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Kyushu University

<120> Methods for Efficiently Producing PPR Proteins and Use thereof

<130> F20688K

<150> JP2019-100551
<151> 2019-05-29

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<170> PatentIn version 3.5

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vvtyttdgck agdvdakmrs kgvknvvtyt tdgckagdvd akmrskgvkn vvtyntdgck 180

sgkakkmkgt svvtyntdgc kagrdamkgk dvvtyntdgc ksgkakkmkg tsvvtyntdg 240

ckagrdamkg kdvvtyntdg ckagrdamkg kdvvtyntdg cksgkakkmk gtsvvtyntd 300

gcksgkakkm kgtsvvtytt dgckagkvda dmkrgkdvvt yttdgckagk vdadmkrgkd 360

vvtyttdgck agkvdadmkr gkdvvtyttd gckagdvdak mrskgvknty ntsggkagra 420

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gkdvvtyttd gckagkvdad mkrgkdvvty ttdgckagdv dakmrskgvk nvvtyttdgc 180

kagdvdakmr skgvknvvty ttdgckagkv dadmkrgkdv vtyntdgcks gkakkmkgts 240

vvtyntdgck sgkakkmkgt svvtyntdgc kagrdamkgk dvvtyttdgc kagkvdadmk 300

rgkdvvtytt dgckagdvda kmrskgvknv vtyttdgcka gkvdadmkrg kdvvtyttdg 360

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ntdgckagrd amkgkdvvty ntdgcksgka kkmkgtsvvt yttdgckagd vdakmrskgv 180

knvvtyntdg ckagrdamkg kdvvtyttdg ckagdvdakm rskgvknvvt yttdgckagd 240

vdakmrskgv knvvtyntdg cksgkakkmk gtsvvtyntd gcksgkakkm kgtsvvtytt 300

dgckagdvda kmrskgvknv vtyttdgcka gkvdadmkrg kdvvtyntdg cksgkakkmk 360

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agrdamkgkd vvtyttdgck agkvdadmkr gkdvvtyttd gckagdvdak mrskgvknvv 120

tyttdgckag kvdadmkrgk dvvtyttdgc kagkvdadmk rgkdvvtytt dgckagdvda 180

kmrskgvknv vtyntdgcka grdamkgkdv vtyntdgcks gkakkmkgts vvtyttdgck 240

agdvdakmrs kgvknvvtyn tdgcksgkak kmkgtsvvty ntdgcksgka kkmkgtsvvt 300

yntdgcksgk akkmkgtsvv tyttdgckag dvdakmrskg vknvvtyntd gckagrdamk 360

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nvvtyttdgc kagdvdakmr skgvknvvty ttdgckagdv dakmrskgvk nvvtyttdgc 180

kagdvdakmr skgvknvvty ttdgckagkv dadmkrgkdv vtyttdgcka gdvdakmrsk 240

gvknvvtynt dgckagrdam kgkdvvtynt dgcksgkakk mkgtsvvtyt tdgckagdvd 300

akmrskgvkn vvtyntdgck sgkakkmkgt svvtyntdgc kagrdamkgk dvvtyttdgc 360

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nvvtyntdgc kagrdamkgk dvvtyntdgc ksgkakkmkg tsvvtyttdg ckagdvdakm 180

rskgvknvvt yttdgckagk vdadmkrgkd vvtyntdgck agrdamkgkd vvtyntdgck 240

sgkakkmkgt svvtyntdgc kagrdamkgk dvvtyttdgc kagkvdadmk rgkdvvtytt 300

dgckagdvda kmrskgvknv vtyntdgcka grdamkgkdv vtyttdgcka gdvdakmrsk 360

gvknvvtytt dgckagdvda kmrskgvknv vtyttdgcka gkvdadmkrg kdtyntsggk 420

agrardv 427

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gagaggaagc cugagagu 18

<210> 48
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<400> 48
cugagucaua accagccu 18

<210> 49
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<400> 49
caugaggauc acccaugu 18

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ggcaaaaaga ucacugua 18

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caacaucagu cugauaag 18

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cacaaugugg ccgaggac 18

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aagccaguuu ucauuuug 18

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gcagauaauu aauaagaa 18

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aaggauaaua ucaaacac 18

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uuaucagacu gauguuga 18

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<400> 63
gguuagagau acagugug 18

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gugggggugg uaggaaau 18

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gugaugugga guuaaggc 18

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<400> 66
ggaagagugu cuggagca 18

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<400> 67
ugaugaugau gaugauga 18

<210> 68
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<400> 68
ucuuugccau uucccaua 18

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<211> 18
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<400> 69
cccauagaug ugacaagc 18

<210> 70
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<400> 70

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Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

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Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
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Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
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                325                 330                 335

Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540
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Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750
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Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765


Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780


Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800


Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815


Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830


Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
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Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
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His His His Gly Arg
865
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<212> PRT
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Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
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Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
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    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn
            260                 265                 270
```

```
Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480
```

```
Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685
```

```
Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                805                 810                 815

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 72
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 72

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
195 200 205

```
Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
                325                 330                 335

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415
```

```
Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
```

625 630 635 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
645 650 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
660 665 670

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
675 680 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
690 695 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705 710 715 720

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
725 730 735

Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
740 745 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
755 760 765

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
770 775 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785 790 795 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
805 810 815

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
820 825 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
835 840 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850   855   860

His His His Gly Arg
865

<210> 73
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 73

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1   5   10   15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20   25   30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50   55   60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65   70   75   80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85   90   95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100   105   110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115   120   125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130   135   140

```
Arg Leu Ile Asn Pro Asp Gly Ser Leu Leu Phe Arg Val Thr Ile Asn
145                 150                 155                 160

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
```

```
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575
```

```
Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
                725                 730                 735

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780
```

```
Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800


Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815


Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830


Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845


Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860


His His His Gly Arg
865
```

<210> 74
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 74

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


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


Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60


Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80


Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
```

```
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300
```

```
Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                485                 490                 495

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            500                 505                 510
```

```
Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
            660                 665                 670

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705                 710                 715                 720
```

```
Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735


Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750


Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765


Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780


Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800


Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815


Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830


Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845


Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860


His His His Gly Arg
865
```

<210> 75
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 75

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30
```

```
Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
        35                  40                  45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240
```

```
Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445
```

```
Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
```

```
            660                 665                 670

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770                 775                 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                805                 810                 815

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 76
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 76

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

```
Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser Ser Arg Leu
            180                 185                 190

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
```

385 390 395 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
405 410 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
420 425 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
435 440 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
450 455 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465 470 475 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
485 490 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
500 505 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
515 520 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
530 535 540

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545 550 555 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
565 570 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
580 585 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
595 600 605

```
Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
    690                 695                 700

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
705                 710                 715                 720

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    770                 775                 780

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                805                 810                 815
```

```
Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 77
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 77

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
```

```
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
                325                 330                 335
```

```
Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540
```

```
Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560


Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575


Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590


Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605


Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
    610                 615                 620


Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640


Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655


Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670


Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685


Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
    690                 695                 700


Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
705                 710                 715                 720


Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
                725                 730                 735


Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
            740                 745                 750
```

```
Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765


Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780


Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800


Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                805                 810                 815


Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830


Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845


Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860


His His His Gly Arg
865
```

<210> 78
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 78

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


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


Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60
```

```
Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270
```

```
Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480
```

```
Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
```

690 695 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705 710 715 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
725 730 735

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
740 745 750

Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
755 760 765

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
770 775 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785 790 795 800

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
805 810 815

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
820 825 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
835 840 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
850 855 860

His His His Gly Arg
865

<210> 79
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 79

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205
```

```
Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                245                 250                 255

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
```

```
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640
```

```
Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845
```

```
Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860


His His His Gly Arg
865


<210>  80
<211>  869
<212>  PRT
<213>  Artificial Sequence

<400>  80

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


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


Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60


Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80


Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95


His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110


Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125


Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140


Arg Leu Ile Asn Pro Asp Gly Ser Leu Leu Phe Arg Val Thr Ile Asn
```

```
145                 150                 155                 160

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365
```

```
Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575
```

```
Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
                725                 730                 735

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780
```

```
Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800


Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                805                 810                 815


Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Glu Leu Thr Tyr Asn
            820                 825                 830


Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845


Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860


His His His Gly Arg
865
```

<210> 81
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 81

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


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


Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60


Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80


Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95
```

```
His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300
```

```
Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                485                 490                 495

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            500                 505                 510
```

```
Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
```

```
                725                 730                 735

Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770                 775                 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 82
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 82

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30
```

```
Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
        35                  40                  45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240
```

```
Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
```

```
    450                 455                 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670
```

```
Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    770                 775                 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 83
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 83

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser Ser Arg Leu

```
            180                 185                 190

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400
```

```
Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605
```

```
Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750

Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                805                 810                 815
```

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
820 825 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
835 840 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
850 855 860

His His His Gly Arg
865

<210> 84
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 84

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

```
Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335
```

```
Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540
```

```
Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560


Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575


Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590


Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605


Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    610                 615                 620


Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640


Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655


Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670


Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685


Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
    690                 695                 700


Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720


Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735


Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750


Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
```

```
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770                 775                 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                805                 810                 815

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 85
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 85

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60
```

```
Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270
```

```
Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
```

```
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
    690                 695                 700
```

```
Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720


Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735


Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750


Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765


Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    770                 775                 780


Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800


Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815


Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830


Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845


Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860


His His His Gly Arg
865
```

<210> 86
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 86

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                  10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
```

```
    210                 215                 220

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
            420                 425                 430
```

```
Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640
```

```
Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770                 775                 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845
```

```
Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860


His His His Gly Arg
865


<210>  87
<211>  869
<212>  PRT
<213>  Artificial Sequence

<400>  87

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


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


Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60


Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80


Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95


His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110


Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125


Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140


Arg Leu Ile Asn Pro Asp Gly Ser Leu Leu Phe Arg Val Thr Ile Asn
145                 150                 155                 160
```

```
Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                245                 250                 255

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365
```

```
Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys
    450                 455                 460

Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575
```

```
Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
            660                 665                 670

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
    690                 695                 700

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
705                 710                 715                 720

Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750

Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    770                 775                 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
```

785 790 795 800

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
805 810 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
820 825 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
835 840 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
850 855 860

His His His Gly Arg
865

<210> 88
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 88

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

```
His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                245                 250                 255

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300
```

```
Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
```

```
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
        595                 600                 605

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
            660                 665                 670

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735
```

```
Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750

Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770                 775                 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                805                 810                 815

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 89
<211> 731
<212> PRT
<213> Artificial Sequence

<400> 89

```
Met Ala Gly Asp Glu Lys Thr Thr Gly Trp Arg Gly Gly His Val Val
1               5                   10                  15

Glu Gly Leu Ala Gly Glu Leu Glu Gln Leu Arg Ala Arg Leu Glu His
            20                  25                  30
```

```
His Pro Gln Gly Gln Arg Glu Pro Gly Gly Ser Gly Gly His Met Gly
        35                  40                  45

Ser Gly Gly Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr
    50                  55                  60

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
65                  70                  75                  80

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
                85                  90                  95

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
            100                 105                 110

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
        115                 120                 125

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    130                 135                 140

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

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
                165                 170                 175

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
            180                 185                 190

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
        195                 200                 205

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
    210                 215                 220

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
225                 230                 235                 240

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
```

```
                245                 250                 255

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
            260                 265                 270

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
        275                 280                 285

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
    290                 295                 300

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
305                 310                 315                 320

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
                325                 330                 335

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

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
        355                 360                 365

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
    370                 375                 380

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
385                 390                 395                 400

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
                405                 410                 415

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
            420                 425                 430

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
        435                 440                 445

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
    450                 455                 460
```

```
Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
465                 470                 475                 480


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


Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
            500                 505                 510


Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
        515                 520                 525


Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
    530                 535                 540


Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
545                 550                 555                 560


Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
                565                 570                 575


Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
            580                 585                 590


Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
        595                 600                 605


Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
    610                 615                 620


Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
625                 630                 635                 640


Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
                645                 650                 655


Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
            660                 665                 670
```

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
675 680 685

Asn Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly
690 695 700

Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser Gly
705 710 715 720

Gly Gly Gly His His His His His His Gly Arg
725 730

<210> 90
<211> 731
<212> PRT
<213> Artificial Sequence

<400> 90

Met Ala Gly Asp Glu Lys Thr Thr Gly Trp Arg Gly Gly His Val Val
1 5 10 15

Glu Gly Leu Ala Gly Glu Leu Glu Gln Leu Arg Ala Arg Leu Glu His
20 25 30

His Pro Gln Gly Gln Arg Glu Pro Gly Gly Ser Gly Gly His Met Gly
35 40 45

Ser Gly Gly Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr
50 55 60

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
65 70 75 80

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
85 90 95

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
100 105 110

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro

```
        115                 120                 125

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    130                 135                 140

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
145                 150                 155                 160

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
                165                 170                 175

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

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
        195                 200                 205

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
    210                 215                 220

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
225                 230                 235                 240

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
                245                 250                 255

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
            260                 265                 270

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
        275                 280                 285

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
    290                 295                 300

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
305                 310                 315                 320

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
                325                 330                 335
```

```
Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
            340                 345                 350

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
        355                 360                 365

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
    370                 375                 380

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
385                 390                 395                 400

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
                405                 410                 415

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
            420                 425                 430

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
        435                 440                 445

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
    450                 455                 460

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
465                 470                 475                 480

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
                485                 490                 495

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
            500                 505                 510

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
        515                 520                 525

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
    530                 535                 540
```

```
Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
545                 550                 555                 560


Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
                565                 570                 575


Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
            580                 585                 590


Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
        595                 600                 605


Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr
    610                 615                 620


Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
625                 630                 635                 640


Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
                645                 650                 655


Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
            660                 665                 670


Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
        675                 680                 685


Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly
    690                 695                 700


Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser Gly
705                 710                 715                 720


Gly Gly Gly His His His His His His Gly Arg
                725                 730


<210>  91
<211>  731
<212>  PRT
<213>  Artificial Sequence
```

<400> 91

```
Met Ala Gly Asp Glu Lys Thr Thr Gly Trp Arg Gly Gly His Val Val
1               5                  10                  15

Glu Gly Leu Ala Gly Glu Leu Glu Gln Leu Arg Ala Arg Leu Glu His
            20                  25                  30

His Pro Gln Gly Gln Arg Glu Pro Gly Gly Ser Gly Gly His Met Gly
        35                  40                  45

Ser Gly Gly Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Asn
    50                  55                  60

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
65                  70                  75                  80

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
                85                  90                  95

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
            100                 105                 110

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
        115                 120                 125

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    130                 135                 140

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
145                 150                 155                 160

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
                165                 170                 175

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

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
        195                 200                 205
```

```
Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
    210                 215                 220

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
225                 230                 235                 240

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
                245                 250                 255

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
            260                 265                 270

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

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
    290                 295                 300

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
305                 310                 315                 320

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
                325                 330                 335

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
            340                 345                 350

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
        355                 360                 365

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
    370                 375                 380

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
385                 390                 395                 400

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu
                405                 410                 415
```

```
Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
            420                 425                 430

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
        435                 440                 445

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
    450                 455                 460

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
465                 470                 475                 480

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

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
            500                 505                 510

Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
        515                 520                 525

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
    530                 535                 540

Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
545                 550                 555                 560

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
                565                 570                 575

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
            580                 585                 590

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
        595                 600                 605

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn
    610                 615                 620
```

```
Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
625                 630                 635                 640


Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
                645                 650                 655


Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
            660                 665                 670


Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
        675                 680                 685


Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly
    690                 695                 700


Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser Gly
705                 710                 715                 720


Gly Gly Gly His His His His His His Gly Arg
                725                 730


<210>  92
<211>  731
<212>  PRT
<213>  Artificial Sequence

<400>  92

Met Ala Gly Asp Glu Lys Thr Thr Gly Trp Arg Gly Gly His Val Val
1               5                   10                  15


Glu Gly Leu Ala Gly Glu Leu Glu Gln Leu Arg Ala Arg Leu Glu His
            20                  25                  30


His Pro Gln Gly Gln Arg Glu Pro Gly Gly Ser Gly Gly His Met Gly
        35                  40                  45


Ser Gly Gly Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Asn
    50                  55                  60


Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
65                  70                  75                  80
```

```
Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
                85                  90                  95

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
            100                 105                 110

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
        115                 120                 125

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    130                 135                 140

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

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
                165                 170                 175

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
            180                 185                 190

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

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
    210                 215                 220

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

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
                245                 250                 255

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
            260                 265                 270

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

```
Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
    290                 295                 300

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
305                 310                 315                 320

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
                325                 330                 335

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
            340                 345                 350

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
        355                 360                 365

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
    370                 375                 380

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
385                 390                 395                 400

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
                405                 410                 415

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
            420                 425                 430

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
        435                 440                 445

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
    450                 455                 460

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
465                 470                 475                 480

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
                485                 490                 495
```

```
Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
            500                 505                 510

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
        515                 520                 525

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
    530                 535                 540

Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
545                 550                 555                 560

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
                565                 570                 575

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
            580                 585                 590

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
        595                 600                 605

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr
    610                 615                 620

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
625                 630                 635                 640

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
                645                 650                 655

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
            660                 665                 670

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
        675                 680                 685

Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly
    690                 695                 700

Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser Gly
```

705 710 715 720

Gly Gly Gly His His His His His His Gly Arg
725 730

<210> 93
<211> 731
<212> PRT
<213> Artificial Sequence

<400> 93

Met Ala Gly Asp Glu Lys Thr Thr Gly Trp Arg Gly Gly His Val Val
1 5 10 15

Glu Gly Leu Ala Gly Glu Leu Glu Gln Leu Arg Ala Arg Leu Glu His
20 25 30

His Pro Gln Gly Gln Arg Glu Pro Gly Gly Ser Gly Gly His Met Gly
35 40 45

Ser Gly Gly Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Asn
50 55 60

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
65 70 75 80

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
85 90 95

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
100 105 110

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
115 120 125

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
130 135 140

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
145 150 155 160

```
Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
                165                 170                 175

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
            180                 185                 190

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
        195                 200                 205

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
    210                 215                 220

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

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
                245                 250                 255

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
            260                 265                 270

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

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
    290                 295                 300

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
305                 310                 315                 320

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
                325                 330                 335

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
            340                 345                 350

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
        355                 360                 365
```

```
Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
    370                 375                 380

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
385                 390                 395                 400

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu
                405                 410                 415

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
            420                 425                 430

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
        435                 440                 445

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
    450                 455                 460

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
465                 470                 475                 480

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
                485                 490                 495

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
            500                 505                 510

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
        515                 520                 525

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
    530                 535                 540

Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
545                 550                 555                 560

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
                565                 570                 575

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
```

```
            580                 585                 590

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
        595                 600                 605

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr
    610                 615                 620

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
625                 630                 635                 640

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
                645                 650                 655

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
            660                 665                 670

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
        675                 680                 685

Asn Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly
    690                 695                 700

Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser Gly
705                 710                 715                 720

Gly Gly Gly His His His His His His Gly Arg
                725                 730


<210>  94
<211>  731
<212>  PRT
<213>  Artificial Sequence

<400>  94

Met Ala Gly Asp Glu Lys Thr Thr Gly Trp Arg Gly Gly His Val Val
1               5                   10                  15

Glu Gly Leu Ala Gly Glu Leu Glu Gln Leu Arg Ala Arg Leu Glu His
            20                  25                  30
```

```
His Pro Gln Gly Gln Arg Glu Pro Gly Gly Ser Gly Gly His Met Gly
        35                  40                  45

Ser Gly Gly Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr
    50                  55                  60

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
65                  70                  75                  80

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
                85                  90                  95

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
            100                 105                 110

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
        115                 120                 125

Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    130                 135                 140

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

Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
                165                 170                 175

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
            180                 185                 190

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
        195                 200                 205

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
    210                 215                 220

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr
225                 230                 235                 240
```

```
Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
                245                 250                 255

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
            260                 265                 270

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
        275                 280                 285

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
    290                 295                 300

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
305                 310                 315                 320

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
                325                 330                 335

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
            340                 345                 350

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
        355                 360                 365

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
    370                 375                 380

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
385                 390                 395                 400

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
                405                 410                 415

Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
            420                 425                 430

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
        435                 440                 445

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
```

```
    450                 455                 460

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
465                 470                 475                 480

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
                485                 490                 495

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
            500                 505                 510

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
        515                 520                 525

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
    530                 535                 540

Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
545                 550                 555                 560

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
                565                 570                 575

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

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
        595                 600                 605

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
    610                 615                 620

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
625                 630                 635                 640

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
                645                 650                 655

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
            660                 665                 670
```

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
675 680 685

Asn Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly
690 695 700

Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser Gly
705 710 715 720

Gly Gly Gly His His His His His His Gly Arg
725 730

<210> 95
<211> 731
<212> PRT
<213> Artificial Sequence

<400> 95

Met Ala Gly Asp Glu Lys Thr Thr Gly Trp Arg Gly Gly His Val Val
1 5 10 15

Glu Gly Leu Ala Gly Glu Leu Glu Gln Leu Arg Ala Arg Leu Glu His
20 25 30

His Pro Gln Gly Gln Arg Glu Pro Gly Gly Ser Gly Gly His Met Gly
35 40 45

Ser Gly Gly Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr
50 55 60

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
65 70 75 80

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
85 90 95

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
100 105 110

```
Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
        115                 120                 125

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    130                 135                 140

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
145                 150                 155                 160

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
                165                 170                 175

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
            180                 185                 190

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
        195                 200                 205

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
    210                 215                 220

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

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
                245                 250                 255

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
            260                 265                 270

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
        275                 280                 285

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
    290                 295                 300

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
305                 310                 315                 320

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
```

```
                325                 330                 335

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
            340                 345                 350

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
        355                 360                 365

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
    370                 375                 380

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
385                 390                 395                 400

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
                405                 410                 415

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
            420                 425                 430

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
        435                 440                 445

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
    450                 455                 460

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
465                 470                 475                 480

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
                485                 490                 495

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
            500                 505                 510

Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
        515                 520                 525

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
    530                 535                 540
```

```
Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
545                 550                 555                 560

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
                565                 570                 575

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

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
        595                 600                 605

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr
    610                 615                 620

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
625                 630                 635                 640

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
                645                 650                 655

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
            660                 665                 670

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
        675                 680                 685

Ser Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly
    690                 695                 700

Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser Gly
705                 710                 715                 720

Gly Gly Gly His His His His His His Gly Arg
                725                 730
```

<210> 96
<211> 731
<212> PRT

<213> Artificial Sequence

<400> 96

```
Met Ala Gly Asp Glu Lys Thr Thr Gly Trp Arg Gly Gly His Val Val
1               5                  10                  15


Glu Gly Leu Ala Gly Glu Leu Glu Gln Leu Arg Ala Arg Leu Glu His
            20                  25                  30


His Pro Gln Gly Gln Arg Glu Pro Gly Gly Ser Gly Gly His Met Gly
        35                  40                  45


Ser Gly Gly Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr
    50                  55                  60


Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
65                  70                  75                  80


Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
                85                  90                  95


Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
            100                 105                 110


Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
        115                 120                 125


Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    130                 135                 140


Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
145                 150                 155                 160


Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
                165                 170                 175


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


Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
```

```
        195                 200                 205

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
    210                 215                 220

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
225                 230                 235                 240

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
                245                 250                 255

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
            260                 265                 270

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

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
    290                 295                 300

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
305                 310                 315                 320

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
                325                 330                 335

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
            340                 345                 350

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
        355                 360                 365

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
    370                 375                 380

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
385                 390                 395                 400

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu
                405                 410                 415
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Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
            420                 425                 430

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
        435                 440                 445

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
    450                 455                 460

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
465                 470                 475                 480

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
                485                 490                 495

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
            500                 505                 510

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
        515                 520                 525

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
    530                 535                 540

Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
545                 550                 555                 560

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
                565                 570                 575

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

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
        595                 600                 605

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
    610                 615                 620
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Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
625                 630                 635                 640


Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
                645                 650                 655


Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
            660                 665                 670


Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
        675                 680                 685


Ser Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly
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Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser Gly
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Gly Gly Gly His His His His His His Gly Arg
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His Pro Gln Gly Gln Arg Glu Pro Gly Gly Ser Gly Gly His Met Gly
        35                  40                  45


Ser Gly Gly Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Asn
    50                  55                  60


Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
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65                  70                  75                  80

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
                85                  90                  95

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
            100                 105                 110

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
        115                 120                 125

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
    130                 135                 140

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
145                 150                 155                 160

Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
                165                 170                 175

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

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
        195                 200                 205

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
    210                 215                 220

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
225                 230                 235                 240

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
                245                 250                 255

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
            260                 265                 270

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
        275                 280                 285
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Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
    290                 295                 300

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
305                 310                 315                 320

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
                325                 330                 335

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
            340                 345                 350

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
        355                 360                 365

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
    370                 375                 380

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
385                 390                 395                 400

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
                405                 410                 415

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
            420                 425                 430

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
        435                 440                 445

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
    450                 455                 460

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
465                 470                 475                 480

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
                485                 490                 495
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Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
            500                 505                 510

Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
        515                 520                 525

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
    530                 535                 540

Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
545                 550                 555                 560

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
                565                 570                 575

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

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
        595                 600                 605

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr
    610                 615                 620

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
625                 630                 635                 640

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
                645                 650                 655

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
            660                 665                 670

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
        675                 680                 685

Ser Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly
    690                 695                 700
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Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser Gly
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Gly Gly Gly His His His His His His Gly Arg
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cacgtcatca tcccctacga gggcctgagc ggcgatcaga tgggccagat cgagaagatc 240

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agcaagggcg tgaagcccaa cgtggttaca tacaccaccc tgatcgacgg cctgtgcaag 2100

gccggcaaag tggacgaggc cctggagctg ttcgacgaga tgaaggagag gggcatcaag 2160

cccgacgtgg tcacatacaa caccctgatc gacggcctgt gcaagagcgg caagatcgag 2220

gaggccctga agctgttcaa ggagatggag gagaagggca tcacccccag cgtggtgaca 2280

tacaccacac tgatcgacgg actgtgtaaa gccggcgacg tggacgaagc cctcgagctg 2340

ttcaaagaga tgcggagcaa gggcgtgaag cccaacgtgg tcacatacac caccctgatc 2400

gacggcctgt gcaaggccgg caaggtggat gaggccctgg agctgttcga cgagatgaag 2460

gagaggggca tcaagcccga cgagctgacc tacaacaccc tgatcagcgg cctgggcaag 2520

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20 25 30

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

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Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255
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Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
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465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        515                 520                 525

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
        595                 600                 605

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685
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Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
                725                 730                 735

Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
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Gly Gly Gly Gly His His His His His His Gly Arg
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Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95
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His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                245                 250                 255

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
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305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
                325                 330                 335

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys
    450                 455                 460

Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525
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Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605

Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625                 630                 635                 640

Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
                645                 650                 655

His Gly Arg
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Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30
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```
Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
        35                  40                  45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
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               245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
               325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
               405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460
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Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
        595                 600                 605

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
            660                 665                 670
```

```
Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
                725                 730                 735

Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
            740                 745                 750

Gly Gly Gly Gly His His His His His His Gly Arg
        755                 760
```

<210> 302
<211> 659
<212> PRT
<213> Artificial Sequence

<400> 302

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
```

```
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300
```

```
Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
                325                 330                 335

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510
```

```
Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605

Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625                 630                 635                 640

Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
                645                 650                 655

His Gly Arg
```

<210> 303
<211> 764
<212> PRT
<213> Artificial Sequence

<400> 303

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
```

```
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240
```

```
Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
               245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
               325                 330                 335

Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
               405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445
```

```
Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                485                 490                 495

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        515                 520                 525

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
        595                 600                 605

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655
```

```
Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
            660                 665                 670

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
                725                 730                 735

Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
            740                 745                 750

Gly Gly Gly Gly His His His His His His Gly Arg
        755                 760
```

<210> 304
<211> 659
<212> PRT
<213> Artificial Sequence

<400> 304

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80
```

```
Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285
```

```
Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495
```

```
Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        515                 520                 525

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625                 630                 635                 640

Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
                645                 650                 655

His Gly Arg
```

<210> 305
<211> 764
<212> PRT
<213> Artificial Sequence

<400> 305

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15
```

```
Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220
```

```
Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
            420                 425                 430
```

```
Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                485                 490                 495

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
        595                 600                 605

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
```

```
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
            660                 665                 670

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
                725                 730                 735

Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
            740                 745                 750

Gly Gly Gly Gly His His His His His His Gly Arg
        755                 760


<210>  306
<211>  659
<212>  PRT
<213>  Artificial Sequence

<400>  306

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60
```

```
Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270
```

```
Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
```

```
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625                 630                 635                 640

Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
                645                 650                 655

His Gly Arg
```

<210> 307
<211> 764
<212> PRT
<213> Artificial Sequence

<400> 307

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                  10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205
```

```
Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
```

```
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys
    450                 455                 460

Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640
```

```
Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655


Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
            660                 665                 670


Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
        675                 680                 685


Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700


Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720


Pro Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
                725                 730                 735


Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
            740                 745                 750


Gly Gly Gly Gly His His His His His His Gly Arg
        755                 760


<210>  308
<211>  659
<212>  PRT
<213>  Artificial Sequence

<400>  308

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
        35                  40                  45
```

```
Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
```

```
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
                325                 330                 335

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480
```

```
Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        515                 520                 525

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625                 630                 635                 640

Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
                645                 650                 655

His Gly Arg
```

<210> 309
<211> 764
<212> PRT

<213> Artificial Sequence

<400> 309

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                  10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


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


Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60


Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80


Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95


His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110


Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125


Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140


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


Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175


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


His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
```

```
        195                 200                 205

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                245                 250                 255

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415
```

```
Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                485                 490                 495

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
    610                 615                 620
```

```
Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640


Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655


Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
            660                 665                 670


Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
        675                 680                 685


Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700


Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720


Pro Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
                725                 730                 735


Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
            740                 745                 750


Gly Gly Gly Gly His His His His His His Gly Arg
        755                 760


<210>  310
<211>  659
<212>  PRT
<213>  Artificial Sequence

<400>  310

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
```

```
        35                  40                  45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255
```

```
Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460
```

```
Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480


Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                485                 490                 495


Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            500                 505                 510


Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525


Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540


Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560


Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575


Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590


Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605


Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr Leu
    610                 615                 620


Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625                 630                 635                 640


Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
                645                 650                 655


His Gly Arg
```

<210> 311
<211> 764
<212> PRT
<213> Artificial Sequence

<400> 311

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

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

```
His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
                325                 330                 335

Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400
```

```
Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        515                 520                 525

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605
```

```
Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
                725                 730                 735

Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
            740                 745                 750

Gly Gly Gly Gly His His His His His His Gly Arg
        755                 760
```

<210> 312
<211> 659
<212> PRT
<213> Artificial Sequence

<400> 312

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30
```

```
Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
        35                  40                  45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240
```

```
Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr
        435                 440                 445
```

```
Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                485                 490                 495

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        515                 520                 525

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625                 630                 635                 640

Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
                645                 650                 655

His Gly Arg
```

<210> 313
<211> 764
<212> PRT
<213> Artificial Sequence

<400> 313

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

```
Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser Ser Arg Leu
            180                 185                 190

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380
```

```
Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400


Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415


Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430


Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
        435                 440                 445


Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys
    450                 455                 460


Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr
465                 470                 475                 480


Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495


Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510


Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525


Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540


Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560


Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575


Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590


Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
```

595 600 605

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
610 615 620

Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
625 630 635 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
645 650 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
660 665 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
675 680 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
690 695 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705 710 715 720

Pro Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
725 730 735

Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
740 745 750

Gly Gly Gly Gly His His His His His His Gly Arg
755 760

<210> 314
<211> 659
<212> PRT
<213> Artificial Sequence

<400> 314

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

```
Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220
```

```
Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
                325                 330                 335

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
```

```
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625                 630                 635                 640

Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
                645                 650                 655
```

His Gly Arg

<210> 315
<211> 764
<212> PRT
<213> Artificial Sequence

<400> 315

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

```
Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
```

370 375 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385 390 395 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
405 410 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
420 425 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
435 440 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
450 455 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465 470 475 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
485 490 495

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
500 505 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
515 520 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
530 535 540

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545 550 555 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
565 570 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
580 585 590

```
Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
        595                 600                 605


Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620


Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640


Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
                645                 650                 655


Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670


Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685


Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700


Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720


Pro Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
                725                 730                 735


Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
            740                 745                 750


Gly Gly Gly Gly His His His His His His Gly Arg
        755                 760


<210>  316
<211>  659
<212>  PRT
<213>  Artificial Sequence

<400>  316
```

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                  10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
```

```
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430
```

```
Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625                 630                 635                 640
```

Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
645 650 655

His Gly Arg

<210> 317
<211> 764
<212> PRT
<213> Artificial Sequence

<400> 317

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

Arg Leu Ile Asn Pro Asp Gly Ser Leu Leu Phe Arg Val Thr Ile Asn

```
145                 150                 155                 160

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365
```

```
Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575
```

```
Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
        595                 600                 605

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
            660                 665                 670

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
                725                 730                 735

Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
            740                 745                 750

Gly Gly Gly Gly His His His His His His Gly Arg
        755                 760
```

<210> 318
<211> 659
<212> PRT
<213> Artificial Sequence

<400> 318

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                  10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205
```

```
Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415
```

```
Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr Leu
    610                 615                 620
```

```
Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625                 630                 635                 640


Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
                645                 650                 655


His Gly Arg
```

<210> 319
<211> 764
<212> PRT
<213> Artificial Sequence

<400> 319

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


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


Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60


Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80


Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95


His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110


Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125


Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140
```

```
Arg Leu Ile Asn Pro Asp Gly Ser Leu Leu Phe Arg Val Thr Ile Asn
145                 150                 155                 160

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                245                 250                 255

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350
```

```
Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                485                 490                 495

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560
```

```
Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
        595                 600                 605

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
                725                 730                 735

Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
            740                 745                 750

Gly Gly Gly Gly His His His His His His Gly Arg
        755                 760
```

<210> 320

<211> 659
<212> PRT
<213> Artificial Sequence

<400> 320

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

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

```
His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
385                 390                 395                 400
```

```
Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605

Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn Thr Leu
```

610 615 620

Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625 630 635 640

Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
645 650 655

His Gly Arg

<210> 321
<211> 764
<212> PRT
<213> Artificial Sequence

<400> 321

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

```
Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335
```

```
Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
```

545 550 555 560

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
565 570 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
580 585 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
595 600 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
610 615 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625 630 635 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
645 650 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
660 665 670

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
675 680 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
690 695 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705 710 715 720

Pro Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
725 730 735

Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
740 745 750

Gly Gly Gly Gly His His His His His His Gly Arg
755 760

<210> 322
<211> 659
<212> PRT
<213> Artificial Sequence

<400> 322

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

```
Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser Ser Arg Leu
            180                 185                 190

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                245                 250                 255

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
```

385 390 395 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
405 410 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
420 425 430

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
435 440 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
450 455 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465 470 475 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
485 490 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
500 505 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
515 520 525

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
530 535 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545 550 555 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
565 570 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
580 585 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
595 600 605

```
Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625                 630                 635                 640

Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
                645                 650                 655

His Gly Arg
```

<210> 323
<211> 764
<212> PRT
<213> Artificial Sequence

<400> 323

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110
```

```
Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                245                 250                 255

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
```

```
                325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys
    450                 455                 460

Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        515                 520                 525

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    530                 535                 540
```

```
Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560


Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575


Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590


Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605


Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620


Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640


Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655


Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670


Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685


Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
    690                 695                 700


Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720


Pro Asn Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala
                725                 730                 735


Gly Arg Ala Arg Asp Pro Pro Val Leu Ser Ser Gly Ser Gly Gly Ser
            740                 745                 750
```

Gly Gly Gly Gly His His His His His His Gly Arg
        755   760

<210> 324
<211> 659
<212> PRT
<213> Artificial Sequence

<400> 324

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1   5   10   15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20   25   30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50   55   60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65   70   75   80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85   90   95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100   105   110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115   120   125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130   135   140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly

```
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380
```

```
Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                485                 490                 495

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590
```

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
595 600 605

Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn Thr Leu
610 615 620

Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val Leu
625 630 635 640

Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His His His
645 650 655

His Gly Arg

<210> 325
<211> 18
<212> DNA
<213> Artificial Sequence

<400> 325
ugccccacag cuuuaagg 18

<210> 326
<211> 18
<212> DNA
<213> Artificial Sequence

<400> 326
gcuaaccucu gcgcuucu 18

<210> 327
<211> 18
<212> DNA
<213> Artificial Sequence

<400> 327
gcuucuuccc uucccucc 18

<210> 328
<211> 18
<212> DNA
<213> Artificial Sequence

<400> 328
cccuccuccc uggcucag 18

<210> 329
<211> 18
<212> DNA
<213> Artificial Sequence

<400> 329
gcucaggauc caggcgau 18

<210> 330
<211> 18
<212> DNA
<213> Artificial Sequence

<400> 330
ggcgauaucc ggaagaau 18

<210> 331
<211> 657
<212> PRT
<213> Artificial Sequence

<400> 331

Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
1 5 10 15

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
20 25 30

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
35 40 45

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
50 55 60

Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
65 70 75 80

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
85 90 95

```
Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr
            100                 105                 110

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
        115                 120                 125

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser
    130                 135                 140

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
145                 150                 155                 160

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
                165                 170                 175

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

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
        195                 200                 205

Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
    210                 215                 220

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
225                 230                 235                 240

Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
                245                 250                 255

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
            260                 265                 270

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr
        275                 280                 285

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
    290                 295                 300

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val
```

```
305                 310                 315                 320

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
                325                 330                 335

Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
            340                 345                 350

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
        355                 360                 365

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
    370                 375                 380

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

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
                405                 410                 415

Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
            420                 425                 430

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
        435                 440                 445

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
    450                 455                 460

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
465                 470                 475                 480

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val
                485                 490                 495

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
            500                 505                 510

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
        515                 520                 525
```

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    530   535   540

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
545   550   555   560

Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
                565   570   575

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
            580   585   590

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
        595   600   605

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
    610   615   620

Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr
625   630   635   640

Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val
                645   650   655

Leu

<210> 332
<211> 657
<212> PRT
<213> Artificial Sequence

<400> 332

Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
1   5   10   15

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
            20   25   30

```
Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
        35                  40                  45

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
    50                  55                  60

Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr
65                  70                  75                  80

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
                85                  90                  95

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr
            100                 105                 110

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
        115                 120                 125

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn
    130                 135                 140

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

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
                165                 170                 175

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

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
        195                 200                 205

Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
    210                 215                 220

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
225                 230                 235                 240

Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu
```

```
                245                 250                 255

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
            260                 265                 270

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
        275                 280                 285

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
    290                 295                 300

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val
305                 310                 315                 320

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
                325                 330                 335

Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
            340                 345                 350

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
        355                 360                 365

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
    370                 375                 380

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

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
                405                 410                 415

Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Thr Thr Leu Ile
            420                 425                 430

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
        435                 440                 445

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
    450                 455                 460
```

```
Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
465                 470                 475                 480


Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val
                485                 490                 495


Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
            500                 505                 510


Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
        515                 520                 525


Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    530                 535                 540


Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
545                 550                 555                 560


Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
                565                 570                 575


Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
            580                 585                 590


Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
        595                 600                 605


Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
    610                 615                 620


Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr
625                 630                 635                 640


Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val
                645                 650                 655


Leu
```

<210> 333
<211> 657
<212> PRT
<213> Artificial Sequence

<400> 333

Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
1 5 10 15

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
20 25 30

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
35 40 45

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
50 55 60

Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr
65 70 75 80

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
85 90 95

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr
100 105 110

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
115 120 125

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp
130 135 140

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
145 150 155 160

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
165 170 175

Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys

```
            180                 185                 190

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
        195                 200                 205

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
    210                 215                 220

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
225                 230                 235                 240

Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
                245                 250                 255

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
            260                 265                 270

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr
        275                 280                 285

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
    290                 295                 300

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val
305                 310                 315                 320

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
                325                 330                 335

Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
            340                 345                 350

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
        355                 360                 365

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
    370                 375                 380

Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
385                 390                 395                 400
```

```
Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
                405                 410                 415

Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
            420                 425                 430

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
        435                 440                 445

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn
    450                 455                 460

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
465                 470                 475                 480

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val
                485                 490                 495

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
            500                 505                 510

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
        515                 520                 525

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    530                 535                 540

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
545                 550                 555                 560

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
                565                 570                 575

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
            580                 585                 590

Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
        595                 600                 605
```

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
    610   615   620

Glu Met Val Glu Lys Gly Ile Lys Pro Ser Glu Leu Thr Tyr Asn Thr
625   630   635   640

Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val
                645   650   655

Leu

<210> 334
<211> 657
<212> PRT
<213> Artificial Sequence

<400> 334

Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
1   5   10   15

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
            20   25   30

Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
        35   40   45

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
    50   55   60

Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr
65   70   75   80

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
                85   90   95

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr
            100   105   110

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu

```
        115                 120                 125

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp
    130                 135                 140

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
145                 150                 155                 160

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
                165                 170                 175

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

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
        195                 200                 205

Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
    210                 215                 220

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
225                 230                 235                 240

Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
                245                 250                 255

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
            260                 265                 270

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr
        275                 280                 285

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
    290                 295                 300

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val
305                 310                 315                 320

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
                325                 330                 335
```

```
Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
            340                 345                 350

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
        355                 360                 365

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
    370                 375                 380

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
385                 390                 395                 400

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
                405                 410                 415

Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
            420                 425                 430

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
        435                 440                 445

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
    450                 455                 460

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
465                 470                 475                 480

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val
                485                 490                 495

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
            500                 505                 510

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
        515                 520                 525

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    530                 535                 540
```

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
545 550 555 560

Ile Lys Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
565 570 575

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
580 585 590

Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
595 600 605

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
610 615 620

Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr
625 630 635 640

Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val
645 650 655

Leu

<210> 335
<211> 657
<212> PRT
<213> Artificial Sequence

<400> 335

Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
1 5 10 15

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
20 25 30

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
35 40 45

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu

```
    50                  55                  60

Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr
65                  70                  75                  80

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
                85                  90                  95

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr
            100                 105                 110

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
        115                 120                 125

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser
    130                 135                 140

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

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
                165                 170                 175

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

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
        195                 200                 205

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
    210                 215                 220

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
225                 230                 235                 240

Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
                245                 250                 255

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
            260                 265                 270
```

```
Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr
        275                 280                 285

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
    290                 295                 300

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val
305                 310                 315                 320

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
                325                 330                 335

Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
            340                 345                 350

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
        355                 360                 365

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
    370                 375                 380

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

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
                405                 410                 415

Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
            420                 425                 430

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
        435                 440                 445

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
    450                 455                 460

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
465                 470                 475                 480
```

```
Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val
                485                 490                 495

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
            500                 505                 510

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
        515                 520                 525

Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    530                 535                 540

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
545                 550                 555                 560

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
                565                 570                 575

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
            580                 585                 590

Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
        595                 600                 605

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
    610                 615                 620

Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr
625                 630                 635                 640

Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val
                645                 650                 655

Leu
```

<210> 336
<211> 657
<212> PRT
<213> Artificial Sequence

<400> 336

```
Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
1               5                  10                  15

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
            20                  25                  30

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
        35                  40                  45

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
    50                  55                  60

Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
65                  70                  75                  80

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
                85                  90                  95

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr
            100                 105                 110

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
        115                 120                 125

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp
    130                 135                 140

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

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
                165                 170                 175

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

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
        195                 200                 205
```

```
Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
    210                 215                 220

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
225                 230                 235                 240

Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
                245                 250                 255

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
            260                 265                 270

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
        275                 280                 285

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
    290                 295                 300

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val
305                 310                 315                 320

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
                325                 330                 335

Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
            340                 345                 350

Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
        355                 360                 365

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
    370                 375                 380

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
385                 390                 395                 400

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
                405                 410                 415
```

```
Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
            420                 425                 430

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
        435                 440                 445

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr
    450                 455                 460

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
465                 470                 475                 480

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val
                485                 490                 495

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
            500                 505                 510

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
        515                 520                 525

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    530                 535                 540

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
545                 550                 555                 560

Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
                565                 570                 575

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
            580                 585                 590

Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
        595                 600                 605

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
    610                 615                 620
```

```
Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr
625                 630                 635                 640

Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val
                645                 650                 655

Leu
```

<210> 337
<211> 657
<212> PRT
<213> Artificial Sequence

<400> 337

```
Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
1               5                   10                  15

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
            20                  25                  30

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
        35                  40                  45

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
    50                  55                  60

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
65                  70                  75                  80

Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys
                85                  90                  95

Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr
            100                 105                 110

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
        115                 120                 125

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
    130                 135                 140
```

```
Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
145                 150                 155                 160


Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
                165                 170                 175


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


Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
        195                 200                 205


Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
    210                 215                 220


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


Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
                245                 250                 255


Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
            260                 265                 270


Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
        275                 280                 285


Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
    290                 295                 300


Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
305                 310                 315                 320


Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
                325                 330                 335


Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
            340                 345                 350
```

```
Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
        355                 360                 365

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
    370                 375                 380

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

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
                405                 410                 415

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
            420                 425                 430

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
        435                 440                 445

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
    450                 455                 460

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
465                 470                 475                 480

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
                485                 490                 495

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
            500                 505                 510

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
        515                 520                 525

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    530                 535                 540

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
545                 550                 555                 560
```

Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
565 570 575

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
580 585 590

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
595 600 605

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
610 615 620

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr
625 630 635 640

Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val
645 650 655

Leu

<210> 338
<211> 657
<212> PRT
<213> Artificial Sequence

<400> 338

Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
1 5 10 15

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
20 25 30

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
35 40 45

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
50 55 60

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
65 70 75 80

```
Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
                85                  90                  95

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
            100                 105                 110

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
        115                 120                 125

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
    130                 135                 140

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

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
                165                 170                 175

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

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
        195                 200                 205

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
    210                 215                 220

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
225                 230                 235                 240

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
                245                 250                 255

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
            260                 265                 270

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
        275                 280                 285
```

```
Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
    290                 295                 300

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
305                 310                 315                 320

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
                325                 330                 335

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
            340                 345                 350

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
        355                 360                 365

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
    370                 375                 380

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

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
                405                 410                 415

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile
            420                 425                 430

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
        435                 440                 445

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
    450                 455                 460

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
465                 470                 475                 480

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
                485                 490                 495
```

```
Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
            500                 505                 510

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
        515                 520                 525

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    530                 535                 540

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
545                 550                 555                 560

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
                565                 570                 575

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
            580                 585                 590

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
        595                 600                 605

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
    610                 615                 620

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr
625                 630                 635                 640

Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val
                645                 650                 655

Leu
```

<210> 339
<211> 657
<212> PRT
<213> Artificial Sequence

<400> 339

```
Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
1               5                   10                  15
```

```
Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
            20                  25                  30

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
        35                  40                  45

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
    50                  55                  60

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
65                  70                  75                  80

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
                85                  90                  95

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
            100                 105                 110

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
        115                 120                 125

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
    130                 135                 140

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

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
                165                 170                 175

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

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
        195                 200                 205

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
    210                 215                 220
```

```
Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
225                 230                 235                 240

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
                245                 250                 255

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
            260                 265                 270

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
        275                 280                 285

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
    290                 295                 300

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
305                 310                 315                 320

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
                325                 330                 335

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
            340                 345                 350

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
        355                 360                 365

Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
    370                 375                 380

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

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
                405                 410                 415

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
            420                 425                 430
```

```
Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
        435                 440                 445

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn
    450                 455                 460

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
465                 470                 475                 480

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
                485                 490                 495

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
            500                 505                 510

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
        515                 520                 525

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    530                 535                 540

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
545                 550                 555                 560

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
                565                 570                 575

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
            580                 585                 590

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
        595                 600                 605

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
    610                 615                 620

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Glu Leu Thr Tyr Asn Thr
625                 630                 635                 640

Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val
```

645 650 655

Leu

<210> 340
<211> 657
<212> PRT
<213> Artificial Sequence

<400> 340

Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
1 5 10 15

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
20 25 30

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
35 40 45

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
50 55 60

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
65 70 75 80

Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys
85 90 95

Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr
100 105 110

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
115 120 125

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
130 135 140

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

```
Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
                165                 170                 175

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

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
        195                 200                 205

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
    210                 215                 220

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
225                 230                 235                 240

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
                245                 250                 255

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
            260                 265                 270

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
        275                 280                 285

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
    290                 295                 300

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
305                 310                 315                 320

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
                325                 330                 335

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
            340                 345                 350

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
        355                 360                 365
```

```
Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
    370                 375                 380

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
385                 390                 395                 400

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

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
            420                 425                 430

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
        435                 440                 445

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
    450                 455                 460

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
465                 470                 475                 480

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
                485                 490                 495

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
            500                 505                 510

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
        515                 520                 525

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
    530                 535                 540

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
545                 550                 555                 560

Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
                565                 570                 575

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
```

580 585 590

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
595 600 605

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
610 615 620

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr
625 630 635 640

Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val
645 650 655

Leu

<210> 341
<211> 657
<212> PRT
<213> Artificial Sequence

<400> 341

Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
1 5 10 15

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
20 25 30

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
35 40 45

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
50 55 60

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
65 70 75 80

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
85 90 95

```
Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
            100                 105                 110

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
        115                 120                 125

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
    130                 135                 140

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

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
                165                 170                 175

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

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
        195                 200                 205

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
    210                 215                 220

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

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
                245                 250                 255

Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
            260                 265                 270

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
        275                 280                 285

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
    290                 295                 300
```

```
Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
305                 310                 315                 320

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
                325                 330                 335

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
            340                 345                 350

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
        355                 360                 365

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
    370                 375                 380

Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
385                 390                 395                 400

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

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
            420                 425                 430

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
        435                 440                 445

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
    450                 455                 460

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
465                 470                 475                 480

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
                485                 490                 495

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
            500                 505                 510

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
```

```
        515                 520                 525

Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    530                 535                 540

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
545                 550                 555                 560

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
                565                 570                 575

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
            580                 585                 590

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
        595                 600                 605

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
    610                 615                 620

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr
625                 630                 635                 640

Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val
                645                 650                 655

Leu
```

<210> 342
<211> 657
<212> PRT
<213> Artificial Sequence

<400> 342

```
Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
1               5                   10                  15

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
            20                  25                  30
```

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

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
    50                  55                  60

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
65                  70                  75                  80

Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys
                85                  90                  95

Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr
            100                 105                 110

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
        115                 120                 125

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
    130                 135                 140

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

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
                165                 170                 175

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

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
        195                 200                 205

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
    210                 215                 220

Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
225                 230                 235                 240
```

```
Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
                245                 250                 255

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
            260                 265                 270

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
        275                 280                 285

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
    290                 295                 300

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
305                 310                 315                 320

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
                325                 330                 335

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
            340                 345                 350

Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
        355                 360                 365

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
    370                 375                 380

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
385                 390                 395                 400

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

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
            420                 425                 430

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
        435                 440                 445

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr
```

```
    450                 455                 460

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
465                 470                 475                 480

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
                485                 490                 495

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
            500                 505                 510

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
        515                 520                 525

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
    530                 535                 540

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
545                 550                 555                 560

Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
                565                 570                 575

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
            580                 585                 590

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
        595                 600                 605

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
    610                 615                 620

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr
625                 630                 635                 640

Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro Val
                645                 650                 655

Leu
```

<210> 343
<211> 738
<212> PRT
<213> Artificial Sequence

<400> 343

Met Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Pro Lys Lys Lys
1 5 10 15

Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys
20 25 30

Lys Lys Arg Lys Val Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
35 40 45

Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile
50 55 60

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
65 70 75 80

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
85 90 95

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
100 105 110

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val
115 120 125

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
130 135 140

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
145 150 155 160

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
165 170 175

```
Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
            180                 185                 190

Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
        195                 200                 205

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
    210                 215                 220

Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
225                 230                 235                 240

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
                245                 250                 255

Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Thr Thr
            260                 265                 270

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
        275                 280                 285

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr
    290                 295                 300

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
305                 310                 315                 320

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser
                325                 330                 335

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
            340                 345                 350

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
        355                 360                 365

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
    370                 375                 380

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
```

385 390 395 400

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
405 410 415

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
420 425 430

Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu
435 440 445

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
450 455 460

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
465 470 475 480

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
485 490 495

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val
500 505 510

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
515 520 525

Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
530 535 540

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
545 550 555 560

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
565 570 575

Gly Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
580 585 590

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
595 600 605

```
Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
    610                 615                 620


Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
625                 630                 635                 640


Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
                645                 650                 655


Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
            660                 665                 670


Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu
        675                 680                 685


Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg
    690                 695                 700


Asp Pro Pro Val Leu Ser Ser Gly Asp Tyr Lys Asp His Asp Gly Asp
705                 710                 715                 720


Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala
                725                 730                 735


Gly Arg
```

<210> 344
<211> 738
<212> PRT
<213> Artificial Sequence

<400> 344

```
Met Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Pro Lys Lys Lys
1               5                   10                  15


Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys
            20                  25                  30
```

```
Lys Lys Arg Lys Val Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
        35                  40                  45

Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile
    50                  55                  60

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
65                  70                  75                  80

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
                85                  90                  95

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
            100                 105                 110

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

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
    130                 135                 140

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
145                 150                 155                 160

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
                165                 170                 175

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
            180                 185                 190

Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
        195                 200                 205

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
    210                 215                 220

Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
225                 230                 235                 240

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
```

```
               245                 250                 255

Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr
            260                 265                 270

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
        275                 280                 285

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr
    290                 295                 300

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
305                 310                 315                 320

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp
               325                 330                 335

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
            340                 345                 350

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
        355                 360                 365

Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
    370                 375                 380

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
385                 390                 395                 400

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
               405                 410                 415

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
            420                 425                 430

Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
        435                 440                 445

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
    450                 455                 460
```

```
Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr
465                 470                 475                 480


Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
                485                 490                 495


Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val
            500                 505                 510


Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
        515                 520                 525


Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
    530                 535                 540


Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
545                 550                 555                 560


Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
                565                 570                 575


Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
            580                 585                 590


Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
        595                 600                 605


Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
    610                 615                 620


Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
625                 630                 635                 640


Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn
                645                 650                 655


Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
            660                 665                 670
```

```
Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu
        675                 680                 685

Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg
    690                 695                 700

Asp Pro Pro Val Leu Ser Ser Gly Asp Tyr Lys Asp His Asp Gly Asp
705                 710                 715                 720

Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala
                725                 730                 735

Gly Arg
```

<210> 345
<211> 738
<212> PRT
<213> Artificial Sequence

<400> 345

```
Met Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Pro Lys Lys Lys
1               5                   10                  15

Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys
            20                  25                  30

Lys Lys Arg Lys Val Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
        35                  40                  45

Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile
    50                  55                  60

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
65                  70                  75                  80

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
                85                  90                  95

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
```

```
            100                 105                 110

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

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
    130                 135                 140

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
145                 150                 155                 160

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
                165                 170                 175

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
            180                 185                 190

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
        195                 200                 205

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
    210                 215                 220

Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
225                 230                 235                 240

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
                245                 250                 255

Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
            260                 265                 270

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
        275                 280                 285

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr
    290                 295                 300

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
305                 310                 315                 320
```

```
Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser
               325                 330                 335

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
            340                 345                 350

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
        355                 360                 365

Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
    370                 375                 380

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
385                 390                 395                 400

Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
               405                 410                 415

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
            420                 425                 430

Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
        435                 440                 445

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
    450                 455                 460

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
465                 470                 475                 480

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
               485                 490                 495

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val
            500                 505                 510

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
        515                 520                 525
```

```
Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
    530                 535                 540

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
545                 550                 555                 560

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
                565                 570                 575

Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
            580                 585                 590

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
        595                 600                 605

Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
    610                 615                 620

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
625                 630                 635                 640

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn
                645                 650                 655

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
            660                 665                 670

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Glu Leu
        675                 680                 685

Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg
    690                 695                 700

Asp Pro Pro Val Leu Ser Ser Gly Asp Tyr Lys Asp His Asp Gly Asp
705                 710                 715                 720

Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala
                725                 730                 735
```

Gly Arg

<210> 346
<211> 738
<212> PRT
<213> Artificial Sequence

<400> 346

Met Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Pro Lys Lys Lys
1 5 10 15

Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys
20 25 30

Lys Lys Arg Lys Val Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
35 40 45

Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile
50 55 60

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
65 70 75 80

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn
85 90 95

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
100 105 110

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

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
130 135 140

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
145 150 155 160

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
165 170 175

```
Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
            180                 185                 190

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
        195                 200                 205

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
    210                 215                 220

Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
225                 230                 235                 240

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
                245                 250                 255

Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr
            260                 265                 270

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
        275                 280                 285

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr
    290                 295                 300

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
305                 310                 315                 320

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser
                325                 330                 335

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
            340                 345                 350

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
        355                 360                 365

Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
    370                 375                 380
```

```
Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
385                 390                 395                 400


Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
                405                 410                 415


Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
            420                 425                 430


Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
        435                 440                 445


Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
    450                 455                 460


Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
465                 470                 475                 480


Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
                485                 490                 495


Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val
            500                 505                 510


Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
        515                 520                 525


Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
    530                 535                 540


Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
545                 550                 555                 560


Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
                565                 570                 575


Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
            580                 585                 590
```

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
595 600 605

Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Thr Thr Leu Ile
610 615 620

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
625 630 635 640

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr
645 650 655

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
660 665 670

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu
675 680 685

Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg
690 695 700

Asp Pro Pro Val Leu Ser Ser Gly Asp Tyr Lys Asp His Asp Gly Asp
705 710 715 720

Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala
725 730 735

Gly Arg

<210> 347
<211> 738
<212> PRT
<213> Artificial Sequence

<400> 347

Met Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Pro Lys Lys Lys
1 5 10 15

Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys
20 25 30

```
Lys Lys Arg Lys Val Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
        35                  40                  45

Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile
    50                  55                  60

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
65                  70                  75                  80

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
                85                  90                  95

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
            100                 105                 110

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

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
    130                 135                 140

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
145                 150                 155                 160

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
                165                 170                 175

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
            180                 185                 190

Ile Lys Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
        195                 200                 205

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
    210                 215                 220

Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
225                 230                 235                 240
```

```
Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
                245                 250                 255

Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
            260                 265                 270

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
        275                 280                 285

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr
    290                 295                 300

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
305                 310                 315                 320

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn
                325                 330                 335

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
            340                 345                 350

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
        355                 360                 365

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
    370                 375                 380

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
385                 390                 395                 400

Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
                405                 410                 415

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
            420                 425                 430

Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Thr Thr Leu
        435                 440                 445
```

```
Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
    450                 455                 460

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr
465                 470                 475                 480

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
                485                 490                 495

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val
            500                 505                 510

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
        515                 520                 525

Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
    530                 535                 540

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
545                 550                 555                 560

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
                565                 570                 575

Gly Ile Lys Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
            580                 585                 590

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
        595                 600                 605

Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
    610                 615                 620

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
625                 630                 635                 640

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Asn
                645                 650                 655

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
```

660 665 670

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu
675 680 685

Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg
690 695 700

Asp Pro Pro Val Leu Ser Ser Gly Asp Tyr Lys Asp His Asp Gly Asp
705 710 715 720

Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala
725 730 735

Gly Arg

<210> 348
<211> 738
<212> PRT
<213> Artificial Sequence

<400> 348

Met Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Pro Lys Lys Lys
1 5 10 15

Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys
20 25 30

Lys Lys Arg Lys Val Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
35 40 45

Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile
50 55 60

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
65 70 75 80

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
85 90 95

```
Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
            100                 105                 110

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val
        115                 120                 125

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
    130                 135                 140

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
145                 150                 155                 160

Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
                165                 170                 175

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
            180                 185                 190

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
        195                 200                 205

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
    210                 215                 220

Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
225                 230                 235                 240

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
                245                 250                 255

Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
            260                 265                 270

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
        275                 280                 285

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr
    290                 295                 300
```

```
Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
305                 310                 315                 320

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp
                325                 330                 335

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
            340                 345                 350

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
        355                 360                 365

Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
    370                 375                 380

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
385                 390                 395                 400

Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
                405                 410                 415

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
            420                 425                 430

Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
        435                 440                 445

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
    450                 455                 460

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
465                 470                 475                 480

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
                485                 490                 495

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val
            500                 505                 510

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
```

```
        515                 520                 525

Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
    530                 535                 540

Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
545                 550                 555                 560

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
                565                 570                 575

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
            580                 585                 590

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
        595                 600                 605

Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
    610                 615                 620

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
625                 630                 635                 640

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Asn
                645                 650                 655

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
            660                 665                 670

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu
        675                 680                 685

Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg
    690                 695                 700

Asp Pro Pro Val Leu Ser Ser Gly Asp Tyr Lys Asp His Asp Gly Asp
705                 710                 715                 720

Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala
                725                 730                 735
```

Gly Arg

<210> 349
<211> 738
<212> PRT
<213> Artificial Sequence

<400> 349

Met Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Pro Lys Lys Lys
1 5 10 15

Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys
20 25 30

Lys Lys Arg Lys Val Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
35 40 45

Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile
50 55 60

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
65 70 75 80

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
85 90 95

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
100 105 110

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
115 120 125

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
130 135 140

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

```
Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
                165                 170                 175

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
            180                 185                 190

Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
        195                 200                 205

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
    210                 215                 220

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
225                 230                 235                 240

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
                245                 250                 255

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr
            260                 265                 270

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
        275                 280                 285

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
    290                 295                 300

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
305                 310                 315                 320

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

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
            340                 345                 350

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
        355                 360                 365

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
```

```
    370                 375                 380

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
385                 390                 395                 400

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
                405                 410                 415

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
            420                 425                 430

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
        435                 440                 445

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
    450                 455                 460

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
465                 470                 475                 480

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
                485                 490                 495

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
            500                 505                 510

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
        515                 520                 525

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
    530                 535                 540

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
545                 550                 555                 560

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
                565                 570                 575

Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
            580                 585                 590
```

```
Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
        595                 600                 605


Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
    610                 615                 620


Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
625                 630                 635                 640


Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
                645                 650                 655


Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
            660                 665                 670


Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu
        675                 680                 685


Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg
    690                 695                 700


Asp Pro Pro Val Leu Ser Ser Gly Asp Tyr Lys Asp His Asp Gly Asp
705                 710                 715                 720


Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala
                725                 730                 735


Gly Arg
```

<210> 350
<211> 738
<212> PRT
<213> Artificial Sequence

<400> 350

```
Met Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Pro Lys Lys Lys
1               5                   10                  15
```

```
Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys
            20                  25                  30

Lys Lys Arg Lys Val Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
        35                  40                  45

Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile
    50                  55                  60

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
65                  70                  75                  80

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
                85                  90                  95

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
            100                 105                 110

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

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
    130                 135                 140

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
145                 150                 155                 160

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
                165                 170                 175

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
            180                 185                 190

Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
        195                 200                 205

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
    210                 215                 220

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
```

225 230 235 240

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
245 250 255

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
260 265 270

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

Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr
290 295 300

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
305 310 315 320

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
325 330 335

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
340 345 350

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
355 360 365

Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
370 375 380

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
385 390 395 400

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
405 410 415

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
420 425 430

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
435 440 445

```
Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
    450                 455                 460

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
465                 470                 475                 480

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
                485                 490                 495

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
            500                 505                 510

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
        515                 520                 525

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
    530                 535                 540

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
545                 550                 555                 560

Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
                565                 570                 575

Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
            580                 585                 590

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
        595                 600                 605

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
    610                 615                 620

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
625                 630                 635                 640

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn
                645                 650                 655
```

```
Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
            660                 665                 670

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu
        675                 680                 685

Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg
    690                 695                 700

Asp Pro Pro Val Leu Ser Ser Gly Asp Tyr Lys Asp His Asp Gly Asp
705                 710                 715                 720

Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala
                725                 730                 735

Gly Arg
```

<210> 351
<211> 738
<212> PRT
<213> Artificial Sequence

<400> 351

```
Met Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Pro Lys Lys Lys
1               5                   10                  15

Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys
            20                  25                  30

Lys Lys Arg Lys Val Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
        35                  40                  45

Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile
    50                  55                  60

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
65                  70                  75                  80

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
```

```
                85                  90                  95

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
            100                 105                 110

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

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
    130                 135                 140

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
145                 150                 155                 160

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
                165                 170                 175

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
            180                 185                 190

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
        195                 200                 205

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
    210                 215                 220

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
225                 230                 235                 240

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
                245                 250                 255

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
            260                 265                 270

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
        275                 280                 285

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
    290                 295                 300
```

```
Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
305                 310                 315                 320

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

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
            340                 345                 350

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
        355                 360                 365

Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
    370                 375                 380

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
385                 390                 395                 400

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
                405                 410                 415

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
            420                 425                 430

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
        435                 440                 445

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
    450                 455                 460

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
465                 470                 475                 480

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
                485                 490                 495

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
            500                 505                 510
```

```
Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
        515                 520                 525

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
    530                 535                 540

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
545                 550                 555                 560

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
                565                 570                 575

Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
            580                 585                 590

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
        595                 600                 605

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
    610                 615                 620

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
625                 630                 635                 640

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn
                645                 650                 655

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
            660                 665                 670

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Glu Leu
        675                 680                 685

Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg
    690                 695                 700

Asp Pro Pro Val Leu Ser Ser Gly Asp Tyr Lys Asp His Asp Gly Asp
705                 710                 715                 720
```

Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala
725 730 735

Gly Arg

<210> 352
<211> 738
<212> PRT
<213> Artificial Sequence

<400> 352

Met Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Pro Lys Lys Lys
1 5 10 15

Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys
20 25 30

Lys Lys Arg Lys Val Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
35 40 45

Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile
50 55 60

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
65 70 75 80

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn
85 90 95

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
100 105 110

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

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
130 135 140

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

```
Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
                165                 170                 175

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
            180                 185                 190

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
        195                 200                 205

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
    210                 215                 220

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp
225                 230                 235                 240

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
                245                 250                 255

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
            260                 265                 270

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
        275                 280                 285

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
    290                 295                 300

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
305                 310                 315                 320

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

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
            340                 345                 350

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
        355                 360                 365
```

```
Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
    370                 375                 380

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
385                 390                 395                 400

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
                405                 410                 415

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
            420                 425                 430

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
        435                 440                 445

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
    450                 455                 460

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
465                 470                 475                 480

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
                485                 490                 495

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
            500                 505                 510

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
        515                 520                 525

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
    530                 535                 540

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
545                 550                 555                 560

Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
                565                 570                 575
```

```
Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
            580                 585                 590

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
        595                 600                 605

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile
    610                 615                 620

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
625                 630                 635                 640

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr
                645                 650                 655

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
            660                 665                 670

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu
        675                 680                 685

Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg
    690                 695                 700

Asp Pro Pro Val Leu Ser Ser Gly Asp Tyr Lys Asp His Asp Gly Asp
705                 710                 715                 720

Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala
                725                 730                 735

Gly Arg
```

<210> 353
<211> 738
<212> PRT
<213> Artificial Sequence

<400> 353

```
Met Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Pro Lys Lys Lys
1               5                   10                  15
```

```
Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys
            20                  25                  30

Lys Lys Arg Lys Val Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
        35                  40                  45

Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile
    50                  55                  60

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
65                  70                  75                  80

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
                85                  90                  95

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
            100                 105                 110

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

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
    130                 135                 140

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
145                 150                 155                 160

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
                165                 170                 175

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
            180                 185                 190

Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
        195                 200                 205

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
    210                 215                 220
```

```
Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
225                 230                 235                 240

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
                245                 250                 255

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
            260                 265                 270

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
        275                 280                 285

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
    290                 295                 300

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu
305                 310                 315                 320

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
                325                 330                 335

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
            340                 345                 350

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
        355                 360                 365

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
    370                 375                 380

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
385                 390                 395                 400

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
                405                 410                 415

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
            420                 425                 430
```

```
Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
        435                 440                 445

Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
    450                 455                 460

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
465                 470                 475                 480

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
                485                 490                 495

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
            500                 505                 510

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
        515                 520                 525

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
    530                 535                 540

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
545                 550                 555                 560

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
                565                 570                 575

Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
            580                 585                 590

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
        595                 600                 605

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
    610                 615                 620

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
625                 630                 635                 640

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn
```

645 650 655

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
660 665 670

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu
675 680 685

Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg
690 695 700

Asp Pro Pro Val Leu Ser Ser Gly Asp Tyr Lys Asp His Asp Gly Asp
705 710 715 720

Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala
725 730 735

Gly Arg

<210> 354
<211> 738
<212> PRT
<213> Artificial Sequence

<400> 354

Met Ala Gly Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Pro Lys Lys Lys
1 5 10 15

Arg Lys Val Glu Asp Pro Lys Lys Lys Arg Lys Val Glu Asp Pro Lys
20 25 30

Lys Lys Arg Lys Val Gly Gly Ser Gly Gly His Met Gly Ser Gly Gly
35 40 45

Ser Arg Leu His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile
50 55 60

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
65 70 75 80

```
Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
                85                  90                  95

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
            100                 105                 110

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
        115                 120                 125

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
    130                 135                 140

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

Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
                165                 170                 175

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

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
        195                 200                 205

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
    210                 215                 220

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
225                 230                 235                 240

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
                245                 250                 255

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
            260                 265                 270

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
        275                 280                 285
```

```
Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
    290                 295                 300

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
305                 310                 315                 320

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
                325                 330                 335

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
            340                 345                 350

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
        355                 360                 365

Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
    370                 375                 380

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
385                 390                 395                 400

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
                405                 410                 415

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
            420                 425                 430

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
        435                 440                 445

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
    450                 455                 460

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
465                 470                 475                 480

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
                485                 490                 495

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
```

```
            500                 505                 510

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
        515                 520                 525

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
    530                 535                 540

Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
545                 550                 555                 560

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
                565                 570                 575

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
            580                 585                 590

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
        595                 600                 605

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
    610                 615                 620

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
625                 630                 635                 640

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn
                645                 650                 655

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
            660                 665                 670

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu
        675                 680                 685

Thr Tyr Asn Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg
    690                 695                 700

Asp Pro Pro Val Leu Ser Ser Gly Asp Tyr Lys Asp His Asp Gly Asp
705                 710                 715                 720
```

Tyr Lys Asp His Asp Ile Asp Tyr Lys Asp Asp Asp Asp Lys Met Ala
725 730 735

Gly Arg

<210> 355
<211> 21
<212> DNA
<213> Artificial Sequence

<400> 355
caaagtggag gacccagtac c 21

<210> 356
<211> 21
<212> DNA
<213> Artificial Sequence

<400> 356
gcgcatgaac tccttgatga c 21

<210> 357
<211> 1029
<212> DNA
<213> Artificial Sequence

<400> 357
atggccggag tgttcacact ggaggacttc gtgggcgact ggagacagac cgccggctac 60

aacctggacc aggtgctgga gcagggcgga gtgagcagcc tgtttcagaa cctgggcgtg 120

agcgtcaccc ccatccagag gatcgtgctg tccggcgaga atggcctgaa gatcgacatc 180

cacgtcatca tcccctacga gggcctgagc ggcgatcaga tgggccagat cgagaagatc 240

ttcaaggtgg tgtatcccgt cgacgaccac cacttcaagg tgatcctgca ttacggcacc 300

ctcgtgatcg acggcgtgac ccctaacatg atcgactact tcggcaggcc ctacgaggga 360

atcgccgtgt tcgacggaaa gaagatcacc gtgaccggca ccctgtggaa cggaaacaag 420

atcatcgacg agaggctgat caaccccgac ggctccctgc tgttcagggt gaccatcaat 480

ggcgtgaccg gctggagact gtgcgagaga atcctggccg gaggcggagg aagcctcgtg 540

cccagaggat ccggcggagg cggctccagc cggctccatg cttctaactt tactcagttc 600

gttctcgtcg acaatggcgg aactggcgac gtgactgtcg ccccaagcaa cttcgctaac 660

ggggtcgctg aatggatcag ctctaactcg cgttcacagg cttacaaagt aacctgtagc 720

gttcgtcaga gctctgcgca gaatcgcaaa tacaccatca aagtcgaggt gcctaaagtg 780

gcaacccaga ctgttggtgg tgtagagctt cctgtagccg catggcgttc gtacctaaat 840

atggaactaa ccattccaat tttcgccacg aattccgact gcgagcttat tgttaaggca 900

atgcaaggtc tcctaaaaga tggaaacccg attccctcag caatcgcagc aaactccggc 960

atctacctca gtagcggctc cggcggcagc gggggaggcg ggcatcatca ccatcaccac 1020

ggacgctag 1029

<210> 358
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 358
gtcacataca ccacactgat cgacggactg tgtaaagccg gcgacgtgga cgaagccctc 60

gagctgttca aagagatgcg gagcaagggc gtgaagccca acgtg 105

<210> 359
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 359
gtcacataca acaccctgat cgacggcctg tgcaaggccg gcagactgga tgaggccgag 60

gagctgctgg aggagatgga ggagaagggc atcaagcccg acgtg 105

<210> 360
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 360
gtcacataca ccaccctgat cgacggcctg tgcaaggccg gcaaggtgga tgaggccctg 60

gagctgttcg acgagatgaa ggagaggggc atcaagcccg acgtg 105

<210> 361
<211> 105

<212> DNA
<213> Artificial Sequence

<400> 361
gtcacataca acaccctgat cgacggcctg tgcaagagcg gcaagatcga ggaggccctg 60

aagctgttca aggagatgga ggagaagggc atcaccccca gcgtg 105

<210> 362
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 362
gtcacataca ccaccctgat cgacggcctg tgcaaggccg gcaaagtgga cgaggccctg 60

gagctgttcg acgagatgaa ggagaggggc atcaagcccg acgtg 105

<210> 363
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 363
gtgacataca ccacactgat cgacggactg tgtaaagccg gcgacgtgga cgaagccctc 60

gagctgttca aagagatgcg gagcaagggc gtgaagccca acgtg 105

<210> 364
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 364
gtgacataca acaccctgat cgacggcctg tgcaaggccg gcagactgga tgaggccgag 60

gagctgctgg aggagatgga ggagaagggc atcaagcccg acgtg 105

<210> 365
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 365
gtgacataca ccaccctgat cgacggcctg tgcaaggccg gcaaggtgga tgaggccctg 60

gagctgttcg acgagatgaa ggagaggggc atcaagcccg acgtg 105

<210> 366
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 366
gtgacataca acaccctgat cgacggcctg tgcaagagcg gcaagatcga ggaggccctg 60

aagctgttca aggagatgga ggagaagggc atcaccccca gcgtg 105

<210> 367
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 367
gtgacataca ccaccctgat cgacggcctg tgcaaggccg gcaaagtgga cgaggccctg 60

gagctgttcg acgagatgaa ggagaggggc atcaagcccg acgtg 105

<210> 368
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 368
gttacataca ccacactgat cgacggactg tgtaaagccg gcgacgtgga cgaagccctc 60

gagctgttca aagagatgcg gagcaagggc gtgaagccca acgtg 105

<210> 369
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 369
gttacataca acaccctgat cgacggcctg tgcaaggccg gcagactgga tgaggccgag 60

gagctgctgg aggagatgga ggagaagggc atcaagcccg acgtg 105

<210> 370
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 370
gttacataca ccaccctgat cgacggcctg tgcaaggccg gcaaggtgga tgaggccctg 60

gagctgttcg acgagatgaa ggagaggggc atcaagcccg acgtg 105

<210> 371
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 371
gttacataca acaccctgat cgacggcctg tgcaagagcg gcaagatcga ggaggccctg 60

aagctgttca aggagatgga ggagaagggc atcaccccca gcgtg 105

<210> 372
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 372
gttacataca ccaccctgat cgacggcctg tgcaaggccg gcaaagtgga cgaggccctg 60

gagctgttcg acgagatgaa ggagaggggc atcaagcccg acgtg 105

<210> 373
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 373
gtcacataca ccacgctgat cgatggtctg tgtaaggccg gcaaattaga tgaggccctg 60

aagttattcg aagagatggt tgaaaaaggc atcaagccga acgtg 105

<210> 374
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 374
gtcacataca acaccctgat tgatggctta tgcaaagcgg gtaagctgga tgaagcgtta 60

aaactgtttg aggaaatggt ggagaagggt attaaaccga gcgtg 105

<210> 375
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 375
gtcacataca ccacgctgat cgatggtctg tgtaaggccg gtaaattaga tgaagcgctg 60

aagttattcg aagagatggt tgaaaaaggt atcaagccgg atgtg 105

<210> 376
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 376
gtcacataca atacgctgat tgatggctta tgtaaagcgg gtaagctgga tgaggcctta 60

aaactgtttg aggaaatggt ggagaagggc attaaaccgg atgtg 105

<210> 377
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 377
gtcacataca ccacgctgat cgatggtctg tgtaaggccg gtaaattaga tgaagcgctg 60

aagttattcg aagagatggt tgaaaaaggt atcaagccgg acgtg 105

<210> 378
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 378
gtcacataca atacgctgat tgatggctta tgtaaagcgg gtaagctgga tgaggcctta 60

aaactgtttg aggaaatggt ggagaagggc attaaaccgg acgtg 105

<210> 379
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 379
gtgacataca ccacgctgat cgatggtctg tgtaaggccg gcaaattaga tgaggccctg 60

aagttattcg aagagatggt tgaaaaaggc atcaagccga acgtg 105

<210> 380
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 380
gtgacataca acaccctgat tgatggctta tgcaaagcgg gtaagctgga tgaagcgtta 60

aaactgtttg aggaaatggt ggagaagggt attaaaccga gcgtg 105

<210> 381
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 381
gtgacataca ccacgctgat cgatggtctg tgtaaggccg gtaaattaga tgaagcgctg 60

aagttattcg aagagatggt tgaaaaaggt atcaagccgg atgtg 105

<210> 382
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 382
gtgacataca atacgctgat tgatggctta tgtaaagcgg gtaagctgga tgaggcctta 60

aaactgtttg aggaaatggt ggagaagggc attaaaccgg atgtg 105

<210> 383
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 383
gtgacataca ccacgctgat cgatggtctg tgtaaggccg gtaaattaga tgaagcgctg 60

aagttattcg aagagatggt tgaaaaaggt atcaagccgg acgtg 105

<210> 384
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 384
gtgacataca atacgctgat tgatggctta tgtaaagcgg gtaagctgga tgaggcctta 60

aaactgtttg aggaaatggt ggagaagggc attaaaccgg acgtg 105

<210> 385
<211> 105
<212> DNA

<213> Artificial Sequence

<400> 385
gttacataca ccacgctgat cgatggtctg tgtaaggccg gcaaattaga tgaggccctg 60

aagttattcg aagagatggt tgaaaaaggc atcaagccga acgtg 105

<210> 386
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 386
gttacataca acaccctgat tgatggctta tgcaaagcgg gtaagctgga tgaagcgtta 60

aaactgtttg aggaaatggt ggagaagggt attaaaccga gcgtg 105

<210> 387
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 387
gttacataca ccacgctgat cgatggtctg tgtaaggccg gtaaattaga tgaagcgctg 60

aagttattcg aagagatggt tgaaaaaggt atcaagccgg atgtg 105

<210> 388
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 388
gttacataca atacgctgat tgatggctta tgtaaagcgg gtaagctgga tgaggcctta 60

aaactgtttg aggaaatggt ggagaagggc attaaaccgg atgtg 105

<210> 389
<211> 105
<212> DNA
<213> Artificial Sequence

<400> 389
gttacataca ccacgctgat cgatggtctg tgtaaggccg gtaaattaga tgaagcgctg 60

aagttattcg aagagatggt tgaaaaaggt atcaagccgg acgtg 105

<210> 390

<211> 105
<212> DNA
<213> Artificial Sequence

<400> 390
gttacataca atacgctgat tgatggctta tgtaaagcgg gtaagctgga tgaggcctta 60

aaactgtttg aggaaatggt ggagaagggc attaaaccgg acgtg 105

<210> 391
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 391

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

```
Arg Leu Ile Asn Pro Asp Gly Ser Leu Leu Phe Arg Val Thr Ile Asn
145                 150                 155                 160

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
    210                 215                 220

Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
                245                 250                 255

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
        275                 280                 285

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
```

```
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
            420                 425                 430

Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
    450                 455                 460

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
                485                 490                 495

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
    530                 535                 540

Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
                565                 570                 575
```

```
Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
        595                 600                 605

Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
            660                 665                 670

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
    690                 695                 700

Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
    770                 775                 780
```

```
Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800


Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
                805                 810                 815


Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830


Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845


Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860


His His His Gly Arg
865
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<210> 392
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 392

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


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


Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60


Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80


Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
```

```
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
    210                 215                 220

Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
                245                 250                 255

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
        275                 280                 285

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300
```

```
Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
            420                 425                 430

Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
    450                 455                 460

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
                485                 490                 495

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510
```

```
Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
    530                 535                 540

Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
                565                 570                 575

Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
        595                 600                 605

Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
            660                 665                 670

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
    690                 695                 700

Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
705                 710                 715                 720
```

```
Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
            740                 745                 750

Gly Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
    770                 775                 780

Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
                805                 810                 815

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 393
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 393

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30
```

```
Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
        35                  40                  45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
    210                 215                 220

Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240
```

```
Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
                245                 250                 255

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
        275                 280                 285

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
            420                 425                 430

Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Thr Thr
        435                 440                 445
```

```
Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
    450                 455                 460

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
                485                 490                 495

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
        595                 600                 605

Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
```

```
            660                 665                 670

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
    690                 695                 700

Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
            740                 745                 750

Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
    770                 775                 780

Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
                805                 810                 815

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 394
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 394

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

```
Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser Ser Arg Leu
            180                 185                 190

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
                245                 250                 255

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
        275                 280                 285

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
```

```
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
            420                 425                 430

Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
    450                 455                 460

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
                485                 490                 495

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
    530                 535                 540

Lys Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
        595                 600                 605
```

```
Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
            660                 665                 670

Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
    690                 695                 700

Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
    770                 775                 780

Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
                805                 810                 815
```

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
820 825 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
835 840 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
850 855 860

His His His Gly Arg
865

<210> 395
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 395

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys

```
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
    210                 215                 220

Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
                245                 250                 255

Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu
        275                 280                 285

Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro
                325                 330                 335
```

```
Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu
            420                 425                 430

Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys
    450                 455                 460

Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu
                485                 490                 495

Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile
    530                 535                 540
```

```
Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560


Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu
                565                 570                 575


Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590


Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu
        595                 600                 605


Met Val Glu Lys Gly Ile Lys Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620


Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu
625                 630                 635                 640


Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Val Val Thr Tyr
                645                 650                 655


Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala
            660                 665                 670


Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys Pro Ser Val
        675                 680                 685


Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Leu
    690                 695                 700


Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys Gly Ile Lys
705                 710                 715                 720


Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735


Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met Val Glu Lys
            740                 745                 750
```

```
Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765


Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe Glu Glu Met
    770                 775                 780


Val Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800


Asp Gly Leu Cys Lys Ala Gly Lys Leu Asp Glu Ala Leu Lys Leu Phe
                805                 810                 815


Glu Glu Met Val Glu Lys Gly Ile Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830


Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845


Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860


His His His Gly Arg
865
```

<210> 396
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 396

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


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


Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60
```

```
Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr
            260                 265                 270
```

```
Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys
    450                 455                 460

Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr
465                 470                 475                 480
```

```
Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        515                 520                 525

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
            660                 665                 670

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
```

690 695 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705 710 715 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
725 730 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
740 745 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
755 760 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
770 775 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785 790 795 800

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
805 810 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
820 825 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
835 840 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
850 855 860

His His His Gly Arg
865

<210> 397
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 397

```
Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                  10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205
```

```
Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
```

```
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        515                 520                 525

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640
```

```
Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750

Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770                 775                 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                805                 810                 815

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845
```

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850   855   860

His His His Gly Arg
865

<210> 398
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 398

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1   5   10   15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20   25   30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50   55   60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65   70   75   80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85   90   95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100   105   110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115   120   125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130   135   140

Arg Leu Ile Asn Pro Asp Gly Ser Leu Leu Phe Arg Val Thr Ile Asn

```
145                 150                 155                 160

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365
```

```
Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575
```

```
Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
                725                 730                 735

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    770                 775                 780
```

```
Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800


Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                805                 810                 815


Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830


Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845


Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860


His His His Gly Arg
865


<210>  399
<211>  869
<212>  PRT
<213>  Artificial Sequence

<400>  399

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


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


Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60


Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80


Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95
```

```
His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300
```

```
Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510
```

```
Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        515                 520                 525

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
            660                 665                 670

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
```

```
                725                 730                 735

Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770                 775                 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                805                 810                 815

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 400
<211> 869
<212> PRT
<213> Artificial Sequence

<400> 400

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30
```

```
Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
        35                  40                  45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240
```

```
Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu
```

```
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
            660                 665                 670
```

```
Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    770                 775                 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
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<210> 401
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_A

<400> 401

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
1   5   10   15

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
            20   25   30

Pro Asn Val
        35

<210> 402
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> 1st_A

<400> 402

Val Thr Tyr Thr Thr Asn Ile Asp Gln Leu Cys Lys Ala Gly Lys Val
1   5   10   15

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
            20   25   30

Pro Asn Val
        35

<210> 403
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> 1st_C

<400> 403

Val Thr Tyr Asn Thr Asn Ile Asp Gln Leu Cys Lys Ser Gly Lys Ile
1 5 10 15

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
20 25 30

Pro Ser Val
35

<210> 404
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> 1st_G

<400> 404

Val Thr Tyr Thr Thr Asn Ile Asp Gln Leu Cys Lys Ala Gly Lys Val
1 5 10 15

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
20 25 30

Pro Asp Val
35

<210> 405
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> 1st_U

<400> 405

Val Thr Tyr Asn Thr Asn Ile Asp Gln Leu Cys Lys Ala Gly Arg Leu
1 5 10 15

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
20 25 30

Pro Asp Val
35

<210> 406
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> v3.1_A

<400> 406
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gagctgttta aggaaatgag aagcaagggc gtcaagccca acgtg 105

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<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> v3.2_A

<400> 407
gtcacataca ccaccaacat cgaccagctg tgcaaagccg gcaaggtgga tgaagctctg 60

gagctgttca aggagatgag aagcaagggc gtgaagccca acgtg 105

<210> 408
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> v3.2_C

<400> 408
gtcacataca acaccaacat cgaccagctg tgcaaaagcg gcaagatcga ggaggctctg 60

aaactgttca aggagatgga ggagaagggc atcaccccca gcgtg 105

<210> 409
<211> 105
<212> DNA
<213> Artificial Sequence

<220>

<223> v3.2_G

<400> 409
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gagctgttcg acgagatgaa ggagagaggc atcaagcccg acgtg 105

<210> 410
<211> 105
<212> DNA
<213> Artificial Sequence

<220>
<223> v3.2_U

<400> 410
gtcacataca acaccaacat cgaccagctc tgcaaggccg gcagactgga cgaggccgaa 60

gagctgctgg aggagatgga ggagaagggc atcaagcccg acgtg 105

<210> 411
<211> 2610
<212> DNA
<213> Artificial Sequence

<220>
<223> v3.1_PPR1

<400> 411
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aacctggacc aggtgctgga gcagggcgga gtgagcagcc tgtttcagaa cctgggcgtg 120

agcgtcaccc ccatccagag gatcgtgctg tccggcgaga atggcctgaa gatcgacatc 180

cacgtcatca tcccctacga gggcctgagc ggcgatcaga tgggccagat cgagaagatc 240

ttcaaggtgg tgtatcccgt cgacgaccac cacttcaagg tgatcctgca ttacggcacc 300

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atcgccgtgt tcgacggaaa gaagatcacc gtgaccggca ccctgtggaa cggaaacaag 420

atcatcgacg agaggctgat caaccccgac ggctccctgc tgttcagggt gaccatcaat 480

ggcgtgaccg gctggagact gtgcgagaga atcctggccg gaggcggagg aagcctcgtg 540

cccagaggat ccggcggagg cggctccagc cggctccata tgggaaactc cgtggtcaca 600

tacaccaccc tgatcgacgg cctgtgcaag gccggcaagg tggatgaggc cctggagctg 660

ttcgacgaga tgaaggagag gggcatcaag cccgacgtgg tcacatacac cacactgatc 720

gacggactgt gtaaagccgg caaggtggac gaagccctcg agctgttcaa agagatgcgg 780

agcaagggcg tgaagcccaa cgtggtgaca tacaccacac tgatcgacgg actgtgtaaa 840

gccggcaagg tggacgaagc cctcgagctg ttcaaagaga tgcggagcaa gggcgtgaag 900

cccaacgtgg tcacatacaa caccctgatc gacggcctgt gcaaggccgg cagactggat 960

gaggccgagg agctgctgga ggagatggag gagaagggca tcaagcccga cgtggttaca 1020

tacaccaccc tgatcgacgg cctgtgcaag gccggcaaag tggacgaggc cctggagctg 1080

ttcgacgaga tgaaggagag gggcatcaag cccgacgtgg tcacatacac cacactgatc 1140

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ctggaggaga tggaggagaa gggcatcaag cccgacgtgg tcacatacaa caccctgatc 1560

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gccggcagac tggatgaggc cgaggagctg ctggaggaga tggaggagaa gggcatcaag 1740

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gccggcaaag tggacgaggc cctggagctg ttcgacgaga tgaaggagag gggcatcaag 2160

cccgacgtgg tcacatacac caccctgatc gacggcctgt gcaaggccgg caaggtggat 2220

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ttcgacgaga tgaaggagag gggcatcaag cccgacgtgg tcacatacac cacactgatc 2400

gacggactgt gtaaagccgg caaggtggac gaagccctcg agctgttcaa agagatgcgg 2460

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gggcatcatc accatcacca cggacgctag 2610

<210> 412
<211> 2610
<212> DNA
<213> Artificial Sequence

<220>
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<400> 412
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aacctggacc aggtgctgga gcagggcgga gtgagcagcc tgtttcagaa cctgggcgtg 120

agcgtcaccc ccatccagag gatcgtgctg tccggcgaga atggcctgaa gatcgacatc 180

cacgtcatca tcccctacga gggcctgagc ggcgatcaga tgggccagat cgagaagatc 240

ttcaaggtgg tgtatcccgt cgacgaccac cacttcaagg tgatcctgca ttacggcacc 300

ctcgtgatcg acggcgtgac ccctaacatg atcgactact tcggcaggcc ctacgaggga 360

atcgccgtgt tcgacggaaa gaagatcacc gtgaccggca ccctgtggaa cggaaacaag 420

atcatcgacg agaggctgat caaccccgac ggctccctgc tgttcagggt gaccatcaat 480

ggcgtgaccg gctggagact gtgcgagaga atcctggccg gaggcggagg aagcctcgtg 540

cccagaggat ccggcggagg cggctccagc cggctccata tgggaaactc cgtggtcaca 600

tacaccaccc tgatcgacgg cctgtgcaag gccggcaagg tggatgaggc cctggagctg 660

ttcgacgaga tgaaggagag gggcatcaag cccgacgtgg tcacatacac cacactgatc 720

gacggactgt gtaaagccgg caaggtggac gaagccctcg agctgttcaa agagatgcgg 780

agcaagggcg tgaagcccaa cgtggtgaca tacaccaccc tgatcgacgg cctgtgcaag 840

gccggcaaag tggacgaggc cctggagctg ttcgacgaga tgaaggagag gggcatcaag 900

cccgacgtgg tcacatacac cacactgatc gacggactgt gtaaagccgg caaggtggac 960

gaagccctcg agctgttcaa agagatgcgg agcaagggcg tgaagcccaa cgtggttaca 1020

tacaccaccc tgatcgacgg cctgtgcaag gccggcaaag tggacgaggc cctggagctg 1080

ttcgacgaga tgaaggagag gggcatcaag cccgacgtgg tcacatacac caccctgatc 1140

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cccaacgtgg tcacatacac cacactgatc gacggactgt gtaaagccgg caaggtggac 1380

gaagccctcg agctgttcaa agagatgcgg agcaagggcg tgaagcccaa cgtggtgaca 1440

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cacgtcatca tcccctacga gggcctgagc ggcgatcaga tgggccagat cgagaagatc 240

ttcaaggtgg tgtatcccgt cgacgaccac cacttcaagg tgatcctgca ttacggcacc 300

ctcgtgatcg acggcgtgac ccctaacatg atcgactact tcggcaggcc ctacgaggga 360

atcgccgtgt tcgacggaaa gaagatcacc gtgaccggca ccctgtggaa cggaaacaag 420

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tacaacaccc tgatcgacgg cctgtgcaag agcggcaaga tcgaggaggc cctgaagctg 660

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cccagcgtgg tcacatacac cacactgatc gacggactgt gtaaagccgg caaggtggac 960

gaagccctcg agctgttcaa agagatgcgg agcaagggcg tgaagcccaa cgtggttaca 1020

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ctggaggaga tggaggagaa gggcatcaag cccgacgtgg tcacatacac cacactgatc 1140

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ctggaggaga tggaggagaa gggcatcaag cccgacgtgg tcacatacac caccctgatc 1560

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gccggcaagg tggacgaagc cctcgagctg ttcaaagaga tgcggagcaa gggcgtgaag 2160

cccaacgtgg tcacatacac cacactgatc gacggactgt gtaaagccgg caaggtggac 2220

gaagccctcg agctgttcaa agagatgcgg agcaagggcg tgaagcccaa cgtggtgaca 2280

tacaccaccc tgatcgacgg cctgtgcaag gccggcaaag tggacgaggc cctggagctg 2340

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gacggcctgt gcaagagcgg caagatcgag gaggccctga agctgttcaa ggagatggag 2460

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gccggcagag ccagagaccc ccccgtgctc agtagcggct ccggcggcag cgggggaggc 2580

gggcatcatc accatcacca cggacgctag 2610

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<211> 869
<212> PRT

<213> Artificial Sequence

<220>
<223> v3.1_PPR1

<400> 434

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Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


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


Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60


Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80


Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95


His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110


Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125


Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140


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


Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175


Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser Ser Arg Leu
            180                 185                 190
```

```
His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400
```

```
Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys
    450                 455                 460

Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        515                 520                 525

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605
```

```
Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
            660                 665                 670

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770                 775                 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
```

```
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
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<210> 435
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR2

<400> 435

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
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Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110
```

```
Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
```

```
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        515                 520                 525

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    530                 535                 540
```

```
Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750
```

Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755   760   765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770   775   780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785   790   795   800

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                805   810   815

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820   825   830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835   840   845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850   855   860

His His His Gly Arg
865

<210> 436
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR3

<400> 436

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1   5   10   15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20   25   30

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

```
Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255
```

```
Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460
```

```
Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480


Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495


Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510


Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525


Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540


Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560


Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575


Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590


Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605


Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
    610                 615                 620


Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640


Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655


Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670


Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
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675 680 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
690 695 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705 710 715 720

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
725 730 735

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
740 745 750

Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
755 760 765

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
770 775 780

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
785 790 795 800

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
805 810 815

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
820 825 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
835 840 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
850 855 860

His His His Gly Arg
865

<210> 437
<211> 869

<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR5

<400> 437

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
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Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser Ser Arg Leu

```
            180                 185                 190

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400
```

```
Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605
```

```
Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
            660                 665                 670

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    770                 775                 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815
```

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820   825   830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835   840   845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850   855   860

His His His Gly Arg
865

<210> 438
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR6

<400> 438

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1   5   10   15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20   25   30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50   55   60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65   70   75   80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85   90   95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100   105   110

```
Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
305                 310                 315                 320
```

```
Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
                325                 330                 335

Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
```

```
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750
```

```
Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765


Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780


Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800


Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815


Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830


Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845


Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860


His His His Gly Arg
865
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<210> 439
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR7

<400> 439

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
```

```
        35                  40                  45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255
```

```
Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460
```

```
Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480


Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495


Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510


Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525


Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540


Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560


Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575


Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590


Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605


Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620


Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640


Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655


Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670
```

```
Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                805                 810                 815

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
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<210> 440

<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR8

<400> 440

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

```
Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser Ser Arg Leu
            180                 185                 190

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
                325                 330                 335

Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
```

385 390 395 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
405 410 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
420 425 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
435 440 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
450 455 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465 470 475 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
485 490 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
500 505 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
515 520 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
530 535 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545 550 555 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
565 570 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
580 585 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
595 600 605

```
Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
            660                 665                 670

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    770                 775                 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815
```

```
Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
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<210> 441
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR9

<400> 441

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110
```

```
Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320
```

```
Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525
```

```
Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
                725                 730                 735

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
```

```
            740                 745                 750

Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 442
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR10

<400> 442

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30
```

```
Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
        35                  40                  45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

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

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
```

```
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460
```

```
Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                485                 490                 495

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
            660                 665                 670
```

```
Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750

Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 443
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR11

<400> 443

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

```
Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser Ser Arg Leu
            180                 185                 190

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380
```

```
Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400


Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415


Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430


Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445


Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460


Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480


Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495


Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510


Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525


Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540


Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560


Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575


Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590


Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
```

595 600 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
610 615 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625 630 635 640

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
645 650 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala
660 665 670

Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val
675 680 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
690 695 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705 710 715 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
725 730 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
740 745 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
755 760 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
770 775 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785 790 795 800

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
805 810 815

```
Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 444
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR12

<400> 444

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
```

```
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320
```

```
Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525
```

```
Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
    690                 695                 700

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
705                 710                 715                 720

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735
```

```
Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    770                 775                 780

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                805                 810                 815

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 445
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR13

<400> 445

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30
```

```
Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
        35                  40                  45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240
```

```
Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu
305                 310                 315                 320

Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro
                325                 330                 335

Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
```

```
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670
```

```
Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
    690                 695                 700

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
705                 710                 715                 720

Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
                725                 730                 735

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                805                 810                 815

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 446
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR14

<400> 446

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
165 170 175

```
Gly Ser Leu Val Pro Arg Gly Ser Gly Gly Gly Gly Ser Ser Arg Leu
            180                 185                 190

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380
```

```
Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400


Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415


Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430


Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445


Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460


Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480


Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495


Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510


Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525


Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540


Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560


Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575


Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590
```

```
Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750

Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    770                 775                 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
```

```
                805                 810                 815

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 447
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR15

<400> 447

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95
```

```
His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                245                 250                 255

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
```

305 310 315 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
325 330 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
340 345 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
355 360 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
370 375 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385 390 395 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
405 410 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys
420 425 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
435 440 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
450 455 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465 470 475 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
485 490 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
500 505 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
515 520 525

```
Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735
```

```
Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750


Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765


Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780


Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800


Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815


Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830


Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845


Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860


His His His Gly Arg
865


<210>  448
<211>  869
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  v3.1_PPR16

<400>  448

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30
```

```
Ser Leu Phe Gln Asn Leu Gly Val Ser Val Thr Pro Ile Gln Arg Ile
        35                  40                  45

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    210                 215                 220

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240
```

```
Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

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

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu
385                 390                 395                 400

Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445
```

```
Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
```

```
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser
                725                 730                 735

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                805                 810                 815

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
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<210> 449
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR17

<400> 449

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15


Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30


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


Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60


Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80


Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95


His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110


Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125


Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140


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


Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
```

```
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly
            340                 345                 350

Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380
```

```
Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400


Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415


Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430


Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445


Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460


Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480


Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                485                 490                 495


Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            500                 505                 510


Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525


Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540


Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560


Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575


Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590
```

```
Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770                 775                 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800
```

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
805 810 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
820 825 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
835 840 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
850 855 860

His His His Gly Arg
865

<210> 450
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR18

<400> 450

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

```
His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300
```

```
Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly
        355                 360                 365

Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys
            420                 425                 430

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
```

```
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                565                 570                 575

Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu
    690                 695                 700

Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys
705                 710                 715                 720

Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735
```

```
Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    770                 775                 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
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<210> 451
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR19

<400> 451

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
```

```
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240
```

```
Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445
```

```
Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655
```

```
Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750

Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    770                 775                 780

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                805                 810                 815

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
```

865

<210> 452
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR20

<400> 452

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1 5 10 15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
20 25 30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
50 55 60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65 70 75 80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
85 90 95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
100 105 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
115 120 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
130 135 140

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

```
Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu
                245                 250                 255

Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
```

```
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    530                 535                 540

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590
```

```
Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770                 775                 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800
```

```
Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                805                 810                 815

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
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<210> 453
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR21

<400> 453

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95
```

```
His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    210                 215                 220

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                245                 250                 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
        275                 280                 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
    290                 295                 300
```

```
Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu
    450                 455                 460

Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp
            500                 505                 510
```

```
Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
```

```
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    770                 775                 780

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 454
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR22

<400> 454

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15
```

```
Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
```

225 230 235 240

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
245 250 255

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr
260 265 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu
275 280 285

Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val
290 295 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305 310 315 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
325 330 335

Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
340 345 350

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
355 360 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
370 375 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385 390 395 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp
405 410 415

Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu
420 425 430

Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
435 440 445

```
Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                565                 570                 575

Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu
        595                 600                 605

Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu
625                 630                 635                 640

Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr
                645                 650                 655
```

```
Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala
            660                 665                 670

Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720

Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys
            740                 745                 750

Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770                 775                 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860
```

His His His Gly Arg
865

<210> 455
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR23

<400> 455

Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1   5   10   15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20   25   30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50   55   60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65   70   75   80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
                85   90   95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100   105   110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115   120   125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130   135   140

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

```
Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                245                 250                 255

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu
        275                 280                 285

Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val
    290                 295                 300

Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp
305                 310                 315                 320

Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro
                325                 330                 335

Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365
```

```
Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys
385                 390                 395                 400

Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys
            420                 425                 430

Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys
    450                 455                 460

Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr
465                 470                 475                 480

Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu
                485                 490                 495

Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn
            500                 505                 510

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg
        515                 520                 525

Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly
```

```
            580                 585                 590

Leu Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu
        595                 600                 605

Met Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
625                 630                 635                 640

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
            660                 665                 670

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
        675                 680                 685

Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile
    690                 695                 700

Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr
705                 710                 715                 720

Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750

Gly Val Lys Pro Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met
    770                 775                 780

Glu Glu Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile
785                 790                 795                 800
```

```
Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                805                 810                 815

Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
```

<210> 456
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.1_PPR24

<400> 456

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Met Ala Gly Val Phe Thr Leu Glu Asp Phe Val Gly Asp Trp Arg Gln
1               5                   10                  15

Thr Ala Gly Tyr Asn Leu Asp Gln Val Leu Glu Gln Gly Gly Val Ser
            20                  25                  30

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

Val Leu Ser Gly Glu Asn Gly Leu Lys Ile Asp Ile His Val Ile Ile
    50                  55                  60

Pro Tyr Glu Gly Leu Ser Gly Asp Gln Met Gly Gln Ile Glu Lys Ile
65                  70                  75                  80

Phe Lys Val Val Tyr Pro Val Asp Asp His His Phe Lys Val Ile Leu
```

```
                85                  90                  95

His Tyr Gly Thr Leu Val Ile Asp Gly Val Thr Pro Asn Met Ile Asp
            100                 105                 110

Tyr Phe Gly Arg Pro Tyr Glu Gly Ile Ala Val Phe Asp Gly Lys Lys
        115                 120                 125

Ile Thr Val Thr Gly Thr Leu Trp Asn Gly Asn Lys Ile Ile Asp Glu
    130                 135                 140

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

Gly Val Thr Gly Trp Arg Leu Cys Glu Arg Ile Leu Ala Gly Gly Gly
                165                 170                 175

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

His Met Gly Asn Ser Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu
        195                 200                 205

Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met
    210                 215                 220

Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn Thr Leu Ile
225                 230                 235                 240

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                245                 250                 255

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Asn
            260                 265                 270

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        275                 280                 285

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    290                 295                 300
```

```
Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp
305                 310                 315                 320

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                325                 330                 335

Asn Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            340                 345                 350

Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly
        355                 360                 365

Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys
    370                 375                 380

Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg
385                 390                 395                 400

Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp
                405                 410                 415

Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp
            420                 425                 430

Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr
        435                 440                 445

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    450                 455                 460

Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr
465                 470                 475                 480

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Arg Leu Asp Glu
                485                 490                 495

Ala Glu Glu Leu Leu Glu Glu Met Glu Glu Lys Gly Ile Lys Pro Asp
            500                 505                 510
```

```
Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys
        515                 520                 525

Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile
    530                 535                 540

Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys
545                 550                 555                 560

Ala Gly Arg Leu Asp Glu Ala Glu Glu Leu Leu Glu Glu Met Glu Glu
                565                 570                 575

Lys Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu Ile Asp Gly
            580                 585                 590

Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu
        595                 600                 605

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Thr Thr Leu
    610                 615                 620

Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu
625                 630                 635                 640

Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr
                645                 650                 655

Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala
            660                 665                 670

Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val
        675                 680                 685

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    690                 695                 700

Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys
705                 710                 715                 720
```

```
Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala
                725                 730                 735

Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys
            740                 745                 750

Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        755                 760                 765

Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met
    770                 775                 780

Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile
785                 790                 795                 800

Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe
                805                 810                 815

Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Glu Leu Thr Tyr Asn
            820                 825                 830

Thr Leu Ile Ser Gly Leu Gly Lys Ala Gly Arg Ala Arg Asp Pro Pro
        835                 840                 845

Val Leu Ser Ser Gly Ser Gly Gly Ser Gly Gly Gly Gly His His His
    850                 855                 860

His His His Gly Arg
865
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<210> 457
<211> 2271
<212> DNA
<213> Artificial Sequence

<220>
<223> v2_polypucleotide

<400> 457
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aagccagagg tcaagccaga agtcaagcct gagactcaca tcaatttaaa ggtgtccgat 120

ggatcttcag agatcttctt caagatcaaa aagaccactc ctttaagaag gctgatggaa 180

gcgttcgcta aaagacaggg taaggaaatg gactccttaa gattcttgta cgacggtatt 240

agaattcaag ctgatcaggc ccctgaagat ttggacatgg aggataacga tattattgag 300

gctcaccgcg aacagattgg aggtatggga aactccgtgg tcacatacaa caccctgatc 360

gacggcctgt gcaagagcgg caagatcgag gaggccctga agctgttcaa ggagatggag 420

gagaagggca tcacccccag cgtggtcaca tacaccacac tgatcgacgg actgtgtaaa 480

gccggcgacg tggacgaagc cctcgagctg ttcaaagaga tgcggagcaa gggcgtgaag 540

cccaacgtgg tgacatacac caccctgatc gacggcctgt gcaaggccgg caaagtggac 600

gaggccctgg agctgttcga cgagatgaag gagaggggca tcaagcccga cgtggtcaca 660

tacaacaccc tgatcgacgg cctgtgcaag agcggcaaga tcgaggaggc cctgaagctg 720

ttcaaggaga tggaggagaa gggcatcacc cccagcgtgg ttacatacac cacactgatc 780

gacggactgt gtaaagccgg cgacgtggac gaagccctcg agctgttcaa agagatgcgg 840

agcaagggcg tgaagcccaa cgtggtcaca tacaccaccc tgatcgacgg cctgtgcaag 900

gccggcaagg tggatgaggc cctggagctg ttcgacgaga tgaaggagag gggcatcaag 960

cccgacgtgg ttacatacaa caccctgatc gacggcctgt gcaagagcgg caagatcgag 1020

gaggccctga agctgttcaa ggagatggag gagaagggca tcacccccag cgtggtcaca 1080

tacaccacac tgatcgacgg actgtgtaaa gccggcgacg tggacgaagc cctcgagctg 1140

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gacggcctgt gcaaggccgg caaagtggac gaggccctgg agctgttcga cgagatgaag 1260

gagaggggca tcaagcccga cgtggtcaca tacaacaccc tgatcgacgg cctgtgcaag 1320

agcggcaaga tcgaggaggc cctgaagctg ttcaaggaga tggaggagaa gggcatcacc 1380

cccagcgtgg ttacatacac cacactgatc gacggactgt gtaaagccgg cgacgtggac 1440

gaagccctcg agctgttcaa agagatgcgg agcaagggcg tgaagcccaa cgtggtcaca 1500

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gagaagggca tcacccccag cgtggtcaca tacaccacac tgatcgacgg actgtgtaaa 1740

gccggcgacg tggacgaagc cctcgagctg ttcaaagaga tgcggagcaa gggcgtgaag 1800

cccaacgtgg ttacatacac caccctgatc gacggcctgt gcaaggccgg caaagtggac 1860

gaggccctgg agctgttcga cgagatgaag gagaggggca tcaagcccga cgtggtcaca 1920

tacaacaccc tgatcgacgg cctgtgcaag agcggcaaga tcgaggaggc cctgaagctg 1980

ttcaaggaga tggaggagaa gggcatcacc cccagcgtgg tgacatacac cacactgatc 2040

gacggactgt gtaaagccgg cgacgtggac gaagccctcg agctgttcaa agagatgcgg 2100

agcaagggcg tgaagcccaa cgtggtcaca tacaccaccc tgatcgacgg cctgtgcaag 2160

gccggcaagg tggatgaggc cctggagctg ttcgacgaga tgaaggagag gggcatcaag 2220

cccgacgagc tgacctacaa caccctgatc agcggcctgg gcaaggccgg c 2271

<210> 458
<211> 757
<212> PRT
<213> Artificial Sequence

<220>
<223> v2_protein

<400> 458

Met Gly His His His His His His Gly Ser Leu Gln Asp Ser Glu Val
1 5 10 15

Asn Gln Glu Ala Lys Pro Glu Val Lys Pro Glu Val Lys Pro Glu Thr
20 25 30

His Ile Asn Leu Lys Val Ser Asp Gly Ser Ser Glu Ile Phe Phe Lys
35 40 45

Ile Lys Lys Thr Thr Pro Leu Arg Arg Leu Met Glu Ala Phe Ala Lys
50 55 60

Arg Gln Gly Lys Glu Met Asp Ser Leu Arg Phe Leu Tyr Asp Gly Ile
65 70 75 80

Arg Ile Gln Ala Asp Gln Ala Pro Glu Asp Leu Asp Met Glu Asp Asn
85 90 95

```
Asp Ile Ile Glu Ala His Arg Glu Gln Ile Gly Gly Met Gly Asn Ser
            100                 105                 110

Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys
        115                 120                 125

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    130                 135                 140

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

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                165                 170                 175

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

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

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
    210                 215                 220

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
225                 230                 235                 240

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                245                 250                 255

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            260                 265                 270

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        275                 280                 285

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    290                 295                 300
```

```
Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
305                 310                 315                 320

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

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
            340                 345                 350

Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        355                 360                 365

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    370                 375                 380

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
385                 390                 395                 400

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                405                 410                 415

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            420                 425                 430

Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        435                 440                 445

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    450                 455                 460

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
465                 470                 475                 480

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                485                 490                 495

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            500                 505                 510

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
```

```
        515                 520                 525

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    530                 535                 540

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
545                 550                 555                 560

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp
                565                 570                 575

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            580                 585                 590

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        595                 600                 605

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    610                 615                 620

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
625                 630                 635                 640

Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                645                 650                 655

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            660                 665                 670

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        675                 680                 685

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    690                 695                 700

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
705                 710                 715                 720

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                725                 730                 735
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Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly
740 745 750

Leu Gly Lys Ala Gly
755

<210> 459
<211> 2274
<212> DNA
<213> Artificial Sequence

<220>
<223> v3.2_polypucleotide

<400> 459
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ggatcttcag agatcttctt caagatcaaa aagaccactc ctttaagaag gctgatggaa 180

gcgttcgcta aaagacaggg taaggaaatg gactccttaa gattcttgta cgacggtatt 240

agaattcaag ctgatcaggc ccctgaagat ttggacatgg aggataacga tattattgag 300

gctcaccgcg aacagattgg aggtatggga aactccgtgg tcacatacaa caccaacatc 360

gaccagctgt gcaagagcgg caagatcgag gaggccctga agctgttcaa ggagatggag 420

gagaagggca tcacccccag cgtggtcaca tacaccacac tgatcgacgg actgtgtaaa 480

gccggcgacg tggacgaagc cctcgagctg ttcaaagaga tgcggagcaa gggcgtgaag 540

cccaacgtgg tgacatacac caccctgatc gacggcctgt gcaaggccgg caaagtggac 600

gaggccctgg agctgttcga cgagatgaag gagaggggca tcaagcccga cgtggtcaca 660

tacaacaccc tgatcgacgg cctgtgcaag agcggcaaga tcgaggaggc cctgaagctg 720

ttcaaggaga tggaggagaa gggcatcacc cccagcgtgg ttacatacac cacactgatc 780

gacggactgt gtaaagccgg cgacgtggac gaagccctcg agctgttcaa agagatgcgg 840

agcaagggcg tgaagcccaa cgtggtcaca tacaccaccc tgatcgacgg cctgtgcaag 900

gccggcaagg tggatgaggc cctggagctg ttcgacgaga tgaaggagag gggcatcaag 960

cccgacgtgg ttacatacaa caccctgatc gacggcctgt gcaagagcgg caagatcgag 1020

gaggccctga agctgttcaa ggagatggag gagaagggca tcacccccag cgtggtcaca 1080

tacaccacac tgatcgacgg actgtgtaaa gccggcgacg tggacgaagc cctcgagctg 1140

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cccagcgtgg ttacatacac cacactgatc gacggactgt gtaaagccgg cgacgtggac 1440

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gagaagggca tcacccccag cgtggtcaca tacaccacac tgatcgacgg actgtgtaaa 1740

gccggcgacg tggacgaagc cctcgagctg ttcaaagaga tgcggagcaa gggcgtgaag 1800

cccaacgtgg ttacatacac caccctgatc gacggcctgt gcaaggccgg caaagtggac 1860

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ttcaaggaga tggaggagaa gggcatcacc cccagcgtgg tgacatacac cacactgatc 2040

gacggactgt gtaaagccgg cgacgtggac gaagccctcg agctgttcaa agagatgcgg 2100

agcaagggcg tgaagcccaa cgtggtcaca tacaccaccc tgatcgacgg cctgtgcaag 2160

gccggcaagg tggatgaggc cctggagctg ttcgacgaga tgaaggagag gggcatcaag 2220

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<210> 460
<211> 757
<212> PRT
<213> Artificial Sequence

<220>
<223> v3.2_protein

<400> 460

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1               5                  10                  15

Asn Gln Glu Ala Lys Pro Glu Val Lys Pro Glu Val Lys Pro Glu Thr
            20                  25                  30

His Ile Asn Leu Lys Val Ser Asp Gly Ser Ser Glu Ile Phe Phe Lys
        35                  40                  45

Ile Lys Lys Thr Thr Pro Leu Arg Arg Leu Met Glu Ala Phe Ala Lys
    50                  55                  60

Arg Gln Gly Lys Glu Met Asp Ser Leu Arg Phe Leu Tyr Asp Gly Ile
65                  70                  75                  80

Arg Ile Gln Ala Asp Gln Ala Pro Glu Asp Leu Asp Met Glu Asp Asn
                85                  90                  95

Asp Ile Ile Glu Ala His Arg Glu Gln Ile Gly Gly Met Gly Asn Ser
            100                 105                 110

Val Val Thr Tyr Asn Thr Asn Ile Asp Gln Leu Cys Lys Ser Gly Lys
        115                 120                 125

Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile
    130                 135                 140

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

Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser
                165                 170                 175

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

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

Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu
```

```
    210                 215                 220

Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu
225                 230                 235                 240

Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr
                245                 250                 255

Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala
            260                 265                 270

Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val
        275                 280                 285

Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val
    290                 295                 300

Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys
305                 310                 315                 320

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

Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys
            340                 345                 350

Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu
        355                 360                 365

Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met
    370                 375                 380

Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile
385                 390                 395                 400

Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe
                405                 410                 415

Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr Tyr Asn
            420                 425                 430
```

```
Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu Ala Leu
        435                 440                 445

Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser Val Val
    450                 455                 460

Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp Val Asp
465                 470                 475                 480

Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val Lys Pro
                485                 490                 495

Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly
            500                 505                 510

Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu Arg Gly
        515                 520                 525

Ile Lys Pro Asp Val Val Thr Tyr Asn Thr Leu Ile Asp Gly Leu Cys
    530                 535                 540

Lys Ser Gly Lys Ile Glu Glu Ala Leu Lys Leu Phe Lys Glu Met Glu
545                 550                 555                 560

Glu Lys Gly Ile Thr Pro Ser Val Val Thr Tyr Thr Thr Leu Ile Asp
                565                 570                 575

Gly Leu Cys Lys Ala Gly Asp Val Asp Glu Ala Leu Glu Leu Phe Lys
            580                 585                 590

Glu Met Arg Ser Lys Gly Val Lys Pro Asn Val Val Thr Tyr Thr Thr
        595                 600                 605

Leu Ile Asp Gly Leu Cys Lys Ala Gly Lys Val Asp Glu Ala Leu Glu
    610                 615                 620

Leu Phe Asp Glu Met Lys Glu Arg Gly Ile Lys Pro Asp Val Val Thr
625                 630                 635                 640
```

```
Tyr Asn Thr Leu Ile Asp Gly Leu Cys Lys Ser Gly Lys Ile Glu Glu
                645                 650                 655

Ala Leu Lys Leu Phe Lys Glu Met Glu Glu Lys Gly Ile Thr Pro Ser
            660                 665                 670

Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys Ala Gly Asp
        675                 680                 685

Val Asp Glu Ala Leu Glu Leu Phe Lys Glu Met Arg Ser Lys Gly Val
    690                 695                 700

Lys Pro Asn Val Val Thr Tyr Thr Thr Leu Ile Asp Gly Leu Cys Lys
705                 710                 715                 720

Ala Gly Lys Val Asp Glu Ala Leu Glu Leu Phe Asp Glu Met Lys Glu
                725                 730                 735

Arg Gly Ile Lys Pro Asp Glu Leu Thr Tyr Asn Thr Leu Ile Ser Gly
            740                 745                 750

Leu Gly Lys Ala Gly
        755
```