SEQUENCE LISTING

<110> Berlin-Chemie AG

<120> Pharmaceutical combinations

<130> 489.131183/01

<160> 207

<170> PatentIn version 3.5

<210> 1
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<400> 1

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


Gly Arg Ile Lys Ser Lys Thr Asp Gly Gly Thr Thr Asp Tyr Ala Ala
    50                  55                  60


Pro Val Gln Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65                  70                  75                  80


Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
                85                  90                  95


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

Tyr Ala Ala Ser Asn Leu Lys Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Thr Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Arg Ser Pro Trp
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Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
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ccagggaagg ggctggagtg ggttggccgt attaaaagca aaactgatgg tgggacaaca 180

gactacgctg cacccgtgca aggcagattc accatctcaa gagatgattc aaaaaacacg 240

ctgtatctgc aaatgaacag cctgaaaacc gaggacacag ccgtgtatta ctgtacgatt 300

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aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcac tctgcaacct 240

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Asn Ala Trp Met Ser
1 5

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Arg Ile Lys Ser Lys Thr Asp Gly Gly Thr Thr Asp Tyr Ala Ala Pro
1 5 10 15

Val Gln Gly

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Phe Gly Val Val Ser Phe Asp Tyr
1               5


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Arg Ala Ser Gln Ser Ile Ser Asp Tyr Leu Ser
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Ala Ala Ser Asn Leu Lys Thr
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Gln Gln Ser Tyr Arg Ser Pro Trp Thr
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
1               5                   10                  15


Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Ala
            20                  25                  30


Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45


Gly Arg Ile Lys Ser Lys Thr Asp Gly Gly Thr Thr Asp Tyr Ala Ala
    50                  55                  60


Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65                  70                  75                  80


Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
                85                  90                  95


Tyr Cys Thr Thr Thr Thr Val Thr
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1               5                   10                  15
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<210>  13
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<213>  Human

<400>  13

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Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                   10                  15
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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
            20                  25                  30


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


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


Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80


Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser
                85                  90


<210>  14
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Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
1               5                   10


<210>  15
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<213>  Human

<400>  15

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


Leu Leu Phe Trp Phe Phe Asp Leu Ala Glu Pro Ser Gly Arg Ala Ala
            20                  25                  30


Asn Asp Pro Phe Thr Ile Val His Gly Asn Thr Gly Lys Cys Ile Lys
        35                  40                  45
```

```
Pro Val Tyr Gly Trp Ile Val Ala Asp Asp Cys Asp Glu Thr Glu Asp
    50                  55                  60

Lys Leu Trp Lys Trp Val Ser Gln His Arg Leu Phe His Leu His Ser
65                  70                  75                  80

Gln Lys Cys Leu Gly Leu Asp Ile Thr Lys Ser Val Asn Glu Leu Arg
                85                  90                  95

Met Phe Ser Cys Asp Ser Ser Ala Met Leu Trp Trp Lys Cys Glu His
            100                 105                 110

His Ser Leu Tyr Gly Ala Ala Arg Tyr Arg Leu Ala Leu Lys Asp Gly
        115                 120                 125

His Gly Thr Ala Ile Ser Asn Ala Ser Asp Val Trp Lys Lys Gly Gly
    130                 135                 140

Ser Glu Glu Ser Leu Cys Asp Gln Pro Tyr His Glu Ile Tyr Thr Arg
145                 150                 155                 160

Asp Gly Asn Ser Tyr Gly Arg Pro Cys Glu Phe Pro Phe Leu Ile Asp
                165                 170                 175

Gly Thr Trp His His Asp Cys Ile Leu Asp Glu Asp His Ser Gly Pro
            180                 185                 190

Trp Cys Ala Thr Thr Leu Asn Tyr Glu Tyr Asp Arg Lys Trp Gly Ile
        195                 200                 205

Cys Leu Lys Pro Glu Asn Gly Cys Glu Asp Asn Trp Glu Lys Asn Glu
    210                 215                 220

Gln Phe Gly Ser Cys Tyr Gln Phe Asn Thr Gln Thr Ala Leu Ser Trp
225                 230                 235                 240

Lys Glu Ala Tyr Val Ser Cys Gln Asn Gln Gly Ala Asp Leu Leu Ser
```

```
                245                 250                 255

Ile Asn Ser Ala Ala Glu Leu Thr Tyr Leu Lys Glu Lys Glu Gly Ile
            260                 265                 270

Ala Lys Ile Phe Trp Ile Gly Leu Asn Gln Leu Tyr Ser Ala Arg Gly
        275                 280                 285

Trp Glu Trp Ser Asp His Lys Pro Leu Asn Phe Leu Asn Trp Asp Pro
    290                 295                 300

Asp Arg Pro Ser Ala Pro Thr Ile Gly Gly Ser Ser Cys Ala Arg Met
305                 310                 315                 320

Asp Ala Glu Ser Gly Leu Trp Gln Ser Phe Ser Cys Glu Ala Gln Leu
                325                 330                 335

Pro Tyr Val Cys Arg Lys Pro Leu Asn Asn Thr Val Glu Leu Thr Asp
            340                 345                 350

Val Trp Thr Tyr Ser Asp Thr Arg Cys Asp Ala Gly Trp Leu Pro Asn
        355                 360                 365

Asn Gly Phe Cys Tyr Leu Leu Val Asn Glu Ser Asn Ser Trp Asp Lys
    370                 375                 380

Ala His Ala Lys Cys Lys Ala Phe Ser Ser Asp Leu Ile Ser Ile His
385                 390                 395                 400

Ser Leu Ala Asp Val Glu Val Val Val Thr Lys Leu His Asn Glu Asp
                405                 410                 415

Ile Lys Glu Glu Val Trp Ile Gly Leu Lys Asn Ile Asn Ile Pro Thr
            420                 425                 430

Leu Phe Gln Trp Ser Asp Gly Thr Glu Val Thr Leu Thr Tyr Trp Asp
        435                 440                 445
```

```
Glu Asn Glu Pro Asn Val Pro Tyr Asn Lys Thr Pro Asn Cys Val Ser
    450                 455                 460

Tyr Leu Gly Glu Leu Gly Gln Trp Lys Val Gln Ser Cys Glu Glu Lys
465                 470                 475                 480

Leu Lys Tyr Val Cys Lys Arg Lys Gly Glu Lys Leu Asn Asp Ala Ser
                485                 490                 495

Ser Asp Lys Met Cys Pro Pro Asp Glu Gly Trp Lys Arg His Gly Glu
            500                 505                 510

Thr Cys Tyr Lys Ile Tyr Glu Asp Glu Val Pro Phe Gly Thr Asn Cys
        515                 520                 525

Asn Leu Thr Ile Thr Ser Arg Phe Glu Gln Glu Tyr Leu Asn Asp Leu
    530                 535                 540

Met Lys Lys Tyr Asp Lys Ser Leu Arg Lys Tyr Phe Trp Thr Gly Leu
545                 550                 555                 560

Arg Asp Val Asp Ser Cys Gly Glu Tyr Asn Trp Ala Thr Val Gly Gly
                565                 570                 575

Arg Arg Arg Ala Val Thr Phe Ser Asn Trp Asn Phe Leu Glu Pro Ala
            580                 585                 590

Ser Pro Gly Gly Cys Val Ala Met Ser Thr Gly Lys Ser Val Gly Lys
        595                 600                 605

Trp Glu Val Lys Asp Cys Arg Ser Phe Lys Ala Leu Ser Ile Cys Lys
    610                 615                 620

Lys Met Ser Gly Pro Leu Gly Pro Glu Glu Ala Ser Pro Lys Pro Asp
625                 630                 635                 640

Asp Pro Cys Pro Glu Gly Trp Gln Ser Phe Pro Ala Ser Leu Ser Cys
```

```
                645                 650                 655

Tyr Lys Val Phe His Ala Glu Arg Ile Val Arg Lys Arg Asn Trp Glu
            660                 665                 670

Glu Ala Glu Arg Phe Cys Gln Ala Leu Gly Ala His Leu Ser Ser Phe
        675                 680                 685

Ser His Val Asp Glu Ile Lys Glu Phe Leu His Phe Leu Thr Asp Gln
    690                 695                 700

Phe Ser Gly Gln His Trp Leu Trp Ile Gly Leu Asn Lys Arg Ser Pro
705                 710                 715                 720

Asp Leu Gln Gly Ser Trp Gln Trp Ser Asp Arg Thr Pro Val Ser Thr
                725                 730                 735

Ile Ile Met Pro Asn Glu Phe Gln Gln Asp Tyr Asp Ile Arg Asp Cys
            740                 745                 750

Ala Ala Val Lys Val Phe His Arg Pro Trp Arg Arg Gly Trp His Phe
        755                 760                 765

Tyr Asp Asp Arg Glu Phe Ile Tyr Leu Arg Pro Phe Ala Cys Asp Thr
    770                 775                 780

Lys Leu Glu Trp Val Cys Gln Ile Pro Lys Gly Arg Thr Pro Lys Thr
785                 790                 795                 800

Pro Asp Trp Tyr Asn Pro Asp Arg Ala Gly Ile His Gly Pro Pro Leu
                805                 810                 815

Ile Ile Glu Gly Ser Glu Tyr Trp Phe Val Ala Asp Leu His Leu Asn
            820                 825                 830

Tyr Glu Glu Ala Val Leu Tyr Cys Ala Ser Asn His Ser Phe Leu Ala
        835                 840                 845
```

```
Thr Ile Thr Ser Phe Val Gly Leu Lys Ala Ile Lys Asn Lys Ile Ala
    850                 855                 860

Asn Ile Ser Gly Asp Gly Gln Lys Trp Trp Ile Arg Ile Ser Glu Trp
865                 870                 875                 880

Pro Ile Asp Asp His Phe Thr Tyr Ser Arg Tyr Pro Trp His Arg Phe
                885                 890                 895

Pro Val Thr Phe Gly Glu Glu Cys Leu Tyr Met Ser Ala Lys Thr Trp
            900                 905                 910

Leu Ile Asp Leu Gly Lys Pro Thr Asp Cys Ser Thr Lys Leu Pro Phe
        915                 920                 925

Ile Cys Glu Lys Tyr Asn Val Ser Ser Leu Glu Lys Tyr Ser Pro Asp
    930                 935                 940

Ser Ala Ala Lys Val Gln Cys Ser Glu Gln Trp Ile Pro Phe Gln Asn
945                 950                 955                 960

Lys Cys Phe Leu Lys Ile Lys Pro Val Ser Leu Thr Phe Ser Gln Ala
                965                 970                 975

Ser Asp Thr Cys His Ser Tyr Gly Gly Thr Leu Pro Ser Val Leu Ser
            980                 985                 990

Gln Ile Glu Gln Asp Phe Ile Thr  Ser Leu Leu Pro Asp  Met Glu Ala
        995                 1000                1005

Thr Leu  Trp Ile Gly Leu Arg  Trp Thr Ala Tyr Glu  Lys Ile Asn
    1010                1015                1020

Lys Trp  Thr Asp Asn Arg Glu  Leu Thr Tyr Ser Asn  Phe His Pro
    1025                1030                1035

Leu Leu  Val Ser Gly Arg Leu  Arg Ile Pro Glu Asn  Phe Phe Glu
```

```
    1040                1045                1050

Glu Glu  Ser Arg Tyr His Cys  Ala Leu Ile Leu Asn  Leu Gln Lys
    1055                1060                1065

Ser Pro  Phe Thr Gly Thr Trp  Asn Phe Thr Ser Cys  Ser Glu Arg
    1070                1075                1080

His Phe  Val Ser Leu Cys Gln  Lys Tyr Ser Glu Val  Lys Ser Arg
    1085                1090                1095

Gln Thr  Leu Gln Asn Ala Ser  Glu Thr Val Lys Tyr  Leu Asn Asn
    1100                1105                1110

Leu Tyr  Lys Ile Ile Pro Lys  Thr Leu Thr Trp His  Ser Ala Lys
    1115                1120                1125

Arg Glu  Cys Leu Lys Ser Asn  Met Gln Leu Val Ser  Ile Thr Asp
    1130                1135                1140

Pro Tyr  Gln Gln Ala Phe Leu  Ser Val Gln Ala Leu  Leu His Asn
    1145                1150                1155

Ser Ser  Leu Trp Ile Gly Leu  Phe Ser Gln Asp Asp  Glu Leu Asn
    1160                1165                1170

Phe Gly  Trp Ser Asp Gly Lys  Arg Leu His Phe Ser  Arg Trp Ala
    1175                1180                1185

Glu Thr  Asn Gly Gln Leu Glu  Asp Cys Val Val Leu  Asp Thr Asp
    1190                1195                1200

Gly Phe  Trp Lys Thr Val Asp  Cys Asn Asp Asn Gln  Pro Gly Ala
    1205                1210                1215

Ile Cys  Tyr Tyr Ser Gly Asn  Glu Thr Glu Lys Glu  Val Lys Pro
    1220                1225                1230
```

```
Val Asp  Ser Val Lys Cys Pro  Ser Pro Val Leu Asn  Thr Pro Trp
    1235                1240                1245

Ile Pro  Phe Gln Asn Cys Cys  Tyr Asn Phe Ile Ile  Thr Lys Asn
    1250                1255                1260

Arg His  Met Ala Thr Thr Gln  Asp Glu Val His Thr  Lys Cys Gln
    1265                1270                1275

Lys Leu  Asn Pro Lys Ser His  Ile Leu Ser Ile Arg  Asp Glu Lys
    1280                1285                1290

Glu Asn  Asn Phe Val Leu Glu  Gln Leu Leu Tyr Phe  Asn Tyr Met
    1295                1300                1305

Ala Ser  Trp Val Met Leu Gly  Ile Thr Tyr Arg Asn  Lys Ser Leu
    1310                1315                1320

Met Trp  Phe Asp Lys Thr Pro  Leu Ser Tyr Thr His  Trp Arg Ala
    1325                1330                1335

Gly Arg  Pro Thr Ile Lys Asn  Glu Lys Phe Leu Ala  Gly Leu Ser
    1340                1345                1350

Thr Asp  Gly Phe Trp Asp Ile  Gln Thr Phe Lys Val  Ile Glu Glu
    1355                1360                1365

Ala Val  Tyr Phe His Gln His  Ser Ile Leu Ala Cys  Lys Ile Glu
    1370                1375                1380

Met Val  Asp Tyr Lys Glu Glu  Tyr Asn Thr Thr Leu  Pro Gln Phe
    1385                1390                1395

Met Pro  Tyr Glu Asp Gly Ile  Tyr Ser Val Ile Gln  Lys Lys Val
    1400                1405                1410

Thr Trp  Tyr Glu Ala Leu Asn  Met Cys Ser Gln Ser  Gly Gly His
```

```
    1415                1420                1425

Leu Ala  Ser Val His Asn Gln  Asn Gly Gln Leu Phe  Leu Glu Asp
    1430                1435                1440

Ile Val  Lys Arg Asp Gly Phe  Pro Leu Trp Val Gly  Leu Ser Ser
    1445                1450                1455

His Asp  Gly Ser Glu Ser Ser  Phe Glu Trp Ser Asp  Gly Ser Thr
    1460                1465                1470

Phe Asp  Tyr Ile Pro Trp Lys  Gly Gln Thr Ser Pro  Gly Asn Cys
    1475                1480                1485

Val Leu  Leu Asp Pro Lys Gly  Thr Trp Lys His Glu  Lys Cys Asn
    1490                1495                1500

Ser Val  Lys Asp Gly Ala Ile  Cys Tyr Lys Pro Thr  Lys Ser Lys
    1505                1510                1515

Lys Leu  Ser Arg Leu Thr Tyr  Ser Ser Arg Cys Pro  Ala Ala Lys
    1520                1525                1530

Glu Asn  Gly Ser Arg Trp Ile  Gln Tyr Lys Gly His  Cys Tyr Lys
    1535                1540                1545

Ser Asp  Gln Ala Leu His Ser  Phe Ser Glu Ala Lys  Lys Leu Cys
    1550                1555                1560

Ser Lys  His Asp His Ser Ala  Thr Ile Val Ser Ile  Lys Asp Glu
    1565                1570                1575

Asp Glu  Asn Lys Phe Val Ser  Arg Leu Met Arg Glu  Asn Asn Asn
    1580                1585                1590

Ile Thr  Met Arg Val Trp Leu  Gly Leu Ser Gln His  Ser Val Asp
    1595                1600                1605
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```
Gln Ser  Trp Ser Trp Leu Asp  Gly Ser Glu Val Thr  Phe Val Lys
    1610                1615                1620


Trp Glu  Asn Lys Ser Lys Ser  Gly Val Gly Arg Cys  Ser Met Leu
    1625                1630                1635


Ile Ala  Ser Asn Glu Thr Trp  Lys Lys Val Glu Cys  Glu His Gly
    1640                1645                1650


Phe Gly  Arg Val Val Cys Lys  Val Pro Leu Gly Pro  Asp Tyr Thr
    1655                1660                1665


Ala Ile  Ala Ile Ile Val Ala  Thr Leu Ser Ile Leu  Val Leu Met
    1670                1675                1680


Gly Gly  Leu Ile Trp Phe Leu  Phe Gln Arg His Arg  Leu His Leu
    1685                1690                1695


Ala Gly  Phe Ser Ser Val Arg  Tyr Ala Gln Gly Val  Asn Glu Asp
    1700                1705                1710


Glu Ile  Met Leu Pro Ser Phe  His Asp
    1715                1720


<210>  16
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<213>  Human

<400>  16

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


Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Tyr Ser
            20                  25                  30


<210>  17
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<212>  PRT
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<400>  17

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Gly
1               5                   10


<210>  18
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<213>  Human

<400>  18

Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Leu Tyr Leu Gln
1               5                   10                  15


Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Thr Ile
            20                  25                  30


<210>  19
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<213>  Human

<400>  19

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
1               5                   10


<210>  20
<211>  23
<212>  PRT
<213>  Human

<400>  20

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


Asp Arg Val Thr Ile Thr Cys
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<210>  21
<211>  15
<212>  PRT
<213>  Human

<400>  21

Trp Tyr Gln Gln Arg Pro Gly Lys Ala Pro Asn Leu Leu Ile Tyr
1               5                   10                  15


<210>  22
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<212>  PRT
<213>  Human

<400>  22

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1               5                   10                  15


Leu Thr Ile Ser Thr Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
            20                  25                  30


<210>  23
<211>  11
<212>  PRT
<213>  Human

<400>  23

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
1               5                   10


<210>  24
<211>  10
<212>  PRT
<213>  Human

<400>  24

Trp Glu Val Lys Asp Cys Arg Ser Phe Lys
1               5                   10


<210>  25
<211>  12

<212>  PRT
<213>  Human

<400>  25

Pro Ala Ser Leu Ser Cys Tyr Lys Val Phe His Ala
1               5                   10


<210>  26
<211>  20
<212>  PRT
<213>  Human

<400>  26

Pro Trp Arg Arg Gly Trp His Phe Tyr Asp Asp Arg Glu Phe Ile Tyr
1               5                   10                  15


Leu Arg Pro Phe
            20


<210>  27
<211>  19
<212>  PRT
<213>  Human

<400>  27

Asp Asp His Phe Thr Tyr Ser Arg Tyr Pro Trp His Arg Phe Pro Val
1               5                   10                  15


Thr Phe Gly



<210>  28
<211>  12
<212>  PRT
<213>  Human

<400>  28

Arg Glu Leu Thr Tyr Ser Asn Phe His Pro Leu Leu
1               5                   10

<210>  29
<211>  17
<212>  PRT
<213>  Human

<400>  29

Phe Thr Ser Cys Ser Glu Arg His Phe Val Ser Leu Cys Gln Lys Tyr
1               5                   10                  15


Ser



<210>  30
<211>  12
<212>  PRT
<213>  Human

<400>  30

Thr Val Lys Tyr Leu Asn Asn Leu Tyr Lys Ile Ile
1               5                   10


<210>  31
<211>  11
<212>  PRT
<213>  Human

<400>  31

Glu Ala Val Tyr Phe His Gln His Ser Ile Leu
1               5                   10


<210>  32
<211>  11
<212>  PRT
<213>  Human

<400>  32

Lys Lys Leu Ser Arg Leu Thr Tyr Ser Ser Cys
1               5                   10


<210>  33
<211>  20

<212>  PRT
<213>  Human

<400>  33

Asn Gly Ser Arg Trp Ile Gln Tyr Lys Gly His Cys Tyr Lys Ser Asp
1               5                   10                  15

Gln Ala Leu His
            20

<210>  34
<211>  25
<212>  PRT
<213>  Human

<400>  34

Ile Ser Glu Trp Pro Ile Asp Asp His Phe Thr Tyr Ser Arg Tyr Pro
1               5                   10                  15

Trp His Arg Phe Pro Val Thr Phe Gly
            20                  25

<210>  35
<211>  20
<212>  PRT
<213>  Human

<400>  35

Gln Thr Leu Gln Asn Ala Ser Glu Thr Val Lys Tyr Leu Asn Asn Leu
1               5                   10                  15

Tyr Lys Ile Ile
            20

<210>  36
<211>  10
<212>  PRT
<213>  Human

<400>  36

Asp Asp His Phe Thr Tyr Ser Arg Tyr Pro
1               5                   10

<210>  37
<211>  15
<212>  PRT
<213>  Human

<400>  37

Phe Thr Ser Cys Ser Glu Arg His Phe Val Ser Leu Cys Gln Lys
1               5                   10                  15

<210>  38
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<220>
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<400>  38

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

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30

Asn Met His Trp Val Lys Gln Thr Pro Gly Arg Gly Leu Glu Trp Ile
        35                  40                  45

Gly Ala Ile Tyr Pro Gly Asn Gly Asp Thr Ser Tyr Asn Gln Lys Phe
    50                  55                  60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Ser Thr Tyr Tyr Gly Gly Asp Trp Tyr Phe Asn Val Trp Gly

```
            100                 105                 110

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

Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
    130                 135                 140

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

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

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

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

Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Ala Glu Pro Lys Ser Cys
    210                 215                 220

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225                 230                 235                 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
    290                 295                 300
```

```
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320


Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
                325                 330                 335


Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350


Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355                 360                 365


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


Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400


Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415


Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430


His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
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Pro Gly Lys
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Glu Lys Val Thr Met Thr Cys Arg Ala Ser Ser Ser Val Ser Tyr Ile
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His Trp Phe Gln Gln Lys Pro Gly Ser Ser Pro Lys Pro Trp Ile Tyr
        35                  40                  45

Ala Thr Ser Asn Leu Ala Ser Gly Val Pro Val Arg Phe Ser Gly Ser
    50                  55                  60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Val Glu Ala Glu
65                  70                  75                  80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Thr Ser Asn Pro Pro Thr
                85                  90                  95

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

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

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

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

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

Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
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Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe
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Asn Arg Gly Glu Cys
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Gly

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Ser Thr Tyr Tyr Gly Gly Asp Trp Tyr Phe Asn Val

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Gly Trp His Phe Tyr Asp Asp Arg
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Glu Val Lys Asp Cys Arg Ser Phe

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Lys Asp Cys Arg Ser Phe Lys Ala
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Asp Cys Arg Ser Phe Lys Ala Leu
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Tyr Lys Val Phe His Ala Glu Arg
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Lys Val Phe His Ala Glu Arg Ile
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Val Phe His Ala Glu Arg Ile Val
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Phe His Ala Glu Arg Ile Val Arg
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Ala Ala Val Lys Val Phe His Arg
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Val Lys Val Phe His Arg Pro Trp
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His Arg Pro Trp Arg Arg Gly Trp
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Gly Trp His Phe Tyr Asp Asp Arg
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Arg Tyr Pro Trp His Arg Phe Pro
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Tyr Pro Trp His Arg Phe Pro Val
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Pro Trp His Arg Phe Pro Val Thr
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Trp His Arg Phe Pro Val Thr Phe
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His Arg Phe Pro Val Thr Phe Gly
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Arg Glu Leu Thr Tyr Ser Asn Phe
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Glu Leu Thr Tyr Ser Asn Phe His
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Leu Thr Tyr Ser Asn Phe His Pro
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Asn Phe His Pro Leu Leu Val Ser
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Phe His Pro Leu Leu Val Ser Gly
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His Pro Leu Leu Val Ser Gly Arg

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Pro Leu Leu Val Ser Gly Arg Leu
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Leu Leu Val Ser Gly Arg Leu Arg
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Leu Val Ser Gly Arg Leu Arg Ile
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Val Ser Gly Arg Leu Arg Ile Pro
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Cys Ser Glu Arg His Phe Val Ser
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Ser Glu Arg His Phe Val Ser Leu
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Glu Arg His Phe Val Ser Leu Cys
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Arg His Phe Val Ser Leu Cys Gln
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His Phe Val Ser Leu Cys Gln Lys
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Phe Val Ser Leu Cys Gln Lys Tyr
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Val Ser Leu Cys Gln Lys Tyr Ser
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Ser Leu Cys Gln Lys Tyr Ser Glu
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Gln Lys Tyr Ser Glu Val Lys Ser
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Thr Val Lys Tyr Leu Asn Asn Leu
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Val Lys Tyr Leu Asn Asn Leu Tyr
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Lys Tyr Leu Asn Asn Leu Tyr Lys
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Tyr Leu Asn Asn Leu Tyr Lys Ile
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Asn Leu Tyr Lys Ile Ile Pro Lys

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Leu Tyr Lys Ile Ile Pro Lys Thr
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Tyr Lys Ile Ile Pro Lys Thr Leu
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Pro Lys Thr Leu Thr Trp His Ser
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Lys Thr Leu Thr Trp His Ser Ala
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Thr Leu Thr Trp His Ser Ala Lys
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Glu Ala Val Tyr Phe His Gln His
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Ala Val Tyr Phe His Gln His Ser
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Val Tyr Phe His Gln His Ser Ile
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Tyr Phe His Gln His Ser Ile Leu
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Phe His Gln His Ser Ile Leu Ala
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Lys Lys Leu Ser Arg Leu Thr Tyr
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Lys Leu Ser Arg Leu Thr Tyr Ser
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Leu Ser Arg Leu Thr Tyr Ser Ser
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Ser Arg Leu Thr Tyr Ser Ser Arg
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Arg Leu Thr Tyr Ser Ser Arg Cys
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Asn Gly Ser Arg Trp Ile Gln Tyr
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Gly Ser Arg Trp Ile Gln Tyr Lys
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Ser Arg Trp Ile Gln Tyr Lys Gly
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Arg Trp Ile Gln Tyr Lys Gly His
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Trp Ile Gln Tyr Lys Gly His Cys
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Ile Gln Tyr Lys Gly His Cys Tyr
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Gln Tyr Lys Gly His Cys Tyr Lys

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Tyr Lys Gly His Cys Tyr Lys Ser
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Lys Gly His Cys Tyr Lys Ser Asp
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Gly His Cys Tyr Lys Ser Asp Gln
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Cys Tyr Lys Ser Asp Gln Ala Leu
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<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  160

Tyr Lys Ser Asp Gln Ala Leu His
1               5


<210>  161
<211>  8
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  161

Lys Ser Asp Gln Ala Leu His Ser
1               5

<210>  162
<211>  8
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  162

Ser Asp Gln Ala Leu His Ser Phe
1               5


<210>  163
<211>  8
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  163

Asp Gln Ala Leu His Ser Phe Ser
1               5


<210>  164
<211>  1722
<212>  PRT
<213>  Homo sapiens

<400>  164

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


Leu Leu Phe Trp Phe Phe Asp Leu Ala Glu Pro Ser Gly Arg Ala Ala
            20                  25                  30


Asn Asp Pro Phe Thr Ile Val His Gly Asn Thr Gly Lys Cys Ile Lys
        35                  40                  45


Pro Val Tyr Gly Trp Ile Val Ala Asp Asp Cys Asp Glu Thr Glu Asp
    50                  55                  60

```
Lys Leu Trp Lys Trp Val Ser Gln His Arg Leu Phe His Leu His Ser
65                  70                  75                  80

Gln Lys Cys Leu Gly Leu Asp Ile Thr Lys Ser Val Asn Glu Leu Arg
                85                  90                  95

Met Phe Ser Cys Asp Ser Ser Ala Met Leu Trp Trp Lys Cys Glu His
            100                 105                 110

His Ser Leu Tyr Gly Ala Ala Arg Tyr Arg Leu Ala Leu Lys Asp Gly
        115                 120                 125

His Gly Thr Ala Ile Ser Asn Ala Ser Asp Val Trp Lys Lys Gly Gly
    130                 135                 140

Ser Glu Glu Ser Leu Cys Asp Gln Pro Tyr His Glu Ile Tyr Thr Arg
145                 150                 155                 160

Asp Gly Asn Ser Tyr Gly Arg Pro Cys Glu Phe Pro Phe Leu Ile Asp
                165                 170                 175

Gly Thr Trp His His Asp Cys Ile Leu Asp Glu Asp His Ser Gly Pro
            180                 185                 190

Trp Cys Ala Thr Thr Leu Asn Tyr Glu Tyr Asp Arg Lys Trp Gly Ile
        195                 200                 205

Cys Leu Lys Pro Glu Asn Gly Cys Glu Asp Asn Trp Glu Lys Asn Glu
    210                 215                 220

Gln Phe Gly Ser Cys Tyr Gln Phe Asn Thr Gln Thr Ala Leu Ser Trp
225                 230                 235                 240

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

```
Ile Asn Ser Ala Ala Glu Leu Thr Tyr Leu Lys Glu Lys Glu Gly Ile
            260                 265                 270

Ala Lys Ile Phe Trp Ile Gly Leu Asn Gln Leu Tyr Ser Ala Arg Gly
        275                 280                 285

Trp Glu Trp Ser Asp His Lys Pro Leu Asn Phe Leu Asn Trp Asp Pro
    290                 295                 300

Asp Arg Pro Ser Ala Pro Thr Ile Gly Gly Ser Ser Cys Ala Arg Met
305                 310                 315                 320

Asp Ala Glu Ser Gly Leu Trp Gln Ser Phe Ser Cys Glu Ala Gln Leu
                325                 330                 335

Pro Tyr Val Cys Arg Lys Pro Leu Asn Asn Thr Val Glu Leu Thr Asp
            340                 345                 350

Val Trp Thr Tyr Ser Asp Thr Arg Cys Asp Ala Gly Trp Leu Pro Asn
        355                 360                 365

Asn Gly Phe Cys Tyr Leu Leu Val Asn Glu Ser Asn Ser Trp Asp Lys
    370                 375                 380

Ala His Ala Lys Cys Lys Ala Phe Ser Ser Asp Leu Ile Ser Ile His
385                 390                 395                 400

Ser Leu Ala Asp Val Glu Val Val Val Thr Lys Leu His Asn Glu Asp
                405                 410                 415

Ile Lys Glu Glu Val Trp Ile Gly Leu Lys Asn Ile Asn Ile Pro Thr
            420                 425                 430

Leu Phe Gln Trp Ser Asp Gly Thr Glu Val Thr Leu Thr Tyr Trp Asp
        435                 440                 445

Glu Asn Glu Pro Asn Val Pro Tyr Asn Lys Thr Pro Asn Cys Val Ser
    450                 455                 460
```

```
Tyr Leu Gly Glu Leu Gly Gln Trp Lys Val Gln Ser Cys Glu Glu Lys
465                 470                 475                 480


Leu Lys Tyr Val Cys Lys Arg Lys Gly Glu Lys Leu Asn Asp Ala Ser
                485                 490                 495


Ser Asp Lys Met Cys Pro Pro Asp Glu Gly Trp Lys Arg His Gly Glu
            500                 505                 510


Thr Cys Tyr Lys Ile Tyr Glu Asp Glu Val Pro Phe Gly Thr Asn Cys
        515                 520                 525


Asn Leu Thr Ile Thr Ser Arg Phe Glu Gln Glu Tyr Leu Asn Asp Leu
    530                 535                 540


Met Lys Lys Tyr Asp Lys Ser Leu Arg Lys Tyr Phe Trp Thr Gly Leu
545                 550                 555                 560


Arg Asp Val Asp Ser Cys Gly Glu Tyr Asn Trp Ala Thr Val Gly Gly
                565                 570                 575


Arg Arg Arg Ala Val Thr Phe Ser Asn Trp Asn Phe Leu Glu Pro Ala
            580                 585                 590


Ser Pro Gly Gly Cys Val Ala Met Ser Thr Gly Lys Ser Val Gly Lys
        595                 600                 605


Trp Glu Val Lys Asp Cys Arg Ser Phe Lys Ala Leu Ser Ile Cys Lys
    610                 615                 620


Lys Met Ser Gly Pro Leu Gly Pro Glu Glu Ala Ser Pro Lys Pro Asp
625                 630                 635                 640


Asp Pro Cys Pro Glu Gly Trp Gln Ser Phe Pro Ala Ser Leu Ser Cys
                645                 650                 655
```

```
Tyr Lys Val Phe His Ala Glu Arg Ile Val Arg Lys Arg Asn Trp Glu
            660                 665                 670

Glu Ala Glu Arg Phe Cys Gln Ala Leu Gly Ala His Leu Ser Ser Phe
        675                 680                 685

Ser His Val Asp Glu Ile Lys Glu Phe Leu His Phe Leu Thr Asp Gln
    690                 695                 700

Phe Ser Gly Gln His Trp Leu Trp Ile Gly Leu Asn Lys Arg Ser Pro
705                 710                 715                 720

Asp Leu Gln Gly Ser Trp Gln Trp Ser Asp Arg Thr Pro Val Ser Thr
                725                 730                 735

Ile Ile Met Pro Asn Glu Phe Gln Gln Asp Tyr Asp Ile Arg Asp Cys
            740                 745                 750

Ala Ala Val Lys Val Phe His Arg Pro Trp Arg Arg Gly Trp His Phe
        755                 760                 765

Tyr Asp Asp Arg Glu Phe Ile Tyr Leu Arg Pro Phe Ala Cys Asp Thr
    770                 775                 780

Lys Leu Glu Trp Val Cys Gln Ile Pro Lys Gly Arg Thr Pro Lys Thr
785                 790                 795                 800

Pro Asp Trp Tyr Asn Pro Asp Arg Ala Gly Ile His Gly Pro Pro Leu
                805                 810                 815

Ile Ile Glu Gly Ser Glu Tyr Trp Phe Val Ala Asp Leu His Leu Asn
            820                 825                 830

Tyr Glu Glu Ala Val Leu Tyr Cys Ala Ser Asn His Ser Phe Leu Ala
        835                 840                 845

Thr Ile Thr Ser Phe Val Gly Leu Lys Ala Ile Lys Asn Lys Ile Ala
    850                 855                 860
```

```
Asn Ile Ser Gly Asp Gly Gln Lys Trp Trp Ile Arg Ile Ser Glu Trp
865                 870                 875                 880

Pro Ile Asp Asp His Phe Thr Tyr Ser Arg Tyr Pro Trp His Arg Phe
                885                 890                 895

Pro Val Thr Phe Gly Glu Glu Cys Leu Tyr Met Ser Ala Lys Thr Trp
            900                 905                 910

Leu Ile Asp Leu Gly Lys Pro Thr Asp Cys Ser Thr Lys Leu Pro Phe
        915                 920                 925

Ile Cys Glu Lys Tyr Asn Val Ser Ser Leu Glu Lys Tyr Ser Pro Asp
    930                 935                 940

Ser Ala Ala Lys Val Gln Cys Ser Glu Gln Trp Ile Pro Phe Gln Asn
945                 950                 955                 960

Lys Cys Phe Leu Lys Ile Lys Pro Val Ser Leu Thr Phe Ser Gln Ala
                965                 970                 975

Ser Asp Thr Cys His Ser Tyr Gly Gly Thr Leu Pro Ser Val Leu Ser
            980                 985                 990

Gln Ile Glu Gln Asp Phe Ile Thr  Ser Leu Leu Pro Asp  Met Glu Ala
        995                 1000                1005

Thr Leu  Trp Ile Gly Leu Arg  Trp Thr Ala Tyr Glu  Lys Ile Asn
    1010                1015                1020

Lys Trp  Thr Asp Asn Arg Glu  Leu Thr Tyr Ser Asn  Phe His Pro
    1025                1030                1035

Leu Leu  Val Ser Gly Arg Leu  Arg Ile Pro Glu Asn  Phe Phe Glu
    1040                1045                1050
```

```
Glu Glu  Ser Arg Tyr His Cys  Ala Leu Ile Leu Asn  Leu Gln Lys
    1055                1060                1065

Ser Pro  Phe Thr Gly Thr Trp  Asn Phe Thr Ser Cys  Ser Glu Arg
    1070                1075                1080

His Phe  Val Ser Leu Cys Gln  Lys Tyr Ser Glu Val  Lys Ser Arg
    1085                1090                1095

Gln Thr  Leu Gln Asn Ala Ser  Glu Thr Val Lys Tyr  Leu Asn Asn
    1100                1105                1110

Leu Tyr  Lys Ile Ile Pro Lys  Thr Leu Thr Trp His  Ser Ala Lys
    1115                1120                1125

Arg Glu  Cys Leu Lys Ser Asn  Met Gln Leu Val Ser  Ile Thr Asp
    1130                1135                1140

Pro Tyr  Gln Gln Ala Phe Leu  Ser Val Gln Ala Leu  Leu His Asn
    1145                1150                1155

Ser Ser  Leu Trp Ile Gly Leu  Phe Ser Gln Asp Asp  Glu Leu Asn
    1160                1165                1170

Phe Gly  Trp Ser Asp Gly Lys  Arg Leu His Phe Ser  Arg Trp Ala
    1175                1180                1185

Glu Thr  Asn Gly Gln Leu Glu  Asp Cys Val Val Leu  Asp Thr Asp
    1190                1195                1200

Gly Phe  Trp Lys Thr Val Asp  Cys Asn Asp Asn Gln  Pro Gly Ala
    1205                1210                1215

Ile Cys  Tyr Tyr Ser Gly Asn  Glu Thr Glu Lys Glu  Val Lys Pro
    1220                1225                1230

Val Asp  Ser Val Lys Cys Pro  Ser Pro Val Leu Asn  Thr Pro Trp
    1235                1240                1245
```

```
Ile Pro  Phe Gln Asn Cys Cys  Tyr Asn Phe Ile Ile  Thr Lys Asn
    1250                1255                1260

Arg His  Met Ala Thr Thr Gln  Asp Glu Val His Thr  Lys Cys Gln
    1265                1270                1275

Lys Leu  Asn Pro Lys Ser His  Ile Leu Ser Ile Arg  Asp Glu Lys
    1280                1285                1290

Glu Asn  Asn Phe Val Leu Glu  Gln Leu Leu Tyr Phe  Asn Tyr Met
    1295                1300                1305

Ala Ser  Trp Val Met Leu Gly  Ile Thr Tyr Arg Asn  Lys Ser Leu
    1310                1315                1320

Met Trp  Phe Asp Lys Thr Pro  Leu Ser Tyr Thr His  Trp Arg Ala
    1325                1330                1335

Gly Arg  Pro Thr Ile Lys Asn  Glu Lys Phe Leu Ala  Gly Leu Ser
    1340                1345                1350

Thr Asp  Gly Phe Trp Asp Ile  Gln Thr Phe Lys Val  Ile Glu Glu
    1355                1360                1365

Ala Val  Tyr Phe His Gln His  Ser Ile Leu Ala Cys  Lys Ile Glu
    1370                1375                1380

Met Val  Asp Tyr Lys Glu Glu  Tyr Asn Thr Thr Leu  Pro Gln Phe
    1385                1390                1395

Met Pro  Tyr Glu Asp Gly Ile  Tyr Ser Val Ile Gln  Lys Lys Val
    1400                1405                1410

Thr Trp  Tyr Glu Ala Leu Asn  Met Cys Ser Gln Ser  Gly Gly His
    1415                1420                1425
```

```
Leu Ala  Ser Val His Asn Gln  Asn Gly Gln Leu Phe  Leu Glu Asp
    1430                1435                1440

Ile Val  Lys Arg Asp Gly Phe  Pro Leu Trp Val Gly  Leu Ser Ser
    1445                1450                1455

His Asp  Gly Ser Glu Ser Ser  Phe Glu Trp Ser Asp  Gly Ser Thr
    1460                1465                1470

Phe Asp  Tyr Ile Pro Trp Lys  Gly Gln Thr Ser Pro  Gly Asn Cys
    1475                1480                1485

Val Leu  Leu Asp Pro Lys Gly  Thr Trp Lys His Glu  Lys Cys Asn
    1490                1495                1500

Ser Val  Lys Asp Gly Ala Ile  Cys Tyr Lys Pro Thr  Lys Ser Lys
    1505                1510                1515

Lys Leu  Ser Arg Leu Thr Tyr  Ser Ser Arg Cys Pro  Ala Ala Lys
    1520                1525                1530

Glu Asn  Gly Ser Arg Trp Ile  Gln Tyr Lys Gly His  Cys Tyr Lys
    1535                1540                1545

Ser Asp  Gln Ala Leu His Ser  Phe Ser Glu Ala Lys  Lys Leu Cys
    1550                1555                1560

Ser Lys  His Asp His Ser Ala  Thr Ile Val Ser Ile  Lys Asp Glu
    1565                1570                1575

Asp Glu  Asn Lys Phe Val Ser  Arg Leu Met Arg Glu  Asn Asn Asn
    1580                1585                1590

Ile Thr  Met Arg Val Trp Leu  Gly Leu Ser Gln His  Ser Val Asp
    1595                1600                1605

Gln Ser  Trp Ser Trp Leu Asp  Gly Ser Glu Val Thr  Phe Val Lys
    1610                1615                1620
```

```
Trp Glu  Asn Lys Ser Lys Ser  Gly Val Gly Arg Cys  Ser Met Leu
    1625                1630                1635


Ile Ala  Ser Asn Glu Thr Trp  Lys Lys Val Glu Cys  Glu His Gly
    1640                1645                1650


Phe Gly  Arg Val Val Cys Lys  Val Pro Leu Gly Pro  Asp Tyr Thr
    1655                1660                1665


Ala Ile  Ala Ile Ile Val Ala  Thr Leu Ser Ile Leu  Val Leu Met
    1670                1675                1680


Gly Gly  Leu Ile Trp Phe Leu  Phe Gln Arg His Arg  Leu His Leu
    1685                1690                1695


Ala Gly  Phe Ser Ser Val Arg  Tyr Ala Gln Gly Val  Asn Glu Asp
    1700                1705                1710


Glu Ile  Met Leu Pro Ser Phe  His Asp
    1715                1720


<210>  165
<211>  23
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  165

Cys Ile Lys Pro Val Tyr Gly Trp Ile Val Ala Asp Asp Cys Asp Glu
1               5                   10                  15


Thr Glu Asp Lys Leu Trp Lys
            20


<210>  166
<211>  11
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<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  166

Cys Glu His His Ser Leu Tyr Gly Ala Ala Arg
1               5                   10


<210>  167
<211>  34
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  167

Asp Gly His Gly Thr Ala Ile Ser Asn Ala Ser Asp Val Trp Lys Lys
1               5                   10                  15


Gly Gly Ser Glu Glu Ser Leu Cys Asp Gln Pro Tyr His Glu Ile Tyr
            20                  25                  30


Thr Arg



<210>  168
<211>  19
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  168

Lys Gly Gly Ser Glu Glu Ser Leu Cys Asp Gln Pro Tyr His Glu Ile
1               5                   10                  15


Tyr Thr Arg

<210> 169
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 169

Gly Gly Ser Glu Glu Ser Leu Cys Asp Gln Pro Tyr His Glu Ile Tyr
1 5 10 15

Thr Arg

<210> 170
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 170

Asp Gly His Gly Thr Ala Ile Ser Asn Ala Ser Asp Val Trp Lys
1 5 10 15

<210> 171
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 171

Trp Gly Ile Cys Leu Lys Pro Glu Asn Gly Cys Glu Asp Asn Trp Glu
1 5 10 15

Lys

<210> 172
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 172

Ile Phe Trp Ile Gly Leu Asn Gln Leu Tyr Ser Ala Arg
1 5 10

<210> 173
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 173

Leu His Asn Glu Asp Ile Lys Glu Glu Val Trp Ile Gly Leu Lys
1 5 10 15

<210> 174
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 174

Thr Pro Asn Cys Val Ser Tyr Leu Gly Glu Leu Gly Gln Trp Lys
1 5 10 15

<210> 175
<211> 23
<212> PRT
<213> Artificial Sequence

<220>

<223> Peptide

<400> 175

Tyr Phe Trp Thr Gly Leu Arg Asp Val Asp Ser Cys Gly Glu Tyr Asn
1 5 10 15

Trp Ala Thr Val Gly Gly Arg
20

<210> 176
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 176

Ser Val Gly Lys Trp Glu Val Lys Asp Cys Arg
1 5 10

<210> 177
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 177

Trp Glu Val Lys Asp Cys Arg Ser Phe Lys
1 5 10

<210> 178
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 178

Ala Leu Ser Ile Cys Lys Lys
1 5

<210> 179
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 179

Pro Ala Ser Leu Ser Cys Tyr Lys Val Phe His Ala
1 5 10

<210> 180
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 180

Arg Asn Trp Glu Glu Ala Glu Arg
1 5

<210> 181
<211> 33
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 181

Arg Ser Pro Asp Leu Gln Gly Ser Trp Gln Trp Ser Asp Arg Thr Pro
1 5 10 15

Val Ser Thr Ile Ile Met Pro Asn Glu Phe Gln Gln Asp Tyr Asp Ile
20 25 30

Arg

<210>  182
<211>  19
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  182

Thr Pro Val Ser Thr Ile Ile Met Pro Asn Glu Phe Gln Gln Asp Tyr
1               5                   10                  15

Asp Ile Arg

<210>  183
<211>  20
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  183

Pro Trp Arg Arg Gly Trp His Phe Tyr Asp Asp Arg Glu Phe Ile Tyr
1               5                   10                  15

Leu Arg Pro Phe
            20

<210>  184
<211>  8
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  184

Gly Trp His Phe Tyr Asp Asp Arg
1 5

<210> 185
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 185

Ile Ser Glu Trp Pro Ile Asp Asp His Phe Thr Tyr Ser Arg
1 5 10

<210> 186
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 186

Asp Asp His Phe Thr Tyr Ser Arg Tyr Pro Trp His Arg Phe Pro Val
1 5 10 15

Thr Phe Gly

<210> 187
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 187

Phe Pro Val Thr Phe Gly Glu Glu Cys Leu Tyr Met Ser Ala Lys Thr
1 5 10 15

Trp Leu Ile Asp Leu Gly Lys Pro Thr Asp Cys Ser Thr Lys
            20                  25                  30


<210>  188
<211>  15
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  188

Thr Trp Leu Ile Asp Leu Gly Lys Pro Thr Asp Cys Ser Thr Lys
1               5                   10                  15


<210>  189
<211>  8
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  189

Tyr Asn Val Ser Ser Leu Glu Lys
1               5


<210>  190
<211>  12
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  190

Val Gln Cys Ser Glu Gln Trp Ile Pro Phe Gln Asn
1               5                   10


<210>  191
<211>  12
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  191

Arg Glu Leu Thr Tyr Ser Asn Phe His Pro Leu Leu
1               5                   10


<210>  192
<211>  39
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  192

Glu Leu Thr Tyr Ser Asn Phe His Pro Leu Leu Val Ser Gly Arg Leu
1               5                   10                  15


Arg Ile Pro Glu Asn Phe Phe Glu Glu Glu Ser Arg Tyr His Cys Ala
            20                  25                  30


Leu Ile Leu Asn Leu Gln Lys
        35


<210>  193
<211>  11
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  193

Tyr His Cys Ala Leu Ile Leu Asn Leu Gln Lys
1               5                   10


<210>  194
<211>  17
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  194

Phe Thr Ser Cys Ser Glu Arg His Phe Val Ser Leu Cys Gln Lys Tyr
1               5                   10                  15


Ser



<210>  195
<211>  8
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  195

His Phe Val Ser Leu Cys Gln Lys
1               5


<210>  196
<211>  11
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  196

Gln Thr Leu Gln Asn Ala Ser Glu Thr Val Lys
1               5                   10


<210>  197
<211>  12
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400> 197

Thr Val Lys Tyr Leu Asn Asn Leu Tyr Lys Ile Ile
1 5 10

<210> 198
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 198

Thr Leu Thr Trp His Ser Ala Lys
1 5

<210> 199
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 199

Asn Arg His Met Ala Thr Thr Gln Asp Glu Val His Thr Lys
1 5 10

<210> 200
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 200

Ser His Ile Leu Ser Ile Arg
1 5

<210> 201
<211> 16

<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  201

Ser Leu Met Trp Phe Asp Lys Thr Pro Leu Ser Tyr Thr His Trp Arg
1               5                   10                  15


<210>  202
<211>  7
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  202

Ser Leu Met Trp Phe Asp Lys
1               5


<210>  203
<211>  11
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  203

Glu Ala Val Tyr Phe His Gln His Ser Ile Leu
1               5                   10


<210>  204
<211>  10
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Peptide

<400>  204

Lys Lys Leu Ser Arg Leu Thr Tyr Ser Ser
1 5 10

<210> 205
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 205

Asn Gly Ser Arg Trp Ile Gln Tyr Lys Gly His Cys Tyr Lys Ser Asp
1 5 10 15

Gln Ala Leu His
20

<210> 206
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 206

His Asp His Ser Ala Thr Ile Val Ser Ile Lys Asp Glu Asp Glu Asn
1 5 10 15

Lys Phe Val Ser Arg
20

<210> 207
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide

<400> 207

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Val Glu Cys Glu His Gly Phe Gly Arg
1               5
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