

SEQUENCE LISTING

<110> EpicentRx, Inc.

<120> IMMUNOMODULATORY FUSION PROTEINS

<130> RDX-024PC

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<151> 2016-09-27

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<151> 2017-04-12

<160> 63

<170> PatentIn version 3.5

<210> 1

<211> 12

<212> PRT

<213> Homo sapiens

<400> 1

Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu
1 5 10

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<211> 12

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Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu
1 5 10

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Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu
1 5 10

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<400> 4

Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu
1 5 10

<210> 5

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Val Lys His Tyr Thr Asn Pro Ser Gln Asp Val Thr
1 5 10

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<400> 6

Val Lys His Tyr Thr Asn Pro Ser Gln Asp Val Thr
1 5 10

<210> 7

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<213> Homo sapiens

<400> 7

Thr Ala Ser Lys Ser Lys Lys Glu Ile Phe
1 5 10

<210> 8

<211> 14

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Thr Pro Ser Ser Thr Asp Trp Val Asp Asn Lys Thr Phe Ser
1 5 10

<210> 9

<211> 13

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Val Gln His Pro Asn Gly Asn Lys Glu Lys Asn Val Pro
1 5 10

<210> 10

<211> 13

<212> PRT

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<400> 10

Val Gln His Pro Asn Gly Asn Lys Glu Lys Asn Val Pro
1 5 10

<210> 11

<211> 12

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<213> Homo sapiens

<400> 11

Arg Glu Lys Gln Thr Asp Glu Ile Lys Asp Thr Arg
1 5 10

<210> 12

<211> 159

<212> PRT

<213> Homo sapiens

<400> 12

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
1 5 10 15

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
 85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
 100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
 115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
 130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp
 145 150 155

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<211> 231

<212> PRT

<213> Homo sapiens

<400> 13

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

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

Asp Thr Leu Met Ile Ser 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> 14
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 <213> Homo sapiens

<400> 14

Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
 1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
 20 25 30

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

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

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

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

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

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

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

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ser 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

Met 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
195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
210 215 220

Pro Gly Lys
225

<210> 15
<211> 278
<212> PRT
<213> Homo sapiens

<400> 15

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

Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro Glu
 20 25 30

Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro Glu Pro
 35 40 45

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

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

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

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

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

Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp
 130 135 140

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

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

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

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

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

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

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

Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys Ser Leu
 260 265 270

Ser Leu Ser Pro Gly Lys
 275

<210> 16

<211> 228

<212> PRT

<213> Homo sapiens

<400> 16

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

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
 20 25 30

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

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

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

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

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

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

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

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

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

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

Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val
 195 200 205

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

Ser Leu Gly Lys
 225

<210> 17
 <211> 255
 <212> PRT
 <213> Homo sapiens

<400> 17

Val Pro Cys Pro Val Pro Ser Thr Pro Pro Thr Pro Ser Pro Ser Thr
 1 5 10 15

Pro Pro Thr Pro Ser Pro Ser Cys Cys His Pro Arg Leu Ser Leu His
 20 25 30

Arg Pro Ala Leu Glu Asp Leu Leu Leu Gly Ser Glu Ala Asn Leu Thr
 35 40 45

Cys Thr Leu Thr Gly Leu Arg Asp Ala Ser Gly Val Thr Phe Thr Trp
 50 55 60

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

Leu Cys Gly Cys Tyr Ser Val Ser Ser Val Leu Pro Gly Cys Ala Glu
 85 90 95

Pro Trp Asn His Gly Lys Thr Phe Thr Cys Thr Ala Ala Tyr Pro Glu
 100 105 110

Ser Lys Thr Pro Leu Thr Ala Thr Leu Ser Lys Ser Gly Asn Thr Phe
 115 120 125

Arg Pro Glu Val His Leu Leu Pro Pro Pro Ser Glu Glu Leu Ala Leu
 130 135 140

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

Asp Val Leu Val Arg Trp Leu Gln Gly Ser Gln Glu Leu Pro Arg Glu
 165 170 175

Lys Tyr Leu Thr Trp Ala Ser Arg Gln Glu Pro Ser Gln Gly Thr Thr
 180 185 190

Thr Phe Ala Val Thr Ser Ile Leu Arg Val Ala Ala Glu Asp Trp Lys
 195 200 205

Lys Gly Asp Thr Phe Ser Cys Met Val Gly His Glu Ala Leu Pro Leu
 210 215 220

Ala Phe Thr Gln Lys Thr Ile Asp Arg Leu Ala Gly Lys Pro Thr His
 225 230 235 240

Val Asn Val Ser Val Val Met Ala Glu Val Asp Gly Thr Cys Tyr
 245 250 255

<210> 18

<211> 242

<212> PRT

<213> Homo sapiens

<400> 18

Val Pro Cys Pro Val Pro Pro Pro Pro Pro Cys Cys His Pro Arg Leu
 1 5 10 15

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

Asn Leu Thr Cys Thr Leu Thr Gly Leu Arg Asp Ala Ser Gly Ala Thr
 35 40 45

Phe Thr Trp Thr Pro Ser Ser Gly Lys Ser Ala Val Gln Gly Pro Pro
 50 55 60

Glu Arg Asp Leu Cys Gly Cys Tyr Ser Val Ser Ser Val Leu Pro Gly
 65 70 75 80

Cys Ala Gln Pro Trp Asn His Gly Glu Thr Phe Thr Cys Thr Ala Ala
 85 90 95

His Pro Glu Leu Lys Thr Pro Leu Thr Ala Asn Ile Thr Lys Ser Gly
 100 105 110

Asn Thr Phe Arg Pro Glu Val His Leu Leu Pro Pro Pro Ser Glu Glu
 115 120 125

Leu Ala Leu Asn Glu Leu Val Thr Leu Thr Cys Leu Ala Arg Gly Phe
 130 135 140

Ser Pro Lys Asp Val Leu Val Arg Trp Leu Gln Gly Ser Gln Glu Leu
 145 150 155 160

Pro Arg Glu Lys Tyr Leu Thr Trp Ala Ser Arg Gln Glu Pro Ser Gln
 165 170 175

Gly Thr Thr Thr Phe Ala Val Thr Ser Ile Leu Arg Val Ala Ala Glu
 180 185 190

Asp Trp Lys Lys Gly Asp Thr Phe Ser Cys Met Val Gly His Glu Ala
 195 200 205

Leu Pro Leu Ala Phe Thr Gln Lys Thr Ile Asp Arg Met Ala Gly Lys
 210 215 220

Pro Thr His Val Asn Val Ser Val Val Met Ala Glu Val Asp Gly Thr
 225 230 235 240

Cys Tyr

<210> 19
 <211> 286
 <212> PRT
 <213> Homo sapiens

<400> 19

Arg Trp Pro Glu Ser Pro Lys Ala Gln Ala Ser Ser Val Pro Thr Ala
 1 5 10 15

Gln Pro Gln Ala Glu Gly Ser Leu Ala Lys Ala Thr Thr Ala Pro Ala
 20 25 30

Thr Thr Arg Asn Thr Gly Arg Gly Gly Glu Glu Lys Lys Lys Glu Lys
 35 40 45

Glu Lys Glu Glu Gln Glu Glu Arg Glu Thr Lys Thr Pro Glu Cys Pro
 50 55 60

Ser His Thr Gln Pro Leu Gly Val Tyr Leu Leu Thr Pro Ala Val Gln
 65 70 75 80

Asp Leu Trp Leu Arg Asp Lys Ala Thr Phe Thr Cys Phe Val Val Gly
 85 90 95

Ser Asp Leu Lys Asp Ala His Leu Thr Trp Glu Val Ala Gly Lys Val
 100 105 110

Pro Thr Gly Gly Val Glu Glu Gly Leu Leu Glu Arg His Ser Asn Gly
 115 120 125

Ser Gln Ser Gln His Ser Arg Leu Thr Leu Pro Arg Ser Leu Trp Asn
 130 135 140

Ala Gly Thr Ser Val Thr Cys Thr Leu Asn His Pro Ser Leu Pro Pro
 145 150 155 160

Gln Arg Leu Met Ala Leu Arg Glu Pro Ala Ala Gln Ala Pro Val Lys
 165 170 175

Leu Ser Leu Asn Leu Leu Ala Ser Ser Asp Pro Pro Glu Ala Ala Ser

180

185

190

Trp Leu Leu Cys Glu Val Ser Gly Phe Ser Pro Pro Asn Ile Leu Leu
 195 200 205

Met Trp Leu Glu Asp Gln Arg Glu Val Asn Thr Ser Gly Phe Ala Pro
 210 215 220

Ala Arg Pro Pro Pro Gln Pro Gly Ser Thr Thr Phe Trp Ala Trp Ser
 225 230 235 240

Val Leu Arg Val Pro Ala Pro Pro Ser Pro Gln Pro Ala Thr Tyr Thr
 245 250 255

Cys Val Val Ser His Glu Asp Ser Arg Thr Leu Leu Asn Ala Ser Arg
 260 265 270

Ser Leu Glu Val Ser Tyr Val Thr Asp His Gly Pro Met Lys
 275 280 285

<210> 20

<211> 325

<212> PRT

<213> Homo sapiens

<400> 20

Val Cys Ser Arg Asp Phe Thr Pro Pro Thr Val Lys Ile Leu Gln Ser
 1 5 10 15

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

Leu Val Ser Gly Tyr Thr Pro Gly Thr Ile Asn Ile Thr Trp Leu Glu
 35 40 45

Asp Gly Gln Val Met Asp Val Asp Leu Ser Thr Ala Ser Thr Thr Gln
 50 55 60

Glu Gly Glu Leu Ala Ser Thr Gln Ser Glu Leu Thr Leu Ser Gln Lys
 65 70 75 80

His Trp Leu Ser Asp Arg Thr Tyr Thr Cys Gln Val Thr Tyr Gln Gly

85

90

95

His Thr Phe Glu Asp Ser Thr Lys Lys Cys Ala Asp Ser Asn Pro Arg
 100 105 110

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

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

Lys Gly Thr Val Asn Leu Thr Trp Ser Arg Ala Ser Gly Lys Pro Val
 145 150 155 160

Asn His Ser Thr Arg Lys Glu Glu Lys Gln Arg Asn Gly Thr Leu Thr
 165 170 175

Val Thr Ser Thr Leu Pro Val Gly Thr Arg Asp Trp Ile Glu Gly Glu
 180 185 190

Thr Tyr Gln Cys Arg Val Thr His Pro His Leu Pro Arg Ala Leu Met
 195 200 205

Arg Ser Thr Thr Lys Thr Ser Gly Pro Arg Ala Ala Pro Glu Val Tyr
 210 215 220

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

Ala Cys Leu Ile Gln Asn Phe Met Pro Glu Asp Ile Ser Val Gln Trp
 245 250 255

Leu His Asn Glu Val Gln Leu Pro Asp Ala Arg His Ser Thr Thr Gln
 260 265 270

Pro Arg Lys Thr Lys Gly Ser Gly Phe Phe Val Phe Ser Arg Leu Glu
 275 280 285

Val Thr Arg Ala Glu Trp Glu Gln Lys Asp Glu Phe Ile Cys Arg Ala
 290 295 300

Val His Glu Ala Ala Ser Pro Ser Gln Thr Val Gln Arg Ala Val Ser
 305 310 315 320

Val Asn Pro Gly Lys
 325

<210> 21
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 21

Leu Pro Val Ile Ala Glu Leu Pro Pro Lys Val Ser Val Phe Val Pro
 1 5 10 15

Pro Arg Asp Gly Phe Phe Gly Asn Pro Arg Lys Ser Lys Leu Ile Cys
 20 25 30

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

Glu Gly Lys Gln Val Gly Ser Gly Val Thr Thr Asp Gln Val Gln Ala
 50 55 60

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

Thr Ile Lys Glu Ser Asp Trp Leu Ser Gln Ser Met Phe Thr Cys Arg
 85 90 95

Val Asp His Arg Gly Leu Thr Phe Gln Gln Asn Ala Ser Ser Met Cys
 100 105 110

Val Pro Asp Gln Asp Thr Ala Ile Arg Val Phe Ala Ile Pro Pro Ser
 115 120 125

Phe Ala Ser Ile Phe Leu Thr Lys Ser Thr Lys Leu Thr Cys Leu Val
 130 135 140

Thr Asp Leu Thr Thr Tyr Asp Ser Val Thr Ile Ser Trp Thr Arg Gln
 145 150 155 160

Asn Gly Glu Ala Val Lys Thr His Thr Asn Ile Ser Glu Ser His Pro
 165 170 175

Asn Ala Thr Phe Ser Ala Val Gly Glu Ala Ser Ile Cys Glu Asp Asp
 180 185 190

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

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

His Arg Pro Asp Val Tyr Leu Leu Pro Pro Ala Arg Glu Gln Leu Asn
 225 230 235 240

Leu Arg Glu Ser Ala Thr Ile Thr Cys Leu Val Thr Gly Phe Ser Pro
 245 250 255

Ala Asp Val Phe Val Gln Trp Met Gln Arg Gly Gln Pro Leu Ser Pro
 260 265 270

Glu Lys Tyr Val Thr Ser Ala Pro Met Pro Glu Pro Gln Ala Pro Gly
 275 280 285

Arg Tyr Phe Ala His Ser Ile Leu Thr Val Ser Glu Glu Glu Trp Asn
 290 295 300

Thr Gly Glu Thr Tyr Thr Cys Val Val Ala His Glu Ala Leu Pro Asn
 305 310 315 320

Arg Val Thr Glu Arg Thr Val Asp Lys Ser Thr Gly Lys Pro Thr Leu
 325 330 335

Tyr Asn Val Ser Leu Val Met Ser Asp Thr Ala Gly Thr Cys Tyr
 340 345 350

<210> 22

<211> 402

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 22

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
 1 5 10 15

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
 65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
 85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
 100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
 115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
 130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Lys
 145 150 155 160

Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser Cys Asp
 165 170 175

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
 180 185 190

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
 195 200 205

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
 210 215 220

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
 225 230 235 240

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
 245 250 255

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
 260 265 270

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

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
 290 295 300

Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu
 305 310 315 320

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
 325 330 335

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
 340 345 350

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
 355 360 365

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
 370 375 380

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
 385 390 395 400

Gly Lys

<210> 23
 <211> 398
 <212> PRT

<213> Artificial Sequence

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<223> Synthetic

<400> 23

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
1 5 10 15

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Lys
145 150 155 160

Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val
165 170 175

Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
180 185 190

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 195 200 205

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 210 215 220

Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 225 230 235 240

Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val
 245 250 255

Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 260 265 270

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

Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
 290 295 300

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
 305 310 315 320

Lys Gly Phe Tyr Pro Ser Asp Ile Ser Val Glu Trp Glu Ser Asn Gly
 325 330 335

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp
 340 345 350

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
 355 360 365

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
 370 375 380

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 385 390 395

<210> 24
 <211> 449
 <212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 24

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
1 5 10 15

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Lys
145 150 155 160

Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Leu Lys Thr Pro Leu
165 170 175

Gly Asp Thr Thr His Thr Cys Pro Arg Cys Pro Glu Pro Lys Ser Cys
180 185 190

Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro Glu Pro Lys Ser Cys Asp
 195 200 205

Thr Pro Pro Pro Cys Pro Arg Cys Pro Glu Pro Lys Ser Cys Asp Thr
 210 215 220

Pro Pro Pro Cys Pro Arg Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro
 225 230 235 240

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

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

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

Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Phe Arg Val
 290 295 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
 305 310 315 320

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

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

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

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

Ser Ser Gly Gln Pro Glu Asn Asn Tyr Asn Thr Thr Pro Pro Met Leu
 385 390 395 400

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

Ser Arg Trp Gln Gln Gly Asn Ile Phe Ser Cys Ser Val Met His Glu
 420 425 430

Ala Leu His Asn Arg Phe Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
 435 440 445

Lys

<210> 25
 <211> 399
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 25

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
 1 5 10 15

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
 65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
 85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
 100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
 115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
 130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Lys
 145 150 155 160

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

Pro Cys Pro Ser Cys Pro Ala Pro Glu Phe Leu Gly Gly Pro Ser Val
 180 185 190

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
 195 200 205

Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro Glu
 210 215 220

Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
 225 230 235 240

Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val Ser
 245 250 255

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
 260 265 270

Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr Ile
 275 280 285

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
 290 295 300

Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu
 305 310 315 320

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
 325 330 335

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
 340 345 350

Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser Arg
 355 360 365

Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
 370 375 380

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly Lys
 385 390 395

<210> 26
 <211> 426
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 26

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
 1 5 10 15

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
 65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
 85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
 100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
 115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
 130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Val
 145 150 155 160

Lys His Tyr Thr Asn Pro Ser Gln Asp Val Thr Val Pro Cys Pro Val
 165 170 175

Pro Ser Thr Pro Pro Thr Pro Ser Pro Ser Thr Pro Pro Thr Pro Ser
 180 185 190

Pro Ser Cys Cys His Pro Arg Leu Ser Leu His Arg Pro Ala Leu Glu
 195 200 205

Asp Leu Leu Leu Gly Ser Glu Ala Asn Leu Thr Cys Thr Leu Thr Gly
 210 215 220

Leu Arg Asp Ala Ser Gly Val Thr Phe Thr Trp Thr Pro Ser Ser Gly
 225 230 235 240

Lys Ser Ala Val Gln Gly Pro Pro Glu Arg Asp Leu Cys Gly Cys Tyr
 245 250 255

Ser Val Ser Ser Val Leu Pro Gly Cys Ala Glu Pro Trp Asn His Gly
 260 265 270

Lys Thr Phe Thr Cys Thr Ala Ala Tyr Pro Glu Ser Lys Thr Pro Leu
 275 280 285

Thr Ala Thr Leu Ser Lys Ser Gly Asn Thr Phe Arg Pro Glu Val His
 290 295 300

Leu Leu Pro Pro Pro Ser Glu Glu Leu Ala Leu Asn Glu Leu Val Thr
 305 310 315 320

Leu Thr Cys Leu Ala Arg Gly Phe Ser Pro Lys Asp Val Leu Val Arg
 325 330 335

Trp Leu Gln Gly Ser Gln Glu Leu Pro Arg Glu Lys Tyr Leu Thr Trp
 340 345 350

Ala Ser Arg Gln Glu Pro Ser Gln Gly Thr Thr Thr Phe Ala Val Thr
 355 360 365

Ser Ile Leu Arg Val Ala Ala Glu Asp Trp Lys Lys Gly Asp Thr Phe
 370 375 380

Ser Cys Met Val Gly His Glu Ala Leu Pro Leu Ala Phe Thr Gln Lys
 385 390 395 400

Thr Ile Asp Arg Leu Ala Gly Lys Pro Thr His Val Asn Val Ser Val
 405 410 415

Val Met Ala Glu Val Asp Gly Thr Cys Tyr
 420 425

<210> 27
 <211> 413
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 27

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
 1 5 10 15

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
 65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
 85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
 100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
 115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
 130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Val
 145 150 155 160

Lys His Tyr Thr Asn Pro Ser Gln Asp Val Thr Val Pro Cys Pro Val
 165 170 175

Pro Pro Pro Pro Pro Cys Cys His Pro Arg Leu Ser Leu His Arg Pro
 180 185 190

Ala Leu Glu Asp Leu Leu Leu Gly Ser Glu Ala Asn Leu Thr Cys Thr
 195 200 205

Leu Thr Gly Leu Arg Asp Ala Ser Gly Ala Thr Phe Thr Trp Thr Pro
 210 215 220

Ser Ser Gly Lys Ser Ala Val Gln Gly Pro Pro Glu Arg Asp Leu Cys
 225 230 235 240

Gly Cys Tyr Ser Val Ser Ser Val Leu Pro Gly Cys Ala Gln Pro Trp
 245 250 255

Asn His Gly Glu Thr Phe Thr Cys Thr Ala Ala His Pro Glu Leu Lys
 260 265 270

Thr Pro Leu Thr Ala Asn Ile Thr Lys Ser Gly Asn Thr Phe Arg Pro
 275 280 285

Glu Val His Leu Leu Pro Pro Pro Ser Glu Glu Leu Ala Leu Asn Glu
 290 295 300

Leu Val Thr Leu Thr Cys Leu Ala Arg Gly Phe Ser Pro Lys Asp Val
 305 310 315 320

Leu Val Arg Trp Leu Gln Gly Ser Gln Glu Leu Pro Arg Glu Lys Tyr
 325 330 335

Leu Thr Trp Ala Ser Arg Gln Glu Pro Ser Gln Gly Thr Thr Thr Phe
 340 345 350

Ala Val Thr Ser Ile Leu Arg Val Ala Ala Glu Asp Trp Lys Lys Gly
 355 360 365

Asp Thr Phe Ser Cys Met Val Gly His Glu Ala Leu Pro Leu Ala Phe
 370 375 380

Thr Gln Lys Thr Ile Asp Arg Met Ala Gly Lys Pro Thr His Val Asn
 385 390 395 400

Val Ser Val Val Met Ala Glu Val Asp Gly Thr Cys Tyr
 405 410

<210> 28

<211> 455

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 28

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
 1 5 10 15

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
 65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
 85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
 100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
 115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
 130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Thr
 145 150 155 160

Ala Ser Lys Ser Lys Lys Glu Ile Phe Arg Trp Pro Glu Ser Pro Lys
 165 170 175

Ala Gln Ala Ser Ser Val Pro Thr Ala Gln Pro Gln Ala Glu Gly Ser
 180 185 190

Leu Ala Lys Ala Thr Thr Ala Pro Ala Thr Thr Arg Asn Thr Gly Arg
 195 200 205

Gly Gly Glu Glu Lys Lys Lys Glu Lys Glu Lys Glu Glu Gln Glu Glu
 210 215 220

Arg Glu Thr Lys Thr Pro Glu Cys Pro Ser His Thr Gln Pro Leu Gly
 225 230 235 240

Val Tyr Leu Leu Thr Pro Ala Val Gln Asp Leu Trp Leu Arg Asp Lys
 245 250 255

Ala Thr Phe Thr Cys Phe Val Val Gly Ser Asp Leu Lys Asp Ala His
 260 265 270

Leu Thr Trp Glu Val Ala Gly Lys Val Pro Thr Gly Gly Val Glu Glu
 275 280 285

Gly Leu Leu Glu Arg His Ser Asn Gly Ser Gln Ser Gln His Ser Arg
 290 295 300

Leu Thr Leu Pro Arg Ser Leu Trp Asn Ala Gly Thr Ser Val Thr Cys
 305 310 315 320

Thr Leu Asn His Pro Ser Leu Pro Pro Gln Arg Leu Met Ala Leu Arg
 325 330 335

Glu Pro Ala Ala Gln Ala Pro Val Lys Leu Ser Leu Asn Leu Leu Ala
 340 345 350

Ser Ser Asp Pro Pro Glu Ala Ala Ser Trp Leu Leu Cys Glu Val Ser
 355 360 365

Gly Phe Ser Pro Pro Asn Ile Leu Leu Met Trp Leu Glu Asp Gln Arg
 370 375 380

Glu Val Asn Thr Ser Gly Phe Ala Pro Ala Arg Pro Pro Pro Gln Pro
 385 390 395 400

Gly Ser Thr Thr Phe Trp Ala Trp Ser Val Leu Arg Val Pro Ala Pro
 405 410 415

Pro Ser Pro Gln Pro Ala Thr Tyr Thr Cys Val Val Ser His Glu Asp
 420 425 430

Ser Arg Thr Leu Leu Asn Ala Ser Arg Ser Leu Glu Val Ser Tyr Val
 435 440 445

Thr Asp His Gly Pro Met Lys
 450 455

<210> 29
 <211> 498
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 29

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
 1 5 10 15

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
 65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
 85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
 100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
 115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
 130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Thr
 145 150 155 160

Pro Ser Ser Thr Asp Trp Val Asp Asn Lys Thr Phe Ser Val Cys Ser
 165 170 175

Arg Asp Phe Thr Pro Pro Thr Val Lys Ile Leu Gln Ser Ser Cys Asp
 180 185 190

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

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

Val Met Asp Val Asp Leu Ser Thr Ala Ser Thr Thr Gln Glu Gly Glu
 225 230 235 240

Leu Ala Ser Thr Gln Ser Glu Leu Thr Leu Ser Gln Lys His Trp Leu
 245 250 255

Ser Asp Arg Thr Tyr Thr Cys Gln Val Thr Tyr Gln Gly His Thr Phe
 260 265 270

Glu Asp Ser Thr Lys Lys Cys Ala Asp Ser Asn Pro Arg Gly Val Ser
 275 280 285

Ala Tyr Leu Ser Arg Pro Ser Pro Phe Asp Leu Phe Ile Arg Lys Ser
 290 295 300

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

Val Asn Leu Thr Trp Ser Arg Ala Ser Gly Lys Pro Val Asn His Ser
 325 330 335

Thr Arg Lys Glu Glu Lys Gln Arg Asn Gly Thr Leu Thr Val Thr Ser
 340 345 350

Thr Leu Pro Val Gly Thr Arg Asp Trp Ile Glu Gly Glu Thr Tyr Gln
 355 360 365

Cys Arg Val Thr His Pro His Leu Pro Arg Ala Leu Met Arg Ser Thr
 370 375 380

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

Thr Pro Glu Trp Pro Gly Ser Arg Asp Lys Arg Thr Leu Ala Cys Leu
 405 410 415

Ile Gln Asn Phe Met Pro Glu Asp Ile Ser Val Gln Trp Leu His Asn
 420 425 430

Glu Val Gln Leu Pro Asp Ala Arg His Ser Thr Thr Gln Pro Arg Lys
 435 440 445

Thr Lys Gly Ser Gly Phe Phe Val Phe Ser Arg Leu Glu Val Thr Arg
 450 455 460

Ala Glu Trp Glu Gln Lys Asp Glu Phe Ile Cys Arg Ala Val His Glu
 465 470 475 480

Ala Ala Ser Pro Ser Gln Thr Val Gln Arg Ala Val Ser Val Asn Pro
 485 490 495

Gly Lys

<210> 30
 <211> 523
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 30

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
 1 5 10 15

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
 65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
 85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
 100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
 115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
 130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Val
 145 150 155 160

Gln His Pro Asn Gly Asn Lys Glu Lys Asn Val Pro Leu Pro Val Ile
 165 170 175

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

Phe Phe Gly Asn Pro Arg Lys Ser Lys Leu Ile Cys Gln Ala Thr Gly
 195 200 205

Phe Ser Pro Arg Gln Ile Gln Val Ser Trp Leu Arg Glu Gly Lys Gln
 210 215 220

Val Gly Ser Gly Val Thr Thr Asp Gln Val Gln Ala Glu Ala Lys Glu
 225 230 235 240

Ser Gly Pro Thr Thr Tyr Lys Val Thr Ser Thr Leu Thr Ile Lys Glu
 245 250 255

Ser Asp Trp Leu Ser Gln Ser Met Phe Thr Cys Arg Val Asp His Arg
 260 265 270

Gly Leu Thr Phe Gln Gln Asn Ala Ser Ser Met Cys Val Pro Asp Gln
 275 280 285

Asp Thr Ala Ile Arg Val Phe Ala Ile Pro Pro Ser Phe Ala Ser Ile
 290 295 300

Phe Leu Thr Lys Ser Thr Lys Leu Thr Cys Leu Val Thr Asp Leu Thr
 305 310 315 320

Thr Tyr Asp Ser Val Thr Ile Ser Trp Thr Arg Gln Asn Gly Glu Ala
 325 330 335

Val Lys Thr His Thr Asn Ile Ser Glu Ser His Pro Asn Ala Thr Phe
 340 345 350

Ser Ala Val Gly Glu Ala Ser Ile Cys Glu Asp Asp Trp Asn Ser Gly
 355 360 365

Glu Arg Phe Thr Cys Thr Val Thr His Thr Asp Leu Pro Ser Pro Leu
 370 375 380

Lys Gln Thr Ile Ser Arg Pro Lys Gly Val Ala Leu His Arg Pro Asp
 385 390 395 400

Val Tyr Leu Leu Pro Pro Ala Arg Glu Gln Leu Asn Leu Arg Glu Ser
 405 410 415

Ala Thr Ile Thr Cys Leu Val Thr Gly Phe Ser Pro Ala Asp Val Phe
 420 425 430

Val Gln Trp Met Gln Arg Gly Gln Pro Leu Ser Pro Glu Lys Tyr Val
 435 440 445

Thr Ser Ala Pro Met Pro Glu Pro Gln Ala Pro Gly Arg Tyr Phe Ala
 450 455 460

His Ser Ile Leu Thr Val Ser Glu Glu Glu Trp Asn Thr Gly Glu Thr
 465 470 475 480

Tyr Thr Cys Val Val Ala His Glu Ala Leu Pro Asn Arg Val Thr Glu
 485 490 495

Arg Thr Val Asp Lys Ser Thr Gly Lys Pro Thr Leu Tyr Asn Val Ser
 500 505 510

Leu Val Met Ser Asp Thr Ala Gly Thr Cys Tyr
 515 520

<210> 31
 <211> 402
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 31

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
 1 5 10 15

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
 65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
 85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
 100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
 115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
 130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Tyr
 145 150 155 160

Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Pro Lys Ser Cys Asp
 165 170 175

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
 180 185 190

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
 195 200 205

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
 210 215 220

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
 225 230 235 240

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
 245 250 255

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
 260 265 270

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

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
 290 295 300

Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu
 305 310 315 320

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
 325 330 335

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
 340 345 350

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
 355 360 365

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
 370 375 380

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
 385 390 395 400

Gly Lys

<210> 32

<211> 402

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 32

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
 1 5 10 15

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
 65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
 85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
 100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
 115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
 130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Arg
 145 150 155 160

Glu Lys Gln Thr Asp Glu Ile Lys Asp Thr Arg Pro Lys Ser Cys Asp
 165 170 175

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
 180 185 190

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
 195 200 205

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
 210 215 220

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
 225 230 235 240

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
 245 250 255

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
 260 265 270

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

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
 290 295 300

Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu
 305 310 315 320

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
 325 330 335

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
 340 345 350

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
 355 360 365

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
 370 375 380

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
 385 390 395 400

Gly Lys

<211> 394
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 33

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
 1 5 10 15

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

Asn Ser Asp Val Met Ala Ser Asp Asn Gly Gly Ala Val Lys Leu Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Leu Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ala Ile Cys Glu Lys Pro
 65 70 75 80

His Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Lys Asn Ile Thr
 85 90 95

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

Leu Glu Asp Ala Ala Ser Pro Lys Cys Val Met Lys Glu Lys Lys Arg
 115 120 125

Ala Gly Glu Thr Phe Phe Met Cys Ala Cys Asn Met Glu Glu Cys Asn
 130 135 140

Asp Tyr Ile Ile Phe Ser Glu Glu Tyr Thr Thr Ser Ser Pro Asp Ser
 145 150 155 160

Thr Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro
 165 170 175

Cys Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro
 180 185 190

Lys Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys
 195 200 205

Val Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp
 210 215 220

Phe Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg Glu
 225 230 235 240

Glu Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met
 245 250 255

His Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser
 260 265 270

Ala Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly
 275 280 285

Arg Pro Lys Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln
 290 295 300

Met Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe
 305 310 315 320

Pro Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu
 325 330 335

Asn Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe
 340 345 350

Val Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn
 355 360 365

Thr Phe Thr Cys Ser Val Leu His Glu Gly Leu His Asn His His Thr
 370 375 380

Glu Lys Ser Leu Ser His Ser Pro Gly Lys
 385 390

<210> 34

<211> 159
 <212> PRT
 <213> Mus musculus

<400> 34

Met Gly Arg Gly Leu Leu Arg Gly Leu Trp Pro Leu His Ile Val Leu
 1 5 10 15

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

Asn Ser Asp Val Met Ala Ser Asp Asn Gly Gly Ala Val Lys Leu Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Leu Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ala Ile Cys Glu Lys Pro
 65 70 75 80

His Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Lys Asn Ile Thr
 85 90 95

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

Leu Glu Asp Ala Ala Ser Pro Lys Cys Val Met Lys Glu Lys Lys Arg
 115 120 125

Ala Gly Glu Thr Phe Phe Met Cys Ala Cys Asn Met Glu Glu Cys Asn
 130 135 140

Asp Tyr Ile Ile Phe Ser Glu Glu Tyr Thr Thr Ser Ser Pro Asp
 145 150 155

<210> 35
 <211> 12
 <212> PRT
 <213> Mus musculus

<400> 35

Ser Thr Lys Val Asp Lys Lys Ile Val Pro Arg Asp
 1 5 10

<210> 36
 <211> 223
 <212> PRT
 <213> Mus musculus

<400> 36

Cys Gly Cys Lys Pro Cys Ile Cys Thr Val Pro Glu Val Ser Ser Val
 1 5 10 15

Phe Ile Phe Pro Pro Lys Pro Lys Asp Val Leu Thr Ile Thr Leu Thr
 20 25 30

Pro Lys Val Thr Cys Val Val Val Asp Ile Ser Lys Asp Asp Pro Glu
 35 40 45

Val Gln Phe Ser Trp Phe Val Asp Asp Val Glu Val His Thr Ala Gln
 50 55 60

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

Glu Leu Pro Ile Met His Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys
 85 90 95

Cys Arg Val Asn Ser Ala Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile
 100 105 110

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

Pro Pro Lys Glu Gln Met Ala Lys Asp Lys Val Ser Leu Thr Cys Met
 130 135 140

Ile Thr Asp Phe Phe Pro Glu Asp Ile Thr Val Glu Trp Gln Trp Asn
 145 150 155 160

Gly Gln Pro Ala Glu Asn Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr
 165 170 175

Asp Gly Ser Tyr Phe Val Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn
 180 185 190

Trp Glu Ala Gly Asn Thr Phe Thr Cys Ser Val Leu His Glu Gly Leu
 195 200 205

His Asn His His Thr Glu Lys Ser Leu Ser His Ser Pro Gly Lys
 210 215 220

<210> 37
 <211> 1209
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 37
 atgggtcggg ggctgctcag gggcctgtgg ccgctgcaca tcgtcctgtg gacgcgtatc 60
 gccagcacga tcccaccgca cgttcagaag tcggttaata acgacatgat agtcactgac 120
 aacaacggtg cagtcaagtt tccacaactg tgtaaatttt gtgatgtgag attttccacc 180
 tgtgacaacc agaaatcctg catgagcaac tgcagcatca cctccatctg tgagaagcca 240
 caggaagtct gtgtggctgt atggagaaag aatgacgaga acataaact agagacagtt 300
 tgccatgacc ccaagctccc ctaccatgac ttatttctgg aagatgctgc ttctccaaag 360
 tgcattatga aggaaaaaaa aaagcctggt gagactttct tcatgtgttc ctgtagctct 420
 gatgagtgcg atgacaacat catctttctc gaagaatata acaccagcaa tcctgacaag 480
 cccagcaaca ccaaggtgga caagagagtt gagcccaat cttgtgacaa aactcacaca 540
 tgcccaccgt gcccagcacc tgaactcctg gggggaccgt cagtcttcct cttccccca 600
 aaaccaagg acaccctcat gatctcccgg acccctgagg tcacatgcgt ggtggtggac 660
 gtgagccacg aagaccctga ggtcaagttc aactggtacg tggacggcgt ggaggtgcat 720
 aatgccaaga caaagccgcg ggaggagcag tacaacagca cgtaccgtgt ggtcagcgtc 780
 ctcaccgtcc tgcaccagga ctggctgaat ggcaaggagt acaagtcaa ggtctccaac 840
 aaagccctcc cagccccat cgagaaaacc atctccaaag ccaaagggca gccccgagaa 900
 ccacaggtgt acaccctgcc cccatcccgg gatgagctga ccaagaacca ggtcagcctg 960
 acctgcctgg tcaaaggctt ctatcccagc gacatcgccg tggagtggga gagcaatggg 1020
 cagccggaga acaactacaa gaccacgcct cccgtgctgg actccgacgg ctccttcttc 1080

ctctacagca agctcaccgt ggacaagagc aggtggcagc aggggaacgt cttctcatgc	1140
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ggtaaata	1209

<210> 38
 <211> 1194
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 38	
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aacaacgggtg cagtcaagtt tccacaactg tgtaaatttt gtgatgtgag attttccacc	180
tgtgacaacc agaaatcctg catgagcaac tgcagcatca cctccatctg tgagaagcca	240
caggaagtct gtgtggctgt atggagaaag aatgacgaga acataaact agagacagtt	300
tgccatgacc ccaagctccc ctaccatgac ttatttctgg aagatgctgc ttctccaaag	360
tgcatatga aggaaaaaaa aaagcctggt gagactttct tcatgtgttc ctgtagctct	420
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cccagcaaca ccaaggtgga caagacagtt gagcgcaaat gttgtgtcga gtgcccaccg	540
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gaccccgagg tccagttcaa ctggtacgtg gacggcgtgg aggtgcataa tgccaagaca	720
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aaaggcttct accccagcga catctccgtg gagtgggaga gcaatgggca gccggagaac	1020
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ctcaccgtgg acaagagcag gtggcagcag gggaaagtct tctcatgctc cgtgatgcat	1140
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<210> 39
 <211> 1347
 <212> DNA
 <213> Artificial Sequence

<220>
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 aacaacggtg cagtcaagtt tccacaactg tgtaaatttt gtgatgtgag attttccacc 180
 tgtgacaacc agaaatcctg catgagcaac tgcagcatca cctccatctg tgagaagcca 240
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 tgccatgacc ccaagctccc ctaccatgac ttatttctgg aagatgctgc ttctccaaag 360
 tgcattatga aggaaaaaaa aaagcctggt gagactttct tcatgtgttc ctgtagctct 420
 gatgagtgca atgacaacat catctttctc gaagaatata acaccagcaa tcctgacaag 480
 cccagcaaca ccaaggtgga caagagagtt gagctcaaaa cccacttgg tgacacaact 540
 cacacatgcc cacggtgccc agagcccaaa tcttgtgaca cacctcccc gtgcccacgg 600
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 accaagaacc aggtcagcct gacctgcctg gtcaaaggct tctaccccag cgacatcgcc 1140
 gtggagtggg agagcagcgg gcagccggag aacaactaca acaccacgcc tccatgctg 1200
 gactccgacg gctccttctt cctctacagc aagctcaccg tggacaagag caggtggcag 1260
 caggggaaca tcttctcatg ctccgtgatg catgaggctc tgcacaaccg cttcacgcag 1320

aagagcctct ccctgtctcc gggtaaa 1347

<210> 40

<211> 1197

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 40

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gccagcacga tcccaccgca cgttcagaag tcggttaata acgacatgat agtcactgac 120

aacaacggtg cagtcaagtt tccacaactg tgtaaatttt gtgatgtgag attttccacc 180

tgtgacaacc agaaatcctg catgagcaac tgcagcatca cctccatctg tgagaagcca 240

caggaagtct gtgtggctgt atggagaaag aatgacgaga acataacact agagacagtt 300

tgccatgacc ccaagctccc ctaccatgac tttattctgg aagatgctgc ttctccaaag 360

tgcattatga aggaaaaaaa aaagcctggt gagactttct tcatgtgttc ctgtagctct 420

gatgagtga atgacaacat catctttctca gaagaatata acaccagcaa tcctgacaag 480

cccagcaaca ccaaggtgga caagagagtt gagtccaaat atgggtcccc atgccccatca 540

tgcccagcac ctgagttcct ggggggacca tcagtcttcc tgttcccccc aaaacccaag 600

gacacttctca tgatctcccc gaccctgag gtcacgtgcg tgggtggtgga cgtgagccag 660

gaagaccccg aggtccagtt caactggtac gtggatggcg tggaggtgca taatgccaag 720

acaaagccgc gggaggagca gttcaacagc acgtaccgtg tggtcagcgt cctcaccgtc 780

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aacaactaca agaccacgcc tcccgctgtg gactccgacg gctccttctt cctctacagc 1080

aggctaaccg tggacaagag caggtggcag gagggggaatg tcttctcatg ctccgtgatg 1140

catgaggctc tgcacaacca ctacacacag aagagcctct ccctgtctct gggtaaa 1197

<210> 41

<211> 1278

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 41

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aacaacggtg cagtcaagtt tccacaactg tgtaaatttt gtgatgtgag attttccacc	180
tgtgacaacc agaaatcctg catgagcaac tgcagcatca cctccatctg tgagaagcca	240
caggaagtct gtgtggctgt atggagaaag aatgacgaga acataaact agagacagtt	300
tgccatgacc ccaagctccc ctaccatgac ttatttctgg aagatgctgc ttctcaaag	360
tgcattatga aggaaaaaaa aaagcctggt gagactttct tcatgtgttc ctgtagctct	420
gatgagtgca atgacaacat catctttctc gaagaatata acaccagcaa tcctgacgtg	480
aagcactaca cgaatcccag ccaggatgtg actgtgccct gccagttcc ctcaactcca	540
cctaccccat ctccctcaac tccacctacc ccattctcct catgctgcca ccccgactg	600
tactgcacc gaccggccct cgaggacctg ctcttaggtt cagaagcgaa cctcacgtgc	660
acactgaccg gcctgagaga tgccctcaggt gtcaccttca cctggacgcc ctcaagtggg	720
aagagcgctg ttcaaggacc acctgagcgt gacctctgtg gctgctacag cgtgtccagt	780
gtcctgccgg gctgtgccga gccatggaac catgggaaga ccttcacttg cactgctgcc	840
taccccgagt ccaagacccc gctaaccgcc accctctcaa aatccgaaa cacattccgg	900
cccgaggtcc acctgctgcc gccgccgtcg gaggagctgg ccctgaacga gctggtgacg	960
ctgacgtgcc tggcacgtgg cttcagcccc aaggatgtgc tggttcgctg gctgcagggg	1020
tcacaggagc tgccccgcga gaagtacctg acttgggcat cccggcagga gccagccag	1080
ggcaccacca ccttcgtgtg gaccagcata ctgcgcgtgg cagccagga ctggaagaag	1140
ggggacacct tctcctgcat ggtgggccac gaggccctgc cgctggcctt cacacagaag	1200
accatcgacc gcttggcggg taaaccacc catgtcaatg tgtctgttgt catggcggag	1260
gtggacggca cctgctac	1278

<210> 42

<211> 1239

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 42

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gccagcacga tcccaccgca cgttcagaag tcggttaata acgacatgat agtcactgac	120
aacaacggtg cagtcaagtt tccacaactg tgtaaatttt gtgatgtgag attttccacc	180
tgtgacaacc agaaatcctg catgagcaac tgcagcatca cctccatctg tgagaagcca	240
caggaagtct gtgtggctgt atggagaaag aatgacgaga acataaact agagacagtt	300
tgccatgacc ccaagctccc ctacatgac ttatttctgg aagatgctgc ttctccaaag	360
tgcattatga aggaaaaaaa aaagcctggt gagactttct tcatgtgttc ctgtagctct	420
gatgagtga atgacaacat catcttctca gaagaatata acaccagcaa tcctgacgtg	480
aagcactaca cgaatcccag ccaggatgtg actgtgccct gccagttcc cccacctccc	540
ccatgctgcc acccccgact gtcgtgcac cgaccggccc tcgaggacct gctcttaggt	600
tcagaagcga acctcacgtg cacactgacc ggcttgagag atgcctctgg tgccaccttc	660
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ggctgctaca gcgtgtccag tgtcctgcct ggctgtgccc agccatggaa ccatggggag	780
accttcacct gcaactgtgc ccaccccag ttgaagacc cactaaccgc caacatcaca	840
aaatccggaa acacattccg gcccgaggtc cacctgctgc cgccgccgtc ggaggagctg	900
gccctgaacg agctggtgac gctgacgtgc ctggcacgtg gcttcagccc caaggatgtg	960
ctggttcgct ggctgcaggg gtcacaggag ctgccccgcg agaagtacct gacttgggca	1020
tcccggcagg agcccagcca gggcaccacc accttcgctg tgaccagcat actgcgcgtg	1080
gcagccgagg actggaagaa gggggacacc ttctcctgca tgggtgggcca cgaggccctg	1140
ccgctggcct tcacacagaa gaccatcgac cgcatggcgg gtaaaccac ccatgtcaat	1200
gtgtctgttg tcatggcgga ggtggacggc acctgctac	1239

<210> 43

<211> 1365

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 43

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gccagcacga tcccaccgca cgttcagaag tcggttaata acgacatgat agtcactgac	120
aacaacggtg cagtcaagtt tccacaactg tgtaaat ttt gtgatgtgag attttccacc	180
tgtgacaacc agaaatcctg catgagcaac tgcagcatca cctccatctg tgagaagcca	240
caggaagtct gtgtggctgt atggagaaag aatgacgaga acataacact agagacagtt	300
tgccatgacc ccaagctccc ctaccatgac tttattctgg aagatgctgc ttctccaaag	360
tgcattatga agga aaaaaa aaagcctggt gagactttct tcatgtgttc ctgtagctct	420
gatgagtgca atgacaacat catctttctca gaagaatata acaccagcaa tcctgacacc	480
gccagcaaga gtaagaagga gatcttccgc tggccagagt ctcaaaggc acaggcctcc	540
tcagtgccca ctgcacaacc ccaagcagag ggagcctcg ccaaggcaac cacagcccca	600
gccaccaccc gtaacacagg aagaggagga gaagagaaga agaaggagaa ggagaaagag	660
gaacaagaag agagagagac aaagacacca gagtgtccga gccacacca gcctcttggc	720
gtctacctgc taaccctgc agtgcaggac ctgtggctcc gggacaaagc caccttcacc	780
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cagcacagcc gtctgaccct gccaggtcc ttgtggaacg cggggacctc cgtcacctgc	960
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tcgtggctcc tgtgtgaggt gtctggcttc tcgccccca acatcctcct gatgtggctg	1140
gaggaccagc gtgaggtgaa cacttctggg tttgccccg cacgcccc tccacagccc	1200
gggagcacca cgttctgggc ctggagtgtg ctgcgtgtcc cagccccgcc cagccctcag	1260
ccagccacct acacgtgtgt ggtcagccac gaggactccc ggactctgct caacgccagc	1320
cggagcctag aagtcagcta tgtaacagac catggcccca tgaaa	1365

<210> 44

<211> 1494

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 44

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gccagcacga tcccaccgca cgttcagaag tcggttaata acgacatgat agtcactgac	120
aacaacggtg cagtcaagtt tccacaactg tgtaaat ttt gtgatgtgag attttccacc	180
tgtgacaacc agaaatcctg catgagcaac tgcagcatca cctccatctg tgagaagcca	240
caggaagtct gtgtggctgt atggagaaag aatgacgaga acataaact agagacagtt	300
tgccatgacc ccaagctccc ctaccatgac tttattctgg aagatgctgc ttctccaaag	360
tgcattatga agggaaaaaa aaagcctggt gagactttct tcatgtgttc ctgtagctct	420
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acgccggagt ggccggggag ccgggacaag cgcacctcg cctgcctgat ccagaacttc	1260
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gaggtgacca gggccgaatg ggagcagaaa gatgagttca tctgccgtgc agtccatgag	1440
gcagcgagcc cctcacagac cgtccagcga gcggtgtctg taaatcccgg taaa	1494

<210> 45
 <211> 1569
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 45
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 aacaacggtg cagtcaagtt tccacaactg tgtaaatttt gtgatgtgag attttccacc 180
 tgtgacaacc agaaatcctg catgagcaac tgcagcatca cctccatctg tgagaagcca 240
 caggaagtct gtgtggctgt atggagaaag aatgacgaga acataaact agagacagtt 300
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 tgcatatga aggaaaaaa aaagcctggt gagactttct tcatgtgttc ctgtagctct 420
 gatgagtga atgacaacat catcttctca gaagaatata acaccagcaa tcctgacgtc 480
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 aagctcatct gccaggccac gggtttcagt ccccggcaga ttcagggtgc ctggctgcgc 660
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aagtccaccg	gtaaaccac	cctgtacaac	gtgtccctgg	tcatgtccga	cacagctggc	1560
acctgctac						1569

<210> 46
 <211> 1206
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 46	
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gggcctgtgg	ccgctgcaca
tcgtcctgtg	gacgcgtatc
	60
gccagcacga	tcccaccgca
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acgacatgat	agtcactgac
	120
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tccacaactg	tgtaaatttt
gtgatgtgag	attttccacc
	180
tgtgacaacc	agaaatcctg
catgagcaac	tgacagcatca
cctccatctg	tgagaagcca
	240
caggaagtct	gtgtggctgt
atggagaaag	aatgacgaga
acataaact	agagacagtt
	300
tgccatgacc	ccaagctccc
ctaccatgac	tttattctgg
aagatgctgc	ttctccaaag
	360
tgcatatga	aggaaaaaaa
aaagcctggt	gagactttct
tcatgtgttc	ctgtagctct
	420
gatgagtga	atgacaacat
catcttctca	gaagaatata
acaccagcaa	tcctgactac
	480
gttcccaaag	agtttaaatgc
tgaacattc	acccccaaat
cttgtgacaa	aactcacaca
	540
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tgaactcctg	gggggaccgt
cagtcttcct	cttcccccca
	600
aaaccaagg	acaccctcat
gatctcccgg	accctgagg
tcacatgcgt	ggtgggtggac
	660
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ggtcaagttc	aactgggtacg
tggacggcgt	ggaggtgcat
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cgtaccgtgt	ggtcagcgtc
	780
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ctggctgaat	ggcaaggagt
acaagtgcaa	ggtctccaac
	840
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cgagaaaacc	atctccaaag
ccaaagggca	gccccgagaa
	900
ccacaggtgt	acaccctgcc
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ccaagaacca	ggtcagcctg
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tggagtggga	gagcaatggg
	1020
cagccggaga	acaactacaa
gaccacgcct	cccgtgctgg
actccgacgg	ctccttcttc
	1080
ctctacagca	agctcaccgt
ggacaagagc	aggtggcagc
aggggaacgt	cttctcatgc
	1140

tccgtgatgc atgaggctct gcacaaccac tacacgcaga agagcctctc cctgtctccg	1200
ggtaaa	1206

<210> 47
 <211> 1206
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 47	
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aacaacgggtg cagtcaagtt tccacaactg tgtaaatttt gtgatgtgag attttccacc	180
tgtgacaacc agaaatcctg catgagcaac tgcagcatca cctccatctg tgagaagcca	240
caggaagtct gtgtggctgt atggagaaag aatgacgaga acataacact agagacagtt	300
tgccatgacc ccaagctccc ctaccatgac tttattctgg aagatgctgc ttctccaaag	360
tgcattatga aggaaaaaaa aaagcctggt gagactttct tcatgtgttc ctgtagctct	420
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Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser Cys Asp Lys Thr
 165 170 175

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser
 180 185 190

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
 195 200 205

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
 210 215 220

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
 225 230 235 240

Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
 245 250 255

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
 260 265 270

Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr
 275 280 285

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
 290 295 300

Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
 305 310 315 320

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
 325 330 335

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
 340 345 350

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
 355 360 365

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
 370 375 380

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
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<212> PRT

<213> Artificial Sequence

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<223> Synthetic

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

Asn Asn Asp Met Ile Val Thr Asp Asn Asn Gly Ala Val Lys Phe Pro
 35 40 45

Gln Leu Cys Lys Phe Cys Asp Val Arg Phe Ser Thr Cys Asp Asn Gln
 50 55 60

Lys Ser Cys Met Ser Asn Cys Ser Ile Thr Ser Ile Cys Glu Lys Pro
 65 70 75 80

Gln Glu Val Cys Val Ala Val Trp Arg Lys Asn Asp Glu Asn Ile Thr
 85 90 95

Leu Glu Thr Val Cys His Asp Pro Lys Leu Pro Tyr His Asp Phe Ile
 100 105 110

Leu Glu Asp Ala Ala Ser Pro Lys Cys Ile Met Lys Glu Lys Lys Lys
 115 120 125

Pro Gly Glu Thr Phe Phe Met Cys Ser Cys Ser Ser Asp Glu Cys Asn
 130 135 140

Asp Asn Ile Ile Phe Ser Glu Glu Tyr Asn Thr Ser Asn Pro Asp Thr
 145 150 155 160

Lys Val Asp Lys Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr
 165 170 175

Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe
 180 185 190

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
 195 200 205

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
 210 215 220

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
 225 230 235 240

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
 245 250 255

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
 260 265 270

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

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
 290 295 300

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
 305 310 315 320

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
 325 330 335

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

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
 355 360 365

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
 370 375 380

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 385 390 395