

SEQUENCE LISTING

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<120> AFFINITY ENTITIES COMPRISING A TCR-LIKE ANTIBODY BINDING DOMAIN
WITH HIGH AFFINITY AND FINE SPECIFICITY AND USES OF SAME

<130> 66429

<150> US 62/172,264

<151> 2015-06-08

<150> NL N2014935

<151> 2015-06-08

<160> 384

<170> PatentIn version 3.5

<210> 1

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 1

Tyr Met Asp Gly Thr Met Ser Gln Val

1

5

<210> 2

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 2

Tyr Leu Leu Pro Ala Ile Val His Ile
1 5

<210> 3

<211> 19

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 3

Thr Thr Ala Gly Cys Ala Ala Ala Gly Cys Ala Thr Ala Cys Cys Ala
1 5 10 15

Thr Cys Ala

<210> 4

<211> 19

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 4

Cys Cys Ala Gly Ala Cys Ala Ala Ala Gly Ala Gly Gly Thr Cys Ala
1 5 10 15

Thr Ala Ala

<210> 5

<211> 18

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 5

Ala Gly Gly Cys Thr Gly Cys Ala Ala Thr Ala Ala Gly Ala Gly Ala
1 5 10 15

Thr Ala

<210> 6

<211> 18

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 6

Thr Thr Cys Gly Cys Thr Gly Ala Cys Ala Ala Gly Thr Thr Thr Thr
1 5 10 15

Ala Cys

<210> 7

<211> 10

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 7

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

<210> 8

<211> 163

<212> PRT

<213> homo sapiens

<400> 8

Met Lys Trp Lys Ala Leu Phe Thr Ala Ala Ile Leu Gln Ala Gln Leu
1 5 10 15

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

Tyr Leu Leu Asp Gly Ile Leu Phe Ile Tyr Gly Val Ile Leu Thr Ala
35 40 45

Leu Phe Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr
50 55 60

Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg
65 70 75 80

Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met
85 90 95

Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu
100 105 110

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

Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu
130 135 140

Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu
145 150 155 160

Pro Pro Arg

<210> 9

<211> 164

<212> PRT

<213> homo sapiens

<400> 9

Met Lys Trp Lys Ala Leu Phe Thr Ala Ala Ile Leu Gln Ala Gln Leu
1 5 10 15

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

Tyr Leu Leu Asp Gly Ile Leu Phe Ile Tyr Gly Val Ile Leu Thr Ala
35 40 45

Leu Phe Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr
50 55 60

Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg
65 70 75 80

Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met
85 90 95

Gly Gly Lys Pro Gln Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn
100 105 110

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

Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly
130 135 140

Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala
145 150 155 160

Leu Pro Pro Arg

<210> 10
<211> 123
<212> PRT
<213> homo sapiens

<400> 10

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

Thr Gly Asn Lys Ile Leu Val Lys Gln Ser Pro Met Leu Val Ala Tyr
20 25 30

Asp Asn Ala Val Asn Leu Ser Trp Lys His Leu Cys Pro Ser Pro Leu
35 40 45

Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly Gly
50 55 60

Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile Phe
65 70 75 80

Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met Asn
85 90 95

Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr
100 105 110

Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser
115 120

<210> 11

<211> 101

<212> PRT

<213> homo sapiens

<400> 11

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

Thr Gly Lys His Leu Cys Pro Ser Pro Leu Phe Pro Gly Pro Ser Lys
20 25 30

Pro Phe Trp Val Leu Val Val Val Gly Gly Val Leu Ala Cys Tyr Ser

35

40

45

Leu Leu Val Thr Val Ala Phe Ile Ile Phe Trp Val Arg Ser Lys Arg
 50 55 60

Ser Arg Leu Leu His Ser Asp Tyr Met Asn Met Thr Pro Arg Arg Pro
 65 70 75 80

Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro Pro Arg Asp Phe
 85 90 95

Ala Ala Tyr Arg Ser
 100

<210> 12
 <211> 220
 <212> PRT
 <213> homo sapiens

<400> 12

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

Thr Gly Asn Lys Ile Leu Val Lys Gln Ser Pro Met Leu Val Ala Tyr
 20 25 30

Asp Asn Ala Val Asn Leu Ser Cys Lys Tyr Ser Tyr Asn Leu Phe Ser
 35 40 45

Arg Glu Phe Arg Ala Ser Leu His Lys Gly Leu Asp Ser Ala Val Glu
 50 55 60

Val Cys Val Val Tyr Gly Asn Tyr Ser Gln Gln Leu Gln Val Tyr Ser
 65 70 75 80

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

Phe Tyr Leu Gln Asn Leu Tyr Val Asn Gln Thr Asp Ile Tyr Phe Cys
100 105 110

Lys Ile Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser
115 120 125

Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro
130 135 140

Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly
145 150 155 160

Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile
165 170 175

Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met
180 185 190

Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro
195 200 205

Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser
210 215 220

<210> 13
<211> 255
<212> PRT
<213> homo sapiens

<400> 13

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

Asn Phe Glu Arg Thr Arg Ser Leu Gln Asp Pro Cys Ser Asn Cys Pro
20 25 30

Ala Gly Thr Phe Cys Asp Asn Asn Arg Asn Gln Ile Cys Ser Pro Cys
35 40 45

Pro Pro Asn Ser Phe Ser Ser Ala Gly Gly Gln Arg Thr Cys Asp Ile
50 55 60

Cys Arg Gln Cys Lys Gly Val Phe Arg Thr Arg Lys Glu Cys Ser Ser
65 70 75 80

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

Ala Gly Cys Ser Met Cys Glu Gln Asp Cys Lys Gln Gly Gln Glu Leu
100 105 110

Thr Lys Lys Gly Cys Lys Asp Cys Cys Phe Gly Thr Phe Asn Asp Gln
115 120 125

Lys Arg Gly Ile Cys Arg Pro Trp Thr Asn Cys Ser Leu Asp Gly Lys
130 135 140

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

Ser Pro Ala Asp Leu Ser Pro Gly Ala Ser Ser Val Thr Pro Pro Ala
165 170 175

Pro Ala Arg Glu Pro Gly His Ser Pro Gln Ile Ile Ser Phe Phe Leu
180 185 190

Ala Leu Thr Ser Thr Ala Leu Leu Phe Leu Leu Phe Phe Leu Thr Leu
195 200 205

Arg Phe Ser Val Val Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe
210 215 220

Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly
225 230 235 240

Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu

245

250

255

<210> 14
 <211> 199
 <212> PRT
 <213> homo sapiens

<400> 14

Met Lys Ser Gly Leu Trp Tyr Phe Phe Leu Phe Cys Leu Arg Ile Lys
 1 5 10 15

Val Leu Thr Gly Glu Ile Asn Gly Ser Ala Asn Tyr Glu Met Phe Ile
 20 25 30

Phe His Asn Gly Gly Val Gln Ile Leu Cys Lys Tyr Pro Asp Ile Val
 35 40 45

Gln Gln Phe Lys Met Gln Leu Leu Lys Gly Gly Gln Ile Leu Cys Asp
 50 55 60

Leu Thr Lys Thr Lys Gly Ser Gly Asn Thr Val Ser Ile Lys Ser Leu
 65 70 75 80

Lys Phe Cys His Ser Gln Leu Ser Asn Asn Ser Val Ser Phe Phe Leu
 85 90 95

Tyr Asn Leu Asp His Ser His Ala Asn Tyr Tyr Phe Cys Asn Leu Ser
 100 105 110

Ile Phe Asp Pro Pro Pro Phe Lys Val Thr Leu Thr Gly Gly Tyr Leu
 115 120 125

His Ile Tyr Glu Ser Gln Leu Cys Cys Gln Leu Lys Phe Trp Leu Pro
 130 135 140

Ile Gly Cys Ala Ala Phe Val Val Val Cys Ile Leu Gly Cys Ile Leu
 145 150 155 160

Ile Cys Trp Leu Thr Lys Lys Lys Tyr Ser Ser Ser Val His Asp Pro
165 170 175

Asn Gly Glu Tyr Met Phe Met Arg Ala Val Asn Thr Ala Lys Lys Ser
180 185 190

Arg Leu Thr Asp Val Thr Leu
195

<210> 15
<211> 277
<212> PRT
<213> homo sapiens

<400> 15

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

Leu Leu Leu Gly Leu Gly Leu Ser Thr Val Thr Gly Leu His Cys Val
20 25 30

Gly Asp Thr Tyr Pro Ser Asn Asp Arg Cys Cys His Glu Cys Arg Pro
35 40 45

Gly Asn Gly Met Val Ser Arg Cys Ser Arg Ser Gln Asn Thr Val Cys
50 55 60

Arg Pro Cys Gly Pro Gly Phe Tyr Asn Asp Val Val Ser Ser Lys Pro
65 70 75 80

Cys Lys Pro Cys Thr Trp Cys Asn Leu Arg Ser Gly Ser Glu Arg Lys
85 90 95

Gln Leu Cys Thr Ala Thr Gln Asp Thr Val Cys Arg Cys Arg Ala Gly
100 105 110

Thr Gln Pro Leu Asp Ser Tyr Lys Pro Gly Val Asp Cys Ala Pro Cys
115 120 125

Pro Pro Gly His Phe Ser Pro Gly Asp Asn Gln Ala Cys Lys Pro Trp
130 135 140

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

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

Gln Glu Thr Gln Gly Pro Pro Ala Arg Pro Ile Thr Val Gln Pro Thr
180 185 190

Glu Ala Trp Pro Arg Thr Ser Gln Gly Pro Ser Thr Arg Pro Val Glu
195 200 205

Val Pro Gly Gly Arg Ala Val Ala Ala Ile Leu Gly Leu Gly Leu Val
210 215 220

Leu Gly Leu Leu Gly Pro Leu Ala Ile Leu Leu Ala Leu Tyr Leu Leu
225 230 235 240

Arg Arg Asp Gln Arg Leu Pro Pro Asp Ala His Lys Pro Pro Gly Gly
245 250 255

Gly Ser Phe Arg Thr Pro Ile Gln Glu Glu Gln Ala Asp Ala His Ser
260 265 270

Thr Leu Ala Lys Ile
275

<210> 16
<211> 184
<212> PRT
<213> homo sapiens

<400> 16

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

Leu Ala Leu Leu Ser Pro Gly Ala Ala Asp Phe Asn Ile Ser Ser Leu
20 25 30

Ser Gly Leu Leu Ser Pro Ala Leu Thr Glu Ser Leu Leu Val Ala Leu
35 40 45

Pro Pro Cys His Leu Thr Gly Gly Asn Ala Thr Leu Met Val Arg Arg
50 55 60

Ala Asn Asp Ser Lys Val Val Thr Ser Ser Phe Val Val Pro Pro Cys
65 70 75 80

Arg Gly Arg Arg Glu Leu Val Ser Val Val Asp Ser Gly Ala Gly Phe
85 90 95

Thr Val Thr Arg Leu Ser Ala Tyr Gln Val Thr Asn Leu Val Pro Gly
100 105 110

Thr Lys Phe Tyr Ile Ser Tyr Leu Val Lys Lys Gly Thr Ala Thr Glu
115 120 125

Ser Ser Arg Glu Ile Pro Met Ser Thr Leu Pro Arg Arg Asn Met Glu
130 135 140

Ser Ile Gly Leu Gly Met Ala Arg Thr Gly Gly Met Val Val Ile Thr
145 150 155 160

Val Leu Leu Ser Val Ala Met Phe Leu Leu Val Leu Gly Phe Ile Ile
165 170 175

Ala Leu Ala Leu Gly Ser Arg Lys
180

<210> 17
<211> 273
<212> PRT
<213> homo sapiens

<400> 17

Met Ala Ser Ala Ala Ala Ala Glu Ala Glu Lys Gly Ser Pro Val Val
1 5 10 15

Val Gly Leu Leu Val Val Gly Asn Ile Ile Ile Leu Leu Ser Gly Leu
20 25 30

Ser Leu Phe Ala Glu Thr Ile Trp Val Thr Ala Asp Gln Tyr Arg Val
35 40 45

Tyr Pro Leu Met Gly Val Ser Gly Lys Asp Asp Val Phe Ala Gly Ala
50 55 60

Trp Ile Ala Ile Phe Cys Gly Phe Ser Phe Phe Met Val Ala Ser Phe
65 70 75 80

Gly Val Gly Ala Ala Leu Cys Arg Arg Arg Ser Met Val Leu Thr Tyr
85 90 95

Leu Val Leu Met Leu Ile Val Tyr Ile Phe Glu Cys Ala Ser Cys Ile
100 105 110

Thr Ser Tyr Thr His Arg Asp Tyr Met Val Ser Asn Pro Ser Leu Ile
115 120 125

Thr Lys Gln Met Leu Thr Phe Tyr Ser Ala Asp Thr Asp Gln Gly Gln
130 135 140

Glu Leu Thr Arg Leu Trp Asp Arg Val Met Ile Glu Gln Glu Cys Cys
145 150 155 160

Gly Thr Ser Gly Pro Met Asp Trp Val Asn Phe Thr Ser Ala Phe Arg
165 170 175

Ala Ala Thr Pro Glu Val Val Phe Pro Trp Pro Pro Leu Cys Cys Arg
180 185 190

Arg Thr Gly Asn Phe Ile Pro Leu Asn Glu Glu Gly Cys Arg Leu Gly
195 200 205

His Met Asp Tyr Leu Phe Thr Lys Ala Gly Val Gln Trp His Asn Leu
210 215 220

Ser Ser Leu Gln Arg Leu Pro Pro Gly Phe Lys Gly Phe Ser His Leu
225 230 235 240

Ser Phe Gln Ser Ser Trp Asp Tyr Arg Ala Ala Ser Asn Thr Ser Ala
245 250 255

Thr Pro Ser Thr Ala Thr Arg Gly Val Ser Arg Gly Leu Gly Leu Pro
260 265 270

Ser

<210> 18
<211> 258
<212> PRT
<213> homo sapiens

<400> 18

Met Ala Ser Ala Ala Ala Ala Glu Ala Glu Lys Gly Ser Pro Val Val
1 5 10 15

Val Gly Leu Leu Val Val Gly Asn Ile Ile Ile Leu Leu Ser Gly Leu
20 25 30

Ser Leu Phe Ala Glu Thr Ile Trp Val Thr Ala Asp Gln Tyr Arg Val
35 40 45

Tyr Pro Leu Met Gly Val Ser Gly Lys Asp Asp Val Phe Ala Gly Ala
50 55 60

Trp Ile Ala Ile Phe Cys Gly Phe Ser Phe Phe Met Val Ala Ser Phe
65 70 75 80

Gly Val Gly Ala Ala Leu Cys Arg Arg Arg Ser Met Val Leu Thr Tyr
85 90 95

Leu Val Leu Met Leu Ile Val Tyr Ile Phe Glu Cys Ala Ser Cys Ile
100 105 110

Thr Ser Tyr Thr His Arg Asp Tyr Met Val Ser Asn Pro Ser Leu Ile
115 120 125

Thr Lys Gln Met Leu Thr Phe Tyr Ser Ala Asp Thr Asp Gln Gly Gln
130 135 140

Glu Leu Thr Arg Leu Trp Asp Arg Val Met Ile Glu Gln Glu Cys Cys
145 150 155 160

Gly Thr Ser Gly Pro Met Asp Trp Val Asn Phe Thr Ser Ala Phe Arg
165 170 175

Ala Ala Thr Pro Glu Val Val Phe Pro Trp Pro Pro Leu Cys Cys Arg
180 185 190

Arg Thr Gly Asn Phe Ile Pro Leu Asn Glu Glu Gly Cys Arg Leu Gly
195 200 205

His Met Asp Tyr Leu Phe Thr Lys Gly Cys Phe Glu His Ile Gly His
210 215 220

Ala Ile Asp Ser Tyr Thr Trp Gly Ile Ser Trp Phe Gly Phe Ala Ile
225 230 235 240

Leu Met Trp Thr Leu Pro Val Met Leu Ile Ala Met Tyr Phe Tyr Thr
245 250 255

Met Leu

<210> 19
<211> 245
<212> PRT
<213> homo sapiens

<400> 19

Met Lys Gln Ser Phe Pro Leu Phe Leu Thr Pro Ser Pro Trp Lys Thr
1 5 10 15

Thr Val Leu Leu Leu Tyr Met Arg Ile Cys Tyr Val Pro Ser Tyr Lys
20 25 30

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

Pro His Met Val Gly Ile Gly Gln Asn Ser Ser Phe Asn Ser Trp Met
50 55 60

Glu Ser Gln Phe Leu His Pro Ser Met Glu Pro Gly Gln Trp Leu Pro
65 70 75 80

Tyr Ile Thr Ile Phe Arg Phe Thr His Ile Ile Arg Cys Val Arg Ile
85 90 95

Ser Phe Leu Phe Asn Ile Pro Trp Tyr Gly Tyr Pro His Phe Val Cys
100 105 110

His Ser Ser Val Ser Gly His Leu Gly Tyr Phe Tyr Leu Leu Leu
115 120 125

Trp Leu Val Cys Cys Glu His Arg Cys Thr Asn Ile Cys Ser Arg Gln
130 135 140

Thr Ser Phe Lys Arg Leu Phe Leu Lys Lys Tyr Val Ser Tyr Asn Ile
145 150 155 160

Phe Leu Leu Cys Val Glu Ser Asp Ile Ser Ile Asp Leu Glu Gly Tyr
165 170 175

Gly Met Gly Cys Thr Asn Ile Cys Ser Arg Gln Thr Ser Phe Lys Arg
180 185 190

Leu Phe Lys Arg Lys Tyr Arg Cys Leu Leu Asn Met Phe Leu Val Met
195 200 205

Asn Val Glu Ser Gly Thr Asn Arg Tyr Met Glu Val Arg Arg Ala Trp
210 215 220

Arg Gly Ser Lys Trp Glu Asp Glu Glu Asn Trp Leu Gly Ile Asp Val
225 230 235 240

Tyr Phe Glu Asp Arg
245

<210> 20
<211> 114
<212> PRT
<213> homo sapiens

<400> 20

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

Cys Lys Ala Gln Val Ser Asn Glu Asp Cys Leu Gln Val Glu Asn Cys
20 25 30

Thr Gln Leu Gly Glu Gln Cys Trp Thr Ala Arg Ile Arg Ala Val Gly
35 40 45

Leu Leu Thr Val Ile Ser Lys Gly Cys Ser Leu Asn Cys Val Asp Asp
50 55 60

Ser Gln Asp Tyr Tyr Val Gly Lys Lys Asn Ile Thr Cys Cys Asp Thr
65 70 75 80

Asp Leu Cys Asn Ala Ser Gly Ala His Ala Leu Gln Pro Ala Ala Ala
85 90 95

Ile Leu Ala Leu Leu Pro Ala Leu Gly Leu Leu Leu Trp Gly Pro Gly
100 105 110

Gln Leu

<210> 21
<211> 386
<212> PRT
<213> homo sapiens

<400> 21

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

Gly Phe Leu Phe Leu Leu Phe Phe Trp Leu Asp Arg Ser Val Leu Ala
20 25 30

Lys Glu Leu Lys Phe Val Thr Leu Val Phe Arg His Gly Asp Arg Ser
35 40 45

Pro Ile Asp Thr Phe Pro Thr Asp Pro Ile Lys Glu Ser Ser Trp Pro
50 55 60

Gln Gly Phe Gly Gln Leu Thr Gln Leu Gly Met Glu Gln His Tyr Glu
65 70 75 80

Leu Gly Glu Tyr Ile Arg Lys Arg Tyr Arg Lys Phe Leu Asn Glu Ser
85 90 95

Tyr Lys His Glu Gln Val Tyr Ile Arg Ser Thr Asp Val Asp Arg Thr
100 105 110

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

Val Ser Ile Trp Asn Pro Ile Leu Leu Trp Gln Pro Ile Pro Val His

130

135

140

Thr Val Pro Leu Ser Glu Asp Gln Leu Leu Tyr Leu Pro Phe Arg Asn
 145 150 155 160

Cys Pro Arg Phe Gln Glu Leu Glu Ser Glu Thr Leu Lys Ser Glu Glu
 165 170 175

Phe Gln Lys Arg Leu His Pro Tyr Lys Asp Phe Ile Ala Thr Leu Gly
 180 185 190

Lys Leu Ser Gly Leu His Gly Gln Asp Leu Phe Gly Ile Trp Ser Lys
 195 200 205

Val Tyr Asp Pro Leu Tyr Cys Glu Ser Val His Asn Phe Thr Leu Pro
 210 215 220

Ser Trp Ala Thr Glu Asp Thr Met Thr Lys Leu Arg Glu Leu Ser Glu
 225 230 235 240

Leu Ser Leu Leu Ser Leu Tyr Gly Ile His Lys Gln Lys Glu Lys Ser
 245 250 255

Arg Leu Gln Gly Gly Val Leu Val Asn Glu Ile Leu Asn His Met Lys
 260 265 270

Arg Ala Thr Gln Ile Pro Ser Tyr Lys Lys Leu Ile Met Tyr Ser Ala
 275 280 285

His Asp Thr Thr Val Ser Gly Leu Gln Met Ala Leu Asp Val Tyr Asn
 290 295 300

Gly Leu Leu Pro Pro Tyr Ala Ser Cys His Leu Thr Glu Leu Tyr Phe
 305 310 315 320

Glu Lys Gly Glu Tyr Phe Val Glu Met Tyr Tyr Arg Asn Glu Thr Gln
 325 330 335

His Glu Pro Tyr Pro Leu Met Leu Pro Gly Cys Ser Pro Ser Cys Pro
340 345 350

Leu Glu Arg Phe Ala Glu Leu Val Gly Pro Val Ile Pro Gln Asp Trp
355 360 365

Ser Thr Glu Cys Met Thr Thr Asn Ser His Gln Gly Thr Glu Asp Ser
370 375 380

Thr Asp
385

<210> 22
<211> 418
<212> PRT
<213> homo sapiens

<400> 22

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

Gly Phe Leu Phe Leu Leu Phe Phe Trp Leu Asp Arg Ser Val Leu Ala
20 25 30

Lys Glu Leu Lys Phe Val Thr Leu Val Phe Arg His Gly Asp Arg Ser
35 40 45

Pro Ile Asp Thr Phe Pro Thr Asp Pro Ile Lys Glu Ser Ser Trp Pro
50 55 60

Gln Gly Phe Gly Gln Leu Thr Gln Leu Gly Met Glu Gln His Tyr Glu
65 70 75 80

Leu Gly Glu Tyr Ile Arg Lys Arg Tyr Arg Lys Phe Leu Asn Glu Ser
85 90 95

Tyr Lys His Glu Gln Val Tyr Ile Arg Ser Thr Asp Val Asp Arg Thr
100 105 110

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

Val Ser Ile Trp Asn Pro Ile Leu Leu Trp Gln Pro Ile Pro Val His
130 135 140

Thr Val Pro Leu Ser Glu Asp Gln Leu Leu Tyr Leu Pro Phe Arg Asn
145 150 155 160

Cys Pro Arg Phe Gln Glu Leu Glu Ser Glu Thr Leu Lys Ser Glu Glu
165 170 175

Phe Gln Lys Arg Leu His Pro Tyr Lys Asp Phe Ile Ala Thr Leu Gly
180 185 190

Lys Leu Ser Gly Leu His Gly Gln Asp Leu Phe Gly Ile Trp Ser Lys
195 200 205

Val Tyr Asp Pro Leu Tyr Cys Glu Ser Val His Asn Phe Thr Leu Pro
210 215 220

Ser Trp Ala Thr Glu Asp Thr Met Thr Lys Leu Arg Glu Leu Ser Glu
225 230 235 240

Leu Ser Leu Leu Ser Leu Tyr Gly Ile His Lys Gln Lys Glu Lys Ser
245 250 255

Arg Leu Gln Gly Gly Val Leu Val Asn Glu Ile Leu Asn His Met Lys
260 265 270

Arg Ala Thr Gln Ile Pro Ser Tyr Lys Lys Leu Ile Met Tyr Ser Ala
275 280 285

His Asp Thr Thr Val Ser Gly Leu Gln Met Ala Leu Asp Val Tyr Asn
290 295 300

Gly Leu Leu Pro Pro Tyr Ala Ser Cys His Leu Thr Glu Leu Tyr Phe
305 310 315 320

Glu Lys Gly Glu Tyr Phe Val Glu Met Tyr Tyr Arg Asn Glu Thr Gln
325 330 335

His Glu Pro Tyr Pro Leu Met Leu Pro Gly Cys Ser Pro Ser Cys Pro
340 345 350

Leu Glu Arg Phe Ala Glu Leu Val Gly Pro Val Ile Pro Gln Asp Trp
355 360 365

Ser Thr Glu Cys Met Thr Thr Asn Ser His Gln Val Leu Lys Val Ile
370 375 380

Phe Ala Val Ala Phe Cys Leu Ile Ser Ala Val Leu Met Val Leu Leu
385 390 395 400

Phe Ile His Ile Arg Arg Gly Leu Cys Trp Gln Arg Glu Ser Tyr Gly
405 410 415

Asn Ile

<210> 23
<211> 353
<212> PRT
<213> homo sapiens

<400> 23

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

Gly Phe Leu Phe Leu Leu Phe Phe Trp Leu Asp Arg Ser Val Leu Ala
20 25 30

Lys Glu Leu Lys Phe Val Thr Leu Val Phe Arg His Gly Asp Arg Ser
35 40 45

Pro Ile Asp Thr Phe Pro Thr Asp Pro Ile Lys Glu Ser Ser Trp Pro
50 55 60

Gln Gly Phe Gly Gln Leu Thr Gln Leu Gly Met Glu Gln His Tyr Glu
65 70 75 80

Leu Gly Glu Tyr Ile Arg Lys Arg Tyr Arg Lys Phe Leu Asn Glu Ser
85 90 95

Tyr Lys His Glu Gln Val Tyr Ile Arg Ser Thr Asp Val Asp Arg Thr
100 105 110

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

Val Ser Ile Trp Asn Pro Ile Leu Leu Trp Gln Pro Ile Pro Val His
130 135 140

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

Leu Ser Gly Leu His Gly Gln Asp Leu Phe Gly Ile Trp Ser Lys Val
165 170 175

Tyr Asp Pro Leu Tyr Cys Glu Ser Val His Asn Phe Thr Leu Pro Ser
180 185 190

Trp Ala Thr Glu Asp Thr Met Thr Lys Leu Arg Glu Leu Ser Glu Leu
195 200 205

Ser Leu Leu Ser Leu Tyr Gly Ile His Lys Gln Lys Glu Lys Ser Arg
210 215 220

Leu Gln Gly Gly Val Leu Val Asn Glu Ile Leu Asn His Met Lys Arg
225 230 235 240

Ala Thr Gln Ile Pro Ser Tyr Lys Lys Leu Ile Met Tyr Ser Ala His

245

250

255

Asp Thr Thr Val Ser Gly Leu Gln Met Ala Leu Asp Val Tyr Asn Gly
 260 265 270

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

Lys Gly Glu Tyr Phe Val Glu Met Tyr Tyr Arg Asn Glu Thr Gln His
 290 295 300

Glu Pro Tyr Pro Leu Met Leu Pro Gly Cys Ser Pro Ser Cys Pro Leu
 305 310 315 320

Glu Arg Phe Ala Glu Leu Val Gly Pro Val Ile Pro Gln Asp Trp Ser
 325 330 335

Thr Glu Cys Met Thr Thr Asn Ser His Gln Gly Thr Glu Asp Ser Thr
 340 345 350

Asp

<210> 24

<211> 335

<212> PRT

<213> homo sapiens

<400> 24

Met Pro Arg Pro Arg Leu Leu Ala Ala Leu Cys Gly Ala Leu Leu Cys
 1 5 10 15

Ala Pro Ser Leu Leu Val Ala Leu Asp Ile Cys Ser Lys Asn Pro Cys
 20 25 30

His Asn Gly Gly Leu Cys Glu Glu Ile Ser Gln Glu Val Arg Gly Asp
 35 40 45

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

His Cys Glu Thr Lys Cys Val Glu Pro Leu Gly Leu Glu Asn Gly Asn
65 70 75 80

Ile Ala Asn Ser Gln Ile Ala Ala Ser Ser Val Arg Val Thr Phe Leu
85 90 95

Gly Leu Gln His Trp Val Pro Glu Leu Ala Arg Leu Asn Arg Ala Gly
100 105 110

Met Val Asn Ala Trp Thr Pro Ser Ser Asn Asp Asp Asn Pro Trp Ile
115 120 125

Gln Val Asn Leu Leu Arg Arg Met Trp Val Thr Gly Val Val Thr Gln
130 135 140

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

Ala Tyr Ser Leu Asn Gly His Glu Phe Asp Phe Ile His Asp Val Asn
165 170 175

Lys Lys His Lys Glu Phe Val Gly Asn Trp Asn Lys Asn Ala Val His
180 185 190

Val Asn Leu Phe Glu Thr Pro Val Glu Ala Gln Tyr Val Arg Leu Tyr
195 200 205

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

Cys Glu Leu Asn Gly Cys Ala Asn Pro Leu Gly Leu Lys Asn Asn Ser
225 230 235 240

Ile Pro Asp Lys Gln Ile Thr Ala Ser Ser Ser Tyr Lys Thr Trp Gly
245 250 255

Leu His Leu Phe Ser Trp Asn Pro Ser Tyr Ala Arg Leu Asp Lys Gln
260 265 270

Gly Asn Phe Asn Ala Trp Val Ala Gly Ser Tyr Gly Asn Asp Gln Trp
275 280 285

Leu Gln Ile Phe Pro Gly Asn Trp Asp Asn His Ser His Lys Lys Asn
290 295 300

Leu Phe Glu Thr Pro Ile Leu Ala Arg Tyr Val Arg Ile Leu Pro Val
305 310 315 320

Ala Trp His Asn Arg Ile Ala Leu Arg Leu Glu Leu Leu Gly Cys
325 330 335

<210> 25
<211> 264
<212> PRT
<213> homo sapiens

<400> 25

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Ala Thr Thr Ala Pro Lys Pro Ala Thr Val Val Thr Gly
20 25 30

Ser Gly His Ala Ser Ser Thr Pro Gly Gly Glu Lys Glu Thr Ser Ala
35 40 45

Thr Gln Arg Ser Ser Val Pro Ser Ser Thr Glu Lys Asn Ala Phe Asn
50 55 60

Ser Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu Leu Gln Arg
65 70 75 80

Asp Ile Ser Glu Met Phe Leu Gln Ile Tyr Lys Gln Gly Gly Phe Leu

85

90

95

Gly Leu Ser Asn Ile Lys Phe Arg Pro Gly Ser Val Val Val Gln Leu
 100 105 110

Thr Leu Ala Phe Arg Glu Gly Thr Ile Asn Val His Asp Val Glu Thr
 115 120 125

Gln Phe Asn Gln Tyr Lys Thr Glu Ala Ala Ser Arg Tyr Asn Leu Thr
 130 135 140

Ile Ser Asp Val Ser Val Ser Asp Val Pro Phe Pro Phe Ser Ala Gln
 145 150 155 160

Ser Gly Ala Gly Val Pro Gly Trp Gly Ile Ala Leu Leu Val Leu Val
 165 170 175

Cys Val Leu Val Ala Leu Ala Ile Val Tyr Leu Ile Ala Leu Ala Val
 180 185 190

Cys Gln Cys Arg Arg Lys Asn Tyr Gly Gln Leu Asp Ile Phe Pro Ala
 195 200 205

Arg Asp Thr Tyr His Pro Met Ser Glu Tyr Pro Thr Tyr His Thr His
 210 215 220

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

Val Ser Ala Gly Asn Gly Gly Ser Ser Leu Ser Tyr Thr Asn Pro Ala
 245 250 255

Val Ala Ala Thr Ser Ala Asn Leu
 260

<210> 26
 <211> 203
 <212> PRT

<213> homo sapiens

<400> 26

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly
20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser
35 40 45

Thr Glu Lys Asn Ala Ile Pro Ala Pro Thr Thr Thr Lys Ser Cys Arg
50 55 60

Glu Thr Phe Leu Lys Cys Phe Cys Arg Phe Ile Asn Lys Gly Val Phe
65 70 75 80

Trp Ala Ser Pro Ile Leu Ser Ser Val Ser Asp Val Pro Phe Pro Phe
85 90 95

Ser Ala Gln Ser Gly Ala Gly Val Pro Gly Trp Gly Ile Ala Leu Leu
100 105 110

Val Leu Val Cys Val Leu Val Ala Leu Ala Ile Val Tyr Leu Ile Ala
115 120 125

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

Phe Pro Ala Arg Asp Thr Tyr His Pro Met Ser Glu Tyr Pro Thr Tyr
145 150 155 160

His Thr His Gly Arg Tyr Val Pro Pro Ser Ser Thr Asp Arg Ser Pro
165 170 175

Tyr Glu Lys Val Ser Ala Gly Asn Gly Gly Ser Ser Leu Ser Tyr Thr
180 185 190

Asn Pro Ala Val Ala Ala Thr Ser Ala Asn Leu
195 200

<210> 27
<211> 159
<212> PRT
<213> homo sapiens

<400> 27

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Ala Thr Thr Ala Pro Lys Pro Ala Thr Val Val Thr Gly
20 25 30

Ser Gly His Ala Ser Ser Thr Pro Gly Gly Glu Lys Glu Thr Ser Ala
35 40 45

Thr Gln Arg Ser Ser Val Pro Ser Ser Thr Glu Lys Asn Ala Phe Asn
50 55 60

Ser Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu Leu Gln Arg
65 70 75 80

Asp Ile Ser Glu Met Ala Val Cys Gln Cys Arg Arg Lys Asn Tyr Gly
85 90 95

Gln Leu Asp Ile Phe Pro Ala Arg Asp Thr Tyr His Pro Met Ser Glu
100 105 110

Tyr Pro Thr Tyr His Thr His Gly Arg Tyr Val Pro Pro Ser Ser Thr
115 120 125

Asp Arg Ser Pro Tyr Glu Lys Val Ser Ala Gly Asn Gly Gly Ser Ser
130 135 140

Leu Ser Tyr Thr Asn Pro Ala Val Ala Ala Thr Ser Ala Asn Leu

145

150

155

<210> 28

<211> 475

<212> PRT

<213> homo sapiens

<400> 28

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
 1 5 10 15

Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly
 20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser
 35 40 45

Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His
 50 55 60

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

Ala Pro Ala Thr Glu Pro Ala Ser Gly Ser Ala Ala Thr Trp Gly Gln
 85 90 95

Asp Val Thr Ser Val Pro Val Thr Arg Pro Ala Leu Gly Ser Thr Thr
 100 105 110

Pro Pro Ala His Asp Val Thr Ser Ala Pro Asp Asn Lys Pro Ala Pro
 115 120 125

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr
 130 135 140

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser
 145 150 155 160

Ala Pro Asp Asn Arg Pro Ala Leu Gly Ser Thr Ala Pro Pro Val His
165 170 175

Asn Val Thr Ser Ala Ser Gly Ser Ala Ser Gly Ser Ala Ser Thr Leu
180 185 190

Val His Asn Gly Thr Ser Ala Arg Ala Thr Thr Thr Pro Ala Ser Lys
195 200 205

Ser Thr Pro Phe Ser Ile Pro Ser His His Ser Asp Thr Pro Thr Thr
210 215 220

Leu Ala Ser His Ser Thr Lys Thr Asp Ala Ser Ser Thr His His Ser
225 230 235 240

Thr Val Pro Pro Leu Thr Ser Ser Asn His Ser Thr Ser Pro Gln Leu
245 250 255

Ser Thr Gly Val Ser Phe Phe Phe Leu Ser Phe His Ile Ser Asn Leu
260 265 270

Gln Phe Asn Ser Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu
275 280 285

Leu Gln Arg Asp Ile Ser Glu Met Phe Leu Gln Ile Tyr Lys Gln Gly
290 295 300

Gly Phe Leu Gly Leu Ser Asn Ile Lys Phe Arg Pro Gly Ser Val Val
305 310 315 320

Val Gln Leu Thr Leu Ala Phe Arg Glu Gly Thr Ile Asn Val His Asp
325 330 335

Val Glu Thr Gln Phe Asn Gln Tyr Lys Thr Glu Ala Ala Ser Arg Tyr
340 345 350

Asn Leu Thr Ile Ser Asp Val Ser Val Ser Asp Val Pro Phe Pro Phe
355 360 365

Ser Ala Gln Ser Gly Ala Gly Val Pro Gly Trp Gly Ile Ala Leu Leu
370 375 380

Val Leu Val Cys Val Leu Val Ala Leu Ala Ile Val Tyr Leu Ile Ala
385 390 395 400

Leu Ala Val Cys Gln Cys Arg Arg Lys Asn Tyr Gly Gln Leu Asp Ile
405 410 415

Phe Pro Ala Arg Asp Thr Tyr His Pro Met Ser Glu Tyr Pro Thr Tyr
420 425 430

His Thr His Gly Arg Tyr Val Pro Pro Ser Ser Thr Asp Arg Ser Pro
435 440 445

Tyr Glu Lys Val Ser Ala Gly Asn Gly Gly Ser Ser Leu Ser Tyr Thr
450 455 460

Asn Pro Ala Val Ala Ala Thr Ser Ala Asn Leu
465 470 475

<210> 29
<211> 282
<212> PRT
<213> homo sapiens

<400> 29

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Ala Thr Thr Ala Pro Lys Pro Ala Thr Val Val Thr Gly
20 25 30

Ser Gly His Ala Ser Ser Thr Pro Gly Gly Glu Lys Glu Thr Ser Ala
35 40 45

Thr Gln Arg Ser Ser Val Pro Ser Ser Thr Glu Lys Asn Ala Leu Ser

50

55

60

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

Phe Asn Ser Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu Leu
 85 90 95

Gln Arg Asp Ile Ser Glu Met Phe Leu Gln Ile Tyr Lys Gln Gly Gly
 100 105 110

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

Gln Leu Thr Leu Ala Phe Arg Glu Gly Thr Ile Asn Val His Asp Val
 130 135 140

Glu Thr Gln Phe Asn Gln Tyr Lys Thr Glu Ala Ala Ser Arg Tyr Asn
 145 150 155 160

Leu Thr Ile Ser Asp Val Ser Val Ser Asp Val Pro Phe Pro Phe Ser
 165 170 175

Ala Gln Ser Gly Ala Gly Val Pro Gly Trp Gly Ile Ala Leu Leu Val
 180 185 190

Leu Val Cys Val Leu Val Ala Leu Ala Ile Val Tyr Leu Ile Ala Leu
 195 200 205

Ala Val Cys Gln Cys Arg Arg Lys Asn Tyr Gly Gln Leu Asp Ile Phe
 210 215 220

Pro Ala Arg Asp Thr Tyr His Pro Met Ser Glu Tyr Pro Thr Tyr His
 225 230 235 240

Thr His Gly Arg Tyr Val Pro Pro Ser Ser Thr Asp Arg Ser Pro Tyr
 245 250 255

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

Pro Ala Val Ala Ala Thr Ser Ala Asn Leu
275 280

<210> 30
<211> 238
<212> PRT
<213> homo sapiens

<400> 30

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Ala Thr Thr Ala Pro Lys Pro Ala Thr Val Val Thr Gly
20 25 30

Ser Gly His Ala Ser Ser Thr Pro Gly Gly Glu Lys Glu Thr Ser Ala
35 40 45

Thr Gln Arg Ser Ser Val Pro Ser Ser Thr Glu Lys Asn Ala Ile Tyr
50 55 60

Lys Gln Gly Gly Phe Leu Gly Leu Ser Asn Ile Lys Phe Arg Pro Gly
65 70 75 80

Ser Val Val Val Gln Leu Thr Leu Ala Phe Arg Glu Gly Thr Ile Asn
85 90 95

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

Ser Arg Tyr Asn Leu Thr Ile Ser Asp Val Ser Val Ser Asp Val Pro
115 120 125

Phe Pro Phe Ser Ala Gln Ser Gly Ala Gly Val Pro Gly Trp Gly Ile
130 135 140

Ala Leu Leu Val Leu Val Cys Val Leu Val Ala Leu Ala Ile Val Tyr
145 150 155 160

Leu Ile Ala Leu Ala Val Cys Gln Cys Arg Arg Lys Asn Tyr Gly Gln
165 170 175

Leu Asp Ile Phe Pro Ala Arg Asp Thr Tyr His Pro Met Ser Glu Tyr
180 185 190

Pro Thr Tyr His Thr His Gly Arg Tyr Val Pro Pro Ser Ser Thr Asp
195 200 205

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

Ser Tyr Thr Asn Pro Ala Val Ala Ala Thr Ser Ala Asn Leu
225 230 235

<210> 31
<211> 241
<212> PRT
<213> homo sapiens

<400> 31

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Ala Thr Thr Ala Pro Lys Pro Ala Thr Val Val Thr Gly
20 25 30

Ser Gly His Ala Ser Ser Thr Pro Gly Gly Glu Lys Glu Thr Ser Ala
35 40 45

Thr Gln Arg Ser Ser Val Pro Ser Ser Thr Glu Lys Asn Ala Phe Leu
50 55 60

Gln Ile Tyr Lys Gln Gly Gly Phe Leu Gly Leu Ser Asn Ile Lys Phe

65		70		75		80									
Arg	Pro	Gly	Ser	Val	Val	Val	Gln	Leu	Thr	Leu	Ala	Phe	Arg	Glu	Gly
			85					90						95	
Thr	Ile	Asn	Val	His	Asp	Val	Glu	Thr	Gln	Phe	Asn	Gln	Tyr	Lys	Thr
			100					105					110		
Glu	Ala	Ala	Ser	Arg	Tyr	Asn	Leu	Thr	Ile	Ser	Asp	Val	Ser	Val	Ser
		115					120					125			
Asp	Val	Pro	Phe	Pro	Phe	Ser	Ala	Gln	Ser	Gly	Ala	Gly	Val	Pro	Gly
	130					135					140				
Trp	Gly	Ile	Ala	Leu	Leu	Val	Leu	Val	Cys	Val	Leu	Val	Ala	Leu	Ala
145					150					155					160
Ile	Val	Tyr	Leu	Ile	Ala	Leu	Ala	Val	Cys	Gln	Cys	Arg	Arg	Lys	Asn
			165						170					175	
Tyr	Gly	Gln	Leu	Asp	Ile	Phe	Pro	Ala	Arg	Asp	Thr	Tyr	His	Pro	Met
			180					185					190		
Ser	Glu	Tyr	Pro	Thr	Tyr	His	Thr	His	Gly	Arg	Tyr	Val	Pro	Pro	Ser
		195					200					205			
Ser	Thr	Asp	Arg	Ser	Pro	Tyr	Glu	Lys	Val	Ser	Ala	Gly	Asn	Gly	Gly
	210					215					220				
Ser	Ser	Leu	Ser	Tyr	Thr	Asn	Pro	Ala	Val	Ala	Ala	Thr	Ser	Ala	Asn
225					230					235					240

Leu

<210> 32
 <211> 198
 <212> PRT

<213> homo sapiens

<400> 32

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly
20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser
35 40 45

Thr Glu Lys Asn Ala Leu Ser Thr Gly Val Ser Phe Phe Phe Leu Ser
50 55 60

Phe His Ile Ser Asn Leu Gln Phe Asn Ser Ser Leu Glu Asp Pro Ser
65 70 75 80

Thr Asp Tyr Tyr Gln Glu Leu Gln Arg Asp Ile Ser Glu Met Phe Leu
85 90 95

Gln Ile Tyr Lys Gln Gly Gly Phe Leu Gly Leu Ser Asn Ile Lys Phe
100 105 110

Arg Pro Gly Ser Val Val Val Gln Leu Thr Leu Ala Phe Arg Glu Gly
115 120 125

Thr Ile Asn Val His Asp Val Glu Thr Gln Phe Asn Gln Tyr Lys Thr
130 135 140

Glu Ala Ala Ser Arg Tyr Asn Leu Thr Ile Ser Asp Val Ser Gly Cys
145 150 155 160

Leu Ser Val Pro Pro Lys Glu Leu Arg Ala Ala Gly His Leu Ser Ser
165 170 175

Pro Gly Tyr Leu Pro Ser Tyr Glu Arg Val Pro His Leu Pro His Pro
180 185 190

Trp Ala Leu Cys Ala Pro
195

<210> 33
<211> 189
<212> PRT
<213> homo sapiens

<400> 33

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Ala Thr Thr Ala Pro Lys Pro Ala Thr Val Val Thr Gly
20 25 30

Ser Gly His Ala Ser Ser Thr Pro Gly Gly Glu Lys Glu Thr Ser Ala
35 40 45

Thr Gln Arg Ser Ser Val Pro Ser Ser Thr Glu Lys Asn Ala Phe Asn
50 55 60

Ser Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu Leu Gln Arg
65 70 75 80

Asp Ile Ser Glu Met Ser Gly Ala Gly Val Pro Gly Trp Gly Ile Ala
85 90 95

Leu Leu Val Leu Val Cys Val Leu Val Ala Leu Ala Ile Val Tyr Leu
100 105 110

Ile Ala Leu Ala Val Cys Gln Cys Arg Arg Lys Asn Tyr Gly Gln Leu
115 120 125

Asp Ile Phe Pro Ala Arg Asp Thr Tyr His Pro Met Ser Glu Tyr Pro
130 135 140

Thr Tyr His Thr His Gly Arg Tyr Val Pro Pro Ser Ser Thr Asp Arg

145 150 155 160

Ser Pro Tyr Glu Lys Val Ser Ala Gly Asn Gly Gly Ser Ser Leu Ser
 165 170 175

Tyr Thr Asn Pro Ala Val Ala Ala Thr Ser Ala Asn Leu
 180 185

<210> 34
<211> 177
<212> PRT
<213> homo sapiens

<400> 34

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Ala Thr Thr Ala Pro Lys Pro Ala Thr Val Val Thr Gly
 20 25 30

Ser Gly His Ala Ser Ser Thr Pro Gly Gly Glu Lys Glu Thr Ser Ala
 35 40 45

Thr Gln Arg Ser Ser Val Pro Ser Ser Thr Glu Lys Asn Ala Leu Ser
 50 55 60

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

Phe Asn Ser Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu Leu
 85 90 95

Gln Arg Asp Ile Ser Glu Met Ala Val Cys Gln Cys Arg Arg Lys Asn
 100 105 110

Tyr Gly Gln Leu Asp Ile Phe Pro Ala Arg Asp Thr Tyr His Pro Met
 115 120 125

Ser Glu Tyr Pro Thr Tyr His Thr His Gly Arg Tyr Val Pro Pro Ser
130 135 140

Ser Thr Asp Arg Ser Pro Tyr Glu Lys Val Ser Ala Gly Asn Gly Gly
145 150 155 160

Ser Ser Leu Ser Tyr Thr Asn Pro Ala Val Ala Ala Thr Ser Ala Asn
165 170 175

Leu

<210> 35
<211> 255
<212> PRT
<213> homo sapiens

<400> 35

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly
20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser
35 40 45

Thr Glu Lys Asn Ala Phe Asn Ser Ser Leu Glu Asp Pro Ser Thr Asp
50 55 60

Tyr Tyr Gln Glu Leu Gln Arg Asp Ile Ser Glu Met Phe Leu Gln Ile
65 70 75 80

Tyr Lys Gln Gly Gly Phe Leu Gly Leu Ser Asn Ile Lys Phe Arg Pro
85 90 95

Gly Ser Val Val Val Gln Leu Thr Leu Ala Phe Arg Glu Gly Thr Ile
100 105 110

Asn Val His Asp Val Glu Thr Gln Phe Asn Gln Tyr Lys Thr Glu Ala
115 120 125

Ala Ser Arg Tyr Asn Leu Thr Ile Ser Asp Val Ser Val Ser Asp Val
130 135 140

Pro Phe Pro Phe Ser Ala Gln Ser Gly Ala Gly Val Pro Gly Trp Gly
145 150 155 160

Ile Ala Leu Leu Val Leu Val Cys Val Leu Val Ala Leu Ala Ile Val
165 170 175

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

Gln Leu Asp Ile Phe Pro Ala Arg Asp Thr Tyr His Pro Met Ser Glu
195 200 205

Tyr Pro Thr Tyr His Thr His Gly Arg Tyr Val Pro Pro Ser Ser Thr
210 215 220

Asp Arg Ser Pro Tyr Glu Lys Val Ser Ala Gly Asn Gly Gly Ser Ser
225 230 235 240

Leu Ser Tyr Thr Asn Pro Ala Val Ala Ala Thr Ser Ala Asn Leu
245 250 255

<210> 36
<211> 150
<212> PRT
<213> homo sapiens

<400> 36

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly
20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser
35 40 45

Thr Glu Lys Asn Ala Phe Asn Ser Ser Leu Glu Asp Pro Ser Thr Asp
50 55 60

Tyr Tyr Gln Glu Leu Gln Arg Asp Ile Ser Glu Met Ala Val Cys Gln
65 70 75 80

Cys Arg Arg Lys Asn Tyr Gly Gln Leu Asp Ile Phe Pro Ala Arg Asp
85 90 95

Thr Tyr His Pro Met Ser Glu Tyr Pro Thr Tyr His Thr His Gly Arg
100 105 110

Tyr Val Pro Pro Ser Ser Thr Asp Arg Ser Pro Tyr Glu Lys Val Ser
115 120 125

Ala Gly Asn Gly Gly Ser Ser Leu Ser Tyr Thr Asn Pro Ala Val Ala
130 135 140

Ala Thr Ser Ala Asn Leu
145 150

<210> 37
<211> 158
<212> PRT
<213> homo sapiens

<400> 37

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly
20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser

35

40

45

Thr Glu Lys Asn Ala Ile Pro Ala Pro Thr Thr Thr Lys Ser Cys Arg
 50 55 60

Glu Thr Phe Leu Lys Cys Phe Cys Arg Phe Ile Asn Lys Gly Val Phe
 65 70 75 80

Trp Ala Ser Pro Ile Leu Ser Ser Val Trp Gly Trp Gly Ala Arg Leu
 85 90 95

Gly His Arg Ala Ala Gly Ala Gly Leu Cys Ser Gly Cys Ala Gly His
 100 105 110

Cys Leu Ser His Cys Leu Gly Cys Leu Ser Val Pro Pro Lys Glu Leu
 115 120 125

Arg Ala Ala Gly His Leu Ser Ser Pro Gly Tyr Leu Pro Ser Tyr Glu
 130 135 140

Arg Val Pro His Leu Pro His Pro Trp Ala Leu Cys Ala Pro
 145 150 155

<210> 38
 <211> 484
 <212> PRT
 <213> homo sapiens

<400> 38

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
 1 5 10 15

Val Leu Thr Ala Thr Thr Ala Pro Lys Pro Ala Thr Val Val Thr Gly
 20 25 30

Ser Gly His Ala Ser Ser Thr Pro Gly Gly Glu Lys Glu Thr Ser Ala
 35 40 45

Thr Gln Arg Ser Ser Val Pro Ser Ser Thr Glu Lys Asn Ala Val Ser
50 55 60

Met Thr Ser Ser Val Leu Ser Ser His Ser Pro Gly Ser Gly Ser Ser
65 70 75 80

Thr Thr Gln Gly Gln Asp Val Thr Leu Ala Pro Ala Thr Glu Pro Ala
85 90 95

Ser Gly Ser Ala Ala Thr Trp Gly Gln Asp Val Thr Ser Val Pro Val
100 105 110

Thr Arg Pro Ala Leu Gly Ser Thr Thr Pro Pro Ala His Asp Val Thr
115 120 125

Ser Ala Pro Asp Asn Lys Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala
130 135 140

His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr
145 150 155 160

Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Asn Arg Pro Ala
165 170 175

Leu Gly Ser Thr Ala Pro Pro Val His Asn Val Thr Ser Ala Ser Gly
180 185 190

Ser Ala Ser Gly Ser Ala Ser Thr Leu Val His Asn Gly Thr Ser Ala
195 200 205

Arg Ala Thr Thr Thr Pro Ala Ser Lys Ser Thr Pro Phe Ser Ile Pro
210 215 220

Ser His His Ser Asp Thr Pro Thr Thr Leu Ala Ser His Ser Thr Lys
225 230 235 240

Thr Asp Ala Ser Ser Thr His His Ser Thr Val Pro Pro Leu Thr Ser
245 250 255

Ser Asn His Ser Thr Ser Pro Gln Leu Ser Thr Gly Val Ser Phe Phe
260 265 270

Phe Leu Ser Phe His Ile Ser Asn Leu Gln Phe Asn Ser Ser Leu Glu
275 280 285

Asp Pro Ser Thr Asp Tyr Tyr Gln Glu Leu Gln Arg Asp Ile Ser Glu
290 295 300

Met Phe Leu Gln Ile Tyr Lys Gln Gly Gly Phe Leu Gly Leu Ser Asn
305 310 315 320

Ile Lys Phe Arg Pro Gly Ser Val Val Val Gln Leu Thr Leu Ala Phe
325 330 335

Arg Glu Gly Thr Ile Asn Val His Asp Val Glu Thr Gln Phe Asn Gln
340 345 350

Tyr Lys Thr Glu Ala Ala Ser Arg Tyr Asn Leu Thr Ile Ser Asp Val
355 360 365

Ser Val Ser Asp Val Pro Phe Pro Phe Ser Ala Gln Ser Gly Ala Gly
370 375 380

Val Pro Gly Trp Gly Ile Ala Leu Leu Val Leu Val Cys Val Leu Val
385 390 395 400

Ala Leu Ala Ile Val Tyr Leu Ile Ala Leu Ala Val Cys Gln Cys Arg
405 410 415

Arg Lys Asn Tyr Gly Gln Leu Asp Ile Phe Pro Ala Arg Asp Thr Tyr
420 425 430

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

Pro Pro Ser Ser Thr Asp Arg Ser Pro Tyr Glu Lys Val Ser Ala Gly
450 455 460

Asn Gly Gly Ser Ser Leu Ser Tyr Thr Asn Pro Ala Val Ala Ala Thr
465 470 475 480

Ser Ala Asn Leu

<210> 39
<211> 219
<212> PRT
<213> homo sapiens

<400> 39

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Ala Thr Thr Ala Pro Lys Pro Ala Thr Val Val Thr Gly
20 25 30

Ser Gly His Ala Ser Ser Thr Pro Gly Gly Glu Lys Glu Thr Ser Ala
35 40 45

Thr Gln Arg Ser Ser Val Pro Ser Ser Thr Glu Lys Asn Ala Phe Asn
50 55 60

Ser Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu Leu Gln Arg
65 70 75 80

Asp Ile Ser Glu Met Phe Leu Gln Ile Tyr Lys Gln Gly Gly Phe Leu
85 90 95

Gly Leu Ser Asn Ile Lys Phe Arg Pro Gly Ser Val Val Val Gln Leu
100 105 110

Thr Leu Ala Phe Arg Glu Gly Thr Ile Asn Val His Asp Val Glu Thr
115 120 125

Gln Phe Asn Gln Tyr Lys Thr Glu Ala Ala Ser Arg Tyr Asn Leu Thr
130 135 140

Ile Ser Asp Val Ser Val Trp Gly Trp Gly Ala Arg Leu Gly His Arg
145 150 155 160

Ala Ala Gly Ala Gly Leu Cys Ser Gly Cys Ala Gly His Cys Leu Ser
165 170 175

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

Gly His Leu Ser Ser Pro Gly Tyr Leu Pro Ser Tyr Glu Arg Val Pro
195 200 205

His Leu Pro His Pro Trp Ala Leu Cys Ala Pro
210 215

<210> 40
<211> 217
<212> PRT
<213> homo sapiens

<400> 40

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
1 5 10 15

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

Val Pro Ser Ser Thr Glu Lys Asn Ala Ile Tyr Lys Gln Gly Gly Phe
35 40 45

Leu Gly Leu Ser Asn Ile Lys Phe Arg Pro Gly Ser Val Val Val Gln
50 55 60

Leu Thr Leu Ala Phe Arg Glu Gly Thr Ile Asn Val His Asp Val Glu
65 70 75 80

Thr Gln Phe Asn Gln Tyr Lys Thr Glu Ala Ala Ser Arg Tyr Asn Leu
85 90 95

Thr Ile Ser Asp Val Ser Val Ser Asp Val Pro Phe Pro Phe Ser Ala
100 105 110

Gln Ser Gly Ala Gly Val Pro Gly Trp Gly Ile Ala Leu Leu Val Leu
115 120 125

Val Cys Val Leu Val Ala Leu Ala Ile Val Tyr Leu Ile Ala Leu Ala
130 135 140

Val Cys Gln Cys Arg Arg Lys Asn Tyr Gly Gln Leu Asp Ile Phe Pro
145 150 155 160

Ala Arg Asp Thr Tyr His Pro Met Ser Glu Tyr Pro Thr Tyr His Thr
165 170 175

His Gly Arg Tyr Val Pro Pro Ser Ser Thr Asp Arg Ser Pro Tyr Glu
180 185 190

Lys Val Ser Ala Gly Asn Gly Gly Ser Ser Leu Ser Tyr Thr Asn Pro
195 200 205

Ala Val Ala Ala Thr Ser Ala Asn Leu
210 215

<210> 41
<211> 239
<212> PRT
<213> homo sapiens

<400> 41

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Ala Thr Thr Ala Pro Lys Pro Ala Thr Val Val Thr Gly

20

25

30

Ser Gly His Ala Ser Ser Thr Pro Gly Gly Glu Lys Glu Thr Ser Ala
 35 40 45

Thr Gln Arg Ser Ser Val Pro Ser Ser Thr Glu Lys Asn Ala Ile Pro
 50 55 60

Ala Pro Thr Thr Thr Lys Ser Cys Arg Glu Thr Phe Leu Lys Trp Pro
 65 70 75 80

Gly Ser Val Val Val Gln Leu Thr Leu Ala Phe Arg Glu Gly Thr Ile
 85 90 95

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

Ala Ser Arg Tyr Asn Leu Thr Ile Ser Asp Val Ser Val Ser Asp Val
 115 120 125

Pro Phe Pro Phe Ser Ala Gln Ser Gly Ala Gly Val Pro Gly Trp Gly
 130 135 140

Ile Ala Leu Leu Val Leu Val Cys Val Leu Val Ala Leu Ala Ile Val
 145 150 155 160

Tyr Leu Ile Ala Leu Ala Val Cys Gln Cys Arg Arg Lys Asn Tyr Gly
 165 170 175

Gln Leu Asp Ile Phe Pro Ala Arg Asp Thr Tyr His Pro Met Ser Glu
 180 185 190

Tyr Pro Thr Tyr His Thr His Gly Arg Tyr Val Pro Pro Ser Ser Thr
 195 200 205

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

Leu Ser Tyr Thr Asn Pro Ala Val Ala Ala Thr Ser Ala Asn Leu
225 230 235

<210> 42
<211> 230
<212> PRT
<213> homo sapiens

<400> 42

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly
20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser
35 40 45

Thr Glu Lys Asn Ala Ile Pro Ala Pro Thr Thr Thr Lys Ser Cys Arg
50 55 60

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

Ala Phe Arg Glu Gly Thr Ile Asn Val His Asp Val Glu Thr Gln Phe
85 90 95

Asn Gln Tyr Lys Thr Glu Ala Ala Ser Arg Tyr Asn Leu Thr Ile Ser
100 105 110

Asp Val Ser Val Ser Asp Val Pro Phe Pro Phe Ser Ala Gln Ser Gly
115 120 125

Ala Gly Val Pro Gly Trp Gly Ile Ala Leu Leu Val Leu Val Cys Val
130 135 140

Leu Val Ala Leu Ala Ile Val Tyr Leu Ile Ala Leu Ala Val Cys Gln
145 150 155 160

Cys Arg Arg Lys Asn Tyr Gly Gln Leu Asp Ile Phe Pro Ala Arg Asp
165 170 175

Thr Tyr His Pro Met Ser Glu Tyr Pro Thr Tyr His Thr His Gly Arg
180 185 190

Tyr Val Pro Pro Ser Ser Thr Asp Arg Ser Pro Tyr Glu Lys Val Ser
195 200 205

Ala Gly Asn Gly Gly Ser Ser Leu Ser Tyr Thr Asn Pro Ala Val Ala
210 215 220

Ala Thr Ser Ala Asn Leu
225 230

<210> 43
<211> 212
<212> PRT
<213> homo sapiens

<400> 43

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Thr
1 5 10 15

Val Leu Thr Ala Thr Thr Ala Pro Lys Pro Ala Thr Val Val Thr Gly
20 25 30

Ser Gly His Ala Ser Ser Thr Pro Gly Gly Glu Lys Glu Thr Ser Ala
35 40 45

Thr Gln Arg Ser Ser Val Pro Ser Ser Thr Glu Lys Asn Ala Ile Pro
50 55 60

Ala Pro Thr Thr Thr Lys Ser Cys Arg Glu Thr Phe Leu Lys Cys Phe
65 70 75 80

Cys Arg Phe Ile Asn Lys Gly Val Phe Trp Ala Ser Pro Ile Leu Ser

85

90

95

Ser Val Ser Asp Val Pro Phe Pro Phe Ser Ala Gln Ser Gly Ala Gly
 100 105 110

Val Pro Gly Trp Gly Ile Ala Leu Leu Val Leu Val Cys Val Leu Val
 115 120 125

Ala Leu Ala Ile Val Tyr Leu Ile Ala Leu Ala Val Cys Gln Cys Arg
 130 135 140

Arg Lys Asn Tyr Gly Gln Leu Asp Ile Phe Pro Ala Arg Asp Thr Tyr
 145 150 155 160

His Pro Met Ser Glu Tyr Pro Thr Tyr His Thr His Gly Arg Tyr Val
 165 170 175

Pro Pro Ser Ser Thr Asp Arg Ser Pro Tyr Glu Lys Val Ser Ala Gly
 180 185 190

Asn Gly Gly Ser Ser Leu Ser Tyr Thr Asn Pro Ala Val Ala Ala Thr
 195 200 205

Ser Ala Asn Leu
 210

<210> 44
 <211> 273
 <212> PRT
 <213> homo sapiens

<400> 44

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr
 1 5 10 15

Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly
 20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser
35 40 45

Thr Glu Lys Asn Ala Leu Ser Thr Gly Val Ser Phe Phe Phe Leu Ser
50 55 60

Phe His Ile Ser Asn Leu Gln Phe Asn Ser Ser Leu Glu Asp Pro Ser
65 70 75 80

Thr Asp Tyr Tyr Gln Glu Leu Gln Arg Asp Ile Ser Glu Met Phe Leu
85 90 95

Gln Ile Tyr Lys Gln Gly Gly Phe Leu Gly Leu Ser Asn Ile Lys Phe
100 105 110

Arg Pro Gly Ser Val Val Val Gln Leu Thr Leu Ala Phe Arg Glu Gly
115 120 125

Thr Ile Asn Val His Asp Val Glu Thr Gln Phe Asn Gln Tyr Lys Thr
130 135 140

Glu Ala Ala Ser Arg Tyr Asn Leu Thr Ile Ser Asp Val Ser Val Ser
145 150 155 160

Asp Val Pro Phe Pro Phe Ser Ala Gln Ser Gly Ala Gly Val Pro Gly
165 170 175

Trp Gly Ile Ala Leu Leu Val Leu Val Cys Val Leu Val Ala Leu Ala
180 185 190

Ile Val Tyr Leu Ile Ala Leu Ala Val Cys Gln Cys Arg Arg Lys Asn
195 200 205

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

Ser Glu Tyr Pro Thr Tyr His Thr His Gly Arg Tyr Val Pro Pro Ser
225 230 235 240

Ser Thr Asp Arg Ser Pro Tyr Glu Lys Val Ser Ala Gly Asn Gly Gly
245 250 255

Ser Ser Leu Ser Tyr Thr Asn Pro Ala Val Ala Ala Thr Ser Ala Asn
260 265 270

Leu

<210> 45
<211> 575
<212> PRT
<213> homo sapiens

<400> 45

Met Asp Leu Val Leu Lys Arg Cys Leu Leu His Leu Ala Val Ile Gly
1 5 10 15

Ala Leu Leu Ala Val Gly Ala Thr Lys Gly Ser Gln Val Trp Gly Gly
20 25 30

Gln Pro Val Tyr Pro Gln Glu Thr Asp Asp Ala Cys Ile Phe Pro Asp
35 40 45

Gly Gly Pro Cys Pro Ser Gly Ser Trp Ser Gln Lys Arg Ser Phe Val
50 55 60

Tyr Val Trp Lys Thr Trp Gly Gln Tyr Trp Gln Val Leu Gly Gly Pro
65 70 75 80

Val Ser Gly Leu Ser Ile Gly Thr Gly Arg Ala Met Leu Gly Thr His
85 90 95

Thr Met Glu Val Thr Val Tyr His Arg Arg Gly Ser Arg Ser Tyr Val
100 105 110

Pro Leu Ala His Ser Ser Ser Ala Phe Thr Ile Thr Asp Gln Val Pro

115

120

125

Phe Ser Val Ser Val Ser Gln Leu Arg Ala Leu Asp Gly Gly Asn Lys
 130 135 140

His Phe Leu Arg Asn Gln Pro Leu Thr Phe Ala Leu Gln Leu His Asp
 145 150 155 160

Pro Ser Gly Tyr Leu Ala Glu Ala Asp Leu Ser Tyr Thr Trp Asp Phe
 165 170 175

Gly Asp Ser Ser Gly Thr Leu Ile Ser Arg Ala Leu Val Val Thr His
 180 185 190

Thr Tyr Leu Glu Pro Gly Pro Val Thr Ala Gln Val Val Leu Gln Ala
 195 200 205

Ala Ile Pro Leu Thr Ser Cys Gly Ser Ser Pro Val Pro Gly Thr Thr
 210 215 220

Asp Gly His Arg Pro Thr Ala Glu Ala Pro Asn Thr Thr Ala Gly Gln
 225 230 235 240

Val Pro Thr Thr Glu Val Val Gly Thr Thr Pro Gly Gln Ala Pro Thr
 245 250 255

Ala Glu Pro Ser Gly Thr Thr Ser Val Gln Val Pro Thr Thr Glu Val
 260 265 270

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

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

Glu Met Ser Thr Pro Glu Ala Thr Gly Met Thr Pro Ala Glu Val Ser
 305 310 315 320

Ile Val Val Leu Ser Gly Thr Thr Ala Ala Gln Val Thr Thr Thr Glu
325 330 335

Trp Val Glu Thr Thr Ala Arg Glu Leu Pro Ile Pro Glu Pro Glu Gly
340 345 350

Pro Asp Ala Ser Ser Ile Met Ser Thr Glu Ser Ile Thr Gly Ser Leu
355 360 365

Gly Pro Leu Leu Asp Gly Thr Ala Thr Leu Arg Leu Val Lys Arg Gln
370 375 380

Val Pro Leu Asp Cys Val Leu Tyr Arg Tyr Gly Ser Phe Ser Val Thr
385 390 395 400

Leu Asp Ile Val Gln Gly Ile Glu Ser Ala Glu Ile Leu Gln Ala Val
405 410 415

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

Gly Leu Pro Lys Glu Ala Cys Met Glu Ile Ser Ser Pro Gly Cys Gln
435 440 445

Pro Pro Ala Gln Arg Leu Cys Gln Pro Val Leu Pro Ser Pro Ala Cys
450 455 460

Gln Leu Val Leu His Gln Ile Leu Lys Gly Gly Ser Gly Thr Tyr Cys
465 470 475 480

Leu Asn Val Ser Leu Ala Asp Thr Asn Ser Leu Ala Val Val Ser Thr
485 490 495

Gln Leu Ile Met Pro Gly Gln Glu Ala Gly Leu Gly Gln Val Pro Leu
500 505 510

Ile Val Gly Ile Leu Leu Val Leu Met Ala Val Val Leu Ala Ser Leu

515

520

525

Ile Tyr Arg Arg Arg Leu Met Lys Gln Asp Phe Ser Val Pro Gln Leu
 530 535 540

Pro His Ser Ser Ser His Trp Leu Arg Leu Pro Arg Ile Phe Cys Ser
 545 550 555 560

Cys Pro Ile Gly Glu Asn Ser Pro Leu Leu Ser Gly Gln Gln Val
 565 570 575

<210> 46
 <211> 661
 <212> PRT
 <213> homo sapiens

<400> 46

Met Asp Leu Val Leu Lys Arg Cys Leu Leu His Leu Ala Val Ile Gly
 1 5 10 15

Ala Leu Leu Ala Val Gly Ala Thr Lys Val Pro Arg Asn Gln Asp Trp
 20 25 30

Leu Gly Val Ser Arg Gln Leu Arg Thr Lys Ala Trp Asn Arg Gln Leu
 35 40 45

Tyr Pro Glu Trp Thr Glu Ala Gln Arg Leu Asp Cys Trp Arg Gly Gly
 50 55 60

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

Asn Ala Ser Phe Ser Ile Ala Leu Asn Phe Pro Gly Ser Gln Lys Val
 85 90 95

Leu Pro Asp Gly Gln Val Ile Trp Val Asn Asn Thr Ile Ile Asn Gly
 100 105 110

Ser Gln Val Trp Gly Gly Gln Pro Val Tyr Pro Gln Glu Thr Asp Asp
115 120 125

Ala Cys Ile Phe Pro Asp Gly Gly Pro Cys Pro Ser Gly Ser Trp Ser
130 135 140

Gln Lys Arg Ser Phe Val Tyr Val Trp Lys Thr Trp Gly Gln Tyr Trp
145 150 155 160

Gln Val Leu Gly Gly Pro Val Ser Gly Leu Ser Ile Gly Thr Gly Arg
165 170 175

Ala Met Leu Gly Thr His Thr Met Glu Val Thr Val Tyr His Arg Arg
180 185 190

Gly Ser Arg Ser Tyr Val Pro Leu Ala His Ser Ser Ser Ala Phe Thr
195 200 205

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

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

Ala Leu Gln Leu His Asp Pro Ser Gly Tyr Leu Ala Glu Ala Asp Leu
245 250 255

Ser Tyr Thr Trp Asp Phe Gly Asp Ser Ser Gly Thr Leu Ile Ser Arg
260 265 270

Ala Leu Val Val Thr His Thr Tyr Leu Glu Pro Gly Pro Val Thr Ala
275 280 285

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

Pro Val Pro Gly Thr Thr Asp Gly His Arg Pro Thr Ala Glu Ala Pro
305 310 315 320

Asn Thr Thr Ala Gly Gln Val Pro Thr Thr Glu Val Val Gly Thr Thr
325 330 335

Pro Gly Gln Ala Pro Thr Ala Glu Pro Ser Gly Thr Thr Ser Val Gln
340 345 350

Val Pro Thr Thr Glu Val Ile Ser Thr Ala Pro Val Gln Met Pro Thr
355 360 365

Ala Glu Ser Thr Gly Met Thr Pro Glu Lys Val Pro Val Ser Glu Val
370 375 380

Met Gly Thr Thr Leu Ala Glu Met Ser Thr Pro Glu Ala Thr Gly Met
385 390 395 400

Thr Pro Ala Glu Val Ser Ile Val Val Leu Ser Gly Thr Thr Ala Ala
405 410 415

Gln Val Thr Thr Thr Glu Trp Val Glu Thr Thr Ala Arg Glu Leu Pro
420 425 430

Ile Pro Glu Pro Glu Gly Pro Asp Ala Ser Ser Ile Met Ser Thr Glu
435 440 445

Ser Ile Thr Gly Ser Leu Gly Pro Leu Leu Asp Gly Thr Ala Thr Leu
450 455 460

Arg Leu Val Lys Arg Gln Val Pro Leu Asp Cys Val Leu Tyr Arg Tyr
465 470 475 480

Gly Ser Phe Ser Val Thr Leu Asp Ile Val Gln Gly Ile Glu Ser Ala
485 490 495

Glu Ile Leu Gln Ala Val Pro Ser Gly Glu Gly Asp Ala Phe Glu Leu
500 505 510

Thr Val Ser Cys Gln Gly Gly Leu Pro Lys Glu Ala Cys Met Glu Ile
515 520 525

Ser Ser Pro Gly Cys Gln Pro Pro Ala Gln Arg Leu Cys Gln Pro Val
530 535 540

Leu Pro Ser Pro Ala Cys Gln Leu Val Leu His Gln Ile Leu Lys Gly
545 550 555 560

Gly Ser Gly Thr Tyr Cys Leu Asn Val Ser Leu Ala Asp Thr Asn Ser
565 570 575

Leu Ala Val Val Ser Thr Gln Leu Ile Met Pro Gly Gln Glu Ala Gly
580 585 590

Leu Gly Gln Val Pro Leu Ile Val Gly Ile Leu Leu Val Leu Met Ala
595 600 605

Val Val Leu Ala Ser Leu Ile Tyr Arg Arg Arg Leu Met Lys Gln Asp
610 615 620

Phe Ser Val Pro Gln Leu Pro His Ser Ser Ser His Trp Leu Arg Leu
625 630 635 640

Pro Arg Ile Phe Cys Ser Cys Pro Ile Gly Glu Asn Ser Pro Leu Leu
645 650 655

Ser Gly Gln Gln Val
660

<210> 47
<211> 668
<212> PRT
<213> homo sapiens

<400> 47

Met Asp Leu Val Leu Lys Arg Cys Leu Leu His Leu Ala Val Ile Gly
1 5 10 15

Ala Leu Leu Ala Val Gly Ala Thr Lys Val Pro Arg Asn Gln Asp Trp
20 25 30

Leu Gly Val Ser Arg Gln Leu Arg Thr Lys Ala Trp Asn Arg Gln Leu
35 40 45

Tyr Pro Glu Trp Thr Glu Ala Gln Arg Leu Asp Cys Trp Arg Gly Gly
50 55 60

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

Asn Ala Ser Phe Ser Ile Ala Leu Asn Phe Pro Gly Ser Gln Lys Val
85 90 95

Leu Pro Asp Gly Gln Val Ile Trp Val Asn Asn Thr Ile Ile Asn Gly
100 105 110

Ser Gln Val Trp Gly Gly Gln Pro Val Tyr Pro Gln Glu Thr Asp Asp
115 120 125

Ala Cys Ile Phe Pro Asp Gly Gly Pro Cys Pro Ser Gly Ser Trp Ser
130 135 140

Gln Lys Arg Ser Phe Val Tyr Val Trp Lys Thr Trp Gly Gln Tyr Trp
145 150 155 160

Gln Val Leu Gly Gly Pro Val Ser Gly Leu Ser Ile Gly Thr Gly Arg
165 170 175

Ala Met Leu Gly Thr His Thr Met Glu Val Thr Val Tyr His Arg Arg
180 185 190

Gly Ser Arg Ser Tyr Val Pro Leu Ala His Ser Ser Ser Ala Phe Thr
195 200 205

Ile Thr Asp Gln Val Pro Phe Ser Val Ser Val Ser Gln Leu Arg Ala

210

215

220

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

Ala Leu Gln Leu His Asp Pro Ser Gly Tyr Leu Ala Glu Ala Asp Leu
 245 250 255

Ser Tyr Thr Trp Asp Phe Gly Asp Ser Ser Gly Thr Leu Ile Ser Arg
 260 265 270

Ala Leu Val Val Thr His Thr Tyr Leu Glu Pro Gly Pro Val Thr Ala
 275 280 285

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

Pro Val Pro Gly Thr Thr Asp Gly His Arg Pro Thr Ala Glu Ala Pro
 305 310 315 320

Asn Thr Thr Ala Gly Gln Val Pro Thr Thr Glu Val Val Gly Thr Thr
 325 330 335

Pro Gly Gln Ala Pro Thr Ala Glu Pro Ser Gly Thr Thr Ser Val Gln
 340 345 350

Val Pro Thr Thr Glu Val Ile Ser Thr Ala Pro Val Gln Met Pro Thr
 355 360 365

Ala Glu Ser Thr Gly Met Thr Pro Glu Lys Val Pro Val Ser Glu Val
 370 375 380

Met Gly Thr Thr Leu Ala Glu Met Ser Thr Pro Glu Ala Thr Gly Met
 385 390 395 400

Thr Pro Ala Glu Val Ser Ile Val Val Leu Ser Gly Thr Thr Ala Ala
 405 410 415

Gln Val Thr Thr Thr Glu Trp Val Glu Thr Thr Ala Arg Glu Leu Pro
420 425 430

Ile Pro Glu Pro Glu Gly Pro Asp Ala Ser Ser Ile Met Ser Thr Glu
435 440 445

Ser Ile Thr Gly Ser Leu Gly Pro Leu Leu Asp Gly Thr Ala Thr Leu
450 455 460

Arg Leu Val Lys Arg Gln Val Pro Leu Asp Cys Val Leu Tyr Arg Tyr
465 470 475 480

Gly Ser Phe Ser Val Thr Leu Asp Ile Val Gln Gly Ile Glu Ser Ala
485 490 495

Glu Ile Leu Gln Ala Val Pro Ser Gly Glu Gly Asp Ala Phe Glu Leu
500 505 510

Thr Val Ser Cys Gln Gly Gly Leu Pro Lys Glu Ala Cys Met Glu Ile
515 520 525

Ser Ser Pro Gly Cys Gln Pro Pro Ala Gln Arg Leu Cys Gln Pro Val
530 535 540

Leu Pro Ser Pro Ala Cys Gln Leu Val Leu His Gln Ile Leu Lys Gly
545 550 555 560

Gly Ser Gly Thr Tyr Cys Leu Asn Val Ser Leu Ala Asp Thr Asn Ser
565 570 575

Leu Ala Val Val Ser Thr Gln Leu Ile Met Pro Val Pro Gly Ile Leu
580 585 590

Leu Thr Gly Gln Glu Ala Gly Leu Gly Gln Val Pro Leu Ile Val Gly
595 600 605

Ile Leu Leu Val Leu Met Ala Val Val Leu Ala Ser Leu Ile Tyr Arg

610

615

620

Arg Arg Leu Met Lys Gln Asp Phe Ser Val Pro Gln Leu Pro His Ser
 625 630 635 640

Ser Ser His Trp Leu Arg Leu Pro Arg Ile Phe Cys Ser Cys Pro Ile
 645 650 655

Gly Glu Asn Ser Pro Leu Leu Ser Gly Gln Gln Val
 660 665

<210> 48
 <211> 118
 <212> PRT
 <213> homo sapiens
 <400> 48

Met Pro Arg Glu Asp Ala His Phe Ile Tyr Gly Tyr Pro Lys Lys Gly
 1 5 10 15

His Gly His Ser Tyr Thr Thr Ala Glu Glu Ala Ala Gly Ile Gly Ile
 20 25 30

Leu Thr Val Ile Leu Gly Val Leu Leu Leu Ile Gly Cys Trp Tyr Cys
 35 40 45

Arg Arg Arg Asn Gly Tyr Arg Ala Leu Met Asp Lys Ser Leu His Val
 50 55 60

Gly Thr Gln Cys Ala Leu Thr Arg Arg Cys Pro Gln Glu Gly Phe Asp
 65 70 75 80

His Arg Asp Ser Lys Val Ser Leu Gln Glu Lys Asn Cys Glu Pro Val
 85 90 95

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

Pro Pro Pro Tyr Ser Pro
115

<210> 49
<211> 1069
<212> PRT
<213> homo sapiens

<400> 49

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

His Tyr Arg Glu Val Leu Pro Leu Ala Thr Phe Val Arg Arg Leu Gly
20 25 30

Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp Pro Ala Ala Phe Arg
35 40 45

Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro Trp Asp Ala Arg Pro
50 55 60

Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser Cys Leu Lys Glu Leu
65 70 75 80

Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg Gly Ala Lys Asn Val
85 90 95

Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Pro Pro
100 105 110

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

Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu Leu Leu Arg Arg Val
130 135 140

Gly Asp Asp Val Leu Val His Leu Leu Ala Arg Cys Ala Leu Phe Val
145 150 155 160

Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys Gly Pro Pro Leu Tyr
165 170 175

Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro Pro His Ala Ser Gly
180 185 190

Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp Asn His Ser Val Arg
195 200 205

Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg Arg
210 215 220

Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro Lys Arg Pro Arg Arg
225 230 235 240

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

Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp Arg Gly Phe Cys Val
260 265 270

Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr Ser Leu Glu Gly Ala
275 280 285

Leu Ser Gly Thr Arg His Ser His Pro Ser Val Gly Arg Gln His His
290 295 300

Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg Pro Trp Asp Thr Pro
305 310 315 320

Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe Leu Tyr Ser Ser Gly
325 330 335

Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu Ser Ser Leu Arg Pro
340 345 350

Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr Ile Phe Leu Gly Ser

355

360

365

Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu Pro Arg Leu Pro Gln
 370 375 380

Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu Leu Leu Gly Asn His
 385 390 395 400

Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr His Cys Pro Leu Arg
 405 410 415

Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala Arg Glu Lys Pro Gln
 420 425 430

Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro Arg Arg Leu
 435 440 445

Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly Phe
 450 455 460

Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu Trp Gly Ser
 465 470 475 480

Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys Phe Ile Ser
 485 490 495

Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr Trp Lys Met
 500 505 510

Ser Val Arg Asp Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly Cys
 515 520 525

Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys Phe
 530 535 540

Leu His Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser Phe
 545 550 555 560

Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn Arg Leu Phe Phe Tyr
565 570 575

Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln His
580 585 590

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

His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg Phe Ile
610 615 620

Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn Met Asp Tyr Val Val
625 630 635 640

Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala Glu Arg Leu Thr Ser
645 650 655

Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala Arg Arg
660 665 670

Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile His Arg
675 680 685

Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro Pro Pro
690 695 700

Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp Thr Ile
705 710 715 720

Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys Pro Gln
725 730 735

Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala Ala His
740 745 750

Gly His Val Arg Lys Ala Phe Lys Ser His Val Ser Thr Leu Thr Asp

755

760

765

Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His Leu Gln Glu Thr Ser
 770 775 780

Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser Ser Ser Leu Asn Glu
 785 790 795 800

Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg Phe Met Cys His His
 805 810 815

Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln Cys Gln Gly Ile Pro
 820 825 830

Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser Leu Cys Tyr Gly Asp
 835 840 845

Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg Asp Gly Leu Leu Leu
 850 855 860

Arg Leu Val Asp Asp Phe Leu Leu Val Thr Pro His Leu Thr His Ala
 865 870 875 880

Lys Thr Phe Leu Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr
 885 890 895

Phe Asn Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe
 900 905 910

Gly Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val
 915 920 925

Asn Ser Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu
 930 935 940

Gln Ala Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln
 945 950 955 960

Gln Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp Thr
965 970 975

Ala Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly Met Ser
980 985 990

Leu Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu Ala Val Gln
995 1000 1005

Trp Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr Arg His Arg
1010 1015 1020

Val Thr Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr Ala Gln Thr
1025 1030 1035

Gln Leu Ser Arg Lys Leu Pro Gly Thr Thr Leu Thr Ala Leu Glu
1040 1045 1050

Ala Ala Ala Asn Pro Ala Leu Pro Ser Asp Phe Lys Thr Ile Leu
1055 1060 1065

Asp

<210> 50
<211> 1132
<212> PRT
<213> homo sapiens

<400> 50

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

His Tyr Arg Glu Val Leu Pro Leu Ala Thr Phe Val Arg Arg Leu Gly
20 25 30

Pro Gln Gly Trp Arg Leu Val Gln Arg Gly Asp Pro Ala Ala Phe Arg
35 40 45

Ala Leu Val Ala Gln Cys Leu Val Cys Val Pro Trp Asp Ala Arg Pro
50 55 60

Pro Pro Ala Ala Pro Ser Phe Arg Gln Val Ser Cys Leu Lys Glu Leu
65 70 75 80

Val Ala Arg Val Leu Gln Arg Leu Cys Glu Arg Gly Ala Lys Asn Val
85 90 95

Leu Ala Phe Gly Phe Ala Leu Leu Asp Gly Ala Arg Gly Gly Pro Pro
100 105 110

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

Asp Ala Leu Arg Gly Ser Gly Ala Trp Gly Leu Leu Leu Arg Arg Val
130 135 140

Gly Asp Asp Val Leu Val His Leu Leu Ala Arg Cys Ala Leu Phe Val
145 150 155 160

Leu Val Ala Pro Ser Cys Ala Tyr Gln Val Cys Gly Pro Pro Leu Tyr
165 170 175

Gln Leu Gly Ala Ala Thr Gln Ala Arg Pro Pro Pro His Ala Ser Gly
180 185 190

Pro Arg Arg Arg Leu Gly Cys Glu Arg Ala Trp Asn His Ser Val Arg
195 200 205

Glu Ala Gly Val Pro Leu Gly Leu Pro Ala Pro Gly Ala Arg Arg Arg
210 215 220

Gly Gly Ser Ala Ser Arg Ser Leu Pro Leu Pro Lys Arg Pro Arg Arg
225 230 235 240

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

Ala His Pro Gly Arg Thr Arg Gly Pro Ser Asp Arg Gly Phe Cys Val
260 265 270

Val Ser Pro Ala Arg Pro Ala Glu Glu Ala Thr Ser Leu Glu Gly Ala
275 280 285

Leu Ser Gly Thr Arg His Ser His Pro Ser Val Gly Arg Gln His His
290 295 300

Ala Gly Pro Pro Ser Thr Ser Arg Pro Pro Arg Pro Trp Asp Thr Pro
305 310 315 320

Cys Pro Pro Val Tyr Ala Glu Thr Lys His Phe Leu Tyr Ser Ser Gly
325 330 335

Asp Lys Glu Gln Leu Arg Pro Ser Phe Leu Leu Ser Ser Leu Arg Pro
340 345 350

Ser Leu Thr Gly Ala Arg Arg Leu Val Glu Thr Ile Phe Leu Gly Ser
355 360 365

Arg Pro Trp Met Pro Gly Thr Pro Arg Arg Leu Pro Arg Leu Pro Gln
370 375 380

Arg Tyr Trp Gln Met Arg Pro Leu Phe Leu Glu Leu Leu Gly Asn His
385 390 395 400

Ala Gln Cys Pro Tyr Gly Val Leu Leu Lys Thr His Cys Pro Leu Arg
405 410 415

Ala Ala Val Thr Pro Ala Ala Gly Val Cys Ala Arg Glu Lys Pro Gln
420 425 430

Gly Ser Val Ala Ala Pro Glu Glu Glu Asp Thr Asp Pro Arg Arg Leu
435 440 445

Val Gln Leu Leu Arg Gln His Ser Ser Pro Trp Gln Val Tyr Gly Phe
450 455 460

Val Arg Ala Cys Leu Arg Arg Leu Val Pro Pro Gly Leu Trp Gly Ser
465 470 475 480

Arg His Asn Glu Arg Arg Phe Leu Arg Asn Thr Lys Lys Phe Ile Ser
485 490 495

Leu Gly Lys His Ala Lys Leu Ser Leu Gln Glu Leu Thr Trp Lys Met
500 505 510

Ser Val Arg Asp Cys Ala Trp Leu Arg Arg Ser Pro Gly Val Gly Cys
515 520 525

Val Pro Ala Ala Glu His Arg Leu Arg Glu Glu Ile Leu Ala Lys Phe
530 535 540

Leu His Trp Leu Met Ser Val Tyr Val Val Glu Leu Leu Arg Ser Phe
545 550 555 560

Phe Tyr Val Thr Glu Thr Thr Phe Gln Lys Asn Arg Leu Phe Phe Tyr
565 570 575

Arg Lys Ser Val Trp Ser Lys Leu Gln Ser Ile Gly Ile Arg Gln His
580 585 590

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

His Arg Glu Ala Arg Pro Ala Leu Leu Thr Ser Arg Leu Arg Phe Ile
610 615 620

Pro Lys Pro Asp Gly Leu Arg Pro Ile Val Asn Met Asp Tyr Val Val
625 630 635 640

Gly Ala Arg Thr Phe Arg Arg Glu Lys Arg Ala Glu Arg Leu Thr Ser
645 650 655

Arg Val Lys Ala Leu Phe Ser Val Leu Asn Tyr Glu Arg Ala Arg Arg
660 665 670

Pro Gly Leu Leu Gly Ala Ser Val Leu Gly Leu Asp Asp Ile His Arg
675 680 685

Ala Trp Arg Thr Phe Val Leu Arg Val Arg Ala Gln Asp Pro Pro Pro
690 695 700

Glu Leu Tyr Phe Val Lys Val Asp Val Thr Gly Ala Tyr Asp Thr Ile
705 710 715 720

Pro Gln Asp Arg Leu Thr Glu Val Ile Ala Ser Ile Ile Lys Pro Gln
725 730 735

Asn Thr Tyr Cys Val Arg Arg Tyr Ala Val Val Gln Lys Ala Ala His
740 745 750

Gly His Val Arg Lys Ala Phe Lys Ser His Val Ser Thr Leu Thr Asp
755 760 765

Leu Gln Pro Tyr Met Arg Gln Phe Val Ala His Leu Gln Glu Thr Ser
770 775 780

Pro Leu Arg Asp Ala Val Val Ile Glu Gln Ser Ser Ser Leu Asn Glu
785 790 795 800

Ala Ser Ser Gly Leu Phe Asp Val Phe Leu Arg Phe Met Cys His His
805 810 815

Ala Val Arg Ile Arg Gly Lys Ser Tyr Val Gln Cys Gln Gly Ile Pro
820 825 830

Gln Gly Ser Ile Leu Ser Thr Leu Leu Cys Ser Leu Cys Tyr Gly Asp
835 840 845

Met Glu Asn Lys Leu Phe Ala Gly Ile Arg Arg Asp Gly Leu Leu Leu
850 855 860

Arg Leu Val Asp Asp Phe Leu Leu Val Thr Pro His Leu Thr His Ala
865 870 875 880

Lys Thr Phe Leu Arg Thr Leu Val Arg Gly Val Pro Glu Tyr Gly Cys
885 890 895

Val Val Asn Leu Arg Lys Thr Val Val Asn Phe Pro Val Glu Asp Glu
900 905 910

Ala Leu Gly Gly Thr Ala Phe Val Gln Met Pro Ala His Gly Leu Phe
915 920 925

Pro Trp Cys Gly Leu Leu Leu Asp Thr Arg Thr Leu Glu Val Gln Ser
930 935 940

Asp Tyr Ser Ser Tyr Ala Arg Thr Ser Ile Arg Ala Ser Leu Thr Phe
945 950 955 960

Asn Arg Gly Phe Lys Ala Gly Arg Asn Met Arg Arg Lys Leu Phe Gly
965 970 975

Val Leu Arg Leu Lys Cys His Ser Leu Phe Leu Asp Leu Gln Val Asn
980 985 990

Ser Leu Gln Thr Val Cys Thr Asn Ile Tyr Lys Ile Leu Leu Leu Gln
995 1000 1005

Ala Tyr Arg Phe His Ala Cys Val Leu Gln Leu Pro Phe His Gln
1010 1015 1020

Gln Val Trp Lys Asn Pro Thr Phe Phe Leu Arg Val Ile Ser Asp
1025 1030 1035

Thr Ala Ser Leu Cys Tyr Ser Ile Leu Lys Ala Lys Asn Ala Gly
1040 1045 1050

Met Ser Leu Gly Ala Lys Gly Ala Ala Gly Pro Leu Pro Ser Glu
1055 1060 1065

Ala Val Gln Trp Leu Cys His Gln Ala Phe Leu Leu Lys Leu Thr
1070 1075 1080

Arg His Arg Val Thr Tyr Val Pro Leu Leu Gly Ser Leu Arg Thr
1085 1090 1095

Ala Gln Thr Gln Leu Ser Arg Lys Leu Pro Gly Thr Thr Leu Thr
1100 1105 1110

Ala Leu Glu Ala Ala Ala Asn Pro Ala Leu Pro Ser Asp Phe Lys
1115 1120 1125

Thr Ile Leu Asp
1130

<210> 51
<211> 353
<212> PRT
<213> homo sapiens

<400> 51

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

Val Tyr Val Phe Gly Asp Cys Val Gln Gly Asp Trp Cys Pro Ile Ser
20 25 30

Gly Gly Leu Cys Ser Ala Arg Leu His Arg His Ala Leu Leu Ala Thr
35 40 45

Cys Pro Glu His Gln Ile Thr Trp Asp Pro Ile Asp Gly Arg Val Ile
50 55 60

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

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

Thr Thr Pro Asn Ile Pro Pro Ser Phe Leu Gln Ala Met Arg Lys Tyr
100 105 110

Ser Pro Phe Arg Asn Gly Tyr Met Glu Pro Thr Leu Gly Gln His Leu
115 120 125

Pro Thr Leu Ser Phe Pro Asp Pro Gly Leu Arg Pro Gln Asn Leu Tyr
130 135 140

Thr Leu Trp Gly Gly Ser Val Val Cys Met Tyr Leu Tyr Gln Leu Ser
145 150 155 160

Pro Pro Ile Thr Trp Pro Leu Leu Pro His Val Ile Phe Cys His Pro
165 170 175

Gly Gln Leu Gly Ala Phe Leu Thr Asn Val Pro Tyr Lys Arg Ile Glu
180 185 190

Lys Leu Leu Tyr Lys Ile Ser Leu Thr Thr Gly Ala Leu Ile Ile Leu
195 200 205

Pro Glu Asp Cys Leu Pro Thr Thr Leu Phe Gln Pro Ala Arg Ala Pro
210 215 220

Val Thr Leu Thr Ala Trp Gln Asn Gly Leu Leu Pro Phe His Ser Thr
225 230 235 240

Leu Thr Thr Pro Gly Leu Ile Trp Thr Phe Thr Asp Gly Thr Pro Met
245 250 255

Ile Ser Gly Pro Cys Pro Lys Asp Gly Gln Pro Ser Leu Val Leu Gln

260

265

270

Ser Ser Ser Phe Ile Phe His Lys Phe Gln Thr Lys Ala Tyr His Pro
 275 280 285

Ser Phe Leu Leu Ser His Gly Leu Ile Gln Tyr Ser Ser Phe His Asn
 290 295 300

Leu His Leu Leu Phe Glu Glu Tyr Thr Asn Ile Pro Ile Ser Leu Leu
 305 310 315 320

Phe Asn Glu Lys Glu Ala Asp Asp Asn Asp His Glu Pro Gln Ile Ser
 325 330 335

Pro Gly Gly Leu Glu Pro Leu Ser Glu Lys His Phe Arg Glu Thr Glu
 340 345 350

Val

<210> 52
 <211> 345
 <212> PRT
 <213> homo sapiens

<400> 52

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

Val Tyr Val Phe Gly Asp Cys Val Gln Ala Asp Trp Cys Pro Ile Ser
 20 25 30

Gly Gly Leu Cys Ser Pro Arg Leu His Arg His Ala Leu Leu Ala Thr
 35 40 45

Cys Pro Glu His Gln Ile Thr Trp Asp Pro Ile Asp Gly Arg Val Val
 50 55 60

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

Gln Arg Thr Ser Lys Thr Leu Lys Val Leu Thr Pro Pro Thr Thr Pro
85 90 95

Val Thr Pro Lys Val Pro Pro Ser Phe Phe Gln Ser Val Arg Arg His
100 105 110

Ser Pro Tyr Arg Asn Gly Cys Leu Glu Thr Thr Leu Gly Glu Gln Leu
115 120 125

Pro Ser Leu Ala Phe Pro Glu Pro Gly Leu Arg Pro Gln Asn Val Tyr
130 135 140

Thr Ile Trp Gly Lys Thr Ile Val Cys Leu Tyr Ile Tyr Gln Leu Ser
145 150 155 160

Pro Pro Met Thr Trp Pro Leu Ile Pro His Val Ile Phe Cys Asn Pro
165 170 175

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

Glu Leu Leu Tyr Lys Leu Tyr Leu His Thr Gly Ala Ile Ile Ile Leu
195 200 205

Pro Glu Asp Ala Leu Pro Thr Thr Leu Phe Gln Pro Val Arg Ala Pro
210 215 220

Cys Val Gln Thr Thr Trp Asn Thr Gly Leu Leu Pro Tyr Gln Pro Asn
225 230 235 240

Leu Thr Thr Pro Gly Leu Ile Trp Thr Phe Asn Asp Gly Ser Pro Met
245 250 255

Ile Ser Gly Pro Cys Pro Lys Ala Gly Gln Pro Ser Leu Val Val Gln
260 265 270

Ser Ser Leu Leu Ile Phe Glu Arg Phe Gln Thr Lys Ala Tyr His Pro
275 280 285

Ser Tyr Leu Leu Ser His Gln Leu Ile Gln Tyr Ser Ser Phe His His
290 295 300

Leu Tyr Leu Leu Phe Asp Glu Tyr Thr Thr Ile Pro Phe Ser Leu Leu
305 310 315 320

Phe Lys Glu Lys Glu Gly Asp Asp Arg Asp Asn Asp Pro Leu Pro Gly
325 330 335

Ala Thr Ala Ser Pro Gln Gly Gln Asn
340 345

<210> 53
<211> 180
<212> PRT
<213> homo sapiens

<400> 53

Met Gln Ala Glu Gly Arg Gly Thr Gly Gly Ser Thr Gly Asp Ala Asp
1 5 10 15

Gly Pro Gly Gly Pro Gly Ile Pro Asp Gly Pro Gly Gly Asn Ala Gly
20 25 30

Gly Pro Gly Glu Ala Gly Ala Thr Gly Gly Arg Gly Pro Arg Gly Ala
35 40 45

Gly Ala Ala Arg Ala Ser Gly Pro Gly Gly Gly Ala Pro Arg Gly Pro
50 55 60

His Gly Gly Ala Ala Ser Gly Leu Asn Gly Cys Cys Arg Cys Gly Ala
65 70 75 80

Arg Gly Pro Glu Ser Arg Leu Leu Glu Phe Tyr Leu Ala Met Pro Phe

85

90

95

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

Ala Pro Pro Leu Pro Val Pro Gly Val Leu Leu Lys Glu Phe Thr Val
 115 120 125

Ser Gly Asn Ile Leu Thr Ile Arg Leu Thr Ala Ala Asp His Arg Gln
 130 135 140

Leu Gln Leu Ser Ile Ser Ser Cys Leu Gln Gln Leu Ser Leu Leu Met
 145 150 155 160

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

Gly Gln Arg Arg
 180

<210> 54
 <211> 309
 <212> PRT
 <213> homo sapiens

<400> 54

Met Ser Leu Glu Gln Arg Ser Leu His Cys Lys Pro Glu Glu Ala Leu
 1 5 10 15

Glu Ala Gln Gln Glu Ala Leu Gly Leu Val Cys Val Gln Ala Ala Thr
 20 25 30

Ser Ser Ser Ser Pro Leu Val Leu Gly Thr Leu Glu Glu Val Pro Thr
 35 40 45

Ala Gly Ser Thr Asp Pro Pro Gln Ser Pro Gln Gly Ala Ser Ala Phe
 50 55 60

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

Ser Ser Arg Glu Glu Glu Gly Pro Ser Thr Ser Cys Ile Leu Glu Ser
85 90 95

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

Leu Leu Leu Lys Tyr Arg Ala Arg Glu Pro Val Thr Lys Ala Glu Met
115 120 125

Leu Glu Ser Val Ile Lys Asn Tyr Lys His Cys Phe Pro Glu Ile Phe
130 135 140

Gly Lys Ala Ser Glu Ser Leu Gln Leu Val Phe Gly Ile Asp Val Lys
145 150 155 160

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

Leu Ser Tyr Asp Gly Leu Leu Gly Asp Asn Gln Ile Met Pro Lys Thr
180 185 190

Gly Phe Leu Ile Ile Val Leu Val Met Ile Ala Met Glu Gly Gly His
195 200 205

Ala Pro Glu Glu Glu Ile Trp Glu Glu Leu Ser Val Met Glu Val Tyr
210 215 220

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

Gln Asp Leu Val Gln Glu Lys Tyr Leu Glu Tyr Arg Gln Val Pro Asp
245 250 255

Ser Asp Pro Ala Arg Tyr Glu Phe Leu Trp Gly Pro Arg Ala Leu Ala
260 265 270

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

Arg Val Arg Phe Phe Phe Pro Ser Leu Arg Glu Ala Ala Leu Arg Glu
290 295 300

Glu Glu Glu Gly Val
305

<210> 55
<211> 314
<212> PRT
<213> homo sapiens

<400> 55

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

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

Thr Glu Glu Gln Glu Ala Ala Ser Ser Ser Ser Thr Leu Val Glu Val
35 40 45

Thr Leu Gly Glu Val Pro Ala Ala Glu Ser Pro Asp Pro Pro Gln Ser
50 55 60

Pro Gln Gly Ala Ser Ser Leu Pro Thr Thr Met Asn Tyr Pro Leu Trp
65 70 75 80

Ser Gln Ser Tyr Glu Asp Ser Ser Asn Gln Glu Glu Glu Gly Pro Ser
85 90 95

Thr Phe Pro Asp Leu Glu Ser Glu Phe Gln Ala Ala Leu Ser Arg Lys
100 105 110

Val Ala Glu Leu Val His Phe Leu Leu Leu Lys Tyr Arg Ala Arg Glu

115

120

125

Pro Val Thr Lys Ala Glu Met Leu Gly Ser Val Val Gly Asn Trp Gln
 130 135 140

Tyr Phe Phe Pro Val Ile Phe Ser Lys Ala Ser Ser Ser Leu Gln Leu
 145 150 155 160

Val Phe Gly Ile Glu Leu Met Glu Val Asp Pro Ile Gly His Leu Tyr
 165 170 175

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

Asn Gln Ile Met Pro Lys Ala Gly Leu Leu Ile Ile Val Leu Ala Ile
 195 200 205

Ile Ala Arg Glu Gly Asp Cys Ala Pro Glu Glu Lys Ile Trp Glu Glu
 210 215 220

Leu Ser Val Leu Glu Val Phe Glu Gly Arg Glu Asp Ser Ile Leu Gly
 225 230 235 240

Asp Pro Lys Lys Leu Leu Thr Gln His Phe Val Gln Glu Asn Tyr Leu
 245 250 255

Glu Tyr Arg Gln Val Pro Gly Ser Asp Pro Ala Cys Tyr Glu Phe Leu
 260 265 270

Trp Gly Pro Arg Ala Leu Val Glu Thr Ser Tyr Val Lys Val Leu His
 275 280 285

His Met Val Lys Ile Ser Gly Gly Pro His Ile Ser Tyr Pro Pro Leu
 290 295 300

His Glu Trp Val Leu Arg Glu Gly Glu Glu
 305 310

<210> 56
<211> 1225
<212> PRT
<213> homo sapiens

<400> 56

Met Lys Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu
1 5 10 15

Arg His Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu
20 25 30

Thr Tyr Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln
35 40 45

Glu Val Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln Val
50 55 60

Pro Leu Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp
65 70 75 80

Asn Tyr Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu Asn Asn Thr
85 90 95

Thr Pro Val Thr Gly Ala Ser Pro Gly Gly Leu Arg Glu Leu Gln Leu
100 105 110

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

Pro Gln Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe His
130 135 140

Lys Asn Asn Gln Leu Ala Leu Thr Leu Ile Asp Thr Asn Arg Ser Arg
145 150 155 160

Ala Cys His Pro Cys Ser Pro Met Cys Lys Gly Ser Arg Cys Trp Gly
165 170 175

Glu Ser Ser Glu Asp Cys Gln Ser Leu Thr Arg Thr Val Cys Ala Gly
180 185 190

Gly Cys Ala Arg Cys Lys Gly Pro Leu Pro Thr Asp Cys Cys His Glu
195 200 205

Gln Cys Ala Ala Gly Cys Thr Gly Pro Lys His Ser Asp Cys Leu Ala
210 215 220

Cys Leu His Phe Asn His Ser Gly Ile Cys Glu Leu His Cys Pro Ala
225 230 235 240

Leu Val Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro Asn Pro Glu
245 250 255

Gly Arg Tyr Thr Phe Gly Ala Ser Cys Val Thr Ala Cys Pro Tyr Asn
260 265 270

Tyr Leu Ser Thr Asp Val Gly Ser Cys Thr Leu Val Cys Pro Leu His
275 280 285

Asn Gln Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys Cys
290 295 300

Ser Lys Pro Cys Ala Arg Val Cys Tyr Gly Leu Gly Met Glu His Leu
305 310 315 320

Arg Glu Val Arg Ala Val Thr Ser Ala Asn Ile Gln Glu Phe Ala Gly
325 330 335

Cys Lys Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu Ser Phe Asp
340 345 350

Gly Asp Pro Ala Ser Asn Thr Ala Pro Leu Gln Pro Glu Gln Leu Gln
355 360 365

Val Phe Glu Thr Leu Glu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser Ala
370 375 380

Trp Pro Asp Ser Leu Pro Asp Leu Ser Val Phe Gln Asn Leu Gln Val
385 390 395 400

Ile Arg Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu Thr Leu Gln
405 410 415

Gly Leu Gly Ile Ser Trp Leu Gly Leu Arg Ser Leu Arg Glu Leu Gly
420 425 430

Ser Gly Leu Ala Leu Ile His His Asn Thr His Leu Cys Phe Val His
435 440 445

Thr Val Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln Ala Leu Leu
450 455 460

His Thr Ala Asn Arg Pro Glu Asp Glu Cys Val Gly Glu Gly Leu Ala
465 470 475 480

Cys His Gln Leu Cys Ala Arg Gly His Cys Trp Gly Pro Gly Pro Thr
485 490 495

Gln Cys Val Asn Cys Ser Gln Phe Leu Arg Gly Gln Glu Cys Val Glu
500 505 510

Glu Cys Arg Val Leu Gln Gly Leu Pro Arg Glu Tyr Val Asn Ala Arg
515 520 525

His Cys Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Gly Ser Val
530 535 540

Thr Cys Phe Gly Pro Glu Ala Asp Gln Cys Val Ala Cys Ala His Tyr
545 550 555 560

Lys Asp Pro Pro Phe Cys Val Ala Arg Cys Pro Ser Gly Val Lys Pro
565 570 575

Asp Leu Ser Tyr Met Pro Ile Trp Lys Phe Pro Asp Glu Glu Gly Ala
580 585 590

Cys Gln Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu Asp
595 600 605

Asp Lys Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Leu Thr Ser Ile
610 615 620

Ile Ser Ala Val Val Gly Ile Leu Leu Val Val Val Leu Gly Val Val
625 630 635 640

Phe Gly Ile Leu Ile Lys Arg Arg Gln Gln Lys Ile Arg Lys Tyr Thr
645 650 655

Met Arg Arg Leu Leu Gln Glu Thr Glu Leu Val Glu Pro Leu Thr Pro
660 665 670

Ser Gly Ala Met Pro Asn Gln Ala Gln Met Arg Ile Leu Lys Glu Thr
675 680 685

Glu Leu Arg Lys Val Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val
690 695 700

Tyr Lys Gly Ile Trp Ile Pro Asp Gly Glu Asn Val Lys Ile Pro Val
705 710 715 720

Ala Ile Lys Val Leu Arg Glu Asn Thr Ser Pro Lys Ala Asn Lys Glu
725 730 735

Ile Leu Asp Glu Ala Tyr Val Met Ala Gly Val Gly Ser Pro Tyr Val
740 745 750

Ser Arg Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln Leu Val Thr
755 760 765

Gln Leu Met Pro Tyr Gly Cys Leu Leu Asp His Val Arg Glu Asn Arg
770 775 780

Gly Arg Leu Gly Ser Gln Asp Leu Leu Asn Trp Cys Met Gln Ile Ala
785 790 795 800

Lys Gly Met Ser Tyr Leu Glu Asp Val Arg Leu Val His Arg Asp Leu
805 810 815

Ala Ala Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys Ile Thr
820 825 830

Asp Phe Gly Leu Ala Arg Leu Leu Asp Ile Asp Glu Thr Glu Tyr His
835 840 845

Ala Asp Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu Glu Ser Ile
850 855 860

Leu Arg Arg Arg Phe Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val
865 870 875 880

Thr Val Trp Glu Leu Met Thr Phe Gly Ala Lys Pro Tyr Asp Gly Ile
885 890 895

Pro Ala Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu Pro
900 905 910

Gln Pro Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys
915 920 925

Trp Met Ile Asp Ser Glu Cys Arg Pro Arg Phe Arg Glu Leu Val Ser
930 935 940

Glu Phe Ser Arg Met Ala Arg Asp Pro Gln Arg Phe Val Val Ile Gln
945 950 955 960

Asn Glu Asp Leu Gly Pro Ala Ser Pro Leu Asp Ser Thr Phe Tyr Arg
965 970 975

Ser Leu Leu Glu Asp Asp Asp Met Gly Asp Leu Val Asp Ala Glu Glu
980 985 990

Tyr Leu Val Pro Gln Gln Gly Phe Phe Cys Pro Asp Pro Ala Pro Gly
995 1000 1005

Ala Gly Gly Met Val His His Arg His Arg Ser Ser Ser Thr Arg
1010 1015 1020

Ser Gly Gly Gly Asp Leu Thr Leu Gly Leu Glu Pro Ser Glu Glu
1025 1030 1035

Glu Ala Pro Arg Ser Pro Leu Ala Pro Ser Glu Gly Ala Gly Ser
1040 1045 1050

Asp Val Phe Asp Gly Asp Leu Gly Met Gly Ala Ala Lys Gly Leu
1055 1060 1065

Gln Ser Leu Pro Thr His Asp Pro Ser Pro Leu Gln Arg Tyr Ser
1070 1075 1080

Glu Asp Pro Thr Val Pro Leu Pro Ser Glu Thr Asp Gly Tyr Val
1085 1090 1095

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

Asp Val Arg Pro Gln Pro Pro Ser Pro Arg Glu Gly Pro Leu Pro
1115 1120 1125

Ala Ala Arg Pro Ala Gly Ala Thr Leu Glu Arg Pro Lys Thr Leu
1130 1135 1140

Ser Pro Gly Lys Asn Gly Val Val Lys Asp Val Phe Ala Phe Gly
1145 1150 1155

Gly Ala Val Glu Asn Pro Glu Tyr Leu Thr Pro Gln Gly Gly Ala
1160 1165 1170

Ala Pro Gln Pro His Pro Pro Pro Ala Phe Ser Pro Ala Phe Asp
1175 1180 1185

Asn Leu Tyr Tyr Trp Asp Gln Asp Pro Pro Glu Arg Gly Ala Pro
1190 1195 1200

Pro Ser Thr Phe Lys Gly Thr Pro Thr Ala Glu Asn Pro Glu Tyr
1205 1210 1215

Leu Gly Leu Asp Val Pro Val
1220 1225

<210> 57
<211> 1240
<212> PRT
<213> homo sapiens

<400> 57

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

Lys Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu Arg
20 25 30

His Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu Thr
35 40 45

Tyr Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Glu
50 55 60

Val Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln Val Pro
65 70 75 80

Leu Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Asn
85 90 95

Tyr Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu Asn Asn Thr Thr
100 105 110

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

Ser Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile Gln Arg Asn Pro
130 135 140

Gln Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe His Lys
145 150 155 160

Asn Asn Gln Leu Ala Leu Thr Leu Ile Asp Thr Asn Arg Ser Arg Ala
165 170 175

Cys His Pro Cys Ser Pro Met Cys Lys Gly Ser Arg Cys Trp Gly Glu
180 185 190

Ser Ser Glu Asp Cys Gln Ser Leu Thr Arg Thr Val Cys Ala Gly Gly
195 200 205

Cys Ala Arg Cys Lys Gly Pro Leu Pro Thr Asp Cys Cys His Glu Gln
210 215 220

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

Leu His Phe Asn His Ser Gly Ile Cys Glu Leu His Cys Pro Ala Leu
245 250 255

Val Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro Asn Pro Glu Gly
260 265 270

Arg Tyr Thr Phe Gly Ala Ser Cys Val Thr Ala Cys Pro Tyr Asn Tyr
275 280 285

Leu Ser Thr Asp Val Gly Ser Cys Thr Leu Val Cys Pro Leu His Asn

290

295

300

Gln Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys Cys Ser
 305 310 315 320

Lys Pro Cys Ala Arg Val Cys Tyr Gly Leu Gly Met Glu His Leu Arg
 325 330 335

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

Lys Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu Ser Phe Asp Gly
 355 360 365

Asp Pro Ala Ser Asn Thr Ala Pro Leu Gln Pro Glu Gln Leu Gln Val
 370 375 380

Phe Glu Thr Leu Glu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser Ala Trp
 385 390 395 400

Pro Asp Ser Leu Pro Asp Leu Ser Val Phe Gln Asn Leu Gln Val Ile
 405 410 415

Arg Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu Thr Leu Gln Gly
 420 425 430

Leu Gly Ile Ser Trp Leu Gly Leu Arg Ser Leu Arg Glu Leu Gly Ser
 435 440 445

Gly Leu Ala Leu Ile His His Asn Thr His Leu Cys Phe Val His Thr
 450 455 460

Val Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln Ala Leu Leu His
 465 470 475 480

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

His Gln Leu Cys Ala Arg Gly His Cys Trp Gly Pro Gly Pro Thr Gln
500 505 510

Cys Val Asn Cys Ser Gln Phe Leu Arg Gly Gln Glu Cys Val Glu Glu
515 520 525

Cys Arg Val Leu Gln Gly Leu Pro Arg Glu Tyr Val Asn Ala Arg His
530 535 540

Cys Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Gly Ser Val Thr
545 550 555 560

Cys Phe Gly Pro Glu Ala Asp Gln Cys Val Ala Cys Ala His Tyr Lys
565 570 575

Asp Pro Pro Phe Cys Val Ala Arg Cys Pro Ser Gly Val Lys Pro Asp
580 585 590

Leu Ser Tyr Met Pro Ile Trp Lys Phe Pro Asp Glu Glu Gly Ala Cys
595 600 605

Gln Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu Asp Asp
610 615 620

Lys Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Leu Thr Ser Ile Ile
625 630 635 640

Ser Ala Val Val Gly Ile Leu Leu Val Val Val Leu Gly Val Val Phe
645 650 655

Gly Ile Leu Ile Lys Arg Arg Gln Gln Lys Ile Arg Lys Tyr Thr Met
660 665 670

Arg Arg Leu Leu Gln Glu Thr Glu Leu Val Glu Pro Leu Thr Pro Ser
675 680 685

Gly Ala Met Pro Asn Gln Ala Gln Met Arg Ile Leu Lys Glu Thr Glu

690

695

700

Leu Arg Lys Val Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr
 705 710 715 720

Lys Gly Ile Trp Ile Pro Asp Gly Glu Asn Val Lys Ile Pro Val Ala
 725 730 735

Ile Lys Val Leu Arg Glu Asn Thr Ser Pro Lys Ala Asn Lys Glu Ile
 740 745 750

Leu Asp Glu Ala Tyr Val Met Ala Gly Val Gly Ser Pro Tyr Val Ser
 755 760 765

Arg Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln Leu Val Thr Gln
 770 775 780

Leu Met Pro Tyr Gly Cys Leu Leu Asp His Val Arg Glu Asn Arg Gly
 785 790 795 800

Arg Leu Gly Ser Gln Asp Leu Leu Asn Trp Cys Met Gln Ile Ala Lys
 805 810 815

Gly Met Ser Tyr Leu Glu Asp Val Arg Leu Val His Arg Asp Leu Ala
 820 825 830

Ala Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys Ile Thr Asp
 835 840 845

Phe Gly Leu Ala Arg Leu Leu Asp Ile Asp Glu Thr Glu Tyr His Ala
 850 855 860

Asp Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu
 865 870 875 880

Arg Arg Arg Phe Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr
 885 890 895

Val Trp Glu Leu Met Thr Phe Gly Ala Lys Pro Tyr Asp Gly Ile Pro
900 905 910

Ala Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu Pro Gln
915 920 925

Pro Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp
930 935 940

Met Ile Asp Ser Glu Cys Arg Pro Arg Phe Arg Glu Leu Val Ser Glu
945 950 955 960

Phe Ser Arg Met Ala Arg Asp Pro Gln Arg Phe Val Val Ile Gln Asn
965 970 975

Glu Asp Leu Gly Pro Ala Ser Pro Leu Asp Ser Thr Phe Tyr Arg Ser
980 985 990

Leu Leu Glu Asp Asp Asp Met Gly Asp Leu Val Asp Ala Glu Glu Tyr
995 1000 1005

Leu Val Pro Gln Gln Gly Phe Phe Cys Pro Asp Pro Ala Pro Gly
1010 1015 1020

Ala Gly Gly Met Val His His Arg His Arg Ser Ser Ser Thr Arg
1025 1030 1035

Ser Gly Gly Gly Asp Leu Thr Leu Gly Leu Glu Pro Ser Glu Glu
1040 1045 1050

Glu Ala Pro Arg Ser Pro Leu Ala Pro Ser Glu Gly Ala Gly Ser
1055 1060 1065

Asp Val Phe Asp Gly Asp Leu Gly Met Gly Ala Ala Lys Gly Leu
1070 1075 1080

Gln Ser Leu Pro Thr His Asp Pro Ser Pro Leu Gln Arg Tyr Ser

1085

1090

1095

Glu Asp Pro Thr Val Pro Leu Pro Ser Glu Thr Asp Gly Tyr Val
 1100 1105 1110

Ala Pro Leu Thr Cys Ser Pro Gln Pro Glu Tyr Val Asn Gln Pro
 1115 1120 1125

Asp Val Arg Pro Gln Pro Pro Ser Pro Arg Glu Gly Pro Leu Pro
 1130 1135 1140

Ala Ala Arg Pro Ala Gly Ala Thr Leu Glu Arg Pro Lys Thr Leu
 1145 1150 1155

Ser Pro Gly Lys Asn Gly Val Val Lys Asp Val Phe Ala Phe Gly
 1160 1165 1170

Gly Ala Val Glu Asn Pro Glu Tyr Leu Thr Pro Gln Gly Gly Ala
 1175 1180 1185

Ala Pro Gln Pro His Pro Pro Pro Ala Phe Ser Pro Ala Phe Asp
 1190 1195 1200

Asn Leu Tyr Tyr Trp Asp Gln Asp Pro Pro Glu Arg Gly Ala Pro
 1205 1210 1215

Pro Ser Thr Phe Lys Gly Thr Pro Thr Ala Glu Asn Pro Glu Tyr
 1220 1225 1230

Leu Gly Leu Asp Val Pro Val
 1235 1240

<210> 58

<211> 1055

<212> PRT

<213> homo sapiens

<400> 58

Met Glu Leu Ala Ala Leu Cys Arg Trp Gly Leu Leu Leu Ala Leu Leu
1 5 10 15

Pro Pro Gly Ala Ala Ser Thr Gln Val Cys Thr Gly Thr Asp Met Lys
20 25 30

Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu Arg His
35 40 45

Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu Thr Tyr
50 55 60

Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Glu Val
65 70 75 80

Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln Val Pro Leu
85 90 95

Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Asn Tyr
100 105 110

Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu Asn Asn Thr Thr Pro
115 120 125

Val Thr Gly Ala Ser Pro Gly Gly Leu Arg Glu Leu Gln Leu Arg Ser
130 135 140

Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile Gln Arg Asn Pro Gln
145 150 155 160

Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe His Lys Asn
165 170 175

Asn Gln Leu Ala Leu Thr Leu Ile Asp Thr Asn Arg Ser Arg Ala Cys
180 185 190

His Pro Cys Ser Pro Met Cys Lys Gly Ser Arg Cys Trp Gly Glu Ser
195 200 205

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

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

Ala Ala Gly Cys Thr Gly Pro Lys His Ser Asp Cys Leu Ala Cys Leu
245 250 255

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

Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro Asn Pro Glu Gly Arg
275 280 285

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

Ser Thr Asp Val Gly Ser Cys Thr Leu Val Cys Pro Leu His Asn Gln
305 310 315 320

Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys Cys Ser Lys
325 330 335

Pro Cys Ala Arg Val Cys Tyr Gly Leu Gly Met Glu His Leu Arg Glu
340 345 350

Val Arg Ala Val Thr Ser Ala Asn Ile Gln Glu Phe Ala Gly Cys Lys
355 360 365

Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu Ser Phe Asp Gly Asp
370 375 380

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

Glu Thr Leu Glu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser Ala Trp Pro
405 410 415

Asp Ser Leu Pro Asp Leu Ser Val Phe Gln Asn Leu Gln Val Ile Arg
420 425 430

Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu Thr Leu Gln Gly Leu
435 440 445

Gly Ile Ser Trp Leu Gly Leu Arg Ser Leu Arg Glu Leu Gly Ser Gly
450 455 460

Leu Ala Leu Ile His His Asn Thr His Leu Cys Phe Val His Thr Val
465 470 475 480

Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln Ala Leu Leu His Thr
485 490 495

Ala Asn Arg Pro Glu Asp Glu Cys Val Gly Glu Gly Leu Ala Cys His
500 505 510

Gln Leu Cys Ala Arg Gly His Cys Trp Gly Pro Gly Pro Thr Gln Cys
515 520 525

Val Asn Cys Ser Gln Phe Leu Arg Gly Gln Glu Cys Val Glu Glu Cys
530 535 540

Arg Val Leu Gln Gly Leu Pro Arg Glu Tyr Val Asn Ala Arg His Cys
545 550 555 560

Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Gly Ser Val Thr Cys
565 570 575

Phe Gly Pro Glu Ala Asp Gln Cys Val Ala Cys Ala His Tyr Lys Asp
580 585 590

Pro Pro Phe Cys Val Ala Arg Cys Pro Ser Gly Val Lys Pro Asp Leu
595 600 605

Ser Tyr Met Pro Ile Trp Lys Phe Pro Asp Glu Glu Gly Ala Cys Gln
610 615 620

Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu Asp Asp Lys
625 630 635 640

Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Leu Thr Ser Ile Ile Ser
645 650 655

Ala Val Val Gly Ile Leu Leu Val Val Val Leu Gly Val Val Phe Gly
660 665 670

Ile Leu Ile Lys Arg Arg Gln Gln Lys Ile Arg Lys Tyr Thr Met Arg
675 680 685

Arg Leu Leu Gln Glu Thr Glu Leu Val Glu Pro Leu Thr Pro Ser Gly
690 695 700

Ala Met Pro Asn Gln Ala Gln Met Arg Ile Leu Lys Glu Thr Glu Leu
705 710 715 720

Arg Lys Val Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys
725 730 735

Gly Ile Trp Ile Pro Asp Gly Glu Asn Val Lys Ile Pro Val Ala Ile
740 745 750

Lys Val Leu Arg Glu Asn Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu
755 760 765

Asp Glu Ala Tyr Val Met Ala Gly Val Gly Ser Pro Tyr Val Ser Arg
770 775 780

Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln Leu Val Thr Gln Leu
785 790 795 800

Met Pro Tyr Gly Cys Leu Leu Asp His Val Arg Glu Asn Arg Gly Arg
805 810 815

Leu Gly Ser Gln Asp Leu Leu Asn Trp Cys Met Gln Ile Ala Lys Gly
820 825 830

Met Ser Tyr Leu Glu Asp Val Arg Leu Val His Arg Asp Leu Ala Ala
835 840 845

Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys Ile Thr Asp Phe
850 855 860

Gly Leu Ala Arg Leu Leu Asp Ile Asp Glu Thr Glu Tyr His Ala Asp
865 870 875 880

Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu Arg
885 890 895

Arg Arg Phe Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr Val
900 905 910

Trp Glu Leu Met Thr Phe Gly Ala Lys Pro Tyr Asp Gly Ile Pro Ala
915 920 925

Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro
930 935 940

Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp Met
945 950 955 960

Ile Asp Ser Glu Cys Arg Pro Arg Phe Arg Glu Leu Val Ser Glu Phe
965 970 975

Ser Arg Met Ala Arg Asp Pro Gln Arg Phe Val Val Ile Gln Asn Glu
980 985 990

Asp Leu Gly Pro Ala Ser Pro Leu Asp Ser Thr Phe Tyr Arg Ser Leu
995 1000 1005

Leu Glu Asp Asp Asp Met Gly Asp Leu Val Asp Ala Glu Glu Tyr
1010 1015 1020

Leu Val Pro Gln Gln Gly Phe Phe Cys Pro Asp Pro Ala Pro Gly
1025 1030 1035

Ala Gly Gly Met Val His His Arg His Arg Ser Ser Ser Thr Arg
1040 1045 1050

Asn Met
1055

<210> 59
<211> 603
<212> PRT
<213> homo sapiens

<400> 59

Met Lys Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu
1 5 10 15

Arg His Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu
20 25 30

Thr Tyr Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln
35 40 45

Glu Val Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln Val
50 55 60

Pro Leu Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp
65 70 75 80

Asn Tyr Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu Asn Asn Thr
85 90 95

Thr Pro Val Thr Gly Ala Ser Pro Gly Gly Leu Arg Glu Leu Gln Leu

100

105

110

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

Pro Gln Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe His
 130 135 140

Lys Asn Asn Gln Leu Ala Leu Thr Leu Ile Asp Thr Asn Arg Ser Arg
 145 150 155 160

Ala Cys His Pro Cys Ser Pro Met Cys Lys Gly Ser Arg Cys Trp Gly
 165 170 175

Glu Ser Ser Glu Asp Cys Gln Ser Leu Thr Arg Thr Val Cys Ala Gly
 180 185 190

Gly Cys Ala Arg Cys Lys Gly Pro Leu Pro Thr Asp Cys Cys His Glu
 195 200 205

Gln Cys Ala Ala Gly Cys Thr Gly Pro Lys His Ser Asp Cys Leu Ala
 210 215 220

Cys Leu His Phe Asn His Ser Gly Ile Cys Glu Leu His Cys Pro Ala
 225 230 235 240

Leu Val Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro Asn Pro Glu
 245 250 255

Gly Arg Tyr Thr Phe Gly Ala Ser Cys Val Thr Ala Cys Pro Tyr Asn
 260 265 270

Tyr Leu Ser Thr Asp Val Gly Ser Cys Thr Leu Val Cys Pro Leu His
 275 280 285

Asn Gln Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys Cys
 290 295 300

Ser Lys Pro Cys Ala Arg Val Cys Tyr Gly Leu Gly Met Glu His Leu
305 310 315 320

Arg Glu Val Arg Ala Val Thr Ser Ala Asn Ile Gln Glu Phe Ala Gly
325 330 335

Cys Lys Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu Ser Phe Asp
340 345 350

Gly Asp Pro Ala Ser Asn Thr Ala Pro Leu Gln Pro Glu Gln Leu Gln
355 360 365

Val Phe Glu Thr Leu Glu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser Ala
370 375 380

Trp Pro Asp Ser Leu Pro Asp Leu Ser Val Phe Gln Asn Leu Gln Val
385 390 395 400

Ile Arg Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu Thr Leu Gln
405 410 415

Gly Leu Gly Ile Ser Trp Leu Gly Leu Arg Ser Leu Arg Glu Leu Gly
420 425 430

Ser Gly Leu Ala Leu Ile His His Asn Thr His Leu Cys Phe Val His
435 440 445

Thr Val Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln Ala Leu Leu
450 455 460

His Thr Ala Asn Arg Pro Glu Asp Glu Cys Val Gly Glu Gly Leu Ala
465 470 475 480

Cys His Gln Leu Cys Ala Arg Gly His Cys Trp Gly Pro Gly Pro Thr
485 490 495

Gln Cys Val Asn Cys Ser Gln Phe Leu Arg Gly Gln Glu Cys Val Glu

500

505

510

Glu Cys Arg Val Leu Gln Gly Leu Pro Arg Glu Tyr Val Asn Ala Arg
 515 520 525

His Cys Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Gly Ser Val
 530 535 540

Thr Cys Phe Gly Pro Glu Ala Asp Gln Cys Val Ala Cys Ala His Tyr
 545 550 555 560

Lys Asp Pro Pro Phe Cys Val Ala Arg Cys Pro Ser Gly Val Lys Pro
 565 570 575

Asp Leu Ser Tyr Met Pro Ile Trp Lys Phe Pro Asp Glu Glu Gly Ala
 580 585 590

Cys Gln Pro Cys Pro Ile Asn Cys Thr His Ser
 595 600

<210> 60
 <211> 1255
 <212> PRT
 <213> homo sapiens

<400> 60

Met Glu Leu Ala Ala Leu Cys Arg Trp Gly Leu Leu Leu Ala Leu Leu
 1 5 10 15

Pro Pro Gly Ala Ala Ser Thr Gln Val Cys Thr Gly Thr Asp Met Lys
 20 25 30

Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu Arg His
 35 40 45

Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu Thr Tyr
 50 55 60

Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Glu Val
65 70 75 80

Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln Val Pro Leu
85 90 95

Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Asn Tyr
100 105 110

Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu Asn Asn Thr Thr Pro
115 120 125

Val Thr Gly Ala Ser Pro Gly Gly Leu Arg Glu Leu Gln Leu Arg Ser
130 135 140

Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile Gln Arg Asn Pro Gln
145 150 155 160

Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe His Lys Asn
165 170 175

Asn Gln Leu Ala Leu Thr Leu Ile Asp Thr Asn Arg Ser Arg Ala Cys
180 185 190

His Pro Cys Ser Pro Met Cys Lys Gly Ser Arg Cys Trp Gly Glu Ser
195 200 205

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

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

Ala Ala Gly Cys Thr Gly Pro Lys His Ser Asp Cys Leu Ala Cys Leu
245 250 255

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

Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro Asn Pro Glu Gly Arg
275 280 285

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

Ser Thr Asp Val Gly Ser Cys Thr Leu Val Cys Pro Leu His Asn Gln
305 310 315 320

Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys Cys Ser Lys
325 330 335

Pro Cys Ala Arg Val Cys Tyr Gly Leu Gly Met Glu His Leu Arg Glu
340 345 350

Val Arg Ala Val Thr Ser Ala Asn Ile Gln Glu Phe Ala Gly Cys Lys
355 360 365

Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu Ser Phe Asp Gly Asp
370 375 380

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

Glu Thr Leu Glu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser Ala Trp Pro
405 410 415

Asp Ser Leu Pro Asp Leu Ser Val Phe Gln Asn Leu Gln Val Ile Arg
420 425 430

Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu Thr Leu Gln Gly Leu
435 440 445

Gly Ile Ser Trp Leu Gly Leu Arg Ser Leu Arg Glu Leu Gly Ser Gly
450 455 460

Leu Ala Leu Ile His His Asn Thr His Leu Cys Phe Val His Thr Val
465 470 475 480

Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln Ala Leu Leu His Thr
485 490 495

Ala Asn Arg Pro Glu Asp Glu Cys Val Gly Glu Gly Leu Ala Cys His
500 505 510

Gln Leu Cys Ala Arg Gly His Cys Trp Gly Pro Gly Pro Thr Gln Cys
515 520 525

Val Asn Cys Ser Gln Phe Leu Arg Gly Gln Glu Cys Val Glu Glu Cys
530 535 540

Arg Val Leu Gln Gly Leu Pro Arg Glu Tyr Val Asn Ala Arg His Cys
545 550 555 560

Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Gly Ser Val Thr Cys
565 570 575

Phe Gly Pro Glu Ala Asp Gln Cys Val Ala Cys Ala His Tyr Lys Asp
580 585 590

Pro Pro Phe Cys Val Ala Arg Cys Pro Ser Gly Val Lys Pro Asp Leu
595 600 605

Ser Tyr Met Pro Ile Trp Lys Phe Pro Asp Glu Glu Gly Ala Cys Gln
610 615 620

Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu Asp Asp Lys
625 630 635 640

Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Leu Thr Ser Ile Ile Ser
645 650 655

Ala Val Val Gly Ile Leu Leu Val Val Val Leu Gly Val Val Phe Gly
660 665 670

Ile Leu Ile Lys Arg Arg Gln Gln Lys Ile Arg Lys Tyr Thr Met Arg
675 680 685

Arg Leu Leu Gln Glu Thr Glu Leu Val Glu Pro Leu Thr Pro Ser Gly
690 695 700

Ala Met Pro Asn Gln Ala Gln Met Arg Ile Leu Lys Glu Thr Glu Leu
705 710 715 720

Arg Lys Val Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys
725 730 735

Gly Ile Trp Ile Pro Asp Gly Glu Asn Val Lys Ile Pro Val Ala Ile
740 745 750

Lys Val Leu Arg Glu Asn Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu
755 760 765

Asp Glu Ala Tyr Val Met Ala Gly Val Gly Ser Pro Tyr Val Ser Arg
770 775 780

Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln Leu Val Thr Gln Leu
785 790 795 800

Met Pro Tyr Gly Cys Leu Leu Asp His Val Arg Glu Asn Arg Gly Arg
805 810 815

Leu Gly Ser Gln Asp Leu Leu Asn Trp Cys Met Gln Ile Ala Lys Gly
820 825 830

Met Ser Tyr Leu Glu Asp Val Arg Leu Val His Arg Asp Leu Ala Ala
835 840 845

Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys Ile Thr Asp Phe
850 855 860

Gly Leu Ala Arg Leu Leu Asp Ile Asp Glu Thr Glu Tyr His Ala Asp
865 870 875 880

Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu Arg
885 890 895

Arg Arg Phe Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr Val
900 905 910

Trp Glu Leu Met Thr Phe Gly Ala Lys Pro Tyr Asp Gly Ile Pro Ala
915 920 925

Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro
930 935 940

Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp Met
945 950 955 960

Ile Asp Ser Glu Cys Arg Pro Arg Phe Arg Glu Leu Val Ser Glu Phe
965 970 975

Ser Arg Met Ala Arg Asp Pro Gln Arg Phe Val Val Ile Gln Asn Glu
980 985 990

Asp Leu Gly Pro Ala Ser Pro Leu Asp Ser Thr Phe Tyr Arg Ser Leu
995 1000 1005

Leu Glu Asp Asp Asp Met Gly Asp Leu Val Asp Ala Glu Glu Tyr
1010 1015 1020

Leu Val Pro Gln Gln Gly Phe Phe Cys Pro Asp Pro Ala Pro Gly
1025 1030 1035

Ala Gly Gly Met Val His His Arg His Arg Ser Ser Ser Thr Arg
1040 1045 1050

Ser Gly Gly Gly Asp Leu Thr Leu Gly Leu Glu Pro Ser Glu Glu
1055 1060 1065

Glu Ala Pro Arg Ser Pro Leu Ala Pro Ser Glu Gly Ala Gly Ser
1070 1075 1080

Asp Val Phe Asp Gly Asp Leu Gly Met Gly Ala Ala Lys Gly Leu
1085 1090 1095

Gln Ser Leu Pro Thr His Asp Pro Ser Pro Leu Gln Arg Tyr Ser
1100 1105 1110

Glu Asp Pro Thr Val Pro Leu Pro Ser Glu Thr Asp Gly Tyr Val
1115 1120 1125

Ala Pro Leu Thr Cys Ser Pro Gln Pro Glu Tyr Val Asn Gln Pro
1130 1135 1140

Asp Val Arg Pro Gln Pro Pro Ser Pro Arg Glu Gly Pro Leu Pro
1145 1150 1155

Ala Ala Arg Pro Ala Gly Ala Thr Leu Glu Arg Pro Lys Thr Leu
1160 1165 1170

Ser Pro Gly Lys Asn Gly Val Val Lys Asp Val Phe Ala Phe Gly
1175 1180 1185

Gly Ala Val Glu Asn Pro Glu Tyr Leu Thr Pro Gln Gly Gly Ala
1190 1195 1200

Ala Pro Gln Pro His Pro Pro Pro Ala Phe Ser Pro Ala Phe Asp
1205 1210 1215

Asn Leu Tyr Tyr Trp Asp Gln Asp Pro Pro Glu Arg Gly Ala Pro
1220 1225 1230

Pro Ser Thr Phe Lys Gly Thr Pro Thr Ala Glu Asn Pro Glu Tyr
1235 1240 1245

Leu Gly Leu Asp Val Pro Val
1250 1255

<210> 61
<211> 781
<212> PRT
<213> homo sapiens

<400> 61

Met Ala Thr Gln Ala Asp Leu Met Glu Leu Asp Met Ala Met Glu Pro
1 5 10 15

Asp Arg Lys Ala Ala Val Ser His Trp Gln Gln Gln Ser Tyr Leu Asp
20 25 30

Ser Gly Ile His Ser Gly Ala Thr Thr Thr Ala Pro Ser Leu Ser Gly
35 40 45

Lys Gly Asn Pro Glu Glu Glu Asp Val Asp Thr Ser Gln Val Leu Tyr
50 55 60

Glu Trp Glu Gln Gly Phe Ser Gln Ser Phe Thr Gln Glu Gln Val Ala
65 70 75 80

Asp Ile Asp Gly Gln Tyr Ala Met Thr Arg Ala Gln Arg Val Arg Ala
85 90 95

Ala Met Phe Pro Glu Thr Leu Asp Glu Gly Met Gln Ile Pro Ser Thr
100 105 110

Gln Phe Asp Ala Ala His Pro Thr Asn Val Gln Arg Leu Ala Glu Pro
115 120 125

Ser Gln Met Leu Lys His Ala Val Val Asn Leu Ile Asn Tyr Gln Asp
130 135 140

Asp Ala Glu Leu Ala Thr Arg Ala Ile Pro Glu Leu Thr Lys Leu Leu
145 150 155 160

Asn Asp Glu Asp Gln Val Val Val Asn Lys Ala Ala Val Met Val His
165 170 175

Gln Leu Ser Lys Lys Glu Ala Ser Arg His Ala Ile Met Arg Ser Pro
180 185 190

Gln Met Val Ser Ala Ile Val Arg Thr Met Gln Asn Thr Asn Asp Val
195 200 205

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

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

Val Lys Met Leu Gly Ser Pro Val Asp Ser Val Leu Phe Tyr Ala Ile
245 250 255

Thr Thr Leu His Asn Leu Leu Leu His Gln Glu Gly Ala Lys Met Ala
260 265 270

Val Arg Leu Ala Gly Gly Leu Gln Lys Met Val Ala Leu Leu Asn Lys
275 280 285

Thr Asn Val Lys Phe Leu Ala Ile Thr Thr Asp Cys Leu Gln Ile Leu
290 295 300

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

Pro Gln Ala Leu Val Asn Ile Met Arg Thr Tyr Thr Tyr Glu Lys Leu
325 330 335

Leu Trp Thr Thr Ser Arg Val Leu Lys Val Leu Ser Val Cys Ser Ser
340 345 350

Asn Lys Pro Ala Ile Val Glu Ala Gly Gly Met Gln Ala Leu Gly Leu

355

360

365

His Leu Thr Asp Pro Ser Gln Arg Leu Val Gln Asn Cys Leu Trp Thr
 370 375 380

Leu Arg Asn Leu Ser Asp Ala Ala Thr Lys Gln Glu Gly Met Glu Gly
 385 390 395 400

Leu Leu Gly Thr Leu Val Gln Leu Leu Gly Ser Asp Asp Ile Asn Val
 405 410 415

Val Thr Cys Ala Ala Gly Ile Leu Ser Asn Leu Thr Cys Asn Asn Tyr
 420 425 430

Lys Asn Lys Met Met Val Cys Gln Val Gly Gly Ile Glu Ala Leu Val
 435 440 445

Arg Thr Val Leu Arg Ala Gly Asp Arg Glu Asp Ile Thr Glu Pro Ala
 450 455 460

Ile Cys Ala Leu Arg His Leu Thr Ser Arg His Gln Glu Ala Glu Met
 465 470 475 480

Ala Gln Asn Ala Val Arg Leu His Tyr Gly Leu Pro Val Val Val Lys
 485 490 495

Leu Leu His Pro Pro Ser His Trp Pro Leu Ile Lys Ala Thr Val Gly
 500 505 510

Leu Ile Arg Asn Leu Ala Leu Cys Pro Ala Asn His Ala Pro Leu Arg
 515 520 525

Glu Gln Gly Ala Ile Pro Arg Leu Val Gln Leu Leu Val Arg Ala His
 530 535 540

Gln Asp Thr Gln Arg Arg Thr Ser Met Gly Gly Thr Gln Gln Gln Phe
 545 550 555 560

Val Glu Gly Val Arg Met Glu Glu Ile Val Glu Gly Cys Thr Gly Ala
565 570 575

Leu His Ile Leu Ala Arg Asp Val His Asn Arg Ile Val Ile Arg Gly
580 585 590

Leu Asn Thr Ile Pro Leu Phe Val Gln Leu Leu Tyr Ser Pro Ile Glu
595 600 605

Asn Ile Gln Arg Val Ala Ala Gly Val Leu Cys Glu Leu Ala Gln Asp
610 615 620

Lys Glu Ala Ala Glu Ala Ile Glu Ala Glu Gly Ala Thr Ala Pro Leu
625 630 635 640

Thr Glu Leu Leu His Ser Arg Asn Glu Gly Val Ala Thr Tyr Ala Ala
645 650 655

Ala Val Leu Phe Arg Met Ser Glu Asp Lys Pro Gln Asp Tyr Lys Lys
660 665 670

Arg Leu Ser Val Glu Leu Thr Ser Ser Leu Phe Arg Thr Glu Pro Met
675 680 685

Ala Trp Asn Glu Thr Ala Asp Leu Gly Leu Asp Ile Gly Ala Gln Gly
690 695 700

Glu Pro Leu Gly Tyr Arg Gln Asp Asp Pro Ser Tyr Arg Ser Phe His
705 710 715 720

Ser Gly Gly Tyr Gly Gln Asp Ala Leu Gly Met Asp Pro Met Met Glu
725 730 735

His Glu Met Gly Gly His His Pro Gly Ala Asp Tyr Pro Val Asp Gly
740 745 750

Leu Pro Asp Leu Gly His Ala Gln Asp Leu Met Asp Gly Leu Pro Pro

755

760

765

Gly Asp Ser Asn Gln Leu Ala Trp Phe Asp Thr Asp Leu
 770 775 780

<210> 62

<211> 781

<212> PRT

<213> homo sapiens

<400> 62

Met Ala Thr Gln Ala Asp Leu Met Glu Leu Asp Met Ala Met Glu Pro
 1 5 10 15

Asp Arg Lys Ala Ala Val Ser His Trp Gln Gln Gln Ser Tyr Leu Asp
 20 25 30

Ser Gly Ile His Ser Gly Ala Thr Thr Thr Ala Pro Ser Leu Ser Gly
 35 40 45

Lys Gly Asn Pro Glu Glu Glu Asp Val Asp Thr Ser Gln Val Leu Tyr
 50 55 60

Glu Trp Glu Gln Gly Phe Ser Gln Ser Phe Thr Gln Glu Gln Val Ala
 65 70 75 80

Asp Ile Asp Gly Gln Tyr Ala Met Thr Arg Ala Gln Arg Val Arg Ala
 85 90 95

Ala Met Phe Pro Glu Thr Leu Asp Glu Gly Met Gln Ile Pro Ser Thr
 100 105 110

Gln Phe Asp Ala Ala His Pro Thr Asn Val Gln Arg Leu Ala Glu Pro
 115 120 125

Ser Gln Met Leu Lys His Ala Val Val Asn Leu Ile Asn Tyr Gln Asp
 130 135 140

Asp Ala Glu Leu Ala Thr Arg Ala Ile Pro Glu Leu Thr Lys Leu Leu
145 150 155 160

Asn Asp Glu Asp Gln Val Val Val Asn Lys Ala Ala Val Met Val His
165 170 175

Gln Leu Ser Lys Lys Glu Ala Ser Arg His Ala Ile Met Arg Ser Pro
180 185 190

Gln Met Val Ser Ala Ile Val Arg Thr Met Gln Asn Thr Asn Asp Val
195 200 205

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

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

Val Lys Met Leu Gly Ser Pro Val Asp Ser Val Leu Phe Tyr Ala Ile
245 250 255

Thr Thr Leu His Asn Leu Leu Leu His Gln Glu Gly Ala Lys Met Ala
260 265 270

Val Arg Leu Ala Gly Gly Leu Gln Lys Met Val Ala Leu Leu Asn Lys
275 280 285

Thr Asn Val Lys Phe Leu Ala Ile Thr Thr Asp Cys Leu Gln Ile Leu
290 295 300

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

Pro Gln Ala Leu Val Asn Ile Met Arg Thr Tyr Thr Tyr Glu Lys Leu
325 330 335

Leu Trp Thr Thr Ser Arg Val Leu Lys Val Leu Ser Val Cys Ser Ser
340 345 350

Asn Lys Pro Ala Ile Val Glu Ala Gly Gly Met Gln Ala Leu Gly Leu
355 360 365

His Leu Thr Asp Pro Ser Gln Arg Leu Val Gln Asn Cys Leu Trp Thr
370 375 380

Leu Arg Asn Leu Ser Asp Ala Ala Thr Lys Gln Glu Gly Met Glu Gly
385 390 395 400

Leu Leu Gly Thr Leu Val Gln Leu Leu Gly Ser Asp Asp Ile Asn Val
405 410 415

Val Thr Cys Ala Ala Gly Ile Leu Ser Asn Leu Thr Cys Asn Asn Tyr
420 425 430

Lys Asn Lys Met Met Val Cys Gln Val Gly Gly Ile Glu Ala Leu Val
435 440 445

Arg Thr Val Leu Arg Ala Gly Asp Arg Glu Asp Ile Thr Glu Pro Ala
450 455 460

Ile Cys Ala Leu Arg His Leu Thr Ser Arg His Gln Glu Ala Glu Met
465 470 475 480

Ala Gln Asn Ala Val Arg Leu His Tyr Gly Leu Pro Val Val Val Lys
485 490 495

Leu Leu His Pro Pro Ser His Trp Pro Leu Ile Lys Ala Thr Val Gly
500 505 510

Leu Ile Arg Asn Leu Ala Leu Cys Pro Ala Asn His Ala Pro Leu Arg
515 520 525

Glu Gln Gly Ala Ile Pro Arg Leu Val Gln Leu Leu Val Arg Ala His
530 535 540

Gln Asp Thr Gln Arg Arg Thr Ser Met Gly Gly Thr Gln Gln Gln Phe
545 550 555 560

Val Glu Gly Val Arg Met Glu Glu Ile Val Glu Gly Cys Thr Gly Ala
565 570 575

Leu His Ile Leu Ala Arg Asp Val His Asn Arg Ile Val Ile Arg Gly
580 585 590

Leu Asn Thr Ile Pro Leu Phe Val Gln Leu Leu Tyr Ser Pro Ile Glu
595 600 605

Asn Ile Gln Arg Val Ala Ala Gly Val Leu Cys Glu Leu Ala Gln Asp
610 615 620

Lys Glu Ala Ala Glu Ala Ile Glu Ala Glu Gly Ala Thr Ala Pro Leu
625 630 635 640

Thr Glu Leu Leu His Ser Arg Asn Glu Gly Val Ala Thr Tyr Ala Ala
645 650 655

Ala Val Leu Phe Arg Met Ser Glu Asp Lys Pro Gln Asp Tyr Lys Lys
660 665 670

Arg Leu Ser Val Glu Leu Thr Ser Ser Leu Phe Arg Thr Glu Pro Met
675 680 685

Ala Trp Asn Glu Thr Ala Asp Leu Gly Leu Asp Ile Gly Ala Gln Gly
690 695 700

Glu Pro Leu Gly Tyr Arg Gln Asp Asp Pro Ser Tyr Arg Ser Phe His
705 710 715 720

Ser Gly Gly Tyr Gly Gln Asp Ala Leu Gly Met Asp Pro Met Met Glu
725 730 735

His Glu Met Gly Gly His His Pro Gly Ala Asp Tyr Pro Val Asp Gly
740 745 750

Leu Pro Asp Leu Gly His Ala Gln Asp Leu Met Asp Gly Leu Pro Pro
755 760 765

Gly Asp Ser Asn Gln Leu Ala Trp Phe Asp Thr Asp Leu
770 775 780

<210> 63
<211> 781
<212> PRT
<213> homo sapiens

<400> 63

Met Ala Thr Gln Ala Asp Leu Met Glu Leu Asp Met Ala Met Glu Pro
1 5 10 15

Asp Arg Lys Ala Ala Val Ser His Trp Gln Gln Gln Ser Tyr Leu Asp
20 25 30

Ser Gly Ile His Ser Gly Ala Thr Thr Thr Ala Pro Ser Leu Ser Gly
35 40 45

Lys Gly Asn Pro Glu Glu Glu Asp Val Asp Thr Ser Gln Val Leu Tyr
50 55 60

Glu Trp Glu Gln Gly Phe Ser Gln Ser Phe Thr Gln Glu Gln Val Ala
65 70 75 80

Asp Ile Asp Gly Gln Tyr Ala Met Thr Arg Ala Gln Arg Val Arg Ala
85 90 95

Ala Met Phe Pro Glu Thr Leu Asp Glu Gly Met Gln Ile Pro Ser Thr
100 105 110

Gln Phe Asp Ala Ala His Pro Thr Asn Val Gln Arg Leu Ala Glu Pro
115 120 125

Ser Gln Met Leu Lys His Ala Val Val Asn Leu Ile Asn Tyr Gln Asp

130

135

140

Asp Ala Glu Leu Ala Thr Arg Ala Ile Pro Glu Leu Thr Lys Leu Leu
 145 150 155 160

Asn Asp Glu Asp Gln Val Val Val Asn Lys Ala Ala Val Met Val His
 165 170 175

Gln Leu Ser Lys Lys Glu Ala Ser Arg His Ala Ile Met Arg Ser Pro
 180 185 190

Gln Met Val Ser Ala Ile Val Arg Thr Met Gln Asn Thr Asn Asp Val
 195 200 205

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

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

Val Lys Met Leu Gly Ser Pro Val Asp Ser Val Leu Phe Tyr Ala Ile
 245 250 255

Thr Thr Leu His Asn Leu Leu Leu His Gln Glu Gly Ala Lys Met Ala
 260 265 270

Val Arg Leu Ala Gly Gly Leu Gln Lys Met Val Ala Leu Leu Asn Lys
 275 280 285

Thr Asn Val Lys Phe Leu Ala Ile Thr Thr Asp Cys Leu Gln Ile Leu
 290 295 300

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

Pro Gln Ala Leu Val Asn Ile Met Arg Thr Tyr Thr Tyr Glu Lys Leu
 325 330 335

Leu Trp Thr Thr Ser Arg Val Leu Lys Val Leu Ser Val Cys Ser Ser
340 345 350

Asn Lys Pro Ala Ile Val Glu Ala Gly Gly Met Gln Ala Leu Gly Leu
355 360 365

His Leu Thr Asp Pro Ser Gln Arg Leu Val Gln Asn Cys Leu Trp Thr
370 375 380

Leu Arg Asn Leu Ser Asp Ala Ala Thr Lys Gln Glu Gly Met Glu Gly
385 390 395 400

Leu Leu Gly Thr Leu Val Gln Leu Leu Gly Ser Asp Asp Ile Asn Val
405 410 415

Val Thr Cys Ala Ala Gly Ile Leu Ser Asn Leu Thr Cys Asn Asn Tyr
420 425 430

Lys Asn Lys Met Met Val Cys Gln Val Gly Gly Ile Glu Ala Leu Val
435 440 445

Arg Thr Val Leu Arg Ala Gly Asp Arg Glu Asp Ile Thr Glu Pro Ala
450 455 460

Ile Cys Ala Leu Arg His Leu Thr Ser Arg His Gln Glu Ala Glu Met
465 470 475 480

Ala Gln Asn Ala Val Arg Leu His Tyr Gly Leu Pro Val Val Val Lys
485 490 495

Leu Leu His Pro Pro Ser His Trp Pro Leu Ile Lys Ala Thr Val Gly
500 505 510

Leu Ile Arg Asn Leu Ala Leu Cys Pro Ala Asn His Ala Pro Leu Arg
515 520 525

Glu Gln Gly Ala Ile Pro Arg Leu Val Gln Leu Leu Val Arg Ala His

530

535

540

Gln Asp Thr Gln Arg Arg Thr Ser Met Gly Gly Thr Gln Gln Gln Phe
 545 550 555 560

Val Glu Gly Val Arg Met Glu Glu Ile Val Glu Gly Cys Thr Gly Ala
 565 570 575

Leu His Ile Leu Ala Arg Asp Val His Asn Arg Ile Val Ile Arg Gly
 580 585 590

Leu Asn Thr Ile Pro Leu Phe Val Gln Leu Leu Tyr Ser Pro Ile Glu
 595 600 605

Asn Ile Gln Arg Val Ala Ala Gly Val Leu Cys Glu Leu Ala Gln Asp
 610 615 620

Lys Glu Ala Ala Glu Ala Ile Glu Ala Glu Gly Ala Thr Ala Pro Leu
 625 630 635 640

Thr Glu Leu Leu His Ser Arg Asn Glu Gly Val Ala Thr Tyr Ala Ala
 645 650 655

Ala Val Leu Phe Arg Met Ser Glu Asp Lys Pro Gln Asp Tyr Lys Lys
 660 665 670

Arg Leu Ser Val Glu Leu Thr Ser Ser Leu Phe Arg Thr Glu Pro Met
 675 680 685

Ala Trp Asn Glu Thr Ala Asp Leu Gly Leu Asp Ile Gly Ala Gln Gly
 690 695 700

Glu Pro Leu Gly Tyr Arg Gln Asp Asp Pro Ser Tyr Arg Ser Phe His
 705 710 715 720

Ser Gly Gly Tyr Gly Gln Asp Ala Leu Gly Met Asp Pro Met Met Glu
 725 730 735

His Glu Met Gly Gly His His Pro Gly Ala Asp Tyr Pro Val Asp Gly
740 745 750

Leu Pro Asp Leu Gly His Ala Gln Asp Leu Met Asp Gly Leu Pro Pro
755 760 765

Gly Asp Ser Asn Gln Leu Ala Trp Phe Asp Thr Asp Leu
770 775 780

<210> 64

<211> 529

<212> PRT

<213> homo sapiens

<400> 64

Met Leu Leu Ala Val Leu Tyr Cys Leu Leu Trp Ser Phe Gln Thr Ser
1 5 10 15

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

Lys Glu Cys Cys Pro Pro Trp Ser Gly Asp Arg Ser Pro Cys Gly Gln
35 40 45

Leu Ser Gly Arg Gly Ser Cys Gln Asn Ile Leu Leu Ser Asn Ala Pro
50 55 60

Leu Gly Pro Gln Phe Pro Phe Thr Gly Val Asp Asp Arg Glu Ser Trp
65 70 75 80

Pro Ser Val Phe Tyr Asn Arg Thr Cys Gln Cys Ser Gly Asn Phe Met
85 90 95

Gly Phe Asn Cys Gly Asn Cys Lys Phe Gly Phe Trp Gly Pro Asn Cys
100 105 110

Thr Glu Arg Arg Leu Leu Val Arg Arg Asn Ile Phe Asp Leu Ser Ala
115 120 125

Pro Glu Lys Asp Lys Phe Phe Ala Tyr Leu Thr Leu Ala Lys His Thr
130 135 140

Ile Ser Ser Asp Tyr Val Ile Pro Ile Gly Thr Tyr Gly Gln Met Lys
145 150 155 160

Asn Gly Ser Thr Pro Met Phe Asn Asp Ile Asn Ile Tyr Asp Leu Phe
165 170 175

Val Trp Met His Tyr Tyr Val Ser Met Asp Ala Leu Leu Gly Gly Ser
180 185 190

Glu Ile Trp Arg Asp Ile Asp Phe Ala His Glu Ala Pro Ala Phe Leu
195 200 205

Pro Trp His Arg Leu Phe Leu Leu Arg Trp Glu Gln Glu Ile Gln Lys
210 215 220

Leu Thr Gly Asp Glu Asn Phe Thr Ile Pro Tyr Trp Asp Trp Arg Asp
225 230 235 240

Ala Glu Lys Cys Asp Ile Cys Thr Asp Glu Tyr Met Gly Gly Gln His
245 250 255

Pro Thr Asn Pro Asn Leu Leu Ser Pro Ala Ser Phe Phe Ser Ser Trp
260 265 270

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

Cys Asn Gly Thr Pro Glu Gly Pro Leu Arg Arg Asn Pro Gly Asn His
290 295 300

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

Cys Leu Ser Leu Thr Gln Tyr Glu Ser Gly Ser Met Asp Lys Ala Ala
325 330 335

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

Gly Ile Ala Asp Ala Ser Gln Ser Ser Met His Asn Ala Leu His Ile
355 360 365

Tyr Met Asn Gly Thr Met Ser Gln Val Gln Gly Ser Ala Asn Asp Pro
370 375 380

Ile Phe Leu Leu His His Ala Phe Val Asp Ser Ile Phe Glu Gln Trp
385 390 395 400

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

Pro Ile Gly His Asn Arg Glu Ser Tyr Met Val Pro Phe Ile Pro Leu
420 425 430

Tyr Arg Asn Gly Asp Phe Phe Ile Ser Ser Lys Asp Leu Gly Tyr Asp
435 440 445

Tyr Ser Tyr Leu Gln Asp Ser Asp Pro Asp Ser Phe Gln Asp Tyr Ile
450 455 460

Lys Ser Tyr Leu Glu Gln Ala Ser Arg Ile Trp Ser Trp Leu Leu Gly
465 470 475 480

Ala Ala Met Val Gly Ala Val Leu Thr Ala Leu Leu Ala Gly Leu Val
485 490 495

Ser Leu Leu Cys Arg His Lys Arg Lys Gln Leu Pro Glu Glu Lys Gln
500 505 510

Pro Leu Leu Met Glu Lys Glu Asp Tyr His Ser Leu Tyr Gln Ser His
515 520 525

Leu

<210> 65
<211> 693
<212> PRT
<213> homo sapiens

<400> 65

Met Val Asp Pro Val Gly Phe Ala Glu Ala Trp Lys Ala Gln Phe Pro
1 5 10 15

Asp Ser Glu Pro Pro Arg Met Glu Leu Arg Ser Val Gly Asp Ile Glu
20 25 30

Gln Glu Leu Glu Arg Cys Lys Ala Ser Ile Arg Arg Leu Glu Gln Glu
35 40 45

Val Asn Gln Glu Arg Phe Arg Met Ile Tyr Leu Gln Thr Leu Leu Ala
50 55 60

Lys Glu Lys Lys Ser Tyr Asp Arg Gln Arg Trp Gly Phe Arg Arg Ala
65 70 75 80

Ala Gln Ala Pro Asp Gly Ala Ser Glu Pro Arg Ala Ser Ala Ser Arg
85 90 95

Pro Gln Pro Ala Pro Ala Asp Gly Ala Asp Pro Pro Pro Ala Glu Glu
100 105 110

Pro Glu Ala Arg Pro Asp Gly Glu Gly Ser Pro Gly Lys Ala Arg Pro
115 120 125

Gly Thr Ala Arg Arg Pro Gly Ala Ala Ala Ser Gly Glu Arg Asp Asp
130 135 140

Arg Gly Pro Pro Ala Ser Val Ala Ala Leu Arg Ser Asn Phe Glu Arg

145		150		155		160
Ile Arg Lys Gly His Gly Gln Pro Gly Ala Asp Ala Glu Lys Pro Phe		165		170		175
Tyr Val Asn Val Glu Phe His His Glu Arg Gly Leu Val Lys Val Asn		180		185		190
Asp Lys Glu Val Ser Asp Arg Ile Ser Ser Leu Gly Ser Gln Ala Met		195		200		205
Gln Met Glu Arg Lys Lys Ser Gln His Gly Ala Gly Ser Ser Val Gly		210		215		220
Asp Ala Ser Arg Pro Pro Tyr Arg Gly Arg Ser Ser Glu Ser Ser Cys		225		230		235
Gly Val Asp Gly Asp Tyr Glu Asp Ala Glu Leu Asn Pro Arg Phe Leu		245		250		255
Lys Asp Asn Leu Ile Asp Ala Asn Gly Gly Ser Arg Pro Pro Trp Pro		260		265		270
Pro Leu Glu Tyr Gln Pro Tyr Gln Ser Ile Tyr Val Gly Gly Met Met		275		280		285
Glu Gly Glu Gly Lys Gly Pro Leu Leu Arg Ser Gln Ser Thr Ser Glu		290		295		300
Gln Glu Lys Arg Leu Thr Trp Pro Arg Arg Ser Tyr Ser Pro Arg Ser		305		310		315
Phe Glu Asp Cys Gly Gly Gly Tyr Thr Pro Asp Cys Ser Ser Asn Glu		325		330		335
Asn Leu Thr Ser Ser Glu Glu Asp Phe Ser Ser Gly Gln Ser Ser Arg		340		345		350

Val Ser Pro Ser Pro Thr Thr Tyr Arg Met Phe Arg Asp Lys Ser Arg
355 360 365

Ser Pro Ser Gln Asn Ser Gln Gln Ser Phe Asp Ser Ser Ser Pro Pro
370 375 380

Thr Pro Gln Cys His Lys Arg His Arg His Cys Pro Val Val Val Ser
385 390 395 400

Glu Ala Thr Ile Val Gly Val Arg Lys Thr Gly Gln Ile Trp Pro Asn
405 410 415

Asp Gly Glu Gly Ala Phe His Gly Asp Ala Asp Gly Ser Phe Gly Thr
420 425 430

Pro Pro Gly Tyr Gly Cys Ala Ala Asp Arg Ala Glu Glu Gln Arg Arg
435 440 445

His Gln Asp Gly Leu Pro Tyr Ile Asp Asp Ser Pro Ser Ser Ser Pro
450 455 460

His Leu Ser Ser Lys Gly Arg Gly Ser Arg Asp Ala Leu Val Ser Gly
465 470 475 480

Ala Leu Glu Ser Thr Lys Ala Ser Glu Leu Asp Leu Glu Lys Gly Leu
485 490 495

Glu Met Arg Lys Trp Val Leu Ser Gly Ile Leu Ala Ser Glu Glu Thr
500 505 510

Tyr Leu Ser His Leu Glu Ala Leu Leu Leu Pro Met Lys Pro Leu Lys
515 520 525

Ala Ala Ala Thr Thr Ser Gln Pro Val Leu Thr Ser Gln Gln Ile Glu
530 535 540

Thr Ile Phe Phe Lys Val Pro Glu Leu Tyr Glu Ile His Lys Glu Phe

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

Arg Lys Gln Glu Pro Ile Lys Asp Ala Leu Met Leu Phe Gln Arg Leu
35 40 45

Gln Glu Lys Arg Met Leu Glu Glu Ser Asn Leu Ser Phe Leu Lys Glu
50 55 60

Leu Leu Phe Arg Ile Asn Arg Leu Asp Leu Leu Ile Thr Tyr Leu Asn
65 70 75 80

Thr Arg Lys Glu Glu Met Glu Arg Glu Leu Gln Thr Pro Gly Arg Ala
85 90 95

Gln Ile Ser Ala Tyr Arg Val Met Leu Tyr Gln Ile Ser Glu Glu Val
100 105 110

Ser Arg Ser Glu Leu Arg Ser Phe Lys Phe Leu Leu Gln Glu Glu Ile
115 120 125

Ser Lys Cys Lys Leu Asp Asp Asp Met Asn Leu Leu Asp Ile Phe Ile
130 135 140

Glu Met Glu Lys Arg Val Ile Leu Gly Glu Gly Lys Leu Asp Ile Leu
145 150 155 160

Lys Arg Val Cys Ala Gln Ile Asn Lys Ser Leu Leu Lys Ile Ile Asn
165 170 175

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

Ile Ser Asp Ser Pro Arg Glu Gln Asp Ser Glu Ser Gln Thr Leu Asp
195 200 205

Lys Val Tyr Gln Met Lys Ser Lys Pro Arg Gly Tyr Cys Leu Ile Ile
210 215 220

Asn Asn His Asn Phe Ala Lys Ala Arg Glu Lys Val Pro Lys Leu His
225 230 235 240

Ser Ile Arg Asp Arg Asn Gly Thr His Leu Asp Ala Gly Ala Leu Thr
245 250 255

Thr Thr Phe Glu Glu Leu His Phe Glu Ile Lys Pro His Asp Asp Cys
260 265 270

Thr Val Glu Gln Ile Tyr Glu Ile Leu Lys Ile Tyr Gln Leu Met Asp
275 280 285

His Ser Asn Met Asp Cys Phe Ile Cys Cys Ile Leu Ser His Gly Asp
290 295 300

Lys Gly Ile Ile Tyr Gly Thr Asp Gly Gln Glu Ala Pro Ile Tyr Glu
305 310 315 320

Leu Thr Ser Gln Phe Thr Gly Leu Lys Cys Pro Ser Leu Ala Gly Lys
325 330 335

Pro Lys Val Phe Phe Ile Gln Ala Cys Gln Gly Asp Asn Tyr Gln Lys
340 345 350

Gly Ile Pro Val Glu Thr Asp Ser Glu Glu Gln Pro Tyr Leu Glu Met
355 360 365

Asp Leu Ser Ser Pro Gln Thr Arg Tyr Ile Pro Asp Glu Ala Asp Phe
370 375 380

Leu Leu Gly Met Ala Thr Val Asn Asn Cys Val Ser Tyr Arg Asn Pro
385 390 395 400

Ala Glu Gly Thr Trp Tyr Ile Gln Ser Leu Cys Gln Ser Leu Arg Glu
405 410 415

Arg Cys Pro Arg Gly Asp Asp Ile Leu Thr Ile Leu Thr Glu Val Asn
420 425 430

Tyr Glu Val Ser Asn Lys Asp Asp Lys Lys Asn Met Gly Lys Gln Met
435 440 445

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

<210> 67

<211> 538

<212> PRT

<213> homo sapiens

<400> 67

Met Glu Gly Gly Arg Arg Ala Arg Val Val Ile Glu Ser Lys Arg Asn
1 5 10 15

Phe Phe Leu Gly Ala Phe Pro Thr Pro Phe Pro Ala Glu His Val Glu
20 25 30

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

Gly Ala Asp Tyr Ile Leu Leu Pro Phe Lys Lys Met Asp Phe Ser Arg
50 55 60

Asn Leu Tyr Asp Ile Gly Glu Gln Leu Asp Ser Glu Asp Leu Ala Ser
65 70 75 80

Leu Lys Phe Leu Ser Leu Asp Tyr Ile Pro Gln Arg Lys Gln Glu Pro
85 90 95

Ile Lys Asp Ala Leu Met Leu Phe Gln Arg Leu Gln Glu Lys Arg Met
100 105 110

Leu Glu Glu Ser Asn Leu Ser Phe Leu Lys Glu Leu Leu Phe Arg Ile
115 120 125

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

Met Glu Arg Glu Leu Gln Thr Pro Gly Arg Ala Gln Ile Ser Ala Tyr
145 150 155 160

Arg Val Met Leu Tyr Gln Ile Ser Glu Glu Val Ser Arg Ser Glu Leu
165 170 175

Arg Ser Phe Lys Phe Leu Leu Gln Glu Glu Ile Ser Lys Cys Lys Leu
180 185 190

Asp Asp Asp Met Asn Leu Leu Asp Ile Phe Ile Glu Met Glu Lys Arg
195 200 205

Val Ile Leu Gly Glu Gly Lys Leu Asp Ile Leu Lys Arg Val Cys Ala
210 215 220

Gln Ile Asn Lys Ser Leu Leu Lys Ile Ile Asn Asp Tyr Glu Glu Phe
225 230 235 240

Ser Lys Glu Arg Ser Ser Ser Leu Glu Gly Ser Pro Asp Glu Phe Ser
245 250 255

Asn Gly Glu Glu Leu Cys Gly Val Met Thr Ile Ser Asp Ser Pro Arg
260 265 270

Glu Gln Asp Ser Glu Ser Gln Thr Leu Asp Lys Val Tyr Gln Met Lys
275 280 285

Ser Lys Pro Arg Gly Tyr Cys Leu Ile Ile Asn Asn His Asn Phe Ala
290 295 300

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

Gly Thr His Leu Asp Ala Gly Ala Leu Thr Thr Thr Phe Glu Glu Leu

325

330

335

His Phe Glu Ile Lys Pro His Asp Asp Cys Thr Val Glu Gln Ile Tyr
 340 345 350

Glu Ile Leu Lys Ile Tyr Gln Leu Met Asp His Ser Asn Met Asp Cys
 355 360 365

Phe Ile Cys Cys Ile Leu Ser His Gly Asp Lys Gly Ile Ile Tyr Gly
 370 375 380

Thr Asp Gly Gln Glu Ala Pro Ile Tyr Glu Leu Thr Ser Gln Phe Thr
 385 390 395 400

Gly Leu Lys Cys Pro Ser Leu Ala Gly Lys Pro Lys Val Phe Phe Ile
 405 410 415

Gln Ala Cys Gln Gly Asp Asn Tyr Gln Lys Gly Ile Pro Val Glu Thr
 420 425 430

Asp Ser Glu Glu Gln Pro Tyr Leu Glu Met Asp Leu Ser Ser Pro Gln
 435 440 445

Thr Arg Tyr Ile Pro Asp Glu Ala Asp Phe Leu Leu Gly Met Ala Thr
 450 455 460

Val Asn Asn Cys Val Ser Tyr Arg Asn Pro Ala Glu Gly Thr Trp Tyr
 465 470 475 480

Ile Gln Ser Leu Cys Gln Ser Leu Arg Glu Arg Cys Pro Arg Gly Asp
 485 490 495

Asp Ile Leu Thr Ile Leu Thr Glu Val Asn Tyr Glu Val Ser Asn Lys
 500 505 510

Asp Asp Lys Lys Asn Met Gly Lys Gln Met Pro Gln Pro Thr Phe Thr
 515 520 525

Leu Arg Lys Lys Leu Val Phe Pro Ser Asp
530 535

<210> 68
<211> 496
<212> PRT
<213> homo sapiens

<400> 68

Met Asp Phe Ser Arg Asn Leu Tyr Asp Ile Gly Glu Gln Leu Asp Ser
1 5 10 15

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

Arg Lys Gln Glu Pro Ile Lys Asp Ala Leu Met Leu Phe Gln Arg Leu
35 40 45

Gln Glu Lys Arg Met Leu Glu Glu Ser Asn Leu Ser Phe Leu Lys Glu
50 55 60

Leu Leu Phe Arg Ile Asn Arg Leu Asp Leu Leu Ile Thr Tyr Leu Asn
65 70 75 80

Thr Arg Lys Glu Glu Met Glu Arg Glu Leu Gln Thr Pro Gly Arg Ala
85 90 95

Gln Ile Ser Ala Tyr Arg Phe His Phe Cys Arg Met Ser Trp Ala Glu
100 105 110

Ala Asn Ser Gln Cys Gln Thr Gln Ser Val Pro Phe Trp Arg Arg Val
115 120 125

Asp His Leu Leu Ile Arg Val Met Leu Tyr Gln Ile Ser Glu Glu Val
130 135 140

Ser Arg Ser Glu Leu Arg Ser Phe Lys Phe Leu Leu Gln Glu Glu Ile
145 150 155 160

Ser Lys Cys Lys Leu Asp Asp Asp Met Asn Leu Leu Asp Ile Phe Ile
165 170 175

Glu Met Glu Lys Arg Val Ile Leu Gly Glu Gly Lys Leu Asp Ile Leu
180 185 190

Lys Arg Val Cys Ala Gln Ile Asn Lys Ser Leu Leu Lys Ile Ile Asn
195 200 205

Asp Tyr Glu Glu Phe Ser Lys Gly Glu Glu Leu Cys Gly Val Met Thr
210 215 220

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

Lys Val Tyr Gln Met Lys Ser Lys Pro Arg Gly Tyr Cys Leu Ile Ile
245 250 255

Asn Asn His Asn Phe Ala Lys Ala Arg Glu Lys Val Pro Lys Leu His
260 265 270

Ser Ile Arg Asp Arg Asn Gly Thr His Leu Asp Ala Gly Ala Leu Thr
275 280 285

Thr Thr Phe Glu Glu Leu His Phe Glu Ile Lys Pro His Asp Asp Cys
290 295 300

Thr Val Glu Gln Ile Tyr Glu Ile Leu Lys Ile Tyr Gln Leu Met Asp
305 310 315 320

His Ser Asn Met Asp Cys Phe Ile Cys Cys Ile Leu Ser His Gly Asp
325 330 335

Lys Gly Ile Ile Tyr Gly Thr Asp Gly Gln Glu Ala Pro Ile Tyr Glu
340 345 350

Leu Thr Ser Gln Phe Thr Gly Leu Lys Cys Pro Ser Leu Ala Gly Lys
355 360 365

Pro Lys Val Phe Phe Ile Gln Ala Cys Gln Gly Asp Asn Tyr Gln Lys
370 375 380

Gly Ile Pro Val Glu Thr Asp Ser Glu Glu Gln Pro Tyr Leu Glu Met
385 390 395 400

Asp Leu Ser Ser Pro Gln Thr Arg Tyr Ile Pro Asp Glu Ala Asp Phe
405 410 415

Leu Leu Gly Met Ala Thr Val Asn Asn Cys Val Ser Tyr Arg Asn Pro
420 425 430

Ala Glu Gly Thr Trp Tyr Ile Gln Ser Leu Cys Gln Ser Leu Arg Glu
435 440 445

Arg Cys Pro Arg Gly Asp Asp Ile Leu Thr Ile Leu Thr Glu Val Asn
450 455 460

Tyr Glu Val Ser Asn Lys Asp Asp Lys Lys Asn Met Gly Lys Gln Met
465 470 475 480

Pro Gln Pro Thr Phe Thr Leu Arg Lys Lys Leu Val Phe Pro Ser Asp
485 490 495

<210> 69
<211> 479
<212> PRT
<213> homo sapiens

<400> 69

Met Asp Phe Ser Arg Asn Leu Tyr Asp Ile Gly Glu Gln Leu Asp Ser
1 5 10 15

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

Arg Lys Gln Glu Pro Ile Lys Asp Ala Leu Met Leu Phe Gln Arg Leu
35 40 45

Gln Glu Lys Arg Met Leu Glu Glu Ser Asn Leu Ser Phe Leu Lys Glu
50 55 60

Leu Leu Phe Arg Ile Asn Arg Leu Asp Leu Leu Ile Thr Tyr Leu Asn
65 70 75 80

Thr Arg Lys Glu Glu Met Glu Arg Glu Leu Gln Thr Pro Gly Arg Ala
85 90 95

Gln Ile Ser Ala Tyr Arg Val Met Leu Tyr Gln Ile Ser Glu Glu Val
100 105 110

Ser Arg Ser Glu Leu Arg Ser Phe Lys Phe Leu Leu Gln Glu Glu Ile
115 120 125

Ser Lys Cys Lys Leu Asp Asp Asp Met Asn Leu Leu Asp Ile Phe Ile
130 135 140

Glu Met Glu Lys Arg Val Ile Leu Gly Glu Gly Lys Leu Asp Ile Leu
145 150 155 160

Lys Arg Val Cys Ala Gln Ile Asn Lys Ser Leu Leu Lys Ile Ile Asn
165 170 175

Asp Tyr Glu Glu Phe Ser Lys Glu Arg Ser Ser Ser Leu Glu Gly Ser
180 185 190

Pro Asp Glu Phe Ser Asn Gly Glu Glu Leu Cys Gly Val Met Thr Ile
195 200 205

Ser Asp Ser Pro Arg Glu Gln Asp Ser Glu Ser Gln Thr Leu Asp Lys
210 215 220

Val Tyr Gln Met Lys Ser Lys Pro Arg Gly Tyr Cys Leu Ile Ile Asn

225		230		235		240
Asn His Asn Phe	Ala Lys Ala Arg Glu Lys Val Pro Lys Leu His Ser	245		250		255
Ile Arg Asp Arg	Asn Gly Thr His Leu Asp Ala Gly Ala Leu Thr Thr	260		265		270
Thr Phe Glu Glu	Leu His Phe Glu Ile Lys Pro His Asp Asp Cys Thr	275		280		285
Val Glu Gln Ile Tyr	Glu Ile Leu Lys Ile Tyr Gln Leu Met Asp His	290		295		300
Ser Asn Met Asp Cys	Phe Ile Cys Cys Ile Leu Ser His Gly Asp Lys	305		310		315
Gly Ile Ile Tyr	Gly Thr Asp Gly Gln Glu Ala Pro Ile Tyr Glu Leu	325		330		335
Thr Ser Gln Phe Thr	Gly Leu Lys Cys Pro Ser Leu Ala Gly Lys Pro	340		345		350
Lys Val Phe Phe Ile	Gln Ala Cys Gln Gly Asp Asn Tyr Gln Lys Gly	355		360		365
Ile Pro Val Glu Thr	Asp Ser Glu Glu Gln Pro Tyr Leu Glu Met Asp	370		375		380
Leu Ser Ser Pro Gln	Thr Arg Tyr Ile Pro Asp Glu Ala Asp Phe Leu	385		390		395
Leu Gly Met Ala Thr	Val Asn Asn Cys Val Ser Tyr Arg Asn Pro Ala	405		410		415
Glu Gly Thr Trp Tyr	Ile Gln Ser Leu Cys Gln Ser Leu Arg Glu Arg	420		425		430

Cys Pro Arg Gly Asp Asp Ile Leu Thr Ile Leu Thr Glu Val Asn Tyr
435 440 445

Glu Val Ser Asn Lys Asp Asp Lys Lys Asn Met Gly Lys Gln Met Pro
450 455 460

Gln Pro Thr Phe Thr Leu Arg Lys Lys Leu Val Phe Pro Ser Asp
465 470 475

<210> 70

<211> 464

<212> PRT

<213> homo sapiens

<400> 70

Met Asp Phe Ser Arg Asn Leu Tyr Asp Ile Gly Glu Gln Leu Asp Ser
1 5 10 15

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

Arg Lys Gln Glu Pro Ile Lys Asp Ala Leu Met Leu Phe Gln Arg Leu
35 40 45

Gln Glu Lys Arg Met Leu Glu Glu Ser Asn Leu Ser Phe Leu Lys Glu
50 55 60

Leu Leu Phe Arg Ile Asn Arg Leu Asp Leu Leu Ile Thr Tyr Leu Asn
65 70 75 80

Thr Arg Lys Glu Glu Met Glu Arg Glu Leu Gln Thr Pro Gly Arg Ala
85 90 95

Gln Ile Ser Ala Tyr Arg Val Met Leu Tyr Gln Ile Ser Glu Glu Val
100 105 110

Ser Arg Ser Glu Leu Arg Ser Phe Lys Phe Leu Leu Gln Glu Glu Ile
115 120 125

Ser Lys Cys Lys Leu Asp Asp Asp Met Asn Leu Leu Asp Ile Phe Ile
130 135 140

Glu Met Glu Lys Arg Val Ile Leu Gly Glu Gly Lys Leu Asp Ile Leu
145 150 155 160

Lys Arg Val Cys Ala Gln Ile Asn Lys Ser Leu Leu Lys Ile Ile Asn
165 170 175

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

Ile Ser Asp Ser Pro Arg Glu Gln Asp Ser Glu Ser Gln Thr Leu Asp
195 200 205

Lys Val Tyr Gln Met Lys Ser Lys Pro Arg Gly Tyr Cys Leu Ile Ile
210 215 220

Asn Asn His Asn Phe Ala Lys Ala Arg Glu Lys Val Pro Lys Leu His
225 230 235 240

Ser Ile Arg Asp Arg Asn Gly Thr His Leu Asp Ala Gly Ala Leu Thr
245 250 255

Thr Thr Phe Glu Glu Leu His Phe Glu Ile Lys Pro His Asp Asp Cys
260 265 270

Thr Val Glu Gln Ile Tyr Glu Ile Leu Lys Ile Tyr Gln Leu Met Asp
275 280 285

His Ser Asn Met Asp Cys Phe Ile Cys Cys Ile Leu Ser His Gly Asp
290 295 300

Lys Gly Ile Ile Tyr Gly Thr Asp Gly Gln Glu Ala Pro Ile Tyr Glu
305 310 315 320

Leu Thr Ser Gln Phe Thr Gly Leu Lys Cys Pro Ser Leu Ala Gly Lys
325 330 335

Pro Lys Val Phe Phe Ile Gln Ala Cys Gln Gly Asp Asn Tyr Gln Lys
340 345 350

Gly Ile Pro Val Glu Thr Asp Ser Glu Glu Gln Pro Tyr Leu Glu Met
355 360 365

Asp Leu Ser Ser Pro Gln Thr Arg Tyr Ile Pro Asp Glu Ala Asp Phe
370 375 380

Leu Leu Gly Met Ala Thr Val Asn Asn Cys Val Ser Tyr Arg Asn Pro
385 390 395 400

Ala Glu Gly Thr Trp Tyr Ile Gln Ser Leu Cys Gln Ser Leu Arg Glu
405 410 415

Arg Cys Pro Arg Gly Asp Asp Ile Leu Thr Ile Leu Thr Glu Val Asn
420 425 430

Tyr Glu Val Ser Asn Lys Asp Asp Lys Lys Asn Met Gly Lys Gln Met
435 440 445

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

<210> 71
<211> 235
<212> PRT
<213> homo sapiens

<400> 71

Met Asp Phe Ser Arg Asn Leu Tyr Asp Ile Gly Glu Gln Leu Asp Ser
1 5 10 15

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

Arg Lys Gln Glu Pro Ile Lys Asp Ala Leu Met Leu Phe Gln Arg Leu
35 40 45

Gln Glu Lys Arg Met Leu Glu Glu Ser Asn Leu Ser Phe Leu Lys Glu
50 55 60

Leu Leu Phe Arg Ile Asn Arg Leu Asp Leu Leu Ile Thr Tyr Leu Asn
65 70 75 80

Thr Arg Lys Glu Glu Met Glu Arg Glu Leu Gln Thr Pro Gly Arg Ala
85 90 95

Gln Ile Ser Ala Tyr Arg Val Met Leu Tyr Gln Ile Ser Glu Glu Val
100 105 110

Ser Arg Ser Glu Leu Arg Ser Phe Lys Phe Leu Leu Gln Glu Glu Ile
115 120 125

Ser Lys Cys Lys Leu Asp Asp Asp Met Asn Leu Leu Asp Ile Phe Ile
130 135 140

Glu Met Glu Lys Arg Val Ile Leu Gly Glu Gly Lys Leu Asp Ile Leu
145 150 155 160

Lys Arg Val Cys Ala Gln Ile Asn Lys Ser Leu Leu Lys Ile Ile Asn
165 170 175

Asp Tyr Glu Glu Phe Ser Lys Glu Arg Ser Ser Ser Leu Glu Gly Ser
180 185 190

Pro Asp Glu Phe Ser Asn Asp Phe Gly Gln Ser Leu Pro Asn Glu Lys
195 200 205

Gln Thr Ser Gly Ile Leu Ser Asp His Gln Gln Ser Gln Phe Cys Lys
210 215 220

Ser Thr Gly Glu Ser Ala Gln Thr Ser Gln His

225

230

235

<210> 72
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 72

Ile Leu Lys Glu Pro Val His Gly Val
1 5

<210> 73
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 73

Ser Leu Tyr Asn Thr Val Ala Thr Leu
1 5

<210> 74
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 74

Ile Leu Glu Pro Val His Gly Val
1 5

<210> 75
<211> 9
<212> PRT
<213> Artificial sequence

<220>

<223> short peptide

<400> 75

Gly Ile Leu Gly Phe Val Phe Thr Leu
1 5

<210> 76

<211> 252

<212> PRT

<213> Influenza A virus

<400> 76

Met Ser Leu Leu Thr Glu Val Glu Thr Tyr Val Leu Ser Ile Val Pro
1 5 10 15

Ser Gly Pro Leu Lys Ala Glu Ile Ala Gln Arg Leu Glu Asp Val Phe
20 25 30

Ala Gly Lys Asn Thr Asp Leu Glu Ala Leu Met Glu Trp Leu Lys Thr
35 40 45

Arg Pro Ile Leu Ser Pro Leu Thr Lys Gly Ile Leu Gly Phe Val Phe
50 55 60

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

Gln Asn Ala Leu Asn Gly Asn Gly Asp Pro Asn Asn Met Asp Arg Ala
85 90 95

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

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

Gly Leu Ile Tyr Asn Arg Met Gly Ala Val Thr Thr Glu Val Ala Phe
130 135 140

Ala Val Val Cys Ala Thr Cys Glu Gln Ile Ala Asp Ser Gln His Arg
145 150 155 160

Ser His Arg Gln Met Val Thr Thr Thr Asn Pro Leu Ile Arg His Glu
165 170 175

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

Ala Gly Ser Ser Glu Gln Ala Ala Glu Ala Met Glu Val Ala Ser Gln
195 200 205

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

Ser Ser Ala Gly Leu Lys Asp Asp Leu Leu Glu Asn Leu Gln Ala Tyr
225 230 235 240

Gln Lys Arg Met Gly Val Gln Met Gln Arg Phe Lys
245 250

<210> 77
<211> 584
<212> PRT
<213> Influenza A virus

<400> 77

Met Lys Ala Ile Ile Val Leu Leu Met Val Val Thr Ser Asn Ala Asp
1 5 10 15

Arg Ile Cys Thr Gly Ile Thr Ser Ser Asn Ser Pro His Val Val Lys
20 25 30

Thr Ala Thr Gln Gly Glu Val Asn Val Thr Gly Val Ile Pro Leu Thr
35 40 45

Thr Thr Pro Thr Lys Ser His Phe Ala Asn Leu Lys Gly Thr Gln Thr

50

55

60

Arg Gly Lys Leu Cys Pro Asn Cys Phe Asn Cys Thr Asp Leu Asp Val
65 70 75 80

Ala Leu Gly Arg Pro Lys Cys Met Gly Asn Thr Pro Ser Ala Lys Val
85 90 95

Ser Ile Leu His Glu Val Lys Pro Ala Thr Ser Gly Cys Phe Pro Ile
100 105 110

Met His Asp Arg Thr Lys Ile Arg Gln Leu Pro Asn Leu Leu Arg Gly
115 120 125

Tyr Glu Asn Ile Arg Leu Ser Thr Ser Asn Val Ile Asn Thr Glu Thr
130 135 140

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

Val Ala Asn Gly Asn Gly Phe Phe Asn Thr Met Ala Trp Val Ile Pro
165 170 175

Lys Asp Asn Asn Lys Thr Ala Ile Asn Pro Val Thr Val Glu Val Pro
180 185 190

Tyr Ile Cys Ser Glu Gly Glu Asp Gln Ile Thr Val Trp Gly Phe His
195 200 205

Ser Asp Asp Lys Thr Gln Met Glu Arg Leu Tyr Gly Asp Ser Asn Pro
210 215 220

Gln Lys Phe Thr Ser Ser Ala Asn Gly Val Thr Thr His Tyr Val Ser
225 230 235 240

Gln Ile Gly Gly Phe Pro Asn Gln Thr Glu Asp Glu Gly Leu Lys Gln
245 250 255

Ser Gly Arg Ile Val Val Asp Tyr Met Val Gln Lys Pro Gly Lys Thr
260 265 270

Gly Thr Ile Val Tyr Gln Arg Gly Ile Leu Leu Pro Gln Lys Val Trp
275 280 285

Cys Ala Ser Gly Arg Ser Lys Val Ile Lys Gly Ser Leu Pro Leu Ile
290 295 300

Gly Glu Ala Asp Cys Leu His Glu Lys Tyr Gly Gly Leu Asn Lys Ser
305 310 315 320

Lys Pro Tyr Tyr Thr Gly Glu His Ala Lys Ala Ile Gly Asn Cys Pro
325 330 335

Ile Trp Val Lys Thr Pro Leu Lys Leu Ala Asn Gly Thr Lys Tyr Arg
340 345 350

Pro Pro Ala Lys Leu Leu Lys Glu Arg Gly Phe Phe Gly Ala Ile Ala
355 360 365

Gly Phe Leu Glu Gly Gly Trp Glu Gly Met Ile Ala Gly Trp His Gly
370 375 380

Tyr Thr Ser His Gly Ala His Gly Val Ala Val Ala Ala Asp Leu Lys
385 390 395 400

Ser Thr Gln Glu Ala Ile Asn Lys Ile Thr Lys Asn Leu Asn Tyr Leu
405 410 415

Ser Glu Leu Glu Val Lys Asn Leu Gln Arg Leu Ser Gly Ala Met Asn
420 425 430

Glu Leu His Asp Glu Ile Leu Glu Leu Asp Glu Lys Val Asp Asp Leu
435 440 445

Arg Ala Asp Thr Ile Ser Ser Gln Ile Glu Leu Ala Val Leu Leu Ser

450

455

460

Asn Glu Gly Ile Ile Asn Ser Glu Asp Glu His Leu Leu Ala Leu Glu
 465 470 475 480

Arg Lys Leu Lys Lys Met Leu Gly Pro Ser Ala Val Glu Ile Gly Asn
 485 490 495

Gly Cys Phe Glu Thr Lys His Lys Cys Asn Gln Thr Cys Leu Asp Arg
 500 505 510

Ile Ala Ala Gly Thr Phe Asn Ala Gly Asp Phe Ser Leu Pro Thr Phe
 515 520 525

Asp Ser Leu Asn Ile Thr Ala Ala Ser Leu Asn Asp Asp Gly Leu Asp
 530 535 540

Asn His Thr Ile Leu Leu Tyr Tyr Ser Thr Ala Ala Ser Ser Leu Ala
 545 550 555 560

Val Thr Leu Met Ile Ala Ile Phe Ile Val Tyr Met Val Ser Arg Asp
 565 570 575

Asn Val Ser Cys Ser Ile Cys Leu
 580

<210> 78

<211> 566

<212> PRT

<213> Influenza A virus

<400> 78

Met Lys Thr Ile Ile Ala Leu Ser Tyr Ile Leu Cys Leu Val Phe Ala
 1 5 10 15

Gln Lys Leu Pro Gly Asn Asp Asn Ser Thr Ala Thr Leu Cys Leu Gly
 20 25 30

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

Gln Ile Glu Val Thr Asn Ala Thr Glu Leu Val Gln Ser Ser Ser Thr
50 55 60

Gly Gly Ile Cys Asp Ser Pro His Gln Ile Leu Asp Gly Glu Asn Cys
65 70 75 80

Thr Leu Ile Asp Ala Leu Leu Gly Asp Pro Gln Cys Asp Gly Phe Gln
85 90 95

Asn Lys Lys Trp Asp Leu Phe Val Glu Arg Ser Lys Ala Tyr Ser Asn
100 105 110

Cys Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser Leu Arg Ser Leu Val
115 120 125

Ala Ser Ser Gly Thr Leu Glu Phe Asn Asn Glu Ser Phe Asn Trp Thr
130 135 140

Gly Val Thr Gln Asn Gly Thr Ser Ser Ala Cys Lys Arg Arg Ser Asn
145 150 155 160

Asn Ser Phe Phe Ser Arg Leu Asn Trp Leu Thr His Leu Lys Phe Lys
165 170 175

Tyr Pro Ala Leu Asn Val Thr Met Pro Asn Asn Glu Lys Phe Asp Lys
180 185 190

Leu Tyr Ile Trp Gly Val His His Pro Gly Thr Asp Asn Asp Gln Ile
195 200 205

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

Ser Gln Gln Thr Val Ile Pro Ser Ile Gly Ser Arg Pro Arg Ile Arg
225 230 235 240

Asp Val Pro Ser Arg Ile Ser Ile Tyr Trp Thr Ile Val Lys Pro Gly
245 250 255

Asp Ile Leu Leu Ile Asn Ser Thr Gly Asn Leu Ile Ala Pro Arg Gly
260 265 270

Tyr Phe Lys Ile Arg Ser Gly Lys Ser Ser Ile Met Arg Ser Asp Ala
275 280 285

Pro Ile Gly Lys Cys Asn Ser Glu Cys Ile Thr Pro Asn Gly Ser Ile
290 295 300

Pro Asn Asp Lys Pro Phe Gln Asn Val Asn Arg Ile Thr Tyr Gly Ala
305 310 315 320

Cys Pro Arg Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr Gly Met
325 330 335

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

Gly Phe Ile Glu Asn Gly Trp Glu Gly Met Val Asp Gly Trp Tyr Gly
355 360 365

Phe Arg His Gln Asn Ser Glu Gly Thr Gly Gln Ala Ala Asp Leu Lys
370 375 380

Ser Thr Gln Ala Ala Ile Asn Gln Ile Asn Gly Lys Leu Asn Arg Leu
385 390 395 400

Ile Gly Lys Thr Asn Glu Lys Phe His Gln Ile Glu Lys Glu Phe Ser
405 410 415

Glu Val Glu Gly Arg Ile Gln Asp Leu Glu Lys Tyr Val Glu Asp Thr
420 425 430

Lys Ile Asp Leu Trp Ser Tyr Asn Ala Glu Leu Leu Val Ala Leu Glu
435 440 445

Asn Gln His Thr Ile Asp Leu Thr Asp Ser Glu Met Asn Lys Leu Phe
450 455 460

Glu Arg Thr Lys Lys Gln Leu Arg Glu Asn Ala Glu Asp Met Gly Asn
465 470 475 480

Gly Cys Phe Lys Ile Tyr His Lys Cys Asp Asn Ala Cys Ile Gly Ser
485 490 495

Ile Arg Asn Gly Thr Tyr Asp His Asp Val Tyr Arg Asp Glu Ala Leu
500 505 510

Asn Asn Arg Phe Gln Ile Lys Gly Val Glu Leu Lys Ser Gly Tyr Lys
515 520 525

Asp Trp Ile Leu Trp Ile Ser Phe Ala Ile Ser Cys Phe Leu Leu Cys
530 535 540

Val Ala Leu Leu Gly Phe Ile Met Trp Ala Cys Gln Lys Gly Asn Ile
545 550 555 560

Arg Cys Asn Ile Cys Ile
565

<210> 79
<211> 466
<212> PRT
<213> Influenza B virus

<400> 79

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

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

Tyr Ser Asp Val Leu Leu Lys Phe Ser Ser Thr Lys Thr Thr Ala Pro
35 40 45

Thr Met Ser Leu Glu Cys Thr Asn Ala Ser Asn Ala Gln Thr Val Asn
50 55 60

His Ser Ala Thr Lys Glu Met Thr Phe Pro Pro Pro Glu Pro Glu Trp
65 70 75 80

Thr Tyr Pro Arg Leu Ser Cys Gln Gly Ser Thr Phe Gln Lys Ala Leu
85 90 95

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

Leu Ile Ile Arg Glu Pro Phe Val Ala Cys Gly Pro Lys Glu Cys Arg
115 120 125

His Phe Ala Leu Thr His Tyr Ala Ala Gln Pro Gly Gly Tyr Tyr Asn
130 135 140

Gly Thr Arg Lys Asp Arg Asn Lys Leu Arg His Leu Val Ser Val Lys
145 150 155 160

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

Trp Ser Gly Ser Ala Cys His Asp Gly Arg Glu Trp Thr Tyr Ile Gly
180 185 190

Val Asp Gly Pro Asp Asn Asp Ala Leu Val Lys Ile Lys Tyr Gly Glu
195 200 205

Ala Tyr Thr Asp Thr Tyr His Ser Tyr Ala His Asn Ile Leu Arg Thr
210 215 220

Gln Glu Ser Ala Cys Asn Cys Ile Gly Gly Asp Cys Tyr Leu Met Ile

225		230		235		240
Thr Asp Gly Ser	Ala Ser Gly Ile	Ser Lys Cys Arg Phe	Leu Lys Ile			
	245	250	255			
Arg Glu Gly Arg	Ile Ile Lys Glu	Ile Leu Pro Thr	Gly Arg Val Glu			
	260	265	270			
His Thr Glu Glu	Cys Thr Cys Gly	Phe Ala Ser Asn	Lys Thr Ile Glu			
	275	280	285			
Cys Ala Cys Arg	Asp Asn Ser Tyr	Thr Ala Lys Arg	Pro Phe Val Lys			
	290	295	300			
Leu Asn Val Glu	Thr Asp Thr Ala	Glu Ile Arg Leu	Met Cys Thr Lys			
305	310	315	320			
Thr Tyr Leu Asp	Thr Pro Arg Pro	Asp Asp Gly Ser	Ile Ala Gly Pro			
	325	330	335			
Cys Glu Ser Asn	Gly Asp Lys Trp	Leu Gly Gly Ile	Lys Gly Gly Phe			
	340	345	350			
Val His Gln Arg	Met Ala Ser Lys	Ile Gly Arg Trp	Tyr Ser Arg Thr			
	355	360	365			
Met Ser Lys Thr	Asn Arg Met Gly	Met Glu Leu Tyr	Val Lys Tyr Asp			
	370	375	380			
Gly Asp Pro Trp	Thr Asp Ser Asp	Ala Leu Thr Leu	Ser Gly Val Met			
385	390	395	400			
Val Ser Ile Glu	Glu Pro Gly Trp	Tyr Ser Phe Gly	Phe Glu Ile Lys			
	405	410	415			
Asp Lys Lys Cys	Asp Val Pro Cys	Ile Gly Ile Glu	Met Val His Asp			
	420	425	430			

Gly Gly Lys Asp Thr Trp His Ser Ala Ala Thr Ala Ile Tyr Cys Leu
435 440 445

Met Gly Ser Gly Gln Leu Leu Trp Asp Thr Val Thr Gly Val Asp Met
450 455 460

Ala Leu
465

<210> 80
<211> 565
<212> PRT
<213> Influenza C virus

<400> 80

Met Ser Asp Arg Arg Gln Asn Arg Lys Thr Pro Asp Glu Gln Arg Lys
1 5 10 15

Ala Asn Ala Leu Ile Ile Asn Glu Asn Ile Glu Ala Tyr Ile Ala Ile
20 25 30

Cys Lys Glu Val Gly Leu Asn Gly Asp Glu Met Leu Ile Leu Glu Asn
35 40 45

Gly Ile Ala Ile Glu Lys Ala Ile Arg Ile Cys Cys Asp Gly Lys Tyr
50 55 60

Gln Glu Lys Arg Glu Lys Lys Ala Arg Glu Ala Gln Arg Ala Asp Ser
65 70 75 80

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

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

Ser Arg Ile Val Gln Ile Leu Lys Ser His Trp Gly Asn Glu Leu Asn
115 120 125

Arg Ala Lys Ile Ala Gly Lys Arg Leu Gly Phe Ser Ala Leu Phe Ala
130 135 140

Ser Asn Leu Glu Ala Ile Ile Tyr Gln Arg Gly Arg Asn Ala Ala Arg
145 150 155 160

Arg Asn Gly Ser Ala Glu Leu Phe Thr Leu Thr Gln Gly Ala Gly Ile
165 170 175

Glu Thr Arg Tyr Lys Trp Ile Met Glu Lys His Ile Gly Ile Gly Val
180 185 190

Leu Ile Ala Asp Ala Lys Gly Leu Ile Asn Gly Lys Arg Glu Gly Lys
195 200 205

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

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

Pro Leu Arg Ala Leu Ala Arg Arg Val Val Lys Ala Asn Tyr Asn Asp
245 250 255

Ala Arg Glu Ala Leu Asn Val Ile Ala Glu Ala Ser Leu Leu Leu Lys
260 265 270

Pro Gln Ile Thr Asn Lys Met Thr Met Pro Trp Cys Met Trp Leu Ala
275 280 285

Ala Arg Leu Thr Leu Lys Asp Glu Phe Ala Asn Phe Cys Ala Tyr Ala
290 295 300

Gly Arg Arg Ala Phe Glu Val Phe Asn Ile Ala Met Glu Lys Ile Gly
305 310 315 320

Ile Cys Ser Phe Gln Gly Thr Ile Met Asn Asp Asp Glu Ile Glu Ser
325 330 335

Ile Glu Asp Lys Ala Gln Val Leu Met Met Ala Cys Phe Gly Leu Ala
340 345 350

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

Leu Arg Asn Arg Met Lys Ile Gly Asn Phe Arg Val Gly Glu Lys Val
370 375 380

Ser Thr Val Leu Ser Pro Leu Leu Arg Phe Thr Arg Trp Ala Glu Phe
385 390 395 400

Ala Gln Arg Phe Ala Leu Gln Ala Asn Thr Ser Arg Glu Gly Ala Gln
405 410 415

Ile Ser Asn Ser Ala Val Phe Ala Val Glu Arg Lys Ile Thr Thr Asp
420 425 430

Val Gln Arg Val Glu Glu Leu Leu Asn Lys Val Gln Ala His Glu Asp
435 440 445

Glu Pro Leu Gln Thr Leu Tyr Lys Lys Val Arg Glu Gln Ile Ser Ile
450 455 460

Ile Gly Arg Asn Lys Ser Glu Ile Lys Glu Phe Leu Gly Ser Ser Met
465 470 475 480

Tyr Asp Leu Asn Asp Gln Glu Lys Gln Asn Pro Ile Asn Phe Arg Ser
485 490 495

Gly Ala His Pro Phe Phe Phe Glu Phe Asp Pro Asp Tyr Asn Pro Ile
500 505 510

Arg Val Lys Arg Pro Lys Lys Pro Ile Ala Lys Arg Asn Ser Asn Ile
515 520 525

Ser Arg Leu Glu Glu Glu Gly Met Asp Glu Asn Ser Glu Ile Gly Gln
530 535 540

Ala Lys Lys Met Lys Pro Leu Asp Gln Leu Thr Ser Thr Ser Ser Asn
545 550 555 560

Ile Pro Gly Lys Asn
565

<210> 81
<211> 498
<212> PRT
<213> Influenza A virus

<400> 81

Met Ala Ser Gln Gly Thr Lys Arg Ser Tyr Glu Gln Met Glu Thr Asp
1 5 10 15

Gly Glu Arg Gln Asn Ala Thr Glu Ile Arg Ala Ser Val Gly Lys Met
20 25 30

Ile Asp Gly Ile Gly Arg Phe Tyr Ile Gln Met Cys Thr Glu Leu Lys
35 40 45

Leu Ser Asp Tyr Glu Gly Arg Leu Ile Gln Asn Ser Leu Thr Ile Glu
50 55 60

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

Glu His Pro Ser Ala Gly Lys Asp Pro Lys Lys Thr Gly Gly Pro Ile
85 90 95

Tyr Lys Arg Val Asp Gly Lys Trp Met Arg Glu Leu Val Leu Tyr Asp
100 105 110

Lys Glu Glu Ile Arg Arg Ile Trp Arg Gln Ala Asn Asn Gly Asp Asp

115

120

125

Ala Thr Ala Gly Leu Thr His Met Met Ile Trp His Ser Asn Leu Asn
 130 135 140

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

Pro Arg Met Cys Ser Leu Met Gln Gly Ser Thr Leu Pro Arg Arg Ser
 165 170 175

Gly Ala Ala Gly Ala Ala Val Lys Gly Val Gly Thr Met Val Met Glu
 180 185 190

Leu Ile Arg Met Ile Lys Arg Gly Ile Asn Asp Arg Asn Phe Trp Arg
 195 200 205

Gly Glu Asn Gly Arg Lys Thr Arg Ser Ala Tyr Glu Arg Met Cys Asn
 210 215 220

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

Gln Val Arg Glu Ser Arg Asn Pro Gly Asn Ala Glu Ile Glu Asp Leu
 245 250 255

Ile Phe Leu Ala Arg Ser Ala Leu Ile Leu Arg Gly Ser Val Ala His
 260 265 270

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

Tyr Asn Phe Glu Lys Glu Gly Tyr Ser Leu Val Gly Ile Asp Pro Phe
 290 295 300

Lys Leu Leu Gln Asn Ser Gln Val Tyr Ser Leu Ile Arg Pro Asn Glu
 305 310 315 320

Asn Pro Ala His Lys Ser Gln Leu Val Trp Met Ala Cys Asn Ser Ala
325 330 335

Ala Phe Glu Asp Leu Arg Val Leu Ser Phe Ile Arg Gly Thr Lys Val
340 345 350

Ser Pro Arg Gly Lys Leu Ser Thr Arg Gly Val Gln Ile Ala Ser Asn
355 360 365

Glu Asn Met Asp Thr Met Glu Ser Ser Thr Leu Glu Leu Arg Ser Arg
370 375 380

Tyr Trp Ala Ile Arg Thr Arg Ser Gly Gly Asn Thr Asn Gln Gln Arg
385 390 395 400

Ala Ser Ala Gly Gln Ile Ser Val Gln Pro Ala Phe Ser Val Gln Arg
405 410 415

Asn Leu Pro Phe Asp Lys Pro Thr Ile Met Ala Ala Phe Thr Gly Asn
420 425 430

Thr Glu Gly Arg Thr Ser Asp Met Arg Ala Glu Ile Ile Arg Met Met
435 440 445

Glu Gly Ala Lys Pro Glu Glu Met Ser Phe Gln Gly Arg Gly Val Phe
450 455 460

Glu Leu Ser Asp Glu Lys Ala Thr Asn Pro Ile Val Pro Ser Phe Asp
465 470 475 480

Met Ser Asn Glu Gly Ser Tyr Phe Phe Gly Asp Asn Ala Glu Glu Tyr
485 490 495

Asp Asn

<211> 498
<212> PRT
<213> Influenza A virus

<400> 82

Met Ala Ser Gln Gly Thr Lys Arg Ser Tyr Glu Gln Met Glu Thr Gly
1 5 10 15

Gly Glu Arg Gln Asn Ala Thr Glu Ile Arg Ala Ser Val Gly Arg Met
20 25 30

Val Gly Gly Ile Gly Arg Phe Tyr Val Gln Met Cys Thr Glu Leu Lys
35 40 45

Leu Ser Asp Gln Glu Gly Arg Leu Ile Gln Asn Ser Ile Thr Ile Glu
50 55 60

Arg Met Val Leu Ser Ala Phe Asp Glu Arg Arg Asn Arg Tyr Leu Glu
65 70 75 80

Glu His Pro Ser Ala Gly Lys Asp Pro Lys Lys Thr Gly Gly Pro Ile
85 90 95

Tyr Arg Arg Arg Asp Gly Lys Trp Val Arg Glu Leu Ile Leu Tyr Asp
100 105 110

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

Ala Thr Ala Gly Leu Thr His Met Met Ile Trp His Ser Asn Leu Asn
130 135 140

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

Pro Arg Met Cys Ser Leu Met Gln Gly Ser Thr Leu Pro Arg Arg Ser
165 170 175

Gly Ala Ala Gly Ala Ala Ile Lys Gly Val Gly Thr Met Val Met Glu
180 185 190

Leu Ile Arg Met Ile Lys Arg Gly Ile Asn Asp Arg Asn Phe Trp Arg
195 200 205

Gly Asp Asn Gly Arg Arg Thr Arg Ile Ala Tyr Glu Arg Met Cys Asn
210 215 220

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

Gln Val Arg Glu Ser Arg Asn Pro Gly Asn Ala Glu Ile Glu Asp Leu
245 250 255

Ile Phe Leu Ala Arg Ser Ala Leu Ile Leu Arg Gly Ser Val Ala His
260 265 270

Lys Ser Cys Leu Pro Ala Cys Val Tyr Gly Leu Ala Val Ala Ser Gly
275 280 285

Tyr Asp Phe Glu Arg Glu Gly Tyr Ser Leu Val Gly Ile Asp Pro Phe
290 295 300

Arg Leu Leu Gln Asn Ser Gln Val Phe Ser Leu Ile Arg Pro Asn Glu
305 310 315 320

Asn Pro Ala His Lys Ser Gln Leu Val Trp Met Ala Cys His Ser Ala
325 330 335

Ala Phe Glu Asp Leu Arg Val Ser Ser Phe Ile Arg Gly Thr Arg Val
340 345 350

Ile Pro Arg Gly Gln Leu Ser Thr Arg Gly Val Gln Ile Ala Ser Asn
355 360 365

Glu Asn Val Glu Ala Met Asp Ser Ser Thr Leu Glu Leu Arg Ser Arg
370 375 380

Tyr Trp Ala Ile Arg Thr Arg Ser Gly Gly Asn Thr Asn Gln Gln Arg
385 390 395 400

Ala Ser Ala Gly Gln Ile Ser Val Gln Pro Thr Phe Ser Val Gln Arg
405 410 415

Asn Leu Pro Phe Glu Arg Pro Thr Ile Met Ala Ala Phe Lys Gly Asn
420 425 430

Thr Glu Gly Arg Thr Ser Asp Met Arg Thr Glu Ile Ile Arg Met Met
435 440 445

Glu Ser Ala Arg Pro Glu Asp Val Ser Phe Gln Gly Arg Gly Val Phe
450 455 460

Glu Leu Ser Asp Glu Lys Ala Thr Asn Pro Ile Val Pro Ser Phe Asp
465 470 475 480

Met Ser Asn Glu Gly Ser Tyr Phe Phe Gly Asp Asn Ala Glu Glu Tyr
485 490 495

Asp Asn

<210> 83
<211> 560
<212> PRT
<213> Influenza B virus

<400> 83

Met Ser Asn Met Asp Ile Asp Ser Ile Asn Thr Gly Thr Ile Asp Lys
1 5 10 15

Thr Pro Glu Glu Leu Thr Pro Gly Thr Ser Gly Ala Thr Arg Pro Ile
20 25 30

Ile Lys Pro Ala Thr Leu Ala Pro Pro Ser Asn Lys Arg Thr Arg Asn

35

40

45

Pro Ser Pro Glu Arg Thr Thr Thr Ser Ser Glu Thr Asp Ile Gly Arg
 50 55 60

Lys Ile Gln Lys Lys Gln Thr Pro Thr Glu Ile Lys Lys Ser Val Tyr
 65 70 75 80

Lys Met Val Val Lys Leu Gly Glu Phe Tyr Asn Gln Met Met Val Lys
 85 90 95

Ala Gly Leu Asn Asp Asp Met Glu Arg Asn Leu Ile Gln Asn Ala Gln
 100 105 110

Ala Val Glu Arg Ile Leu Leu Ala Ala Thr Asp Asp Lys Lys Thr Glu
 115 120 125

Tyr Gln Lys Lys Arg Asn Ala Arg Asp Val Lys Glu Gly Lys Glu Glu
 130 135 140

Ile Asp His Asn Lys Thr Gly Gly Thr Phe Tyr Lys Met Val Arg Asp
 145 150 155 160

Asp Lys Thr Ile Tyr Phe Ser Pro Ile Lys Ile Thr Phe Leu Lys Glu
 165 170 175

Glu Val Lys Thr Met Tyr Lys Thr Thr Met Gly Ser Asp Gly Phe Ser
 180 185 190

Gly Leu Asn His Ile Met Ile Gly His Ser Gln Met Asn Asp Val Cys
 195 200 205

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

Ile Ser Thr Phe Ala Gly Ser Thr Leu Pro Arg Arg Ser Gly Thr Thr
 225 230 235 240

Gly Val Ala Ile Lys Gly Gly Gly Thr Leu Val Asp Glu Ala Ile Arg
245 250 255

Phe Ile Gly Arg Ala Met Ala Asp Arg Gly Leu Leu Arg Asp Ile Lys
260 265 270

Ala Lys Thr Ala Tyr Glu Lys Ile Leu Leu Asn Leu Lys Asn Lys Cys
275 280 285

Ser Ala Pro Gln Gln Lys Ala Leu Val Asp Gln Val Ile Gly Ser Arg
290 295 300

Asn Pro Gly Ile Ala Asp Ile Glu Asp Leu Thr Leu Leu Ala Arg Ser
305 310 315 320

Met Val Val Val Arg Pro Ser Val Ala Ser Lys Val Val Leu Pro Ile
325 330 335

Ser Ile Tyr Ala Lys Ile Pro Gln Leu Gly Phe Asn Thr Glu Glu Tyr
340 345 350

Ser Met Val Gly Tyr Glu Ala Met Ala Leu Tyr Asn Met Ala Thr Pro
355 360 365

Val Ser Ile Leu Arg Met Gly Asp Asp Ala Lys Asp Lys Ser Gln Leu
370 375 380

Phe Phe Met Ser Cys Phe Gly Ala Ala Tyr Glu Asp Leu Arg Val Leu
385 390 395 400

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

Lys Gly Phe His Val Pro Ala Lys Glu Gln Val Glu Gly Met Gly Ala
420 425 430

Ala Leu Met Ser Ile Lys Leu Gln Phe Trp Ala Pro Met Thr Arg Ser

435

440

445

Gly Gly Asn Glu Val Ser Gly Glu Gly Gly Ser Gly Gln Ile Ser Cys
 450 455 460

Ser Pro Val Phe Ala Val Glu Arg Pro Ile Ala Leu Ser Lys Gln Ala
 465 470 475 480

Val Arg Arg Met Leu Ser Met Asn Val Glu Gly Arg Asp Ala Asp Val
 485 490 495

Lys Gly Asn Leu Leu Lys Met Met Asn Asp Ser Met Ala Lys Lys Thr
 500 505 510

Ser Gly Asn Ala Phe Ile Gly Lys Lys Met Phe Gln Ile Ser Asp Lys
 515 520 525

Asn Lys Val Asn Pro Ile Glu Ile Pro Ile Lys Gln Thr Ile Pro Asn
 530 535 540

Phe Phe Phe Gly Arg Asp Thr Ala Glu Asp Tyr Asp Asp Leu Asp Tyr
 545 550 555 560

<210> 84

<211> 248

<212> PRT

<213> Influenza B virus

<400> 84

Met Ser Leu Phe Gly Asp Thr Ile Ala Tyr Leu Leu Ser Leu Ile Glu
 1 5 10 15

Asp Gly Glu Gly Lys Ala Glu Leu Ala Glu Lys Leu His Cys Trp Phe
 20 25 30

Gly Gly Lys Glu Phe Asp Leu Asp Ser Ala Leu Glu Trp Ile Lys Asn
 35 40 45

Lys Arg Cys Leu Thr Asp Ile Gln Lys Ala Leu Ile Gly Ala Ser Ile
50 55 60

Cys Phe Leu Lys Pro Lys Asp Gln Glu Arg Lys Arg Arg Phe Ile Thr
65 70 75 80

Glu Pro Leu Ser Gly Met Gly Thr Thr Ala Thr Lys Lys Lys Gly Leu
85 90 95

Ile Leu Ala Glu Arg Lys Met Arg Arg Cys Val Ser Phe His Glu Ala
100 105 110

Phe Glu Ile Ala Glu Gly His Glu Ser Ser Ala Leu Leu Tyr Cys Leu
115 120 125

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

Gly Thr Leu Cys Ala Leu Cys Glu Lys Gln Ala Ser His Ser His Arg
145 150 155 160

Ala His Ser Arg Ala Ala Arg Ser Ser Val Pro Gly Val Arg Arg Glu
165 170 175

Met Gln Met Val Ser Ala Met Asn Thr Ala Lys Thr Met Asn Gly Met
180 185 190

Gly Lys Gly Glu Asp Val Gln Lys Leu Ala Glu Glu Leu Gln Asn Asn
195 200 205

Ile Gly Val Leu Arg Ser Leu Gly Ala Ser Gln Lys Asn Gly Glu Gly
210 215 220

Ile Ala Lys Asp Val Met Glu Val Leu Lys Gln Ser Ser Met Gly Asn
225 230 235 240

Ser Ala Leu Val Arg Lys Tyr Leu
245

<210> 85
<211> 97
<212> PRT
<213> Influenza A virus

<400> 85

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

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

Ile Gly Ile Leu His Leu Ile Leu Trp Ile Leu Asp Arg Leu Phe Phe
35 40 45

Lys Cys Ile Tyr Arg Arg Phe Lys Tyr Gly Leu Lys Gly Gly Pro Ser
50 55 60

Thr Glu Gly Val Pro Lys Ser Met Arg Glu Glu Tyr Arg Lys Glu Gln
65 70 75 80

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

Glu

<210> 86
<211> 281
<212> PRT
<213> Influenza B virus

<400> 86

Met Ala Asp Asn Met Thr Thr Thr Gln Ile Glu Val Gly Pro Gly Ala
1 5 10 15

Thr Asn Ala Thr Ile Asn Phe Glu Ala Gly Ile Leu Glu Cys Tyr Glu
20 25 30

Arg Phe Ser Trp Gln Arg Ala Leu Asp Tyr Pro Gly Gln Asp Arg Leu
35 40 45

His Arg Leu Lys Arg Lys Leu Glu Ser Arg Ile Lys Thr His Asn Lys
50 55 60

Ser Glu Pro Glu Asn Lys Arg Met Ser Leu Glu Glu Arg Lys Ala Ile
65 70 75 80

Gly Val Lys Met Met Lys Val Leu Leu Phe Met Asp Pro Ser Ala Gly
85 90 95

Ile Glu Gly Phe Glu Pro Tyr Cys Val Lys Asn Pro Ser Thr Ser Lys
100 105 110

Cys Pro Asn Tyr Asp Trp Thr Asp Tyr Pro Pro Thr Pro Gly Lys Tyr
115 120 125

Leu Asp Asp Ile Glu Glu Glu Pro Glu Asn Val Asp His Pro Ile Glu
130 135 140

Val Val Leu Arg Asp Met Asn Asn Lys Asp Ala Arg Gln Lys Ile Lys
145 150 155 160

Asp Glu Val Asn Thr Gln Lys Glu Gly Lys Phe Arg Leu Thr Ile Lys
165 170 175

Arg Asp Ile Arg Asn Val Leu Ser Leu Arg Val Leu Val Asn Gly Thr
180 185 190

Phe Leu Lys His Pro Asn Gly Asp Lys Ser Leu Ser Thr Leu His Arg
195 200 205

Leu Asn Ala Tyr Asp Gln Asn Gly Gly Leu Val Ala Lys Leu Val Ala
210 215 220

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

Asn Ser Leu Phe Glu Arg Phe Asp Glu Gly His Ser Lys Pro Ile Arg
245 250 255

Ala Ala Glu Thr Ala Val Gly Val Leu Ser Gln Phe Gly Gln Glu His
260 265 270

Arg Leu Ser Pro Glu Glu Gly Asp Asn
275 280

<210> 87
<211> 122
<212> PRT
<213> Influenza B virus

<400> 87

Met Ala Asp Asn Met Thr Thr Thr Gln Ile Glu Trp Arg Met Lys Lys
1 5 10 15

Met Ala Ile Gly Ser Ser Thr His Ser Ser Ser Val Leu Met Lys Asp
20 25 30

Ile Gln Ser Gln Phe Glu Gln Leu Lys Leu Arg Trp Glu Ser Tyr Pro
35 40 45

Asn Leu Val Lys Ser Thr Asp Tyr His Gln Lys Arg Glu Thr Ile Arg
50 55 60

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

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

Met Ile Val Ser Leu Ser Leu Leu Glu Thr Leu Tyr Glu Met Lys Asp
100 105 110

Val Val Glu Val Tyr Ser Arg Gln Cys Leu
115 120

<210> 88
<211> 716
<212> PRT
<213> Influenza A virus

<400> 88

Met Glu Asp Phe Val Arg Gln Cys Phe Asn Pro Met Ile Val Glu Leu
1 5 10 15

Ala Glu Lys Ala Met Lys Glu Tyr Gly Glu Asp Leu Lys Ile Glu Thr
20 25 30

Asn Lys Phe Ala Ala Ile Cys Thr His Leu Glu Val Cys Phe Met Tyr
35 40 45

Ser Asp Phe His Phe Ile Asn Glu Gln Gly Glu Ser Ile Ile Val Glu
50 55 60

Pro Glu Asp Pro Asn Ala Leu Leu Lys His Arg Phe Glu Ile Ile Glu
65 70 75 80

Gly Arg Asp Arg Thr Met Ala Trp Thr Val Val Asn Ser Ile Cys Asn
85 90 95

Thr Thr Gly Ala Glu Lys Pro Lys Phe Leu Pro Asp Leu Tyr Asp Tyr
100 105 110

Lys Glu Asn Arg Phe Ile Glu Ile Gly Val Thr Arg Arg Glu Val His
115 120 125

Ile Tyr Tyr Leu Glu Lys Ala Asn Lys Ile Lys Ser Glu Lys Thr His
130 135 140

Ile His Ile Phe Ser Phe Thr Gly Glu Glu Met Ala Thr Lys Ala Asp
145 150 155 160

Tyr Thr Leu Asp Glu Glu Ser Arg Ala Arg Ile Lys Thr Arg Leu Phe
165 170 175

Thr Ile Arg Gln Glu Met Ala Ser Arg Gly Leu Trp Asp Ser Phe Arg
180 185 190

Gln Ser Glu Arg Gly Glu Glu Thr Ile Glu Glu Arg Phe Glu Ile Thr
195 200 205

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

Cys Leu Glu Asn Phe Arg Ala Tyr Val Asp Gly Phe Glu Pro Asn Gly
225 230 235 240

Tyr Ile Glu Gly Lys Leu Ser Gln Met Ser Lys Glu Val Asn Ala Arg
245 250 255

Ile Glu Pro Phe Leu Arg Thr Thr Pro Arg Pro Ile Arg Leu Pro Asp
260 265 270

Gly Pro Pro Cys Phe Gln Arg Ser Lys Phe Leu Leu Met Asp Ser Leu
275 280 285

Lys Leu Ser Ile Glu Asp Pro Ser His Glu Gly Glu Gly Ile Pro Leu
290 295 300

Tyr Asp Ala Ile Lys Cys Met Arg Thr Phe Phe Gly Trp Lys Glu Pro
305 310 315 320

Ser Val Val Lys Pro His Gly Lys Gly Ile Asn Pro Asn Tyr Leu Leu
325 330 335

Ser Trp Lys Gln Val Leu Ala Glu Leu Gln Asp Ile Glu Ser Glu Glu
340 345 350

Lys Ile Pro Arg Thr Lys Asn Met Lys Lys Thr Ser Gln Leu Lys Trp
355 360 365

Ala Leu Gly Glu Asn Met Ala Pro Glu Lys Val Asp Phe Asp Asp Cys
370 375 380

Lys Asp Ile Ser Asp Leu Lys Gln Tyr Asp Ser Asp Glu Pro Glu Leu
385 390 395 400

Arg Ser Leu Ser Ser Trp Ile Gln Asn Glu Phe Asn Lys Ala Cys Glu
405 410 415

Leu Thr Asp Ser Ile Trp Ile Glu Leu Asp Glu Ile Gly Glu Asp Val
420 425 430

Ala Pro Ile Glu His Ile Ala Ser Met Arg Arg Asn Tyr Phe Thr Ala
435 440 445

Glu Val Ser His Cys Arg Ala Thr Glu Tyr Ile Met Lys Gly Val Tyr
450 455 460

Ile Asn Thr Ala Leu Leu Asn Ala Ser Cys Ala Ala Met Asp Asp Phe
465 470 475 480

Gln Leu Ile Pro Met Ile Ser Lys Cys Arg Thr Lys Glu Gly Arg Arg
485 490 495

Lys Thr Asn Leu Tyr Gly Phe Ile Ile Lys Gly Arg Ser His Leu Arg
500 505 510

Asn Asp Thr Asp Val Val Asn Phe Val Ser Met Glu Phe Ser Leu Thr
515 520 525

Asp Pro Arg Leu Glu Pro His Lys Trp Glu Lys Tyr Cys Val Leu Glu
530 535 540

Ile Gly Asp Met Leu Leu Arg Ser Ala Ile Gly Gln Val Ser Arg Pro
545 550 555 560

Met Phe Leu Tyr Val Arg Thr Asn Gly Thr Ser Lys Ile Lys Met Lys
565 570 575

Trp Gly Met Glu Met Arg Arg Cys Leu Leu Gln Ser Leu Gln Gln Ile
580 585 590

Glu Ser Met Ile Glu Ala Glu Ser Ser Val Lys Glu Lys Asp Met Thr
595 600 605

Lys Glu Phe Phe Glu Asn Arg Ser Glu Thr Trp Pro Ile Gly Glu Ser
610 615 620

Pro Lys Gly Val Glu Glu Gly Ser Ile Gly Lys Val Cys Arg Thr Leu
625 630 635 640

Leu Ala Lys Ser Val Phe Asn Ser Leu Tyr Ala Ser Pro Gln Leu Glu
645 650 655

Gly Phe Ser Ala Glu Ser Arg Lys Leu Leu Leu Ile Val Gln Ala Leu
660 665 670

Arg Asp Asn Leu Glu Pro Gly Thr Phe Asp Leu Gly Gly Leu Tyr Glu
675 680 685

Ala Ile Glu Glu Cys Leu Ile Asn Asp Pro Trp Val Leu Leu Asn Ala
690 695 700

Ser Trp Phe Asn Ser Phe Leu Thr His Ala Leu Arg
705 710 715

<210> 89
<211> 752
<212> PRT
<213> Influenza B virus

<400> 89

Met Asn Ile Asn Pro Tyr Phe Leu Phe Ile Asp Val Pro Ile Gln Ala

1	5	10	15
Ala Ile Ser Thr Thr Phe Pro Tyr Thr Gly Val Pro Pro Tyr Ser His	20	25	30
Gly Thr Gly Thr Gly Tyr Thr Ile Asp Thr Val Ile Arg Thr His Glu	35	40	45
Tyr Ser Asn Lys Gly Lys Gln Tyr Ile Ser Asp Val Thr Gly Cys Val	50	55	60
Met Val Asp Pro Thr Asn Gly Pro Leu Pro Glu Asp Asn Glu Pro Ser	65	70	75
Ala Tyr Ala Gln Leu Asp Cys Val Leu Glu Ala Leu Asp Arg Met Asp	85	90	95
Glu Glu His Pro Gly Leu Phe Gln Ala Gly Ser Gln Asn Ala Met Glu	100	105	110
Ala Leu Met Val Thr Thr Val Asp Lys Leu Thr Gln Gly Arg Gln Thr	115	120	125
Phe Asp Trp Thr Val Cys Arg Asn Gln Pro Ala Ala Thr Ala Leu Asn	130	135	140
Thr Thr Ile Thr Ser Phe Arg Leu Asn Asp Leu Asn Gly Ala Asp Lys	145	150	155
Gly Gly Leu Val Pro Phe Cys Gln Asp Ile Ile Asp Ser Leu Asp Lys	165	170	175
Pro Glu Met Ile Phe Phe Thr Val Lys Asn Ile Lys Lys Lys Leu Pro	180	185	190
Ala Lys Asn Arg Lys Gly Phe Leu Ile Lys Arg Ile Pro Met Lys Val	195	200	205

Lys Asp Arg Ile Thr Arg Val Glu Tyr Ile Lys Arg Ala Leu Ser Leu
210 215 220

Asn Thr Met Thr Lys Asp Ala Glu Arg Gly Lys Leu Lys Arg Arg Ala
225 230 235 240

Ile Ala Thr Ala Gly Ile Gln Ile Arg Gly Phe Val Leu Val Val Glu
245 250 255

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

Val Gly Gly Asn Glu Lys Lys Ala Lys Leu Ser Asn Ala Val Ala Lys
275 280 285

Met Leu Ser Asn Cys Pro Pro Gly Gly Ile Ser Met Thr Val Thr Gly
290 295 300

Asp Asn Thr Lys Trp Asn Glu Cys Leu Asn Pro Arg Ile Phe Leu Ala
305 310 315 320

Met Thr Glu Arg Ile Thr Arg Asp Ser Pro Ile Trp Phe Arg Asp Phe
325 330 335

Cys Ser Ile Ala Pro Val Leu Phe Ser Asn Lys Ile Ala Arg Leu Gly
340 345 350

Lys Gly Phe Met Ile Thr Ser Lys Thr Lys Arg Leu Lys Ala Gln Ile
355 360 365

Pro Cys Pro Asp Leu Phe Asn Ile Pro Leu Glu Arg Tyr Asn Glu Glu
370 375 380

Thr Arg Ala Lys Leu Lys Lys Leu Lys Pro Phe Phe Asn Glu Glu Gly
385 390 395 400

Thr Ala Ser Leu Ser Pro Gly Met Met Met Gly Met Phe Asn Met Leu

405

410

415

Ser Thr Val Leu Gly Val Ala Ala Leu Gly Ile Lys Asn Ile Gly Asn
 420 425 430

Lys Glu Tyr Leu Trp Asp Gly Leu Gln Ser Ser Asp Asp Phe Ala Leu
 435 440 445

Phe Val Asn Ala Lys Asp Glu Glu Thr Cys Met Glu Gly Ile Asn Asp
 450 455 460

Phe Tyr Arg Thr Cys Lys Leu Leu Gly Ile Asn Met Ser Lys Lys Lys
 465 470 475 480

Ser Tyr Cys Asn Glu Thr Gly Met Phe Glu Phe Thr Ser Met Phe Tyr
 485 490 495

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

Val Ala Gly Val Asn Glu Ser Ala Asp Met Ala Ile Gly Met Thr Ile
 515 520 525

Ile Lys Asn Asn Met Ile Asn Asn Gly Met Gly Pro Ala Thr Ala Gln
 530 535 540

Thr Ala Ile Gln Leu Phe Ile Ala Asp Tyr Arg Tyr Thr Tyr Lys Cys
 545 550 555 560

His Arg Gly Asp Ser Lys Val Glu Gly Lys Arg Met Lys Ile Ile Lys
 565 570 575

Glu Leu Trp Glu Asn Thr Lys Gly Arg Asp Gly Leu Leu Val Ala Asp
 580 585 590

Gly Gly Pro Asn Leu Tyr Asn Leu Arg Asn Leu His Ile Pro Glu Ile
 595 600 605

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

His Pro Gln Asn Pro Phe Val Gly His Leu Ser Ile Glu Gly Ile Lys
625 630 635 640

Glu Ala Asp Ile Thr Pro Ala His Gly Pro Ile Lys Lys Met Asp Tyr
645 650 655

Asp Ala Val Ser Gly Thr His Ser Trp Arg Thr Lys Arg Asn Arg Ser
660 665 670

Ile Leu Asn Thr Asp Gln Arg Asn Met Ile Leu Glu Glu Gln Cys Tyr
675 680 685

Ala Lys Cys Cys Asn Leu Phe Glu Ala Cys Phe Asn Ser Ala Ser Tyr
690 695 700

Arg Lys Pro Val Gly Gln His Ser Met Leu Glu Ala Met Ala His Arg
705 710 715 720

Leu Arg Met Asp Ala Arg Leu Asp Tyr Glu Ser Gly Arg Met Ser Lys
725 730 735

Glu Asp Phe Glu Lys Ala Met Ala His Leu Gly Glu Ile Gly Tyr Met
740 745 750

<210> 90
<211> 759
<212> PRT
<213> Influenza A virus

<400> 90

Met Glu Arg Ile Lys Glu Leu Arg Asn Leu Met Ser Gln Ser Arg Thr
1 5 10 15

Arg Glu Ile Leu Thr Lys Thr Thr Val Asp His Met Ala Ile Ile Lys
20 25 30

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

Trp Met Met Ala Met Lys Tyr Pro Ile Thr Ala Asp Lys Arg Ile Thr
50 55 60

Glu Met Ile Pro Glu Arg Asn Glu Gln Gly Gln Thr Leu Trp Ser Lys
65 70 75 80

Met Asn Asp Ala Gly Ser Asp Arg Val Met Val Ser Pro Leu Ala Val
85 90 95

Thr Trp Trp Asn Arg Asn Gly Pro Met Thr Asn Thr Val His Tyr Pro
100 105 110

Lys Ile Tyr Lys Thr Tyr Phe Glu Arg Val Glu Arg Leu Lys His Gly
115 120 125

Thr Phe Gly Pro Val His Phe Arg Asn Gln Val Lys Ile Arg Arg Arg
130 135 140

Val Asp Ile Asn Pro Gly His Ala Asp Leu Ser Ala Lys Glu Ala Gln
145 150 155 160

Asp Val Ile Met Glu Val Val Phe Pro Asn Glu Val Gly Ala Arg Ile
165 170 175

Leu Thr Ser Glu Ser Gln Leu Thr Ile Thr Lys Glu Lys Lys Glu Glu
180 185 190

Leu Gln Asp Cys Lys Ile Ser Pro Leu Met Val Ala Tyr Met Leu Glu
195 200 205

Arg Glu Leu Val Arg Lys Thr Arg Phe Leu Pro Val Ala Gly Gly Thr
210 215 220

Ser Ser Val Tyr Ile Glu Val Leu His Leu Thr Gln Gly Thr Cys Trp
225 230 235 240

Glu Gln Met Tyr Thr Pro Gly Gly Glu Val Lys Asn Asp Asp Val Asp
245 250 255

Gln Ser Leu Ile Ile Ala Ala Arg Asn Ile Val Arg Arg Ala Ala Val
260 265 270

Ser Ala Asp Pro Leu Ala Ser Leu Leu Glu Met Cys His Ser Thr Gln
275 280 285

Ile Gly Gly Ile Arg Met Val Asp Ile Leu Lys Gln Asn Pro Thr Glu
290 295 300

Glu Gln Ala Val Gly Ile Cys Lys Ala Ala Met Gly Leu Arg Ile Ser
305 310 315 320

Ser Ser Phe Ser Phe Gly Gly Phe Thr Phe Lys Arg Thr Ser Gly Ser
325 330 335

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

Lys Ile Arg Val His Glu Gly Tyr Glu Glu Phe Thr Met Val Gly Arg
355 360 365

Arg Ala Thr Ala Ile Leu Arg Lys Ala Thr Arg Arg Leu Ile Gln Leu
370 375 380

Ile Val Ser Gly Arg Asp Glu Gln Ser Ile Ala Glu Ala Ile Ile Val
385 390 395 400

Ala Met Val Phe Ser Gln Glu Asp Cys Met Ile Lys Ala Val Arg Gly
405 410 415

Asp Leu Asn Phe Val Asn Arg Ala Asn Gln Arg Leu Asn Pro Met His
420 425 430

Gln Leu Leu Arg His Phe Gln Lys Asp Ala Lys Val Leu Phe Gln Asn
435 440 445

Trp Gly Val Glu Pro Ile Asp Asn Val Met Gly Met Ile Gly Ile Leu
450 455 460

Pro Asp Met Thr Pro Ser Ile Glu Met Ser Met Arg Gly Val Arg Ile
465 470 475 480

Ser Lys Met Gly Val Asp Glu Tyr Ser Ser Thr Glu Arg Val Val Val
485 490 495

Ser Ile Asp Arg Phe Leu Arg Val Arg Asp Gln Arg Gly Asn Val Leu
500 505 510

Leu Ser Pro Glu Glu Val Ser Glu Thr Gln Gly Thr Glu Lys Leu Thr
515 520 525

Ile Thr Tyr Ser Ser Ser Met Met Trp Glu Ile Asn Gly Pro Glu Ser
530 535 540

Val Leu Val Asn Thr Tyr Gln Trp Ile Ile Arg Asn Trp Glu Thr Val
545 550 555 560

Lys Ile Gln Trp Ser Gln Asn Pro Thr Met Leu Tyr Asn Lys Met Glu
565 570 575

Phe Glu Pro Phe Gln Ser Leu Val Pro Lys Ala Ile Arg Gly Gln Tyr
580 585 590

Ser Gly Phe Val Arg Thr Leu Phe Gln Gln Met Arg Asp Val Leu Gly
595 600 605

Thr Phe Asp Thr Ala Gln Ile Ile Lys Leu Leu Pro Phe Ala Ala Ala
610 615 620

Pro Pro Lys Gln Ser Arg Met Gln Phe Ser Ser Phe Thr Val Asn Val
625 630 635 640

Arg Gly Ser Gly Met Arg Ile Leu Val Arg Gly Asn Ser Pro Val Phe
645 650 655

Asn Tyr Asn Lys Ala Thr Lys Arg Leu Thr Val Leu Gly Lys Asp Ala
660 665 670

Gly Thr Leu Thr Glu Asp Pro Asp Glu Gly Thr Ala Gly Val Glu Ser
675 680 685

Ala Val Leu Arg Gly Phe Leu Ile Leu Gly Lys Glu Asp Arg Arg Tyr
690 695 700

Gly Pro Ala Leu Ser Ile Asn Glu Leu Ser Asn Leu Ala Lys Gly Glu
705 710 715 720

Lys Ala Asn Val Leu Ile Gly Gln Gly Asp Val Val Leu Val Met Lys
725 730 735

Arg Lys Arg Asp Ser Ser Ile Leu Thr Asp Ser Gln Thr Ala Thr Lys
740 745 750

Arg Ile Arg Met Ala Ile Asn
755

<210> 91
<211> 109
<212> PRT
<213> Influenza B virus

<400> 91

Met Leu Glu Pro Leu Gln Ile Leu Ser Ile Cys Ser Phe Ile Leu Ser
1 5 10 15

Ala Leu His Phe Met Ala Trp Thr Ile Gly His Leu Asn Gln Ile Lys
20 25 30

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

Ile Asn Arg Glu Val Ser Ile Leu Arg His Asn Tyr Gln Lys Glu Ile
50 55 60

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

Leu Gly Asp His Ile Val Val Glu Gly Leu Ser Thr Asp Glu Ile Ile
85 90 95

Lys Met Gly Glu Thr Val Leu Glu Val Glu Glu Leu Gln
100 105

<210> 92
<211> 100
<212> PRT
<213> Influenza B virus

<400> 92

Met Asn Asn Ala Thr Phe Asn Cys Thr Asn Ile Asn Pro Ile Thr His
1 5 10 15

Ile Arg Gly Ser Ile Ile Ile Thr Ile Cys Val Ser Leu Ile Val Ile
20 25 30

Leu Ile Val Phe Gly Cys Ile Ala Lys Ile Phe Ile Asn Lys Asn Asn
35 40 45

Cys Thr Asn Asn Val Ile Arg Val His Lys Arg Ile Lys Cys Pro Asp
50 55 60

Cys Glu Pro Phe Cys Asn Lys Arg Asp Asp Ile Ser Thr Pro Arg Ala
65 70 75 80

Gly Val Asp Ile Pro Ser Phe Ile Leu Pro Gly Leu Asn Leu Ser Glu
85 90 95

Gly Thr Pro Asn
100

<210> 93
<211> 498
<212> PRT
<213> Influenza A virus

<400> 93

Met Ala Ser Gln Gly Thr Lys Arg Ser Tyr Glu Gln Met Glu Thr Asp
1 5 10 15

Gly Glu Arg Gln Asn Ala Thr Glu Ile Arg Ala Ser Val Gly Lys Met
20 25 30

Ile Gly Gly Ile Gly Arg Phe Tyr Ile Gln Met Cys Thr Glu Leu Lys
35 40 45

Leu Ser Asp Tyr Glu Gly Arg Leu Ile Gln Asn Ser Leu Thr Ile Glu
50 55 60

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

Glu His Pro Ser Ala Gly Lys Asp Pro Lys Lys Thr Gly Gly Pro Ile
85 90 95

Tyr Arg Arg Val Asn Gly Lys Trp Met Arg Glu Leu Ile Leu Tyr Asp
100 105 110

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

Ala Thr Ala Gly Leu Thr His Met Met Ile Trp His Ser Asn Leu Asn
130 135 140

Asp Ala Thr Tyr Gln Arg Thr Arg Ala Leu Val Arg Thr Gly Met Asp

145		150		155		160									
Pro	Arg	Met	Cys	Ser	Leu	Met	Gln	Gly	Ser	Thr	Leu	Pro	Arg	Arg	Ser
				165					170					175	
Gly	Ala	Ala	Gly	Ala	Ala	Val	Lys	Gly	Val	Gly	Thr	Met	Val	Met	Glu
			180					185					190		
Leu	Val	Arg	Met	Ile	Lys	Arg	Gly	Ile	Asn	Asp	Arg	Asn	Phe	Trp	Arg
		195					200					205			
Gly	Glu	Asn	Gly	Arg	Lys	Thr	Arg	Ile	Ala	Tyr	Glu	Arg	Met	Cys	Asn
	210					215					220				
Ile	Leu	Lys	Gly	Lys	Phe	Gln	Thr	Ala	Ala	Gln	Lys	Ala	Met	Met	Asp
225					230					235					240
Gln	Val	Arg	Glu	Ser	Arg	Asp	Pro	Gly	Asn	Ala	Glu	Phe	Glu	Asp	Leu
				245					250					255	
Thr	Phe	Leu	Ala	Arg	Ser	Ala	Leu	Ile	Leu	Arg	Gly	Ser	Val	Ala	His
			260					265					270		
Lys	Ser	Cys	Leu	Pro	Ala	Cys	Val	Tyr	Gly	Pro	Ala	Val	Ala	Ser	Gly
		275					280					285			
Tyr	Asp	Phe	Glu	Arg	Glu	Gly	Tyr	Ser	Leu	Val	Gly	Ile	Asp	Pro	Phe
	290					295					300				
Arg	Leu	Leu	Gln	Asn	Ser	Gln	Val	Tyr	Ser	Leu	Ile	Arg	Pro	Asn	Glu
305					310					315					320
Asn	Pro	Ala	His	Lys	Ser	Gln	Leu	Val	Trp	Met	Ala	Cys	His	Ser	Ala
				325					330					335	
Ala	Phe	Glu	Asp	Leu	Arg	Val	Leu	Ser	Phe	Ile	Lys	Gly	Thr	Lys	Val
			340					345					350		

Val Pro Arg Gly Lys Leu Ser Thr Arg Gly Val Gln Ile Ala Ser Asn
355 360 365

Glu Asn Met Glu Thr Met Glu Ser Ser Thr Leu Glu Leu Arg Ser Arg
370 375 380

Tyr Trp Ala Ile Arg Thr Arg Ser Gly Gly Asn Thr Asn Gln Gln Arg
385 390 395 400

Ala Ser Ala Gly Gln Ile Ser Ile Gln Pro Thr Phe Ser Val Gln Arg
405 410 415

Asn Leu Pro Phe Asp Arg Thr Thr Val Met Ala Ala Phe Thr Gly Asn
420 425 430

Thr Glu Gly Arg Thr Ser Asp Met Arg Thr Glu Ile Ile Arg Met Met
435 440 445

Glu Ser Ala Arg Pro Glu Asp Val Ser Phe Gln Gly Arg Gly Val Phe
450 455 460

Glu Leu Ser Asp Glu Lys Ala Ala Ser Pro Ile Val Pro Ser Phe Asp
465 470 475 480

Met Ser Asn Glu Gly Ser Tyr Phe Phe Gly Asp Asn Ala Glu Glu Tyr
485 490 495

Asp Asn

<210> 94
<211> 548
<212> PRT
<213> Human herpesvirus 5

<400> 94

Met Glu Ser Arg Gly Arg Arg Cys Pro Glu Met Ile Ser Val Leu Gly
1 5 10 15

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

Pro Val Leu Pro His Glu Thr Arg Leu Leu Gln Thr Gly Ile His Val
35 40 45

Arg Val Ser Gln Pro Ser Leu Ile Leu Val Ser Gln Tyr Thr Pro Asp
50 55 60

Ser Thr Pro Cys His Arg Gly Asp Asn Gln Leu Gln Val Gln His Thr
65 70 75 80

Tyr Phe Thr Gly Ser Glu Val Glu Asn Val Ser Val Asn Glu Pro Met
85 90 95

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

Ile Asn Val His His Tyr Pro Ser Ala Ala Glu Arg Lys His Arg His
115 120 125

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

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

Gln Trp Lys Glu Pro Asp Val Tyr Tyr Thr Ser Ala Phe Val Phe Pro
165 170 175

Thr Lys Asp Val Ala Leu Arg His Val Val Cys Ala His Glu Leu Val
180 185 190

Cys Ser Met Glu Asn Thr Arg Ala Thr Lys Met Gln Val Ile Gly Asp
195 200 205

Gln Tyr Val Lys Val Tyr Leu Glu Ser Phe Cys Glu Asp Val Pro Ser
210 215 220

Gly Lys Leu Phe Met His Val Thr Leu Gly Ser Asp Val Glu Glu Asp
225 230 235 240

Leu Thr Met Thr Arg Asn Pro Gln Pro Phe Met Arg Pro His Glu Arg
245 250 255

Asn Gly Phe Thr Val Leu Cys Pro Lys Asn Met Ile Ile Lys Pro Gly
260 265 270

Lys Ile Ser His Ile Met Leu Asp Val Ala Phe Thr Ser His Glu His
275 280 285

Phe Gly Leu Leu Cys Pro Lys Ser Ile Pro Gly Leu Ser Ile Ser Gly
290 295 300

Asn Leu Leu Met Asn Gly Gln Gln Ile Phe Leu Glu Val Gln Ala Ile
305 310 315 320

Arg Glu Thr Val Glu Leu Arg Gln Tyr Asp Pro Val Ala Ala Leu Phe
325 330 335

Phe Phe Asp Ile Asp Leu Leu Leu Gln Arg Gly Pro Gln Tyr Ser Glu
340 345 350

His Pro Thr Phe Thr Ser Gln Tyr Arg Ile Gln Gly Lys Leu Glu Tyr
355 360 365

Arg His Thr Trp Asp Arg His Asp Glu Gly Ala Ala Gln Gly Asp Asp
370 375 380

Asp Val Trp Thr Ser Gly Ser Asp Ser Asp Glu Glu Leu Val Thr Thr
385 390 395 400

Glu Arg Lys Thr Pro Arg Val Thr Gly Gly Gly Ala Met Ala Gly Ala
405 410 415

Ser Thr Ser Ala Gly Arg Lys Arg Lys Ser Ala Ser Ser Ala Thr Ala
420 425 430

Cys Thr Ser Gly Val Met Thr Arg Gly Arg Leu Lys Ala Glu Ser Thr
435 440 445

Val Ala Pro Glu Glu Asp Thr Asp Glu Asp Ser Asp Asn Glu Ile His
450 455 460

Asn Pro Ala Val Phe Thr Trp Pro Pro Trp Gln Ala Gly Ile Leu Ala
465 470 475 480

Arg Asn Leu Val Pro Met Val Ala Thr Val Gln Gly Gln Asn Leu Lys
485 490 495

Tyr Gln Glu Phe Phe Trp Asp Ala Asn Asp Ile Tyr Arg Ile Phe Ala
500 505 510

Glu Leu Glu Gly Val Trp Gln Pro Ala Ala Gln Pro Lys Arg Arg Arg
515 520 525

His Arg Gln Asp Ala Leu Pro Gly Pro Cys Ile Ala Ser Thr Pro Lys
530 535 540

Lys His Arg Gly
545

<210> 95
<211> 561
<212> PRT
<213> Human herpesvirus 5

<400> 95

Met Glu Ser Arg Gly Arg Arg Cys Pro Glu Met Ile Ser Val Leu Gly
1 5 10 15

Pro Ile Ser Gly His Val Leu Lys Ala Val Phe Ser Arg Gly Asp Thr

20

25

30

Pro Val Leu Pro His Glu Thr Arg Leu Leu Gln Thr Gly Ile His Val
 35 40 45

Arg Val Ser Gln Pro Ser Leu Ile Leu Val Ser Gln Tyr Thr Pro Asp
 50 55 60

Ser Thr Pro Cys His Arg Gly Asp Asn Gln Leu Gln Val Gln His Thr
 65 70 75 80

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

Pro Thr Gly Arg Ser Ile Cys Pro Ser Gln Glu Pro Met Ser Ile Tyr
 100 105 110

Val Tyr Ala Leu Pro Leu Lys Met Leu Asn Ile Pro Ser Ile Asn Val
 115 120 125

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

Ala Asp Ala Val Ile His Ala Ser Gly Lys Gln Met Trp Gln Ala Arg
 145 150 155 160

Leu Thr Val Ser Gly Leu Ala Trp Thr Arg Gln Gln Asn Gln Trp Lys
 165 170 175

Glu Pro Asp Val Tyr Tyr Thr Ser Ala Phe Val Phe Pro Thr Lys Asp
 180 185 190

Val Ala Leu Arg His Val Val Cys Ala His Glu Leu Val Cys Ser Met
 195 200 205

Glu Asn Thr Arg Ala Thr Lys Met Gln Val Ile Gly Asp Gln Tyr Val
 210 215 220

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

Phe Met His Val Thr Leu Gly Ser Asp Val Glu Glu Asp Leu Thr Met
245 250 255

Thr Arg Asn Pro Gln Pro Phe Met Arg Pro His Glu Arg Asn Gly Phe
260 265 270

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

His Ile Met Leu Asp Val Ala Phe Thr Ser His Glu His Phe Gly Leu
290 295 300

Leu Cys Pro Lys Ser Ile Pro Gly Leu Ser Ile Ser Gly Asn Leu Leu
305 310 315 320

Met Asn Gly Gln Gln Ile Phe Leu Glu Val Gln Ala Ile Arg Glu Thr
325 330 335

Val Glu Leu Arg Gln Tyr Asp Pro Val Ala Ala Leu Phe Phe Phe Asp
340 345 350

Ile Asp Leu Leu Leu Gln Arg Gly Pro Gln Tyr Ser Glu His Pro Thr
355 360 365

Phe Thr Ser Gln Tyr Arg Ile Gln Gly Lys Leu Glu Tyr Arg His Thr
370 375 380

Trp Asp Arg His Asp Glu Gly Ala Ala Gln Gly Asp Asp Asp Val Trp
385 390 395 400

Thr Ser Gly Ser Asp Ser Asp Glu Glu Leu Val Thr Thr Glu Arg Lys
405 410 415

Thr Pro Arg Val Thr Gly Gly Gly Ala Met Ala Gly Ala Ser Thr Ser

420

425

430

Ala Gly Arg Lys Arg Lys Ser Ala Ser Ser Ala Thr Ala Cys Thr Ser
 435 440 445

Gly Val Met Thr Arg Gly Arg Leu Lys Ala Glu Ser Thr Val Ala Pro
 450 455 460

Glu Glu Asp Thr Asp Glu Asp Ser Asp Asn Glu Ile His Asn Pro Ala
 465 470 475 480

Val Phe Thr Trp Pro Pro Trp Gln Ala Gly Ile Leu Ala Arg Asn Leu
 485 490 495

Val Pro Met Val Ala Thr Val Gln Gly Gln Asn Leu Lys Tyr Gln Glu
 500 505 510

Phe Phe Trp Asp Ala Asn Asp Ile Tyr Arg Ile Phe Ala Glu Leu Glu
 515 520 525

Gly Val Trp Gln Pro Ala Ala Gln Pro Lys Arg Arg Arg His Arg Gln
 530 535 540

Asp Ala Leu Pro Gly Pro Cys Ile Ala Ser Thr Pro Lys Lys His Arg
 545 550 555 560

Gly

<210> 96
 <211> 551
 <212> PRT
 <213> Human herpesvirus 5

<400> 96

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

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

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

Ser Gln Tyr Thr Pro Asp Ser Thr Pro Cys His Arg Gly Asp Asn Gln
50 55 60

Leu Gln Val Gln His Thr Tyr Phe Thr Gly Ser Glu Val Glu Asn Val
65 70 75 80

Ser Val Asn Val His Asn Pro Thr Gly Arg Ser Ile Cys Pro Ser Gln
85 90 95

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

Ile Pro Ser Ile Asn Val His His Tyr Pro Ser Ala Ala Glu Arg Lys
115 120 125

His Arg His Leu Pro Val Ala Asp Ala Val Ile His Ala Ser Gly Lys
130 135 140

Gln Met Trp Gln Ala Arg Leu Thr Val Ser Gly Leu Ala Trp Thr Arg
145 150 155 160

Gln Gln Asn Gln Trp Lys Glu Pro Asp Val Tyr Tyr Thr Ser Ala Phe
165 170 175

Val Phe Pro Thr Lys Asp Val Ala Leu Arg His Val Val Cys Ala His
180 185 190

Glu Leu Val Cys Ser Met Glu Asn Thr Arg Ala Thr Lys Met Gln Val
195 200 205

Ile Gly Asp Gln Tyr Val Lys Val Tyr Leu Glu Ser Phe Cys Glu Asp
210 215 220

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

Glu Glu Asp Leu Thr Met Thr Arg Asn Pro Gln Pro Phe Met Arg Pro
245 250 255

His Glu Arg Asn Gly Phe Thr Val Leu Cys Pro Lys Asn Met Ile Ile
260 265 270

Lys Pro Gly Lys Ile Ser His Ile Met Leu Asp Val Ala Phe Thr Ser
275 280 285

His Glu His Phe Gly Leu Leu Cys Pro Lys Ser Ile Pro Gly Leu Ser
290 295 300

Ile Ser Gly Asn Leu Leu Met Asn Gly Gln Gln Ile Phe Leu Glu Val
305 310 315 320

Gln Ala Ile Arg Glu Thr Val Glu Leu Arg Gln Tyr Asp Pro Val Ala
325 330 335

Ala Leu Phe Phe Phe Asp Ile Asp Leu Leu Leu Gln Arg Gly Pro Gln
340 345 350

Tyr Ser Glu His Pro Thr Phe Thr Ser Gln Tyr Arg Ile Gln Gly Lys
355 360 365

Leu Glu Tyr Arg His Thr Trp Asp Arg His Asp Glu Gly Ala Ala Gln
370 375 380

Gly Asp Asp Asp Val Trp Thr Ser Gly Ser Asp Ser Asp Glu Glu Leu
385 390 395 400

Val Thr Thr Glu Arg Lys Thr Pro Arg Val Thr Gly Gly Gly Ala Met
405 410 415

Ala Gly Ala Ser Thr Ser Ala Gly Arg Lys Arg Lys Ser Ala Ser Ser
420 425 430

Ala Thr Ala Cys Thr Ala Gly Val Met Thr Arg Gly Arg Leu Lys Ala
435 440 445

Glu Ser Thr Val Ala Pro Glu Glu Asp Thr Asp Glu Asp Ser Asp Asn
450 455 460

Glu Ile His Asn Pro Ala Val Phe Thr Trp Pro Pro Trp Gln Ala Gly
465 470 475 480

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

Asn Leu Lys Tyr Gln Glu Phe Phe Trp Asp Ala Asn Asp Ile Tyr Arg
500 505 510

Ile Phe Ala Glu Leu Glu Gly Val Trp Gln Pro Ala Ala Gln Pro Lys
515 520 525

Arg Arg Arg His Arg Gln Asp Ala Leu Pro Gly Pro Cys Ile Ala Ser
530 535 540

Thr Pro Lys Lys His Arg Gly
545 550

<210> 97
<211> 551
<212> PRT
<213> Human herpesvirus 5

<400> 97

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

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

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

Ser Gln Tyr Thr Pro Asp Ser Thr Pro Cys His Arg Gly Asp Asn Gln
50 55 60

Leu Gln Val Gln His Thr Tyr Phe Thr Gly Ser Glu Val Glu Asn Val
65 70 75 80

Ser Val Asn Val His Asn Pro Thr Gly Arg Ser Ile Cys Pro Ser Gln
85 90 95

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

Ile Pro Ser Ile Asn Val His His Tyr Pro Ser Ala Ala Glu Arg Lys
115 120 125

His Arg His Leu Pro Val Ala Asp Ala Val Ile His Ala Ser Gly Lys
130 135 140

Gln Met Trp Gln Ala Arg Leu Thr Val Ser Gly Leu Ala Trp Thr Arg
145 150 155 160

Gln Gln Asn Gln Trp Lys Glu Pro Asp Val Tyr Tyr Thr Ser Ala Phe
165 170 175

Val Phe Pro Thr Lys Asp Val Ala Leu Arg His Val Val Cys Ala His
180 185 190

Glu Leu Val Cys Ser Met Glu Asn Thr Arg Ala Thr Lys Met Gln Val
195 200 205

Ile Gly Asp Gln Tyr Val Lys Val Tyr Leu Glu Ser Phe Cys Glu Asp
210 215 220

Val Pro Ser Gly Lys Leu Phe Met His Val Thr Leu Gly Ser Asp Val

225		230		235		240									
Glu	Glu	Asp	Leu	Thr	Met	Thr	Arg	Asn	Pro	Gln	Pro	Phe	Met	Arg	Pro
			245					250						255	
His	Glu	Arg	Asn	Gly	Phe	Thr	Val	Leu	Cys	Pro	Lys	Asn	Met	Ile	Ile
			260					265					270		
Lys	Pro	Gly	Lys	Ile	Ser	His	Ile	Met	Leu	Asp	Val	Ala	Phe	Thr	Ser
		275					280					285			
His	Glu	His	Phe	Gly	Leu	Leu	Cys	Pro	Lys	Ser	Ile	Pro	Gly	Leu	Ser
	290					295					300				
Ile	Ser	Gly	Asn	Leu	Leu	Met	Asn	Gly	Gln	Gln	Ile	Phe	Leu	Glu	Val
305				310					315						320
Gln	Ala	Ile	Arg	Glu	Thr	Val	Glu	Leu	Arg	Gln	Tyr	Asp	Pro	Val	Ala
			325						330					335	
Ala	Leu	Phe	Phe	Phe	Asp	Ile	Asp	Leu	Leu	Leu	Gln	Arg	Gly	Pro	Gln
			340					345					350		
Tyr	Ser	Glu	His	Pro	Thr	Phe	Thr	Ser	Gln	Tyr	Arg	Ile	Gln	Gly	Lys
		355					360					365			
Leu	Glu	Tyr	Arg	His	Thr	Trp	Asp	Arg	His	Asp	Glu	Gly	Ala	Ala	Gln
	370					375					380				
Gly	Asp	Asp	Asp	Val	Trp	Thr	Ser	Gly	Ser	Asp	Ser	Asp	Glu	Glu	Leu
385					390					395					400
Val	Thr	Thr	Glu	Arg	Lys	Thr	Pro	Arg	Val	Thr	Gly	Gly	Gly	Ala	Met
			405						410					415	
Ala	Gly	Ala	Ser	Thr	Ser	Ala	Gly	Arg	Lys	Arg	Lys	Ser	Ala	Ser	Ser
			420				425						430		

Ala Thr Ala Cys Thr Ala Gly Val Met Thr Arg Gly Arg Leu Lys Ala
435 440 445

Glu Ser Thr Val Ala Pro Glu Glu Asp Thr Asp Glu Asp Ser Asp Asn
450 455 460

Glu Ile His Asn Pro Ala Val Phe Thr Trp Pro Pro Trp Gln Ala Gly
465 470 475 480

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

Asn Leu Lys Tyr Gln Glu Phe Phe Trp Asp Ala Asn Asp Ile Tyr Arg
500 505 510

Ile Phe Ala Glu Leu Glu Gly Val Trp Gln Pro Ala Ala Gln Pro Lys
515 520 525

Arg Arg Arg His Arg Gln Asp Ala Leu Pro Gly Pro Cys Ile Ala Ser
530 535 540

Thr Pro Lys Lys His Arg Gly
545 550

<210> 98
<211> 353
<212> PRT
<213> Human T-lymphotropic virus 1]

<400> 98

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

Val Tyr Val Phe Gly Asp Cys Val Gln Gly Asp Trp Cys Pro Ile Ser
20 25 30

Gly Gly Leu Cys Ser Ala Arg Leu His Arg His Ala Leu Leu Ala Thr
35 40 45

Cys Pro Glu His Gln Ile Thr Trp Asp Pro Ile Asp Gly Arg Val Ile
50 55 60

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

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

Thr Thr Pro Asn Ile Pro Pro Ser Phe Leu Gln Ala Met Arg Lys Tyr
100 105 110

Ser Pro Phe Arg Asn Gly Tyr Met Glu Pro Thr Leu Gly Gln His Leu
115 120 125

Pro Thr Leu Ser Phe Pro Asp Pro Gly Leu Arg Pro Gln Asn Leu Tyr
130 135 140

Thr Leu Trp Gly Gly Ser Val Val Cys Met Tyr Leu Tyr Gln Leu Ser
145 150 155 160

Pro Pro Ile Thr Trp Pro Leu Leu Pro His Val Ile Phe Cys His Pro
165 170 175

Gly Gln Leu Gly Ala Phe Leu Thr Asn Val Pro Tyr Lys Arg Ile Glu
180 185 190

Lys Leu Leu Tyr Lys Ile Ser Leu Thr Thr Gly Ala Leu Ile Ile Leu
195 200 205

Pro Glu Asp Cys Leu Pro Thr Thr Leu Phe Gln Pro Ala Arg Ala Pro
210 215 220

Val Thr Leu Thr Ala Trp Gln Asn Gly Leu Leu Pro Phe His Ser Thr
225 230 235 240

Leu Thr Thr Pro Gly Leu Ile Trp Thr Phe Thr Asp Gly Thr Pro Met
245 250 255

Ile Ser Gly Pro Cys Pro Lys Asp Gly Gln Pro Ser Leu Val Leu Gln
260 265 270

Ser Ser Ser Phe Ile Phe His Lys Phe Gln Thr Lys Ala Tyr His Pro
275 280 285

Ser Phe Leu Leu Ser His Gly Leu Ile Gln Tyr Ser Ser Phe His Asn
290 295 300

Leu His Leu Leu Phe Glu Glu Tyr Thr Asn Ile Pro Ile Ser Leu Leu
305 310 315 320

Phe Asn Glu Lys Glu Ala Asp Asp Asn Asp His Glu Pro Gln Ile Ser
325 330 335

Pro Gly Gly Leu Glu Pro Leu Ser Glu Lys His Phe Arg Glu Thr Glu
340 345 350

Val

<210> 99
<211> 345
<212> PRT
<213> Human T-lymphotropic virus 1]

<400> 99

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

Val Tyr Val Phe Gly Asp Cys Val Gln Ala Asp Trp Cys Pro Ile Ser
20 25 30

Gly Gly Leu Cys Ser Pro Arg Leu His Arg His Ala Leu Leu Ala Thr
35 40 45

Cys Pro Glu His Gln Ile Thr Trp Asp Pro Ile Asp Gly Arg Val Val
50 55 60

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

Gln Arg Thr Ser Lys Thr Leu Lys Val Leu Thr Pro Pro Thr Thr Pro
85 90 95

Val Thr Pro Lys Val Pro Pro Ser Phe Phe Gln Ser Val Arg Arg His
100 105 110

Ser Pro Tyr Arg Asn Gly Cys Leu Glu Thr Thr Leu Gly Glu Gln Leu
115 120 125

Pro Ser Leu Ala Phe Pro Glu Pro Gly Leu Arg Pro Gln Asn Val Tyr
130 135 140

Thr Ile Trp Gly Lys Thr Ile Val Cys Leu Tyr Ile Tyr Gln Leu Ser
145 150 155 160

Pro Pro Met Thr Trp Pro Leu Ile Pro His Val Ile Phe Cys Asn Pro
165 170 175

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

Glu Leu Leu Tyr Lys Leu Tyr Leu His Thr Gly Ala Ile Ile Ile Leu
195 200 205

Pro Glu Asp Ala Leu Pro Thr Thr Leu Phe Gln Pro Val Arg Ala Pro
210 215 220

Cys Val Gln Thr Thr Trp Asn Thr Gly Leu Leu Pro Tyr Gln Pro Asn
225 230 235 240

Leu Thr Thr Pro Gly Leu Ile Trp Thr Phe Asn Asp Gly Ser Pro Met

245

250

255

Ile Ser Gly Pro Cys Pro Lys Ala Gly Gln Pro Ser Leu Val Val Gln
 260 265 270

Ser Ser Leu Leu Ile Phe Glu Arg Phe Gln Thr Lys Ala Tyr His Pro
 275 280 285

Ser Tyr Leu Leu Ser His Gln Leu Ile Gln Tyr Ser Ser Phe His His
 290 295 300

Leu Tyr Leu Leu Phe Asp Glu Tyr Thr Thr Ile Pro Phe Ser Leu Leu
 305 310 315 320

Phe Lys Glu Lys Glu Gly Asp Asp Arg Asp Asn Asp Pro Leu Pro Gly
 325 330 335

Ala Thr Ala Ser Pro Gln Gly Gln Asn
 340 345

<210> 100

<400> 100
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<210> 101

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 101

Ser Thr Asn Arg Gln Ser Gly Arg Gln
 1 5

<210> 102

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 102

Leu Leu Phe Gly Tyr Pro Val Tyr Val
1 5

<210> 103

<211> 10

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 103

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

<210> 104

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 104

Ala Met Asp Gly Thr Met Ser Gln Val
1 5

<210> 105

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 105

Tyr Ala Asp Gly Thr Met Ser Gln Val
1 5

<210> 106
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 106

Tyr Met Ala Gly Thr Met Ser Gln Val
1 5

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

<220>
<223> short peptide

<400> 107

Tyr Met Asp Ala Thr Met Ser Gln Val
1 5

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

<220>
<223> short peptide

<400> 108

Tyr Met Asp Gly Ala Met Ser Gln Val
1 5

<210> 109
<211> 9
<212> PRT
<213> Artificial sequence

<220>

<223> short peptide

<400> 109

Tyr Met Asp Gly Thr Ala Ser Gln Val
1 5

<210> 110

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 110

Tyr Met Asp Gly Thr Met Ala Gln Val
1 5

<210> 111

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 111

Tyr Met Asp Gly Thr Met Ser Ala Val
1 5

<210> 112

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 112

Tyr Met Asp Gly Thr Met Ser Gln Ala
1 5

<210> 113
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 113

Tyr Met Asp Gly Thr Met Ser Gln Val
1 5

<210> 114
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 114

Tyr Met Asn Gly Thr Met Ser Gln Val
1 5

<210> 115
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 115

Tyr Met Asp Asn Val Met Ser Glu Val
1 5

<210> 116
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 116

Val Met Asp Ser Lys Ile Val Gln Val
1 5

<210> 117

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 117

Leu Met Asn Gly Thr Leu Lys Gln Val
1 5

<210> 118

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 118

Ser Gln Asp Gly Thr Arg Ser Gln Val
1 5

<210> 119

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 119

Val Met Asp Thr Thr Lys Ser Gln Val
1 5

<210> 120

<211> 9

<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 120

Gly Met Asp Gly Thr Gln Gln Gln Ile
1 5

<210> 121
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 121

Gly Met Val Gly Thr Met Thr Glu Val
1 5

<210> 122
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 122

Met Met Asp Ala Thr Phe Ser Ala Val
1 5

<210> 123
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 123

Gln Met Asp Pro Thr Gly Ser Gln Leu
1 5

<210> 124
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 124

Ser Met Asp Gly Ser Met Arg Thr Val
1 5

<210> 125
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 125

Trp Met Asp Gly Ile Ala Ser Gln Ile
1 5

<210> 126
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 126

Tyr Leu Glu Gly Ile Leu Ser Gln Val
1 5

<210> 127
<211> 9
<212> PRT
<213> Artificial sequence

<220>

<223> short peptide

<400> 127

Tyr Met Ala Ile Lys Met Ser Gln Leu
1 5

<210> 128

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 128

Tyr Met Asp Ala Val Val Ser Leu Val
1 5

<210> 129

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 129

Tyr Met Asp Gly Thr Asn Arg Arg Ile
1 5

<210> 130

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 130

Tyr Met Asp Pro Ser Thr Tyr Gln Val
1 5

<210> 131
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 131

Tyr Met Leu Gly Thr Asn His Gln Leu
1 5

<210> 132
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 132

Tyr Met Pro Gly Thr Ala Ser Leu Ile
1 5

<210> 133
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 133

Tyr Met Arg Glu Thr Arg Ser Gln Leu
1 5

<210> 134
<211> 9
<212> PRT
<213> Artificial sequence

<220>

<223> short peptide

<400> 134

Met Met Asp Gly Ala Met Gly Tyr Val
1 5

<210> 135

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 135

Asn Met Asp Ser Phe Met Ala Gln Val
1 5

<210> 136

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 136

Gln Met Asp Phe Ile Met Ser Cys Val
1 5

<210> 137

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 137

Tyr Glu Asp Leu Lys Met Tyr Gln Val
1 5

<210> 138
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 138

Tyr Met Asp Thr Ile Met Glu Leu Val
1 5

<210> 139
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 139

Tyr Thr Asp Leu Ala Met Ser Thr Val
1 5

<210> 140
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 140

Tyr Val Asp Phe Val Met Ser Ser Val
1 5

<210> 141
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 141

Arg Met Phe Pro Asn Ala Pro Tyr Leu
1 5

<210> 142

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 142

Leu Asp Phe Pro Asn Leu Pro Tyr Leu
1 5

<210> 143

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 143

Arg Cys Phe Pro Asn Cys Pro Phe Leu
1 5

<210> 144

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 144

Leu Met Phe Glu Asn Ala Ala Tyr Leu
1 5

<210> 145

<211> 9

<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 145

Arg Met Phe Pro Asn Lys Tyr Ser Leu
1 5

<210> 146
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 146

Arg Leu Phe Pro Asn Ala Lys Phe Leu
1 5

<210> 147
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 147

Arg Leu Phe Pro Asn Leu Pro Glu Leu
1 5

<210> 148
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 148

Arg Met Phe Pro Thr Pro Pro Ser Leu
1 5

<210> 149
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 149

Arg Met Val Pro Arg Ala Val Tyr Leu
1 5

<210> 150
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 150

Arg Met Phe Phe Asn Gly Arg Tyr Ile
1 5

<210> 151
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 151

Arg Met Leu Pro His Ala Pro Gly Val
1 5

<210> 152
<211> 9
<212> PRT
<213> Artificial sequence

<220>

<223> short peptide

<400> 152

Tyr Met Phe Pro Asn Ala Pro Tyr Leu
1 5

<210> 153

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 153

Ala Met Asp Pro Asn Ala Ala Tyr Val
1 5

<210> 154

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 154

Ile Cys Phe Pro Asn Ala Pro Lys Val
1 5

<210> 155

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> short peptide

<400> 155

Asn Met Phe Glu Asn Gly Cys Tyr Leu
1 5

<210> 156
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 156

Asn Met Pro Pro Asn Phe Pro Tyr Ile
1 5

<210> 157
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 157

Arg Glu Met Thr Gln Ala Pro Tyr Leu
1 5

<210> 158
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 158

Arg Met Ala Pro Arg Ala Pro Trp Ile
1 5

<210> 159
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Gly Val Phe Asp Gly Leu His Thr Val
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<211> 233

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of D11 light chain

<400> 281

Met	Arg	Pro	Ser	Ile	Gln	Phe	Leu	Gly	Leu	Leu	Leu	Phe	Trp	Leu	His
1				5				10						15	

Gly	Ala	Gln	Cys	Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser
		20						25					30		

Ala	Ser	Leu	Gly	Gly	Lys	Val	Thr	Ile	Thr	Cys	Lys	Ala	Ser	Gln	Asp
		35					40					45			

Ile	His	Asn	Tyr	Ile	Ala	Trp	Tyr	Gln	His	Lys	Pro	Val	Lys	Gly	Pro
	50					55					60				

Arg	Leu	Leu	Ile	His	Tyr	Thr	Ser	Thr	Leu	Gln	Pro	Gly	Thr	Pro	Ser
65					70					75				80	

Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Tyr Ser Phe Ser Ile Ser
85 90 95

Asn Leu Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp
100 105 110

Asn Leu Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
115 120 125

Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu
130 135 140

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

Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn
165 170 175

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

Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His
195 200 205

Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile
210 215 220

Val Lys Ser Phe Asn Arg Asn Glu Cys
225 230

<210> 282

<211> 1398

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of D11 heavy chain

<400> 282

atggacaggc ttacttcctc attcctgctg ctgattgtcc ctgcatatgt cctttcccag	60
gtaactctga aagagtctgg ccctgggata ttgcagccct cccagaccct cagtctgact	120
tgttctttct ctgggttttc actgaccact tctggatatgg gtgtgagctg gattcgtcag	180
ccttcaggaa agggctctgga gtggctggca cacatttact gggatgatga caagcgctat	240
aacccatccc tgaagagccg actcacaatc tccaaggata cctccagaaa ccaggatttc	300
ctcaagatca ccagtgtgga cgctgcagat actgccacat actactgtgc tcgaaaggac	360
tacggtagta gcttctatgc tatgcactac tgggggtcaag gaacctcagt caccgtctcc	420
tcagccaaaa cgacaccccc atctgtctat ccactggccc ctggatctgc tgcccaaact	480
aactccatgg tgacctggg atgcctggtc aagggtctatt tccctgagcc agtgacagtg	540
acctggaact ctggatccct gtccagcggg gtgcacacct tcccagctgt cctgcagtct	600
gacctctaca ctctgagcag ctcagtgact gtcccctcca gcacctggcc cagcgagacc	660
gtcacctgca acgttgccca cccggccagc agcaccaagg tggacaagaa aattgtgccc	720
agggattgtg gttgtaagcc ttgcatatgt acagtcccag aagtatcatc tgtcttcatc	780
ttcccccaa agcccaagga tgtgctcacc attactctga ctctaagggt cacgtgtgtt	840
gtggtagaca tcagcaagga tgatcccag gtccagttca gctggtttgt agatgatgtg	900
gaggtgcaca cagctcagac gcaaccccg gaggagcagt tcaacagcac tttccgctca	960
gtcagtgaac ttcccatcat gcaccaggac tggctcaatg gcaaggagtt caaatgcagg	1020
gtcaacagtg cagctttccc tgccccatc gagaaaacca tctccaaaac caaaggcaga	1080
ccgaaggctc cacagggtga caccattcca cctcccaagg agcagatggc caaggataaa	1140
gtcagtctga cctgcatgat aacagacttc ttccctgaag acattactgt ggagtggcag	1200
tggaatgggc agccagcgga gaactacaag aacactcagc ccatcatgga cacagatggc	1260
tcttacttcg tctacagcaa gctcaatgtg cagaagagca actgggaggc aggaaatact	1320
ttcacctgct ctgtgttaca tgagggcctg cacaaccacc atactgagaa gagcctctcc	1380
cactctcctg gtaaatga	1398

<210> 283
<211> 465
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of D11 heavy chain

<400> 283

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

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

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

Thr Thr Ser Gly Met Gly Val Ser Trp Ile Arg Gln Pro Ser Gly Lys
50 55 60

Gly Leu Glu Trp Leu Ala His Ile Tyr Trp Asp Asp Asp Lys Arg Tyr
65 70 75 80

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

Asn Gln Val Phe Leu Lys Ile Thr Ser Val Asp Ala Ala Asp Thr Ala
100 105 110

Thr Tyr Tyr Cys Ala Arg Lys Asp Tyr Gly Ser Ser Phe Tyr Ala Met
115 120 125

His Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala Lys Thr
130 135 140

Thr Pro Pro Ser Val Tyr Pro Leu Ala Pro Gly Ser Ala Ala Gln Thr
145 150 155 160

Asn Ser Met Val Thr Leu Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu
165 170 175

Pro Val Thr Val Thr Trp Asn Ser Gly Ser Leu Ser Ser Gly Val His
180 185 190

Thr Phe Pro Ala Val Leu Gln Ser Asp Leu Tyr Thr Leu Ser Ser Ser
195 200 205

Val Thr Val Pro Ser Ser Thr Trp Pro Ser Glu Thr Val Thr Cys Asn
210 215 220

Val Ala His Pro Ala Ser Ser Thr Lys Val Asp Lys Lys Ile Val Pro
225 230 235 240

Arg Asp Cys Gly Cys Lys Pro Cys Ile Cys Thr Val Pro Glu Val Ser
245 250 255

Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Val Leu Thr Ile Thr
260 265 270

Leu Thr Pro Lys Val Thr Cys Val Val Val Asp Ile Ser Lys Asp Asp
275 280 285

Pro Glu Val Gln Phe Ser Trp Phe Val Asp Asp Val Glu Val His Thr
290 295 300

Ala Gln Thr Gln Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Ser
305 310 315 320

Val Ser Glu Leu Pro Ile Met His Gln Asp Trp Leu Asn Gly Lys Glu
325 330 335

Phe Lys Cys Arg Val Asn Ser Ala Ala Phe Pro Ala Pro Ile Glu Lys
340 345 350

Thr Ile Ser Lys Thr Lys Gly Arg Pro Lys Ala Pro Gln Val Tyr Thr
355 360 365

Ile Pro Pro Pro Lys Glu Gln Met Ala Lys Asp Lys Val Ser Leu Thr
370 375 380

Cys Met Ile Thr Asp Phe Phe Pro Glu Asp Ile Thr Val Glu Trp Gln
385 390 395 400

Trp Asn Gly Gln Pro Ala Glu Asn Tyr Lys Asn Thr Gln Pro Ile Met
405 410 415

Asp Thr Asp Gly Ser Tyr Phe Val Tyr Ser Lys Leu Asn Val Gln Lys
420 425 430

Ser Asn Trp Glu Ala Gly Asn Thr Phe Thr Cys Ser Val Leu His Glu
435 440 445

Gly Leu His Asn His His Thr Glu Lys Ser Leu Ser His Ser Pro Gly
450 455 460

Lys
465

<210> 284
<211> 33
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D11 light chain CDR

<400> 284
aaggcaagcc aagacattca caactatata gct

33

<210> 285
<211> 21
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D11 light chain CDR

<400> 285
tacacatcta cattacagcc a 21

<210> 286
<211> 24
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D11 light chain CDR

<400> 286
ctacagtatg ataatctgtg gacg 24

<210> 287
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of D11 light chain CDR

<400> 287

Lys Ala Ser Gln Asp Ile His Asn Tyr Ile Ala
1 5 10

<210> 288
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of D11 light chain CDR

<400> 288

Tyr Thr Ser Thr Leu Gln Pro
1 5

<210> 289
<211> 8
<212> PRT
<213> Artificial sequence

<220>

<223> Amino Acid sequence of D11 light chain CDR

<400> 289

Leu Gln Tyr Asp Asn Leu Trp Thr
1 5

<210> 290

<211> 21

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of D11 heavy chain CDR

<400> 290

acttctggta tgggtgtgag c 21

<210> 291

<211> 48

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of D11 heavy chain CDR

<400> 291

cacatttact gggatgatga caagcgctat aacccatccc tgaagagc 48

<210> 292

<211> 36

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of D11 heavy chain CDR

<400> 292

aaggactacg gtagtagctt ctatgctatg cactac 36

<210> 293

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of D11 heavy chain CDR

<400> 293

Thr Ser Gly Met Gly Val Ser
1 5

<210> 294

<211> 16

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of D11 heavy chain CDR

<400> 294

His Ile Tyr Trp Asp Asp Asp Lys Arg Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

<210> 295

<211> 12

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of D11 heavy chain CDR

<400> 295

Lys Asp Tyr Gly Ser Ser Phe Tyr Ala Met His Tyr
1 5 10

<210> 296

<211> 705

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of D7 light chain

<400> 296

atgagtgtgc ccactcaggt cctgggggttg ctgctgctgt ggcttacaga tgccagatgt 60

gacatccaga tgactcagtc tccagcctcc ctatctgtat ctgtgggaga aactgtcacc 120

atcacatgtc gagcaagtga tattattttac agtaatttag catggtatca gcagaaacag 180

ggaaaatctc ctcagctcct ggtctatgct gcaacaaact tagcagctgg tgtgccatca 240
 aggttcagtg gcagtggatc aggcacacag tattccctca agatcaatag cctgcagtct 300
 gaagattttg ggacttatta ctgtcaacat ttttggggta gttcaatctc gttcggctcg 360
 gggacaaaagt tggaaataaa acgggctgat gctgcaccaa ctgtatccat cttcccacca 420
 tccagtgagc agttaacatc tggaggtgcc tcagtcgtgt gcttcttgaa caacttctac 480
 cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg 540
 aacagttgga ctgatcagga cagcaaagac agcacctaca gcatgagcag caccctcacg 600
 ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca 660
 tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gttag 705

<210> 297
 <211> 234
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Amino Acid sequence of D7 light chain

<400> 297

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

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

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

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

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

Arg Phe Ser Gly Ser Gly Ser Gly Thr Gln Tyr Ser Leu Lys Ile Asn
85 90 95

Ser Leu Gln Ser Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp
100 105 110

Gly Ser Ser Ile Ser Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg
115 120 125

Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln
130 135 140

Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr
145 150 155 160

Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln
165 170 175

Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr
180 185 190

Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg
195 200 205

His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro
210 215 220

Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
225 230

<210> 298
<211> 1380
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D7 heavy chain

<400> 298
atggctgtcc tgggtgctgtt cctctgcctg gttgcatttc caagctgtgt cctgtcccag

gtgcaactga aggaatcagg acctgggtctg gtggcgccct cacagagcct gtccatcact	120
tgcactgtct ctgggttttc attaacccagc tatgggtgtac actgggttcg ccagcctcca	180
ggaaagggtc tggagtggct gggagtaata tgggctgggtg gaaccacaaa ttataattcg	240
gctctcatgt ccagactgag catcagcaga gacaactcca agagccaagt tttcttagaa	300
atgaacagtc tgcaaaactga tgacacagcc atttactact gtgccagaga tggtcacttc	360
cactttgact tctggggcca aggcaccact ctcacagtct cctcagccaa aacgacaccc	420
ccatctgtct atccactggc ccctggatct gctgccccaa ctaactccat ggtgaccctg	480
ggatgcctgg tcaagggtta tttccctgag ccagtgcagc tgacctggaa ctctggatcc	540
ctgtccagcg gtgtgcacac cttcccagct gtcctgcagt ctgacctcta cactctgagc	600
agctcagtga ctgtcccctc cagcacctgg cccagcgaga ccgtcacctg caacgttgcc	660
cacccggcca gcagcaccaa ggtggacaag aaaattgtgc ccagggattg tggttgtaag	720
ccttgcatat gtacagtccc agaagtatca tctgtcttca tcttcccccc aaagcccaag	780
gatgtgctca ccattactct gactcctaag gtcacgtgtg ttgtggtaga catcagcaag	840
gatgatcccg aggtccagtt cagctggttt gtagatgatg tggagggtgca cacagctcag	900
acgcaacccc gggaggagca gttcaacagc actttccgct cagtcagtga acttcccata	960
atgcaccagg actgggtcaa tggcaaggag ttcaaatgca gggtaaacag tgcagctttc	1020
cctgccccca tcgagaaaac catctccaaa accaaaggca gaccgaaggc tccacaggtg	1080
tacaccattc cacctcccaa ggagcagatg gccaaaggata aagtcagtct gacctgcatg	1140
ataacagact tcttccctga agacattact gtggagtggc agtggaatgg gcagccagcg	1200
gagaactaca agaacactca gcccatacatg gacacagatg gctcttactt cgtctacagc	1260
aagctcaatg tgcagaagag caactgggag gcaggaaata ctttcacctg ctctgtgtta	1320
catgagggcc tgcacaacca ccatactgag aagagcctct cccactctcc tggtaaatga	1380

<210> 299

<211> 459

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of D7 heavy chain

<400> 299

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

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

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

Thr Ser Tyr Gly Val His Trp Val Arg Gln Pro Pro Gly Lys Gly Leu
50 55 60

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

Ala Leu Met Ser Arg Leu Ser Ile Ser Arg Asp Asn Ser Lys Ser Gln
85 90 95

Val Phe Leu Glu Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Ile Tyr
100 105 110

Tyr Cys Ala Arg Asp Gly His Phe His Phe Asp Phe Trp Gly Gln Gly
115 120 125

Thr Thr Leu Thr Val Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Tyr
130 135 140

Pro Leu Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu
145 150 155 160

Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp
165 170 175

Asn Ser Gly Ser Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu
180 185 190

Gln Ser Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser
195 200 205

Thr Trp Pro Ser Glu Thr Val Thr Cys Asn Val Ala His Pro Ala Ser
210 215 220

Ser Thr Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys
225 230 235 240

Pro Cys Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro
245 250 255

Pro Lys Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr
260 265 270

Cys Val Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser
275 280 285

Trp Phe Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg
290 295 300

Glu Glu Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile
305 310 315 320

Met His Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn
325 330 335

Ser Ala Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys
340 345 350

Gly Arg Pro Lys Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu
355 360 365

Gln Met Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe
370 375 380

Phe Pro Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala
385 390 395 400

Glu Asn Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr
405 410 415

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

Asn Thr Phe Thr Cys Ser Val Leu His Glu Gly Leu His Asn His His
435 440 445

Thr Glu Lys Ser Leu Ser His Ser Pro Gly Lys
450 455

<210> 300
<211> 33
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D7 light chain CDR

<400> 300
cgagcaagtg atattattta cagtaattta gca 33

<210> 301
<211> 21
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D7 light chain CDR

<400> 301
gctgcaacaa acttagcagc t 21

<210> 302
<211> 27
<212> DNA
<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of D7 light chain CDR

<400> 302

caacattttt ggggtagttc aatctcg

27

<210> 303

<211> 11

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of D7 light chain CDR

<400> 303

Arg Ala Ser Asp Ile Ile Tyr Ser Asn Leu Ala

1

5

10

<210> 304

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of D7 light chain CDR

<400> 304

Ala Ala Thr Asn Leu Ala Ala

1

5

<210> 305

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of D7 light chain CDR

<400> 305

Gln His Phe Trp Gly Ser Ser Ile Ser

1

5

<210> 306
<211> 15
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D7 heavy chain CDR

<400> 306
agctatgggtg tacac 15

<210> 307
<211> 48
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D7 heavy chain CDR

<400> 307
gtaatatggg ctggtggaac cacaaattat aattcggctc tcatgtcc 48

<210> 308
<211> 24
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D7 heavy chain CDR

<400> 308
gatggtcact tccactttga cttc 24

<210> 309
<211> 5
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of D7 heavy chain CDR

<400> 309

Ser Tyr Gly Val His
1 5

<210> 310
<211> 16
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of D7 heavy chain CDR

<400> 310

Val	Ile	Trp	Ala	Gly	Gly	Thr	Thr	Asn	Tyr	Asn	Ser	Ala	Leu	Met	Ser
1				5				10						15	

<210> 311
<211> 8
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of D7 heavy chain CDR

<400> 311

Asp	Gly	His	Phe	His	Phe	Asp	Phe
1				5			

<210> 312
<211> 642
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of B47B6 light chain

<400> 312

gatattgtgc	tactcagtc	tccagccacc	ctgtctgtga	gtccaggaga	tagcgtcagt	60
ctttcctgca	gggccagcca	aagtattagc	aacagcctac	actggtatca	acaaaaatca	120
catgagtctc	caaggcttct	catcaagtat	gcttcccagt	ccatctctgg	aatcccctct	180
aggttcagtg	gcagtggatc	aggacagat	ttcactctca	gtatcaacag	tgtggagact	240
gaagattttg	gaatgtat	ctgtcaacag	agttacagct	ggcctctcac	gttcggtgct	300
gggtccaagc	tggagctgaa	acgggctgat	gctgcaccaa	ctgtatccat	cttcccacca	360
tccagtgagc	agttaacatc	tggagggtgcc	tcagtcgtgt	gcttcttgaa	caacttctac	420

cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg	480
aacagttgga ctgatacagga cagcaaagac agcacctaca gcatgagcag caccctcacg	540
ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca	600
tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt	642

<210> 313
 <211> 214
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Amino Acid sequence of B47B6 light chain

<400> 313

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

Asp Ser Val Ser Leu Ser Cys Arg Ala Ser Gln Ser Ile Ser Asn Ser
20 25 30

Leu His Trp Tyr Gln Gln Lys Ser His Glu Ser Pro Arg Leu Leu Ile
35 40 45

Lys Tyr Ala Ser Gln Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Thr
65 70 75 80

Glu Asp Phe Gly Met Tyr Phe Cys Gln Gln Ser Tyr Ser Trp Pro Leu
85 90 95

Thr Phe Gly Ala Gly Ser Lys Leu Glu Leu Lys Arg Ala Asp Ala Ala
100 105 110

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

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

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

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
210

<210> 314
<211> 1323
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of B47B6 heavy chain

<400> 314
gaagtgcagt tgggtggagtc ggggggaggc ttagtgaagc ctggagggtc cctgaaactc 60
tcctgtgcag cctctggatt cgttttcagt agctatgaca tgtcttgggt tcgccaggct 120
caggagaaga ggctggagtg ggtcgcatac atgagtagtg gtggcggcac ctactatcca 180
gacactgtga agggccgatt caccatctcc agagacaatg ccaagaacac cctgcacctg 240
caaatgagca gcctgaagtc tgaggacaca gccatgtatt actgtgcaag acatgatgag 300
attactaact ttgactactg gggccaaggc accactctca cagtctcctc agccaaaacg 360
acacccccat ctgtctatcc actggcccct ggatctgctg cccaaactaa ctccatgggtg 420
accctgggat gcctgggtcaa gggctatttc cctgagccag tgacagtgac ctggaactct 480

ggatccctgt ccagcgggtgt gcacaccttc ccagctgtcc tgcagtctga cctctacact	540
ctgagcagct cagtgactgt cccctccagc acctggccca gcgagaccgt cacctgcaac	600
gttgcccacc cggccagcag caccaagggtg gacaagaaaa ttgtgcccag ggattgtggt	660
tgtaagcctt gcatatgtac agtcccagaa gtatcatctg tcttcatctt cccccaaaag	720
cccaaggatg tgctcaccat tactctgact cctaagggtca cgtgtgttgt ggtagacatc	780
agcaaggatg atcccgaggt ccagttcagc tggttttag atgatgtgga ggtgcacaca	840
gctcagacgc aaccccgga ggagcagttc aacagcactt tccgctcagt cagtgaactt	900
cccatcatgc accaggactg gctcaatggc aaggagttca aatgcagggt caacagtgc	960
gctttccctg ccccatcga gaaaaccatc tccaaaacca aaggcagacc gaaggctcca	1020
caggtgtaca ccattccacc tccaaggag cagatggcca aggataaagt cagtctgacc	1080
tgcatgataa cagacttctt ccctgaagac attactgtgg agtggcagtg gaatgggcag	1140
ccagcggaga actacaagaa cactcagccc atcatggaca cagatggctc ttacttcgtc	1200
tacagcaagc tcaatgtgca gaagagcaac tgggaggcag gaaatacttt cacctgctct	1260
gtgttacatg agggcctgca caaccacat actgagaaga gcctctccca ctctcctggt	1320
aaa	1323

<210> 315
 <211> 441
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Amino Acid sequence of B47B6 heavy chain

<400> 315

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

Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Val	Phe	Ser	Ser	Tyr
			20					25					30		

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

Ala Tyr Met Ser Ser Gly Gly Gly Thr Tyr Tyr Pro Asp Thr Val Lys
50 55 60

Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu His Leu
65 70 75 80

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

Arg His Asp Glu Ile Thr Asn Phe Asp Tyr Trp Gly Gln Gly Thr Thr
100 105 110

Leu Thr Val Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu
115 120 125

Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys
130 135 140

Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser
145 150 155 160

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

Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp
180 185 190

Pro Ser Glu Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr
195 200 205

Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys
210 215 220

Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys
225 230 235 240

Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val
245 250 255

Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe
260 265 270

Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg Glu Glu
275 280 285

Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His
290 295 300

Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala
305 310 315 320

Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg
325 330 335

Pro Lys Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met
340 345 350

Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro
355 360 365

Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn
370 375 380

Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val
385 390 395 400

Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr
405 410 415

Phe Thr Cys Ser Val Leu His Glu Gly Leu His Asn His His Thr Glu
420 425 430

Lys Ser Leu Ser His Ser Pro Gly Lys
435 440

<210> 316
<211> 33
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of B47B6 light chain CDR

<400> 316
agggccagcc aaagtattag caacagccta cac 33

<210> 317
<211> 21
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of B47B6 light chain CDR

<400> 317
tatgcttccc agtccatctc t 21

<210> 318
<211> 27
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of B47B6 light chain CDR

<400> 318
caacagagtt acagctggcc tctcacg 27

<210> 319
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of B47B6 light chain CDR

<400> 319

Arg Ala Ser Gln Ser Ile Ser Asn Ser Leu His
1 5 10

<210> 320
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of B47B6 light chain CDR

<400> 320

Tyr Ala Ser Gln Ser Ile Ser
1 5

<210> 321
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of B47B6 light chain CDR

<400> 321

Gln Gln Ser Tyr Ser Trp Pro Leu Thr
1 5

<210> 322
<211> 15
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of B47B6 heavy chain CDR

<400> 322
agctatgaca tgtct

15

<210> 323
<211> 48
<212> DNA
<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of B47B6 heavy chain CDR

<400> 323

tacatgagta gtggtggcgg cacctactat ccagacactg tgaagggc

48

<210> 324

<211> 27

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of B47B6 heavy chain CDR

<400> 324

catgatgaga ttactaactt tgactac

27

<210> 325

<211> 5

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of B47B6 heavy chain CDR

<400> 325

Ser Tyr Asp Met Ser

1

5

<210> 326

<211> 16

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of B47B6 heavy chain CDR

<400> 326

Tyr Met Ser Ser Gly Gly Gly Thr Tyr Tyr Pro Asp Thr Val Lys Gly

1

5

10

15

<210> 327

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of B47B6 heavy chain CDR

<400> 327

His Asp Glu Ile Thr Asn Phe Asp Tyr
1 5

<210> 328

<211> 639

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of C106B9 light chain

<400> 328

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caaattgttc tcacccagtc tccagcaatc atgtctgcat ctccagggga gaaggtcacc      60
ataacctgca gtgtcagctc aagtgtagat tacattcact ggttcagca gaagccaggc      120
acttctccca aattctggat ttatagcaca tccatcctgg cttctggagt ccctgctcgc      180
ttcagtggca gtggatctgg gacctcttac tctctcaca tcagccgaat ggaggctgaa      240
gatgctgcca cttattactg ccagcaaagg agtagttacc caccacggtt cggctcgggg      300
acaaagttgg aaataaaaacg ggctgatgct gcaccaactg tatccatctt cccaccatcc      360
agtgagcagt taacatctgg aggtgcctca gtcgtgtgct tcttgaacaa cttctacccc      420
aaagacatca atgtcaagtg gaagattgat ggcagtgaac gacaaaatgg cgtcctgaac      480
agttggactg atcaggacag caaagacagc acctacagca tgagcagcac cctcacgttg      540
accaaggacg agtatgaacg acataacagc tatacctgtg aggccactca caagacatca      600
acttcaccca ttgtcaagag cttcaacagg aatgagtgt      639
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<210> 329

<211> 213

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of C106B9 light chain

<400> 329

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

Glu Lys Val Thr Ile Thr Cys Ser Val Ser Ser Ser Val Asp Tyr Ile
20 25 30

His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys Phe Trp Ile Tyr
35 40 45

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

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

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Pro Thr
85 90 95

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

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

Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile Asn
130 135 140

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

Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser Ser
165 170 175

Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr Thr
180 185 190

Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser Phe
195 200 205

Asn Arg Asn Glu Cys
210

<210> 330
<211> 1320
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of C106B9 heavy chain

<400> 330
caggttcaac tgcagcagtc tggaggtgag gtgatgaagc ctggggcctc agtgaagctt 60
tcctgcaagg ctactggcta cacattcact ggctactgga tagagtggat aaaacagagg 120
cctggacatg gccttgagtg gattggagag attttacctg gaagtgggtg tactaactac 180
aatgagaaaat tcaagggcaa ggccacattc actgcacata catcctccaa cacagcctac 240
atgcaactca gcagcctgac aactgaggac tctgccatct attactgtgc aagggatagt 300
aactccttta cttactgggg ccaagggact ctggtcactg tctcttcagc caaaacgaca 360
cccccatctg tctatccact ggcccctgga tctgctgccc aaactaactc catggtgacc 420
ctgggatgcc tgggtcaaggg ctatttccct gagccagtga cagtgcctg gaactctgga 480
tccctgtcca gcggtgtgca caccttccca gctgtcctgc agtctgacct ctacactctg 540
agcagctcag tgactgtccc ctccagcacc tggcccagcg agaccgtcac ctgcaacgtt 600
gcccacccgg ccagcagcac caaggtggac aagaaaattg tgcccaggga ttgtggttgt 660
aagccttgca tatgtacagt ccagaaagta tcatctgtct tcatcttccc cccaaagccc 720
aaggatgtgc tcaccattac tctgactcct aaggtcacgt gtgttggtgt agacatcagc 780
aaggatgatc ccgaggcca gttcagctgg tttgtagatg atgtggaggt gcacacagct 840
cagacgcaac cccgggagga gcagttcaac agcactttcc gctcagtcag tgaacttccc 900
atcatgcacc aggactggct caatggcaag gagttcaaag gcagggtcaa cagtgcagct 960
ttccctgccc ccatcgagaa aaccatctcc aaaaccaaag gcagaccgaa ggctccacag 1020

gtgtacacca	ttccacctcc	caaggagcag	atggccaagg	ataaagtcag	tctgacctgc	1080
atgataacag	acttcttccc	tgaagacatt	actgtggagt	ggcagtggaa	tgggcagcca	1140
gcggagaact	acaagaacac	tcagcccatc	atggacacag	atggctctta	cttcgtctac	1200
agcaagctca	atgtgcagaa	gagcaactgg	gaggcaggaa	atactttcac	ctgctctgtg	1260
ttacatgagg	gcctgcacaa	ccaccatact	gagaagagcc	tctcccactc	tccttggtaaa	1320

<210>	331
<211>	440
<212>	PRT
<213>	Artificial sequence

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<220>
<223> Amino Acid sequence of C106B9 heavy chain
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<400> 331

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

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

Trp Ile Glu Trp Ile Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Leu Pro Gly Ser Gly Gly Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Phe Thr Ala His Thr Ser Ser Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg Asp Ser Asn Ser Phe Thr Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu Ala
115 120 125

Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys Leu
130 135 140

Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser Gly
145 150 155 160

Ser Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Asp
165 170 175

Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp Pro
180 185 190

Ser Glu Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr Lys
195 200 205

Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys Ile
210 215 220

Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys Pro
225 230 235 240

Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val Val
245 250 255

Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val
260 265 270

Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg Glu Glu Gln
275 280 285

Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His Gln
290 295 300

Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala Ala
305 310 315 320

Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg Pro
325 330 335

Lys Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met Ala
340 345 350

Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro Glu
355 360 365

Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn Tyr
370 375 380

Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val Tyr
385 390 395 400

Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr Phe
405 410 415

Thr Cys Ser Val Leu His Glu Gly Leu His Asn His His Thr Glu Lys
420 425 430

Ser Leu Ser His Ser Pro Gly Lys
435 440

<210> 332
<211> 30
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of C106B9 light chain CDR

<400> 332
agtgtcagct caagtgtaga ttacattcac

30

<210> 333
<211> 21
<212> DNA
<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of C106B9 light chain CDR

<400> 333

agcacatcca tcctggcttc t

21

<210> 334

<211> 27

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of C106B9 light chain CDR

<400> 334

cagcaaagga gtagttaccc acccacg

27

<210> 335

<211> 10

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of C106B9 light chain CDR

<400> 335

Ser Val Ser Ser Ser Val Asp Tyr Ile His

1

5

10

<210> 336

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of C106B9 light chain CDR

<400> 336

Ser Thr Ser Ile Leu Ala Ser

1

5

<210> 337

<211> 9

<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of C106B9 light chain CDR

<400> 337

Gln Gln Arg Ser Ser Tyr Pro Pro Thr
1 5

<210> 338
<211> 15
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of C106B9 heavy chain CDR

<400> 338
ggctactgga tagag 15

<210> 339
<211> 51
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of C106B9 heavy chain CDR

<400> 339
gagattttac ctggaagtgg tgg tactaac tacaatgaga aattcaaggg c 51

<210> 340
<211> 21
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of C106B9 heavy chain CDR

<400> 340
gatagtaact cctttactta c 21

<210> 341
<211> 5

<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of C106B9 heavy chain CDR

<400> 341

Gly Tyr Trp Ile Glu
1 5

<210> 342
<211> 17
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of C106B9 heavy chain CDR

<400> 342

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

Gly

<210> 343
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of C106B9 heavy chain CDR

<400> 343

Asp Ser Asn Ser Phe Thr Tyr
1 5

<210> 344
<211> 642
<212> DNA
<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of F184C7 light chain

<400> 344

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gacatccaga tgactcagtc tccagcctcc ctatctgtat ctgtgggaga aactgtcacc      60
atcacatgtc gagcaagtga gaatatttac agaaatttag catggatatca gcagaaacag      120
ggaaaatctc ctcaactcct ggtccatgct gcaacaaact tagcagatgg tgtgccatca      180
aggttcagtg gcagtggatc agacacacag tattccctca agatcaacag cctgcagtct      240
gaagattttg ggaattatta ctgtcaacat ttttggggga ctccgctcac gttcgggtgct      300
gggaccaagc tggagctgaa acgggctgat gctgcaccaa ctgtatccat cttcccacca      360
tccagtgagc agttaacatc tggagggtgcc tcagtcgtgt gcttcttgaa caacttctac      420
cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg      480
aacagttgga ctgatcagga cagcaaagac agcacctaca gcatgagcag caccctcacg      540
ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca      600
tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt                                642
```

<210> 345

<211> 214

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of F184C7 light chain

<400> 345

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

```
Glu Thr Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Arg Asn
20          25          30
```

```
Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
35          40          45
```

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

Ser Gly Ser Asp Thr Gln Tyr Ser Leu Lys Ile Asn Ser Leu Gln Ser
65 70 75 80

Glu Asp Phe Gly Asn Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Leu
85 90 95

Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ala Asp Ala Ala
100 105 110

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

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

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

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
210

<210> 346

<211> 1338

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of F184C7 heavy chain

<400> 346
caggttcagc tgcagcagtc tggacctgag atggtgaagc ctggggcctc agtgaagatt 60
ccctgcaagg cttctggcta cgcattcagt agctcctgga tgaactgggt gaagcagagg 120
cctggaaagg gtcttgagtg gattggacgg atttatcctg gagatggaga tactaactac 180
aatgagaagt tcaagggcaa ggccacactg actgtagaca aatcctccag cacagtctac 240
atgcaactca gcagcctgac atctgaggac tctgcggtct acttctgtgc aagagaggct 300
actacggtag tggccccgta ctactttgac tactggggcc aaggcaccac tctcacagtc 360
tcctcagcca aaacgacacc cccatctgtc tatccactgg cccctggatc tgctgccccaa 420
actaactcca tggtgaccct gggatgcctg gtcaagggtct atttccctga gccagtgaca 480
gtgacctgga actctggatc cctgtccagc ggtgtgcaca ccttcccagc tgtcctgcag 540
tctgacctct acactctgag cagctcagtg actgtcccct ccagcacctg gcccagcgag 600
accgtcacct gcaacgttgc ccacccggcc agcagcacca aggtggacaa gaaaattgtg 660
cccagggatt gtggttgtaa gccttgcata tgtacagtcc cagaagtatc atctgtcttc 720
atcttcccc caaagcccaa ggatgtgctc accattactc tgactcctaa ggtcacgtgt 780
gttgtggtag acatcagcaa ggatgatccc gaggtccagt tcagctgggtt tgtagatgat 840
gtggagggtgc acacagctca gacgcaacc cgggaggagc agttcaacag cactttccgc 900
tcagtcagtg aacttcccat catgcaccag gactggctca atggcaagga gttcaaattgc 960
agggtcaaca gtgcagcttt ccctgcccc atcgagaaaa ccatctccaa aaccaaaggc 1020
agaccgaagg ctccacaggt gtacaccatt ccacctcca aggagcagat ggccaaggat 1080
aaagtcagtc tgacctgcat gataacagac ttcttccctg aagacattac tgtggagtgg 1140
cagtggaatg ggcagccagc ggagaactac aagaacactc agcccatcat ggacacagat 1200
ggctcttact tcgtctacag caagctcaat gtgcagaaga gcaactggga ggcaggaaat 1260
actttcacct gctctgtgtt acatgagggc ctgcacaacc accatactga gaagagcctc 1320
tcccactctc ctggtaaa 1338

<210> 347

<211> 446

<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of F184C7 heavy chain

<400> 347

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

Ser Val Lys Ile Pro Cys Lys Ala Ser Gly Tyr Ala Phe Ser Ser Ser
20 25 30

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

Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Asn Glu Lys Phe
50 55 60

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

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

Ala Arg Glu Ala Thr Thr Val Val Ala Pro Tyr Tyr Phe Asp Tyr Trp
100 105 110

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

Ser Val Tyr Pro Leu Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met
130 135 140

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

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

Ala Val Leu Gln Ser Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val
180 185 190

Pro Ser Ser Thr Trp Pro Ser Glu Thr Val Thr Cys Asn Val Ala His
195 200 205

Pro Ala Ser Ser Thr Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys
210 215 220

Gly Cys Lys Pro Cys Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe
225 230 235 240

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

Lys Val Thr Cys Val Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val
260 265 270

Gln Phe Ser Trp Phe Val Asp Asp Val Glu Val His Thr Ala Gln Thr
275 280 285

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

Leu Pro Ile Met His Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys
305 310 315 320

Arg Val Asn Ser Ala Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser
325 330 335

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

Pro Lys Glu Gln Met Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile
355 360 365

Thr Asp Phe Phe Pro Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly
370 375 380

Gln Pro Ala Glu Asn Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp
385 390 395 400

Gly Ser Tyr Phe Val Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp
405 410 415

Glu Ala Gly Asn Thr Phe Thr Cys Ser Val Leu His Glu Gly Leu His
420 425 430

Asn His His Thr Glu Lys Ser Leu Ser His Ser Pro Gly Lys
435 440 445

<210> 348
<211> 33
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of F184C7 light chain CDR

<400> 348
cgagcaagtg agaatatatta cagaaattta gca 33

<210> 349
<211> 21
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of F184C7 light chain CDR

<400> 349
gctgcaacaa acttagcaga t 21

<210> 350
<211> 27
<212> DNA
<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of F184C7 light chain CDR

<400> 350

caacatTTTT gggggactcc gctcacg

27

<210> 351

<211> 11

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of F184C7 light chain CDR

<400> 351

Arg Ala Ser Glu Asn Ile Tyr Arg Asn Leu Ala

1

5

10

<210> 352

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of F184C7 light chain CDR

<400> 352

Ala Ala Thr Asn Leu Ala Asp

1

5

<210> 353

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of F184C7 light chain CDR

<400> 353

Gln His Phe Trp Gly Thr Pro Leu Thr

1

5

<210> 354

<211> 22

<212> DNA
<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of F184C7 heavy chain CDR

<400> 354

attcagtagc tcctggatga ac

22

<210> 355

<211> 51

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of F184C7 heavy chain CDR

<400> 355

cggatttatc ctggagatgg agatactaac tacaatgaga agttcaaggg c

51

<210> 356

<211> 39

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of F184C7 heavy chain CDR

<400> 356

gaggctacta cggtagtggc cccgtactac tttgactac

39

<210> 357

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of F184C7 heavy chain CDR

<400> 357

Phe Ser Ser Ser Trp Met Asn

1

5

<210> 358

<211> 17

<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of F184C7 heavy chain CDR

<400> 358

Arg	Ile	Tyr	Pro	Gly	Asp	Gly	Asp	Thr	Asn	Tyr	Asn	Glu	Lys	Phe	Lys
1				5				10						15	

Gly

<210> 359
<211> 13
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of F184C7 heavy chain CDR

<400> 359

Glu	Ala	Thr	Thr	Val	Val	Ala	Pro	Tyr	Tyr	Phe	Asp	Tyr
1				5				10				

<210> 360
<211> 642
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D10A3 light chain

<400> 360	
aatattgtgc tgacccagac tcccaaattc ctgcttgtat cagcaggaga cagggtttcc	60
ataacctgca aggccagtca gcgtgtgaat aatgatgtag cttggtacca acagaagcca	120
gggcagtctc ctaaactgct gatatactat gcatccaatc gctacactgg agtccctgat	180
cgcttcactg gcagtggata tgggacggat ttactttca ccatcagcac tgtgcaggct	240
gaagacctgg cagtttattt ctgtcagcag gattatagct ctccattcac gttcggctcg	300
gggacaaagt tggaaataaa acgggctgat gctgcaccaa ctgtatccat cttcccacca	360

tccagtgagc agttaacatc tggagggtgcc tcagtcgtgt gcttcttgaa caacttctac	420
cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg	480
aacagttgga ctgatcagga cagcaaagac agcacctaca gcatgagcag caccctcacg	540
ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca	600
tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt	642

<210>	361
<211>	214
<212>	PRT
<213>	Artificial sequence

<220>
<223> Amino Acid sequence of D10A3 light chain

<400> 361

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

Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Arg Val Asn Asn Asp
20 25 30

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

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

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

Glu Asp Leu Ala Val Tyr Phe Cys Gln Gln Asp Tyr Ser Ser Pro Phe
85 90 95

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

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

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

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

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
210

<210> 362
<211> 1332
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D10A3 heavy chain

<400> 362
gagggtccagc tgcaacagtt tggaactgag ctggtgaagc ctggggcttc agtgaagata 60
tcctgcaagg cttctggcta cacattcact gactacaaca tggactgggt gaagcagagc 120
catggaaaga gccttgagtg gattggagat attaatccta actatgatac tactacctac 180
aaccagaagt tcaagggaag ggccacattg actgtagaca agtcctccag cacagcctac 240
atggagctcc gcagcctgac ttctgaggac actgcagtct ttactgtgc aagaaggaac 300
tatggtaact acgtgggggt tgacttctgg ggccaaggca ccactctcac agtctcctca 360
gccaaaacga caccatcatc tgtctatcca ctggcccctg gatctgctgc ccaaactaac 420

Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
35 40 45

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

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

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

Ala Arg Arg Asn Tyr Gly Asn Tyr Val Gly Phe Asp Phe Trp Gly Gln
100 105 110

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

Tyr Pro Leu Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr
130 135 140

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

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

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

Ser Thr Trp Pro Ser Glu Thr Val Thr Cys Asn Val Ala His Pro Ala
195 200 205

Ser Ser Thr Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys
210 215 220

Lys Pro Cys Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe
225 230 235 240

Pro Pro Lys Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val
245 250 255

Thr Cys Val Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe
260 265 270

Ser Trp Phe Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro
275 280 285

Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro
290 295 300

Ile Met His Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val
305 310 315 320

Asn Ser Ala Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr
325 330 335

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

Glu Gln Met Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp
355 360 365

Phe Phe Pro Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro
370 375 380

Ala Glu Asn Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser
385 390 395 400

Tyr Phe Val Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala
405 410 415

Gly Asn Thr Phe Thr Cys Ser Val Leu His Glu Gly Leu His Asn His
420 425 430

His Thr Glu Lys Ser Leu Ser His Ser Pro Gly Lys
435 440

<210> 364
<211> 33
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D10A3 light chain CDR

<400> 364
aaggccagtc agcgtgtgaa taatgatgta gct 33

<210> 365
<211> 21
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D10A3 light chain CDR

<400> 365
tatgcatcca atcgctacac t 21

<210> 366
<211> 27
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D10A3 light chain CDR

<400> 366
cagcaggatt atagctctcc attcacg 27

<210> 367
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of D10A3 light chain CDR

<400> 367

Lys Ala Ser Gln Arg Val Asn Asn Asp Val Ala
1 5 10

<210> 368

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of D10A3 light chain CDR

<400> 368

Tyr Ala Ser Asn Arg Tyr Thr
1 5

<210> 369

<211> 9

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of D10A3 light chain CDR

<400> 369

Gln Gln Asp Tyr Ser Ser Pro Phe Thr
1 5

<210> 370

<211> 15

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of D10A3 heavy chain CDR

<400> 370

gactacaaca tggac

15

<210> 371

<211> 51

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of D10A3 heavy chain CDR

<400> 371

gatattaatc ctaactatga tactactacc tacaaccaga agttcaaggg a

51

<210> 372

<211> 33

<212> DNA

<213> Artificial sequence

<220>

<223> Nucleic Acid sequence of D10A3 heavy chain CDR

<400> 372

aggaactatg gtaactacgt ggggtttgac ttc

33

<210> 373

<211> 5

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of D10A3 heavy chain CDR

<400> 373

Asp Tyr Asn Met Asp

1 5

<210> 374

<211> 17

<212> PRT

<213> Artificial sequence

<220>

<223> Amino Acid sequence of D10A3 heavy chain CDR

<400> 374

Asp Ile Asn Pro Asn Tyr Asp Thr Thr Thr Tyr Asn Gln Lys Phe Lys

1 5 10 15

Gly

<210> 375
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of D10A3 heavy chain CDR

<400> 375

Arg Asn Tyr Gly Asn Tyr Val Gly Phe Asp Phe
1 5 10

<210> 376
<211> 163
<212> PRT
<213> homo sapiens

<400> 376

Met Lys Trp Lys Ala Leu Phe Thr Ala Ala Ile Leu Gln Ala Gln Leu
1 5 10 15

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

Tyr Leu Leu Asp Gly Ile Leu Phe Ile Tyr Gly Val Ile Leu Thr Ala
35 40 45

Leu Phe Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr
50 55 60

Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg
65 70 75 80

Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met
85 90 95

Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu
100 105 110

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

Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu
130 135 140

Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu
145 150 155 160

Pro Pro Arg

<210> 377
<211> 164
<212> PRT
<213> homo sapiens

<400> 377

Met Lys Trp Lys Ala Leu Phe Thr Ala Ala Ile Leu Gln Ala Gln Leu
1 5 10 15

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

Tyr Leu Leu Asp Gly Ile Leu Phe Ile Tyr Gly Val Ile Leu Thr Ala
35 40 45

Leu Phe Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr
50 55 60

Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg
65 70 75 80

Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met
85 90 95

Gly Gly Lys Pro Gln Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn
100 105 110

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

Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly
130 135 140

Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala
145 150 155 160

Leu Pro Pro Arg

<210> 378
<211> 123
<212> PRT
<213> homo sapiens

<400> 378

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

Thr Gly Asn Lys Ile Leu Val Lys Gln Ser Pro Met Leu Val Ala Tyr
20 25 30

Asp Asn Ala Val Asn Leu Ser Trp Lys His Leu Cys Pro Ser Pro Leu
35 40 45

Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly Gly
50 55 60

Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile Phe
65 70 75 80

Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met Asn
85 90 95

Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr

100

105

110

Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser
 115 120

<210> 379
 <211> 101
 <212> PRT
 <213> homo sapiens

<400> 379

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

Thr Gly Lys His Leu Cys Pro Ser Pro Leu Phe Pro Gly Pro Ser Lys
 20 25 30

Pro Phe Trp Val Leu Val Val Val Gly Gly Val Leu Ala Cys Tyr Ser
 35 40 45

Leu Leu Val Thr Val Ala Phe Ile Ile Phe Trp Val Arg Ser Lys Arg
 50 55 60

Ser Arg Leu Leu His Ser Asp Tyr Met Asn Met Thr Pro Arg Arg Pro
 65 70 75 80

Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro Pro Arg Asp Phe
 85 90 95

Ala Ala Tyr Arg Ser
 100

<210> 380
 <211> 220
 <212> PRT
 <213> homo sapiens

<400> 380

Met Leu Arg Leu Leu Leu Ala Leu Asn Leu Phe Pro Ser Ile Gln Val

1	5	10	15
Thr Gly Asn Lys Ile Leu Val Lys Gln Ser Pro Met Leu Val Ala Tyr	20	25	30
Asp Asn Ala Val Asn Leu Ser Cys Lys Tyr Ser Tyr Asn Leu Phe Ser	35	40	45
Arg Glu Phe Arg Ala Ser Leu His Lys Gly Leu Asp Ser Ala Val Glu	50	55	60
Val Cys Val Val Tyr Gly Asn Tyr Ser Gln Gln Leu Gln Val Tyr Ser	65	70	75
Lys Thr Gly Phe Asn Cys Asp Gly Lys Leu Gly Asn Glu Ser Val Thr	85	90	95
Phe Tyr Leu Gln Asn Leu Tyr Val Asn Gln Thr Asp Ile Tyr Phe Cys	100	105	110
Lys Ile Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser	115	120	125
Asn Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro	130	135	140
Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly	145	150	155
Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile	165	170	175
Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met	180	185	190
Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro	195	200	205

Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser
210 215 220

<210> 381
<211> 255
<212> PRT
<213> homo sapiens

<400> 381

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

Asn Phe Glu Arg Thr Arg Ser Leu Gln Asp Pro Cys Ser Asn Cys Pro
20 25 30

Ala Gly Thr Phe Cys Asp Asn Asn Arg Asn Gln Ile Cys Ser Pro Cys
35 40 45

Pro Pro Asn Ser Phe Ser Ser Ala Gly Gly Gln Arg Thr Cys Asp Ile
50 55 60

Cys Arg Gln Cys Lys Gly Val Phe Arg Thr Arg Lys Glu Cys Ser Ser
65 70 75 80

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

Ala Gly Cys Ser Met Cys Glu Gln Asp Cys Lys Gln Gly Gln Glu Leu
100 105 110

Thr Lys Lys Gly Cys Lys Asp Cys Cys Phe Gly Thr Phe Asn Asp Gln
115 120 125

Lys Arg Gly Ile Cys Arg Pro Trp Thr Asn Cys Ser Leu Asp Gly Lys
130 135 140

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

Ser Pro Ala Asp Leu Ser Pro Gly Ala Ser Ser Val Thr Pro Pro Ala
165 170 175

Pro Ala Arg Glu Pro Gly His Ser Pro Gln Ile Ile Ser Phe Phe Leu
180 185 190

Ala Leu Thr Ser Thr Ala Leu Leu Phe Leu Leu Phe Phe Leu Thr Leu
195 200 205

Arg Phe Ser Val Val Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe
210 215 220

Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly
225 230 235 240

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

<210> 382
<211> 199
<212> PRT
<213> homo sapiens

<400> 382

Met Lys Ser Gly Leu Trp Tyr Phe Phe Leu Phe Cys Leu Arg Ile Lys
1 5 10 15

Val Leu Thr Gly Glu Ile Asn Gly Ser Ala Asn Tyr Glu Met Phe Ile
20 25 30

Phe His Asn Gly Gly Val Gln Ile Leu Cys Lys Tyr Pro Asp Ile Val
35 40 45

Gln Gln Phe Lys Met Gln Leu Leu Lys Gly Gly Gln Ile Leu Cys Asp
50 55 60

Leu Thr Lys Thr Lys Gly Ser Gly Asn Thr Val Ser Ile Lys Ser Leu

65		70		75		80									
Lys	Phe	Cys	His	Ser	Gln	Leu	Ser	Asn	Asn	Ser	Val	Ser	Phe	Phe	Leu
				85					90				95		
Tyr	Asn	Leu	Asp	His	Ser	His	Ala	Asn	Tyr	Tyr	Phe	Cys	Asn	Leu	Ser
			100					105					110		
Ile	Phe	Asp	Pro	Pro	Pro	Phe	Lys	Val	Thr	Leu	Thr	Gly	Gly	Tyr	Leu
		115					120					125			
His	Ile	Tyr	Glu	Ser	Gln	Leu	Cys	Cys	Gln	Leu	Lys	Phe	Trp	Leu	Pro
	130					135					140				
Ile	Gly	Cys	Ala	Ala	Phe	Val	Val	Val	Cys	Ile	Leu	Gly	Cys	Ile	Leu
145					150					155					160
Ile	Cys	Trp	Leu	Thr	Lys	Lys	Lys	Tyr	Ser	Ser	Ser	Val	His	Asp	Pro
				165					170					175	
Asn	Gly	Glu	Tyr	Met	Phe	Met	Arg	Ala	Val	Asn	Thr	Ala	Lys	Lys	Ser
			180					185					190		
Arg	Leu	Thr	Asp	Val	Thr	Leu									
			195												

<210> 383
 <211> 277
 <212> PRT
 <213> homo sapiens

<400> 383

Met	Cys	Val	Gly	Ala	Arg	Arg	Leu	Gly	Arg	Gly	Pro	Cys	Ala	Ala	Leu
1				5					10					15	
Leu	Leu	Leu	Gly	Leu	Gly	Leu	Ser	Thr	Val	Thr	Gly	Leu	His	Cys	Val
			20					25					30		

Gly Asp Thr Tyr Pro Ser Asn Asp Arg Cys Cys His Glu Cys Arg Pro
35 40 45

Gly Asn Gly Met Val Ser Arg Cys Ser Arg Ser Gln Asn Thr Val Cys
50 55 60

Arg Pro Cys Gly Pro Gly Phe Tyr Asn Asp Val Val Ser Ser Lys Pro
65 70 75 80

Cys Lys Pro Cys Thr Trp Cys Asn Leu Arg Ser Gly Ser Glu Arg Lys
85 90 95

Gln Leu Cys Thr Ala Thr Gln Asp Thr Val Cys Arg Cys Arg Ala Gly
100 105 110

Thr Gln Pro Leu Asp Ser Tyr Lys Pro Gly Val Asp Cys Ala Pro Cys
115 120 125

Pro Pro Gly His Phe Ser Pro Gly Asp Asn Gln Ala Cys Lys Pro Trp
130 135 140

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

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

Gln Glu Thr Gln Gly Pro Pro Ala Arg Pro Ile Thr Val Gln Pro Thr
180 185 190

Glu Ala Trp Pro Arg Thr Ser Gln Gly Pro Ser Thr Arg Pro Val Glu
195 200 205

Val Pro Gly Gly Arg Ala Val Ala Ala Ile Leu Gly Leu Gly Leu Val
210 215 220

Leu Gly Leu Leu Gly Pro Leu Ala Ile Leu Leu Ala Leu Tyr Leu Leu
225 230 235 240

Arg Arg Asp Gln Arg Leu Pro Pro Asp Ala His Lys Pro Pro Gly Gly
245 250 255

Gly Ser Phe Arg Thr Pro Ile Gln Glu Glu Gln Ala Asp Ala His Ser
260 265 270

Thr Leu Ala Lys Ile
275

<210> 384

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> short peptide

<400> 384

Asp Leu Met Gly Tyr Ile Pro Leu Val
1 5