

SEQUENCE LISTING

<110> Pharmafox
Pharmafox therapeutics AG
Pharmafox

<120> NEUROMUSCULAR DISEASES

<130> AFR

<160> 51

<170> PatentIn version 3.5

<210> 1

<211> 186

<212> PRT

<213> mouse

<400> 1

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

Glu Tyr Leu Asn Ala Val Thr Glu Ser Glu Lys Ala Leu Gln Ser Asn
20 25 30

His Phe Glu Leu Ser Leu Arg Thr Glu Ala Thr Gln Gly Leu Val Leu
35 40 45

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

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

Val Leu Arg Ser Thr Val Lys Val Asn Thr Asn Arg Trp Leu Arg Val
85 90 95

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

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

Asp Gly Ala Leu Trp Leu Gly Gly Leu Gln Lys Leu Pro Val Gly Gln

130

135

140

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

Val Val Val Gly His Arg Gln Leu His Leu Leu Glu Asp Ala Val Thr
 165 170 175

Lys Pro Glu Leu Arg Pro Cys Pro Thr Leu
 180 185

<210> 2
 <211> 8
 <212> PRT
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<400> 2

Glu Leu Thr Asn Glu Ile Pro Ala
 1 5

<210> 3
 <211> 11
 <212> PRT
 <213> mouse

<400> 3

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

<210> 4
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 <212> PRT
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<400> 4

Glu Leu Thr Asn Glu Ile Pro Ala Pro Glu Thr Leu Asp Ser Arg Ala
 1 5 10 15

Leu Phe Ser

<210> 5
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<212> PRT
 <213> mouse

<400> 5

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

Glu Tyr Leu Asn Ala Val Thr Glu Ser Glu Leu Thr Asn Glu Ile Pro
 20 25 30

Ala Glu Lys Ala Leu Gln Ser Asn His Phe Glu Leu Ser Leu Arg Thr
 35 40 45

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

Ala Asp Tyr Met Ala Leu Ala Ile Val Asp Gly His Leu Gln Leu Ser
 65 70 75 80

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

Asn Thr Asn Arg Trp Leu Arg Val Arg Ala His Arg Glu His Arg Glu
 100 105 110

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

Leu Gly Ala Thr Gln Leu Asp Thr Asp Gly Ala Leu Trp Leu Gly Gly
 130 135 140

Leu Gln Lys Leu Pro Val Gly Gln Ala Leu Pro Lys Ala Tyr Gly Thr
 145 150 155 160

Gly Phe Val Gly Cys Leu Arg Asp Val Val Val Gly His Arg Gln Leu
 165 170 175

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

Thr Leu

<210> 6
 <211> 186
 <212> PRT
 <213> human

<400> 6

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

Glu Tyr Leu Asn Ala Val Thr Glu Ser Glu Lys Ala Leu Gln Ser Asn
 20 25 30

His Phe Glu Leu Ser Leu Arg Thr Glu Ala Thr Gln Gly Leu Val Leu
 35 40 45

Trp Ser Gly Lys Ala Thr Glu Arg Ala Asp Tyr Val Ala Leu Ala Ile
 50 55 60

Val Asp Gly His Leu Gln Leu Ser Tyr Asn Leu Gly Ser Gln Pro Val
 65 70 75 80

Val Leu Arg Ser Thr Val Pro Val Asn Thr Asn Arg Trp Leu Arg Val
 85 90 95

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

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

Asp Gly Ala Leu Trp Leu Gly Gly Leu Pro Glu Leu Pro Val Gly Pro
 130 135 140

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

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

Lys Pro Glu Leu Arg Pro Cys Pro Thr Pro
 180 185

<210> 7
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 <212> PRT
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<400> 7

Glu Leu Ala Asn Glu Ile Pro Val
 1 5

<210> 8
 <211> 11
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 <213> human

<400> 8

Pro Glu Thr Leu Asp Ser Gly Ala Leu His Ser
 1 5 10

<210> 9
 <211> 19
 <212> PRT
 <213> human

<400> 9

Glu Leu Ala Asn Glu Ile Pro Val Pro Glu Thr Leu Asp Ser Gly Ala
 1 5 10 15

Leu His Ser

<210> 10
 <211> 194
 <212> PRT
 <213> human

<400> 10

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

Glu Tyr Leu Asn Ala Val Thr Glu Ser Glu Leu Ala Asn Glu Ile Pro
 20 25 30

Val Glu Lys Ala Leu Gln Ser Asn His Phe Glu Leu Ser Leu Arg Thr
 35 40 45

Glu Ala Thr Gln Gly Leu Val Leu Trp Ser Gly Lys Ala Thr Glu Arg
 50 55 60

Ala Asp Tyr Val Ala Leu Ala Ile Val Asp Gly His Leu Gln Leu Ser
 65 70 75 80

Tyr Asn Leu Gly Ser Gln Pro Val Val Leu Arg Ser Thr Val Pro Val
 85 90 95

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

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

Leu Gly Ala Thr Gln Leu Asp Thr Asp Gly Ala Leu Trp Leu Gly Gly
 130 135 140

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

Gly Phe Val Gly Cys Leu Arg Asp Val Val Val Gly Arg His Pro Leu
 165 170 175

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

Thr Pro

<210> 11
 <211> 115
 <212> PRT
 <213> mouse

<400> 11

Glu Ala Glu Thr Arg Glu Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu

1 5 10 15
 Glu Arg Thr Asn Gln Ser Gly Leu Glu Arg Cys Glu Gly Glu Gln Asp
 20 25 30
 Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile
 35 40 45
 Glu Leu Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp
 50 55 60
 Arg Gln Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys
 65 70 75 80
 Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu
 85 90 95
 Pro Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr
 100 105 110
 Leu Leu Thr
 115
 <210> 12
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 <213> human
 <400> 12
 Glu Ala Glu Thr Arg Glu Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu
 1 5 10 15
 Glu Arg Thr Asn Gln Ser Gly Leu Glu Arg Cys Glu Gly Glu Gln Asp
 20 25 30
 Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile
 35 40 45
 Glu Leu Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys Tyr Asp
 50 55 60

Arg Gln Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys
65 70 75 80

Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu
85 90 95

Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr
100 105 110

Leu Leu Thr
115

<210> 13
<211> 15
<212> PRT
<213> recombinant

<400> 13

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

<210> 14
<211> 227
<212> PRT
<213> human

<400> 14

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pro Gly Lys
225

<210> 15
<211> 435
<212> PRT
<213> recombinant

<400> 15

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 225 230 235 240

Gly Ser Val Gly Asp Leu Glu Thr Leu Ala Phe Asp Gly Arg Thr Tyr

	245		250		255
Ile Glu Tyr	Leu Asn Ala Val Thr	Glu Ser Glu Leu Thr	Asn Glu Ile		
	260	265	270		
Pro Ala Glu Lys	Ala Leu Gln Ser Asn His Phe	Glu Leu Ser Leu Arg			
	275	280	285		
Thr Glu Ala Thr	Gln Gly Leu Val Leu Trp Ile	Gly Lys Val Gly Glu			
	290	295	300		
Arg Ala Asp Tyr Met	Ala Leu Ala Ile Val Asp Gly His Leu Gln Leu				
305	310	315	320		
Ser Tyr Asp Leu	Gly Ser Gln Pro Val Val Leu Arg Ser Thr Val Lys				
	325	330	335		
Val Asn Thr Asn Arg Trp Leu Arg Val Arg Ala His Arg Glu His Arg					
	340	345	350		
Glu Gly Ser Leu Gln Val Gly Asn Glu Ala Pro Val Thr Gly Ser Ser					
	355	360	365		
Pro Leu Gly Ala Thr Gln Leu Asp Thr Asp Gly Ala Leu Trp Leu Gly					
	370	375	380		
Gly Leu Gln Lys Leu Pro Val Gly Gln Ala Leu Pro Lys Ala Tyr Gly					
385	390	395	400		
Thr Gly Phe Val Gly Cys Leu Arg Asp Val Val Val Gly His Arg Gln					
	405	410	415		
Leu His Leu Leu Glu Asp Ala Val Thr Lys Pro Glu Leu Arg Pro Cys					
	420	425	430		
Pro Thr Leu					
	435				
<210>	16				
<211>	436				
<212>	PRT				

<213> recombinant

<400> 16

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

Glu Tyr Leu Asn Ala Val Thr Glu Ser Glu Leu Thr Asn Glu Ile Pro
20 25 30

Ala Glu Lys Ala Leu Gln Ser Asn His Phe Glu Leu Ser Leu Arg Thr
35 40 45

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

Ala Asp Tyr Met Ala Leu Ala Ile Val Asp Gly His Leu Gln Leu Ser
65 70 75 80

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

Asn Thr Asn Arg Trp Leu Arg Val Arg Ala His Arg Glu His Arg Glu
100 105 110

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

Leu Gly Ala Thr Gln Leu Asp Thr Asp Gly Ala Leu Trp Leu Gly Gly
130 135 140

Leu Gln Lys Leu Pro Val Gly Gln Ala Leu Pro Lys Ala Tyr Gly Thr
145 150 155 160

Gly Phe Val Gly Cys Leu Arg Asp Val Val Val Gly His Arg Gln Leu
165 170 175

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

Thr Leu Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
195 200 205

Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu
 210 215 220

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

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
 245 250 255

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
 260 265 270

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr
 275 280 285

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

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro
 305 310 315 320

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
 325 330 335

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

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
 355 360 365

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
 370 375 380

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

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
 405 410 415

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
 420 425 430

Ser Pro Gly Lys
 435

<210> 17
 <211> 435
 <212> PRT
 <213> recombinant

<400> 17

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 225 230 235 240

Gly Ser Ala Gly Asp Val Asp Thr Leu Ala Phe Asp Gly Arg Thr Phe
 245 250 255

Val Glu Tyr Leu Asn Ala Val Thr Glu Ser Glu Leu Ala Asn Glu Ile
 260 265 270

Pro Val Glu Lys Ala Leu Gln Ser Asn His Phe Glu Leu Ser Leu Arg
 275 280 285

Thr Glu Ala Thr Gln Gly Leu Val Leu Trp Ser Gly Lys Ala Thr Glu
 290 295 300

Arg Ala Asp Tyr Val Ala Leu Ala Ile Val Asp Gly His Leu Gln Leu
 305 310 315 320

Ser Tyr Asn Leu Gly Ser Gln Pro Val Val Leu Arg Ser Thr Val Pro
 325 330 335

Val Asn Thr Asn Arg Trp Leu Arg Val Val Ala His Arg Glu Gln Arg
 340 345 350

Glu Gly Ser Leu Gln Val Gly Asn Glu Ala Pro Val Thr Gly Ser Ser
 355 360 365

Pro Leu Gly Ala Thr Gln Leu Asp Thr Asp Gly Ala Leu Trp Leu Gly

370

375

380

Gly Leu Pro Glu Leu Pro Val Gly Pro Ala Leu Pro Lys Ala Tyr Gly
 385 390 395 400

Thr Gly Phe Val Gly Cys Leu Arg Asp Val Val Val Gly Arg His Pro
 405 410 415

Leu His Leu Leu Glu Asp Ala Val Thr Lys Pro Glu Leu Arg Pro Cys
 420 425 430

Pro Thr Pro
 435

<210> 18
 <211> 427
 <212> PRT
 <213> recombinant

<400> 18

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 225 230 235 240

Gly Ser Ala Gly Asp Val Asp Thr Leu Ala Phe Asp Gly Arg Thr Phe
 245 250 255

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

Asn His Phe Glu Leu Ser Leu Arg Thr Glu Ala Thr Gln Gly Leu Val
 275 280 285

Leu Trp Ser Gly Lys Ala Thr Glu Arg Ala Asp Tyr Val Ala Leu Ala
 290 295 300

Ile Val Asp Gly His Leu Gln Leu Ser Tyr Asn Leu Gly Ser Gln Pro
 305 310 315 320

Val Val Leu Arg Ser Thr Val Pro Val Asn Thr Asn Arg Trp Leu Arg
 325 330 335

Val Val Ala His Arg Glu Gln Arg Glu Gly Ser Leu Gln Val Gly Asn
 340 345 350

Glu Ala Pro Val Thr Gly Ser Ser Pro Leu Gly Ala Thr Gln Leu Asp
 355 360 365

Thr Asp Gly Ala Leu Trp Leu Gly Gly Leu Pro Glu Leu Pro Val Gly
 370 375 380

Pro Ala Leu Pro Lys Ala Tyr Gly Thr Gly Phe Val Gly Cys Leu Arg
 385 390 395 400

Asp Val Val Val Gly Arg His Pro Leu His Leu Leu Glu Asp Ala Val
 405 410 415

Thr Lys Pro Glu Leu Arg Pro Cys Pro Thr Pro
 420 425

<210> 19
 <211> 357
 <212> PRT
 <213> Recombinant

<400> 19

Glu Ala Glu Thr Arg Glu Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu
 1 5 10 15

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

Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile
 35 40 45

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

Arg Gln Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys
 65 70 75 80

Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu

				85					90					95			
Pro	Gly	Gly	Pro	Glu	Val	Thr	Tyr	Glu	Pro	Pro	Pro	Thr	Ala	Pro	Thr		
			100					105					110				
Leu	Leu	Thr	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly		
		115					120					125					
Gly	Ser	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu		
	130					135					140						
Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr		
145					150				155						160		
Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val		
				165					170					175			
Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val		
			180					185					190				
Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser		
		195					200					205					
Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu		
	210					215					220						
Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala		
225					230					235					240		
Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro		
				245					250					255			
Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	Gln		
			260					265					270				
Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala		
		275					280					285					
Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr		
	290					295					300						

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
 305 310 315 320

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
 325 330 335

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
 340 345 350

Leu Ser Pro Gly Lys
 355

<210> 20
 <211> 357
 <212> PRT
 <213> recombinant

<400> 20

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 225 230 235 240

Gly Ser Glu Ala Glu Thr Arg Glu Cys Ile Tyr Tyr Asn Ala Asn Trp
 245 250 255

Glu Leu Glu Arg Thr Asn Gln Ser Gly Leu Glu Arg Cys Glu Gly Glu
 260 265 270

Gln Asp Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly
 275 280 285

Thr Ile Glu Leu Val Lys Lys Gly Cys Trp Leu Asp Asp Phe Asn Cys
 290 295 300

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

Phe Cys Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu
 325 330 335

Pro Glu Pro Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala
 340 345 350

Pro Thr Leu Leu Thr
 355

<210> 21
 <211> 357
 <212> PRT
 <213> recombinant

<400> 21

Glu Ala Glu Thr Arg Glu Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu
 1 5 10 15

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

Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile
 35 40 45

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

Arg Gln Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys
 65 70 75 80

Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu
 85 90 95

Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr
 100 105 110

Leu Leu Thr Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 115 120 125

Gly Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
 130 135 140

Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
 145 150 155 160

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
 165 170 175

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
 180 185 190

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

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
 210 215 220

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

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
 245 250 255

Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
 260 265 270

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
 275 280 285

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
 290 295 300

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
 305 310 315 320

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
 325 330 335

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
 340 345 350

Leu Ser Pro Gly Lys
 355

<211> 565
 <212> PRT
 <213> recombinant

<400> 22

Glu Ala Glu Thr Arg Glu Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu
 1 5 10 15

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

Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile
 35 40 45

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

Arg Gln Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys
 65 70 75 80

Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu
 85 90 95

Pro Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr
 100 105 110

Leu Leu Thr Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 115 120 125

Gly Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
 130 135 140

Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
 145 150 155 160

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
 165 170 175

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
 180 185 190

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

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
 210 215 220

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

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
 245 250 255

Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
 260 265 270

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
 275 280 285

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
 290 295 300

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
 305 310 315 320

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
 325 330 335

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
 340 345 350

Leu Ser Pro Gly Lys Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
 355 360 365

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

Thr Tyr Ile Glu Tyr Leu Asn Ala Val Thr Glu Ser Glu Leu Thr Asn
 385 390 395 400

Glu Ile Pro Ala Glu Lys Ala Leu Gln Ser Asn His Phe Glu Leu Ser
 405 410 415

Leu Arg Thr Glu Ala Thr Gln Gly Leu Val Leu Trp Ile Gly Lys Val
 420 425 430

Gly Glu Arg Ala Asp Tyr Met Ala Leu Ala Ile Val Asp Gly His Leu
 435 440 445

Gln Leu Ser Tyr Asp Leu Gly Ser Gln Pro Val Val Leu Arg Ser Thr
 450 455 460

Val Lys Val Asn Thr Asn Arg Trp Leu Arg Val Arg Ala His Arg Glu
 465 470 475 480

His Arg Glu Gly Ser Leu Gln Val Gly Asn Glu Ala Pro Val Thr Gly
 485 490 495

Ser Ser Pro Leu Gly Ala Thr Gln Leu Asp Thr Asp Gly Ala Leu Trp
 500 505 510

Leu Gly Gly Leu Gln Lys Leu Pro Val Gly Gln Ala Leu Pro Lys Ala
 515 520 525

Tyr Gly Thr Gly Phe Val Gly Cys Leu Arg Asp Val Val Val Gly His
 530 535 540

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

Pro Cys Pro Thr Leu
 565

<210> 23
 <211> 565
 <212> PRT
 <213> recombinant

<400> 23

Glu Ala Glu Thr Arg Glu Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu
 1 5 10 15

Glu Arg Thr Asn Gln Ser Gly Leu Glu Arg Cys Glu Gly Glu Gln Asp

20

25

30

Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile
 35 40 45

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

Arg Gln Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys
 65 70 75 80

Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu
 85 90 95

Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr
 100 105 110

Leu Leu Thr Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
 115 120 125

Gly Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
 130 135 140

Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
 145 150 155 160

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
 165 170 175

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
 180 185 190

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

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
 210 215 220

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

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
245 250 255

Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
260 265 270

Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala
		275					280					285			

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
290 295 300

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
305 310 315 320

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
325 330 335

Val	Met	His	Glu	Ala	Leu	His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser
			340				345						350		

Leu Ser Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
355 360 365

Gly Gly Gly Ser Ala Gly Asp Val Asp Thr Leu Ala Phe Asp Gly Arg
370 375 380

Thr Phe Val Glu Tyr Leu Asn Ala Val Thr Glu Ser Glu Leu Ala Asn
385 390 395 400

Glu Ile Pro Val Glu Lys Ala Leu Gln Ser Asn His Phe Glu Leu Ser
405 410 415

Leu Arg Thr Glu Ala Thr Gln Gly Leu Val Leu Trp Ser Gly Lys Ala
420 425 430

Thr Glu Arg Ala Asp Tyr Val Ala Leu Ala Ile Val Asp Gly His Leu
435 440 445

Gln Leu Ser Tyr Asn Leu Gly Ser Gln Pro Val Val Leu Arg Ser Thr

450

455

460

Val Pro Val Asn Thr Asn Arg Trp Leu Arg Val Val Ala His Arg Glu
 465 470 475 480

Gln Arg Glu Gly Ser Leu Gln Val Gly Asn Glu Ala Pro Val Thr Gly
 485 490 495

Ser Ser Pro Leu Gly Ala Thr Gln Leu Asp Thr Asp Gly Ala Leu Trp
 500 505 510

Leu Gly Gly Leu Pro Glu Leu Pro Val Gly Pro Ala Leu Pro Lys Ala
 515 520 525

Tyr Gly Thr Gly Phe Val Gly Cys Leu Arg Asp Val Val Val Gly Arg
 530 535 540

His Pro Leu His Leu Leu Glu Asp Ala Val Thr Lys Pro Glu Leu Arg
 545 550 555 560

Pro Cys Pro Thr Pro
 565

<210> 24
 <211> 557
 <212> PRT
 <213> recombinant

<400> 24

Glu Ala Glu Thr Arg Glu Cys Ile Tyr Tyr Asn Ala Asn Trp Glu Leu
 1 5 10 15

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

Lys Arg Leu His Cys Tyr Ala Ser Trp Arg Asn Ser Ser Gly Thr Ile
 35 40 45

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

Arg Gln Glu Cys Val Ala Thr Glu Glu Asn Pro Gln Val Tyr Phe Cys
65 70 75 80

Cys Cys Glu Gly Asn Phe Cys Asn Glu Arg Phe Thr His Leu Pro Glu
85 90 95

Ala Gly Gly Pro Glu Val Thr Tyr Glu Pro Pro Pro Thr Ala Pro Thr
100 105 110

Leu Leu Thr Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

Gly Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
130 135 140

Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
145 150 155 160

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
165 170 175

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
180 185 190

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

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
210 215 220

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

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
245 250 255

Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
260 265 270

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
275 280 285

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
 290 295 300

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
 305 310 315 320

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
 325 330 335

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
 340 345 350

Leu Ser Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
 355 360 365

Gly Gly Gly Ser Ala Gly Asp Val Asp Thr Leu Ala Phe Asp Gly Arg
 370 375 380

Thr Phe Val Glu Tyr Leu Asn Ala Val Thr Glu Ser Glu Lys Ala Leu
 385 390 395 400

Gln Ser Asn His Phe Glu Leu Ser Leu Arg Thr Glu Ala Thr Gln Gly
 405 410 415

Leu Val Leu Trp Ser Gly Lys Ala Thr Glu Arg Ala Asp Tyr Val Ala
 420 425 430

Leu Ala Ile Val Asp Gly His Leu Gln Leu Ser Tyr Asn Leu Gly Ser
 435 440 445

Gln Pro Val Val Leu Arg Ser Thr Val Pro Val Asn Thr Asn Arg Trp
 450 455 460

Leu Arg Val Val Ala His Arg Glu Gln Arg Glu Gly Ser Leu Gln Val
 465 470 475 480

Gly Asn Glu Ala Pro Val Thr Gly Ser Ser Pro Leu Gly Ala Thr Gln
 485 490 495

Leu Asp Thr Asp Gly Ala Leu Trp Leu Gly Gly Leu Pro Glu Leu Pro
 500 505 510

Val Gly Pro Ala Leu Pro Lys Ala Tyr Gly Thr Gly Phe Val Gly Cys
 515 520 525

Leu Arg Asp Val Val Val Gly Arg His Pro Leu His Leu Leu Glu Asp
 530 535 540

Ala Val Thr Lys Pro Glu Leu Arg Pro Cys Pro Thr Pro
 545 550 555

<210> 25
 <211> 288
 <212> PRT
 <213> recombinant

<400> 25

Gly Asn Cys Trp Leu Arg Gln Ala Lys Asn Gly Arg Cys Gln Val Leu
 1 5 10 15

Tyr Lys Thr Glu Leu Ser Lys Glu Glu Cys Cys Ser Thr Gly Arg Leu
 20 25 30

Ser Thr Ser Trp Thr Glu Glu Asp Val Asn Asp Asn Thr Leu Phe Lys
 35 40 45

Trp Met Ile Phe Asn Gly Gly Ala Pro Asn Cys Ile Pro Cys Lys Glu
 50 55 60

Thr Cys Glu Asn Val Asp Cys Gly Pro Gly Lys Lys Cys Arg Met Asn
 65 70 75 80

Lys Lys Asn Lys Pro Arg Cys Val Cys Ala Pro Asp Cys Ser Asn Ile
 85 90 95

Thr Trp Lys Gly Pro Val Cys Gly Leu Asp Gly Lys Thr Tyr Arg Asn
 100 105 110

Glu Cys Ala Leu Leu Lys Ala Arg Cys Lys Glu Gln Pro Glu Leu Glu
 115 120 125

Val Gln Tyr Gln Gly Lys Cys Lys Lys Thr Cys Arg Asp Val Phe Cys
 130 135 140

Pro Gly Ser Ser Thr Cys Val Val Asp Gln Thr Asn Asn Ala Tyr Cys
 145 150 155 160

Val Thr Cys Asn Arg Ile Cys Pro Glu Pro Ser Ser Ser Glu Gln Tyr
 165 170 175

Leu Cys Gly Asn Asp Gly Val Thr Tyr Ser Ser Ala Cys His Leu Arg
 180 185 190

Lys Ala Thr Cys Leu Leu Gly Arg Ser Ile Gly Leu Ala Tyr Glu Gly
 195 200 205

Lys Cys Ile Lys Ala Lys Ser Cys Glu Asp Ile Gln Cys Gly Gly Gly
 210 215 220

Lys Lys Cys Leu Trp Asp Ser Lys Val Gly Arg Gly Arg Cys Ser Leu
 225 230 235 240

Cys Asp Glu Leu Cys Pro Asp Ser Lys Ser Asp Glu Pro Val Cys Ala
 245 250 255

Ser Asp Asn Ala Thr Tyr Ala Ser Glu Cys Ala Met Lys Glu Ala Ala
 260 265 270

Cys Ser Ser Gly Val Leu Leu Glu Val Lys His Ser Gly Ser Cys Asn
 275 280 285

<210> 26
 <211> 530
 <212> PRT
 <213> recombinant

<400> 26

Gly Asn Cys Trp Leu Arg Gln Ala Lys Asn Gly Arg Cys Gln Val Leu
 1 5 10 15

Tyr Lys Thr Glu Leu Ser Lys Glu Glu Cys Cys Ser Thr Gly Arg Leu
 20 25 30

Ser Thr Ser Trp Thr Glu Glu Asp Val Asn Asp Asn Thr Leu Phe Lys
 35 40 45

Trp Met Ile Phe Asn Gly Gly Ala Pro Asn Cys Ile Pro Cys Lys Glu
 50 55 60

Thr Cys Glu Asn Val Asp Cys Gly Pro Gly Lys Lys Cys Arg Met Asn
 65 70 75 80

Lys Lys Asn Lys Pro Arg Cys Val Cys Ala Pro Asp Cys Ser Asn Ile
 85 90 95

Thr Trp Lys Gly Pro Val Cys Gly Leu Asp Gly Lys Thr Tyr Arg Asn
 100 105 110

Glu Cys Ala Leu Leu Lys Ala Arg Cys Lys Glu Gln Pro Glu Leu Glu
 115 120 125

Val Gln Tyr Gln Gly Lys Cys Lys Lys Thr Cys Arg Asp Val Phe Cys
 130 135 140

Pro Gly Ser Ser Thr Cys Val Val Asp Gln Thr Asn Asn Ala Tyr Cys
 145 150 155 160

Val Thr Cys Asn Arg Ile Cys Pro Glu Pro Ser Ser Ser Glu Gln Tyr
 165 170 175

Leu Cys Gly Asn Asp Gly Val Thr Tyr Ser Ser Ala Cys His Leu Arg
 180 185 190

Lys Ala Thr Cys Leu Leu Gly Arg Ser Ile Gly Leu Ala Tyr Glu Gly
 195 200 205

Lys Cys Ile Lys Ala Lys Ser Cys Glu Asp Ile Gln Cys Gly Gly Gly
 210 215 220

Lys Lys Cys Leu Trp Asp Ser Lys Val Gly Arg Gly Arg Cys Ser Leu
 225 230 235 240

Cys Asp Glu Leu Cys Pro Asp Ser Lys Ser Asp Glu Pro Val Cys Ala
245 250 255

Ser Asp Asn Ala Thr Tyr Ala Ser Glu Cys Ala Met Lys Glu Ala Ala
260 265 270

Cys Ser Ser Gly Val Leu Leu Glu Val Lys His Ser Gly Ser Cys Asn
275 280 285

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
290 295 300

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
305 310 315 320

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
325 330 335

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
340 345 350

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
355 360 365

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
370 375 380

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
385 390 395 400

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu
405 410 415

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
420 425 430

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

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
450 455 460

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
 465 470 475 480

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
 485 490 495

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
 500 505 510

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
 515 520 525

Gly Lys
 530

<210> 27
 <211> 738
 <212> PRT
 <213> recombinant

<400> 27

Gly Asn Cys Trp Leu Arg Gln Ala Lys Asn Gly Arg Cys Gln Val Leu
 1 5 10 15

Tyr Lys Thr Glu Leu Ser Lys Glu Glu Cys Cys Ser Thr Gly Arg Leu
 20 25 30

Ser Thr Ser Trp Thr Glu Glu Asp Val Asn Asp Asn Thr Leu Phe Lys
 35 40 45

Trp Met Ile Phe Asn Gly Gly Ala Pro Asn Cys Ile Pro Cys Lys Glu
 50 55 60

Thr Cys Glu Asn Val Asp Cys Gly Pro Gly Lys Lys Cys Arg Met Asn
 65 70 75 80

Lys Lys Asn Lys Pro Arg Cys Val Cys Ala Pro Asp Cys Ser Asn Ile
 85 90 95

Thr Trp Lys Gly Pro Val Cys Gly Leu Asp Gly Lys Thr Tyr Arg Asn

100					105					110					
Glu	Cys	Ala	Leu	Leu	Lys	Ala	Arg	Cys	Lys	Glu	Gln	Pro	Glu	Leu	Glu
		115					120					125			
Val	Gln	Tyr	Gln	Gly	Lys	Cys	Lys	Lys	Thr	Cys	Arg	Asp	Val	Phe	Cys
	130					135					140				
Pro	Gly	Ser	Ser	Thr	Cys	Val	Val	Asp	Gln	Thr	Asn	Asn	Ala	Tyr	Cys
145					150					155					160
Val	Thr	Cys	Asn	Arg	Ile	Cys	Pro	Glu	Pro	Ser	Ser	Ser	Glu	Gln	Tyr
				165					170					175	
Leu	Cys	Gly	Asn	Asp	Gly	Val	Thr	Tyr	Ser	Ser	Ala	Cys	His	Leu	Arg
			180					185					190		
Lys	Ala	Thr	Cys	Leu	Leu	Gly	Arg	Ser	Ile	Gly	Leu	Ala	Tyr	Glu	Gly
		195					200					205			
Lys	Cys	Ile	Lys	Ala	Lys	Ser	Cys	Glu	Asp	Ile	Gln	Cys	Gly	Gly	Gly
	210					215					220				
Lys	Lys	Cys	Leu	Trp	Asp	Ser	Lys	Val	Gly	Arg	Gly	Arg	Cys	Ser	Leu
225					230					235					240
Cys	Asp	Glu	Leu	Cys	Pro	Asp	Ser	Lys	Ser	Asp	Glu	Pro	Val	Cys	Ala
				245					250					255	
Ser	Asp	Asn	Ala	Thr	Tyr	Ala	Ser	Glu	Cys	Ala	Met	Lys	Glu	Ala	Ala
			260					265					270		
Cys	Ser	Ser	Gly	Val	Leu	Leu	Glu	Val	Lys	His	Ser	Gly	Ser	Cys	Asn
		275					280					285			
Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp
	290					295					300				
Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly
305					310					315					320

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
 325 330 335

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
 340 345 350

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
 355 360 365

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
 370 375 380

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
 385 390 395 400

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu
 405 410 415

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
 420 425 430

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

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
 450 455 460

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
 465 470 475 480

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
 485 490 495

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
 500 505 510

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
 515 520 525

Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly

530

535

540

Ser Val Gly Asp Leu Glu Thr Leu Ala Phe Asp Gly Arg Thr Tyr Ile
 545 550 555 560

Glu Tyr Leu Asn Ala Val Thr Glu Ser Glu Leu Thr Asn Glu Ile Pro
 565 570 575

Ala Glu Lys Ala Leu Gln Ser Asn His Phe Glu Leu Ser Leu Arg Thr
 580 585 590

Glu Ala Thr Gln Gly Leu Val Leu Trp Ile Gly Lys Val Gly Glu Arg
 595 600 605

Ala Asp Tyr Met Ala Leu Ala Ile Val Asp Gly His Leu Gln Leu Ser
 610 615 620

Tyr Asp Leu Gly Ser Gln Pro Val Val Leu Arg Ser Thr Val Lys Val
 625 630 635 640

Asn Thr Asn Arg Trp Leu Arg Val Arg Ala His Arg Glu His Arg Glu
 645 650 655

Gly Ser Leu Gln Val Gly Asn Glu Ala Pro Val Thr Gly Ser Ser Pro
 660 665 670

Leu Gly Ala Thr Gln Leu Asp Thr Asp Gly Ala Leu Trp Leu Gly Gly
 675 680 685

Leu Gln Lys Leu Pro Val Gly Gln Ala Leu Pro Lys Ala Tyr Gly Thr
 690 695 700

Gly Phe Val Gly Cys Leu Arg Asp Val Val Val Gly His Arg Gln Leu
 705 710 715 720

His Leu Leu Glu Asp Ala Val Thr Lys Pro Glu Leu Arg Pro Cys Pro
 725 730 735

Thr Leu

<210> 28
 <211> 445
 <212> PRT
 <213> recombinant

<400> 28

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

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

Tyr Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45

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

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

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

Ala Arg Gly Gly Trp Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
 100 105 110

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

Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val
 130 135 140

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

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

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

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

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

Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu
 225 230 235 240

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

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

Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
 275 280 285

Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
 290 295 300

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

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

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

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

Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
 370 375 380

Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
 385 390 395 400

Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
 405 410 415

Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
 420 425 430

His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 435 440 445

<210> 29
 <211> 217
 <212> PRT
 <213> recombinant

<400> 29

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

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Ser Tyr
 20 25 30

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

Met Ile Tyr Gly Val Ser Lys Arg Pro Ser Gly Val Ser Asn Arg Phe
 50 55 60

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

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Phe Ala Gly Gly
 85 90 95

Ser Tyr Tyr Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
 100 105 110

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

Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe
 130 135 140

Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val
 145 150 155 160

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

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

His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu
 195 200 205

Lys Thr Val Ala Pro Thr Glu Cys Ser
 210 215

<210> 30
 <211> 653
 <212> PRT
 <213> recombinant

<400> 30

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

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

Tyr Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45

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

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

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

Ala Arg Gly Gly Trp Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
 100 105 110

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

Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val
 130 135 140

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

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

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

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

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

Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu
 225 230 235 240

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

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

Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
 275 280 285

Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
 290 295 300

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

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

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

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

Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
 370 375 380

Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
 385 390 395 400

Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
 405 410 415

Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
 420 425 430

His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Gly Gly Gly
 435 440 445

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ala Gly Asp Val
 450 455 460

Asp Thr Leu Ala Phe Asp Gly Arg Thr Phe Val Glu Tyr Leu Asn Ala
 465 470 475 480

Val Thr Glu Ser Glu Leu Ala Asn Glu Ile Pro Val Glu Lys Ala Leu
 485 490 495

Gln Ser Asn His Phe Glu Leu Ser Leu Arg Thr Glu Ala Thr Gln Gly
 500 505 510

Leu Val Leu Trp Ser Gly Lys Ala Thr Glu Arg Ala Asp Tyr Val Ala
 515 520 525

Leu Ala Ile Val Asp Gly His Leu Gln Leu Ser Tyr Asn Leu Gly Ser
 530 535 540

Gln Pro Val Val Leu Arg Ser Thr Val Pro Val Asn Thr Asn Arg Trp
 545 550 555 560

Leu Arg Val Val Ala His Arg Glu Gln Arg Glu Gly Ser Leu Gln Val
 565 570 575

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

Leu Asp Thr Asp Gly Ala Leu Trp Leu Gly Gly Leu Pro Glu Leu Pro
 595 600 605

Val Gly Pro Ala Leu Pro Lys Ala Tyr Gly Thr Gly Phe Val Gly Cys
 610 615 620

Leu Arg Asp Val Val Val Gly Arg His Pro Leu His Leu Leu Glu Asp
 625 630 635 640

Ala Val Thr Lys Pro Glu Leu Arg Pro Cys Pro Thr Pro
 645 650

<210> 31
 <211> 454
 <212> PRT
 <213> recombinant

<400> 31

Gln Leu Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
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Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Arg Lys Val
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Gly Ser Ser Val Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu
 35 40 45

Trp Ile Gly His Ile Tyr Trp Asp Asp Asp Lys Arg Leu Asn Pro Ser
 50 55 60

Leu Arg Asn Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe

65					70						75				80
Ser	Leu	Lys	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp	Thr	Ala	Val	Tyr	Tyr
				85					90					95	
Cys	Ala	Arg	Arg	Ala	Ile	Thr	Thr	Val	Ile	Gly	Gly	Gly	Thr	Phe	Asp
			100					105					110		
Leu	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys
		115					120					125			
Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly
	130					135					140				
Gly	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro
145					150					155					160
Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr
				165					170					175	
Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val
			180					185					190		
Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn
		195					200					205			
Val	Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Lys	Val	Glu	Pro
	210					215					220				
Lys	Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu
225					230				235						240
Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp
				245					250					255	
Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp
			260					265					270		
Val	Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly
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Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn
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Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp
 305 310 315 320

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

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

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

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

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

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

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

Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
 435 440 445

Ser Leu Ser Pro Gly Lys
 450

<210> 32
 <211> 213
 <212> PRT
 <213> recombinant

<400> 32

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

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

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

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

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Tyr Leu His Pro Leu Thr
 85 90 95

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

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

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

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

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

Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
 180 185 190

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

Asn Arg Gly Glu Cys
 210

<210> 33
 <211> 662
 <212> PRT
 <213> recombinant

<400> 33

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

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

Trp Ile Gly His Ile Tyr Trp Asp Asp Asp Lys Arg Leu Asn Pro Ser
 50 55 60

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

Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
 85 90 95

Cys Ala Arg Arg Ala Ile Thr Thr Val Ile Gly Gly Gly Thr Phe Asp
 100 105 110

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

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

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

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

Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val
 180 185 190

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

Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro
 210 215 220

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

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

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

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

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

Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp
 305 310 315 320

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

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

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

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

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

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

405

410

415

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

Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
 435 440 445

Ser Leu Ser Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 450 455 460

Gly Gly Gly Gly Ser Ala Gly Asp Val Asp Thr Leu Ala Phe Asp Gly
 465 470 475 480

Arg Thr Phe Val Glu Tyr Leu Asn Ala Val Thr Glu Ser Glu Leu Ala
 485 490 495

Asn Glu Ile Pro Val Glu Lys Ala Leu Gln Ser Asn His Phe Glu Leu
 500 505 510

Ser Leu Arg Thr Glu Ala Thr Gln Gly Leu Val Leu Trp Ser Gly Lys
 515 520 525

Ala Thr Glu Arg Ala Asp Tyr Val Ala Leu Ala Ile Val Asp Gly His
 530 535 540

Leu Gln Leu Ser Tyr Asn Leu Gly Ser Gln Pro Val Val Leu Arg Ser
 545 550 555 560

Thr Val Pro Val Asn Thr Asn Arg Trp Leu Arg Val Val Ala His Arg
 565 570 575

Glu Gln Arg Glu Gly Ser Leu Gln Val Gly Asn Glu Ala Pro Val Thr
 580 585 590

Gly Ser Ser Pro Leu Gly Ala Thr Gln Leu Asp Thr Asp Gly Ala Leu
 595 600 605

Trp Leu Gly Gly Leu Pro Glu Leu Pro Val Gly Pro Ala Leu Pro Lys
 610 615 620

Ala Tyr Gly Thr Gly Phe Val Gly Cys Leu Arg Asp Val Val Val Gly
 625 630 635 640

Arg His Pro Leu His Leu Leu Glu Asp Ala Val Thr Lys Pro Glu Leu
 645 650 655

Arg Pro Cys Pro Thr Pro
 660

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 <211> 1381
 <212> DNA
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<400> 34
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 tctgtgtttc tgttcccacc aaaacaaaa gataccctga tgatctctag aaccctgag 180
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<210> 35
 <211> 1389
 <212> DNA
 <213> recombinant

<400> 35
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 taaaagctt 1389

<210> 36
 <211> 1379
 <212> DNA
 <213> recombinant

<400> 36
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 ctgtgtttct gttccacca aaacaaaag ataccctgat gatctctaga acccctgagg 180
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<210> 37
 <211> 1357
 <212> DNA
 <213> recombinant

<400> 37	
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<210> 38
 <211> 1147
 <212> DNA
 <213> recombinant

<400> 38	
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taagctt 1147

<210> 39
<211> 1152
<212> DNA
<213> recombinant

<400> 39
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tagtaaaagc tt 1152

<210> 40

<211> 1152
 <212> DNA
 <213> recombinant

<400> 40
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<400> 45
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