

SEQUENCE LISTING

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 TBOUL (ELBAZ), Yael
 SHPERBER (SERY), Yael
 EREL SEGAL, Reut
 OREN, Ravit
 ALISHEKEVITZ, Dror Shmuel

<120> T CELL RECEPTOR LIKE ANTIBODIES HAVING FINE SPECIFICITY

<130> 66428

<150> US 62/172,264
 <151> 2015-06-08

<150> NL N2014935
 <151> 2015-06-08

<160> 384

<170> PatentIn version 3.5

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 Tyr Leu Leu Pro Ala Ile Val His Ile
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Thr Cys Ala

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Cys Cys Ala Gly Ala Cys Ala Ala Ala Gly Ala Gly Gly Thr Cys Ala
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Thr Ala Ala

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Thr Ala

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Ala Cys

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Glu Ala Ala Gly Ile Gly Ile Leu Thr Val
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<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
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Pro Ile Thr Glu Ala Gln Ser Phe Gly Leu Leu Asp Pro Lys Leu Cys

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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
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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				
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Pro Pro Arg

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			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
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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

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<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

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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
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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

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<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

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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
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<213> homo sapiens

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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				
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Thr	Gln	Pro	Leu	Asp	Ser	Tyr	Lys	Pro	Gly	Val	Asp	Cys	Ala	Pro	Cys				
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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				
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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				
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Gly	Ser	Phe	Arg	Thr	Pro	Ile	Gln	Glu	Glu	Gln	Ala	Asp	Ala	His	Ser				
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Ser	Gly	Leu	Leu	Ser	Pro	Ala	Leu	Thr	Glu	Ser	Leu	Leu	Val	Ala	Leu				
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Pro	Pro	Cys	His	Leu	Thr	Gly	Gly	Asn	Ala	Thr	Leu	Met	Val	Arg	Arg				
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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
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Val Leu Leu Ser Val Ala Met Phe Leu Leu Val Leu Gly Phe Ile Ile
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Ala Leu Ala Leu Gly Ser Arg Lys
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<213> homo sapiens

<400> 17

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

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<400> 19

Met Lys Gln Ser Phe Pro Leu Phe Leu Thr Pro Ser Pro Trp Lys Thr
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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 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

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Met Ala Gly Leu Ala Leu Gln Pro Gly Thr Ala Leu Leu Cys Tyr Ser
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 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

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<400> 21

Met Arg Ala Ala Pro Leu Leu Leu Ala Arg Ala Ala Ser Leu Ser Leu
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 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		
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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
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
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
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 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 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 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 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
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
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
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
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 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 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 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 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 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	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	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 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 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 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

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<210> 50
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<213> homo sapiens
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His Tyr Arg Glu Val Leu Pro Leu Ala Thr Phe Val Arg Arg Leu Gly
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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

<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
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
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
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 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
 225 230 235 240

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
 305 310 315 320

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
 545 550 555 560
 Tyr Asp Gly Leu Phe Pro Arg Val Gln Gln Trp Ser His Gln Gln Arg
 565 570 575
 Val Gly Asp Leu Phe Gln Lys Leu Ala Ser Gln Leu Gly Val Tyr Arg
 580 585 590
 Ala Phe Val Asp Asn Tyr Gly Val Ala Met Glu Met Ala Glu Lys Cys
 595 600 605
 Cys Gln Ala Asn Ala Gln Phe Ala Glu Ile Ser Glu Asn Leu Arg Ala
 610 615 620
 Arg Ser Asn Lys Asp Ala Lys Asp Pro Thr Thr Lys Asn Ser Leu Glu
 625 630 635 640
 Thr Leu Leu Tyr Lys Pro Val Asp Arg Val Thr Arg Ser Thr Leu Val
 645 650 655
 Leu His Asp Leu Leu Lys His Thr Pro Ala Ser His Pro Asp His Pro
 660 665 670
 Leu Leu Gln Asp Ala Leu Arg Ile Ser Gln Asn Phe Leu Ser Ser Ile
 675 680 685
 Asn Glu Glu Ile Thr
 690
 <210> 66
 <211> 464
 <212> PRT
 <213> homo sapiens
 <400> 66
 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			
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			
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			
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			
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
 305 310 315 320

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
385 390 395 400

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
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
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
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		

<210> 82
 <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				80	
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				160	
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																				
Ala	Lys	Cys	Cys	Asn	Leu	Phe	Glu	Ala	Cys	Phe	Asn	Ser	Ala	Ser	Tyr								
			690																				
Arg	Lys	Pro	Val	Gly	Gln	His	Ser	Met	Leu	Glu	Ala	Met	Ala	His	Arg								
			705																				
Leu	Arg	Met	Asp	Ala	Arg	Leu	Asp	Tyr	Glu	Ser	Gly	Arg	Met	Ser	Lys								
			725																				
Glu	Asp	Phe	Glu	Lys	Ala	Met	Ala	His	Leu	Gly	Glu	Ile	Gly	Tyr	Met								
			740																				
<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									
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										155			160							
Asp	Val	Ile	Met	Glu	Val	Val	Phe	Pro	Asn	Glu	Val	Gly	Ala	Arg	Ile								
			165													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											
Ala	Thr	Ala	Gly	Leu	Thr	His	Met	Met	Ile	Trp	His	Ser	Asn	Leu	Asn		
130						135											
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											
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 130	His	Tyr	Pro	Ser	Ala	Ala 135	Glu	Arg	Lys	His	Arg 140	His	Leu	Pro	Val
Ala 145	Asp	Ala	Val	Ile	His 150	Ala	Ser	Gly	Lys	Gln 155	Met	Trp	Gln	Ala	Arg 160
Leu	Thr	Val	Ser	Gly 165	Leu	Ala	Trp	Thr	Arg 170	Gln	Gln	Asn	Gln	Trp 175	Lys
Glu	Pro	Asp	Val 180	Tyr	Tyr	Thr	Ser	Ala 185	Phe	Val	Phe	Pro	Thr 190	Lys	Asp
Val	Ala	Leu 195	Arg	His	Val	Val	Cys 200	Ala	His	Glu	Leu	Val 205	Cys	Ser	Met
Glu	Asn 210	Thr	Arg	Ala	Thr	Lys 215	Met	Gln	Val	Ile	Gly 220	Asp	Gln	Tyr	Val
Lys 225	Val	Tyr	Leu	Glu	Ser 230	Phe	Cys	Glu	Asp	Val 235	Pro	Ser	Gly	Lys	Leu 240
Phe	Met	His	Val	Thr 245	Leu	Gly	Ser	Asp	Val 250	Glu	Glu	Asp	Leu	Thr 255	Met
Thr	Arg	Asn	Pro 260	Gln	Pro	Phe	Met	Arg 265	Pro	His	Glu	Arg	Asn 270	Gly	Phe
Thr	Val	Leu 275	Cys	Pro	Lys	Asn	Met 280	Ile	Ile	Lys	Pro	Gly 285	Lys	Ile	Ser
His 290	Ile	Met	Leu	Asp	Val	Ala 295	Phe	Thr	Ser	His	Glu 300	His	Phe	Gly	Leu
Leu 305	Cys	Pro	Lys	Ser	Ile 310	Pro	Gly	Leu	Ser	Ile 315	Ser	Gly	Asn	Leu	Leu 320
Met	Asn	Gly	Gln	Gln 325	Ile	Phe	Leu	Glu	Val 330	Gln	Ala	Ile	Arg	Glu 335	Thr
Val	Glu	Leu 340	Arg	Gln	Tyr	Asp	Pro	Val 345	Ala	Ala	Leu	Phe	Phe 350	Phe	Asp
Ile	Asp	Leu 355	Leu	Leu	Gln	Arg	Gly 360	Pro	Gln	Tyr	Ser	Glu 365	His	Pro	Thr
Phe 370	Thr	Ser	Gln	Tyr	Arg	Ile 375	Gln	Gly	Lys	Leu	Glu 380	Tyr	Arg	His	Thr
Trp 385	Asp	Arg	His	Asp	Glu 390	Gly	Ala	Ala	Gln	Gly 395	Asp	Asp	Asp	Val	Trp 400
Thr	Ser	Gly	Ser	Asp 405	Ser	Asp	Glu	Glu	Leu 410	Val	Thr	Thr	Glu 415	Arg	Lys
Thr	Pro	Arg 420	Val	Thr	Gly	Gly	Gly	Ala 425	Met	Ala	Gly	Ala	Ser 430	Thr	Ser

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
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Gly Val Phe Asp Gly Leu His Thr Val
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<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 278

Ser Leu Leu Met Trp Ile Thr Gln Cys
1 5

<210> 279
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> short peptide

<400> 279

Thr Leu Phe Asp Tyr Glu Val Arg Leu
1 5

<210> 280
<211> 702
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleic Acid sequence of D11 light chain

<400> 280
atgagaccgt ctattcagtt cctggggctc ttgttgttct ggcttcatgg tgctcagtgt 60
gacatccaga tgacacagtc tccatcctca ctgtctgcat ctctgggagg caaagtcacc 120
atcacatgca aggcaagcca agacattcac aactatatag cttggtacca acacaagcct 180
gtaaaaggtc ctaggctgct catacattac acatctacat tacagccagg caccatca 240
aggttcagtg gaagtgggtc tgggagagat tattccttca gcatcagcaa cctggagcct 300
gaagatattg caacttatta ttgtctacag tatgataatc tgtggacgtt cgggtggaggc 360
accaagctgg aaatcaaagc ggctgatgct gcaccaactg tatccatctt cccaccatcc 420
agtgagcagt taacatctgg aggtgcctca gtcgtgtgct tcttgaacaa cttctacccc 480
aaagacatca atgtcaagtg gaagattgat ggcagtgaac gacaaaatgg cgtcctgaac 540
agttggactg atcaggacag caaagacagc acctacagca tgagcagcac cctcacgttg 600
accaaggacg agtatgaacg acataacagc tatacctgtg aggccactca caagacatca 660
acttcaccca ttgtcaagag cttcaacagg aatgagtgtt ag 702

<210> 281
<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
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
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 ccagaccct cagtctgact	120
tgttctttct ctgggttttc actgaccact tctggtatgg gtgtgagctg gattcgtcag	180
ccttcaggaa agggctctgga gtggctggca cacatttact gggatgatga caagcgctat	240
aacccatccc tgaagagccg actcacaatc tccaaggata cctccagaaa ccaggtattc	300

ctcaagatca	ccagtgtgga	cgctgcagat	actgccacat	actactgtgc	tcgaaaggac	360
tacggtagta	gcttctatgc	tatgcactac	tggggtc aaag	gaacctcagt	caccgtctcc	420
tcagccaaaa	cgacaccccc	atctgtctat	ccactggccc	ctggatctgc	tgcccaaact	480
aactccatgg	tgaccctggg	atgcctggtc	aagggctatt	tccttgagcc	agtgacagtg	540
acctggaact	ctggatccct	gtccagcggg	gtgcacacct	tcccagctgt	cctgcagtct	600
gacctctaca	ctctgagcag	ctcagtgtact	gtccccctcca	gcacctggcc	cagcgagacc	660
gtcacctgca	acgttgccca	cccgccagc	agcaccaagg	tggacaagaa	aattgtgccc	720
agggattgtg	gttgtaagcc	ttgcatatgt	acagtcccag	aagtatcatc	tgtcttcac	780
ttccccccaa	agcccaagga	tgtgtctacc	attactctga	ctcctaaggt	cacgtgtgtt	840
gtggtagaca	tcagcaagga	tgatcccag	gtccagttca	gctggttttgt	agatgatgtg	900
gagggtgcaca	cagctcagac	gcaaccccg	gaggagcagt	tcaacagcac	tttccgctca	960
gtcagtgaac	ttcccatcat	gcaccaggac	tggctcaatg	gcaaggagtt	caaatgcagg	1020
gtcaacagtg	cagctttccc	tgccccatc	gagaaaacca	tctccaaaac	caaaggcaga	1080
ccgaaggctc	cacaggtgta	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

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 tattatttac agtaatttag catggtatca gcagaaacag 180
ggaaaatctc ctgagctcct ggtctatgct gcaacaaact tagcagctgg tgtgccatca 240
aggttcagtg gcagtggatc aggcacacag tattccctca agatcaatag cctgcagtct 300
gaagattttg ggacttatta ctgtcaacat ttttggggta gttcaatctc gttcggctcg 360
gggacaaagt tggaaataaa acgggctgat gctgcaccaa ctgtatccat cttcccacca 420
tccagtgagc agttaacatc tggaggtgcc tcagtcgtgt gcttcttgaa caactctac 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 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 60
gtgcaactga aggaatcagg acctggtctg tgggcgcct cacagagcct gtccatcact 120
tgcaactgtct ctgggttttc attaaccagc tatggtgtac actgggttcg ccagcctcca 180
ggaaagggtc tggagtggct gggagtaata tgggctggtg gaaccacaaa ttataattcg 240
gctctcatgt ccagactgag catcagcaga gacaactcca agagccaagt tttcttagaa 300
atgaacagtc tgcaactga tgacacagcc atttactact gtgccagaga tggtcacttc 360
cactttgact tctggggcca aggcaccact ctcacagtct cctcagccaa aacgacacc 420
ccatctgtct atccactggc ccctggatct gctgccaaa ctaactccat ggtgacctg 480
ggatgcctgg tcaagggcta tttccctgag ccagtgcag tgacctgaa ctctggatcc 540
ctgtccagcg gtgtgcacac cttcccagct gtccctgcagt ctgacctcta cactctgagc 600
agctcagtga ctgtcccctc cagcacctgg cccagcgaga ccgtcacctg caacgttgcc 660
caccggcca gcagaccaa ggtggacaag aaaattgtgc ccagggattg tggttgtaag 720

ccttgcatat gtacagtccc agaagtatca tctgtcttca tcttcccccc aaagcccaag	780
gatgtgctca ccattactct gactcctaag gtcacgtgtg ttgtggtaga catcagcaag	840
gatgatcccg aggtccagtt cagctggttt gtagatgatg tggaggtgca cacagctcag	900
acgcaacccc gggaggagca gttcaacagc actttccgct cagtcagtga acttcccatc	960
atgcaccagg actgggtcaa tggcaaggag ttcaaatgca ggggtcaacag tgcagctttc	1020
cctgccccca tcgagaaaaac catctccaaa accaaaggca gaccgaaggc tccacaggtg	1080
tacaccattc cacctcccaa ggagcagatg gccaaaggata aagtcagtct gacctgcatg	1140
ataacagact tcttcctga agacattact gtggagtggc agtggaatgg gcagccagcg	1200
gagaactaca agaacactca gcccatcatg gacacagatg gctcttactt cgtctacagc	1260
aagctcaatg tgcagaagag caactgggag gcaggaaata ctttcacctg ctctgtgtta	1320
catgaggggcc tgcacaacca ccatactgag aagagcctct cccactctcc tggtaaata	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	

<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
 agctatggtg 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 tcaactcagtc tccagccacc ctgtctgtga gtccaggaga tagcgtcagt 60
ctttcctgca gggccagcca aagtattagc aacagcctac actggatatca acaaaaatca 120
catgagtctc caaggcttct catcaagtat gcttcccagt ccatctctgg aatccctct 180
aggttcagtg gcagtggatc agggacagat ttcactctca gtatcaacag tgtggagact 240
gaagattttg gaatgtatct ctgtcaacag agttacagct ggcctctcac gttcgggtgt 300
gggtccaagc tggagctgaa acgggctgat gctgcaccaa ctgtatccat cttcccacca 360
tccagtggagc 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> 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 tggaggagtc ggggggaggc ttagtgaagc ctggagggtc cctgaaactc	60
tcctgtgcag cctctggatt cgttttcagt agctatgaca tgtcttgggt tcgccaggct	120
caggagaaga ggctggagtg ggtcgcatac atgagtagtg gtggcgccac 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 tgacagtgtg ctggaactct	480
ggatccctgt ccagcgggtg gcacaccttc ccagctgtcc tgcagtctga cctctacact	540
ctgagcagct cagtgtactgt cccctccagc acctggccca gcgagaccgt cacctgcaac	600
gttgcaccac cgccagcag caccaagggt gacaagaaaa ttgtgcccag ggattgtggt	660
tgtaagcctt gcatatgtac agtcccagaa gtatcatctg tcttcatctt cccccaaaag	720
cccaaggatg tgctcaccat tactctgact cctaagggtc cgtgtgttgt ggtagacatc	780
agcaaggatg atcccagagt ccagttcagc tggttttag atgatgtgga ggtgcacaca	840
gctcagacgc aaccccgga ggagcagttc aacagcactt tccgctcagt cagtgaactt	900
cccatcatgc accaggactg gctcaatggc aaggagtcca aatgcagggt caacagtgca	960
gctttccctg ccccatcga gaaaaccatc tccaaaacca aaggcagacc gaaggtcca	1020
caggtgtaca ccattccacc tcccaaggag 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								

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<210> 316
<211> 33
<212> DNA
<213> Artificial sequence
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<220>
<223> Nucleic Acid sequence of B47B6 light chain CDR

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<400> 316
agggccagcc aaagtattag caacagccta cac
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33

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<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
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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

caaattgttc tcaccagtc tccagcaatc atgtctgcat ctccagggga gaaggtcacc 60

ataacctgca gtgtcagctc aagtgtagat tacattcact ggttcagca gaagccaggc 120

acttctccca aattctggat ttatagcaca tccatcctgg cttctggagt ccctgctcgc 180

ttcagtggca gtggatctgg gacctcttac tctctcacia tcagccgaat ggaggtgaa 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

<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

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tcttgcaagg ctactggcta cacattcact ggctactgga tagagtggat aaaacagagg      120
cctggacatg gccttgagtg gattggagag attttacctg gaagtgggtg tactaactac      180
aatgagaaat tcaagggcaa ggccacattc actgcacata catcctcca cagagcctac      240
atgcaactca gcagcctgac aactgaggac tctgccatct attactgtgc aagggatagt      300
aactccttta cttactgggg ccaagggact ctggctactg tctcttcagc caaaacgaca      360
cccccatctg tctatccact ggcccctgga tctgctgccc aaactaactc catggtgacc      420
ctgggatgcc tggtaagggt ctatttcctt gagccagtga cagtgcctg gaactctgga      480
tccctgtcca gcggtgtgca caccttccca gctgtcctgc agtctgacct ctacactctg      540
agcagctcag tgactgtccc ctccagcacc tggcccagcg agaccgtcac ctgcaacggt      600
gccacccggt ccagcagcac caaggtggac aagaaaattg tgcccaggga ttgtggttgt      660
aagccttgca tatgtacagt ccagaagta tcatctgtct tcatcttccc ccaaagccc      720
aaggatgtgc tcaccattac tctgactcct aaggtcacgt gtgttggtgt agacatcagc      780
aaggatgatc ccgaggtcca gttcagctgg tttgtagatg atgtggaggt gcacacagct      840
cagacgcaac cccgggagga gcagttcaac agcactttcc gctcagtcag tgaacttccc      900
atcatgcacc aggactggct caatggcaag gagttcaaat gcagggtcaa cagtgcagct      960
ttccctgccc ccatcgagaa aaccatctcc aaaaccaaag gcagaccgaa ggctccacag     1020
gtgtacacca ttccacctcc caaggagcag atggccaagg ataaagtcat 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 tctccactc tctggtaaa     1320

```

```

<210> 331
<211> 440
<212> PRT
<213> Artificial sequence

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```

<220>
<223> Amino Acid sequence of C106B9 heavy chain

```

```

<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 tggactaac 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
gacatccaga tgactcagtc tccagcctcc ctatctgtat ctgtgggaga aactgtcacc 60
atcacatgtc gagcaagtga gaatatttac agaaatttag catggtatca 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 tggaggtgcc 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 tgctgcccaa 420
actaactcca tggtgaccct gggatgcctg gtcaagggct atttcctga gccagtgaca 480
gtgacctgga actctggatc cctgtccagc ggtgtgcaca ccttcccagc tgtcctgcag 540
tctgacctct aactctgag cagctcagtg actgtcccct ccagcacctg gccagcgag 600
accgtcacct gcaacgttgc ccacccggcc agcagcacca aggtggacaa gaaaattgtg 660
cccagggatt gtggttgtaa gccttgcata tgtacagtcc cagaagtatc atctgtcttc 720
atcttcccc caaagcccaa ggatgtgctc accattactc tgactcctaa ggtcacgtgt 780
gttggtgtag acatcagcaa ggatgatccc gaggtccagt tcagctgggt ttagatgat 840
gtggagggtg acacagctca gacgcaaccc cgggaggagc agttcaacag cactttccgc 900

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tcagtcagtg aacttcccat catgcaccag gactggctca atggcaagga gttcaaatgc      960
agggtaaca gtgcagcttt cctgcccc atcgagaaaa ccatctccaa aaccaaaggc      1020
agaccgaagg ctccacaggt gtacaccatt ccacctcca aggagcagat ggccaaggat      1080
aaagtcagtc tgacctgcat gataacagac ttcttccttg 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

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```

<210> 347
<211> 446
<212> PRT
<213> Artificial sequence

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<220>
<223> Amino Acid sequence of F184C7 heavy chain

```

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<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

<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
 gaggtacta cggtagtggc cccgtactac ttgactac 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

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aatattgtgc tgaccagac tcccaaattc ctgcttgat cagcaggaga cagggtttcc      60
ataacctgca aggccagtca gcgtgtgaat aatgatgtag cttggtacca acagaagcca      120
gggcagtctc ctaaactgct gatatactat gcatccaatc gctacactgg agtccctgat      180
cgcttcactg gcagtggata tgggacggat ttcactttca ccatcagcac tgtgcaggct      240
gaagacctgg cagtttattt ctgtcagcag gattatagct ctccattcac gttcggctcg      300
gggacaaagt tggaaataaa acgggctgat gctgcaccaa ctgtatccat cttcccacca      360
tccagtgagc agttaacatc tggaggtgcc 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

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<210> 361
<211> 214
<212> PRT
<213> Artificial sequence

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<220>
<223> Amino Acid sequence of D10A3 light chain

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<400> 361

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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
catggaaaaga gccttgagtg gattggagat attaatccta actatgatac tactacctac 180
aaccagaagt tcaagggaaa ggccacattg actgtagaca agtcctccag cacagcctac 240
atggagctcc gcagcctgac ttctgaggac actgcagtct tttactgtgc aagaaggaac 300
tatggtaact acgtgggggt tgacttctgg ggccaaggca ccactctcac agtctcctca 360
gccaaaacga ccccccatc tgtctatcca ctggccctg gatctgctgc ccaaactaac 420
tccatgggtga cctgggatg cctggtaag ggctatttcc ctgagccagt gacagtgacc 480
tggaactctg gatccctgtc cagcgggtg cacccttcc cagctgtcct gcagtctgac 540
ctctacactc tgagcagctc agtgactgtc cctccagca cctggcccag cgagaccgtc 600
acctgcaacg ttgccacccc ggccagcagc accaagggtg acaagaaaat tgtgcccagg 660
gattgtgggt gtaagccttg catatgtaca gtcccagaag tatcatctgt cttcatcttc 720
cccccaaagc ccaaggatgt gctcaccatt actctgactc ctaaggtcac gtgtgttgtg 780
gtagacatca gcaaggatga tcccagggtc cagttcagct ggttttaga tgatgtggag 840
gtgcacacag ctgagacgca accccgggag gagcagttca acagcacttt ccgctcagtc 900
agtgaacttc ccatcatgca ccaggactgg ctcaatggca aggagttcaa atgcagggtc 960
aacagtgcag ctttcctgtc ccccatcgag aaaaccatct ccaaaaccaa aggcagaccg 1020
aaggctccac aggtgtacac cattccacct cccaaggagc agatggccaa ggataaagtc 1080
agtctgacct gcatgataac agacttcttc cctgaagaca ttactgtgga gtggcagtg 1140
aatgggcagc cagcggagaa ctacaagaac actcagccca tcatggacac agatggctct 1200
tacttcgtct acagcaagct caatgtgcag aagagcaact gggaggcagg aaatactttc 1260
acctgctctg tgttacatga gggcctgcac aaccaccata ctgagaagag cctctccac 1320
tctcctggta aa 1332

<210> 363
<211> 444
<212> PRT
<213> Artificial sequence

<220>
<223> Amino Acid sequence of D10A3 heavy chain

<400> 363

Glu	Val	Gln	Leu	Gln	Gln	Phe	Gly	Thr	Glu	Leu	Val	Lys	Pro	Gly	Ala	1	5	10	15
Ser	Val	Lys	Ile	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	Thr	Asp	Tyr	20	25	30	
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
tatgcattcca 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

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<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 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> 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
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