SEQUENCE LISTING

<110> Jura Bio, Inc.

<120> MAJOR HISTOCOMPATIBILITY COMPLEX-BASED CHIMERIC RECEPTORS AND USES THEREOF FOR TREATING AUTOIMMUNE DISEASES

<130> J0300.70000WO00

<140> Not Yet Assigned
<141> 2018-11-10

<150> US 62/584,449
<151> 2017-11-10

<160> 431

<170> PatentIn version 3.5

<210> 1
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<213> Homo Sapiens

<400> 1

Met Ala Ser Gln Lys Arg Pro Ser Gln Arg His Gly Ser Lys Tyr Leu
1 5 10 15

Ala Thr Ala Ser Thr Met Asp His Ala Arg His Gly Phe Leu Pro Arg
20 25 30

His Arg Asp Thr Gly Ile Leu Asp Ser Ile Gly Arg Phe Phe Gly Gly
35 40 45

Asp Arg Gly Ala Pro Lys Arg Gly Ser Gly Lys Val Pro Trp Leu Lys
50 55 60

Pro Gly Arg Ser Pro Leu Pro Ser His Ala Arg Ser Gln Pro Gly Leu
65 70 75 80

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

Gly Ser Leu Pro Gln Lys Ser His Gly Arg Thr Gln Asp Glu Asn Pro
100 105 110

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Val Val His Phe Phe Lys Asn Ile Val Thr Pro Arg Thr Pro Pro Pro
        115                 120                 125


Ser Gln Gly Lys Gly Arg Gly Leu Ser Leu Ser Arg Phe Ser Trp Gly
    130                 135                 140


Ala Glu Gly Gln Arg Pro Gly Phe Gly Tyr Gly Gly Arg Ala Ser Asp
145                 150                 155                 160


Tyr Lys Ser Ala His Lys Gly Phe Lys Gly Val Asp Ala Gln Gly Thr
                165                 170                 175


Leu Ser Lys Ile Phe Lys Leu Gly Gly Arg Asp Ser Arg Ser Gly Ser
            180                 185                 190


Pro Met Ala Arg Arg His His His His His His
        195                 200


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<400>  2

Gly Ser Lys Tyr Leu Ala Thr Ala Ser Thr Met Asp His Ala Arg His
1               5                   10                  15


Gly Phe Leu Pro Arg His Arg Asp Thr Gly Ile Leu Asp Ser Ile Gly
            20                  25                  30


Arg Phe Phe Gly Gly Asp Arg Gly
        35                  40


<210>  3
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<213>  Homo Sapiens

<400>  3

Lys Tyr Leu Ala Thr Ala Ser Thr Met Asp His Ala Arg His Gly Phe
1               5                   10                  15
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Leu Pro Arg His
            20

<210> 4
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Ala Thr Ala Ser Thr Met Asp His Ala Arg His Gly Phe Leu Pro Arg
1   5   10   15

His Arg Asp Thr Gly Ile Leu
            20

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<400> 5

Arg Asp Thr Gly Ile Leu Asp Ser Ile Gly Arg Phe Phe Gly Gly Asp
1   5   10   15

Arg Gly Ala Pro
            20

<210> 6
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<400> 6

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

Gly Lys Asp Ser His His Pro Ala Arg Thr Ala His Tyr
            20   25

<210> 7
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<400> 7

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

Ala His Tyr

<210> 8
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<400> 8

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

Ser Leu Pro Gln
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<210> 9
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<400> 9

His His Pro Ala Arg Thr Ala His Tyr Gly Ser Leu Pro Gln Lys Ser
1 5 10 15

His Gly Arg

<210> 10
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<213> Homo Sapiens

<400> 10

His Ala Ala Arg Thr Ala His Tyr Gly Ser Leu Pro Gln Lys Ser Gln
1 5 10 15

Gly His Arg

<210> 11
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<400> 11

Ser Leu Pro Gln Lys Ser His Gly Arg Thr Gln Asp Glu Asn Pro Val
1   5   10   15

Val His Phe

<210> 12
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<400> 12

Pro Gln Asp Glu Asn Pro Val Val His Phe Phe Lys Asn Ile Val Thr
1   5   10   15

Pro Arg Thr Pro
            20

<210> 13
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<400> 13

Thr Gln Asp Glu Asn Pro Val Val His Phe Phe Lys Asn Ile Val Thr
1   5   10   15

Pro Arg Thr Pro
            20

<210> 14
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<400> 14

Gln Asp Glu Asn Pro Val Val His Phe Phe Lys Asn Ile Val Thr Pro

1 5 10 15

Arg Thr Pro

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<400> 15

Asp Glu Asn Pro Val Val His Phe Phe Lys Asn Ile Val Thr Pro Arg
1 5 10 15

Thr Pro Pro

<210> 16
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<400> 16

Glu Asn Pro Val Val His Phe Phe Lys Asn Ile Val Thr Pro Arg
1 5 10 15

<210> 17
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<400> 17

Glu Asn Pro Val Val His Phe Phe Lys Asn Ile Val Thr Pro Arg Thr
1 5 10 15

Pro

<210> 18
<211> 14
<212> PRT
<213> Homo Sapiens

<400> 18

Glu Asn Pro Val Val His Phe Phe Lys Asn Ile Val Thr Pro
1   5   10

<210> 19
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<400> 19

Asn Pro Val Val His Phe Phe Lys Asn Ile Val Thr Pro Arg Thr Pro
1   5   10   15

Pro Pro Ser Gln
            20

<210> 20
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<400> 20

Val Val His Phe Phe Lys Asn Ile Val Thr Pro Arg Thr
1   5   10

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<400> 21

Val Val His Phe Phe Lys Asn Ile Val Thr Pro Arg Thr Pro Pro Pro
1   5   10   15

Ser Gln Gly Lys
            20

<210> 22
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<213> Homo Sapiens

<400> 22

Lys Asn Ile Val Thr Pro Arg Thr Pro Pro Pro Ser Gln Gly Lys Gly

1 5 10 15

Arg Gly Leu

<210> 23
<211> 19
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<400> 23

Pro Ser Gln Gly Lys Gly Arg Gly Leu Ser Leu Ser Arg Phe Ser Trp
1 5 10 15

Gly Ala Glu

<210> 24
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<213> Homo Sapiens

<400> 24

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

Gly Gln Arg Pro
20

<210> 25
<211> 19
<212> PRT
<213> Homo Sapiens

<400> 25

Leu Ser Arg Phe Ser Trp Gly Ala Glu Gly Gln Arg Pro Gly Phe Gly
1 5 10 15

Tyr Gly Gly

<210> 26
<211> 19

<212> PRT
<213> Homo Sapiens

<400> 26

Gln Arg Pro Gly Phe Gly Tyr Gly Gly Arg Ala Ser Asp Tyr Lys Ser
1   5   10   15

Ala His Lys

<210> 27
<211> 19
<212> PRT
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<400> 27

Ala Ser Asp Tyr Lys Ser Ala His Lys Gly Phe Lys Gly Val Asp Ala
1   5   10   15

Gln Gly Thr

<210> 28
<211> 19
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<213> Homo Sapiens

<400> 28

Phe Lys Gly Val Asp Ala Gln Gly Thr Leu Ser Lys Ile Phe Lys Leu
1   5   10   15

Gly Gly Arg

<210> 29
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<212> PRT
<213> Homo Sapiens

<400> 29

Val Asp Ala Gln Gly Thr Leu Ser Lys Ile Phe Lys Leu Gly Gly Arg
1   5   10   15

Asp Ser Arg Ser
            20

<210> 30
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<212> PRT
<213> Homo Sapiens

<400> 30

Ser Lys Ile Phe Lys Leu Gly Gly Arg Asp Ser Arg Ser Gly Ser Pro
1   5   10   15

Met Ala Arg Arg
            20

<210> 31
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<400> 31

Met Ala Ser Leu Ser Arg Pro Ser Leu Pro Ser Cys Leu Cys Ser Phe
1   5   10   15

Leu Leu Leu Leu Leu Leu Gln Val Ser Ser Ser Tyr Ala Gly Gln Phe
            20   25   30

Arg Val Ile Gly Pro Arg His Pro Ile Arg Ala Leu Val Gly Asp Glu
        35   40   45

Val Glu Leu Pro Cys Arg Ile Ser Pro Gly Lys Asn Ala Thr Gly Met
    50   55   60

Glu Val Gly Trp Tyr Arg Pro Pro Phe Ser Arg Val Val His Leu Tyr
65   70   75   80

Arg Asn Gly Lys Asp Gln Asp Gly Asp Gln Ala Pro Glu Tyr Arg Gly
                85   90   95

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

```
Arg Ile Arg Asn Val Arg Phe Ser Asp Glu Gly Gly Phe Thr Cys Phe
        115                 120                 125

Phe Arg Asp His Ser Tyr Gln Glu Glu Ala Ala Met Glu Leu Lys Val
    130                 135                 140

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

Val Leu Pro Val Leu Leu Leu Gln Ile Thr Val Gly Leu Val Phe Leu
                165                 170                 175

Cys Leu Gln Tyr Arg Leu Arg Gly Lys Leu Arg Ala Glu Ile Glu Asn
            180                 185                 190

Leu His Arg Thr Phe Asp Pro His Phe Leu Arg Val Pro Cys Trp Lys
        195                 200                 205

Ile Thr Leu Phe Val Ile Val Pro Val Leu Gly Pro Leu Val Ala Leu
    210                 215                 220

Ile Ile Cys Tyr Asn Trp Leu His Arg Arg Leu Ala Gly Gln Phe Leu
225                 230                 235                 240

Glu Glu Leu Arg Asn Pro Phe
                245
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<400> 32

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Met Gly Leu Leu Glu Cys Cys Ala Arg Cys Leu Val Gly Ala Pro Phe
1               5                   10                  15

Ala Ser Leu Val Ala Thr Gly Leu Cys Phe Phe Gly Val Ala Leu Phe
            20                  25                  30

Cys Gly Cys Gly His Glu Ala Leu Thr Gly Thr Glu Lys Leu Ile Glu
        35                  40                  45
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```
Thr Tyr Phe Ser Lys Asn Tyr Gln Asp Tyr Glu Tyr Leu Ile Asn Val
    50                  55                  60

Ile His Ala Phe Gln Tyr Val Ile Tyr Gly Thr Ala Ser Phe Phe Phe
65                  70                  75                  80

Leu Tyr Gly Ala Leu Leu Leu Ala Glu Gly Phe Tyr Thr Thr Gly Ala
                85                  90                  95

Val Arg Gln Ile Phe Gly Asp Tyr Lys Thr Thr Ile Cys Gly Lys Gly
            100                 105                 110

Leu Ser Ala Thr Val Thr Gly Gly Gln Lys Gly Arg Gly Ser Arg Gly
        115                 120                 125

Gln His Gln Ala His Ser Leu Glu Arg Val Cys Thr Cys Leu Gly Lys
    130                 135                 140

Trp Leu Gly His Pro Asp Lys Phe Val Gly Ile Thr Tyr Ala Leu Thr
145                 150                 155                 160

Val Val Trp Leu Leu Val Phe Ala Cys Ser Ala Val Pro Val Tyr Ile
                165                 170                 175

Tyr Phe Asn Thr Trp Thr Thr Cys Gln Ser Ile Ala Phe Pro Ser Lys
            180                 185                 190

Thr Ser Ala Ser Ile Gly Ser Leu Cys Ala Asp Ala Arg Met Tyr Gly
        195                 200                 205

Val Leu Pro Trp Asn Ala Phe Pro Gly Lys Val Cys Gly Ser Asn Leu
    210                 215                 220

Leu Ser Ile Cys Lys Thr Ala Glu Phe Gln Met Thr Phe His Leu Phe
225                 230                 235                 240

Ile Ala Ala Phe Val Gly Ala Ala Ala Thr Leu Val Ser Leu Leu Thr
                245                 250                 255

Phe Met Ile Ala Ala Thr Tyr Asn Phe Ala Val Leu Lys Leu Met Gly
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260 265 270

Arg Gly Thr Lys Phe
275

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<213> Homo Sapiens

<400> 33

Met Ile Phe Leu Thr Ala Leu Pro Leu Phe Trp Ile Met Ile Ser Ala
1 5 10 15

Ser Arg Gly Gly His Trp Gly Ala Trp Met Pro Ser Ser Ile Ser Ala
20 25 30

Phe Glu Gly Thr Cys Val Ser Ile Pro Cys Arg Phe Asp Phe Pro Asp
35 40 45

Glu Leu Arg Pro Ala Val Val His Gly Val Trp Tyr Phe Asn Ser Pro
50 55 60

Tyr Pro Lys Asn Tyr Pro Pro Val Val Phe Lys Ser Arg Thr Gln Val
65 70 75 80

Val His Glu Ser Phe Gln Gly Arg Ser Arg Leu Leu Gly Asp Leu Gly
85 90 95

Leu Arg Asn Cys Thr Leu Leu Leu Ser Asn Val Ser Pro Glu Leu Gly
100 105 110

Gly Lys Tyr Tyr Phe Arg Gly Asp Leu Gly Gly Tyr Asn Gln Tyr Thr
115 120 125

Phe Ser Glu His Ser Val Leu Asp Ile Val Asn Thr Pro Asn Ile Val
130 135 140

Val Pro Pro Glu Val Val Ala Gly Thr Glu Val Glu Val Ser Cys Met
145 150 155 160

```
Val Pro Asp Asn Cys Pro Glu Leu Arg Pro Glu Leu Ser Trp Leu Gly
                165                 170                 175

His Glu Gly Leu Gly Glu Pro Ala Val Leu Gly Arg Leu Arg Glu Asp
            180                 185                 190

Glu Gly Thr Trp Val Gln Val Ser Leu Leu His Phe Val Pro Thr Arg
        195                 200                 205

Glu Ala Asn Gly His Arg Leu Gly Cys Gln Ala Ser Phe Pro Asn Thr
    210                 215                 220

Thr Leu Gln Phe Glu Gly Tyr Ala Ser Met Asp Val Lys Tyr Pro Pro
225                 230                 235                 240

Val Ile Val Glu Met Asn Ser Ser Val Glu Ala Ile Glu Gly Ser His
                245                 250                 255

Val Ser Leu Leu Cys Gly Ala Asp Ser Asn Pro Pro Pro Leu Leu Thr
            260                 265                 270

Trp Met Arg Asp Gly Thr Val Leu Arg Glu Ala Val Ala Glu Ser Leu
        275                 280                 285

Leu Leu Glu Leu Glu Glu Val Thr Pro Ala Glu Asp Gly Val Tyr Ala
    290                 295                 300

Cys Leu Ala Glu Asn Ala Tyr Gly Gln Asp Asn Arg Thr Val Gly Leu
305                 310                 315                 320

Ser Val Met Tyr Ala Pro Trp Lys Pro Thr Val Asn Gly Thr Met Val
                325                 330                 335

Ala Val Glu Gly Glu Thr Val Ser Ile Leu Cys Ser Thr Gln Ser Asn
            340                 345                 350

Pro Asp Pro Ile Leu Thr Ile Phe Lys Glu Lys Gln Ile Leu Ser Thr
        355                 360                 365

Val Ile Tyr Glu Ser Glu Leu Gln Leu Glu Leu Pro Ala Val Ser Pro
    370                 375                 380
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```
Glu Asp Asp Gly Glu Tyr Trp Cys Val Ala Glu Asn Gln Tyr Gly Gln
385                 390                 395                 400

Arg Ala Thr Ala Phe Asn Leu Ser Val Glu Phe Ala Pro Val Leu Leu
                405                 410                 415

Leu Glu Ser His Cys Ala Ala Ala Arg Asp Thr Val Gln Cys Leu Cys
            420                 425                 430

Val Val Lys Ser Asn Pro Glu Pro Ser Val Ala Phe Glu Leu Pro Ser
        435                 440                 445

Arg Asn Val Thr Val Asn Glu Ser Glu Arg Glu Phe Val Tyr Ser Glu
    450                 455                 460

Arg Ser Gly Leu Val Leu Thr Ser Ile Leu Thr Leu Arg Gly Gln Ala
465                 470                 475                 480

Gln Ala Pro Pro Arg Val Ile Cys Thr Ala Arg Asn Leu Tyr Gly Ala
                485                 490                 495

Lys Ser Leu Glu Leu Pro Phe Gln Gly Ala His Arg Leu Met Trp Ala
            500                 505                 510

Lys Ile Gly Pro Val Gly Ala Val Val Ala Phe Ala Ile Leu Ile Ala
        515                 520                 525

Ile Val Cys Tyr Ile Thr Gln Thr Arg Arg Lys Lys Asn Val Thr Glu
    530                 535                 540

Ser Pro Ser Phe Ser Ala Gly Asp Asn Pro Pro Val Leu Phe Ser Ser
545                 550                 555                 560

Asp Phe Arg Ile Ser Gly Ala Pro Glu Lys Tyr Glu Ser Lys Glu Val
                565                 570                 575

Ser Thr Leu Glu Ser His
            580
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<220>
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<400> 34

Thr Tyr Glu Ile Ala Pro Val Phe Val Leu Leu Phe Tyr Val Thr Leu
1 5 10 15

Lys Lys Met Arg
20

<210> 35
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<223> Synthetic

<400> 35

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

Leu Val Ala Thr Gly Leu Cys Phe Phe Gly Val Ala Leu Phe Cys
20 25 30

<210> 36
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<400> 36

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

Phe Gly Val Ala
20

<210> 37
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<223> Synthetic

<400> 37

Phe Gly Val Ala Leu Phe Cys Gly Cys Glu Val Glu Ala Leu Thr Gly
1   5   10   15

Thr Glu Lys Leu Ile Glu Thr Tyr Phe Ser Lys Asn Tyr Gln Asp
            20   25   30

<210> 38
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<400> 38

Leu Phe Cys Gly Cys Gly His Glu Ala Leu Thr Gly Thr Glu Lys Leu
1   5   10   15

Ile Glu Thr Tyr
            20

<210> 39
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<400> 39

Thr Gly Thr Glu Lys Leu Ile Glu Thr Tyr Phe Ser Lys Asn Tyr Gln
1   5   10   15

Asp Tyr Glu Tyr
            20

<210> 40
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<400> 40

Thr Gly Thr Glu Lys Leu Ile Glu Thr Tyr Phe Ser Lys Asn Tyr Gln
1 5 10 15

Asp Tyr Glu Tyr Leu
20

<210> 41
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<400> 41

Tyr Phe Ser Lys Asn Tyr Gln Asp Tyr Glu Tyr Leu Ile Asn Val Ile
1 5 10 15

His Ala Phe Gln Tyr Val Ile Tyr Gly Thr Ala Ser Phe Phe Phe Leu
20 25 30

<210> 42
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<213> Artificial Sequence

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<400> 42

Gly Thr Ala Ser Phe Phe Phe Leu Tyr Gly Ala Leu Leu Leu Ala Tyr
1 5 10 15

Gly Phe Tyr Thr Thr Gly Ala Val Arg Gln Ile Phe Gly Asp Tyr Lys
20 25 30

<210> 43
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 43

Leu Tyr Gly Ala Leu Leu Leu Ala Glu Gly Phe Tyr Thr Thr Gly Ala
1 5 10 15

Val Arg Gln Ile
20

<210> 44
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
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<400> 44

Phe Tyr Tyr Thr Thr Gly Ala Val Arg Gln Ile Phe Gly Asp Tyr Lys
1 5 10 15

Thr Thr Ile Cys Gly
20

<210> 45
<211> 22
<212> PRT
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<220>
<223> Synthetic

<400> 45

Ala Val Arg Gln Ile Phe Gly Asp Tyr Lys Thr Thr Ile Cys Gly Lys
1 5 10 15

Gly Leu Ser Ala Thr Val
20

<210> 46
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 46

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

Ala Thr Val Thr Gly Gly Gln Lys Gly Arg Gly Ser Arg Gly Gln
20 25 30

<210> 47
<211> 20
<212> PRT
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<400> 47

Lys Gly Leu Ser Ala Thr Val Thr Gly Gly Gln Lys Gly Arg Gly Tyr
1 5 10 15

Arg Gly Gln His
20

<210> 48
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<212> PRT
<213> Artificial Sequence

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<400> 48

Gln Lys Gly Arg Gly Ser Arg Gly Gln His Gln Ala His Ser Leu Glu
1 5 10 15

Arg Val Cys His
20

<210> 49
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<212> PRT
<213> Artificial Sequence

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<400> 49

Lys Gly Arg Gly Ser Arg Gly Gln His Gln Ala His Ser Leu Glu Arg
1 5 10 15

Val Cys His Cys Leu Gly Cys Trp Leu Gly His Pro Asp Lys Phe Val
20 25 30

<210> 50
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<212> PRT
<213> Artificial Sequence

<220>
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<400> 50

Leu Gly His Pro Asp Lys Phe Val Gly Ile Thr Tyr Ala Leu Thr Val
1 5 10 15

Val Trp Leu Leu Val Phe Ala Cys Ser Ala Val Pro Val Tyr Ile Tyr
20 25 30

<210> 51
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<212> PRT
<213> Artificial Sequence

<220>
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<400> 51

Ser Ala Val Pro Val Tyr Ile Tyr Phe Asn Thr Trp Thr Thr Cys Gln
1 5 10 15

Ser Ile Ala Ala Pro Cys Lys Thr Ser Ala Ser Ile Gly Thr Leu Cys
20 25 30

<210> 52
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<212> PRT
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<220>
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<400> 52

Ala Val Pro Val Tyr Ile Tyr Phe Asn Thr Trp Thr Thr Cys Gln Ser
1   5   10   15

Ile Ala Phe Pro
            20

<210> 53
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<400> 53

Trp Thr Thr Cys Gln Ser Ile Ala Phe Pro Ser Lys Thr Ser Ala Ser
1   5   10   15

Ile Gly Ser Leu
            20

<210> 54
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<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 54

Ser Ala Ser Ile Gly Thr Leu Cys Ala Asp Ala Arg Met Tyr Gly Val
1   5   10   15

Leu Pro Trp Asn Ala Phe Phe Gly Lys Val Cys Gly Ser Asn Leu Leu
            20   25   30

<210> 55
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<223> Synthetic

<400> 55

Lys Val Cys Gly Ser Asn Leu Leu Ser Ile Cys Lys Thr Ala Glu Phe
1 5 10 15

Gln Met Thr Phe His Leu Phe Ile Ala Ala Phe Val Gly Ala Ala Ala
20 25 30

<210> 56
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<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 56

Ala Ala Phe Val Gly Ala Ala Ala Thr Leu Val Ser Leu Leu Thr Phe
1 5 10 15

Met Ile Ala Ala Thr Tyr Asn Phe Ala Val Leu Lys Leu Met Gly Arg
20 25 30

<210> 57
<211> 20
<212> PRT
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<220>
<223> Synthetic

<400> 57

Met Ile Ala Ala Thr Tyr Asn Phe Ala Val Leu Lys Leu Met Gly Arg
1 5 10 15

Gly Thr Lys Phe
20

<210> 58
<211> 19
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<400> 58

Met Ala Ala Thr Tyr Asn Phe Ala Val Leu Lys Leu Met Gly Arg Phe
1 5 10 15

Thr Lys Phe

<210> 59
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<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 59

Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met
1 5 10 15

Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe
20 25 30

Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu
35 40

<210> 60
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<212> PRT
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<400> 60

Pro Gly Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro
1 5 10 15

Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys
20 25 30

Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Ala His Ala
35 40 45

<210> 61
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<212> PRT
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<220>
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<400> 61

Arg Ser Lys Arg Ser Arg Gly Gly His Ser Asp Tyr Met Asn Met Thr
1 5 10 15

Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro
20 25 30

Pro Arg Asp Phe Ala Ala Tyr Arg Ser
35 40

<210> 62
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<400> 62

Pro Gly Arg Ser Lys Arg Ser Arg Gly Gly His Ser Asp Tyr Met Asn
1 5 10 15

Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr
20 25 30

Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser Ala His Ala
35 40 45

<210> 63
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<400> 63

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

Glu Arg Asn Val Lys Gly Met Phe Glu Val Leu Glu Pro Leu His Ala
20 25 30

Met Met Glu Arg Gly Pro Gln Thr Leu Lys Glu Thr Ser Phe Asn Gln
35 40 45

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

Met Lys Ser Gly Asn Val Lys Asp Leu Leu Gln Ala Trp Asp Leu Tyr
65 70 75 80

Tyr His Val Phe Arg Arg Ile
85

<210> 64
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<400> 64

Gly Ser Ser Ser Gly Ser Ser Ser Gly Ser Ser Ser Gly Ser Ser Ser
1 5 10 15

Glu Met Trp His Glu Gly Leu Glu Glu Ala Ser Arg Leu Tyr Phe Gly
20 25 30

Glu Arg Asn Val Lys Gly Met Phe Glu Val Leu Glu Pro Leu His Ala
35 40 45

```
Met Met Glu Arg Gly Pro Gln Thr Leu Lys Glu Thr Ser Phe Asn Gln
    50                  55                  60

Ala Tyr Gly Arg Asp Leu Met Glu Ala Gln Glu Trp Cys Arg Lys Tyr
65                  70                  75                  80

Met Lys Ser Gly Asn Val Lys Asp Leu Leu Gln Ala Trp Asp Leu Tyr
                85                  90                  95

Tyr His Val Phe Arg Arg Ile Gly Ser Ser Ser Gly Ser Ser Ser Gly
            100                 105                 110

Ser Ser Ser
        115
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<210> 65
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<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 65

```
Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
1               5                   10                  15

Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
            20                  25                  30

Gly Lys Lys Phe Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe
        35                  40                  45

Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
    50                  55                  60

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

Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
                85                  90                  95
```

```
Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu
            100                 105


<210>  66
<211>  135
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  66

Gly Ser Ser Ser Gly Ser Ser Ser Gly Ser Ser Ser Gly Ser Ser Ser
1               5                   10                  15


Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
            20                  25                  30


Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
        35                  40                  45


Gly Lys Lys Phe Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe
    50                  55                  60


Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
65                  70                  75                  80


Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp Tyr
                85                  90                  95


Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
            100                 105                 110


Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Gly Ser Ser Ser Gly
        115                 120                 125


Ser Ser Ser Gly Ser Ser Ser
    130                 135


<210>  67
<211>  112
<212>  PRT
<213>  Artificial Sequence
```

<220>
<223> Synthetic

<400> 67

Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly
1 5 10 15

Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
20 25 30

Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
35 40 45

Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys
50 55 60

Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg
65 70 75 80

Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
85 90 95

Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
100 105 110

<210> 68
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 68

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15

<210> 69
<211> 15
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 69

Gly Gly Gly Gly Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
1 5 10 15

<210> 70
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 70

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1 5 10 15

Gly Gly Gly Ser
20

<210> 71
<211> 2340
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 71
atggtatgct tgaagctccc gggcgggtcc tgcatgaccg ctctcactgt tactcttatg 60

gtccttagtt caccgcttgc cctggcatct gatgagaatc ccgtggttca ttttttaag 120

aacatcgtca caccgcgcac cccacctggg ggaggcggat ctggcggagg cgggagtgga 180

ggctcaggag acacaagacc ccgattcttg tggcagccca aaagggagtg ccatttttc 240

aatgggacgg aacgagttcg cttccttgat cggtactttt acaaccaaga agagagtgta 300

cggttcgact cagatgtcgg cgagttccga gcggttacgg aattggggcg acctgacgcg 360

gagtactgga actcccaaaa ggatattttg gagcaggcac gagcagctgt ggacacctat 420

tgtcgacata attatggtgt ggtggaatcc tttacagttc agcggcgggt gcaacctaaa 480

gtgaccgtgt atccatctaa aacgcaaccc ctccaacacc ataacctcct ggtgtgttcc 540

gtaagcggct tctatcccgg gtcaattgag gtcaggtggt tcctcaacgg tcaggaggag 600

aaggccggaa tggtaagtac tggtcttatc cagaacggag actggacctt ccaaactttg 660

gtaatgttgg aaacggtgcc gcgatccggg gaggtgtata catgccaagt tgaacacccg 720

agtgttacga gccccctgac ggttgagtgg agggcgcggt cagagagcgc acaatctaaa 780

atgctgtcag gagtaggcgg atttgtactc ggactcctct ttttgggcgc tgggttgttt 840

atctacttta gaaaccaaac aagtagagta aagttttccc gaagtgcgga cgctcccgcg 900

tatcagcaag gtcaaaacca gctttacaac gaactgaact tgggacgacg cgaagagtac 960

gatgttcttg ataagcggag agggcgcgat cccgaaatgg ggggaaagcc tcggaggaag 1020

aacccacaag aaggccttta taatgaactg cagaaggaca agatggcgga ggcgtattcc 1080

gaaataggca tgaagggtga acggaggaga ggaaagggac atgacggact ttatcaagga 1140

ttgtctaccg caactaaaga cacctatgac gcgttgcaca tgcaggctct ccctccgaga 1200

ggttcgagcg gcagtggaga gggcagagga agtctgctaa catgcggtga cgtcgaggag 1260

aatcctggcc caatggcaat atctggtgtt cctgtcctcg ggtttttttat catagccgta 1320

ctgatgtcag cacaggaatc atgggcgata aaagaagagc acgtgataat acaggcggag 1380

ttttatttga acccggacca gagcggtgag ttcatgttcg attttgatgg cgacgagata 1440

tttcacgttg acatggcaaa aaaggaaacg gtgtggagac ttgaggagtt tggacgattc 1500

gcatcatttg aggcacaagg agcactcgcc aatatcgcgg tggacaaggc caacctggag 1560

atcatgacaa aacgctccaa ttatacgcct atcactaatg tgccccctga ggttactgtg 1620

ctcacaaatt ctcccgtaga acttagggaa cctaacgtcc tcatatgttt catcgacaag 1680

ttcactcctc cggtggtcaa tgtaacgtgg cttcggaatg gtaagccggt caccacgggt 1740

gtctcagaga ccgtatttct gcccagagaa gaccacctct tccgcaaatt tcattacctt 1800

ccctttcttc cttcaacgga agacgtttac gactgcaggg tcgaacattg ggggcttgac 1860

gagccacttc tcaagcattg ggagttcgac gccccatcac cgcttccaga aacgactgaa 1920

aacgttgtct gcgctcttgg cctgacagtg ggcctggtag gcattattat cgggaccatc 1980

tttatcatca aaggtttgac ttcccgggtc aaatttagca gatccgctga cgcaccggcc 2040

taccagcagg gccagaacca actctacaac gagctgaatc tcggccgacg ggaagagtat 2100

gacgtactcg acaagcggag aggtcgagac cctgagatgg gcggtaaacc gagacggaaa 2160

aatccccaag agggtcttta taatgaactc cagaaggata agatggctga agcctattct 2220

gagataggga tgaaaggcga gcggcggagg ggtaagggcc atgatggcct ttaccaggga 2280

ctctccacgg caaccaaaga tacttacgac gcccttcaca tgcaagccct cccgccacgc 2340

<210> 72
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 72

Gly Ser Gly Ser Gly Ser Gly Ser
1 5

<210> 73
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 73

Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu
1 5 10 15

Ser Leu Val Ile Thr
20

<210> 74
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 74

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

Ile Ile Thr Leu Ile
20

<210> 75
<211> 267
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 75

```
Gly Val Gln Val Glu Thr Ile Ser Pro Gly Asp Gly Arg Thr Phe Pro
1               5                  10                  15


Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu Asp
            20                  25                  30


Gly Lys Lys Phe Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys Phe
        35                  40                  45


Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val Ala
    50                  55                  60


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


Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala Thr
                85                  90                  95


Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu Glu Ala Ala Ala Arg
            100                 105                 110


Glu Ala Ala Ala Arg Glu Ala Ala Ala Arg Glu Ala Ala Ala Arg Gly
        115                 120                 125


Arg Val Ala Ile Leu Trp His Glu Met Trp His Glu Gly Leu Glu Glu
    130                 135                 140


Ala Ser Arg Leu Tyr Phe Gly Glu Arg Asn Val Lys Gly Met Phe Glu
145                 150                 155                 160


Val Leu Glu Pro Leu His Ala Met Met Glu Arg Gly Pro Gln Thr Leu
                165                 170                 175
```

```
Lys Glu Thr Ser Phe Asn Gln Ala Tyr Gly Arg Asp Leu Met Glu Ala
            180                 185                 190


Gln Glu Trp Cys Arg Lys Tyr Met Lys Ser Gly Asn Val Lys Asp Leu
        195                 200                 205


Leu Gln Ala Trp Asp Leu Tyr Tyr His Val Phe Arg Arg Ile Thr Thr
    210                 215                 220


Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln
225                 230                 235                 240


Pro Leu Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala
                245                 250                 255


Val His Thr Arg Gly Leu Asp Phe Ala Cys Asp
            260                 265
```

<210> 76
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 76

```
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1               5                   10                  15


Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
            20                  25                  30


Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        35                  40                  45
```

<210> 77
<211> 13
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 77

Leu Arg Trp Glu Pro Pro Pro Ser Thr Val Ser Asn Met
1 5 10

<210> 78
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 78

Leu Arg Trp Glu Pro Ser Ser Gln Pro Thr Ile Pro Ile
1 5 10

<210> 79
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 79

Leu Arg Trp Glu Leu Ser Ser Gln Pro Thr Ile Pro Ile
1 5 10

<210> 80
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 80

Gln Thr Thr Pro Gly Glu Arg Ser Ser Leu Pro Ala Phe Tyr Pro Gly
1 5 10 15

Thr Ser Gly Ser Cys Ser Gly Cys Gly Ser Leu Ser Leu Pro
20 25 30

<210> 81
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 81

Gly Ser Ser Ser Gly Ser Ser Ser Gly Ser Ser Ser Gly Ser Ser Ser
1 5 10 15

Gln Thr Thr Pro Gly Glu Arg Ser Ser Leu Pro Ala Phe Tyr Pro Gly
20 25 30

Thr Ser Gly Ser Cys Ser Gly Cys Gly Ser Leu Ser Leu Pro
35 40 45

<210> 82
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 82

Leu Arg Pro Val Gln Ala Gln Ala Gln Ser Asp Cys Ser Cys Ser Thr
1 5 10 15

Val Ser Pro

<210> 83
<211> 35
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 83

Gly Ser Ser Ser Gly Ser Ser Ser Gly Ser Ser Ser Gly Ser Ser Ser
1 5 10 15

Leu Arg Pro Val Gln Ala Gln Ala Gln Ser Asp Cys Ser Cys Ser Thr
            20   25   30

Val Ser Pro
        35

<210> 84
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 84

Gly Leu Ala Val Ser Thr Ile Ser Ser Phe Phe Pro Pro Gly Tyr Gln
1   5   10   15

<210> 85
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 85

Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala
1   5   10   15

Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly
            20   25   30

Gly Ala Val His Thr Arg Gly Leu Asp Phe Ala Cys Asp
        35   40   45

<210> 86
<211> 231
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 86

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

Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
            20                  25                  30

Asp Thr Leu Met Ile Ala Arg Thr Pro Glu Val Thr Cys Val Val Val
        35                  40                  45

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp
    50                  55                  60

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr
65                  70                  75                  80

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
                85                  90                  95

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu
            100                 105                 110

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
        115                 120                 125

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys
    130                 135                 140

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
145                 150                 155                 160

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
                165                 170                 175

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

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

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
    210                 215                 220
```

Leu Ser Leu Ser Pro Gly Lys
225 230

<210> 87
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 87

Glu Phe Asp Ala Pro Ser Pro Leu Pro Glu Thr Thr Glu
1 5 10

<210> 88
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 88

Val Glu Trp Arg Ala Arg Ser Glu Ser Ala Gln Ser Lys
1 5 10

<210> 89
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 89

Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu
1 5 10 15

Ser Leu Val Ile Thr Leu Tyr Cys
20

<210> 90
<211> 24

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 90

Val Gly Ile Ile Ala Gly Leu Val Leu Phe Gly Ala Val Ile Thr Gly
1   5   10   15

Ala Val Val Ala Ala Val Met Trp
            20

<210> 91
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 91

Val Gly Ile Ile Ala Gly Leu Val Leu Leu Gly Ala Val Ile Thr Gly
1   5   10   15

Ala Val Val Ala Ala Val Met Trp
            20

<210> 92
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 92

Leu Cys Tyr Leu Leu Asp Gly Ile Leu Phe Ile Tyr Gly Val Ile Leu
1   5   10   15

Thr Ala Leu Phe Leu
            20

<210> 93
<211> 21

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 93

Met Leu Ser Gly Val Gly Gly Phe Val Leu Gly Leu Leu Phe Leu Gly
1   5   10   15

Ala Gly Leu Phe Ile
            20

<210> 94
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 94

Met Leu Ser Gly Val Gly Gly Phe Val Leu Gly Leu Leu Phe Leu Gly
1   5   10   15

Ala Gly Leu Phe Ile Tyr Phe Arg Asn Gln
            20   25

<210> 95
<211> 326
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 95

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

Pro Gln Ile Glu Glu Ala Cys Glu Leu Pro Glu Cys Gln Val Asp Ala
            20   25   30

Gly Asn Lys Val Cys Asn Leu Gln Cys Asn Asn His Ala Cys Gly Trp
        35   40   45

```
Asp Gly Gly Asp Cys Ser Leu Asn Phe Asn Asp Pro Trp Lys Asn Cys
    50                  55                  60

Thr Gln Ser Leu Gln Cys Trp Lys Tyr Phe Ser Asp Gly His Cys Asp
65                  70                  75                  80

Ser Gln Cys Asn Ser Ala Gly Cys Leu Phe Asp Gly Phe Asp Cys Gln
                85                  90                  95

Leu Thr Glu Gly Gln Cys Asn Pro Leu Tyr Asp Gln Tyr Cys Lys Asp
            100                 105                 110

His Phe Ser Asp Gly His Cys Asp Gln Gly Cys Asn Ser Ala Glu Cys
        115                 120                 125

Glu Trp Asp Gly Leu Asp Cys Ala Glu His Val Pro Glu Arg Leu Ala
    130                 135                 140

Ala Gly Thr Leu Val Leu Val Val Leu Leu Pro Pro Asp Gln Leu Arg
145                 150                 155                 160

Asn Asn Ser Phe His Phe Leu Arg Glu Leu Ser His Val Leu His Thr
                165                 170                 175

Asn Val Val Phe Lys Arg Asp Ala Gln Gly Gln Gln Met Ile Phe Pro
            180                 185                 190

Tyr Tyr Gly His Glu Glu Glu Leu Arg Lys His Pro Ile Lys Arg Ser
        195                 200                 205

Thr Val Gly Trp Ala Thr Ser Ser Leu Leu Pro Gly Thr Ser Gly Gly
    210                 215                 220

Arg Gln Arg Arg Glu Leu Asp Pro Met Asp Ile Arg Gly Ser Ile Val
225                 230                 235                 240

Tyr Leu Glu Ile Asp Asn Arg Gln Cys Val Gln Ser Ser Ser Gln Cys
                245                 250                 255
```

```
Phe Gln Ser Ala Thr Asp Val Ala Ala Phe Leu Gly Ala Leu Ala Ser
            260                 265                 270

Leu Gly Ser Leu Asn Ile Pro Tyr Lys Ile Glu Ala Val Lys Ser Glu
        275                 280                 285

Pro Val Glu Pro Pro Leu Pro Ser Gln Leu His Leu Met Tyr Val Ala
    290                 295                 300

Ala Ala Ala Phe Val Leu Leu Phe Phe Val Gly Cys Gly Val Leu Leu
305                 310                 315                 320

Ser Arg Lys Arg Arg Arg
                325
```

<210> 96
<211> 363
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 96

```
Pro Cys Val Gly Ser Asn Pro Cys Tyr Asn Gln Gly Thr Cys Glu Pro
1               5                   10                  15

Thr Ser Glu Asn Pro Phe Tyr Arg Cys Leu Cys Pro Ala Lys Phe Asn
            20                  25                  30

Gly Leu Leu Cys His Ile Leu Asp Tyr Ser Phe Thr Gly Gly Ala Gly
        35                  40                  45

Arg Asp Ile Pro Pro Pro Gln Ile Glu Glu Ala Cys Glu Leu Pro Glu
    50                  55                  60

Cys Gln Val Asp Ala Gly Asn Lys Val Cys Asn Leu Gln Cys Asn Asn
65                  70                  75                  80

His Ala Cys Gly Trp Asp Gly Gly Asp Cys Ser Leu Asn Phe Asn Asp
                85                  90                  95
```

```
Pro Trp Lys Asn Cys Thr Gln Ser Leu Gln Cys Trp Lys Tyr Phe Ser
            100                 105                 110

Asp Gly His Cys Asp Ser Gln Cys Asn Ser Ala Gly Cys Leu Phe Asp
        115                 120                 125

Gly Phe Asp Cys Gln Leu Thr Glu Gly Gln Cys Asn Pro Leu Tyr Asp
    130                 135                 140

Gln Tyr Cys Lys Asp His Phe Ser Asp Gly His Cys Asp Gln Gly Cys
145                 150                 155                 160

Asn Ser Ala Glu Cys Glu Trp Asp Gly Leu Asp Cys Ala Glu His Val
                165                 170                 175

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

Pro Asp Gln Leu Arg Asn Asn Ser Phe His Phe Leu Arg Glu Leu Ser
        195                 200                 205

His Val Leu His Thr Asn Val Val Phe Lys Arg Asp Ala Gln Gly Gln
    210                 215                 220

Gln Met Ile Phe Pro Tyr Tyr Gly His Glu Glu Glu Leu Arg Lys His
225                 230                 235                 240

Pro Ile Lys Arg Ser Thr Val Gly Trp Ala Thr Ser Ser Leu Leu Pro
                245                 250                 255

Gly Thr Ser Gly Gly Arg Gln Arg Arg Glu Leu Asp Pro Met Asp Ile
            260                 265                 270

Arg Gly Ser Ile Val Tyr Leu Glu Ile Asp Asn Arg Gln Cys Val Gln
        275                 280                 285

Ser Ser Ser Gln Cys Phe Gln Ser Ala Thr Asp Val Ala Ala Phe Leu
    290                 295                 300

Gly Ala Leu Ala Ser Leu Gly Ser Leu Asn Ile Pro Tyr Lys Ile Glu
305                 310                 315                 320
```

Ala Val Lys Ser Glu Pro Val Glu Pro Pro Leu Pro Ser Gln Leu His
325 330 335

Leu Met Tyr Val Ala Ala Ala Ala Phe Val Leu Leu Phe Phe Val Gly
340 345 350

Cys Gly Val Leu Leu Ser Arg Lys Arg Arg Arg
355 360

<210> 97
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 97

Met Leu Arg Leu Leu Leu Ala Leu Asn Leu Phe Pro Ser Ile Gln Val
1 5 10 15

Thr Gly

<210> 98
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 98

Met Ser Arg Ser Val Ala Leu Ala Val Leu Ala Leu Leu Ser Leu Ser
1 5 10 15

Gly Leu Glu Ala
20

<210> 99
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 99

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

Leu Ala Leu Thr Gln Thr Trp Ala
            20

<210> 100
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 100

Met Ala Ile Ser Gly Val Pro Val Leu Gly Phe Phe Ile Ile Ala Val
1   5   10   15

Leu Met Ser Ala Gln Glu Ser Trp Ala
            20   25

<210> 101
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 101

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

Val Thr Leu Met Val Leu Ser Ser Pro Leu Ala Leu
            20   25

<210> 102
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 102

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

Val Thr Leu Met Val Leu Ser Ser Pro Leu Ala Leu Ala
            20   25

<210> 103
<211> 100
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> MISC_FEATURE
<222> (16)..(100)
<223> may be absent

<400> 103

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1   5   10   15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
            20   25   30

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
        35   40   45

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
    50   55   60

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
65   70   75   80

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
                85   90   95

Gly Gly Gly Ser
100

<210> 104
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 104

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
20 25 30

<210> 105
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 105

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
20 25 30

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
35 40 45

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
50 55 60

<210> 106
<211> 75
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 106

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
20 25 30

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
35 40 45

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
50 55 60

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
65 70 75

<210> 107
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 107

Lys Leu Ile Glu Thr Tyr Phe Ser Lys
1 5

<210> 108
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 108

Leu Leu Phe Gly Tyr Pro Val Tyr Val
1 5

<210> 109
<211> 271

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 109

```
Gly Ser His Ser Met Arg Tyr Phe Phe Thr Ser Val Ser Arg Pro Gly
1               5                   10                  15


Arg Gly Glu Pro Arg Phe Ile Ala Val Gly Tyr Val Asp Asp Thr Gln
            20                  25                  30


Phe Val Arg Phe Asp Ser Asp Ala Ala Ser Gln Arg Met Glu Pro Arg
        35                  40                  45


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


Arg Lys Val Lys Ala His Ser Gln Thr His Arg Val Asp Leu Gly Thr
65                  70                  75                  80


Leu Arg Gly Tyr Tyr Asn Gln Ser Glu Ala Gly Ser His Thr Val Gln
                85                  90                  95


Arg Met Tyr Gly Cys Asp Val Gly Ser Asp Trp Arg Phe Leu Arg Gly
            100                 105                 110


Tyr His Gln Tyr Ala Tyr Asp Gly Lys Asp Tyr Ile Ala Leu Lys Glu
        115                 120                 125


Asp Leu Arg Ser Trp Thr Ala Ala Asp Met Ala Ala Gln Thr Thr Lys
    130                 135                 140


His Lys Trp Glu Ala Ala His Val Ala Glu Gln Leu Arg Ala Tyr Leu
145                 150                 155                 160


Glu Gly Thr Cys Val Glu Trp Leu Arg Arg Tyr Leu Glu Asn Gly Lys
                165                 170                 175


Glu Thr Leu Gln Arg Thr Asp Ala Pro Lys Thr His Met Thr His His
            180                 185                 190
```

Ala Val Ser Asp His Glu Ala Thr Leu Arg Cys Trp Ala Leu Ser Phe
195 200 205

Tyr Pro Ala Glu Ile Thr Leu Thr Trp Gln Arg Asp Gly Glu Asp Gln
210 215 220

Thr Gln Asp Thr Glu Leu Val Glu Thr Arg Pro Ala Gly Asp Gly Thr
225 230 235 240

Phe Gln Lys Trp Ala Ala Val Val Val Pro Ser Gly Gln Glu Gln Arg
245 250 255

Tyr Thr Cys His Val Gln His Glu Gly Leu Pro Lys Pro Leu Thr
260 265 270

<210> 110
<211> 271
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 110

Gly Ser His Ser Met Arg Tyr Phe Phe Thr Ser Val Ser Arg Pro Gly
1 5 10 15

Arg Gly Glu Pro Arg Phe Ile Ala Val Gly Tyr Val Asp Asp Thr Gln
20 25 30

Phe Val Arg Phe Asp Ser Asp Ala Ala Ser Gln Arg Met Glu Pro Arg
35 40 45

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

Arg Asn Val Lys Ala Gln Ser Gln Thr Asp Arg Val Asp Leu Gly Thr
65 70 75 80

Leu Arg Gly Tyr Tyr Asn Gln Ser Glu Ala Gly Ser His Thr Ile Gln
85 90 95

```
Ile Met Tyr Gly Cys Asp Val Gly Ser Asp Gly Arg Phe Leu Arg Gly
            100                 105                 110

Tyr Arg Gln Asp Ala Tyr Asp Gly Lys Asp Tyr Ile Ala Leu Asn Glu
        115                 120                 125

Asp Leu Arg Ser Trp Thr Ala Ala Asp Met Ala Ala Gln Ile Thr Lys
    130                 135                 140

Arg Lys Trp Glu Ala Ala His Glu Ala Glu Gln Leu Arg Ala Tyr Leu
145                 150                 155                 160

Asp Gly Thr Cys Val Glu Trp Leu Arg Arg Tyr Leu Glu Asn Gly Lys
                165                 170                 175

Glu Thr Leu Gln Arg Thr Asp Pro Pro Lys Thr His Met Thr His His
            180                 185                 190

Pro Ile Ser Asp His Glu Ala Thr Leu Arg Cys Trp Ala Leu Gly Phe
        195                 200                 205

Tyr Pro Ala Glu Ile Thr Leu Thr Trp Gln Arg Asp Gly Glu Asp Gln
    210                 215                 220

Thr Gln Asp Thr Glu Leu Val Glu Thr Arg Pro Ala Gly Asp Gly Thr
225                 230                 235                 240

Phe Gln Lys Trp Ala Ala Val Val Val Pro Ser Gly Glu Glu Gln Arg
                245                 250                 255

Tyr Thr Cys His Val Gln His Glu Gly Leu Pro Lys Pro Leu Thr
            260                 265                 270
```

<210> 111
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 111

Leu Arg Trp Glu
1

<210> 112
<211> 271
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 112

Gly Ser His Ser Met Arg Tyr Phe Phe Thr Ser Val Ser Arg Pro Gly
1 5 10 15

Arg Gly Glu Pro Arg Phe Ile Ala Val Gly Tyr Val Asp Asp Thr Gln
20 25 30

Phe Val Arg Phe Asp Ser Asp Ala Ala Ser Gln Arg Met Glu Pro Arg
35 40 45

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

Arg Lys Val Lys Ala His Ser Gln Thr His Arg Val Asp Leu Gly Thr
65 70 75 80

Leu Arg Gly Tyr Tyr Asn Gln Ser Glu Ala Gly Ser His Thr Val Gln
85 90 95

Arg Met Tyr Gly Cys Asp Val Gly Ser Asp Trp Arg Phe Leu Arg Gly
100 105 110

Tyr His Gln Tyr Ala Tyr Asp Gly Lys Asp Tyr Ile Ala Leu Lys Glu
115 120 125

Asp Leu Arg Ser Trp Thr Ala Ala Asp Met Ala Ala Gln Thr Thr Lys
130 135 140

His Lys Trp Glu Ala Ala His Val Ala Glu Gln Leu Arg Ala Tyr Leu
145 150 155 160

```
Glu Gly Thr Cys Val Glu Trp Leu Arg Arg Tyr Leu Glu Asn Gly Lys
                165                 170                 175


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


Ser Arg Pro Glu Asp Lys Val Thr Leu Arg Cys Trp Ala Leu Gly Phe
        195                 200                 205


Tyr Pro Ala Asp Ile Thr Leu Thr Trp Gln Leu Asn Gly Glu Glu Leu
    210                 215                 220


Ile Gln Asp Met Glu Leu Val Glu Thr Arg Pro Ala Gly Asp Gly Thr
225                 230                 235                 240


Phe Gln Lys Trp Ala Ser Val Val Val Pro Leu Gly Lys Glu Gln Tyr
                245                 250                 255


Tyr Thr Cys His Val Tyr His Gln Gly Leu Pro Glu Pro Leu Thr
            260                 265                 270


<210>  113
<211>  271
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  113

Gly Ser His Ser Met Arg Tyr Phe Phe Thr Ser Val Ser Arg Pro Gly
1               5                   10                  15


Arg Gly Glu Pro Arg Phe Ile Ala Val Gly Tyr Val Asp Asp Thr Gln
            20                  25                  30


Phe Val Arg Phe Asp Ser Asp Ala Ala Ser Gln Arg Met Glu Pro Arg
        35                  40                  45


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

```
Arg Asn Val Lys Ala Gln Ser Gln Thr Asp Arg Val Asp Leu Gly Thr
65                  70                  75                  80

Leu Arg Gly Tyr Tyr Asn Gln Ser Glu Ala Gly Ser His Thr Ile Gln
                85                  90                  95

Ile Met Tyr Gly Cys Asp Val Gly Ser Asp Gly Arg Phe Leu Arg Gly
            100                 105                 110

Tyr Arg Gln Asp Ala Tyr Asp Gly Lys Asp Tyr Ile Ala Leu Asn Glu
        115                 120                 125

Asp Leu Arg Ser Trp Thr Ala Ala Asp Met Ala Ala Gln Ile Thr Lys
    130                 135                 140

Arg Lys Trp Glu Ala Ala His Glu Ala Glu Gln Leu Arg Ala Tyr Leu
145                 150                 155                 160

Asp Gly Thr Cys Val Glu Trp Leu Arg Arg Tyr Leu Glu Asn Gly Lys
                165                 170                 175

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

Ser Arg Pro Glu Asp Lys Val Thr Leu Arg Cys Trp Ala Leu Gly Phe
        195                 200                 205

Tyr Pro Ala Asp Ile Thr Leu Thr Trp Gln Leu Asn Gly Glu Glu Leu
    210                 215                 220

Ile Gln Asp Met Glu Leu Val Glu Thr Arg Pro Ala Gly Asp Gly Thr
225                 230                 235                 240

Phe Gln Lys Trp Ala Ser Val Val Val Pro Leu Gly Lys Glu Gln Tyr
                245                 250                 255

Tyr Thr Cys His Val Tyr His Gln Gly Leu Pro Glu Pro Leu Thr
            260                 265                 270
```

<210> 114
<211> 99
<212> PRT
<213> Homo Sapiens

<400> 114

Ile Gln Arg Thr Pro Lys Ile Gln Val Tyr Ser Arg His Pro Ala Glu
1 5 10 15

Asn Gly Lys Ser Asn Phe Leu Asn Cys Tyr Val Ser Gly Phe His Pro
20 25 30

Ser Asp Ile Glu Val Asp Leu Leu Lys Asn Gly Glu Arg Ile Glu Lys
35 40 45

Val Glu His Ser Asp Leu Ser Phe Ser Lys Asp Trp Ser Phe Tyr Leu
50 55 60

Leu Tyr Tyr Thr Glu Phe Thr Pro Thr Glu Lys Asp Glu Tyr Ala Cys
65 70 75 80

Arg Val Asn His Val Thr Leu Ser Gln Pro Lys Ile Val Lys Trp Asp
85 90 95

Arg Asp Met

<210> 115
<211> 99
<212> PRT
<213> Musmusculus

<400> 115

Ile Gln Lys Thr Pro Gln Ile Gln Val Tyr Ser Arg His Pro Pro Glu
1 5 10 15

Asn Gly Lys Pro Asn Ile Leu Asn Cys Tyr Val Thr Gln Phe His Pro
20 25 30

Pro His Ile Glu Ile Gln Met Leu Lys Asn Gly Lys Lys Ile Pro Lys
35 40 45

Val Glu Met Ser Asp Met Ser Phe Ser Lys Asp Trp Ser Phe Tyr Ile
50 55 60

Leu Ala His Thr Glu Phe Thr Pro Thr Glu Thr Asp Thr Tyr Ala Cys
65 70 75 80

Arg Val Lys His Ala Ser Met Ala Glu Pro Lys Thr Val Tyr Trp Asp
85 90 95

Arg Asp Met

<210> 116
<211> 149
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 116
agcgctctcg tacagagttg gcattataat acgactcact ataggggaga atcaaaatcg 60

gtgaatgttt tagagctaga aatagcaagt taaaataagg ctagtccgtt atcaacttga 120

aaaagtggca ccgagtcggt gcttttttt 149

<210> 117
<211> 185
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 117

Gly Asp Thr Arg Pro Arg Phe Leu Trp Gln Pro Lys Arg Glu Cys His
1 5 10 15

Phe Phe Asn Gly Thr Glu Arg Val Arg Phe Leu Asp Arg Tyr Phe Tyr
20 25 30

Asn Gln Glu Glu Ser Val Arg Phe Asp Ser Asp Val Gly Glu Phe Arg
35 40 45

```
Ala Val Thr Glu Leu Gly Arg Pro Asp Ala Glu Tyr Trp Asn Ser Gln
    50                  55                  60

Lys Asp Ile Leu Glu Gln Ala Arg Ala Ala Val Asp Thr Tyr Cys Arg
65                  70                  75                  80

His Asn Tyr Gly Val Val Glu Ser Phe Thr Val Gln Arg Arg Val Gln
                85                  90                  95

Pro Lys Val Thr Val Tyr Pro Ser Lys Thr Gln Pro Leu Gln His His
            100                 105                 110

Asn Leu Leu Val Cys Ser Val Ser Gly Phe Tyr Pro Gly Ser Ile Glu
        115                 120                 125

Val Arg Trp Phe Leu Asn Gly Gln Glu Glu Lys Ala Gly Met Val Ser
    130                 135                 140

Thr Gly Leu Ile Gln Asn Gly Asp Trp Thr Phe Gln Thr Leu Val Met
145                 150                 155                 160

Leu Glu Thr Val Pro Arg Ser Gly Glu Val Tyr Thr Cys Gln Val Glu
                165                 170                 175

His Pro Ser Val Thr Ser Pro Leu Thr
            180                 185


<210>  118
<211>  178
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  118

Ile Lys Glu Glu His Val Ile Ile Gln Ala Glu Phe Tyr Leu Asn Pro
1               5                   10                  15

Asp Gln Ser Gly Glu Phe Met Phe Asp Phe Asp Gly Asp Glu Ile Phe
            20                  25                  30
```

```
His Val Asp Met Ala Lys Lys Glu Thr Val Trp Arg Leu Glu Glu Phe
        35                  40                  45

Gly Arg Phe Ala Ser Phe Glu Ala Gln Gly Ala Leu Ala Asn Ile Ala
    50                  55                  60

Val Asp Lys Ala Asn Leu Glu Ile Met Thr Lys Arg Ser Asn Tyr Thr
65                  70                  75                  80

Pro Ile Thr Asn Val Pro Pro Glu Val Thr Val Leu Thr Asn Ser Pro
                85                  90                  95

Val Glu Leu Arg Glu Pro Asn Val Leu Ile Cys Phe Ile Asp Lys Phe
            100                 105                 110

Thr Pro Pro Val Val Asn Val Thr Trp Leu Arg Asn Gly Lys Pro Val
        115                 120                 125

Thr Thr Gly Val Ser Glu Thr Val Phe Leu Pro Arg Glu Asp His Leu
    130                 135                 140

Phe Arg Lys Phe His Tyr Leu Pro Phe Leu Pro Ser Thr Glu Asp Val
145                 150                 155                 160

Tyr Asp Cys Arg Val Glu His Trp Gly Leu Asp Glu Pro Leu Leu Lys
                165                 170                 175

His Trp
```

<210> 119
<211> 185
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 119

```
Ile Lys Glu Glu His Val Ile Ile Gln Ala Glu Ser Tyr Leu Asn Pro
1               5                   10                  15
```

```
Asp Gln Ser Gly Glu Phe Lys Phe Asp Phe Asp Gly Asp Glu Ile Phe
            20                  25                  30

His Val Asp Met Ala Lys Lys Glu Thr Val Trp Arg Leu Glu Glu Phe
        35                  40                  45

Gly Arg Phe Ala Ser Phe Glu Ala Gln Gly Ala Leu Ala Asn Ile Ala
    50                  55                  60

Val Asp Lys Ala Asn Leu Glu Ile Met Thr Lys Arg Ser Asn Tyr Thr
65                  70                  75                  80

Pro Ile Glu Glu Thr Glu Val Pro Thr Ser Leu Arg Arg Leu Glu Gln
                85                  90                  95

Pro Asn Val Ala Ile Ser Leu Ser Arg Thr Glu Ala Leu Asn His His
            100                 105                 110

Asn Thr Leu Val Cys Ser Val Thr Asp Phe Tyr Pro Ala Lys Ile Lys
        115                 120                 125

Val Arg Trp Phe Arg Asn Gly Gln Glu Glu Thr Val Gly Val Ser Ser
    130                 135                 140

Thr Gln Leu Ile Arg Asn Gly Asp Trp Thr Phe Gln Val Leu Val Met
145                 150                 155                 160

Leu Glu Met Thr Pro His Gln Gly Glu Val Tyr Thr Cys His Val Glu
                165                 170                 175

His Pro Ser Leu Lys Ser Pro Ile Thr
            180                 185
```

<210> 120
<211> 183
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 120

```
Ile Lys Glu Glu His Val Ile Ile Gln Ala Glu Ser Tyr Leu Asn Pro
1               5                   10                  15

Asp Gln Ser Gly Glu Phe Lys Phe Asp Phe Asp Gly Asp Glu Ile Phe
            20                  25                  30

His Val Asp Met Ala Lys Lys Glu Thr Val Trp Arg Leu Glu Glu Phe
        35                  40                  45

Gly Arg Phe Ala Ser Phe Glu Ala Gln Gly Ala Leu Ala Asn Ile Ala
    50                  55                  60

Val Asp Lys Ala Asn Leu Glu Ile Met Thr Lys Arg Ser Asn Tyr Thr
65                  70                  75                  80

Pro Ile Ala Thr Asn Glu Ala Pro Gln Ala Thr Val Phe Pro Lys Ser
                85                  90                  95

Pro Val Leu Leu Gly Gln Pro His Thr Leu Ile Cys Phe Val Asp Asn
            100                 105                 110

Ile Phe Pro Pro Val Ile Asn Ile Thr Trp Leu Arg Asn Ser Lys Ser
        115                 120                 125

Val Thr Asp Gly Val Tyr Glu Thr Ser Phe Leu Val Asn Arg Asp His
    130                 135                 140

Ser Phe His Lys Leu Ser Tyr Leu Thr Phe Ile Pro Ser Asp Asp Asp
145                 150                 155                 160

Ile Tyr Asp Cys Lys Val Glu His Trp Gly Leu Glu Glu Pro Val Leu
                165                 170                 175

Lys His Trp Glu Pro Glu Ile
            180
```

<210> 121
<211> 90
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 121

Arg Pro Arg Phe Leu Trp Gln Ser Lys Arg Glu Cys His Phe Phe Asn
1 5 10 15

Gly Thr Glu Arg Val Arg Phe Leu Asp Arg Tyr Phe Tyr Asn Gln Glu
20 25 30

Glu Ser Val Arg Phe Asp Ser Asp Val Gly Glu Phe Arg Ala Val Thr
35 40 45

Glu Leu Gly Arg Pro Asp Ala Glu Tyr Trp Asn Ser Gln Lys Asp Ile
50 55 60

Leu Glu Gln Ala Arg Ala Ala Val Asp Thr Tyr Cys Arg His Asn Tyr
65 70 75 80

Gly Val Val Glu Ser Phe Thr Val Gln Arg
85 90

<210> 122
<211> 82
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 122

Ile Lys Glu Glu His Val Ile Ile Gln Ala Glu Ser Tyr Leu Asn Pro
1 5 10 15

Asp Gln Ser Gly Glu Phe Lys Phe Asp Phe Asp Gly Asp Glu Ile Phe
20 25 30

His Val Asp Met Ala Lys Lys Glu Thr Val Trp Arg Leu Glu Glu Phe
35 40 45

Gly Arg Phe Ala Ser Phe Glu Ala Gln Gly Ala Leu Ala Asn Ile Ala
50 55 60

Val Asp Lys Ala Asn Leu Glu Ile Met Thr Lys Arg Ser Asn Tyr Thr
65 70 75 80

Pro Ile

<210> 123
<211> 272
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 123

Met Glu Thr Leu Leu Gly Val Ser Leu Val Ile Leu Trp Leu Gln Leu
1 5 10 15

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

Ile Gln Glu Gly Glu Asn Ala Thr Met Asn Cys Ser Tyr Lys Thr Ser
35 40 45

Ile Asn Asn Leu Gln Trp Tyr Arg Gln Asn Ser Gly Arg Gly Leu Val
50 55 60

His Leu Ile Leu Ile Arg Ser Asn Glu Arg Glu Lys His Ser Gly Arg
65 70 75 80

Leu Arg Val Thr Leu Asp Thr Ser Lys Lys Ser Ser Ser Leu Leu Ile
85 90 95

Thr Ala Ser Arg Ala Ala Asp Thr Ala Ser Tyr Phe Cys Ala Thr Ala
100 105 110

Ala Val Gly Gly Phe Lys Thr Ile Phe Gly Ala Gly Thr Arg Leu Phe
115 120 125

Val Lys Ala Asn Ile Gln Asn Pro Asp Pro Ala Val Tyr Gln Leu Arg
130 135 140

```
Asp Ser Lys Ser Ser Asp Lys Ser Val Cys Leu Phe Thr Asp Phe Asp
145                 150                 155                 160


Ser Gln Thr Asn Val Ser Gln Ser Lys Asp Ser Asp Val Tyr Ile Thr
                165                 170                 175


Asp Lys Thr Val Leu Asp Met Arg Ser Met Asp Phe Lys Ser Asn Ser
            180                 185                 190


Ala Val Ala Trp Ser Asn Lys Ser Asp Phe Ala Cys Ala Asn Ala Phe
        195                 200                 205


Asn Asn Ser Ile Ile Pro Glu Asp Thr Phe Phe Pro Ser Pro Glu Ser
    210                 215                 220


Ser Cys Asp Val Lys Leu Val Glu Lys Ser Phe Glu Thr Asp Thr Asn
225                 230                 235                 240


Leu Asn Phe Gln Asn Leu Ser Val Ile Gly Phe Arg Ile Leu Leu Leu
                245                 250                 255


Lys Val Ala Gly Phe Asn Leu Leu Met Thr Leu Arg Leu Trp Ser Ser
            260                 265                 270


<210>  124
<211>  312
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  124

Met Leu Leu Leu Leu Leu Leu Leu Gly Leu Ala Gly Ser Gly Leu Gly
1               5                   10                  15


Ala Val Val Ser Gln His Pro Ser Trp Val Ile Ser Lys Ser Gly Thr
            20                  25                  30


Ser Val Lys Ile Glu Cys Arg Ser Leu Asp Phe Gln Ala Thr Thr Met
        35                  40                  45
```

```
Phe Trp Tyr Arg Gln Phe Pro Lys Gln Ser Leu Met Leu Met Ala Thr
    50                  55                  60

Ser Asn Glu Gly Ser Lys Ala Thr Tyr Glu Gln Gly Val Glu Lys Asp
65                  70                  75                  80

Lys Phe Leu Ile Asn His Ala Ser Leu Thr Leu Ser Thr Leu Thr Val
                85                  90                  95

Thr Ser Ala His Pro Glu Asp Ser Ser Phe Tyr Ile Cys Ser Ala Arg
            100                 105                 110

Asp Leu Thr Ser Gly Ala Asn Asn Glu Gln Phe Phe Gly Pro Gly Thr
        115                 120                 125

Arg Leu Thr Val Leu Glu Asp Leu Lys Asn Val Phe Pro Pro Glu Val
    130                 135                 140

Ala Val Phe Glu Pro Ser Glu Ala Glu Ile Ser His Thr Gln Lys Ala
145                 150                 155                 160

Thr Leu Val Cys Leu Ala Thr Gly Phe Tyr Pro Asp His Val Glu Leu
                165                 170                 175

Ser Trp Trp Val Asn Gly Lys Glu Val His Ser Gly Val Ser Thr Asp
            180                 185                 190

Pro Gln Pro Leu Lys Glu Gln Pro Ala Leu Asn Asp Ser Arg Tyr Ser
        195                 200                 205

Leu Ser Ser Arg Leu Arg Val Ser Ala Thr Phe Trp Gln Asn Pro Arg
    210                 215                 220

Asn His Phe Arg Cys Gln Val Gln Phe Tyr Gly Leu Ser Glu Asn Asp
225                 230                 235                 240

Glu Trp Thr Gln Asp Arg Ala Lys Pro Val Thr Gln Ile Val Ser Ala
                245                 250                 255

Glu Ala Trp Gly Arg Ala Asp Cys Gly Phe Thr Ser Glu Ser Tyr Gln
            260                 265                 270
```

Gln Gly Val Leu Ser Ala Thr Ile Leu Tyr Glu Ile Leu Leu Gly Lys
        275   280   285

Ala Thr Leu Tyr Ala Val Leu Val Ser Ala Leu Val Leu Met Ala Met
    290   295   300

Val Lys Arg Lys Asp Ser Arg Gly
305   310

<210> 125
<211> 278
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 125

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

Asp Trp Val Asn Ser Gln Gln Lys Asn Asp Asp Gln Gln Val Lys Gln
            20   25   30

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

Cys Asp Tyr Thr Asn Ser Met Phe Asp Tyr Phe Leu Trp Tyr Lys Lys
    50   55   60

Tyr Pro Ala Glu Gly Pro Thr Phe Leu Ile Ser Ile Ser Ser Ile Lys
65   70   75   80

Asp Lys Asn Ala Asp Gly Arg Phe Thr Val Phe Leu Asn Lys Ser Ala
                85   90   95

Lys His Leu Ser Leu His Ile Val Pro Ser Gln Pro Gly Asp Ser Ala
            100   105   110

Val Tyr Phe Cys Ala Ala Met Glu Gly Ala Gln Lys Leu Val Phe Gly
        115   120   125

```
Gln Gly Thr Arg Leu Thr Ile Asn Pro Asn Ile Gln Asn Pro Asp Pro
    130                 135                 140

Ala Val Tyr Gln Leu Arg Asp Ser Lys Ser Ser Asp Lys Ser Val Cys
145                 150                 155                 160

Leu Phe Thr Asp Phe Asp Ser Gln Thr Asn Val Ser Gln Ser Lys Asp
                165                 170                 175

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

Asp Phe Lys Ser Asn Ser Ala Val Ala Trp Ser Asn Lys Ser Asp Phe
        195                 200                 205

Ala Cys Ala Asn Ala Phe Asn Asn Ser Ile Ile Pro Glu Asp Thr Phe
    210                 215                 220

Phe Pro Ser Pro Glu Ser Ser Cys Asp Val Lys Leu Val Glu Lys Ser
225                 230                 235                 240

Phe Glu Thr Asp Thr Asn Leu Asn Phe Gln Asn Leu Ser Val Ile Gly
                245                 250                 255

Phe Arg Ile Leu Leu Leu Lys Val Ala Gly Phe Asn Leu Leu Met Thr
            260                 265                 270

Leu Arg Leu Trp Ser Ser
        275
```

<210> 126
<211> 312
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 126

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

```
Gly Pro Val Asn Ala Gly Val Thr Gln Thr Pro Lys Phe Gln Val Leu
            20                  25                  30

Lys Thr Gly Gln Ser Met Thr Leu Gln Cys Ala Gln Asp Met Asn His
        35                  40                  45

Glu Tyr Met Ser Trp Tyr Arg Gln Asp Pro Gly Met Gly Leu Arg Leu
    50                  55                  60

Ile His Tyr Ser Val Gly Ala Gly Ile Thr Asp Gln Gly Glu Val Pro
65                  70                  75                  80

Asn Gly Tyr Asn Val Ser Arg Ser Thr Thr Glu Asp Phe Pro Leu Arg
                85                  90                  95

Leu Leu Ser Ala Ala Pro Ser Gln Thr Ser Val Tyr Phe Cys Ala Ser
            100                 105                 110

Ser Tyr Pro Gly Gly Gly Phe Tyr Glu Gln Tyr Phe Gly Pro Gly Thr
        115                 120                 125

Arg Leu Thr Val Thr Glu Asp Leu Lys Asn Val Phe Pro Pro Glu Val
    130                 135                 140

Ala Val Phe Glu Pro Ser Glu Ala Glu Ile Ser His Thr Gln Lys Ala
145                 150                 155                 160

Thr Leu Val Cys Leu Ala Thr Gly Phe Tyr Pro Asp His Val Glu Leu
                165                 170                 175

Ser Trp Trp Val Asn Gly Lys Glu Val His Ser Gly Val Ser Thr Asp
            180                 185                 190

Pro Gln Pro Leu Lys Glu Gln Pro Ala Leu Asn Asp Ser Arg Tyr Ala
        195                 200                 205

Leu Ser Ser Arg Leu Arg Val Ser Ala Thr Phe Trp Gln Asp Pro Arg
    210                 215                 220
```

```
Asn His Phe Arg Cys Gln Val Gln Phe Tyr Gly Leu Ser Glu Asn Asp
225                 230                 235                 240


Glu Trp Thr Gln Asp Arg Ala Lys Pro Val Thr Gln Ile Val Ser Ala
                245                 250                 255


Glu Ala Trp Gly Arg Ala Asp Cys Gly Phe Thr Ser Glu Ser Tyr Gln
            260                 265                 270


Gln Gly Val Leu Ser Ala Thr Ile Leu Tyr Glu Ile Leu Leu Gly Lys
        275                 280                 285


Ala Thr Leu Tyr Ala Val Leu Val Ser Ala Leu Val Leu Met Ala Met
    290                 295                 300


Val Lys Arg Lys Asp Ser Arg Gly
305                 310
```

<210> 127
<211> 461
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 127

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu
            20                  25                  30


Ile Lys Pro Gly Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr
        35                  40                  45


Thr Phe Thr Ser Tyr Val Met His Trp Val Lys Gln Lys Pro Gly Gln
    50                  55                  60


Gly Leu Glu Trp Ile Gly Tyr Ile Asn Pro Tyr Asn Asp Gly Thr Lys
65                  70                  75                  80
```

```
Tyr Asn Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Ser Asp Lys Ser
                85                  90                  95

Ser Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser
            100                 105                 110

Ala Val Tyr Tyr Cys Ala Arg Gly Thr Tyr Tyr Tyr Gly Ser Arg Val
        115                 120                 125

Phe Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser Gly Gly
    130                 135                 140

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val
145                 150                 155                 160

Met Thr Gln Ala Ala Pro Ser Ile Pro Val Thr Pro Gly Glu Ser Val
                165                 170                 175

Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu Asn Ser Asn Gly Asn
            180                 185                 190

Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile Ser Arg Val Glu
        195                 200                 205

Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His Leu Glu Tyr Pro
    210                 215                 220

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

Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln
                245                 250                 255

Pro Leu Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala
            260                 265                 270

Val His Thr Arg Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala
        275                 280                 285

Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu Ser Leu Val Ile Thr
    290                 295                 300
```

```
Leu Tyr Cys Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln
305                 310                 315                 320

Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser
                325                 330                 335

Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Arg Val Lys
            340                 345                 350

Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln
        355                 360                 365

Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu
    370                 375                 380

Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg
385                 390                 395                 400

Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met
                405                 410                 415

Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly
            420                 425                 430

Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp
        435                 440                 445

Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
    450                 455                 460
```

<210> 128
<211> 495
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 128

```
Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1               5                   10                  15
```

```
Gly Ser Thr Gly Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Ile
            20                  25                  30

Lys Pro Gly Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr
        35                  40                  45

Phe Thr Ser Tyr Val Met His Trp Val Lys Gln Lys Pro Gly Gln Gly
    50                  55                  60

Leu Glu Trp Ile Gly Tyr Ile Asn Pro Tyr Asn Asp Gly Thr Lys Tyr
65                  70                  75                  80

Asn Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Ser Asp Lys Ser Ser
                85                  90                  95

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala
            100                 105                 110

Val Tyr Tyr Cys Ala Arg Gly Thr Tyr Tyr Tyr Gly Ser Arg Val Phe
        115                 120                 125

Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser Gly Gly Gly
    130                 135                 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met
145                 150                 155                 160

Thr Gln Ala Ala Pro Ser Ile Pro Val Thr Pro Gly Glu Ser Val Ser
                165                 170                 175

Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu Asn Ser Asn Gly Asn Thr
            180                 185                 190

Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser Pro Gln Leu Leu
        195                 200                 205

Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro Asp Arg Phe Ser
    210                 215                 220
```

```
Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile Ser Arg Val Glu
225                 230                 235                 240


Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His Leu Glu Tyr Pro
                245                 250                 255


Phe Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ser Asp Pro
            260                 265                 270


Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala
        275                 280                 285


Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly
    290                 295                 300


Gly Ala Val His Thr Arg Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile
305                 310                 315                 320


Trp Ala Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu Ser Leu Val
                325                 330                 335


Ile Thr Leu Tyr Cys Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe
            340                 345                 350


Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly
        355                 360                 365


Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Arg
    370                 375                 380


Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln
385                 390                 395                 400


Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp
                405                 410                 415


Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro
            420                 425                 430


Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp
        435                 440                 445
```

Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg
450 455 460

Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr
465 470 475 480

Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
485 490 495

<210> 129
<211> 432
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 129

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Glu Val Lys Leu Leu Glu Ser Gly Gly Gly Leu
20 25 30

Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe
35 40 45

Asp Phe Ser Arg Tyr Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys
50 55 60

Gly Leu Glu Trp Ile Gly Glu Ile Asn Pro Asp Ser Ser Thr Ile Asn
65 70 75 80

Tyr Thr Pro Ser Leu Lys Asp Lys Phe Ile Ile Ser Arg Asp Asn Ala
85 90 95

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

Ala Leu Tyr Tyr Cys Ala Arg Pro Asp Gly Asn Tyr Trp Tyr Phe Asp
115 120 125

```
Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly
    130                 135                 140

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr
145                 150                 155                 160

Gln Ser His Lys Phe Met Ser Thr Ser Val Gly Asp Arg Val Ser Ile
                165                 170                 175

Thr Cys Lys Ala Ser Gln Asp Val Gly Ile Ala Val Ala Trp Tyr Gln
            180                 185                 190

Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr
        195                 200                 205

Arg His Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr
    210                 215                 220

Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser Glu Asp Leu Ala Asp
225                 230                 235                 240

Tyr Phe Cys Gln Gln Tyr Ser Ser Tyr Pro Tyr Thr Phe Gly Gly Gly
                245                 250                 255

Thr Lys Leu Glu Ile Lys Gly Leu Ala Val Ser Thr Ile Ser Ser Phe
            260                 265                 270

Phe Pro Pro Gly Tyr Gln Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile
        275                 280                 285

Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp
    290                 295                 300

Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu
305                 310                 315                 320

Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly
                325                 330                 335
```

```
Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
            340                 345                 350

Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
        355                 360                 365

Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys
    370                 375                 380

Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg
385                 390                 395                 400

Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
                405                 410                 415

Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
            420                 425                 430
```

<210> 130
<211> 485
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 130

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Glu Val Lys Leu Leu Glu Ser Gly Gly Gly Leu
            20                  25                  30

Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe
        35                  40                  45

Asp Phe Ser Arg Tyr Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys
    50                  55                  60

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

```
Tyr Thr Pro Ser Leu Lys Asp Lys Phe Ile Ile Ser Arg Asp Asn Ala
                85                  90                  95

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

Ala Leu Tyr Tyr Cys Ala Arg Pro Asp Gly Asn Tyr Trp Tyr Phe Asp
        115                 120                 125

Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly
    130                 135                 140

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr
145                 150                 155                 160

Gln Ser His Lys Phe Met Ser Thr Ser Val Gly Asp Arg Val Ser Ile
                165                 170                 175

Thr Cys Lys Ala Ser Gln Asp Val Gly Ile Ala Val Ala Trp Tyr Gln
            180                 185                 190

Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr
        195                 200                 205

Arg His Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr
    210                 215                 220

Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser Glu Asp Leu Ala Asp
225                 230                 235                 240

Tyr Phe Cys Gln Gln Tyr Ser Ser Tyr Pro Tyr Thr Phe Gly Gly Gly
                245                 250                 255

Thr Lys Leu Glu Ile Lys Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr
            260                 265                 270

Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala
        275                 280                 285

Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu Asp Phe
    290                 295                 300
```

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


Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Lys Arg Gly Arg Lys
                325                 330                 335


Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr
            340                 345                 350


Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu
        355                 360                 365


Gly Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro
    370                 375                 380


Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly
385                 390                 395                 400


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


Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr
            420                 425                 430


Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly
        435                 440                 445


Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln
    450                 455                 460


Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln
465                 470                 475                 480


Ala Leu Pro Pro Arg
                485
```

<210> 131
<211> 647
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 131

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15


His Ala Ala Arg Pro Glu Val Lys Leu Leu Glu Ser Gly Gly Gly Leu
            20                  25                  30


Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe
        35                  40                  45


Asp Phe Ser Arg Tyr Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys
    50                  55                  60


Gly Leu Glu Trp Ile Gly Glu Ile Asn Pro Asp Ser Ser Thr Ile Asn
65                  70                  75                  80


Tyr Thr Pro Ser Leu Lys Asp Lys Phe Ile Ile Ser Arg Asp Asn Ala
                85                  90                  95


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


Ala Leu Tyr Tyr Cys Ala Arg Pro Asp Gly Asn Tyr Trp Tyr Phe Asp
        115                 120                 125


Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly
    130                 135                 140


Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr
145                 150                 155                 160


Gln Ser His Lys Phe Met Ser Thr Ser Val Gly Asp Arg Val Ser Ile
                165                 170                 175


Thr Cys Lys Ala Ser Gln Asp Val Gly Ile Ala Val Ala Trp Tyr Gln
            180                 185                 190
```

```
Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr
        195                 200                 205

Arg His Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr
    210                 215                 220

Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser Glu Asp Leu Ala Asp
225                 230                 235                 240

Tyr Phe Cys Gln Gln Tyr Ser Ser Tyr Pro Tyr Thr Phe Gly Gly Gly
                245                 250                 255

Thr Lys Leu Glu Ile Lys Glu Pro Lys Ser Pro Asp Lys Thr His Thr
            260                 265                 270

Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu
        275                 280                 285

Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ala Arg Thr Pro Glu
    290                 295                 300

Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
305                 310                 315                 320

Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
                325                 330                 335

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

Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
        355                 360                 365

Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
    370                 375                 380

Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
385                 390                 395                 400

Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
                405                 410                 415
```

```
Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
            420                 425                 430

Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
        435                 440                 445

Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
    450                 455                 460

Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
465                 470                 475                 480

His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Lys Arg Gly
                485                 490                 495

Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val
            500                 505                 510

Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu
        515                 520                 525

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

Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn
545                 550                 555                 560

Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg
                565                 570                 575

Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly
            580                 585                 590

Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu
        595                 600                 605

Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu
    610                 615                 620
```

Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His
625 630 635 640

Met Gln Ala Leu Pro Pro Arg
645

<210> 132
<211> 433
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 132

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu
20 25 30

Val Arg Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Ser Phe Thr Thr Tyr Trp Met Asn Trp Val Lys Gln Arg Pro Gly Gln
50 55 60

Gly Leu Glu Trp Ile Gly Met Ile His Pro Ser Asp Ser Glu Thr Arg
65 70 75 80

Leu Asn Gln Lys Phe Lys Asp Lys Ala Thr Leu Thr Val Asp Lys Ser
85 90 95

Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Pro Thr Ser Glu Asp Ser
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Ser Thr Met Ile Ala Thr Arg Ala Met
115 120 125

Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly
130 135 140

```
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met
145                 150                 155                 160


Thr Gln Ser Gln Lys Ser Met Ser Thr Ser Val Gly Asp Arg Val Ser
                165                 170                 175


Ile Thr Cys Lys Ala Ser Gln Asp Val Ile Thr Gly Val Ala Trp Tyr
            180                 185                 190


Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Ser Ala Ser
        195                 200                 205


Tyr Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly
    210                 215                 220


Thr Asp Phe Thr Phe Thr Ile Ser Asn Val Gln Ala Glu Asp Leu Ala
225                 230                 235                 240


Val Tyr Tyr Cys Gln Gln His Tyr Ser Thr Pro Leu Thr Phe Gly Ala
                245                 250                 255


Gly Thr Lys Leu Glu Leu Lys Gly Leu Ala Val Ser Thr Ile Ser Ser
            260                 265                 270


Phe Phe Pro Pro Gly Tyr Gln Lys Arg Gly Arg Lys Lys Leu Leu Tyr
        275                 280                 285


Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu
    290                 295                 300


Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu
305                 310                 315                 320


Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln
                325                 330                 335


Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu
            340                 345                 350


Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly
        355                 360                 365
```

```
Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln
    370                 375                 380

Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu
385                 390                 395                 400

Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr
                405                 410                 415

Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro
            420                 425                 430

Arg
```

<210> 133
<211> 486
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 133

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu
            20                  25                  30

Val Arg Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr
        35                  40                  45

Ser Phe Thr Thr Tyr Trp Met Asn Trp Val Lys Gln Arg Pro Gly Gln
    50                  55                  60

Gly Leu Glu Trp Ile Gly Met Ile His Pro Ser Asp Ser Glu Thr Arg
65                  70                  75                  80

Leu Asn Gln Lys Phe Lys Asp Lys Ala Thr Leu Thr Val Asp Lys Ser
                85                  90                  95
```

```
Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Pro Thr Ser Glu Asp Ser
            100                 105                 110

Ala Val Tyr Tyr Cys Ala Arg Ser Thr Met Ile Ala Thr Arg Ala Met
        115                 120                 125

Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly
    130                 135                 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met
145                 150                 155                 160

Thr Gln Ser Gln Lys Ser Met Ser Thr Ser Val Gly Asp Arg Val Ser
                165                 170                 175

Ile Thr Cys Lys Ala Ser Gln Asp Val Ile Thr Gly Val Ala Trp Tyr
            180                 185                 190

Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Ser Ala Ser
        195                 200                 205

Tyr Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly
    210                 215                 220

Thr Asp Phe Thr Phe Thr Ile Ser Asn Val Gln Ala Glu Asp Leu Ala
225                 230                 235                 240

Val Tyr Tyr Cys Gln Gln His Tyr Ser Thr Pro Leu Thr Phe Gly Ala
                245                 250                 255

Gly Thr Lys Leu Glu Leu Lys Thr Thr Thr Pro Ala Pro Arg Pro Pro
            260                 265                 270

Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro Glu
        275                 280                 285

Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu Asp
    290                 295                 300
```

```
Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly
305                 310                 315                 320

Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Lys Arg Gly Arg
                325                 330                 335

Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln
            340                 345                 350

Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu
        355                 360                 365

Glu Gly Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala
    370                 375                 380

Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu
385                 390                 395                 400

Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp
                405                 410                 415

Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu
            420                 425                 430

Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile
        435                 440                 445

Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr
    450                 455                 460

Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met
465                 470                 475                 480

Gln Ala Leu Pro Pro Arg
                485
```

<210> 134
<211> 648
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 134

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15


His Ala Ala Arg Pro Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu
            20                  25                  30


Val Arg Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr
        35                  40                  45


Ser Phe Thr Thr Tyr Trp Met Asn Trp Val Lys Gln Arg Pro Gly Gln
    50                  55                  60


Gly Leu Glu Trp Ile Gly Met Ile His Pro Ser Asp Ser Glu Thr Arg
65                  70                  75                  80


Leu Asn Gln Lys Phe Lys Asp Lys Ala Thr Leu Thr Val Asp Lys Ser
                85                  90                  95


Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Pro Thr Ser Glu Asp Ser
            100                 105                 110


Ala Val Tyr Tyr Cys Ala Arg Ser Thr Met Ile Ala Thr Arg Ala Met
        115                 120                 125


Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly
    130                 135                 140


Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met
145                 150                 155                 160


Thr Gln Ser Gln Lys Ser Met Ser Thr Ser Val Gly Asp Arg Val Ser
                165                 170                 175


Ile Thr Cys Lys Ala Ser Gln Asp Val Ile Thr Gly Val Ala Trp Tyr
            180                 185                 190


Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Ser Ala Ser
        195                 200                 205
```

```
Tyr Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly
    210                 215                 220

Thr Asp Phe Thr Phe Thr Ile Ser Asn Val Gln Ala Glu Asp Leu Ala
225                 230                 235                 240

Val Tyr Tyr Cys Gln Gln His Tyr Ser Thr Pro Leu Thr Phe Gly Ala
                245                 250                 255

Gly Thr Lys Leu Glu Leu Lys Glu Pro Lys Ser Pro Asp Lys Thr His
            260                 265                 270

Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
        275                 280                 285

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ala Arg Thr Pro
    290                 295                 300

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
305                 310                 315                 320

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
                325                 330                 335

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
            340                 345                 350

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
        355                 360                 365

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
    370                 375                 380

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
385                 390                 395                 400

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
                405                 410                 415
```

```
Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
            420                 425                 430

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
        435                 440                 445

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
    450                 455                 460

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
465                 470                 475                 480

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Lys Arg
                485                 490                 495

Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro
            500                 505                 510

Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu
        515                 520                 525

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

Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu
545                 550                 555                 560

Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly
                565                 570                 575

Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu
            580                 585                 590

Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser
        595                 600                 605

Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly
    610                 615                 620

Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu
625                 630                 635                 640
```

His Met Gln Ala Leu Pro Pro Arg
645

<210> 135
<211> 434
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 135

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu
20 25 30

Ala Arg Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Thr Phe Thr Ser Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln
50 55 60

Gly Leu Glu Trp Ile Gly Ala Ile Tyr Pro Gly Asp Gly Asp Thr Arg
65 70 75 80

Tyr Thr Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser
85 90 95

Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Ala Ser Glu Asp Ser
100 105 110

Ala Val Tyr Tyr Cys Ala Arg Gly Lys Val Tyr Tyr Gly Ser Asn Pro
115 120 125

Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala Gly Gly
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln
145 150 155 160

```
Met Thr Gln Ser Ser Ser Tyr Leu Ser Val Ser Leu Gly Gly Arg Val
                165                 170                 175

Thr Ile Thr Cys Lys Ala Ser Asp His Ile Asn Asn Trp Leu Ala Trp
            180                 185                 190

Tyr Gln Gln Lys Pro Gly Asn Ala Pro Arg Leu Leu Ile Ser Gly Ala
        195                 200                 205

Thr Ser Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
    210                 215                 220

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

Ala Thr Tyr Tyr Cys Gln Gln Tyr Trp Ser Thr Pro Trp Thr Phe Gly
                245                 250                 255

Gly Gly Thr Lys Leu Glu Ile Lys Gly Leu Ala Val Ser Thr Ile Ser
            260                 265                 270

Ser Phe Phe Pro Pro Gly Tyr Gln Lys Arg Gly Arg Lys Lys Leu Leu
        275                 280                 285

Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu
    290                 295                 300

Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys
305                 310                 315                 320

Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln
                325                 330                 335

Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu
            340                 345                 350

Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly
        355                 360                 365
```

```
Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu
    370                 375                 380

Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly
385                 390                 395                 400

Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser
                405                 410                 415

Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro
            420                 425                 430

Pro Arg
```

<210> 136
<211> 487
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 136

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

His Ala Ala Arg Pro Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu
            20                  25                  30

Ala Arg Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr
        35                  40                  45

Thr Phe Thr Ser Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln
    50                  55                  60

Gly Leu Glu Trp Ile Gly Ala Ile Tyr Pro Gly Asp Gly Asp Thr Arg
65                  70                  75                  80

Tyr Thr Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser
                85                  90                  95
```

```
Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Ala Ser Glu Asp Ser
            100                 105                 110

Ala Val Tyr Tyr Cys Ala Arg Gly Lys Val Tyr Tyr Gly Ser Asn Pro
        115                 120                 125

Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala Gly Gly
    130                 135                 140

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln
145                 150                 155                 160

Met Thr Gln Ser Ser Ser Tyr Leu Ser Val Ser Leu Gly Gly Arg Val
                165                 170                 175

Thr Ile Thr Cys Lys Ala Ser Asp His Ile Asn Asn Trp Leu Ala Trp
            180                 185                 190

Tyr Gln Gln Lys Pro Gly Asn Ala Pro Arg Leu Leu Ile Ser Gly Ala
        195                 200                 205

Thr Ser Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
    210                 215                 220

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

Ala Thr Tyr Tyr Cys Gln Gln Tyr Trp Ser Thr Pro Trp Thr Phe Gly
                245                 250                 255

Gly Gly Thr Lys Leu Glu Ile Lys Thr Thr Thr Pro Ala Pro Arg Pro
            260                 265                 270

Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro
        275                 280                 285

Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu
    290                 295                 300

Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys
305                 310                 315                 320
```

```
Gly Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Lys Arg Gly
                325                 330                 335

Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val
            340                 345                 350

Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu
        355                 360                 365

Glu Glu Gly Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp
    370                 375                 380

Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn
385                 390                 395                 400

Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg
                405                 410                 415

Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly
            420                 425                 430

Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu
        435                 440                 445

Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu
    450                 455                 460

Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His
465                 470                 475                 480

Met Gln Ala Leu Pro Pro Arg
                485
```

<210> 137
<211> 649
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 137

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

His Ala Ala Arg Pro Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu
            20                  25                  30

Ala Arg Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr
        35                  40                  45

Thr Phe Thr Ser Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln
    50                  55                  60

Gly Leu Glu Trp Ile Gly Ala Ile Tyr Pro Gly Asp Gly Asp Thr Arg
65                  70                  75                  80

Tyr Thr Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser
                85                  90                  95

Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Ala Ser Glu Asp Ser
            100                 105                 110

Ala Val Tyr Tyr Cys Ala Arg Gly Lys Val Tyr Tyr Gly Ser Asn Pro
        115                 120                 125

Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala Gly Gly
    130                 135                 140

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln
145                 150                 155                 160

Met Thr Gln Ser Ser Ser Tyr Leu Ser Val Ser Leu Gly Gly Arg Val
                165                 170                 175

Thr Ile Thr Cys Lys Ala Ser Asp His Ile Asn Asn Trp Leu Ala Trp
            180                 185                 190

Tyr Gln Gln Lys Pro Gly Asn Ala Pro Arg Leu Leu Ile Ser Gly Ala
        195                 200                 205
```

```
Thr Ser Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
    210                 215                 220

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

Ala Thr Tyr Tyr Cys Gln Gln Tyr Trp Ser Thr Pro Trp Thr Phe Gly
                245                 250                 255

Gly Gly Thr Lys Leu Glu Ile Lys Glu Pro Lys Ser Pro Asp Lys Thr
            260                 265                 270

His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
        275                 280                 285

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ala Arg Thr
    290                 295                 300

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
305                 310                 315                 320

Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
                325                 330                 335

Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser
            340                 345                 350

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
        355                 360                 365

Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile
    370                 375                 380

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
385                 390                 395                 400

Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu
                405                 410                 415

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
            420                 425                 430
```

```
Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
        435                 440                 445

Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
    450                 455                 460

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
465                 470                 475                 480

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Lys
                485                 490                 495

Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg
            500                 505                 510

Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro
        515                 520                 525

Glu Glu Glu Glu Gly Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser
    530                 535                 540

Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu
545                 550                 555                 560

Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg
                565                 570                 575

Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln
            580                 585                 590

Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr
        595                 600                 605

Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp
    610                 615                 620

Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala
625                 630                 635                 640
```

Leu His Met Gln Ala Leu Pro Pro Arg
645

<210> 138
<211> 433
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 138

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu
20 25 30

Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Ala Phe Ser Ser Ser Trp Met Asn Trp Val Lys Gln Arg Pro Gly Gln
50 55 60

Gly Leu Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Lys
65 70 75 80

Tyr Asn Gly Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser
85 90 95

Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Val Asp Ser
100 105 110

Ala Val Tyr Phe Cys Ala Arg Ser Thr Met Ile Ala Thr Gly Ala Met
115 120 125

Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly
130 135 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Thr Thr Val
145 150 155 160

```
Thr Gln Ser Pro Ala Ser Leu Ser Met Ala Ile Gly Glu Lys Val Thr
                165                 170                 175

Ile Arg Cys Ile Thr Ser Thr Asp Ile Asp Asp Asp Met Asn Trp Tyr
            180                 185                 190

Gln Gln Lys Pro Gly Glu Pro Pro Lys Leu Leu Ile Ser Glu Gly Asn
        195                 200                 205

Thr Leu Arg Pro Gly Val Pro Ser Arg Phe Ser Ser Ser Gly Tyr Gly
    210                 215                 220

Thr Asp Phe Val Phe Thr Ile Glu Asn Met Leu Ser Glu Asp Val Ala
225                 230                 235                 240

Asp Tyr Tyr Cys Leu Gln Ser Asp Asn Leu Pro Leu Thr Phe Gly Gly
                245                 250                 255

Gly Thr Lys Leu Glu Ile Lys Gly Leu Ala Val Ser Thr Ile Ser Ser
            260                 265                 270

Phe Phe Pro Pro Gly Tyr Gln Lys Arg Gly Arg Lys Lys Leu Leu Tyr
        275                 280                 285

Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu
    290                 295                 300

Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu
305                 310                 315                 320

Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln
                325                 330                 335

Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu
            340                 345                 350

Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly
        355                 360                 365

Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln
    370                 375                 380
```

```
Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu
385                 390                 395                 400


Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr
                405                 410                 415


Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro
            420                 425                 430


Arg
```

<210> 139
<211> 486
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 139

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15


His Ala Ala Arg Pro Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu
            20                  25                  30


Ala Arg Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr
        35                  40                  45


Thr Phe Thr Ser Tyr Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln
    50                  55                  60


Gly Leu Glu Trp Ile Gly Ala Ile Tyr Pro Gly Asp Gly Asp Thr Arg
65                  70                  75                  80


Tyr Thr Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser
                85                  90                  95


Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Ala Ser Glu Asp Ser
            100                 105                 110
```

```
Ala Val Tyr Tyr Cys Ala Arg Gly Lys Val Tyr Tyr Gly Ser Asn Pro
        115                 120                 125

Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala Gly Gly
    130                 135                 140

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln
145                 150                 155                 160

Met Thr Gln Ser Ser Ser Tyr Leu Ser Val Ser Leu Gly Gly Arg Val
                165                 170                 175

Thr Ile Thr Cys Lys Ala Ser Asp His Ile Asn Asn Trp Leu Ala Trp
            180                 185                 190

Tyr Gln Gln Lys Pro Gly Asn Ala Pro Arg Leu Leu Ile Ser Gly Ala
        195                 200                 205

Thr Ser Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
    210                 215                 220

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

Ala Thr Tyr Tyr Cys Gln Gln Tyr Trp Ser Thr Pro Trp Thr Phe Gly
                245                 250                 255

Gly Gly Thr Lys Leu Glu Ile Lys Thr Thr Thr Pro Ala Pro Arg Pro
            260                 265                 270

Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro
        275                 280                 285

Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu
    290                 295                 300

Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys
305                 310                 315                 320
```

```
Gly Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Lys Arg Gly
                325                 330                 335

Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val
            340                 345                 350

Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu
        355                 360                 365

Glu Glu Gly Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp
    370                 375                 380

Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu
385                 390                 395                 400

Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp
                405                 410                 415

Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu
            420                 425                 430

Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile
        435                 440                 445

Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr
    450                 455                 460

Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met
465                 470                 475                 480

Gln Ala Leu Pro Pro Arg
                485
```

<210> 140
<211> 647
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 140

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15

His Ala Ala Arg Pro Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu
            20                  25                  30

Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr
        35                  40                  45

Ala Phe Ser Ser Ser Trp Met Asn Trp Val Lys Gln Arg Pro Gly Gln
    50                  55                  60

Gly Leu Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Lys
65                  70                  75                  80

Tyr Asn Gly Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser
                85                  90                  95

Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Val Asp Ser
            100                 105                 110

Ala Val Tyr Phe Cys Ala Arg Ser Thr Met Ile Ala Thr Gly Ala Met
        115                 120                 125

Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly
    130                 135                 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Thr Thr Val
145                 150                 155                 160

Thr Gln Ser Pro Ala Ser Leu Ser Met Ala Ile Gly Glu Lys Val Thr
                165                 170                 175

Ile Arg Cys Ile Thr Ser Thr Asp Ile Asp Asp Asp Met Asn Trp Tyr
            180                 185                 190

Gln Gln Lys Pro Gly Glu Pro Pro Lys Leu Leu Ile Ser Glu Gly Asn
        195                 200                 205

Thr Leu Arg Pro Gly Val Pro Ser Arg Phe Ser Ser Ser Gly Tyr Gly
    210                 215                 220
```

```
Thr Asp Phe Val Phe Thr Ile Glu Asn Met Leu Ser Glu Asp Val Ala
225                 230                 235                 240


Asp Tyr Tyr Cys Leu Gln Ser Asp Asn Leu Pro Leu Thr Phe Gly Gly
                245                 250                 255


Gly Thr Lys Leu Glu Ile Lys Glu Pro Lys Ser Pro Asp Lys Thr His
            260                 265                 270


Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
        275                 280                 285


Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ala Arg Thr Pro
    290                 295                 300


Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
305                 310                 315                 320


Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
                325                 330                 335


Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
            340                 345                 350


Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
        355                 360                 365


Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
    370                 375                 380


Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
385                 390                 395                 400


Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
                405                 410                 415


Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
            420                 425                 430
```

```
Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
        435                 440                 445

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
    450                 455                 460

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
465                 470                 475                 480

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Lys Arg
                485                 490                 495

Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro
            500                 505                 510

Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu
        515                 520                 525

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

Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu
545                 550                 555                 560

Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly
                565                 570                 575

Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu
            580                 585                 590

Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser
        595                 600                 605

Glu Ile Gly Met Lys Gly Glu Arg Arg Gly Lys Gly His Asp Gly Leu
    610                 615                 620

Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His
625                 630                 635                 640

Met Gln Ala Leu Pro Pro Arg
                645
```

<210> 141
<211> 432
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 141

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                  10                  15


His Ala Ala Arg Pro Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu
            20                  25                  30


Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr
        35                  40                  45


Ala Phe Ser Ser Ser Trp Met Asn Trp Val Lys Gln Arg Pro Gly Gln
    50                  55                  60


Gly Leu Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Lys
65                  70                  75                  80


Tyr Asn Gly Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser
                85                  90                  95


Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Val Asp Ser
            100                 105                 110


Ala Val Tyr Phe Cys Ala Arg Ser Thr Met Ile Ala Thr Gly Ala Met
        115                 120                 125


Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly
    130                 135                 140


Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Asp Ile Val Met Thr
145                 150                 155                 160


Gln Ser His Lys Phe Met Ser Thr Ser Val Gly Asp Arg Val Ser Ile
                165                 170                 175
```

```
Thr Cys Lys Ala Ser Gln Asp Val Ser Thr Ala Val Ala Trp Tyr Gln
            180                 185                 190

Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Ser Ala Ser Tyr
        195                 200                 205

Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr
    210                 215                 220

Asp Phe Thr Phe Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val
225                 230                 235                 240

Tyr Tyr Cys Gln Gln His Tyr Ser Thr Pro Pro Tyr Thr Phe Gly Gly
                245                 250                 255

Gly Thr Lys Leu Glu Ile Lys Gly Leu Ala Val Ser Thr Ile Ser Ser
            260                 265                 270

Phe Phe Pro Pro Gly Tyr Gln Lys Arg Gly Arg Lys Lys Leu Leu Tyr
        275                 280                 285

Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu
    290                 295                 300

Asp Gly Cys Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu
305                 310                 315                 320

Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly
                325                 330                 335

Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
            340                 345                 350

Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
        355                 360                 365

Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys
    370                 375                 380
```

Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg
385 390 395 400

Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
405 410 415

Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
420 425 430

<210> 142
<211> 486
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 142

Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1 5 10 15

His Ala Ala Arg Pro Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu
20 25 30

Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr
35 40 45

Ala Phe Ser Ser Ser Trp Met Asn Trp Val Lys Gln Arg Pro Gly Gln
50 55 60

Gly Leu Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Lys
65 70 75 80

Tyr Asn Gly Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser
85 90 95

Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Val Asp Ser
100 105 110

Ala Val Tyr Phe Cys Ala Arg Ser Thr Met Ile Ala Thr Gly Ala Met
115 120 125

```
Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly
    130                 135                 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met
145                 150                 155                 160

Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly Asp Arg Val Ser
                165                 170                 175

Ile Thr Cys Lys Ala Ser Gln Asp Val Ser Thr Ala Val Ala Trp Tyr
            180                 185                 190

Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Ser Ala Ser
        195                 200                 205

Tyr Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly
    210                 215                 220

Thr Asp Phe Thr Phe Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala
225                 230                 235                 240

Val Tyr Tyr Cys Gln Gln His Tyr Ser Thr Pro Pro Tyr Thr Phe Gly
                245                 250                 255

Gly Gly Thr Lys Leu Glu Ile Lys Thr Thr Thr Pro Ala Pro Arg Pro
            260                 265                 270

Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro
        275                 280                 285

Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu
    290                 295                 300

Asp Phe Ala Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys Gly
305                 310                 315                 320

Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Lys Arg Gly Arg
                325                 330                 335

Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln
            340                 345                 350
```

```
Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu
        355                 360                 365

Glu Gly Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala
    370                 375                 380

Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu
385                 390                 395                 400

Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp
                405                 410                 415

Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu
            420                 425                 430

Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile
        435                 440                 445

Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr
    450                 455                 460

Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met
465                 470                 475                 480

Gln Ala Leu Pro Pro Arg
                485
```

<210> 143
<211> 648
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 143

```
Met Ala Leu Pro Val Thr Ala Leu Leu Leu Pro Leu Ala Leu Leu Leu
1               5                   10                  15

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

```
Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr
        35                  40                  45

Ala Phe Ser Ser Ser Trp Met Asn Trp Val Lys Gln Arg Pro Gly Gln
    50                  55                  60

Gly Leu Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Lys
65                  70                  75                  80

Tyr Asn Gly Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser
                85                  90                  95

Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Val Asp Ser
            100                 105                 110

Ala Val Tyr Phe Cys Ala Arg Ser Thr Met Ile Ala Thr Gly Ala Met
        115                 120                 125

Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Gly Gly Gly
    130                 135                 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met
145                 150                 155                 160

Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly Asp Arg Val Ser
                165                 170                 175

Ile Thr Cys Lys Ala Ser Gln Asp Val Ser Thr Ala Val Ala Trp Tyr
            180                 185                 190

Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Ser Ala Ser
        195                 200                 205

Tyr Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly
    210                 215                 220

Thr Asp Phe Thr Phe Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala
225                 230                 235                 240
```

```
Val Tyr Tyr Cys Gln Gln His Tyr Ser Thr Pro Pro Tyr Thr Phe Gly
                245                 250                 255

Gly Gly Thr Lys Leu Glu Ile Lys Glu Pro Lys Ser Pro Asp Lys Thr
            260                 265                 270

His Thr Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
        275                 280                 285

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ala Arg Thr
    290                 295                 300

Pro Glu Val Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
305                 310                 315                 320

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
                325                 330                 335

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
            340                 345                 350

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
        355                 360                 365

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
    370                 375                 380

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
385                 390                 395                 400

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
                405                 410                 415

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
            420                 425                 430

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
        435                 440                 445

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
    450                 455                 460
```

```
Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
465                 470                 475                 480


Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Lys Arg
                485                 490                 495


Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro
            500                 505                 510


Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu
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Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu
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Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly
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Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu
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Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser
        595                 600                 605


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

Thr Asn Val Ser Pro Ala Lys Pro Thr Thr Thr Ala Cys Pro Tyr Ser
50 55 60

Asn Pro Ser Leu Cys Ser Gly Gly Gly Gly Ser Pro Ala Pro Arg Pro
65 70 75 80

Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro
85 90 95

Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu
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Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys
115 120 125

Gly Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Asn His Arg
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Glu Ser Asn Pro Gly Pro Pro Thr Gly Met Val Cys Leu Lys Leu Pro
            180                 185                 190

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

Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
50 55 60

Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
65 70 75 80

Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr Val Ala Val
85 90 95

Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
100 105 110

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Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
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Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val
145                 150                 155                 160

Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
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Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys
            180                 185                 190

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
        195                 200                 205

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly
    210                 215                 220

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
225                 230                 235                 240

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His
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Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
            260                 265                 270

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
        275                 280                 285

Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
    290                 295                 300

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
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Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
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Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
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Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu
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Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
                405                 410                 415

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala
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Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
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Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys
    450                 455                 460

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
465                 470                 475                 480

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly
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Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
            500                 505                 510

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
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Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
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Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
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Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
            580                 585                 590


Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
        595                 600                 605


Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
    610                 615                 620


Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
625                 630                 635                 640


Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
                645                 650                 655


Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu
            660                 665                 670


Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
        675                 680                 685


Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Arg Pro Ala
    690                 695                 700


Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala Leu Ala
705                 710                 715                 720


Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly Gly Arg
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Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro His Ala Pro Ala Leu
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Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg Thr Ser His Arg Val
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        755                 760                 765

Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys Ser Glu
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Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu Leu Ile
785                 790                 795                 800

Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val
                805                 810                 815

Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly
            820                 825                 830

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

Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn
    850                 855                 860

Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn
865                 870                 875                 880

Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr
                885                 890                 895

Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe
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Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn
        915                 920                 925

Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu
    930                 935                 940

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Tyr Lys Asp Asp Asp Asp Lys Met Ala Pro Lys Lys Lys Arg Lys Val
20 25 30

Gly Ile His Gly Val Pro Ala Ala Val Asp Leu Arg Thr Leu Gly Tyr
35 40 45

Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
50 55 60

Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
65 70 75 80

Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr Val Ala Val
85 90 95

Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
100 105 110

Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
115 120 125

Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu Gln Leu Asp
130 135 140

Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val

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145                 150                 155                 160

Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
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Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys
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Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
        195                 200                 205

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly
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Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
225                 230                 235                 240

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
                245                 250                 255

Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
            260                 265                 270

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
        275                 280                 285

Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
    290                 295                 300

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
305                 310                 315                 320

Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
                325                 330                 335

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
            340                 345                 350

Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val
        355                 360                 365
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Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
    370                 375                 380

Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu
385                 390                 395                 400

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
                405                 410                 415

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala
            420                 425                 430

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
        435                 440                 445

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys
    450                 455                 460

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
465                 470                 475                 480

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly
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Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
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Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His
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Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
    530                 535                 540

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
545                 550                 555                 560

Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
                565                 570                 575

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
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Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
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Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
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Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val
625                 630                 635                 640

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
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Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu
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Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
        675                 680                 685

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Arg Pro Ala
    690                 695                 700

Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala Leu Ala
705                 710                 715                 720

Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly Gly Arg
                725                 730                 735

Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro His Ala Pro Ala Leu
            740                 745                 750

Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg Thr Ser His Arg Val
        755                 760                 765

Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys Ser Glu
    770                 775                 780

Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu Leu Ile
785                 790                 795                 800
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Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val
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Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly
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Gly Ser Arg Lys Pro Asp Gly Ala Ile Tyr Thr Val Gly Ser Pro Ile
        835                 840                 845

Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn
    850                 855                 860

Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn
865                 870                 875                 880

Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr
                885                 890                 895

Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe
            900                 905                 910

Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn
        915                 920                 925

Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu
    930                 935                 940

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Met Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp
1 5 10 15

Tyr Lys Asp Asp Asp Asp Lys Met Ala Pro Lys Lys Lys Arg Lys Val
20 25 30

Gly Ile His Gly Val Pro Ala Ala Val Asp Leu Arg Thr Leu Gly Tyr
35 40 45

Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
50 55 60

Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
65 70 75 80

Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr Val Ala Val
85 90 95

Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
100 105 110

Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
115 120 125

Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu Gln Leu Asp
130 135 140

Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val
145 150 155 160

```
Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
                165                 170                 175

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys
            180                 185                 190

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
        195                 200                 205

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly
    210                 215                 220

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
225                 230                 235                 240

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His
                245                 250                 255

Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
            260                 265                 270

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
        275                 280                 285

Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
    290                 295                 300

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
305                 310                 315                 320

Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
                325                 330                 335

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
            340                 345                 350

Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val
        355                 360                 365
```

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Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
    370                 375                 380

Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu
385                 390                 395                 400

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
                405                 410                 415

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala
            420                 425                 430

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
        435                 440                 445

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys
    450                 455                 460

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
465                 470                 475                 480

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly
                485                 490                 495

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
            500                 505                 510

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
        515                 520                 525

Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
    530                 535                 540

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
545                 550                 555                 560

Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
                565                 570                 575

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
            580                 585                 590
```

```
Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
        595                 600                 605

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
    610                 615                 620

Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val
625                 630                 635                 640

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
                645                 650                 655

Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu
            660                 665                 670

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
        675                 680                 685

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Arg Pro Ala
    690                 695                 700

Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala Leu Ala
705                 710                 715                 720

Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly Gly Arg
                725                 730                 735

Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro His Ala Pro Ala Leu
            740                 745                 750

Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg Thr Ser His Arg Val
        755                 760                 765

Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys Ser Glu
    770                 775                 780

Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu Leu Ile
785                 790                 795                 800
```

```
Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val
                805                 810                 815

Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly
            820                 825                 830

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

Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn
    850                 855                 860

Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn
865                 870                 875                 880

Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr
                885                 890                 895

Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe
            900                 905                 910

Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn
        915                 920                 925

Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu
    930                 935                 940

Met Ile Lys Ala Gly Thr Leu Thr Leu Glu Glu Val Arg Arg Lys Phe
945                 950                 955                 960

Asn Asn Gly Glu Ile Asn Phe Arg Ser
                965
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Met Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp
1               5                  10                  15


Tyr Lys Asp Asp Asp Asp Lys Met Ala Pro Lys Lys Lys Arg Lys Val
            20                  25                  30


Gly Ile His Gly Val Pro Ala Ala Val Asp Leu Arg Thr Leu Gly Tyr
        35                  40                  45


Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
    50                  55                  60


Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
65                  70                  75                  80


Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr Val Ala Val
                85                  90                  95


Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
            100                 105                 110


Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
        115                 120                 125


Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu Gln Leu Asp
    130                 135                 140


Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val
145                 150                 155                 160


Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
                165                 170                 175


Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys
            180                 185                 190
```

```
Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
        195                 200                 205

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly
    210                 215                 220

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
225                 230                 235                 240

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
                245                 250                 255

Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
            260                 265                 270

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
        275                 280                 285

Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
    290                 295                 300

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
305                 310                 315                 320

Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
                325                 330                 335

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
            340                 345                 350

Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val
        355                 360                 365

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
    370                 375                 380

Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu
385                 390                 395                 400

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
                405                 410                 415
```

```
Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala
            420                 425                 430

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
        435                 440                 445

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys
    450                 455                 460

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
465                 470                 475                 480

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly
                485                 490                 495

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
            500                 505                 510

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
        515                 520                 525

Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
    530                 535                 540

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
545                 550                 555                 560

Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
                565                 570                 575

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
            580                 585                 590

Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
        595                 600                 605

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
    610                 615                 620
```

```
Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val
625                 630                 635                 640


Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
                645                 650                 655


Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu
            660                 665                 670


Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
        675                 680                 685


Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Arg Pro Ala
    690                 695                 700


Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala Leu Ala
705                 710                 715                 720


Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly Gly Arg
                725                 730                 735


Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro His Ala Pro Ala Leu
            740                 745                 750


Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg Thr Ser His Arg Val
        755                 760                 765


Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys Ser Glu
    770                 775                 780


Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu Leu Ile
785                 790                 795                 800


Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val
                805                 810                 815


Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly
            820                 825                 830


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

```
Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn
    850                 855                 860

Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn
865                 870                 875                 880

Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr
                885                 890                 895

Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe
            900                 905                 910

Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn
        915                 920                 925

Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu
    930                 935                 940

Met Ile Lys Ala Gly Thr Leu Thr Leu Glu Glu Val Arg Arg Lys Phe
945                 950                 955                 960

Asn Asn Gly Glu Ile Asn Phe Arg Ser
                965
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<210> 362
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<400> 362
ttgactctat tgtctgg 17

<210> 363
<211> 969

<212> PRT
<213> Homo Sapiens

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Met Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp
1               5                  10                  15


Tyr Lys Asp Asp Asp Asp Lys Met Ala Pro Lys Lys Lys Arg Lys Val
            20                  25                  30


Gly Ile His Gly Val Pro Ala Ala Val Asp Leu Arg Thr Leu Gly Tyr
        35                  40                  45


Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
    50                  55                  60


Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
65                  70                  75                  80


Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr Val Ala Val
                85                  90                  95


Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
            100                 105                 110


Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
        115                 120                 125


Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu Gln Leu Asp
    130                 135                 140


Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val
145                 150                 155                 160


Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
                165                 170                 175


Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys
            180                 185                 190


Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
```

```
        195                 200                 205

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly
    210                 215                 220

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
225                 230                 235                 240

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
                245                 250                 255

Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
            260                 265                 270

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
        275                 280                 285

Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
    290                 295                 300

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
305                 310                 315                 320

Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
                325                 330                 335

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
            340                 345                 350

Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
        355                 360                 365

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
    370                 375                 380

Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu
385                 390                 395                 400

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
                405                 410                 415
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```
Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala
            420                 425                 430

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
        435                 440                 445

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys
    450                 455                 460

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
465                 470                 475                 480

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly
                485                 490                 495

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
            500                 505                 510

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
        515                 520                 525

Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
    530                 535                 540

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
545                 550                 555                 560

Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
                565                 570                 575

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
            580                 585                 590

Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
        595                 600                 605

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
    610                 615                 620

Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val
```

```
625                 630                 635                 640

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
                645                 650                 655

Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu
            660                 665                 670

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
        675                 680                 685

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Arg Pro Ala
    690                 695                 700

Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala Leu Ala
705                 710                 715                 720

Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly Gly Arg
                725                 730                 735

Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro His Ala Pro Ala Leu
            740                 745                 750

Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg Thr Ser His Arg Val
        755                 760                 765

Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys Ser Glu
    770                 775                 780

Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu Leu Ile
785                 790                 795                 800

Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val
                805                 810                 815

Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly
            820                 825                 830

Gly Ser Arg Lys Pro Asp Gly Ala Ile Tyr Thr Val Gly Ser Pro Ile
        835                 840                 845
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Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn
    850   855   860

Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn
865   870   875   880

Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr
                885   890   895

Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe
            900   905   910

Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn
        915   920   925

Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu
    930   935   940

Met Ile Lys Ala Gly Thr Leu Thr Leu Glu Glu Val Arg Arg Lys Phe
945   950   955   960

Asn Asn Gly Glu Ile Asn Phe Arg Ser
                965

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<213> Homo Sapiens

<400> 364
cctcttgtca ccataca   17

<210> 365
<211> 969
<212> PRT
<213> Homo Sapiens

<400> 365

Met Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp
1   5   10   15

Tyr Lys Asp Asp Asp Asp Lys Met Ala Pro Lys Lys Lys Arg Lys Val

```
            20                  25                  30

Gly Ile His Gly Val Pro Ala Ala Val Asp Leu Arg Thr Leu Gly Tyr
        35                  40                  45

Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
    50                  55                  60

Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
65                  70                  75                  80

Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr Val Ala Val
                85                  90                  95

Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
            100                 105                 110

Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
        115                 120                 125

Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu Gln Leu Asp
    130                 135                 140

Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val
145                 150                 155                 160

Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
                165                 170                 175

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys
            180                 185                 190

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
        195                 200                 205

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly
    210                 215                 220

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
225                 230                 235                 240
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```
Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
               245                 250                 255

Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
            260                 265                 270

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
        275                 280                 285

Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
    290                 295                 300

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
305                 310                 315                 320

Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
               325                 330                 335

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
            340                 345                 350

Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val
        355                 360                 365

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
    370                 375                 380

Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu
385                 390                 395                 400

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
               405                 410                 415

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala
            420                 425                 430

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
        435                 440                 445

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys
```

```
    450                 455                 460

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
465                 470                 475                 480

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly
                485                 490                 495

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
            500                 505                 510

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
        515                 520                 525

Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
    530                 535                 540

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
545                 550                 555                 560

Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
                565                 570                 575

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
            580                 585                 590

Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
        595                 600                 605

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
    610                 615                 620

Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val
625                 630                 635                 640

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
                645                 650                 655

Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu
            660                 665                 670
```

```
Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
        675                 680                 685

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Arg Pro Ala
    690                 695                 700

Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala Leu Ala
705                 710                 715                 720

Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly Gly Arg
                725                 730                 735

Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro His Ala Pro Ala Leu
            740                 745                 750

Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg Thr Ser His Arg Val
        755                 760                 765

Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys Ser Glu
    770                 775                 780

Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu Leu Ile
785                 790                 795                 800

Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val
                805                 810                 815

Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly
            820                 825                 830

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

Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn
    850                 855                 860

Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn
865                 870                 875                 880

Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr
```

```
               885                 890                 895

Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe
            900                 905                 910

Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn
        915                 920                 925

Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu
    930                 935                 940

Met Ile Lys Ala Gly Thr Leu Thr Leu Glu Glu Val Arg Arg Lys Phe
945                 950                 955                 960

Asn Asn Gly Glu Ile Asn Phe Arg Ser
               965


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<210>  367
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<400>  367
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<210>  368
<211>  1003
<212>  PRT
<213>  Homo Sapiens

<400>  368

Met Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp
1               5                   10                  15

Tyr Lys Asp Asp Asp Asp Lys Met Ala Pro Lys Lys Lys Arg Lys Val
            20                  25                  30
```

```
Gly Ile His Gly Val Pro Ala Ala Val Asp Leu Arg Thr Leu Gly Tyr
        35                  40                  45

Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
    50                  55                  60

Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
65                  70                  75                  80

Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr Val Ala Val
                85                  90                  95

Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
            100                 105                 110

Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
        115                 120                 125

Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu Gln Leu Asp
    130                 135                 140

Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val
145                 150                 155                 160

Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
                165                 170                 175

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys
            180                 185                 190

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
        195                 200                 205

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly
    210                 215                 220

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
225                 230                 235                 240
```

```
Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His
               245                 250                 255

Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
            260                 265                 270

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
        275                 280                 285

Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
    290                 295                 300

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
305                 310                 315                 320

Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
               325                 330                 335

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
            340                 345                 350

Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
        355                 360                 365

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
    370                 375                 380

Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu
385                 390                 395                 400

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
               405                 410                 415

Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala
            420                 425                 430

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
        435                 440                 445

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys
    450                 455                 460
```

```
Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
465                 470                 475                 480


His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly
                485                 490                 495


Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
            500                 505                 510


Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
        515                 520                 525


Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
    530                 535                 540


Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
545                 550                 555                 560


Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
                565                 570                 575


Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
            580                 585                 590


Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
        595                 600                 605


Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
    610                 615                 620


Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val
625                 630                 635                 640


Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
                645                 650                 655


Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu
            660                 665                 670
```

```
Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
        675                 680                 685

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala
    690                 695                 700

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
705                 710                 715                 720

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Arg
                725                 730                 735

Pro Ala Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala
            740                 745                 750

Leu Ala Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly
        755                 760                 765

Gly Arg Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro His Ala Pro
    770                 775                 780

Ala Leu Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg Thr Ser His
785                 790                 795                 800

Arg Val Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys
                805                 810                 815

Ser Glu Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu
            820                 825                 830

Leu Ile Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met
        835                 840                 845

Lys Val Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His
    850                 855                 860

Leu Gly Gly Ser Arg Lys Pro Asp Gly Ala Ile Tyr Thr Val Gly Ser
865                 870                 875                 880

Pro Ile Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly
                885                 890                 895
```

```
Tyr Asn Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu
            900                 905                 910

Glu Asn Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys
        915                 920                 925

Val Tyr Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly
    930                 935                 940

His Phe Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile
945                 950                 955                 960

Thr Asn Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly
                965                 970                 975

Gly Glu Met Ile Lys Ala Gly Thr Leu Thr Leu Glu Glu Val Arg Arg
            980                 985                 990

Lys Phe Asn Asn Gly Glu Ile Asn  Phe Arg Ser
        995                 1000
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<210> 369
<211> 17
<212> DNA
<213> Homo Sapiens

<400> 369
tggagttggg gccccta 17

<210> 370
<211> 969
<212> PRT
<213> Homo Sapiens

<400> 370

```
Met Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp
1               5                   10                  15

Tyr Lys Asp Asp Asp Asp Lys Met Ala Pro Lys Lys Lys Arg Lys Val
            20                  25                  30
```

```
Gly Ile His Gly Val Pro Ala Ala Val Asp Leu Arg Thr Leu Gly Tyr
        35                  40                  45

Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
    50                  55                  60

Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
65                  70                  75                  80

Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr Val Ala Val
                85                  90                  95

Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
            100                 105                 110

Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
        115                 120                 125

Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu Gln Leu Asp
    130                 135                 140

Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val
145                 150                 155                 160

Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
                165                 170                 175

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys
            180                 185                 190

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
        195                 200                 205

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly
    210                 215                 220

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
225                 230                 235                 240

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
                245                 250                 255
```

```
Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
            260                 265                 270

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
        275                 280                 285

Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
    290                 295                 300

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
305                 310                 315                 320

Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
                325                 330                 335

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
            340                 345                 350

Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
        355                 360                 365

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
    370                 375                 380

Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu
385                 390                 395                 400

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
                405                 410                 415

Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala
            420                 425                 430

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
        435                 440                 445

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys
    450                 455                 460
```

```
Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
465                 470                 475                 480


His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly
                485                 490                 495


Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
            500                 505                 510


Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
        515                 520                 525


Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
    530                 535                 540


Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
545                 550                 555                 560


Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
                565                 570                 575


Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
            580                 585                 590


Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
        595                 600                 605


Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
    610                 615                 620


Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
625                 630                 635                 640


Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
                645                 650                 655


Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu
            660                 665                 670


Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
        675                 680                 685
```

```
Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Arg Pro Ala
    690                 695                 700

Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala Leu Ala
705                 710                 715                 720

Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly Gly Arg
                725                 730                 735

Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro His Ala Pro Ala Leu
            740                 745                 750

Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg Thr Ser His Arg Val
        755                 760                 765

Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys Ser Glu
    770                 775                 780

Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu Leu Ile
785                 790                 795                 800

Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val
                805                 810                 815

Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly
            820                 825                 830

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

Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn
    850                 855                 860

Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn
865                 870                 875                 880

Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr
                885                 890                 895
```

Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe
900 905 910

Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn
915 920 925

Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu
930 935 940

Met Ile Lys Ala Gly Thr Leu Thr Leu Glu Glu Val Arg Arg Lys Phe
945 950 955 960

Asn Asn Gly Glu Ile Asn Phe Arg Ser
965

<210> 371
<211> 49
<212> DNA
<213> Homo Sapiens

<400> 371
ttcctcctac tcaccatcag cctcctggtt atggtacagg taagagcaa 49

<210> 372
<211> 17
<212> DNA
<213> Homo Sapiens

<400> 372
ttcctcctac tcaccat 17

<210> 373
<211> 969
<212> PRT
<213> Homo Sapiens

<400> 373

Met Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp
1 5 10 15

Tyr Lys Asp Asp Asp Asp Lys Met Ala Pro Lys Lys Lys Arg Lys Val
20 25 30

Gly Ile His Gly Val Pro Ala Ala Val Asp Leu Arg Thr Leu Gly Tyr

```
        35                  40                  45

Ser Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
    50                  55                  60

Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
65                  70                  75                  80

Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr Val Ala Val
                85                  90                  95

Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
            100                 105                 110

Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
        115                 120                 125

Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu Gln Leu Asp
    130                 135                 140

Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val
145                 150                 155                 160

Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
                165                 170                 175

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys
            180                 185                 190

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
        195                 200                 205

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly
    210                 215                 220

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
225                 230                 235                 240

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His
                245                 250                 255
```

```
Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
            260                 265                 270

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
        275                 280                 285

Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
    290                 295                 300

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
305                 310                 315                 320

Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
                325                 330                 335

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
            340                 345                 350

Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
        355                 360                 365

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
    370                 375                 380

Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu
385                 390                 395                 400

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
                405                 410                 415

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala
            420                 425                 430

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
        435                 440                 445

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys
    450                 455                 460

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
```

```
465                 470                 475                 480

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly
                485                 490                 495

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
            500                 505                 510

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His
        515                 520                 525

Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
    530                 535                 540

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
545                 550                 555                 560

Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
                565                 570                 575

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
            580                 585                 590

Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
        595                 600                 605

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
    610                 615                 620

Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
625                 630                 635                 640

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
                645                 650                 655

Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu
            660                 665                 670

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
        675                 680                 685
```

```
Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Arg Pro Ala
    690                 695                 700

Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala Leu Ala
705                 710                 715                 720

Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly Gly Arg
                725                 730                 735

Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro His Ala Pro Ala Leu
            740                 745                 750

Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg Thr Ser His Arg Val
        755                 760                 765

Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys Ser Glu
    770                 775                 780

Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu Leu Ile
785                 790                 795                 800

Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val
                805                 810                 815

Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly
            820                 825                 830

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

Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn
    850                 855                 860

Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn
865                 870                 875                 880

Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr
                885                 890                 895

Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe
```

900 905 910

Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn
915 920 925

Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu
930 935 940

Met Ile Lys Ala Gly Thr Leu Thr Leu Glu Glu Val Arg Arg Lys Phe
945 950 955 960

Asn Asn Gly Glu Ile Asn Phe Arg Ser
965

<210> 374
<211> 17
<212> DNA
<213> Homo Sapiens

<400> 374
ggtacaggta agagcaa 17

<210> 375
<211> 969
<212> PRT
<213> Homo Sapiens

<400> 375

Met Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp
1 5 10 15

Tyr Lys Asp Asp Asp Asp Lys Met Ala Pro Lys Lys Lys Arg Lys Val
20 25 30

Gly Ile His Gly Val Pro Ala Ala Val Asp Leu Arg Thr Leu Gly Tyr
35 40 45

Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
50 55 60

Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
65 70 75 80

```
Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr Val Ala Val
                85                  90                  95

Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
            100                 105                 110

Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
        115                 120                 125

Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu Gln Leu Asp
    130                 135                 140

Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val
145                 150                 155                 160

Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
                165                 170                 175

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys
            180                 185                 190

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
        195                 200                 205

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly
    210                 215                 220

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
225                 230                 235                 240

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His
                245                 250                 255

Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
            260                 265                 270

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
        275                 280                 285

Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
```

```
    290                 295                 300

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
305                 310                 315                 320

Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
                325                 330                 335

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
            340                 345                 350

Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val
        355                 360                 365

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
    370                 375                 380

Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu
385                 390                 395                 400

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
                405                 410                 415

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala
            420                 425                 430

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
        435                 440                 445

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys
    450                 455                 460

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
465                 470                 475                 480

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly
                485                 490                 495

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
            500                 505                 510
```

```
Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
        515                 520                 525

Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
    530                 535                 540

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
545                 550                 555                 560

Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
                565                 570                 575

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
            580                 585                 590

Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
        595                 600                 605

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
    610                 615                 620

Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val
625                 630                 635                 640

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
                645                 650                 655

Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu
            660                 665                 670

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
        675                 680                 685

Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Arg Pro Ala
    690                 695                 700

Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala Leu Ala
705                 710                 715                 720

Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly Gly Arg
```

```
                725                 730                 735

Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro His Ala Pro Ala Leu
            740                 745                 750

Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg Thr Ser His Arg Val
        755                 760                 765

Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys Ser Glu
    770                 775                 780

Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu Leu Ile
785                 790                 795                 800

Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val
                805                 810                 815

Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly
            820                 825                 830

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

Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn
    850                 855                 860

Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn
865                 870                 875                 880

Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr
                885                 890                 895

Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe
            900                 905                 910

Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn
        915                 920                 925

Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu
    930                 935                 940
```

Met Ile Lys Ala Gly Thr Leu Thr Leu Glu Glu Val Arg Arg Lys Phe
945 950 955 960

Asn Asn Gly Glu Ile Asn Phe Arg Ser
965

<210> 376
<211> 49
<212> DNA
<213> Homo Sapiens

<400> 376
ttgtcccaca gatatccaga accctgaccc tgccgtgtac cagctgaga 49

<210> 377
<211> 17
<212> DNA
<213> Homo Sapiens

<400> 377
ttgtcccaca gatatcc 17

<210> 378
<211> 969
<212> PRT
<213> Homo Sapiens

<400> 378

Met Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp
1 5 10 15

Tyr Lys Asp Asp Asp Asp Lys Met Ala Pro Lys Lys Lys Arg Lys Val
20 25 30

Gly Ile His Gly Val Pro Ala Ala Val Asp Leu Arg Thr Leu Gly Tyr
35 40 45

Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
50 55 60

Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
65 70 75 80

```
Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr Val Ala Val
                85                  90                  95

Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
            100                 105                 110

Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
        115                 120                 125

Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu Gln Leu Asp
    130                 135                 140

Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val
145                 150                 155                 160

Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
                165                 170                 175

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys
            180                 185                 190

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
        195                 200                 205

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly
    210                 215                 220

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
225                 230                 235                 240

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
                245                 250                 255

Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
            260                 265                 270

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
        275                 280                 285

Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
    290                 295                 300
```

```
Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
305                 310                 315                 320

Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
                325                 330                 335

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
            340                 345                 350

Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
        355                 360                 365

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
    370                 375                 380

Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu
385                 390                 395                 400

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
                405                 410                 415

Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala
            420                 425                 430

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
        435                 440                 445

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys
    450                 455                 460

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
465                 470                 475                 480

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly
                485                 490                 495

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
            500                 505                 510
```

```
Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
        515                 520                 525

Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
    530                 535                 540

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
545                 550                 555                 560

Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
                565                 570                 575

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
            580                 585                 590

Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
        595                 600                 605

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
    610                 615                 620

Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val
625                 630                 635                 640

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
                645                 650                 655

Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu
            660                 665                 670

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
        675                 680                 685

Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Arg Pro Ala
    690                 695                 700

Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala Leu Ala
705                 710                 715                 720

Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly Gly Arg
                725                 730                 735
```

```
Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro His Ala Pro Ala Leu
            740                 745                 750

Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg Thr Ser His Arg Val
        755                 760                 765

Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys Ser Glu
    770                 775                 780

Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu Leu Ile
785                 790                 795                 800

Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val
                805                 810                 815

Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly
            820                 825                 830

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

Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn
    850                 855                 860

Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn
865                 870                 875                 880

Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr
                885                 890                 895

Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe
            900                 905                 910

Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn
        915                 920                 925

Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu
    930                 935                 940
```

Met Ile Lys Ala Gly Thr Leu Thr Leu Glu Glu Val Arg Arg Lys Phe
945 950 955 960

Asn Asn Gly Glu Ile Asn Phe Arg Ser
965

<210> 379
<211> 17
<212> DNA
<213> Homo Sapiens

<400> 379
ccgtgtacca gctgaga 17

<210> 380
<211> 969
<212> PRT
<213> Homo Sapiens

<400> 380

Met Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp
1 5 10 15

Tyr Lys Asp Asp Asp Asp Lys Met Ala Pro Lys Lys Lys Arg Lys Val
20 25 30

Gly Ile His Gly Val Pro Ala Ala Val Asp Leu Arg Thr Leu Gly Tyr
35 40 45

Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
50 55 60

Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
65 70 75 80

Ile Val Ala Leu Ser Gln His Pro Ala Ala Leu Gly Thr Val Ala Val
85 90 95

Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
100 105 110

Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
115 120 125

```
Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu Gln Leu Asp
    130                 135                 140

Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val
145                 150                 155                 160

Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
                165                 170                 175

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

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
        195                 200                 205

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly
    210                 215                 220

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
225                 230                 235                 240

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His
                245                 250                 255

Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
            260                 265                 270

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
        275                 280                 285

Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
    290                 295                 300

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
305                 310                 315                 320

Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
                325                 330                 335
```

```
Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
            340                 345                 350

Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
        355                 360                 365

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
    370                 375                 380

Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu
385                 390                 395                 400

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
                405                 410                 415

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala
            420                 425                 430

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
        435                 440                 445

Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys
    450                 455                 460

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
465                 470                 475                 480

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly
                485                 490                 495

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
            500                 505                 510

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
        515                 520                 525

Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
    530                 535                 540

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
545                 550                 555                 560
```

```
Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
               565                 570                 575

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
            580                 585                 590

Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
        595                 600                 605

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
    610                 615                 620

Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
625                 630                 635                 640

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
               645                 650                 655

Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu
            660                 665                 670

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
        675                 680                 685

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Arg Pro Ala
    690                 695                 700

Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala Leu Ala
705                 710                 715                 720

Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly Gly Arg
               725                 730                 735

Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Pro His Ala Pro Ala Leu
            740                 745                 750

Ile Lys Arg Thr Asn Arg Arg Ile Pro Glu Arg Thr Ser His Arg Val
        755                 760                 765
```

```
Ala Gly Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys Ser Glu
    770                 775                 780

Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu Leu Ile
785                 790                 795                 800

Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val
                805                 810                 815

Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly
            820                 825                 830

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

Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn
    850                 855                 860

Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn
865                 870                 875                 880

Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr
                885                 890                 895

Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe
            900                 905                 910

Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn
        915                 920                 925

Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu
    930                 935                 940

Met Ile Lys Ala Gly Thr Leu Thr Leu Glu Glu Val Arg Arg Lys Phe
945                 950                 955                 960

Asn Asn Gly Glu Ile Asn Phe Arg Ser
                965
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<210> 381
<211> 49

<212> DNA
<213> Homo Sapiens

<400> 381
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<210> 382
<211> 936
<212> PRT
<213> Homo Sapiens

<400> 382

Met Gly Asp Pro Lys Lys Lys Arg Lys Val Ile Asp Tyr Pro Tyr Asp
1 5 10 15

Val Pro Asp Tyr Ala Ile Asp Ile Ala Asp Leu Arg Thr Leu Gly Tyr
20 25 30

Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro Lys Val Arg Ser Thr Val
35 40 45

Ala Gln His His Glu Ala Leu Val Gly His Gly Phe Thr His Ala His
50 55 60

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

Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro Glu Ala Thr His Glu Ala
85 90 95

Ile Val Gly Val Gly Lys Gln Trp Ser Gly Ala Arg Ala Leu Glu Ala
100 105 110

Leu Leu Thr Val Ala Gly Glu Leu Arg Gly Pro Pro Leu Gln Leu Asp
115 120 125

Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg Gly Gly Val Thr Ala Val
130 135 140

Glu Ala Val His Ala Trp Arg Asn Ala Leu Thr Gly Ala Pro Leu Asn
145 150 155 160

```
Leu Thr Pro Gln Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys
                165                 170                 175

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
            180                 185                 190

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

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
    210                 215                 220

Gln Ala His Gly Leu Thr Pro Gln Gln Val Val Ala Ile Ala Ser Asn
225                 230                 235                 240

Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
                245                 250                 255

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
            260                 265                 270

Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
        275                 280                 285

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
    290                 295                 300

Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
305                 310                 315                 320

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
                325                 330                 335

Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
            340                 345                 350

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
        355                 360                 365

Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu
    370                 375                 380
```

```
Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
385                 390                 395                 400

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Ile Gly Gly Lys Gln Ala
                405                 410                 415

Leu Glu Thr Val Gln Ala Leu Leu Pro Val Leu Cys Gln Ala His Gly
            420                 425                 430

Leu Thr Pro Gln Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys
        435                 440                 445

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
    450                 455                 460

His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly
465                 470                 475                 480

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
                485                 490                 495

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His
            500                 505                 510

Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val
        515                 520                 525

Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala
    530                 535                 540

Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
545                 550                 555                 560

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Gln Gln Val Val Ala
                565                 570                 575

Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
            580                 585                 590
```

```
Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Gln Gln Val
        595                 600                 605

Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu Thr Val
    610                 615                 620

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu
625                 630                 635                 640

Gln Val Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu
                645                 650                 655

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
            660                 665                 670

Pro Gln Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Arg Pro Ala
        675                 680                 685

Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro Asp Pro Ala Leu Ala
    690                 695                 700

Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala Cys Leu Gly Gly Arg
705                 710                 715                 720

Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Gly Asp Pro Ile Ser Arg
                725                 730                 735

Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys Lys Ser Glu Leu Arg
            740                 745                 750

His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile Glu Leu Ile Glu Ile
        755                 760                 765

Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu Met Lys Val Met Glu
    770                 775                 780

Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys His Leu Gly Gly Ser
785                 790                 795                 800

Arg Lys Pro Asp Gly Ala Ile Tyr Thr Val Gly Ser Pro Ile Asp Tyr
                805                 810                 815
```

```
Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly Gly Tyr Asn Leu Pro
            820                 825                 830

Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val Glu Glu Asn Gln Thr
        835                 840                 845

Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp Lys Val Tyr Pro Ser
    850                 855                 860

Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser Gly His Phe Lys Gly
865                 870                 875                 880

Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His Ile Thr Asn Cys Asn
                885                 890                 895

Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile Gly Gly Glu Met Ile
            900                 905                 910

Lys Ala Gly Thr Leu Thr Leu Glu Glu Val Arg Arg Lys Phe Asn Asn
        915                 920                 925

Gly Glu Ile Asn Phe Ala Ala Asp
    930                 935


<210>  383
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<213>  Homo Sapiens

<400>  383

Met Gly Asp Pro Lys Lys Lys Arg Lys Val Ile Asp Lys Glu Thr Ala
1               5                   10                  15

Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser Ile Asp Ile Ala Asp
            20                  25                  30

Leu Arg Thr Leu Gly Tyr Ser Gln Gln Gln Gln Glu Lys Ile Lys Pro
        35                  40                  45

Lys Val Arg Ser Thr Val Ala Gln His His Glu Ala Leu Val Gly His
```

```
    50                  55                  60

Gly Phe Thr His Ala His Ile Val Ala Leu Ser Gln His Pro Ala Ala
65                  70                  75                  80

Leu Gly Thr Val Ala Val Lys Tyr Gln Asp Met Ile Ala Ala Leu Pro
                85                  90                  95

Glu Ala Thr His Glu Ala Ile Val Gly Val Gly Lys Gln Trp Ser Gly
            100                 105                 110

Ala Arg Ala Leu Glu Ala Leu Leu Thr Val Ala Gly Glu Leu Arg Gly
        115                 120                 125

Pro Pro Leu Gln Leu Asp Thr Gly Gln Leu Leu Lys Ile Ala Lys Arg
    130                 135                 140

Gly Gly Val Thr Ala Val Glu Ala Val His Ala Trp Arg Asn Ala Leu
145                 150                 155                 160

Thr Gly Ala Pro Leu Asn Leu Thr Pro Glu Gln Val Val Ala Ile Ala
                165                 170                 175

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

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Gln Gln Val Val Ala
        195                 200                 205

Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
    210                 215                 220

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val
225                 230                 235                 240

Val Ala Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val
                245                 250                 255

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Gln
            260                 265                 270
```

```
Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu
        275                 280                 285

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
    290                 295                 300

Pro Gln Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala
305                 310                 315                 320

Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly
                325                 330                 335

Leu Thr Pro Gln Gln Val Val Ala Ile Ala Ser Asn Gly Gly Gly Lys
            340                 345                 350

Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala
        355                 360                 365

His Gly Leu Thr Pro Gln Gln Val Val Ala Ile Ala Ser Asn Asn Gly
    370                 375                 380

Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys
385                 390                 395                 400

Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser Asn
                405                 410                 415

Ile Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Ala Leu Leu Pro Val
            420                 425                 430

Leu Cys Gln Ala His Gly Leu Thr Pro Gln Gln Val Val Ala Ile Ala
        435                 440                 445

Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu
    450                 455                 460

Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Glu Gln Val Val Ala
465                 470                 475                 480

Ile Ala Ser His Asp Gly Gly Lys Gln Ala Leu Glu Thr Val Gln Arg
```

```
                485                 490                 495

Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Gln Gln Val
            500                 505                 510

Val Ala Ile Ala Ser Asn Gly Gly Gly Lys Gln Ala Leu Glu Thr Val
        515                 520                 525

Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr Pro Gln
    530                 535                 540

Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln Ala Leu Glu
545                 550                 555                 560

Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu Thr
                565                 570                 575

Pro Glu Gln Val Val Ala Ile Ala Ser Asn Gly Gly Lys Gln Ala Leu
            580                 585                 590

Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His Gly Leu
        595                 600                 605

Thr Pro Gln Gln Val Val Ala Ile Ala Ser Asn Asn Gly Gly Lys Gln
    610                 615                 620

Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln Ala His
625                 630                 635                 640

Gly Leu Thr Pro Glu Gln Val Val Ala Ile Ala Ser His Asp Gly Gly
                645                 650                 655

Lys Gln Ala Leu Glu Thr Val Gln Arg Leu Leu Pro Val Leu Cys Gln
            660                 665                 670

Ala His Gly Leu Thr Pro Gln Gln Val Val Ala Ile Ala Ser Asn Gly
        675                 680                 685

Gly Gly Arg Pro Ala Leu Glu Ser Ile Val Ala Gln Leu Ser Arg Pro
    690                 695                 700
```

```
Asp Pro Ala Leu Ala Ala Leu Thr Asn Asp His Leu Val Ala Leu Ala
705                 710                 715                 720

Cys Leu Gly Gly Arg Pro Ala Leu Asp Ala Val Lys Lys Gly Leu Gly
                725                 730                 735

Asp Pro Ile Ser Arg Ser Gln Leu Val Lys Ser Glu Leu Glu Glu Lys
            740                 745                 750

Lys Ser Glu Leu Arg His Lys Leu Lys Tyr Val Pro His Glu Tyr Ile
        755                 760                 765

Glu Leu Ile Glu Ile Ala Arg Asn Ser Thr Gln Asp Arg Ile Leu Glu
    770                 775                 780

Met Lys Val Met Glu Phe Phe Met Lys Val Tyr Gly Tyr Arg Gly Lys
785                 790                 795                 800

His Leu Gly Gly Ser Arg Lys Pro Asp Gly Ala Ile Tyr Thr Val Gly
                805                 810                 815

Ser Pro Ile Asp Tyr Gly Val Ile Val Asp Thr Lys Ala Tyr Ser Gly
            820                 825                 830

Gly Tyr Asn Leu Pro Ile Gly Gln Ala Asp Glu Met Gln Arg Tyr Val
        835                 840                 845

Glu Glu Asn Gln Thr Arg Asn Lys His Ile Asn Pro Asn Glu Trp Trp
    850                 855                 860

Lys Val Tyr Pro Ser Ser Val Thr Glu Phe Lys Phe Leu Phe Val Ser
865                 870                 875                 880

Gly His Phe Lys Gly Asn Tyr Lys Ala Gln Leu Thr Arg Leu Asn His
                885                 890                 895

Ile Thr Asn Cys Asn Gly Ala Val Leu Ser Val Glu Glu Leu Leu Ile
            900                 905                 910

Gly Gly Glu Met Ile Lys Ala Gly Thr Leu Thr Leu Glu Glu Val Arg
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915 920 925

Arg Lys Phe Asn Asn Gly Glu Ile Asn Phe Ala Ala Asp
930 935 940

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<212> RNA
<213> Artificial Sequence

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<223> Synthetic

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cguuaucaac uugaaaaagu ggcaccgagu cggugcuuuu 100

<210> 385
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 385
agcgctctcg tacagagttg g 21

<210> 386
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 386
aaaaaaagca ccgactcggt gcc 23

<210> 387
<211> 100
<212> RNA
<213> Artificial Sequence

<220>
<223> Synthetic

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<223> 2'OMe

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<223> 2'OMe

<220>
<221> misc_feature
<222> (97)..(98)
<223> phosphorothioate

<220>
<221> misc_feature
<222> (98)..(99)
<223> phosphorothioate

<220>
<221> misc_feature
<222> (99)..(100)
<223> phosphorothioate

<400> 387
gagaaucaaa aucggugaau guuuuagagc uagaaauagc aaguuaaaau aaggcuaguc 60

cguuaucaac uugaaaaagu ggcaccgagu cggugcuuuu 100

<210> 388
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 388

Met Asp Pro Lys Gly Leu Leu Ser Leu Thr Phe Val Leu Phe Leu Ser
1 5 10 15

Leu Ala Phe Gly
20

<210> 389
<211> 495
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 389

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Ile
20 25 30

Lys Pro Gly Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr
35 40 45

Phe Thr Ser Tyr Val Met His Trp Val Lys Gln Lys Pro Gly Gln Gly
50 55 60

Leu Glu Trp Ile Gly Tyr Ile Asn Pro Tyr Asn Asp Gly Thr Lys Tyr
65 70 75 80

Asn Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Ser Asp Lys Ser Ser
85 90 95

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala
100 105 110

Val Tyr Tyr Cys Ala Arg Gly Thr Tyr Tyr Tyr Gly Ser Arg Val Phe
115 120 125

Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser Gly Gly Gly
130 135 140

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Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met
145                 150                 155                 160

Thr Gln Ala Ala Pro Ser Ile Pro Val Thr Pro Gly Glu Ser Val Ser
                165                 170                 175

Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu Asn Ser Asn Gly Asn Thr
            180                 185                 190

Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser Pro Gln Leu Leu
        195                 200                 205

Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro Asp Arg Phe Ser
    210                 215                 220

Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile Ser Arg Val Glu
225                 230                 235                 240

Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His Leu Glu Tyr Pro
                245                 250                 255

Phe Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ser Asp Pro
            260                 265                 270

Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala
        275                 280                 285

Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly
    290                 295                 300

Gly Ala Val His Thr Arg Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile
305                 310                 315                 320

Trp Ala Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu Ser Leu Val
                325                 330                 335

Ile Thr Leu Tyr Cys Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe
            340                 345                 350
```

Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly
355 360 365

Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Arg
370 375 380

Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln
385 390 395 400

Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp
405 410 415

Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro
420 425 430

Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp
435 440 445

Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg
450 455 460

Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr
465 470 475 480

Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
485 490 495

<210> 390
<211> 1485
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 390
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gaagtacagt tgcaacagtc tgggccagaa ctcatcaaac ccggagcttc tgtaaaaatg 120

tcatgcaaag ctagtggata tacatttact tcttacgtga tgcactgggt aaaacagaaa 180

cctggtcagg ggcttgagtg gatcgggtac attaacccat ataatgacgg caccaaatat 240

aacgagaaat tcaagggaaa ggctacgctt acatcagata agtccagtag caccgcttat 300

atggaactta gcagccttac ttccgaagat tccgcggtgt attactgcgc gagagggact 360

tactactacg ggagtcgagt attcgattat tggggtcaag gcacgacgct cacggtgagc 420

tcaggtggtg gagggtctgg gggtggcggc agtggtgggg ggggctcaga catcgtgatg 480

acccaggcag caccttctat cccggtaacc ccaggcgagt ctgtatctat cagttgtcgg 540

tccagcaagt ctcttctcaa cagtaatggc aatacatatc tttactggtt cctccaaagg 600

cctgggcaaa gtcctcaact tcttatatat cggatgtcca atcttgcgag tggcgtaccc 660

gacaggtttt cagggtctgg gagcggaaca gcttttacgt tgagaatatc cagggtagaa 720

gctgaggacg tcggtgtata ttattgcatg caacatctcg aataccccctt taccttcggc 780

gctggtacaa agctcgaatt gaaacgcagc gatccaacca cgacgccagc gccacgacca 840

cctacgcccg ctccaactat tgcctcccag cccctgagtc ttcggccaga agcgtgtaga 900

cctgctgccg gcggggccgt tcatacgcgg ggccttgact ttgcatgtga tatctatata 960

tgggctcctt tggcgggaac ttgcggagtg cttcttttgt cactcgtgat aacgttgtat 1020

tgtaaaaggg gtcgaaagaa actcctctat atatttaagc agccctttat gaggcccgtg 1080

caaacaacac aagaagagga cggatgctct tgtcgattcc cggaagagga ggagggggg 1140

tgtgagctta gggtcaagtt ttctcgctct gccgacgcgc cagcctatca acagggccaa 1200

aaccagctgt ataacgaact caacctcggg cgccgggaag agtatgacgt ccttgacaaa 1260

cggcgcggtc gcgaccctga aatgggtgga aaaccgaggc gaaagaaccc ccaggaggga 1320

ctttacaacg aattgcaaaa agacaagatg gccgaagcct attccgaaat tggaatgaaa 1380

ggcgagcgga gacgaggtaa ggggcatgac ggcctgtatc aagggctctc tacggccacg 1440

aaggatactt acgacgccct tcatatgcaa gctcttccac cacgg 1485

<210> 391
<211> 374
<212> PRT
<213> Homo Sapiens

<400> 391

Met Ser Gly Glu Ser Met Asn Phe Ser Asp Val Phe Asp Ser Ser Glu
1 5 10 15

Asp Tyr Phe Val Ser Val Asn Thr Ser Tyr Tyr Ser Val Asp Ser Glu

```
            20                  25                  30

Met Leu Leu Cys Ser Leu Gln Glu Val Arg Gln Phe Ser Arg Leu Phe
        35                  40                  45

Val Pro Ile Ala Tyr Ser Leu Ile Cys Val Phe Gly Leu Leu Gly Asn
    50                  55                  60

Ile Leu Val Val Ile Thr Phe Ala Phe Tyr Lys Lys Ala Arg Ser Met
65                  70                  75                  80

Thr Asp Val Tyr Leu Leu Asn Met Ala Ile Ala Asp Ile Leu Phe Val
                85                  90                  95

Leu Thr Leu Pro Phe Trp Ala Val Ser His Ala Thr Gly Ala Trp Val
            100                 105                 110

Phe Ser Asn Ala Thr Cys Lys Leu Leu Lys Gly Ile Tyr Ala Ile Asn
        115                 120                 125

Phe Asn Cys Gly Met Leu Leu Leu Thr Cys Ile Ser Met Asp Arg Tyr
    130                 135                 140

Ile Ala Ile Val Gln Ala Thr Lys Ser Phe Arg Leu Arg Ser Arg Thr
145                 150                 155                 160

Leu Pro Arg Ser Lys Ile Ile Cys Leu Val Val Trp Gly Leu Ser Val
                165                 170                 175

Ile Ile Ser Ser Ser Thr Phe Val Phe Asn Gln Lys Tyr Asn Thr Gln
            180                 185                 190

Gly Ser Asp Val Cys Glu Pro Lys Tyr Gln Thr Val Ser Glu Pro Ile
        195                 200                 205

Arg Trp Lys Leu Leu Met Leu Gly Leu Glu Leu Leu Phe Gly Phe Phe
    210                 215                 220

Ile Pro Leu Met Phe Met Ile Phe Cys Tyr Thr Phe Ile Val Lys Thr
225                 230                 235                 240
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Leu Val Gln Ala Gln Asn Ser Lys Arg His Lys Ala Ile Arg Val Ile
                245                 250                 255

Ile Ala Val Val Leu Val Phe Leu Ala Cys Gln Ile Pro His Asn Met
            260                 265                 270

Val Leu Leu Val Thr Ala Ala Asn Leu Gly Lys Met Asn Arg Ser Cys
        275                 280                 285

Gln Ser Glu Lys Leu Ile Gly Tyr Thr Lys Thr Val Thr Glu Val Leu
    290                 295                 300

Ala Phe Leu His Cys Cys Leu Asn Pro Val Leu Tyr Ala Phe Ile Gly
305                 310                 315                 320

Gln Lys Phe Arg Asn Tyr Phe Leu Lys Ile Leu Lys Asp Leu Trp Cys
                325                 330                 335

Val Arg Arg Lys Tyr Lys Ser Ser Gly Phe Ser Cys Ala Gly Arg Tyr
            340                 345                 350

Ser Glu Asn Ile Ser Arg Gln Thr Ser Glu Thr Ala Asp Asn Asp Asn
        355                 360                 365

Ala Ser Ser Phe Thr Met
    370


<210>  392
<211>  1122
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Synthetic

<400>  392
atgagtgggg aaagtatgaa cttcagcgat gtatttgact cctccgaaga ttactttgta       60

tctgtgaata cgagctatta ctccgtcgat agtgaaatgc tgctctgtag tctccaagaa      120

gtccgccaat tcagtcgcct cttcgttccc atcgcgtact cccttatttg tgtttttggc      180

cttctgggta acatcctggt tgtaatcaca ttcgctttct ataaaaaagc tcggagtatg      240
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actgatgttt accttcttaa catggctata gcggacattc tttttgtgct tactctccca 300

ttctgggctg tgagccatgc aacaggggcg tgggtttttt caaatgccac atgtaagctg 360

cttaaaggga tctatgcaat aaacttcaat tgcgggatgc tcctgctgac atgcatcagt 420

atggatcgat acatagctat agtacaggcg actaagtcct tccgcctgcg atcccgcaca 480

ctgcctagga gcaaaattat ttgcctcgtc gtatgggggc tctcagtgat catctcctcc 540

agtacgtttg tctttaacca gaaatataac acacagggtt ctgatgtatg tgaaccaaag 600

tatcagacag tgagtgaacc aatacggtgg aagttgctta tgttgggctt ggagctgctt 660

tttgggtttt tcatcccact gatgttcatg attttctgtt atacatttat tgttaagacc 720

ttggttcagg cgcaaaatag caagagacat aaggcaattc gagtcatcat tgccgtggtg 780

ttggtcttct tggcctgtca gatcccccat aatatggttc tgctcgtcac cgccgctaac 840

ttgggtaaga tgaatcgatc ttgtcagtcc gagaagttga tcggatacac caaaactgtg 900

acagaagtgc tggccttcct tcactgttgt ctgaacccag ttttgtatgc ttttatagga 960

cagaagtttc gaaattactt cttgaaaatc ctcaaggacc tctggtgtgt tcgaaggaag 1020

tacaagagct ctggctttag ttgcgctggg cgctacagtg agaatatatc ccggcagacc 1080

tccgagactg ctgataatga caacgcaagt tccttcacta tg 1122

<210> 393
<211> 1122
<212> DNA
<213> Homo Sapiens

<400> 393
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tcagtcaata cttcatatta ctcagttgat tctgagatgt tactgtgctc cttgcaggag 120

gtcaggcagt tctccaggct atttgtaccg attgcctact ccttgatctg tgtctttggc 180

ctcctgggga atattctggt ggtgatcacc tttgcttttt ataagaaggc caggtctatg 240

acagacgtct atctcttgaa catggccatt gcagacatcc tctttgttct tactctccca 300

ttctgggcag tgagtcatgc cactggtgcg tgggttttca gcaatgccac gtgcaagttg 360

ctaaaaggca tctatgccat caactttaac tgcgggatgc tgctcctgac ttgcattagc 420

atggaccggt acatcgccat tgtacaggcg actaagtcat tccggctccg atccagaaca 480

ctaccgcgca cgaaaatcat ctgccttgtt gtgtgggggc tgtcagtcat catctccagc 540

tcaacttttg tcttcaacca aaaatacaac acccaaggca gcgatgtctg tgaacccaag 600

taccagactg tctcggagcc catcaggtgg aagctgctga tgttggggct tgagctactc 660

tttggtttct ttatcccttt gatgttcatg atattttgtt acacgttcat tgtcaaaacc 720

ttggtgcaag ctcagaattc taaaaggcac aaagccatcc gtgtaatcat agctgtggtg 780

cttgtgtttc tggcttgtca gattcctcat aacatggtcc tgcttgtgac ggctgcaaat 840

ttgggtaaaa tgaaccgatc ctgccagagc gaaaagctaa ttggctatac gaaaactgtc 900

acagaagtcc tggctttcct gcactgctgc ctgaaccctg tgctctacgc ttttattggg 960

cagaagttca gaaactactt tctgaagatc ttgaaggacc tgtggtgtgt gagaaggaag 1020

tacaagtcct caggcttctc ctgtgccggg aggtactcag aaaacatttc tcggcagacc 1080

agtgagaccg cagataacga caatgcgtcg tccttcacta tg 1122

<210> 394
<211> 157
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 394

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

Asp His Ala Asp Ala Cys Pro Tyr Ser Asn Pro Ser Leu Cys Ser Gly
20 25 30

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

Thr Asn Val Ser Pro Ala Lys Pro Thr Thr Thr Ala Cys Pro Tyr Ser
50 55 60

Asn Pro Ser Leu Cys Ser Gly Gly Gly Gly Ser Pro Ala Pro Arg Pro
65 70 75 80

Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro
85 90 95

Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu
100 105 110

Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys
115 120 125

Gly Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Asn His Arg
130 135 140

Asn Arg Arg Arg Val Cys Lys Cys Pro Arg Pro Val Val
145 150 155

<210> 395
<211> 471
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 395
atgggtactt cactgttgtg ctggatggca ctttgtcttt tgggtgccga tcatgctgat 60

gcatgtccgt actccaatcc tagcctgtgc tccgggggggg gagggagtga actccctaca 120

cagggaacct tctctaatgt ctccaccaac gtctcccctg caaaaccgac cacaacagct 180

tgcccctata gtaacccttc cctctgtagt ggaggggggg gttcacctgc tccacgccct 240

cctacccccg cgccaacgat cgcgtcacaa ccgctcagtc ttaggccgga agcctgtagg 300

ccagcggctg gcggtgcggt tcatacgcgg ggattggatt ttgcctgcga catttacatt 360

tgggctccgc tggccggtac ttgtggggta ttgctgttgt ctcttgttat tacgctttat 420

tgcaatcaca ggaacaggcg acgagtatgc aaatgcccgc ggcccgtcgt g 471

<210> 396
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 396

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

Val Thr Leu Met Val Leu Ser Ser Pro Leu Ala Leu
            20   25

<210> 397
<211> 84
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 397
atggtatgct tgaagctccc gggcgggtcc tgcatgaccg ctctcactgt tactcttatg 60

gtccttagtt caccgcttgc cctg 84

<210> 398
<211> 2
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 398

Ala Ser
1

<210> 399
<211> 6
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 399
gcatct 6

<210> 400
<211> 13
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 400

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

<210> 401
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 401
gggggaggcg gatctggcgg aggcgggagt ggaggctca 39

<210> 402
<211> 555
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 402
ggagacacaa gaccccgatt cttgtggcag cccaaaaggg agtgccattt tttcaatggg 60

acggaacgag ttcgcttcct tgatcggtac ttttacaacc aagaagagag tgtacggttc 120

gactcagatg tcggcgagtt ccgagcggtt acggaattgg ggcgacctga cgcggagtac 180

tggaactccc aaaaggatat tttggagcag gcacgagcag ctgtggacac ctattgtcga 240

cataattatg gtgtggtgga atcctttaca gttcagcggc gggtgcaacc taaagtgacc 300

gtgtatccat ctaaaacgca acccctccaa caccataacc tcctggtgtg ttccgtaagc 360

ggcttctatc ccgggtcaat tgaggtcagg tggttcctca acggtcagga ggagaaggcc 420

ggaatggtaa gtactggtct tatccagaac ggagactgga ccttccaaac tttggtaatg 480

ttggaaacgg tgccgcgatc cggggaggtg tatacatgcc aagttgaaca cccgagtgtt 540

acgagccccc tgacg 555

<210> 403
<211> 2895
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 403
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gcatgtccgt actccaatcc tagcctgtgc tccgggggggg gagggagtga actccctaca 120

cagggaacct tctctaatgt ctccaccaac gtctcccctg caaaaccgac cacaacagct 180

tgcccctata gtaacccttc cctctgtagt ggaggggggg gttcacctgc tccacgccct 240

cctacccccg cgccaacgat cgcgtcacaa ccgctcagtc ttaggccgga agcctgtagg 300

ccagcggctg gcggtgcggt tcatacgcgg ggattggatt ttgcctgcga catttacatt 360

tgggctccgc tggccggtac ttgtggggta ttgctgttgt ctcttgttat tacgctttat 420

tgcaatcaca ggaacaggcg acgagtatgc aaatgcccgc ggcccgtcgt gagatctggg 480

tccggccaat gtactaacta cgctttgttg aaactcgctg gcgatgttga aagtaacccc 540

ggtcctccaa caggtatggt atgcttgaag ctcccgggcg ggtcctgcat gaccgctctc 600

actgttactc ttatggtcct tagttcaccg cttgccctgg catctgatga gaatcccgtg 660

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ggaggcggga gtggaggctc aggagacaca agaccccgat tcttgtggca gcccaaaagg 780

gagtgccatt ttttcaatgg gacggaacga gttcgcttcc ttgatcggta cttttacaac 840

caagaagaga gtgtacggtt cgactcagat gtcggcgagt tccgagcggt tacggaattg 900

gggcgacctg acgcggagta ctggaactcc caaaaggata ttttggagca ggcacgagca 960

gctgtggaca cctattgtcg acataattat ggtgtggtgg aatcctttac agttcagcgg 1020

cgggtgcaac ctaaagtgac cgtgtatcca tctaaaacgc aacccctcca acaccataac 1080

ctcctggtgt gttccgtaag cggcttctat cccgggtcaa ttgaggtcag gtggttcctc 1140

aacggtcagg aggagaaggc cggaatggta agtactggtc ttatccagaa cggagactgg 1200

accttccaaa ctttggtaat gttggaaacg gtgccgcgat ccggggaggt gtatacatgc 1260

caagttgaac acccgagtgt tacgagcccc ctgacggttg agtggagggc gcggtcagag 1320

agcgcacaat ctaaaatgct gtcaggagta ggcggatttg tactcggact cctcttttg 1380

ggcgctgggt tgtttatcta ctttagaaac caaacaagta gagtaaagtt ttcccgaagt 1440

gcggacgctc ccgcgtatca gcaaggtcaa aaccagcttt acaacgaact gaacttggga 1500

cgacgcgaag agtacgatgt tcttgataag cggagagggc gcgatcccga aatgggggga 1560

aagcctcgga ggaagaaccc acaagaaggc ctttataatg aactgcagaa ggacaagatg 1620

gcggaggcgt attccgaaat aggcatgaag ggtgaacgga ggagaggaaa gggacatgac 1680

ggactttatc aaggattgtc taccgcaact aaagacacct atgacgcgtt gcacatgcag 1740

gctctccctc cgagaggttc gagcggcagt ggagagggca gaggaagtct gctaacatgc 1800

ggtgacgtcg aggagaatcc tggcccaatg gcaatatctg gtgttcctgt cctcgggttt 1860

tttatcatag ccgtactgat gtcagcacag gaatcatggg cgataaaaga agagcacgtg 1920

ataatacagg cggagtttta tttgaacccg gaccagagcg gtgagttcat gttcgatttt 1980

gatggcgacg agatatttca cgttgacatg gcaaaaaagg aaacggtgtg gagacttgag 2040

gagtttggac gattcgcatc atttgaggca caaggagcac tcgccaatat cgcggtggac 2100

aaggccaacc tggagatcat gacaaaacgc tccaattata cgcctatcac taatgtgccc 2160

cctgaggtta ctgtgctcac aaattctccc gtagaactta gggaacctaa cgtcctcata 2220

tgtttcatcg acaagttcac tcctccggtg gtcaatgtaa cgtggcttcg gaatggtaag 2280

ccggtcacca cgggtgtctc agagaccgta tttctgccca gagaagacca cctcttccgc 2340

aaatttcatt accttccctt tcttccttca acggaagacg tttacgactg cagggtcgaa 2400

cattgggggc ttgacgagcc acttctcaag cattgggagt tcgacgcccc atcaccgctt 2460

ccagaaacga ctgaaaacgt tgtctgcgct cttggcctga cagtgggcct ggtaggcatt 2520

attatcggga ccatctttat catcaaaggt ttgacttccc gggtcaaatt tagcagatcc 2580

gctgacgcac cggcctacca gcagggccag aaccaactct acaacgagct gaatctcggc 2640

cgacgggaag agtatgacgt actcgacaag cggagaggtc gagaccctga gatgggcggt 2700

aaaccgagac ggaaaaatcc ccaagagggt ctttataatg aactccagaa ggataagatg 2760

gctgaagcct attctgagat agggatgaaa ggcgagcggc ggaggggtaa gggccatgat 2820

ggcctttacc agggactctc cacggcaacc aaagatactt acgacgccct tcacatgcaa 2880

gccctcccgc cacgc 2895

<210> 404
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 404
gttgagtgga gggcgcggtc agagagcgca caatctaaa 39

<210> 405
<211> 1225
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 405

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

Asp His Ala Asp Ala Cys Pro Tyr Ser Asn Pro Ser Leu Cys Ser Gly
20 25 30

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

Thr Asn Val Ser Pro Ala Lys Pro Thr Thr Thr Ala Cys Pro Tyr Ser
50 55 60

Asn Pro Ser Leu Cys Ser Gly Gly Gly Gly Ser Pro Ala Pro Arg Pro
65 70 75 80

Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu Arg Pro
85 90 95

Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg Gly Leu
100 105 110

Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly Thr Cys
115 120 125

Gly Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Asn His Arg
130 135 140

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Asn Arg Arg Arg Val Cys Lys Cys Pro Arg Pro Val Val Arg Ser Gly
145                 150                 155                 160

Ser Gly Gln Cys Thr Asn Tyr Ala Leu Leu Lys Leu Ala Gly Asp Val
                165                 170                 175

Glu Ser Asn Pro Gly Pro Pro Thr Gly Met Val Cys Leu Lys Leu Pro
            180                 185                 190

Gly Gly Ser Cys Met Thr Ala Leu Thr Val Thr Leu Met Val Leu Ser
        195                 200                 205

Ser Pro Leu Ala Leu Ala Ser Asp Glu Asn Pro Val Val His Phe Phe
    210                 215                 220

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

Gly Gly Gly Ser Gly Gly Ser Gly Asp Thr Arg Pro Arg Phe Leu Trp
                245                 250                 255

Gln Pro Lys Arg Glu Cys His Phe Phe Asn Gly Thr Glu Arg Val Arg
            260                 265                 270

Phe Leu Asp Arg Tyr Phe Tyr Asn Gln Glu Glu Ser Val Arg Phe Asp
        275                 280                 285

Ser Asp Val Gly Glu Phe Arg Ala Val Thr Glu Leu Gly Arg Pro Asp
    290                 295                 300

Ala Glu Tyr Trp Asn Ser Gln Lys Asp Ile Leu Glu Gln Ala Arg Ala
305                 310                 315                 320

Ala Val Asp Thr Tyr Cys Arg His Asn Tyr Gly Val Val Glu Ser Phe
                325                 330                 335

Thr Val Gln Arg Arg Val Gln Pro Lys Val Thr Val Tyr Pro Ser Lys
            340                 345                 350

Thr Gln Pro Leu Gln His His Asn Leu Leu Val Cys Ser Val Ser Gly
        355                 360                 365
```

```
Phe Tyr Pro Gly Ser Ile Glu Val Arg Trp Phe Leu Asn Gly Gln Glu
    370                 375                 380

Glu Lys Ala Gly Met Val Ser Thr Gly Leu Ile Gln Asn Gly Asp Trp
385                 390                 395                 400

Thr Phe Gln Thr Leu Val Met Leu Glu Thr Val Pro Arg Ser Gly Glu
                405                 410                 415

Val Tyr Thr Cys Gln Val Glu His Pro Ser Val Thr Ser Pro Leu Thr
            420                 425                 430

Val Glu Trp Arg Ala Arg Ser Glu Ser Ala Gln Ser Lys Met Leu Ser
        435                 440                 445

Gly Val Gly Gly Phe Val Leu Gly Leu Leu Phe Leu Gly Ala Gly Leu
    450                 455                 460

Phe Ile Tyr Phe Arg Asn Gln Thr Ser Arg Val Lys Phe Ser Arg Ser
465                 470                 475                 480

Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu
                485                 490                 495

Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg
            500                 505                 510

Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln
        515                 520                 525

Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr
    530                 535                 540

Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp
545                 550                 555                 560

Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala
                565                 570                 575
```

```
Leu His Met Gln Ala Leu Pro Pro Arg Gly Ser Ser Gly Ser Gly Glu
            580                 585                 590

Gly Arg Gly Ser Leu Leu Thr Cys Gly Asp Val Glu Glu Asn Pro Gly
        595                 600                 605

Pro Met Ala Ile Ser Gly Val Pro Val Leu Gly Phe Phe Ile Ile Ala
    610                 615                 620

Val Leu Met Ser Ala Gln Glu Ser Trp Ala Ile Lys Glu Glu His Val
625                 630                 635                 640

Ile Ile Gln Ala Glu Phe Tyr Leu Asn Pro Asp Gln Ser Gly Glu Phe
                645                 650                 655

Met Phe Asp Phe Asp Gly Asp Glu Ile Phe His Val Asp Met Ala Lys
            660                 665                 670

Lys Glu Thr Val Trp Arg Leu Glu Glu Phe Gly Arg Phe Ala Ser Phe
        675                 680                 685

Glu Ala Gln Gly Ala Leu Ala Asn Ile Ala Val Asp Lys Ala Asn Leu
    690                 695                 700

Glu Ile Met Thr Lys Arg Ser Asn Tyr Thr Pro Ile Thr Asn Val Pro
705                 710                 715                 720

Pro Glu Val Thr Val Leu Thr Asn Ser Pro Val Glu Leu Arg Glu Pro
                725                 730                 735

Asn Val Leu Ile Cys Phe Ile Asp Lys Phe Thr Pro Pro Val Val Asn
            740                 745                 750

Val Thr Trp Leu Arg Asn Gly Lys Pro Val Thr Thr Gly Val Ser Glu
        755                 760                 765

Thr Val Phe Leu Pro Arg Glu Asp His Leu Phe Arg Lys Phe His Tyr
    770                 775                 780

Leu Pro Phe Leu Pro Ser Thr Glu Asp Val Tyr Asp Cys Arg Val Glu
785                 790                 795                 800
```

```
His Trp Gly Leu Asp Glu Pro Leu Leu Lys His Trp Glu Phe Asp Ala
                805                 810                 815

Pro Ser Pro Leu Pro Glu Thr Thr Glu Asn Val Val Cys Ala Leu Gly
            820                 825                 830

Leu Thr Val Gly Leu Val Gly Ile Ile Ile Gly Thr Ile Phe Ile Ile
        835                 840                 845

Lys Gly Leu Thr Ser Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro
    850                 855                 860

Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly
865                 870                 875                 880

Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro
                885                 890                 895

Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr
            900                 905                 910

Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly
        915                 920                 925

Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln
    930                 935                 940

Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln
945                 950                 955                 960

Ala Leu Pro Pro Arg Gly Ser Gly Ala Thr Asn Phe Ser Leu Leu Lys
                965                 970                 975

Gln Ala Gly Asp Val Glu Glu Asn Pro Gly Pro Val Ser Lys Gly Glu
            980                 985                 990

Glu Leu Phe Thr Gly Val Val Pro  Ile Leu Val Glu Leu  Asp Gly Asp
        995                 1000                1005
```

```
Val Asn  Gly His Lys Phe Ser  Val Ser Gly Glu Gly  Glu Gly Asp
    1010                1015                1020

Ala Thr  Tyr Gly Lys Leu Thr  Leu Lys Phe Ile Cys  Thr Thr Gly
    1025                1030                1035

Lys Leu  Pro Val Pro Trp Pro  Thr Leu Val Thr Thr  Leu Thr Tyr
    1040                1045                1050

Gly Val  Gln Cys Phe Ser Arg  Tyr Pro Asp His Met  Lys Gln His
    1055                1060                1065

Asp Phe  Phe Lys Ser Ala Met  Pro Glu Gly Tyr Val  Gln Glu Arg
    1070                1075                1080

Thr Ile  Phe Phe Lys Asp Asp  Gly Asn Tyr Lys Thr  Arg Ala Glu
    1085                1090                1095

Val Lys  Phe Glu Gly Asp Thr  Leu Val Asn Arg Ile  Glu Leu Lys
    1100                1105                1110

Gly Ile  Asp Phe Lys Glu Asp  Gly Asn Ile Leu Gly  His Lys Leu
    1115                1120                1125

Glu Tyr  Asn Tyr Asn Ser His  Asn Val Tyr Ile Met  Ala Asp Lys
    1130                1135                1140

Gln Lys  Asn Gly Ile Lys Ala  Asn Phe Lys Ile Arg  His Asn Ile
    1145                1150                1155

Glu Asp  Gly Ser Val Gln Leu  Ala Asp His Tyr Gln  Gln Asn Thr
    1160                1165                1170

Pro Ile  Gly Asp Gly Pro Val  Leu Leu Pro Asp Asn  His Tyr Leu
    1175                1180                1185

Ser Thr  Gln Ser Ala Leu Ser  Lys Asp Pro Asn Glu  Lys Arg Asp
    1190                1195                1200

His Met  Val Leu Leu Glu Phe  Val Thr Ala Ala Gly  Ile Thr Leu
    1205                1210                1215
```

Gly Met Asp Glu Leu Tyr Lys
    1220   1225

<210> 406
<211> 78
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 406
atgctgtcag gagtaggcgg atttgtactc ggactcctct ttttgggcgc tgggttgttt 60

atctacttta gaaaccaa 78

<210> 407
<211> 2
<212> PRT
<213> Artificial Sequence

<220>
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<400> 407

Thr Ala
1

<210> 408
<211> 6
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 408
acaagt 6

<210> 409
<211> 3678
<212> DNA
<213> Artificial Sequence

<220>
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<400> 409
atgggtactt cactgttgtg ctggatggca ctttgtcttt tgggtgccga tcatgctgat 60

gcatgtccgt actccaatcc tagcctgtgc tccgggggggg gagggagtga actccctaca 120

cagggaacct tctctaatgt ctccaccaac gtctcccctg caaaaccgac cacaacagct 180

tgcccctata gtaacccttc cctctgtagt ggaggggggg gttcacctgc tccacgccct 240

cctacccccg cgccaacgat cgcgtcacaa ccgctcagtc ttaggccgga agcctgtagg 300

ccagcggctg gcggtgcggt tcatacgcgg ggattggatt ttgcctgcga catttacatt 360

tgggctccgc tggccggtac ttgtggggta ttgctgttgt ctcttgttat tacgctttat 420

tgcaatcaca ggaacaggcg acgagtatgc aaatgcccgc ggcccgtcgt gagatctggg 480

tccggccaat gtactaacta cgctttgttg aaactcgctg gcgatgttga aagtaacccc 540

ggtcctccaa caggtatggt atgcttgaag ctcccgggcg ggtcctgcat gaccgctctc 600

actgttactc ttatggtcct tagttcaccg cttgccctgg catctgatga gaatcccgtg 660

gttcattttt ttaagaacat cgtcacaccg cgcaccccac ctgggggagg cggatctggc 720

ggaggcggga gtggaggctc aggagacaca agaccccgat tcttgtggca gcccaaaagg 780

gagtgccatt ttttcaatgg gacggaacga gttcgcttcc ttgatcggta cttttacaac 840

caagaagaga gtgtacggtt cgactcagat gtcggcgagt tccgagcggt tacggaattg 900

gggcgacctg acgcggagta ctggaactcc caaaaggata ttttggagca ggcacgagca 960

gctgtggaca cctattgtcg acataattat ggtgtggtgg aatcctttac agttcagcgg 1020

cgggtgcaac ctaaagtgac cgtgtatcca tctaaaacgc aacccctcca acaccataac 1080

ctcctggtgt gttccgtaag cggcttctat cccgggtcaa ttgaggtcag gtggttcctc 1140

aacggtcagg aggagaaggc cggaatggta agtactggtc ttatccagaa cggagactgg 1200

accttccaaa ctttggtaat gttggaaacg gtgccgcgat ccggggaggt gtatacatgc 1260

caagttgaac acccgagtgt tacgagcccc ctgacggttg agtggagggc gcggtcagag 1320

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ggcgctgggt tgtttatcta ctttagaaac caaacaagta gagtaaagtt ttcccgaagt 1440

gcggacgctc ccgcgtatca gcaaggtcaa aaccagcttt acaacgaact gaacttggga 1500

cgacgcgaag agtacgatgt tcttgataag cggagagggc gcgatcccga aatgggggga 1560

aagcctcgga ggaagaaccc acaagaaggc ctttataatg aactgcagaa ggacaagatg 1620

gcggaggcgt attccgaaat aggcatgaag ggtgaacgga ggagaggaaa gggacatgac 1680

ggactttatc aaggattgtc taccgcaact aaagacacct atgacgcgtt gcacatgcag 1740

gctctccctc cgagaggttc gagcggcagt ggagagggca gaggaagtct gctaacatgc 1800

ggtgacgtcg aggagaatcc tggcccaatg gcaatatctg gtgttcctgt cctcgggttt 1860

tttatcatag ccgtactgat gtcagcacag gaatcatggg cgataaaaga agagcacgtg 1920

ataatacagg cggagtttta tttgaacccg gaccagagcg gtgagttcat gttcgatttt 1980

gatggcgacg agatatttca cgttgacatg gcaaaaaagg aaacggtgtg gagacttgag 2040

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attatcggga ccatctttat catcaaaggt ttgacttccc gggtcaaatt tagcagatcc 2580

gctgacgcac cggcctacca gcagggccag aaccaactct acaacgagct gaatctcggc 2640

cgacgggaag agtatgacgt actcgacaag cggagaggtc gagaccctga gatgggcggt 2700

aaaccgagac ggaaaaatcc ccaagagggt ctttataatg aactccagaa ggataagatg 2760

gctgaagcct attctgagat agggatgaaa ggcgagcggc ggaggggtaa gggccatgat 2820

ggcctttacc agggactctc cacggcaacc aaagatactt acgacgccct tcacatgcaa 2880

gccctcccgc cacgcggatc cggcgcaaca aacttctctc tgctgaaaca agccggagat 2940

gtcgaagaga atcctggacc ggtgagcaag ggcgaggagc tgttcaccgg ggtggtgccc 3000

atcctggtcg agctggacgg cgacgtaaac ggccacaagt tcagcgtgtc tggcgagggc 3060

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ttcgagggcg acaccctggt gaaccgcatc gagctgaagg gcatcgactt caaggaggac 3360

ggcaacatcc tggggcacaa gctggagtac aactacaaca gccacaacgt ctatatcatg 3420

gccgacaagc agaagaacgg catcaaggcg aacttcaaga tccgccacaa catcgaggac 3480

ggcagcgtgc agctcgccga ccactaccag cagaacaccc ccatcggcga cggccccgtg 3540

ctgctgcccg acaaccacta cctgagcacc cagtccgccc tgagcaaaga ccccaacgag 3600

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gacgagctgt acaagtaa 3678

<210> 410
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 410
agagtaaagt tttcccgaag tgcggacgct cccgcgtatc agcaaggtca aaaccagctt 60

tacaacgaac tgaacttggg acgacgcgaa gagtacgatg ttcttgataa gcggagaggg 120

cgcgatcccg aaatgggggg aaagcctcgg aggaagaacc cacaagaagg cctttataat 180

gaactgcaga aggacaagat ggcggaggcg tattccgaaa taggcatgaa gggtgaacgg 240

aggagaggaa agggacatga cggactttat caaggattgt ctaccgcaac taaagacacc 300

tatgacgcgt tgcacatgca ggctctccct ccgaga 336

<210> 411
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 411
gatgagaatc ccgtggttca ttttttttaag aacatcgtca caccgcgcac cccacctg 58

<210> 412
<211> 400

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 412

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


Val Thr Leu Met Val Leu Ser Ser Pro Leu Ala Leu Ala Ser Asp Glu
            20                  25                  30


Asn Pro Val Val His Phe Phe Lys Asn Ile Val Thr Pro Arg Thr Pro
        35                  40                  45


Pro Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Ser Gly Asp
    50                  55                  60


Thr Arg Pro Arg Phe Leu Trp Gln Pro Lys Arg Glu Cys His Phe Phe
65                  70                  75                  80


Asn Gly Thr Glu Arg Val Arg Phe Leu Asp Arg Tyr Phe Tyr Asn Gln
                85                  90                  95


Glu Glu Ser Val Arg Phe Asp Ser Asp Val Gly Glu Phe Arg Ala Val
            100                 105                 110


Thr Glu Leu Gly Arg Pro Asp Ala Glu Tyr Trp Asn Ser Gln Lys Asp
        115                 120                 125


Ile Leu Glu Gln Ala Arg Ala Ala Val Asp Thr Tyr Cys Arg His Asn
    130                 135                 140


Tyr Gly Val Val Glu Ser Phe Thr Val Gln Arg Arg Val Gln Pro Lys
145                 150                 155                 160


Val Thr Val Tyr Pro Ser Lys Thr Gln Pro Leu Gln His His Asn Leu
                165                 170                 175


Leu Val Cys Ser Val Ser Gly Phe Tyr Pro Gly Ser Ile Glu Val Arg
            180                 185                 190
```

```
Trp Phe Leu Asn Gly Gln Glu Glu Lys Ala Gly Met Val Ser Thr Gly
        195                 200                 205

Leu Ile Gln Asn Gly Asp Trp Thr Phe Gln Thr Leu Val Met Leu Glu
    210                 215                 220

Thr Val Pro Arg Ser Gly Glu Val Tyr Thr Cys Gln Val Glu His Pro
225                 230                 235                 240

Ser Val Thr Ser Pro Leu Thr Val Glu Trp Arg Ala Arg Ser Glu Ser
                245                 250                 255

Ala Gln Ser Lys Met Leu Ser Gly Val Gly Gly Phe Val Leu Gly Leu
            260                 265                 270

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

Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly
    290                 295                 300

Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
305                 310                 315                 320

Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
                325                 330                 335

Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys
            340                 345                 350

Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg
        355                 360                 365

Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
    370                 375                 380

Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
385                 390                 395                 400
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<210> 413
<211> 1200
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 413
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gtccttagtt caccgcttgc cctggcatct gatgagaatc ccgtggttca ttttttaag 120

aacatcgtca caccgcgcac cccacctggg ggaggcggat ctggcggagg cgggagtgga 180

ggctcaggag acacaagacc ccgattcttg tggcagccca aaagggagtg ccatttttc 240

aatgggacgg aacgagttcg cttccttgat cggtactttt acaaccaaga agagagtgta 300

cggttcgact cagatgtcgg cgagttccga gcggttacgg aattggggcg acctgacgcg 360

gagtactgga actcccaaaa ggatattttg gagcaggcac gagcagctgt ggacacctat 420

tgtcgacata attatggtgt ggtggaatcc tttacagttc agcggcgggt gcaacctaaa 480

gtgaccgtgt atccatctaa aacgcaaccc ctccaacacc ataacctcct ggtgtgttcc 540

gtaagcggct tctatcccgg gtcaattgag gtcaggtggt tcctcaacgg tcaggaggag 600

aaggccggaa tggtaagtac tggtcttatc cagaacggag actggacctt ccaaactttg 660

gtaatgttgg aaacggtgcc gcgatccggg gaggtgtata catgccaagt tgaacacccg 720

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atgctgtcag gagtaggcgg atttgtactc ggactcctct ttttgggcgc tgggttgttt 840

atctacttta gaaaccaaac aagtagagta aagttttccc gaagtgcgga cgctcccgcg 900

tatcagcaag gtcaaaacca gctttacaac gaactgaact tgggacgacg cgaagagtac 960

gatgttcttg ataagcggag agggcgcgat cccgaaatgg ggggaaagcc tcggaggaag 1020

aacccacaag aaggccttta taatgaactg cagaaggaca agatggcgga ggcgtattcc 1080

gaaataggca tgaagggtga acggaggaga ggaaagggac atgacggact ttatcaagga 1140

ttgtctaccg caactaaaga cacctatgac gcgttgcaca tgcaggctct ccctccgaga 1200

<210> 414
<211> 75
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 414
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caggaatcat gggcg 75

<210> 415
<211> 534
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 415
ataaaagaag agcacgtgat aatacaggcg gagttttatt tgaacccgga ccagagcggt 60

gagttcatgt tcgattttga tggcgacgag atatttcacg ttgacatggc aaaaaaggaa 120

acggtgtgga gacttgagga gtttggacga ttcgcatcat ttgaggcaca aggagcactc 180

gccaatatcg cggtggacaa ggccaacctg gagatcatga caaaacgctc caattatacg 240

cctatcacta atgtgccccc tgaggttact gtgctcacaa attctcccgt agaacttagg 300

gaacctaacg tcctcatatg tttcatcgac aagttcactc ctccggtggt caatgtaacg 360

tggcttcgga atggtaagcc ggtcaccacg ggtgtctcag agaccgtatt tctgcccaga 420

gaagaccacc tcttccgcaa atttcattac cttccctttc ttccttcaac ggaagacgtt 480

tacgactgca gggtcgaaca ttgggggctt gacgagccac ttctcaagca ttgg 534

<210> 416
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 416

Asn Val Val Cys Ala Leu Gly Leu Thr Val Gly Leu Val Gly Ile Ile
1 5 10 15

Ile Gly Thr Ile Phe Ile Ile
            20

<210> 417
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 417
gagttcgacg ccccatcacc gcttccagaa acgactgaa 39

<210> 418
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 418

Asn Val Val Cys Ala Leu Gly Leu Thr Val Gly Leu Val Gly Ile Ile
1 5 10 15

Ile Gly Thr Ile Phe Ile Ile Lys Gly Leu
20 25

<210> 419
<211> 78
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 419
aacgttgtct gcgctcttgg cctgacagtg ggcctggtag gcattattat cgggaccatc 60

tttatcatca aaggtttg 78

<210> 420
<211> 2
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 420

Thr Ser
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<210> 421
<211> 6
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 421
acttcc 6

<210> 422
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 422
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tacaacgagc tgaatctcgg ccgacgggaa gagtatgacg tactcgacaa gcggagaggt 120

cgagaccctg agatgggcgg taaaccgaga cggaaaaatc cccaagaggg tctttataat 180

gaactccaga aggataagat ggctgaagcc tattctgaga tagggatgaa aggcgagcgg 240

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tacgacgccc ttcacatgca agccctcccg ccacgc 336

<210> 423
<211> 356
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 423

Met Ala Ile Ser Gly Val Pro Val Leu Gly Phe Phe Ile Ile Ala Val
1 5 10 15

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Leu Met Ser Ala Gln Glu Ser Trp Ala Ile Lys Glu Glu His Val Ile
            20                  25                  30

Ile Gln Ala Glu Phe Tyr Leu Asn Pro Asp Gln Ser Gly Glu Phe Met
        35                  40                  45

Phe Asp Phe Asp Gly Asp Glu Ile Phe His Val Asp Met Ala Lys Lys
    50                  55                  60

Glu Thr Val Trp Arg Leu Glu Glu Phe Gly Arg Phe Ala Ser Phe Glu
65                  70                  75                  80

Ala Gln Gly Ala Leu Ala Asn Ile Ala Val Asp Lys Ala Asn Leu Glu
                85                  90                  95

Ile Met Thr Lys Arg Ser Asn Tyr Thr Pro Ile Thr Asn Val Pro Pro
            100                 105                 110

Glu Val Thr Val Leu Thr Asn Ser Pro Val Glu Leu Arg Glu Pro Asn
        115                 120                 125

Val Leu Ile Cys Phe Ile Asp Lys Phe Thr Pro Pro Val Val Asn Val
    130                 135                 140

Thr Trp Leu Arg Asn Gly Lys Pro Val Thr Thr Gly Val Ser Glu Thr
145                 150                 155                 160

Val Phe Leu Pro Arg Glu Asp His Leu Phe Arg Lys Phe His Tyr Leu
                165                 170                 175

Pro Phe Leu Pro Ser Thr Glu Asp Val Tyr Asp Cys Arg Val Glu His
            180                 185                 190

Trp Gly Leu Asp Glu Pro Leu Leu Lys His Trp Glu Phe Asp Ala Pro
        195                 200                 205

Ser Pro Leu Pro Glu Thr Thr Glu Asn Val Val Cys Ala Leu Gly Leu
    210                 215                 220

Thr Val Gly Leu Val Gly Ile Ile Ile Gly Thr Ile Phe Ile Ile Lys
225                 230                 235                 240
```

```
Gly Leu Thr Ser Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala
                245                 250                 255

Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg
            260                 265                 270

Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu
        275                 280                 285

Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn
    290                 295                 300

Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met
305                 310                 315                 320

Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly
                325                 330                 335

Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala
            340                 345                 350

Leu Pro Pro Arg
        355
```

<210> 424
<211> 1068
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 424

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atggcaatat ctggtgttcc tgtcctcggg ttttttatca tagccgtact gatgtcagca       60

caggaatcat gggcgataaa agaagagcac gtgataatac aggcggagtt ttatttgaac      120

ccggaccaga gcggtgagtt catgttcgat tttgatggcg acgagatatt tcacgttgac      180

atggcaaaaa aggaaacggt gtggagactt gaggagtttg gacgattcgc atcatttgag      240

gcacaaggag cactcgccaa tatcgcggtg gacaaggcca acctggagat catgacaaaa      300

cgctccaatt atacgcctat cactaatgtg ccccctgagg ttactgtgct cacaaattct      360
```

cccgtagaac ttagggaacc taacgtcctc atatgtttca tcgacaagtt cactcctccg 420

gtggtcaatg taacgtggct tcggaatggt aagccggtca ccacgggtgt ctcagagacc 480

gtatttctgc ccagagaaga ccacctcttc cgcaaatttc attaccttcc ctttcttcct 540

tcaacggaag acgtttacga ctgcagggtc gaacattggg ggcttgacga gccacttctc 600

aagcattggg agttcgacgc cccatcaccg cttccagaaa cgactgaaaa cgttgtctgc 660

gctcttggcc tgacagtggg cctggtaggc attattatcg ggaccatctt tatcatcaaa 720

ggtttgactt cccgggtcaa atttagcaga tccgctgacg caccggccta ccagcagggc 780

cagaaccaac tctacaacga gctgaatctc ggccgacggg aagagtatga cgtactcgac 840

aagcggagag gtcgagaccc tgagatgggc ggtaaaccga gacggaaaaa tccccaagag 900

ggtctttata atgaactcca gaaggataag atggctgaag cctattctga gatagggatg 960

aaaggcgagc ggcggagggg taagggccat gatggccttt accagggact ctccacggca 1020

accaaagata cttacgacgc ccttcacatg caagccctcc cgccacgc 1068

<210> 425
<211> 893
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 425

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Ile
20 25 30

Lys Pro Gly Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr
35 40 45

Phe Thr Ser Tyr Val Met His Trp Val Lys Gln Lys Pro Gly Gln Gly
50 55 60

Leu Glu Trp Ile Gly Tyr Ile Asn Pro Tyr Asn Asp Gly Thr Lys Tyr
65 70 75 80

```
Asn Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Ser Asp Lys Ser Ser
                85                  90                  95

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala
            100                 105                 110

Val Tyr Tyr Cys Ala Arg Gly Thr Tyr Tyr Tyr Gly Ser Arg Val Phe
        115                 120                 125

Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser Gly Gly Gly
    130                 135                 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met
145                 150                 155                 160

Thr Gln Ala Ala Pro Ser Ile Pro Val Thr Pro Gly Glu Ser Val Ser
                165                 170                 175

Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu Asn Ser Asn Gly Asn Thr
            180                 185                 190

Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser Pro Gln Leu Leu
        195                 200                 205

Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro Asp Arg Phe Ser
    210                 215                 220

Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile Ser Arg Val Glu
225                 230                 235                 240

Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His Leu Glu Tyr Pro
                245                 250                 255

Phe Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ser Asp Pro
            260                 265                 270

Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala
        275                 280                 285
```

```
Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly
    290                 295                 300

Gly Ala Val His Thr Arg Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile
305                 310                 315                 320

Trp Ala Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu Ser Leu Val
                325                 330                 335

Ile Thr Leu Tyr Cys Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe
            340                 345                 350

Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly
        355                 360                 365

Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Arg
    370                 375                 380

Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln
385                 390                 395                 400

Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp
                405                 410                 415

Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro
            420                 425                 430

Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp
        435                 440                 445

Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg
    450                 455                 460

Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr
465                 470                 475                 480

Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg Gly
                485                 490                 495

Ser Ser Gly Ser Gly Glu Gly Arg Gly Ser Leu Leu Thr Cys Gly Asp
            500                 505                 510
```

```
Val Glu Glu Asn Pro Gly Pro Met Ser Gly Glu Ser Met Asn Phe Ser
        515                 520                 525

Asp Val Phe Asp Ser Ser Glu Asp Tyr Phe Val Ser Val Asn Thr Ser
    530                 535                 540

Tyr Tyr Ser Val Asp Ser Glu Met Leu Leu Cys Ser Leu Gln Glu Val
545                 550                 555                 560

Arg Gln Phe Ser Arg Leu Phe Val Pro Ile Ala Tyr Ser Leu Ile Cys
                565                 570                 575

Val Phe Gly Leu Leu Gly Asn Ile Leu Val Val Ile Thr Phe Ala Phe
            580                 585                 590

Tyr Lys Lys Ala Arg Ser Met Thr Asp Val Tyr Leu Leu Asn Met Ala
        595                 600                 605

Ile Ala Asp Ile Leu Phe Val Leu Thr Leu Pro Phe Trp Ala Val Ser
    610                 615                 620

His Ala Thr Gly Ala Trp Val Phe Ser Asn Ala Thr Cys Lys Leu Leu
625                 630                 635                 640

Lys Gly Ile Tyr Ala Ile Asn Phe Asn Cys Gly Met Leu Leu Leu Thr
                645                 650                 655

Cys Ile Ser Met Asp Arg Tyr Ile Ala Ile Val Gln Ala Thr Lys Ser
            660                 665                 670

Phe Arg Leu Arg Ser Arg Thr Leu Pro Arg Ser Lys Ile Ile Cys Leu
        675                 680                 685

Val Val Trp Gly Leu Ser Val Ile Ile Ser Ser Ser Thr Phe Val Phe
    690                 695                 700

Asn Gln Lys Tyr Asn Thr Gln Gly Ser Asp Val Cys Glu Pro Lys Tyr
705                 710                 715                 720
```

```
Gln Thr Val Ser Glu Pro Ile Arg Trp Lys Leu Leu Met Leu Gly Leu
                725                 730                 735

Glu Leu Leu Phe Gly Phe Phe Ile Pro Leu Met Phe Met Ile Phe Cys
            740                 745                 750

Tyr Thr Phe Ile Val Lys Thr Leu Val Gln Ala Gln Asn Ser Lys Arg
        755                 760                 765

His Lys Ala Ile Arg Val Ile Ile Ala Val Val Leu Val Phe Leu Ala
    770                 775                 780

Cys Gln Ile Pro His Asn Met Val Leu Leu Val Thr Ala Ala Asn Leu
785                 790                 795                 800

Gly Lys Met Asn Arg Ser Cys Gln Ser Glu Lys Leu Ile Gly Tyr Thr
                805                 810                 815

Lys Thr Val Thr Glu Val Leu Ala Phe Leu His Cys Cys Leu Asn Pro
            820                 825                 830

Val Leu Tyr Ala Phe Ile Gly Gln Lys Phe Arg Asn Tyr Phe Leu Lys
        835                 840                 845

Ile Leu Lys Asp Leu Trp Cys Val Arg Arg Lys Tyr Lys Ser Ser Gly
    850                 855                 860

Phe Ser Cys Ala Gly Arg Tyr Ser Glu Asn Ile Ser Arg Gln Thr Ser
865                 870                 875                 880

Glu Thr Ala Asp Asn Asp Asn Ala Ser Ser Phe Thr Met
                885                 890
```

<210> 426
<211> 2679
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 426
atggagacag acactcttct cctttgggtc ttgctgctgt gggttcccgg aagcacagga 60

gaagtacagt tgcaacagtc tgggccagaa ctcatcaaac ccggagcttc tgtaaaaatg 120

tcatgcaaag ctagtggata tacatttact tcttacgtga tgcactgggt aaaacagaaa 180

cctggtcagg ggcttgagtg gatcgggtac attaacccat ataatgacgg caccaaatat 240

aacgagaaat tcaagggaaa ggctacgctt acatcagata agtccagtag caccgcttat 300

atggaactta gcagccttac ttccgaagat tccgcggtgt attactgcgc gagagggact 360

tactactacg ggagtcgagt attcgattat tggggtcaag gcacgacgct cacggtgagc 420

tcaggtggtg gagggtctgg gggtggcggc agtggtgggg ggggctcaga catcgtgatg 480

acccaggcag caccttctat cccggtaacc ccaggcgagt ctgtatctat cagttgtcgg 540

tccagcaagt ctcttctcaa cagtaatggc aatacatatc tttactggtt cctccaaagg 600

cctgggcaaa gtcctcaact tcttatatat cggatgtcca atcttgcgag tggcgtaccc 660

gacaggtttt cagggtctgg gagcggaaca gcttttacgt tgagaatatc cagggtagaa 720

gctgaggacg tcggtgtata ttattgcatg caacatctcg aataccccctt taccttcggc 780

gctggtacaa agctcgaatt gaaacgcagc gatccaacca cgacgccagc gccacgacca 840

cctacgcccg ctccaactat tgcctcccag cccctgagtc ttcggccaga agcgtgtaga 900

cctgctgccg gcggggccgt tcatacgcgg ggccttgact ttgcatgtga tatctatata 960

tgggctcctt tggcgggaac ttgcggagtg cttcttttgt cactcgtgat aacgttgtat 1020

tgtaaaaggg gtcgaaagaa actcctctat atatttaagc agccctttat gaggcccgtg 1080

caaacaacac aagaagagga cggatgctct tgtcgattcc cggaagagga ggagggggg 1140

tgtgagctta gggtcaagtt ttctcgctct gccgacgcgc cagcctatca acagggccaa 1200

aaccagctgt ataacgaact caacctcggg cgccgggaag agtatgacgt ccttgacaaa 1260

cggcgcggtc gcgaccctga aatgggtgga aaaccgaggc gaaagaaccc ccaggaggga 1320

ctttacaacg aattgcaaaa agacaagatg gccgaagcct attccgaaat tggaatgaaa 1380

ggcgagcgga gacgaggtaa ggggcatgac ggcctgtatc aagggctctc tacggccacg 1440

aaggatactt acgacgccct tcatatgcaa gctcttccac cacggggttc gagcggcagt 1500

ggagagggca gaggaagtct gctaacatgc ggtgacgtcg aggagaatcc tggcccaatg 1560

agtggggaaa gtatgaactt cagcgatgta tttgactcct ccgaagatta ctttgtatct 1620

gtgaatacga gctattactc cgtcgatagt gaaatgctgc tctgtagtct ccaagaagtc 1680

cgccaattca gtcgcctctt cgttcccatc gcgtactccc ttatttgtgt ttttggcctt 1740

ctgggtaaca tcctggttgt aatcacattc gctttctata aaaaagctcg gagtatgact 1800

gatgtttacc ttcttaacat ggctatagcg gacattcttt ttgtgcttac tctcccattc 1860

tgggctgtga gccatgcaac aggggcgtgg gttttttcaa atgccacatg taagctgctt 1920

aaagggatct atgcaataaa cttcaattgc gggatgctcc tgctgacatg catcagtatg 1980

gatcgataca tagctatagt acaggcgact aagtccttcc gcctgcgatc ccgcacactg 2040

cctaggagca aaattatttg cctcgtcgta tgggggctct cagtgatcat ctcctccagt 2100

acgtttgtct ttaaccagaa atataacaca cagggttctg atgtatgtga accaaagtat 2160

cagacagtga gtgaaccaat acggtggaag ttgcttatgt tgggcttgga gctgcttttt 2220

gggtttttca tcccactgat gttcatgatt ttctgttata catttattgt taagaccttg 2280

gttcaggcgc aaaatagcaa gagacataag gcaattcgag tcatcattgc cgtggtgttg 2340

gtcttcttgg cctgtcagat cccccataat atggttctgc tcgtcaccgc cgctaacttg 2400

ggtaagatga atcgatcttg tcagtccgag aagttgatcg gatacaccaa aactgtgaca 2460

gaagtgctgg ccttccttca ctgttgtctg aacccagttt tgtatgcttt tataggacag 2520

aagtttcgaa attacttctt gaaaatcctc aaggacctct ggtgtgttcg aaggaagtac 2580

aagagctctg gctttagttg cgctgggcgc tacagtgaga atatatcccg gcagacctcc 2640

gagactgctg ataatgacaa cgcaagttcc ttcactatg 2679

<210> 427
<211> 238
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 427

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

Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu
20 25 30

```
Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys
        35                  40                  45

Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Leu
    50                  55                  60

Thr Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln
65                  70                  75                  80

His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg
                85                  90                  95

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

Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile
        115                 120                 125

Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn
    130                 135                 140

Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly
145                 150                 155                 160

Ile Lys Ala Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val
                165                 170                 175

Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro
            180                 185                 190

Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser
        195                 200                 205

Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val
    210                 215                 220

Thr Ala Ala Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys
225                 230                 235

<210>  428
<211>  717
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 428
gtgagcaagg gcgaggagct gttcaccggg gtggtgccca tcctggtcga gctggacggc 60

gacgtaaacg gccacaagtt cagcgtgtct ggcgagggcg agggcgatgc cacctacggc 120

aagctgaccc tgaagttcat ctgcaccacc ggcaagctgc ccgtgccctg gcccaccctc 180

gtgaccaccc tgacctacgg cgtgcagtgc ttcagccgct accccgacca catgaagcag 240

cacgacttct tcaagtccgc catgcccgaa ggctacgtcc aggagcgcac catcttcttc 300

aaggacgacg gcaactacaa gacccgcgcc gaggtgaagt tcgagggcga caccctggtg 360

aaccgcatcg agctgaaggg catcgacttc aaggaggacg gcaacatcct ggggcacaag 420

ctggagtaca actacaacag ccacaacgtc tatatcatgg ccgacaagca gaagaacggc 480

atcaaggcga acttcaagat ccgccacaac atcgaggacg gcagcgtgca gctcgccgac 540

cactaccagc agaacacccc catcggcgac ggccccgtgc tgctgcccga caaccactac 600

ctgagcaccc agtccgccct gagcaaagac cccaacgaga agcgcgatca catggtcctg 660

ctggagttcg tgaccgccgc cgggatcact ctcggcatgg acgagctgta caagtaa 717

<210> 429
<211> 1153
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 429

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Ile
20 25 30

Lys Pro Gly Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr
35 40 45

```
Phe Thr Ser Tyr Val Met His Trp Val Lys Gln Lys Pro Gly Gln Gly
    50                  55                  60

Leu Glu Trp Ile Gly Tyr Ile Asn Pro Tyr Asn Asp Gly Thr Lys Tyr
65                  70                  75                  80

Asn Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Ser Asp Lys Ser Ser
                85                  90                  95

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala
            100                 105                 110

Val Tyr Tyr Cys Ala Arg Gly Thr Tyr Tyr Tyr Gly Ser Arg Val Phe
        115                 120                 125

Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser Gly Gly Gly
    130                 135                 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met
145                 150                 155                 160

Thr Gln Ala Ala Pro Ser Ile Pro Val Thr Pro Gly Glu Ser Val Ser
                165                 170                 175

Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu Asn Ser Asn Gly Asn Thr
            180                 185                 190

Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser Pro Gln Leu Leu
        195                 200                 205

Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro Asp Arg Phe Ser
    210                 215                 220

Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile Ser Arg Val Glu
225                 230                 235                 240

Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His Leu Glu Tyr Pro
                245                 250                 255

Phe Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ser Asp Pro
            260                 265                 270
```

```
Thr Thr Thr Pro Ala Pro Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala
        275                 280                 285

Ser Gln Pro Leu Ser Leu Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly
    290                 295                 300

Gly Ala Val His Thr Arg Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile
305                 310                 315                 320

Trp Ala Pro Leu Ala Gly Thr Cys Gly Val Leu Leu Leu Ser Leu Val
                325                 330                 335

Ile Thr Leu Tyr Cys Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe
            340                 345                 350

Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly
        355                 360                 365

Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Arg
    370                 375                 380

Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln
385                 390                 395                 400

Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp
                405                 410                 415

Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro
            420                 425                 430

Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp
        435                 440                 445

Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg
    450                 455                 460

Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr
465                 470                 475                 480
```

```
Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg Gly
                485                 490                 495

Ser Ser Gly Ser Gly Glu Gly Arg Gly Ser Leu Leu Thr Cys Gly Asp
            500                 505                 510

Val Glu Glu Asn Pro Gly Pro Met Ser Gly Glu Ser Met Asn Phe Ser
        515                 520                 525

Asp Val Phe Asp Ser Ser Glu Asp Tyr Phe Val Ser Val Asn Thr Ser
    530                 535                 540

Tyr Tyr Ser Val Asp Ser Glu Met Leu Leu Cys Ser Leu Gln Glu Val
545                 550                 555                 560

Arg Gln Phe Ser Arg Leu Phe Val Pro Ile Ala Tyr Ser Leu Ile Cys
                565                 570                 575

Val Phe Gly Leu Leu Gly Asn Ile Leu Val Val Ile Thr Phe Ala Phe
            580                 585                 590

Tyr Lys Lys Ala Arg Ser Met Thr Asp Val Tyr Leu Leu Asn Met Ala
        595                 600                 605

Ile Ala Asp Ile Leu Phe Val Leu Thr Leu Pro Phe Trp Ala Val Ser
    610                 615                 620

His Ala Thr Gly Ala Trp Val Phe Ser Asn Ala Thr Cys Lys Leu Leu
625                 630                 635                 640

Lys Gly Ile Tyr Ala Ile Asn Phe Asn Cys Gly Met Leu Leu Leu Thr
                645                 650                 655

Cys Ile Ser Met Asp Arg Tyr Ile Ala Ile Val Gln Ala Thr Lys Ser
            660                 665                 670

Phe Arg Leu Arg Ser Arg Thr Leu Pro Arg Ser Lys Ile Ile Cys Leu
        675                 680                 685

Val Val Trp Gly Leu Ser Val Ile Ile Ser Ser Ser Thr Phe Val Phe
    690                 695                 700
```

```
Asn Gln Lys Tyr Asn Thr Gln Gly Ser Asp Val Cys Glu Pro Lys Tyr
705                 710                 715                 720

Gln Thr Val Ser Glu Pro Ile Arg Trp Lys Leu Leu Met Leu Gly Leu
                725                 730                 735

Glu Leu Leu Phe Gly Phe Phe Ile Pro Leu Met Phe Met Ile Phe Cys
            740                 745                 750

Tyr Thr Phe Ile Val Lys Thr Leu Val Gln Ala Gln Asn Ser Lys Arg
        755                 760                 765

His Lys Ala Ile Arg Val Ile Ile Ala Val Val Leu Val Phe Leu Ala
    770                 775                 780

Cys Gln Ile Pro His Asn Met Val Leu Leu Val Thr Ala Ala Asn Leu
785                 790                 795                 800

Gly Lys Met Asn Arg Ser Cys Gln Ser Glu Lys Leu Ile Gly Tyr Thr
                805                 810                 815

Lys Thr Val Thr Glu Val Leu Ala Phe Leu His Cys Cys Leu Asn Pro
            820                 825                 830

Val Leu Tyr Ala Phe Ile Gly Gln Lys Phe Arg Asn Tyr Phe Leu Lys
        835                 840                 845

Ile Leu Lys Asp Leu Trp Cys Val Arg Arg Lys Tyr Lys Ser Ser Gly
    850                 855                 860

Phe Ser Cys Ala Gly Arg Tyr Ser Glu Asn Ile Ser Arg Gln Thr Ser
865                 870                 875                 880

Glu Thr Ala Asp Asn Asp Asn Ala Ser Ser Phe Thr Met Gly Ser Gly
                885                 890                 895

Ala Thr Asn Phe Ser Leu Leu Lys Gln Ala Gly Asp Val Glu Glu Asn
            900                 905                 910
```

```
Pro Gly Pro Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro
        915                 920                 925


Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val
    930                 935                 940


Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys
945                 950                 955                 960


Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val
                965                 970                 975


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


Met Lys Gln His Asp Phe Phe Lys  Ser Ala Met Pro Glu  Gly Tyr Val
        995                 1000                1005


Gln Glu  Arg Thr Ile Phe Phe  Lys Asp Asp Gly Asn  Tyr Lys Thr
    1010                1015                1020


Arg Ala  Glu Val Lys Phe Glu  Gly Asp Thr Leu Val  Asn Arg Ile
    1025                1030                1035


Glu Leu  Lys Gly Ile Asp Phe  Lys Glu Asp Gly Asn  Ile Leu Gly
    1040                1045                1050


His Lys  Leu Glu Tyr Asn Tyr  Asn Ser His Asn Val  Tyr Ile Met
    1055                1060                1065


Ala Asp  Lys Gln Lys Asn Gly  Ile Lys Ala Asn Phe  Lys Ile Arg
    1070                1075                1080


His Asn  Ile Glu Asp Gly Ser  Val Gln Leu Ala Asp  His Tyr Gln
    1085                1090                1095


Gln Asn  Thr Pro Ile Gly Asp  Gly Pro Val Leu Leu  Pro Asp Asn
    1100                1105                1110


His Tyr  Leu Ser Thr Gln Ser  Ala Leu Ser Lys Asp  Pro Asn Glu
    1115                1120                1125
```

Lys Arg Asp His Met Val Leu Leu Glu Phe Val Thr Ala Ala Gly
    1130   1135   1140

Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys
    1145   1150

<210> 430
<211> 3462
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 430
atggagacag acactcttct cctttgggtc ttgctgctgt gggttcccgg aagcacagga 60

gaagtacagt tgcaacagtc tgggccagaa ctcatcaaac ccggagcttc tgtaaaaatg 120

tcatgcaaag ctagtggata tacatttact tcttacgtga tgcactgggt aaaacagaaa 180

cctggtcagg ggcttgagtg gatcgggtac attaacccat ataatgacgg caccaaatat 240

aacgagaaat tcaagggaaa ggctacgctt acatcagata agtccagtag caccgcttat 300

atggaactta gcagccttac ttccgaagat tccgcggtgt attactgcgc gagagggact 360

tactactacg ggagtcgagt attcgattat tggggtcaag gcacgacgct cacggtgagc 420

tcaggtggtg gagggtctgg gggtggcggc agtggtgggg ggggctcaga catcgtgatg 480

acccaggcag caccttctat cccggtaacc ccaggcgagt ctgtatctat cagttgtcgg 540

tccagcaagt ctcttctcaa cagtaatggc aatacatatc tttactggtt cctccaaagg 600

cctgggcaaa gtcctcaact tcttatatat cggatgtcca atcttgcgag tggcgtaccc 660

gacaggtttt cagggtctgg gagcggaaca gcttttacgt tgagaatatc cagggtagaa 720

gctgaggacg tcggtgtata ttattgcatg caacatctcg aataccccctt taccttcggc 780

gctggtacaa agctcgaatt gaaacgcagc gatccaacca cgacgccagc gccacgacca 840

cctacgcccg ctccaactat tgcctcccag cccctgagtc ttcggccaga agcgtgtaga 900

cctgctgccg gcggggccgt tcatacgcgg ggccttgact ttgcatgtga tatctatata 960

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Val Thr Leu Met Val Leu Ser Ser Pro Leu Ala Leu Ala Ser Asp Glu
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Asn Pro Val Val His Phe Phe Lys Asn Ile Val Thr Pro Arg Thr Pro
35 40 45

Pro Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Ser Gly Asp
50 55 60

```
Thr Arg Pro Arg Phe Leu Trp Gln Pro Lys Arg Glu Cys His Phe Phe
65                  70                  75                  80


Asn Gly Thr Glu Arg Val Arg Phe Leu Asp Arg Tyr Phe Tyr Asn Gln
                85                  90                  95


Glu Glu Ser Val Arg Phe Asp Ser Asp Val Gly Glu Phe Arg Ala Val
            100                 105                 110


Thr Glu Leu Gly Arg Pro Asp Ala Glu Tyr Trp Asn Ser Gln Lys Asp
        115                 120                 125


Ile Leu Glu Gln Ala Arg Ala Ala Val Asp Thr Tyr Cys Arg His Asn
    130                 135                 140


Tyr Gly Val Val Glu Ser Phe Thr Val Gln Arg Arg Val Gln Pro Lys
145                 150                 155                 160


Val Thr Val Tyr Pro Ser Lys Thr Gln Pro Leu Gln His His Asn Leu
                165                 170                 175


Leu Val Cys Ser Val Ser Gly Phe Tyr Pro Gly Ser Ile Glu Val Arg
            180                 185                 190


Trp Phe Leu Asn Gly Gln Glu Glu Lys Ala Gly Met Val Ser Thr Gly
        195                 200                 205


Leu Ile Gln Asn Gly Asp Trp Thr Phe Gln Thr Leu Val Met Leu Glu
    210                 215                 220


Thr Val Pro Arg Ser Gly Glu Val Tyr Thr Cys Gln Val Glu His Pro
225                 230                 235                 240


Ser Val Thr Ser Pro Leu Thr Val Glu Trp Arg Ala Arg Ser Glu Ser
                245                 250                 255


Ala Gln Ser Lys Met Leu Ser Gly Val Gly Gly Phe Val Leu Gly Leu
            260                 265                 270


Leu Phe Leu Gly Ala Gly Leu Phe Ile Tyr Phe Arg Asn Gln Thr Ser
        275                 280                 285
```

```
Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly
    290                 295                 300

Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
305                 310                 315                 320

Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
                325                 330                 335

Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys
            340                 345                 350

Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg
        355                 360                 365

Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
    370                 375                 380

Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
385                 390                 395                 400

Gly Ser Ser Gly Ser Gly Glu Gly Arg Gly Ser Leu Leu Thr Cys Gly
                405                 410                 415

Asp Val Glu Glu Asn Pro Gly Pro Met Ala Ile Ser Gly Val Pro Val
            420                 425                 430

Leu Gly Phe Phe Ile Ile Ala Val Leu Met Ser Ala Gln Glu Ser Trp
        435                 440                 445

Ala Ile Lys Glu Glu His Val Ile Ile Gln Ala Glu Phe Tyr Leu Asn
    450                 455                 460

Pro Asp Gln Ser Gly Glu Phe Met Phe Asp Phe Asp Gly Asp Glu Ile
465                 470                 475                 480

Phe His Val Asp Met Ala Lys Lys Glu Thr Val Trp Arg Leu Glu Glu
                485                 490                 495
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Phe Gly Arg Phe Ala Ser Phe Glu Ala Gln Gly Ala Leu Ala Asn Ile
            500                 505                 510

Ala Val Asp Lys Ala Asn Leu Glu Ile Met Thr Lys Arg Ser Asn Tyr
        515                 520                 525

Thr Pro Ile Thr Asn Val Pro Pro Glu Val Thr Val Leu Thr Asn Ser
    530                 535                 540

Pro Val Glu Leu Arg Glu Pro Asn Val Leu Ile Cys Phe Ile Asp Lys
545                 550                 555                 560

Phe Thr Pro Pro Val Val Asn Val Thr Trp Leu Arg Asn Gly Lys Pro
                565                 570                 575

Val Thr Thr Gly Val Ser Glu Thr Val Phe Leu Pro Arg Glu Asp His
            580                 585                 590

Leu Phe Arg Lys Phe His Tyr Leu Pro Phe Leu Pro Ser Thr Glu Asp
        595                 600                 605

Val Tyr Asp Cys Arg Val Glu His Trp Gly Leu Asp Glu Pro Leu Leu
    610                 615                 620

Lys His Trp Glu Phe Asp Ala Pro Ser Pro Leu Pro Glu Thr Thr Glu
625                 630                 635                 640

Asn Val Val Cys Ala Leu Gly Leu Thr Val Gly Leu Val Gly Ile Ile
                645                 650                 655

Ile Gly Thr Ile Phe Ile Ile Lys Gly Leu Thr Ser Arg Val Lys Phe
            660                 665                 670

Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly Gln Asn Gln Leu
        675                 680                 685

Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp
    690                 695                 700

Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys
705                 710                 715                 720
```

```
Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala
               725                 730                 735


Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys
            740                 745                 750


Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr
        755                 760                 765


Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
    770                 775                 780
```