SEQUENCE LISTING

<110> THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY

<120> COMBINATION OF INTEGRIN-TARGETING KNOTTIN-FC FUSION AND ANTI-CD47 ANTIBODY FOR THE TREATMENT OF CANCER

<130> STDU2-37922.601

<150> US 62/875,337
<151> 2019-07-17

<160> 143

<170> PatentIn version 3.5

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Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

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Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100                 105                 110

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
        115                 120                 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
    130                 135                 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145                 150                 155                 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165                 170                 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
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Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
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Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225                 230                 235                 240

Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285
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Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
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Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
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Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
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Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
        35                  40                  45

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

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

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
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Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
            100                 105                 110
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Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
        115                 120                 125

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

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

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

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

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

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

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

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

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
            100                 105                 110

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

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

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

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
                165                 170                 175

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

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
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His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
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ctcagagtac aaaagagcac ttgggaaaga ggaagtcttt tcgcctgctc agtggtccac 720

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Pro Leu Lys Glu Cys Pro Pro Cys Ala Ala Pro Asp Leu Leu Gly Gly
35 40 45

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Pro Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile
    50                  55                  60

Ser Leu Ser Pro Met Val Thr Cys Val Val Val Ala Val Ser Glu Asp
65                  70                  75                  80

Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His
                85                  90                  95

Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg
            100                 105                 110

Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys
        115                 120                 125

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

Lys Thr Ile Ser Lys Pro Arg Gly Pro Val Arg Ala Pro Gln Val Tyr
145                 150                 155                 160

Val Leu Pro Pro Pro Ala Glu Glu Met Thr Lys Lys Glu Phe Ser Leu
                165                 170                 175

Thr Cys Met Ile Thr Gly Phe Leu Pro Ala Glu Ile Ala Val Asp Trp
            180                 185                 190

Thr Ser Asn Gly Arg Thr Glu Gln Asn Tyr Lys Asn Thr Ala Thr Val
        195                 200                 205

Leu Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Gln
    210                 215                 220

Lys Ser Thr Trp Glu Arg Gly Ser Leu Phe Ala Cys Ser Val Val His
225                 230                 235                 240

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

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Asp Ser Asp Cys Xaa Ala Gly Cys Val Cys Xaa Pro Asn Gly Phe Cys
20 25 30

Gly

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

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

Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys
50 55 60

```
Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu
65                  70                  75                  80

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

Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp
            100                 105                 110

Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His
        115                 120                 125

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

Val Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys
145                 150                 155                 160

Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu
                165                 170                 175

Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys
            180                 185                 190

Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu
        195                 200                 205

Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala
    210                 215                 220

Ser Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala
225                 230                 235                 240

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

Leu Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp
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260 265 270

Leu Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys
275 280 285

Glu Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys
290 295 300

Pro Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu
305 310 315 320

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

Asp Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met
340 345 350

Phe Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu
355 360 365

Leu Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys
370 375 380

Ala Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe
385 390 395 400

Lys Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu
405 410 415

Leu Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val
420 425 430

Arg Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu
435 440 445

Val Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro
450 455 460

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Glu Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu
465                 470                 475                 480

Asn Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val
                485                 490                 495

Thr Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser
            500                 505                 510

Ala Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu
        515                 520                 525

Thr Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg
    530                 535                 540

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys Pro
545                 550                 555                 560

Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala
                565                 570                 575

Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala
            580                 585                 590

Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu
        595                 600                 605

Gly Gly Gly Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu
    610                 615                 620

Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile
625                 630                 635                 640

Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe
                645                 650                 655
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Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu
            660                 665                 670

Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys
        675                 680                 685

Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile
    690                 695                 700

Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala
705                 710                 715                 720

Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe
                725                 730                 735

Cys Gln Ser Ile Ile Ser Thr Leu Thr Gly Gly Gly Ser
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            20                  25                  30

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
        35                  40                  45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
    50                  55                  60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
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65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His
115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg
130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg
145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala
165 170 175

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

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu
195 200 205

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

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser
260 265 270

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Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His
        275                 280                 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser
    290                 295                 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala
305                 310                 315                 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg
                325                 330                 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr
            340                 345                 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu
        355                 360                 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro
    370                 375                 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu
385                 390                 395                 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro
                405                 410                 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys
            420                 425                 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys
        435                 440                 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His
    450                 455                 460
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Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser
465                 470                 475                 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr
                485                 490                 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp
            500                 505                 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala
        515                 520                 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu
    530                 535                 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys
545                 550                 555                 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val
                565                 570                 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu Gly Gly Gly Ser Ala Pro Thr
            580                 585                 590

Ser Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu
        595                 600                 605

Asp Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys
    610                 615                 620

Leu Thr Arg Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr
625                 630                 635                 640

Glu Leu Lys His Leu Gln Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu
                645                 650                 655
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Glu Val Leu Asn Leu Ala Gln Ser Lys Asn Phe His Leu Arg Pro Arg
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Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala Thr Ile Val
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<210> 40
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<212> PRT
<213> Homo sapiens

<400> 40

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Cys Asp Pro Cys Ala Thr Cys Tyr Cys Arg Phe Phe Asn Ala Phe Cys
20 25 30

Tyr Cys Arg Lys Leu Gly Thr Ala Met Asn Pro Cys Ser Arg Thr
35 40 45

<210> 41
<211> 48
<212> PRT
<213> Homo sapiens

<400> 41

Glu Asp Asn Cys Ile Ala Glu Asp Tyr Gly Lys Cys Thr Trp Gly Gly
1 5 10 15

Thr Lys Cys Cys Arg Gly Arg Pro Cys Arg Cys Ser Met Ile Gly Thr
20 25 30

Asn Cys Glu Cys Thr Pro Arg Leu Ile Met Glu Gly Leu Ser Phe Ala
35 40 45

<210> 42
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<220>
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<222> (3)..(5)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (9)..(13)
<223> Xaa can be any naturally occurring amino acid

<400> 42

Gly Cys Xaa Xaa Xaa Arg Gly Asp Xaa Xaa Xaa Xaa Xaa Cys Lys Gln
1 5 10 15

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

Gly

<210> 43
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (3)..(5)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (9)..(13)
<223> Xaa can be any naturally occurring amino acid

<400> 43

Gly Cys Xaa Xaa Xaa Arg Gly Asp Xaa Xaa Xaa Xaa Xaa Cys Ser Gln
1 5 10 15

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

Gly

<210> 44
<211> 822
<212> DNA
<213> Artificial

<220>
<223> Synthetic

<400> 44
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cccataacac agaacccctg tcctccactc aaagagtgtc ccccatgcgc agctccagac 180

ctcttgggtg gaccatccgt cttcatcttc cctccaaaga tcaaggatgt actcatgatc 240

tccctgagcc ccatggtcac atgtgtggtg gtggatgtga gcgaggatga cccagacgtc 300

cagatcagct ggtttgtgaa caacgtggaa gtacacacag ctcagacaca aacccataga 360

gaggattaca acagtactct ccgggtggtc agtgccctcc ccatccagca ccaggactgg 420

atgagtggca aggagttcaa atgcaaggtc aacaacagag ccctcccatc ccccatcgag 480

aaaaccatct caaaacccag agggccagta agagctccac aggtatatgt cttgcctcca 540

ccagcagaag agatgactaa gaaagagttc agtctgacct gcatgatcac aggcttctta 600

cctgccgaaa ttgctgtgga ctggaccagc aatgggcgta cagagcaaaa ctacaagaac 660

accgcaacag tcctggactc tgatggttct tacttcatgt acagcaagct cagagtacaa 720

aagagcactt gggaaagagg aagtcttttc gcctgctcag tggtccacga gggtctgcac 780

aatcacctta cgactaagac catctcccgg tctctgggta aa 822

<210> 45
<211> 271
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 45

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

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

Gly Glu Pro Arg Val Pro Ile Thr Gln Asn Pro Cys Pro Pro Leu Lys
35 40 45

Glu Cys Pro Pro Cys Ala Ala Pro Asp Leu Leu Gly Gly Pro Ser Val
50 55 60

Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser
65 70 75 80

Pro Met Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp
85 90 95

```
Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln
            100                 105                 110

Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser
        115                 120                 125

Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys
    130                 135                 140

Cys Lys Val Asn Asn Arg Ala Leu Pro Ser Pro Ile Glu Lys Thr Ile
145                 150                 155                 160

Ser Lys Pro Arg Gly Pro Val Arg Ala Pro Gln Val Tyr Val Leu Pro
                165                 170                 175

Pro Pro Ala Glu Glu Met Thr Lys Lys Glu Phe Ser Leu Thr Cys Met
            180                 185                 190

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

Gly Arg Thr Glu Gln Asn Tyr Lys Asn Thr Ala Thr Val Leu Asp Ser
    210                 215                 220

Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Gln Lys Ser Thr
225                 230                 235                 240

Trp Glu Arg Gly Ser Leu Phe Ala Cys Ser Val Val His Glu Gly Leu
                245                 250                 255

His Asn His Leu Thr Thr Lys Thr Ile Ser Arg Ser Leu Gly Lys
            260                 265                 270
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<210> 46
<211> 822
<212> DNA
<213> Artificial

<220>
<223> Synthetic

<400> 46
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ttggctggtt gtgtttgtgg tccaaatggt ttttgtggtg gtcgactaga gcccagagtg 120

cccataacac agaacccctg tcctccactc aaagagtgtc ccccatgcgc agctccagac 180

ctcttgggtg gaccatccgt cttcatcttc cctccaaaga tcaaggatgt actcatgatc 240

tccctgagcc ccatggtcac atgtgtggtg gtggatgtga gcgaggatga cccagacgtc 300

cagatcagct ggtttgtgaa caacgtggaa gtacacacag ctcagacaca aacccataga 360

gaggattaca acagtactct ccgggtggtc agtgccctcc ccatccagca ccaggactgg 420

atgagtggca aggagttcaa atgcaaggtc aacaacagag ccctcccatc ccccatcgag 480

aaaaccatct caaaacccag agggccagta agagctccac aggtatatgt cttgcctcca 540

ccagcagaag agatgactaa gaaagagttc agtctgacct gcatgatcac aggcttctta 600

cctgccgaaa ttgctgtgga ctggaccagc aatgggcgta cagagcaaaa ctacaagaac 660

accgcaacag tcctggactc tgatggttct tacttcatgt acagcaagct cagagtacaa 720

aagagcactt gggaaagagg aagtcttttc gcctgctcag tggtccacga gggtctgcac 780

aatcacctta cgactaagac catctcccgg tctctgggta aa 822

<210> 47
<211> 271
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 47

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

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

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Gly Glu Pro Arg Val Pro Ile Thr Gln Asn Pro Cys Pro Pro Leu Lys
        35                  40                  45

Glu Cys Pro Pro Cys Ala Ala Pro Asp Leu Leu Gly Gly Pro Ser Val
    50                  55                  60

Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser
65                  70                  75                  80

Pro Met Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp
                85                  90                  95

Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln
            100                 105                 110

Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser
        115                 120                 125

Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys
    130                 135                 140

Cys Lys Val Asn Asn Arg Ala Leu Pro Ser Pro Ile Glu Lys Thr Ile
145                 150                 155                 160

Ser Lys Pro Arg Gly Pro Val Arg Ala Pro Gln Val Tyr Val Leu Pro
                165                 170                 175

Pro Pro Ala Glu Glu Met Thr Lys Lys Glu Phe Ser Leu Thr Cys Met
            180                 185                 190

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

Gly Arg Thr Glu Gln Asn Tyr Lys Asn Thr Ala Thr Val Leu Asp Ser
    210                 215                 220
```

```
Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Gln Lys Ser Thr
225                 230                 235                 240


Trp Glu Arg Gly Ser Leu Phe Ala Cys Ser Val Val His Glu Gly Leu
                245                 250                 255


His Asn His Leu Thr Thr Lys Thr Ile Ser Arg Ser Leu Gly Lys
            260                 265                 270


<210>  48
<211>  265
<212>  PRT
<213>  Artificial

<220>
<223>  Synthetic

<400>  48

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


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


Gly Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro
        35                  40                  45


Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
    50                  55                  60


Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
65                  70                  75                  80


Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
                85                  90                  95


Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
            100                 105                 110
```

```
Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
        115                 120                 125

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
    130                 135                 140

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
145                 150                 155                 160

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

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
            180                 185                 190

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
        195                 200                 205

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
    210                 215                 220

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
225                 230                 235                 240

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
                245                 250                 255

Lys Ser Leu Ser Leu Ser Pro Gly Lys
            260                 265
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<210> 49
<211> 260
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 49

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

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

Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu
        35                  40                  45

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
    50                  55                  60

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
65                  70                  75                  80

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
                85                  90                  95

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr
            100                 105                 110

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
        115                 120                 125

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

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
145                 150                 155                 160

Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val
                165                 170                 175

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
            180                 185                 190
```

```
Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
        195                 200                 205

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
    210                 215                 220

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
225                 230                 235                 240

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
                245                 250                 255

Ser Pro Gly Lys
            260
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<210> 50
<211> 265
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 50

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

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

Gly Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro
        35                  40                  45

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
    50                  55                  60

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
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65 70 75 80

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
85 90 95

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
100 105 110

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
115 120 125

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
130 135 140

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
145 150 155 160

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

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
180 185 190

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
195 200 205

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
210 215 220

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
225 230 235 240

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
245 250 255

Lys Ser Leu Ser Leu Ser Pro Gly Lys
260 265

<210> 51
<211> 260
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 51

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


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


Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu
        35                  40                  45


Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
    50                  55                  60


Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
65                  70                  75                  80


His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
                85                  90                  95


Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr
            100                 105                 110


Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
        115                 120                 125


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


Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
```

145 150 155 160

Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val
165 170 175

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
180 185 190

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
195 200 205

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
210 215 220

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
225 230 235 240

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
245 250 255

Ser Pro Gly Lys
260

<210> 52
<400> 52
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<210> 53
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<210> 58
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<210> 59
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 59

Gly Cys Ala Glu Pro Arg Gly Asp Met Pro Trp Thr Trp Cys Lys Gln
1 5 10 15

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

Gly

<210> 60
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 60

Gly Cys Val Gly Gly Arg Gly Asp Trp Ser Pro Lys Trp Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Pro Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 61
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 61

Gly Cys Ala Glu Leu Arg Gly Asp Arg Ser Tyr Pro Glu Cys Lys Gln
1 5 10 15

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

Gly

<210> 62
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 62

Gly Cys Arg Leu Pro Arg Gly Asp Val Pro Arg Pro His Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Gln Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 63
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 63

Gly Cys Tyr Pro Leu Arg Gly Asp Asn Pro Tyr Ala Ala Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Arg Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 64
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 64

Gly Cys Thr Ile Gly Arg Gly Asp Trp Ala Pro Ser Glu Cys Lys Gln
1 5 10 15

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

Gly

<210> 65
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 65

Gly Cys His Pro Pro Arg Gly Asp Asn Pro Pro Val Thr Cys Lys Gln
1 5 10 15

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

Gly

<210> 66
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 66

Gly Cys Pro Glu Pro Arg Gly Asp Asn Pro Pro Pro Ser Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Arg Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 67
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 67

Gly Cys Leu Pro Pro Arg Gly Asp Asn Pro Pro Pro Ser Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Gln Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 68
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 68

Gly Cys His Leu Gly Arg Gly Asp Trp Ala Pro Val Gly Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Pro Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 69
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 69

Gly Cys Asn Val Gly Arg Gly Asp Trp Ala Pro Ser Glu Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Pro Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys

20 25 30

Gly

<210> 70
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 70

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

Asp Ser Asp Cys Arg Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 71
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 71

Gly Cys Pro Leu Pro Arg Gly Asp Asn Pro Pro Thr Glu Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Gln Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 72
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 72

Gly Cys Ser Glu Ala Arg Gly Asp Asn Pro Arg Leu Ser Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Arg Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 73
<211> 32
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 73

Gly Cys Leu Leu Gly Arg Gly Asp Trp Ala Pro Glu Ala Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Arg Ala Gly Cys Val Cys Pro Asn Gly Phe Cys Gly
20 25 30

<210> 74
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 74

Gly Cys His Val Gly Arg Gly Asp Trp Ala Pro Leu Lys Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Gln Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 75
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 75

Gly Cys Val Arg Gly Arg Gly Asp Trp Ala Pro Pro Ser Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Pro Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 76
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 76

Gly Cys Leu Gly Gly Arg Gly Asp Trp Ala Pro Pro Ala Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Arg Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 77
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 77

Gly Cys Phe Val Gly Arg Gly Asp Trp Ala Pro Leu Thr Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Gln Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 78
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 78

Gly Cys Pro Val Gly Arg Gly Asp Trp Ser Pro Ala Ser Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Arg Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 79
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 79

Gly Cys Pro Arg Pro Arg Gly Asp Asn Pro Pro Leu Thr Cys Lys Gln
1 5 10 15

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

Gly

<210> 80
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 80

Gly Cys Tyr Gln Gly Arg Gly Asp Trp Ser Pro Ser Ser Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Pro Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 81
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 81

Gly Cys Ala Pro Gly Arg Gly Asp Trp Ala Pro Ser Glu Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Gln Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 82
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 82

Gly Cys Val Gln Gly Arg Gly Asp Trp Ser Pro Pro Ser Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Pro Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 83
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 83

Gly Cys His Val Gly Arg Gly Asp Trp Ala Pro Glu Glu Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Gln Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 84
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 84

Gly Cys Asp Gly Gly Arg Gly Asp Trp Ala Pro Pro Ala Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Arg Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 85
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 85

Gly Cys Pro Gln Gly Arg Gly Asp Trp Ala Pro Thr Ser Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Arg Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 86
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 86

Gly Cys Pro Arg Pro Arg Gly Asp Asn Pro Pro Leu Thr Cys Lys Gln
1 5 10 15

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

Gly

<210> 87
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 87

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

Asp Ser Asp Cys Leu Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys

20 25 30

Gly

<210> 88
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 88

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

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

Gly

<210> 89
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 89

Gly Cys Pro Gln Gly Arg Gly Asp Trp Ala Pro Glu Trp Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Pro Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 90
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 90

Gly Cys Pro Arg Gly Arg Gly Asp Trp Ser Pro Pro Ala Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Gln Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly

<210> 91
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 91

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Val Val Arg Gly Asp Trp Arg
20 25 30

Lys Arg Cys Tyr Cys Arg
35

<210> 92
<211> 38
<212> PRT

<213> Artificial

<220>
<223> Synthetic

<400> 92

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Glu Glu Arg Gly Asp Met Leu
20 25 30

Glu Lys Cys Tyr Cys Arg
35

<210> 93
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 93

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Glu Thr Arg Gly Asp Gly Lys
20 25 30

Glu Lys Cys Tyr Cys Arg
35

<210> 94
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 94

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Gln Trp Arg Gly Asp Gly Asp
20 25 30

Val Lys Cys Tyr Cys Arg
35

<210> 95
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 95

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Ser Arg Arg Gly Asp Met Arg
20 25 30

Glu Arg Cys Tyr Cys Arg
35

<210> 96
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 96

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Gln Tyr Arg Gly Asp Gly Met
20 25 30

Lys His Cys Tyr Cys Arg
35

<210> 97
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 97

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Thr Gly Arg Gly Asp Thr Lys
20 25 30

Val Leu Cys Tyr Cys Arg
35

<210> 98
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 98

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Val Glu Arg Gly Asp Met Lys
20 25 30

Arg Arg Cys Tyr Cys Arg
35

<210> 99
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 99

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Thr Gly Arg Gly Asp Val Arg
20 25 30

Met Asn Cys Tyr Cys Arg
35

<210> 100
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 100

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Val Glu Arg Gly Asp Gly Met
20 25 30

Ser Lys Cys Tyr Cys Arg
35

<210> 101

<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 101

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Arg Gly Arg Gly Asp Met Arg
20 25 30

Arg Glu Cys Tyr Cys Arg
35

<210> 102
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 102

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Glu Gly Arg Gly Asp Val Lys
20 25 30

Val Asn Cys Tyr Cys Arg
35

<210> 103
<211> 38
<212> PRT
<213> Artificial

<220>

<223> Synthetic

<400> 103

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Val Gly Arg Gly Asp Glu Lys
20 25 30

Met Ser Cys Tyr Cys Arg
35

<210> 104
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 104

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Val Ser Arg Gly Asp Met Arg
20 25 30

Lys Arg Cys Tyr Cys Arg
35

<210> 105
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 105

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys

1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Glu Arg Arg Gly Asp Ser Val
20 25 30

Lys Lys Cys Tyr Cys Arg
35

<210> 106
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 106

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Glu Gly Arg Gly Asp Thr Arg
20 25 30

Arg Arg Cys Tyr Cys Arg
35

<210> 107
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 107

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Glu Gly Arg Gly Asp Val Val
20 25 30

Arg Arg Cys Tyr Cys Arg
35

<210> 108
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 108

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Lys Gly Arg Gly Asp Asn Lys
20 25 30

Arg Lys Cys Tyr Cys Arg
35

<210> 109
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (21)..(21)
<223> Xaa can be any naturally occurring amino acid

<400> 109

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Xaa Thr Cys Tyr Cys Lys Gly Arg Gly Asp Val Arg

20 25 30

Arg Val Cys Tyr Cys Arg
35

<210> 110
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 110

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Val Gly Arg Gly Asp Asn Lys
20 25 30

Val Lys Cys Tyr Cys Arg
35

<210> 111
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 111

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Val Gly Arg Gly Asp Asn Arg
20 25 30

Leu Lys Cys Tyr Cys Arg
35

<210> 112
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 112

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Val Glu Arg Gly Asp Gly Met
20 25 30

Lys Lys Cys Tyr Cys Arg
35

<210> 113
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 113

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Glu Gly Arg Gly Asp Met Arg
20 25 30

Arg Arg Cys Tyr Cys Arg
35

<210> 114
<211> 38
<212> PRT

<213> Artificial

<220>
<223> Synthetic

<400> 114

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Gln Gly Arg Gly Asp Gly Asp
20 25 30

Val Lys Cys Tyr Cys Arg
35

<210> 115
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 115

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Ser Gly Arg Gly Asp Asn Asp
20 25 30

Leu Val Cys Tyr Cys Arg
35

<210> 116
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 116

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Val Glu Arg Gly Asp Gly Met
20 25 30

Ile Arg Cys Tyr Cys Arg
35

<210> 117
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 117

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Ser Gly Arg Gly Asp Asn Asp
20 25 30

Leu Val Cys Tyr Cys Arg
35

<210> 118
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 118

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Glu Gly Arg Gly Asp Met Lys
20 25 30

Met Lys Cys Tyr Cys Arg
35

<210> 119
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 119

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Ile Gly Arg Gly Asp Val Arg
20 25 30

Arg Arg Cys Tyr Cys Arg
35

<210> 120
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 120

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Glu Glu Arg Gly Asp Gly Arg
20 25 30

Lys Lys Cys Tyr Cys Arg
35

<210> 121
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 121

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Glu Gly Arg Gly Asp Arg Asp
20 25 30

Met Lys Cys Tyr Cys Arg
35

<210> 122
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 122

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Thr Gly Arg Gly Asp Glu Lys
20 25 30

Leu Arg Cys Tyr Cys Arg
35

<210> 123

<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 123

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Val Glu Arg Gly Asp Gly Asn
20 25 30

Arg Arg Cys Tyr Cys Arg
35

<210> 124
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 124

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Glu Ser Arg Gly Asp Val Val
20 25 30

Arg Lys Cys Tyr Cys Arg
35

<210> 125
<211> 38
<212> PRT
<213> Artificial

<220>

<223> Synthetic

<400> 125

Gly Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys
1 5 10 15

Cys Asp Pro Ala Ala Thr Cys Tyr Cys Tyr Gly Arg Gly Asp Asn Asp
20 25 30

Leu Arg Cys Tyr Cys Arg
35

<210> 126
<211> 330
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 126

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

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

```
Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100                 105                 110

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
        115                 120                 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
    130                 135                 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145                 150                 155                 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165                 170                 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190

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

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225                 230                 235                 240

Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285
```

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
290 295 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305 310 315 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
325 330

<210> 127
<211> 326
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 127

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

Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr
65 70 75 80

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro
100 105 110

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

Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp
    130                 135                 140

Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly
145                 150                 155                 160

Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn
                165                 170                 175

Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp
            180                 185                 190

Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro
        195                 200                 205

Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu
    210                 215                 220

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
225                 230                 235                 240

Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
                245                 250                 255

Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
            260                 265                 270

Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
        275                 280                 285

Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
    290                 295                 300
```

Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
305 310 315 320

Ser Leu Ser Pro Gly Lys
325

<210> 128
<211> 377
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 128

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

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Thr Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Arg Val Glu Leu Lys Thr Pro Leu Gly Asp Thr Thr His Thr Cys Pro
100 105 110

Arg Cys Pro Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg
115 120 125

```
Cys Pro Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys
    130                 135                 140

Pro Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro
145                 150                 155                 160

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
                165                 170                 175

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
            180                 185                 190

Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Lys Trp Tyr
        195                 200                 205

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    210                 215                 220

Gln Tyr Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Leu His
225                 230                 235                 240

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

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln
            260                 265                 270

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met
        275                 280                 285

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
    290                 295                 300

Ser Asp Ile Ala Val Glu Trp Glu Ser Ser Gly Gln Pro Glu Asn Asn
305                 310                 315                 320
```

Tyr Asn Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu
325 330 335

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Ile
340 345 350

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln
355 360 365

Lys Ser Leu Ser Leu Ser Pro Gly Lys
370 375

<210> 129
<211> 327
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 129

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

Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
65 70 75 80

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

```
Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Ser Cys Pro Ala Pro
            100                 105                 110

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

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
    130                 135                 140

Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
145                 150                 155                 160

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
                165                 170                 175

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            180                 185                 190

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
        195                 200                 205

Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    210                 215                 220

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
225                 230                 235                 240

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
                245                 250                 255

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            260                 265                 270

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        275                 280                 285
```

Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
290 295 300

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
305 310 315 320

Leu Ser Leu Ser Leu Gly Lys
325

<210> 130
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 130

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

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

Gly

<210> 131
<211> 33
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 131

Gly Cys Pro Arg Pro Arg Gly Asp Asn Pro Pro Leu Thr Cys Lys Gln
1 5 10 15

Asp Ser Asp Cys Leu Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys

75
20 25 30

Gly

<210> 132
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 132

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

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

Gly Gly Gly Gly Gly Ser
35

<210> 133
<211> 38
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 133

Gly Cys Pro Arg Pro Arg Gly Asp Asn Pro Pro Leu Thr Cys Lys Gln
1 5 10 15

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

Gly Gly Gly Gly Gly Ser
35

<210> 134
<211> 48
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 134

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

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

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

<210> 135
<211> 48
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 135

Gly Cys Pro Arg Pro Arg Gly Asp Asn Pro Pro Leu Thr Cys Lys Gln
1 5 10 15

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

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

<210> 136
<211> 5
<212> PRT

<213> Artificial

<220>
<223> Synthetic

<400> 136

Gly Gly Gly Gly Ser
1 5

<210> 137
<211> 15
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 137

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

<210> 138
<211> 18
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 138

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

Ser Arg

<210> 139
<211> 264
<212> PRT
<213> Artificial

<220>

<223> Synthetic

<400> 139

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


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


Gly Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro
        35                  40                  45


Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
    50                  55                  60


Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
65                  70                  75                  80


Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
                85                  90                  95


Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
            100                 105                 110


Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
        115                 120                 125


Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
    130                 135                 140


Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
145                 150                 155                 160


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


Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
```

180 185 190

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
195 200 205

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
210 215 220

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
225 230 235 240

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
245 250 255

Lys Ser Leu Ser Leu Ser Pro Gly
260

<210> 140
<211> 264
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 140

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

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

Gly Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro
35 40 45

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
50 55 60

```
                                            80
Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
65                  70                  75                  80


Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
                85                  90                  95


Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
            100                 105                 110


Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
        115                 120                 125


Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
    130                 135                 140


Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
145                 150                 155                 160


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


Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
            180                 185                 190


Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
        195                 200                 205


Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
    210                 215                 220


Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
225                 230                 235                 240


Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
                245                 250                 255


Lys Ser Leu Ser Leu Ser Pro Gly
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260

<210> 141
<211> 270
<212> PRT
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<220>
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Gly Cys Pro Arg Pro Arg Gly Asp Asn Pro Pro Leu Thr Cys Ser Gln
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Asp Ser Asp Cys Leu Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
20 25 30

Gly Glu Pro Arg Val Pro Ile Thr Gln Asn Pro Cys Pro Pro Leu Lys
35 40 45

Glu Cys Pro Pro Cys Ala Ala Pro Asp Leu Leu Gly Gly Pro Ser Val
50 55 60

Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser
65 70 75 80

Pro Met Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp
85 90 95

Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln
100 105 110

Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser
115 120 125

Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys
130 135 140

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Cys Lys Val Asn Asn Arg Ala Leu Pro Ser Pro Ile Glu Lys Thr Ile
145                 150                 155                 160


Ser Lys Pro Arg Gly Pro Val Arg Ala Pro Gln Val Tyr Val Leu Pro
                165                 170                 175


Pro Pro Ala Glu Glu Met Thr Lys Lys Glu Phe Ser Leu Thr Cys Met
            180                 185                 190


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


Gly Arg Thr Glu Gln Asn Tyr Lys Asn Thr Ala Thr Val Leu Asp Ser
    210                 215                 220


Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Gln Lys Ser Thr
225                 230                 235                 240


Trp Glu Arg Gly Ser Leu Phe Ala Cys Ser Val Val His Glu Gly Leu
                245                 250                 255


His Asn His Leu Thr Thr Lys Thr Ile Ser Arg Ser Leu Gly
            260                 265                 270


<210>  142
<211>  269
<212>  PRT
<213>  Artificial

<220>
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<400>  142

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


Asp Ser Asp Cys Leu Ala Gly Cys Val Cys Gly Pro Asn Gly Phe Cys
            20                  25                  30
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Gly Gly Gly Gly Gly Ser Glu Pro Lys Ser Ser Asp Lys Thr His Thr
        35                  40                  45

Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe
    50                  55                  60

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
65                  70                  75                  80

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
                85                  90                  95

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
            100                 105                 110

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
        115                 120                 125

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
    130                 135                 140

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
145                 150                 155                 160

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
                165                 170                 175

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
            180                 185                 190

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
        195                 200                 205

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
    210                 215                 220
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Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
225 230 235 240

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
245 250 255

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
260 265

<210> 143
<211> 279
<212> PRT
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Gly Cys Pro Arg Pro Arg Gly Asp Asn Pro Pro Leu Thr Cys Ser Gln
1 5 10 15

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

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

Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
50 55 60

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
65 70 75 80

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
85 90 95

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
100 105 110

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Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
        115                 120                 125

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
    130                 135                 140

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

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
                165                 170                 175

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr
            180                 185                 190

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
        195                 200                 205

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
    210                 215                 220

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
225                 230                 235                 240

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
                245                 250                 255

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
            260                 265                 270

Ser Leu Ser Leu Ser Pro Gly
        275
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