

SEQUENCE LISTING

<110> THE ROYAL INSTITUTION FOR THE ADVANCEMENT OF
LEARNING/MCGILL UNIVERSITY
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<120> BIOSENSORS FOR MONITORING BIOMOLECULE LOCALIZATION AND
TRAFFICKING IN CELLS

<130> 782/15691.80

<150> US 62/052,738

<151> 2014-09-19

<160> 88

<170> PatentIn version 3.5

<210> 1

<211> 11

<212> PRT

<213> Homo sapiens

<400> 1

Met	Gly	Cys	Ile	Lys	Ser	Lys	Gly	Lys	Asp	Ser
1				5					10	

<210> 2

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic linker

<400> 2

Val	Gly	Gly	Gly	Gly	Ser	Lys	Leu	Pro	Ala	Thr
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<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic linker

<400> 3

Gly	Gly	Ser	Gly	Leu	Lys	Leu	Pro	Ala	Thr
1				5					10

<210> 4
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<213> Artificial Sequence

<220>
<223> synthetic linker

<400> 4

Asn Ala Ala Ile Arg Ser Gly Gly
1 5

<210> 5
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<220>
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<400> 5

Gly Gly Asn Ala Ala Ile Arg Ser
1 5

<210> 6
<211> 14
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<213> Artificial Sequence

<220>
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<400> 6

Gly Ser Ala Gly Thr Met Ala Ser Asn Asn Thr Ala Ser Gly
1 5 10

<210> 7
<211> 15
<212> PRT
<213> Homo sapiens

<400> 7

Gly Lys Lys Lys Lys Lys Lys Ser Lys Thr Lys Cys Val Ile Met
1 5 10 15

<210> 8
<211> 21
<212> PRT
<213> Homo sapiens

<400> 8

Ser Pro Lys Lys Gly Leu Leu Gln Arg Leu Phe Lys Arg Gln His Gln
1 5 10 15

Asn Asn Ser Lys Ser
20

<210> 9
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<213> Artificial Sequence

<220>
<223> GSAGT

<400> 9

Gly Ser Ala Gly Thr
1 5

<210> 10
<211> 311
<212> PRT
<213> Renilla reniformis

<400> 10

Met Thr Ser Lys Val Tyr Asp Pro Glu Gln Arg Lys Arg Met Ile Thr
1 5 10 15

Gly Pro Gln Trp Trp Ala Arg Cys Lys Gln Met Asn Val Leu Asp Ser
20 25 30

Phe Ile Asn Tyr Tyr Asp Ser Glu Lys His Ala Glu Asn Ala Val Ile
35 40 45

Phe Leu His Gly Asn Ala Thr Ser Ser Tyr Leu Trp Arg His Val Val
50 55 60

Pro His Ile Glu Pro Val Ala Arg Cys Ile Ile Pro Asp Leu Ile Gly
65 70 75 80

Met Gly Lys Ser Gly Lys Ser Gly Asn Gly Ser Tyr Arg Leu Leu Asp
85 90 95

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

Lys Ile Ile Phe Val Gly His Asp Trp Gly Ala Ala Leu Ala Phe His
115 120 125

Tyr Ser Tyr Glu His Gln Asp Lys Ile Lys Ala Ile Val His Ala Glu
130 135 140

Ser Val Val Asp Val Ile Glu Ser Trp Asp Glu Trp Pro Asp Ile Glu
145 150 155 160

Glu Asp Ile Ala Leu Ile Lys Ser Glu Glu Gly Glu Lys Met Val Leu
165 170 175

Glu Asn Asn Phe Phe Val Glu Thr Val Leu Pro Ser Lys Ile Met Arg
180 185 190

Lys Leu Glu Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro Phe Lys Glu
195 200 205

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

Leu Val Lys Gly Gly Lys Pro Asp Val Val Gln Ile Val Arg Asn Tyr
225 230 235 240

Asn Ala Tyr Leu Arg Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu
245 250 255

Ser Asp Pro Gly Phe Phe Ser Asn Ala Ile Val Glu Gly Ala Lys Lys
260 265 270

Phe Pro Asn Thr Glu Phe Val Lys Val Lys Gly Leu His Phe Ser Gln
275 280 285

Glu Asp Ala Pro Asp Glu Met Gly Lys Tyr Ile Lys Ser Phe Val Glu
290 295 300

Arg Val Leu Lys Asn Glu Gln
305 310

<210> 11
<211> 233
<212> PRT
<213> Renilla reniformis

<400> 11

Met Asp Leu Ala Lys Leu Gly Leu Lys Glu Val Met Pro Thr Lys Ile
1 5 10 15

Asn Leu Glu Gly Leu Val Gly Asp His Ala Phe Ser Met Glu Gly Val
20 25 30

Gly Glu Gly Asn Ile Leu Glu Gly Thr Gln Glu Val Lys Ile Ser Val
35 40 45

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

Phe Ser Tyr Gly Asn Arg Ala Tyr Thr Gly Tyr Pro Glu Glu Ile Ser
65 70 75 80

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

Ile Arg Tyr Gln Asp Gly Gly Thr Ala Ile Val Lys Ser Asp Ile Ser
100 105 110

Leu Glu Asp Gly Lys Phe Ile Val Asn Val Asp Phe Lys Ala Lys Asp
115 120 125

Leu Arg Arg Met Gly Pro Val Met Gln Gln Asp Ile Val Gly Met Gln
130 135 140

Pro Ser Tyr Glu Ser Met Tyr Thr Asn Val Thr Ser Val Ile Gly Glu
145 150 155 160

Cys Ile Ile Ala Phe Lys Leu Gln Thr Gly Lys His Phe Thr Tyr His
165 170 175

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

Tyr His Phe Ile Gln His Arg Leu Val Lys Thr Asn Val Asp Thr Ala
195 200 205

Ser Gly Tyr Val Val Gln His Glu Thr Ala Ile Ala Ala His Ser Thr
210 215 220

Ile Lys Lys Ile Glu Gly Ser Leu Pro
225 230

<210> 12
<211> 239
<212> PRT
<213> Aequorea victoria

<400> 12

Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu
1 5 10 15

Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly
20 25 30

Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile
35 40 45

Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr

50

55

60

Leu Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys
65 70 75 80

Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu
85 90 95

Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu
100 105 110

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

Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr
130 135 140

Asn Tyr Asn Pro His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn
145 150 155 160

Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser
165 170 175

Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly
180 185 190

Pro Val Leu Leu Pro Asp Asn His Tyr Leu Phe Thr Gln Ser Ala Leu
195 200 205

Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe
210 215 220

Val Thr Ala Ala Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys
225 230 235

<210> 13
<211> 332
<212> PRT
<213> Homo sapiens

<400> 13

Met Val Asn Ser Thr His Arg Gly Met His Thr Ser Leu His Leu Trp
1 5 10 15

Asn Arg Ser Ser Tyr Arg Leu His Ser Asn Ala Ser Glu Ser Leu Gly
20 25 30

Lys Gly Tyr Ser Asp Gly Gly Cys Tyr Glu Gln Leu Phe Val Ser Pro
35 40 45

Glu	Val	Phe	Val	Thr	Leu	Gly	Val	Ile	Ser	Leu	Leu	Glu	Asn	Ile	Leu	50	55	60
Val	Ile	Val	Ala	Ile	Ala	Lys	Asn	Lys	Asn	Leu	His	Ser	Pro	Met	Tyr	65	70	75
Phe	Phe	Ile	Cys	Ser	Leu	Ala	Val	Ala	Asp	Met	Leu	Val	Ser	Val	Ser	85	90	95
Asn	Gly	Ser	Glu	Thr	Ile	Val	Ile	Thr	Leu	Leu	Asn	Ser	Thr	Asp	Thr	100	105	110
Asp	Ala	Gln	Ser	Phe	Thr	Val	Asn	Ile	Asp	Asn	Val	Ile	Asp	Ser	Val	115	120	125
Ile	Cys	Ser	Ser	Leu	Leu	Ala	Ser	Ile	Cys	Ser	Leu	Leu	Ser	Ile	Ala	130	135	140
Val	Asp	Arg	Tyr	Phe	Thr	Ile	Phe	Tyr	Ala	Leu	Gln	Tyr	His	Asn	Ile	145	150	155
Met	Thr	Val	Lys	Arg	Val	Gly	Ile	Ile	Ile	Ser	Cys	Ile	Trp	Ala	Ala	165	170	175
Cys	Thr	Val	Ser	Gly	Ile	Leu	Phe	Ile	Ile	Tyr	Ser	Asp	Ser	Ser	Ala	180	185	190
Val	Ile	Ile	Cys	Leu	Ile	Thr	Met	Phe	Phe	Thr	Met	Leu	Ala	Leu	Met	195	200	205
Ala	Ser	Leu	Tyr	Val	His	Met	Phe	Leu	Met	Ala	Arg	Leu	His	Ile	Lys	210	215	220
Arg	Ile	Ala	Val	Leu	Pro	Gly	Thr	Gly	Ala	Ile	Arg	Gln	Gly	Ala	Asn	225	230	235
Met	Lys	Gly	Ala	Ile	Thr	Leu	Thr	Ile	Leu	Ile	Gly	Val	Phe	Val	Val	245	250	255
Cys	Trp	Ala	Pro	Phe	Phe	Leu	His	Leu	Ile	Phe	Tyr	Ile	Ser	Cys	Pro	260	265	270
Gln	Asn	Pro	Tyr	Cys	Val	Cys	Phe	Met	Ser	His	Phe	Asn	Leu	Tyr	Leu	275	280	285
Ile	Leu	Ile	Met	Cys	Asn	Ser	Ile	Ile	Asp	Pro	Leu	Ile	Tyr	Ala	Leu	290	295	300

Arg Ser Gln Glu Leu Arg Lys Thr Phe Lys Glu Ile Ile Cys Cys Tyr
 305 310 315 320

Pro Leu Gly Gly Leu Cys Asp Leu Ser Ser Arg Tyr
 325 330

<210> 14
 <211> 332
 <212> PRT
 <213> Homo sapiens

<400> 14

Met Val Asn Ser Thr His Arg Gly Met His Thr Ser Leu His Leu Trp
 1 5 10 15

Asn Arg Ser Ser Tyr Arg Leu His Ser Asn Ala Ser Glu Ser Leu Gly
 20 25 30

Lys Gly Tyr Ser Asp Gly Gly Cys Tyr Glu Gln Leu Phe Val Ser Pro
 35 40 45

Glu Val Phe Val Thr Leu Gly Val Ile Ser Leu Leu Glu Asn Ile Leu
 50 55 60

Val Ile Val Ala Ile Ala Lys Asn Lys Asn Leu His Ser Pro Met Tyr
 65 70 75 80

Phe Phe Ile Cys Ser Leu Ala Val Ala Asp Met Leu Val Ser Val Ser
 85 90 95

Asn Gly Ser Glu Thr Ile Val Ile Thr Leu Leu Asn Ser Thr Asp Thr
 100 105 110

Asp Ala Gln Ser Phe Thr Val Asn Ile Asp Asn Val Ile Asp Ser Val
 115 120 125

Ile Cys Ser Ser Leu Leu Ala Ser Ile Cys Ser Leu Leu Ser Ile Ala
 130 135 140

Val Asp Arg Tyr Phe Thr Ile Phe Tyr Ala Leu Gln Tyr His Asn Ile
 145 150 155 160

Met Thr Val Lys Gln Val Gly Ile Ile Ile Ser Cys Ile Trp Ala Ala
 165 170 175

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

Val Ile Ile Cys Leu Ile Thr Met Phe Phe Thr Met Leu Ala Leu Met
195 200 205

Ala Ser Leu Tyr Val His Met Phe Leu Met Ala Arg Leu His Ile Lys
210 215 220

Arg Ile Ala Val Leu Pro Gly Thr Gly Ala Ile Arg Gln Gly Ala Asn
225 230 235 240

Met Lys Gly Ala Ile Thr Leu Thr Ile Leu Ile Gly Val Phe Val Val
245 250 255

Cys Trp Ala Pro Phe Phe Leu His Leu Ile Phe Tyr Ile Ser Cys Pro
260 265 270

Gln Asn Pro Tyr Cys Val Cys Phe Met Ser His Phe Asn Leu Tyr Leu
275 280 285

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

Arg Ser Gln Glu Leu Arg Lys Thr Phe Lys Glu Ile Ile Cys Cys Tyr
305 310 315 320

Pro Leu Gly Gly Leu Cys Asp Leu Ser Ser Arg Tyr
325 330

<210> 15
<211> 332
<212> PRT
<213> Homo sapiens

<400> 15

Met Val Asn Ser Thr His Arg Gly Met His Thr Ser Leu His Leu Trp
1 5 10 15

Asn Arg Ser Ser Tyr Arg Leu His Ser Asn Ala Ser Glu Ser Leu Gly
20 25 30

Lys Gly Tyr Ser Asp Gly Gly Cys Tyr Glu Gln Leu Phe Val Ser Pro
35 40 45

Glu Val Phe Val Thr Leu Gly Val Ile Ser Leu Leu Glu Asn Ile Leu
50 55 60

Val Ile Val Ala Ile Ala Lys Asn Lys Asn Leu His Ser Pro Met Tyr
65 70 75 80

Phe Phe Ile Cys Ser Leu Ala Val Ala Asp Met Leu Val Ser Val Ser
85 90 95

Asn Gly Ser Glu Thr Ile Val Ile Thr Leu Leu Asn Ser Thr Asp Thr
100 105 110

Asp Ala Gln Ser Phe Thr Val Asn Ile Asp Asn Val Ile Asp Ser Val
115 120 125

Ile Cys Ser Ser Leu Leu Ala Ser Ile Cys Ser Leu Leu Ser Ile Ala
130 135 140

Val Asp Arg Tyr Phe Thr Ile Phe Tyr Ala Leu Gln Tyr His Asn Ile
145 150 155 160

Met Thr Val Lys Arg Val Gly Ile Ile Ile Ser Cys Ile Trp Ala Ala
165 170 175

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

Val Ile Ile Cys Leu Ile Thr Met Phe Phe Thr Met Leu Ala Leu Met
195 200 205

Ala Ser Leu Tyr Val His Met Phe Leu Met Ala Arg Leu His Ile Lys
210 215 220

Arg Ile Ala Val Leu Pro Gly Thr Gly Ala Ile Arg Gln Gly Ala Asn
225 230 235 240

Met Lys Gly Ala Ile Thr Leu Thr Ile Leu Ile Gly Val Phe Val Val
245 250 255

Cys Trp Ala Pro Phe Phe Leu His Leu Ile Phe Tyr Ile Ser Cys Pro
260 265 270

Gln Asn Pro Tyr Cys Val Cys Phe Met Ser His Phe Asn Leu Tyr Leu
275 280 285

Ile Leu Ile Met Cys Asn Ser Ile Ile Asp His Leu Ile Tyr Ala Leu
290 295 300

Arg Ser Gln Glu Leu Arg Lys Thr Phe Lys Glu Ile Ile Cys Cys Tyr
305 310 315 320

Pro Leu Gly Gly Leu Cys Asp Leu Ser Ser Arg Tyr
325 330

<210> 16
<211> 371
<212> PRT
<213> Homo sapiens

<400> 16

Met Leu Met Ala Ser Thr Thr Ser Ala Val Pro Gly His Pro Ser Leu
1 5 10 15

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

Asp Pro Leu Leu Ala Arg Ala Glu Leu Ala Leu Leu Ser Ile Val Phe
35 40 45

Val Ala Val Ala Leu Ser Asn Gly Leu Val Leu Ala Ala Leu Ala Arg
50 55 60

Arg Gly Arg Arg Gly His Trp Ala Pro Ile His Val Phe Ile Gly His
65 70 75 80

Leu Cys Leu Ala Asp Leu Ala Val Ala Leu Phe Gln Val Leu Pro Gln
85 90 95

Leu Ala Trp Lys Ala Thr Asp Arg Phe Arg Gly Pro Asp Ala Leu Cys
100 105 110

Arg Ala Val Lys Tyr Leu Gln Met Val Gly Met Tyr Ala Ser Ser Tyr
115 120 125

Met Ile Leu Ala Met Thr Leu Asp Arg His Arg Ala Ile Cys Arg Pro
130 135 140

Met Leu Ala Tyr Arg His Gly Ser Gly Ala His Trp Asn Arg Pro Val
145 150 155 160

Leu Val Ala Trp Ala Phe Ser Leu Leu Leu Ser Leu Pro Gln Leu Phe
165 170 175

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

Trp Ala Cys Phe Ala Glu Pro Trp Gly Arg Arg Thr Tyr Val Thr Trp
195 200 205

Ile Ala Leu Met Val Phe Val Ala Pro Thr Leu Gly Ile Ala Ala Cys
210 215 220

Gln Val Leu Ile Phe Arg Glu Ile His Ala Ser Leu Val Pro Gly Pro

225		230		235		240									
Ser	Glu	Arg	Pro	Gly	Gly	Arg	Arg	Arg	Gly	Arg	Arg	Thr	Gly	Ser	Pro
				245					250					255	
Gly	Glu	Gly	Ala	His	Val	Ser	Ala	Ala	Val	Ala	Lys	Thr	Val	Arg	Met
			260					265					270		
Thr	Leu	Val	Ile	Val	Val	Val	Tyr	Val	Leu	Cys	Trp	Ala	Pro	Phe	Phe
		275					280					285			
Leu	Val	Gln	Leu	Trp	Ala	Ala	Trp	Asp	Pro	Glu	Ala	Pro	Leu	Glu	Gly
	290					295					300				
Ala	Pro	Phe	Val	Leu	Leu	Met	Leu	Leu	Ala	Ser	Leu	Asn	Ser	Cys	Thr
305					310					315					320
Asn	Pro	Trp	Ile	Tyr	Ala	Ser	Phe	Ser	Ser	Ser	Val	Ser	Ser	Glu	Leu
				325					330					335	
Arg	Ser	Leu	Leu	Cys	Cys	Ala	Arg	Gly	Arg	Thr	Pro	Pro	Ser	Leu	Gly
			340					345					350		
Pro	Gln	Asp	Glu	Ser	Cys	Thr	Thr	Ala	Ser	Ser	Ser	Leu	Ala	Lys	Asp
		355					360					365			
Thr	Ser	Ser													
		370													
<210>	17														
<211>	371														
<212>	PRT														
<213>	Homo sapiens														
<400>	17														
Met	Leu	Met	Ala	Ser	Thr	Thr	Ser	Ala	Val	Pro	Gly	His	Pro	Ser	Leu
1				5					10					15	
Pro	Ser	Leu	Pro	Ser	Asn	Ser	Ser	Gln	Glu	Arg	Pro	Leu	Asp	Thr	Arg
			20					25					30		
Asp	Pro	Leu	Leu	Ala	Arg	Ala	Glu	Leu	Ala	Leu	Leu	Ser	Ile	Val	Phe
		35					40					45			
Val	Ala	Val	Ala	Leu	Ser	Asn	Gly	Leu	Val	Leu	Ala	Ala	Leu	Ala	Arg
	50					55					60				
Arg	Gly	Arg	Arg	Gly	His	Trp	Ala	Pro	Ile	His	Val	Phe	Ile	Gly	His
65					70					75					80

Leu Cys Leu Ala Asp Leu Ala Val Ala Leu Phe Gln Val Leu Pro Gln
 85 90 95

Leu Ala Trp Lys Ala Thr Asp Arg Phe Arg Gly Pro Asp Ala Leu Cys
 100 105 110

Arg Ala Val Lys Tyr Leu Gln Met Val Gly Met Tyr Ala Ser Ser Ser
 115 120 125

Met Ile Leu Ala Met Thr Leu Asp Arg His Arg Ala Ile Cys Arg Pro
 130 135 140

Met Leu Ala Tyr Arg His Gly Ser Gly Ala His Trp Asn Arg Pro Val
 145 150 155 160

Leu Val Ala Trp Ala Phe Ser Leu Leu Leu Ser Leu Pro Gln Leu Phe
 165 170 175

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

Trp Ala Cys Phe Ala Glu Pro Trp Gly Arg Arg Thr Tyr Val Thr Trp
 195 200 205

Ile Ala Leu Met Val Phe Val Ala Pro Thr Leu Gly Ile Ala Ala Cys
 210 215 220

Gln Val Leu Ile Phe Arg Glu Ile His Ala Ser Leu Val Pro Gly Pro
 225 230 235 240

Ser Glu Arg Pro Gly Gly Arg Arg Arg Gly Arg Arg Thr Gly Ser Pro
 245 250 255

Gly Glu Gly Ala His Val Ser Ala Ala Val Ala Lys Thr Val Arg Met
 260 265 270

Thr Leu Val Ile Val Val Val Tyr Val Leu Cys Trp Ala Pro Phe Phe
 275 280 285

Leu Val Gln Leu Trp Ala Ala Trp Asp Pro Glu Ala Pro Leu Glu Gly
 290 295 300

Ala Pro Phe Val Leu Leu Met Leu Leu Ala Ser Leu Asn Ser Cys Thr
 305 310 315 320

Asn Pro Trp Ile Tyr Ala Ser Phe Ser Ser Ser Val Ser Ser Glu Leu
 325 330 335

Arg Ser Leu Leu Cys Cys Ala Arg Gly Arg Thr Pro Pro Ser Leu Gly
340 345 350

Pro Gln Asp Glu Ser Cys Thr Thr Ala Ser Ser Ser Leu Ala Lys Asp
355 360 365

Thr Ser Ser
370

<210> 18
<211> 1159
<212> PRT
<213> Homo sapiens

<400> 18

Met Pro Val Arg Arg Gly His Val Ala Pro Gln Asn Thr Phe Leu Asp
1 5 10 15

Thr Ile Ile Arg Lys Phe Glu Gly Gln Ser Arg Lys Phe Ile Ile Ala
20 25 30

Asn Ala Arg Val Glu Asn Cys Ala Val Ile Tyr Cys Asn Asp Gly Phe
35 40 45

Cys Glu Leu Cys Gly Tyr Ser Arg Ala Glu Val Met Gln Arg Pro Cys
50 55 60

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

Gln Ile Ala Gln Ala Leu Leu Gly Ala Glu Glu Arg Lys Val Glu Ile
85 90 95

Ala Phe Tyr Arg Lys Asp Gly Ser Cys Phe Leu Cys Leu Val Asp Val
100 105 110

Val Pro Val Lys Asn Glu Asp Gly Ala Val Ile Met Phe Ile Leu Asn
115 120 125

Phe Glu Val Val Met Glu Lys Asp Met Val Gly Ser Pro Ala His Asp
130 135 140

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

Lys Thr Phe Arg Leu Lys Leu Pro Ala Leu Leu Ala Leu Thr Ala Arg
165 170 175

Glu	Ser	Ser	Val	Arg	Ser	Gly	Gly	Ala	Gly	Gly	Ala	Gly	Ala	Pro	Gly	
			180					185						190		
Ala	Val	Val	Val	Asp	Val	Asp	Leu	Thr	Pro	Ala	Ala	Pro	Ser	Ser	Glu	
			195				200					205				
Ser	Leu	Ala	Leu	Asp	Glu	Val	Thr	Ala	Met	Asp	Asn	His	Val	Ala	Gly	
	210					215					220					
Leu	Gly	Pro	Ala	Glu	Glu	Arg	Arg	Ala	Leu	Val	Gly	Pro	Gly	Ser	Pro	
225					230					235					240	
Pro	Arg	Ser	Ala	Pro	Gly	Gln	Leu	Pro	Ser	Pro	Arg	Ala	His	Ser	Leu	
				245					250					255		
Asn	Pro	Asp	Ala	Ser	Gly	Ser	Ser	Cys	Ser	Leu	Ala	Arg	Thr	Arg	Ser	
			260					265						270		
Arg	Glu	Ser	Cys	Ala	Ser	Val	Arg	Arg	Ala	Ser	Ser	Ala	Asp	Asp	Ile	
		275					280						285			
Glu	Ala	Met	Arg	Ala	Gly	Val	Leu	Pro	Pro	Pro	Pro	Arg	His	Ala	Ser	
		290				295					300					
Thr	Gly	Ala	Met	His	Pro	Leu	Arg	Ser	Gly	Leu	Leu	Asn	Ser	Thr	Ser	
305					310					315					320	
Asp	Ser	Asp	Leu	Val	Arg	Tyr	Arg	Thr	Ile	Ser	Lys	Ile	Pro	Gln	Ile	
				325					330					335		
Thr	Leu	Asn	Phe	Val	Asp	Leu	Lys	Gly	Asp	Pro	Phe	Leu	Ala	Ser	Pro	
			340					345					350			
Thr	Ser	Asp	Arg	Glu	Ile	Ile	Ala	Pro	Lys	Ile	Lys	Glu	Arg	Thr	His	
		355					360					365				
Asn	Val	Thr	Glu	Lys	Val	Thr	Gln	Val	Leu	Ser	Leu	Gly	Ala	Asp	Val	
		370				375					380					
Leu	Pro	Glu	Tyr	Lys	Leu	Gln	Ala	Pro	Arg	Ile	His	Arg	Trp	Thr	Ile	
385					390					395					400	
Leu	His	Tyr	Ser	Pro	Phe	Lys	Ala	Val	Trp	Asp	Trp	Leu	Ile	Leu	Leu	
				405					410					415		
Leu	Val	Ile	Tyr	Thr	Ala	Val	Phe	Thr	Pro	Tyr	Ser	Ala	Ala	Phe	Leu	
			420					425					430			

Leu Lys Glu Thr Glu Glu Gly Pro Pro Ala Thr Glu Cys Gly Tyr Ala
 435 440 445

Cys Gln Pro Leu Ala Val Val Asp Leu Ile Val Asp Ile Met Phe Ile
 450 455 460

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

Glu Val Val Ser His Pro Gly Arg Ile Ala Val His Tyr Phe Lys Gly
 485 490 495

Trp Phe Leu Ile Asp Met Val Ala Ala Ile Pro Phe Asp Leu Leu Ile
 500 505 510

Phe Gly Ser Gly Ser Glu Glu Leu Ile Gly Leu Leu Lys Thr Ala Arg
 515 520 525

Leu Leu Arg Leu Val Arg Val Ala Arg Lys Leu Asp Arg Tyr Ser Glu
 530 535 540

Tyr Gly Ala Ala Val Leu Phe Leu Leu Met Cys Thr Phe Ala Leu Ile
 545 550 555 560

Ala His Trp Leu Ala Cys Ile Trp Tyr Ala Ile Gly Asn Met Glu Gln
 565 570 575

Pro His Met Asp Ser Arg Ile Gly Trp Leu His Asn Leu Gly Asp Gln
 580 585 590

Ile Gly Lys Pro Tyr Asn Ser Ser Gly Leu Gly Gly Pro Ser Ile Lys
 595 600 605

Asp Lys Tyr Val Thr Ala Leu Tyr Phe Thr Phe Ser Ser Leu Thr Ser
 610 615 620

Val Gly Phe Gly Asn Val Ser Pro Asn Thr Asn Ser Glu Lys Ile Phe
 625 630 635 640

Ser Ile Cys Val Met Leu Ile Gly Ser Leu Met Tyr Ala Ser Ile Phe
 645 650 655

Gly Asn Val Ser Ala Ile Ile Gln Arg Leu Tyr Ser Gly Thr Ala Arg
 660 665 670

Tyr His Thr Gln Met Leu Arg Val Arg Glu Phe Ile Arg Phe His Gln
 675 680 685

Ile	Pro	Asn	Pro	Leu	Arg	Gln	Arg	Leu	Glu	Glu	Tyr	Phe	Gln	His	Ala	690	695	700	
Trp	Ser	Tyr	Thr	Asn	Gly	Ile	Asp	Met	Asn	Ala	Val	Leu	Lys	Gly	Phe	705	710	715	720
Pro	Glu	Cys	Leu	Gln	Ala	Asp	Ile	Cys	Leu	His	Leu	Asn	Arg	Ser	Leu	725	730	735	
Leu	Gln	His	Cys	Lys	Pro	Phe	Arg	Gly	Ala	Thr	Lys	Gly	Cys	Leu	Arg	740	745	750	
Ala	Leu	Ala	Met	Lys	Phe	Lys	Thr	Thr	His	Ala	Pro	Pro	Gly	Asp	Thr	755	760	765	
Leu	Val	His	Ala	Gly	Asp	Leu	Leu	Thr	Ala	Leu	Tyr	Phe	Ile	Ser	Arg	770	775	780	
Gly	Ser	Ile	Glu	Ile	Leu	Arg	Gly	Asp	Val	Val	Val	Ala	Ile	Leu	Gly	785	790	795	800
Lys	Asn	Asp	Ile	Phe	Gly	Glu	Pro	Leu	Asn	Leu	Tyr	Ala	Arg	Pro	Gly	805	810	815	
Lys	Ser	Asn	Gly	Asp	Val	Arg	Ala	Leu	Thr	Tyr	Cys	Asp	Leu	His	Lys	820	825	830	
Ile	His	Arg	Asp	Asp	Leu	Leu	Glu	Val	Leu	Asp	Met	Tyr	Pro	Glu	Phe	835	840	845	
Ser	Asp	His	Phe	Trp	Ser	Ser	Leu	Glu	Ile	Thr	Phe	Asn	Leu	Arg	Asp	850	855	860	
Thr	Asn	Met	Ile	Pro	Gly	Ser	Pro	Gly	Ser	Thr	Glu	Leu	Glu	Gly	Gly	865	870	875	880
Phe	Ser	Arg	Gln	Arg	Lys	Arg	Lys	Leu	Ser	Phe	Arg	Arg	Arg	Thr	Asp	885	890	895	
Lys	Asp	Thr	Glu	Gln	Pro	Gly	Glu	Val	Ser	Ala	Leu	Gly	Pro	Gly	Arg	900	905	910	
Ala	Gly	Ala	Gly	Pro	Ser	Ser	Arg	Gly	Arg	Pro	Gly	Gly	Pro	Trp	Gly	915	920	925	
Glu	Ser	Pro	Ser	Ser	Gly	Pro	Ser	Ser	Pro	Glu	Ser	Ser	Glu	Asp	Glu	930	935	940	

Gly Pro Gly Arg Ser Ser Ser Pro Leu Arg Leu Val Pro Phe Ser Ser
945 950 955 960

Pro Arg Pro Pro Gly Glu Pro Pro Gly Gly Glu Pro Leu Met Glu Asp
965 970 975

Cys Glu Lys Ser Ser Asp Thr Cys Asn Pro Leu Ser Gly Ala Phe Ser
980 985 990

Gly Val Ser Asn Ile Phe Ser Phe Trp Gly Asp Ser Arg Gly Arg Gln
995 1000 1005

Tyr Gln Glu Leu Pro Arg Cys Pro Ala Pro Thr Pro Ser Leu Leu
1010 1015 1020

Asn Ile Pro Leu Ser Ser Pro Gly Arg Arg Pro Arg Gly Asp Val
1025 1030 1035

Glu Ser Arg Leu Asp Ala Leu Gln Arg Gln Leu Asn Arg Leu Glu
1040 1045 1050

Thr Arg Leu Ser Ala Asp Met Ala Thr Val Leu Gln Leu Leu Gln
1055 1060 1065

Arg Gln Met Thr Leu Val Pro Pro Ala Tyr Ser Ala Val Thr Thr
1070 1075 1080

Pro Gly Pro Gly Pro Thr Ser Thr Ser Pro Leu Leu Pro Val Ser
1085 1090 1095

Pro Leu Pro Thr Leu Thr Leu Asp Ser Leu Ser Gln Val Ser Gln
1100 1105 1110

Phe Met Ala Cys Glu Glu Leu Pro Pro Gly Ala Pro Glu Leu Pro
1115 1120 1125

Gln Glu Gly Pro Thr Arg Arg Leu Ser Leu Pro Gly Gln Leu Gly
1130 1135 1140

Ala Leu Thr Ser Gln Pro Leu His Arg His Gly Ser Asp Pro Gly
1145 1150 1155

Ser

<210> 19
<211> 1159
<212> PRT

<213> Homo sapiens

<400> 19

Met Pro Val Arg Arg Gly His Val Ala Pro Gln Asn Thr Phe Leu Asp
1 5 10 15

Thr Ile Ile Arg Lys Phe Glu Gly Gln Ser Arg Lys Phe Ile Ile Ala
20 25 30

Asn Ala Arg Val Glu Asn Cys Ala Val Ile Tyr Cys Asn Asp Gly Phe
35 40 45

Cys Glu Leu Cys Gly Tyr Ser Arg Ala Glu Val Met Gln Arg Pro Cys
50 55 60

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

Gln Ile Ala Gln Ala Leu Leu Gly Ala Glu Glu Arg Lys Val Glu Ile
85 90 95

Ala Phe Tyr Arg Lys Asp Gly Ser Cys Phe Leu Cys Leu Val Asp Val
100 105 110

Val Pro Val Lys Asn Glu Asp Gly Ala Val Ile Met Phe Ile Leu Asn
115 120 125

Phe Glu Val Val Met Glu Lys Asp Met Val Gly Ser Pro Ala His Asp
130 135 140

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

Lys Thr Phe Arg Leu Lys Leu Pro Ala Leu Leu Ala Leu Thr Ala Arg
165 170 175

Glu Ser Ser Val Arg Ser Gly Gly Ala Gly Gly Ala Gly Ala Pro Gly
180 185 190

Ala Val Val Val Asp Val Asp Leu Thr Pro Ala Ala Pro Ser Ser Glu
195 200 205

Ser Leu Ala Leu Asp Glu Val Thr Ala Met Asp Asn His Val Ala Gly
210 215 220

Leu Gly Pro Ala Glu Glu Arg Arg Ala Leu Val Gly Pro Gly Ser Pro
225 230 235 240

Pro Arg Ser Ala Pro Gly Gln Leu Pro Ser Pro Arg Ala His Ser Leu
 245 250 255

Asn Pro Asp Ala Ser Gly Ser Ser Cys Ser Leu Ala Arg Thr Arg Ser
 260 265 270

Arg Glu Ser Cys Ala Ser Val Arg Arg Ala Ser Ser Ala Asp Asp Ile
 275 280 285

Glu Ala Met Arg Ala Gly Val Leu Pro Pro Pro Pro Arg His Ala Ser
 290 295 300

Thr Gly Ala Met His Pro Leu Arg Ser Gly Leu Leu Asn Ser Thr Ser
 305 310 315 320

Asp Ser Asp Leu Val Arg Tyr Arg Thr Ile Ser Lys Ile Pro Gln Ile
 325 330 335

Thr Leu Asn Phe Val Asp Leu Lys Gly Asp Pro Phe Leu Ala Ser Pro
 340 345 350

Thr Ser Asp Arg Glu Ile Ile Ala Pro Lys Ile Lys Glu Arg Thr His
 355 360 365

Asn Val Thr Glu Lys Val Thr Gln Val Leu Ser Leu Gly Ala Asp Val
 370 375 380

Leu Pro Glu Tyr Lys Leu Gln Ala Pro Arg Ile His Arg Trp Thr Ile
 385 390 395 400

Leu His Tyr Ser Pro Phe Lys Ala Val Trp Asp Trp Leu Ile Leu Leu
 405 410 415

Leu Val Ile Tyr Thr Ala Val Phe Thr Pro Tyr Ser Ala Ala Phe Leu
 420 425 430

Leu Lys Glu Thr Glu Glu Gly Pro Pro Ala Thr Glu Cys Gly Tyr Ala
 435 440 445

Cys Gln Pro Leu Ala Val Val Asp Leu Ile Val Asp Ile Met Phe Ile
 450 455 460

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

Glu Val Val Ser His Pro Gly Arg Ile Ala Val His Tyr Phe Lys Gly
 485 490 495

Trp	Phe	Leu	Ile	Asp	Met	Val	Ala	Ala	Ile	Pro	Phe	Asp	Leu	Leu	Ile	500	505	510	
Phe	Gly	Ser	Gly	Ser	Glu	Glu	Leu	Ile	Gly	Leu	Leu	Lys	Thr	Ala	Arg	515	520	525	
Leu	Leu	Arg	Leu	Val	Arg	Val	Ala	Arg	Lys	Leu	Asp	Arg	Tyr	Ser	Glu	530	535	540	
Tyr	Gly	Ala	Ala	Val	Leu	Phe	Leu	Leu	Met	Cys	Thr	Phe	Ala	Leu	Ile	545	550	555	560
Ala	His	Trp	Leu	Ala	Cys	Ile	Trp	Tyr	Ala	Ile	Gly	Asn	Met	Glu	Gln	565	570	575	
Pro	His	Met	Asp	Ser	Arg	Ile	Gly	Trp	Leu	His	Asn	Leu	Gly	Asp	Gln	580	585	590	
Ile	Gly	Lys	Pro	Tyr	Asn	Ser	Ser	Ser	Leu	Gly	Gly	Pro	Ser	Ile	Lys	595	600	605	
Asp	Lys	Tyr	Val	Thr	Ala	Leu	Tyr	Phe	Thr	Phe	Ser	Ser	Leu	Thr	Ser	610	615	620	
Val	Gly	Phe	Gly	Asn	Val	Ser	Pro	Asn	Thr	Asn	Ser	Glu	Lys	Ile	Phe	625	630	635	640
Ser	Ile	Cys	Val	Met	Leu	Ile	Gly	Ser	Leu	Met	Tyr	Ala	Ser	Ile	Phe	645	650	655	
Gly	Asn	Val	Ser	Ala	Ile	Ile	Gln	Arg	Leu	Tyr	Ser	Gly	Thr	Ala	Arg	660	665	670	
Tyr	His	Thr	Gln	Met	Leu	Arg	Val	Arg	Glu	Phe	Ile	Arg	Phe	His	Gln	675	680	685	
Ile	Pro	Asn	Pro	Leu	Arg	Gln	Arg	Leu	Glu	Glu	Tyr	Phe	Gln	His	Ala	690	695	700	
Trp	Ser	Tyr	Thr	Asn	Gly	Ile	Asp	Met	Asn	Ala	Val	Leu	Lys	Gly	Phe	705	710	715	720
Pro	Glu	Cys	Leu	Gln	Ala	Asp	Ile	Cys	Leu	His	Leu	Asn	Arg	Ser	Leu	725	730	735	
Leu	Gln	His	Cys	Lys	Pro	Phe	Arg	Gly	Ala	Thr	Lys	Gly	Cys	Leu	Arg	740	745	750	

Ala	Leu	Ala	Met	Lys	Phe	Lys	Thr	Thr	His	Ala	Pro	Pro	Gly	Asp	Thr
	755						760						765		
Leu	Val	His	Ala	Gly	Asp	Leu	Leu	Thr	Ala	Leu	Tyr	Phe	Ile	Ser	Arg
	770					775					780				
Gly	Ser	Ile	Glu	Ile	Leu	Arg	Gly	Asp	Val	Val	Val	Ala	Ile	Leu	Gly
785					790					795					800
Lys	Asn	Asp	Ile	Phe	Gly	Glu	Pro	Leu	Asn	Leu	Tyr	Ala	Arg	Pro	Gly
				805					810					815	
Lys	Ser	Asn	Gly	Asp	Val	Arg	Ala	Leu	Thr	Tyr	Cys	Asp	Leu	His	Lys
			820					825					830		
Ile	His	Arg	Asp	Asp	Leu	Leu	Glu	Val	Leu	Asp	Met	Tyr	Pro	Glu	Phe
		835					840					845			
Ser	Asp	His	Phe	Trp	Ser	Ser	Leu	Glu	Ile	Thr	Phe	Asn	Leu	Arg	Asp
	850					855					860				
Thr	Asn	Met	Ile	Pro	Gly	Ser	Pro	Gly	Ser	Thr	Glu	Leu	Glu	Gly	Gly
865					870					875					880
Phe	Ser	Arg	Gln	Arg	Lys	Arg	Lys	Leu	Ser	Phe	Arg	Arg	Arg	Thr	Asp
				885					890					895	
Lys	Asp	Thr	Glu	Gln	Pro	Gly	Glu	Val	Ser	Ala	Leu	Gly	Pro	Gly	Arg
			900					905					910		
Ala	Gly	Ala	Gly	Pro	Ser	Ser	Arg	Gly	Arg	Pro	Gly	Gly	Pro	Trp	Gly
		915					920					925			
Glu	Ser	Pro	Ser	Ser	Gly	Pro	Ser	Ser	Pro	Glu	Ser	Ser	Glu	Asp	Glu
	930					935					940				
Gly	Pro	Gly	Arg	Ser	Ser	Ser	Pro	Leu	Arg	Leu	Val	Pro	Phe	Ser	Ser
945					950					955					960
Pro	Arg	Pro	Pro	Gly	Glu	Pro	Pro	Gly	Gly	Glu	Pro	Leu	Met	Glu	Asp
				965					970					975	
Cys	Glu	Lys	Ser	Ser	Asp	Thr	Cys	Asn	Pro	Leu	Ser	Gly	Ala	Phe	Ser
			980					985					990		
Gly	Val	Ser	Asn	Ile	Phe	Ser	Phe	Trp	Gly	Asp	Ser	Arg	Gly	Arg	Gln
		995					1000					1005			

Tyr Gln Glu Leu Pro Arg Cys Pro Ala Pro Thr Pro Ser Leu Leu
 1010 1015 1020
 Asn Ile Pro Leu Ser Ser Pro Gly Arg Arg Pro Arg Gly Asp Val
 1025 1030 1035
 Glu Ser Arg Leu Asp Ala Leu Gln Arg Gln Leu Asn Arg Leu Glu
 1040 1045 1050
 Thr Arg Leu Ser Ala Asp Met Ala Thr Val Leu Gln Leu Leu Gln
 1055 1060 1065
 Arg Gln Met Thr Leu Val Pro Pro Ala Tyr Ser Ala Val Thr Thr
 1070 1075 1080
 Pro Gly Pro Gly Pro Thr Ser Thr Ser Pro Leu Leu Pro Val Ser
 1085 1090 1095
 Pro Leu Pro Thr Leu Thr Leu Asp Ser Leu Ser Gln Val Ser Gln
 1100 1105 1110
 Phe Met Ala Cys Glu Glu Leu Pro Pro Gly Ala Pro Glu Leu Pro
 1115 1120 1125
 Gln Glu Gly Pro Thr Arg Arg Leu Ser Leu Pro Gly Gln Leu Gly
 1130 1135 1140
 Ala Leu Thr Ser Gln Pro Leu His Arg His Gly Ser Asp Pro Gly
 1145 1150 1155

Ser

<210> 20
 <211> 68
 <212> PRT
 <213> Homo sapiens

<400> 20

Gln Lys Gln Pro Thr Trp Val Pro Asp Ser Glu Ala Pro Asn Cys Met
 1 5 10 15

Asn Cys Gln Val Lys Phe Thr Phe Thr Lys Arg Arg His His Cys Arg
 20 25 30

Ala Cys Gly Lys Val Phe Cys Gly Val Cys Cys Asn Arg Lys Cys Lys
 35 40 45

Leu Gln Tyr Leu Glu Lys Glu Ala Arg Val Cys Val Val Cys Tyr Glu

50

55

60

Thr Ile Ser Lys
65

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

<400> 21

Met Ser Glu Thr Tyr Asp Phe Leu Phe Lys Phe Leu Val Ile Gly Asn
1 5 10 15

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

Phe Lys Asp Asp Ser Asn His Thr Ile Gly Val Glu Phe Gly Ser Lys
35 40 45

Ile Ile Asn Val Gly Gly Lys Tyr Val Lys Leu Gln Ile Trp Asp Thr
50 55 60

Ala Gly Gln Glu Arg Phe Arg Ser Val Thr Arg Ser Tyr Tyr Arg Gly
65 70 75 80

Ala Ala Gly Ala Leu Leu Val Tyr Asp Ile Thr Ser Arg Glu Thr Tyr
85 90 95

Asn Ala Leu Thr Asn Trp Leu Thr Asp Ala Arg Met Leu Ala Ser Gln
100 105 110

Asn Ile Val Ile Ile Leu Cys Gly Asn Lys Lys Asp Leu Asp Ala Asp
115 120 125

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

Leu Met Phe Leu Glu Thr Ser Ala Leu Thr Gly Glu Asn Val Glu Glu
145 150 155 160

Ala Phe Val Gln Cys Ala Arg Lys Ile Leu Asn Lys Ile Glu Ser Gly
165 170 175

Glu Leu Asp Pro Glu Arg Met Gly Ser Gly Ile Gln Tyr Gly Asp Ala
180 185 190

Ala Leu Arg Gln Leu Arg Ser Pro Arg Arg Ala Gln Ala Pro Asn Ala
195 200 205

Gln Glu Cys Gly Cys
210

<210> 22
<211> 216
<212> PRT
<213> Homo sapiens

<400> 22

Met Gly Thr Arg Asp Asp Glu Tyr Asp Tyr Leu Phe Lys Val Val Leu
1 5 10 15

Ile Gly Asp Ser Gly Val Gly Lys Ser Asn Leu Leu Ser Arg Phe Thr
20 25 30

Arg Asn Glu Phe Asn Leu Glu Ser Lys Ser Thr Ile Gly Val Glu Phe
35 40 45

Ala Thr Arg Ser Ile Gln Val Asp Gly Lys Thr Ile Lys Ala Gln Ile
50 55 60

Trp Asp Thr Ala Gly Gln Glu Arg Tyr Arg Ala Ile Thr Ser Ala Tyr
65 70 75 80

Tyr Arg Gly Ala Val Gly Ala Leu Leu Val Tyr Asp Ile Ala Lys His
85 90 95

Leu Thr Tyr Glu Asn Val Glu Arg Trp Leu Lys Glu Leu Arg Asp His
100 105 110

Ala Asp Ser Asn Ile Val Ile Met Leu Val Gly Asn Lys Ser Asp Leu
115 120 125

Arg His Leu Arg Ala Val Pro Thr Asp Glu Ala Arg Ala Phe Ala Glu
130 135 140

Lys Asn Gly Leu Ser Phe Ile Glu Thr Ser Ala Leu Asp Ser Thr Asn
145 150 155 160

Val Glu Ala Ala Phe Gln Thr Ile Leu Thr Glu Ile Tyr Arg Ile Val
165 170 175

Ser Gln Lys Gln Met Ser Asp Arg Arg Glu Asn Asp Met Ser Pro Ser
180 185 190

Asn Asn Val Val Pro Ile His Val Pro Pro Thr Thr Glu Asn Lys Pro
195 200 205

Lys Val Gln Cys Cys Gln Asn Ile
210 215

<210> 23
<211> 383
<212> PRT
<213> Homo sapiens

<400> 23

Met Lys Thr Ile Ile Ala Leu Ser Tyr Ile Phe Cys Leu Val Phe Ala
1 5 10 15

Asp Tyr Lys Asp Asp Asp Asp Ala Met Ile Leu Asn Ser Ser Thr Glu
20 25 30

Asp Gly Ile Lys Arg Ile Gln Asp Asp Cys Pro Lys Ala Gly Arg His
35 40 45

Asn Tyr Ile Phe Val Met Ile Pro Thr Leu Tyr Ser Ile Ile Phe Val
50 55 60

Val Gly Ile Phe Gly Asn Ser Leu Val Val Ile Val Ile Tyr Phe Tyr
65 70 75 80

Met Lys Leu Lys Thr Val Ala Ser Val Phe Leu Leu Asn Leu Ala Leu
85 90 95

Ala Asp Leu Cys Phe Leu Leu Thr Leu Pro Leu Trp Ala Val Tyr Thr
100 105 110

Ala Met Glu Tyr Arg Trp Pro Phe Gly Asn Tyr Leu Cys Lys Ile Ala
115 120 125

Ser Ala Ser Val Ser Phe Asn Leu Tyr Ala Ser Val Phe Leu Leu Thr
130 135 140

Cys Leu Ser Ile Asp Arg Tyr Leu Ala Ile Val His Pro Met Lys Ser
145 150 155 160

Arg Leu Arg Arg Thr Met Leu Val Ala Lys Val Thr Cys Ile Ile Ile
165 170 175

Trp Leu Leu Ala Gly Leu Ala Ser Leu Pro Ala Ile Ile His Arg Asn
180 185 190

Val Phe Phe Ile Glu Asn Thr Asn Ile Thr Val Cys Ala Phe His Tyr
195 200 205

Glu Ser Gln Asn Ser Thr Leu Pro Ile Gly Leu Gly Leu Thr Lys Asn
210 215 220

Ile Leu Gly Phe Leu Phe Pro Phe Leu Ile Ile Leu Thr Ser Tyr Thr
225 230 235 240

Leu Ile Trp Lys Ala Leu Lys Lys Ala Tyr Glu Ile Gln Lys Asn Lys
245 250 255

Pro Arg Asn Asp Asp Ile Phe Lys Ile Ile Met Ala Ile Val Leu Phe
260 265 270

Phe Phe Phe Ser Trp Ile Pro His Gln Ile Phe Thr Phe Leu Asp Val
275 280 285

Leu Ile Gln Leu Gly Ile Ile Arg Asp Cys Arg Ile Ala Asp Ile Val
290 295 300

Asp Thr Ala Met Pro Ile Thr Ile Cys Ile Ala Tyr Phe Asn Asn Cys
305 310 315 320

Leu Asn Pro Leu Phe Tyr Gly Phe Leu Gly Lys Lys Phe Lys Arg Tyr
325 330 335

Phe Leu Gln Leu Leu Lys Tyr Ile Pro Pro Lys Ala Lys Ser His Ser
340 345 350

Asn Leu Ser Thr Lys Met Ser Thr Leu Ser Tyr Arg Pro Ser Asp Asn
355 360 365

Val Ser Ser Ser Thr Lys Lys Pro Ala Pro Cys Phe Glu Val Glu
370 375 380

<210> 24
<211> 176
<212> PRT
<213> Homo sapiens

<400> 24

Met Glu Ala Ile Ala Lys Tyr Asp Phe Lys Ala Thr Ala Asp Asp Glu
1 5 10 15

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

Asp Gln Asn Trp Tyr Lys Ala Glu Leu Asn Gly Lys Asp Gly Phe Ile
35 40 45

Pro Lys Asn Tyr Ile Glu Met Lys Pro His Pro Phe Gly Asn Asp Val

50

55

60

Gln His Phe Lys Val Leu Arg Asp Gly Ala Gly Lys Tyr Phe Leu Trp
65 70 75 80

Val Val Lys Phe Asn Ser Leu Asn Glu Leu Val Asp Tyr His Arg Ser
85 90 95

Thr Ser Val Ser Arg Asn Gln Gln Ile Phe Leu Arg Asp Ile Glu Gln
100 105 110

Val Pro Gln Gln Pro Thr Tyr Val Gln Ala Leu Phe Asp Phe Asp Pro
115 120 125

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

Met Asp Asn Ser Asp Pro Asn Trp Trp Lys Gly Ala Cys His Gly Gln
145 150 155 160

Thr Gly Met Phe Pro Arg Asn Tyr Val Thr Pro Val Asn Arg Asn Val
165 170 175

<210> 25

<211> 173

<212> PRT

<213> Homo sapiens

<400> 25

Asp Ser Gly Arg Asp Phe Leu Thr Leu His Gly Leu Gln Asp Asp Glu
1 5 10 15

Asp Leu Gln Ala Leu Leu Lys Gly Ser Gln Leu Leu Lys Val Lys Ser
20 25 30

Ser Ser Trp Arg Arg Glu Arg Phe Tyr Lys Leu Gln Glu Asp Cys Lys
35 40 45

Thr Ile Trp Gln Glu Ser Arg Lys Val Met Arg Thr Pro Glu Ser Gln
50 55 60

Leu Phe Ser Ile Glu Asp Ile Gln Glu Val Arg Met Gly His Arg Thr
65 70 75 80

Glu Gly Leu Glu Lys Phe Ala Arg Asp Val Pro Glu Asp Arg Cys Phe
85 90 95

Ser Ile Val Phe Lys Asp Gln Arg Asn Thr Leu Asp Leu Ile Ala Pro
100 105 110

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

His His Ser Gly Ser Met Asp Gln Arg Gln Lys Leu Gln His Trp Ile
130 135 140

His Ser Cys Leu Arg Lys Ala Asp Lys Asn Lys Asp Asn Lys Met Ser
145 150 155 160

Phe Lys Glu Leu Gln Asn Phe Leu Lys Glu Leu Asn Ile
165 170

<210> 26
<211> 10
<212> PRT
<213> Influenza A virus

<400> 26

Met Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
1 5 10

<210> 27
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic linker

<400> 27

Leu Ser Asn Ala Thr
1 5

<210> 28
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic linker

<400> 28

Gly Ser Ala Gly Thr Met Ala Ser Asn Asn Thr Ala Ser Gly
1 5 10

<210> 29
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic linker

<400> 29

Gly Ser Gly Gly Ser Gly Ser Gly Gly Leu Glu
1 5 10

<210> 30

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> GGSGGKLPAT

<400> 30

Gly Gly Ser Gly Gly Lys Leu Pro Ala Thr
1 5 10

<210> 31

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic linker

<400> 31

Gly Asn Ala Ser Gly Thr Gly Ser Gly Gly Ser Gly Ser Gly Gly Leu
1 5 10 15

Glu Met

<210> 32

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic linker

<400> 32

Ser Asn Ala Lys Leu
1 5

<210> 33

<211> 20

<212> PRT

<213> Homo sapiens

<400> 33

Lys Leu Asn Pro Pro Asp Glu Ser Gly Pro Gly Cys Met Ser Cys Lys
1 5 10 15

Cys Val Leu Ser
20

<210> 34
<211> 20
<212> PRT
<213> Homo sapiens

<400> 34

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

Cys Val Val Met
20

<210> 35
<211> 20
<212> PRT
<213> Homo sapiens

<400> 35

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

Cys Ile Ile Met
20

<210> 36
<211> 20
<212> PRT
<213> Homo sapiens

<400> 36

Lys Met Ser Lys Asp Gly Lys Lys Lys Lys Lys Lys Ser Lys Thr Lys
1 5 10 15

Cys Val Ile Met
20

<210> 37
<211> 21
<212> PRT
<213> Homo sapiens

<400> 37

Lys Asn Gly Lys Lys Lys Arg Lys Ser Leu Ala Lys Arg Ile Arg Glu
1 5 10 15

Arg Cys Cys Ile Leu
20

<210> 38
<211> 7
<212> PRT
<213> Homo sapiens

<400> 38

Pro Lys Lys Lys Arg Arg Val
1 5

<210> 39
<211> 16
<212> PRT
<213> Homo sapiens

<400> 39

Lys Arg Pro Ala Ala Thr Lys Lys Ala Gly Gln Ala Lys Lys Lys Lys
1 5 10 15

<210> 40
<211> 15
<212> PRT
<213> Homo sapiens

<400> 40

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

<210> 41
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic linker

<400> 41

Gly Ser Asn Ala Thr
1 5

<210> 42
<211> 73
<212> PRT
<213> Homo sapiens

<400> 42

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

Leu Gly Leu Gly Leu Gly Leu Gly Leu Cys Gly Lys Gln Gly Pro Ala
20 25 30

Thr Pro Ala Pro Glu Pro Ser Arg Ala Pro Ala Ser Leu Leu Pro Pro
35 40 45

Ala Pro Glu His Ser Pro Pro Ser Ser Pro Leu Thr Gln Pro Pro Glu
 50 55 60

Gly Pro Lys Phe Pro Arg Val Lys Asn
 65 70

<210> 43
 <211> 9
 <212> PRT
 <213> Homo sapiens

<400> 43

Cys Met Ser Cys Lys Cys Cys Ile Leu
 1 5

<210> 44
 <211> 178
 <212> PRT
 <213> Homo sapiens

<400> 44

Met Ser Gly Gly Lys Tyr Val Asp Ser Glu Gly His Leu Tyr Thr Val
 1 5 10 15

Pro Ile Arg Glu Gln Gly Asn Ile Tyr Lys Pro Asn Asn Lys Ala Met
 20 25 30

Ala Asp Glu Leu Ser Glu Lys Gln Val Tyr Asp Ala His Thr Lys Glu
 35 40 45

Ile Asp Leu Val Asn Arg Asp Pro Lys His Leu Asn Asp Asp Val Val
 50 55 60

Lys Ile Asp Phe Glu Asp Val Ile Ala Glu Pro Glu Gly Thr His Ser
 65 70 75 80

Phe Asp Gly Ile Trp Lys Ala Ser Phe Thr Thr Phe Thr Val Thr Lys
 85 90 95

Tyr Trp Phe Tyr Arg Leu Leu Ser Ala Leu Phe Gly Ile Pro Met Ala
 100 105 110

Leu Ile Trp Gly Ile Tyr Phe Ala Ile Leu Ser Phe Leu His Ile Trp
 115 120 125

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

Ser Arg Val Tyr Ser Ile Tyr Val His Thr Val Cys Asp Pro Leu Phe
145 150 155 160

Glu Ala Val Gly Lys Ile Phe Ser Asn Val Arg Ile Asn Leu Gln Lys
165 170 175

Glu Ile

<210> 45
<211> 8
<212> PRT
<213> Homo sapiens

<400> 45

Asp Arg Val Tyr Ile His Pro Phe
1 5

<210> 46
<211> 371
<212> PRT
<213> Homo sapiens

<400> 46

Met Leu Met Ala Ser Thr Thr Ser Ala Val Pro Gly His Pro Ser Leu
1 5 10 15

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

Asp Pro Leu Leu Ala Arg Ala Glu Leu Ala Leu Leu Ser Ile Val Phe
35 40 45

Val Ala Val Ala Leu Ser Asn Gly Leu Val Leu Ala Ala Leu Ala Arg
50 55 60

Arg Gly Arg Arg Gly His Trp Ala Pro Ile His Val Phe Ile Gly His
65 70 75 80

Leu Cys Leu Ala Asp Leu Ala Val Ala Leu Phe Gln Val Leu Pro Gln
85 90 95

Leu Ala Trp Lys Ala Thr Asp Arg Phe Arg Gly Pro Asp Ala Leu Cys
100 105 110

Arg Ala Val Lys Tyr Leu Gln Met Val Gly Met Tyr Ala Ser Ser Tyr
115 120 125

Met Ile Leu Ala Met Thr Leu Asp Arg His Arg Ala Ile Cys Arg Pro
130 135 140

Met Leu Ala Tyr Arg His Gly Ser Gly Ala His Trp Asn Arg Pro Val
145 150 155 160

Leu Val Ala Ser Ala Phe Ser Leu Leu Leu Ser Leu Pro Gln Leu Phe
165 170 175

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

Trp Ala Cys Phe Ala Glu Pro Trp Gly Arg Arg Thr Tyr Val Thr Trp
195 200 205

Ile Ala Leu Met Val Phe Val Ala Pro Thr Leu Gly Ile Ala Ala Cys
210 215 220

Gln Val Leu Ile Phe Arg Glu Ile His Ala Ser Leu Val Pro Gly Pro
225 230 235 240

Ser Glu Arg Pro Gly Gly Arg Arg Arg Gly Arg Arg Thr Gly Ser Pro
245 250 255

Gly Glu Gly Ala His Val Ser Ala Ala Val Ala Lys Thr Val Arg Met
260 265 270

Thr Leu Val Ile Val Val Val Tyr Val Leu Cys Trp Ala Pro Phe Phe
275 280 285

Leu Val Gln Leu Trp Ala Ala Trp Asp Pro Glu Ala Pro Leu Glu Gly
290 295 300

Ala Pro Phe Val Leu Leu Met Leu Leu Ala Ser Leu Asn Ser Cys Thr
305 310 315 320

Asn Pro Trp Ile Tyr Ala Ser Phe Ser Ser Ser Val Ser Ser Glu Leu
325 330 335

Arg Ser Leu Leu Cys Cys Ala Arg Gly Arg Thr Pro Pro Ser Leu Gly
340 345 350

Pro Gln Asp Glu Ser Cys Thr Thr Ala Ser Ser Ser Leu Ala Lys Asp
355 360 365

Thr Ser Ser
370

<210> 47

<211> 9

<212> PRT
<213> Homo sapiens

<400> 47

Cys Met Ser Cys Lys Cys Val Leu Ser
1 5

<210> 48
<211> 332
<212> PRT
<213> Homo sapiens

<400> 48

Met Val Asn Ser Thr His Arg Gly Met His Thr Ser Leu His Leu Trp
1 5 10 15

Asn Arg Ser Ser Tyr Arg Leu His Ser Asn Ala Ser Glu Ser Leu Gly
20 25 30

Lys Gly Tyr Ser Asp Gly Gly Cys Tyr Glu Gln Leu Phe Val Ser Pro
35 40 45

Glu Val Phe Val Thr Leu Gly Val Ile Ser Leu Leu Glu Ser Ile Leu
50 55 60

Val Ile Val Ala Ile Ala Lys Asn Lys Asn Leu His Ser Pro Met Tyr
65 70 75 80

Phe Phe Ile Cys Ser Leu Ala Val Ala Asp Met Leu Val Ser Val Ser
85 90 95

Asn Gly Ser Glu Thr Ile Val Ile Thr Leu Leu Asn Ser Thr Asp Thr
100 105 110

Asp Ala Gln Ser Phe Thr Val Asn Ile Asp Asn Val Ile Asp Ser Val
115 120 125

Ile Cys Ser Ser Leu Leu Ala Ser Ile Cys Ser Leu Leu Ser Ile Ala
130 135 140

Val Asp Arg Tyr Phe Thr Ile Phe Tyr Ala Leu Gln Tyr His Asn Ile
145 150 155 160

Met Thr Val Lys Arg Val Gly Ile Ile Ile Ser Cys Ile Trp Ala Ala
165 170 175

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

Val Ile Ile Cys Leu Ile Thr Met Phe Phe Thr Met Leu Ala Leu Met
195 200 205

Ala Ser Leu Tyr Val His Met Phe Leu Met Ala Arg Leu His Ile Lys
210 215 220

Arg Ile Ala Val Leu Pro Gly Thr Gly Ala Ile Arg Gln Gly Ala Asn
225 230 235 240

Met Lys Gly Ala Ile Thr Leu Thr Ile Leu Ile Gly Val Phe Val Val
245 250 255

Cys Trp Ala Pro Phe Phe Leu His Leu Ile Phe Tyr Ile Ser Cys Pro
260 265 270

Gln Asn Pro Tyr Cys Val Cys Phe Met Ser His Phe Asn Leu Tyr Leu
275 280 285

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

Arg Ser Gln Glu Leu Arg Lys Thr Phe Lys Glu Ile Ile Cys Cys Tyr
305 310 315 320

Pro Leu Gly Gly Leu Cys Asp Leu Ser Ser Arg Tyr
325 330

<210> 49
<211> 332
<212> PRT
<213> Homo sapiens

<400> 49

Met Val Asn Ser Thr His Arg Gly Met His Thr Ser Leu His Leu Trp
1 5 10 15

Asn Arg Ser Ser Tyr Arg Leu His Ser Asn Ala Ser Glu Ser Leu Gly
20 25 30

Lys Gly Tyr Ser Asp Gly Gly Cys Tyr Glu Gln Leu Phe Val Ser Pro
35 40 45

Glu Val Phe Val Thr Leu Gly Val Ile Ser Leu Leu Glu Asn Ile Leu
50 55 60

Val Ile Val Ala Ile Ala Lys Asn Lys Asn Leu His Ser Pro Met Tyr
65 70 75 80

Phe Phe Ile Cys Ser Leu Ala Val Ala Asp Met Leu Val Ser Val Ser

Asn Gly Ser Glu Thr Ile Val Ile Thr Leu Leu Asn Ser Thr Asp Thr
 100 105 110

Asp Ala Gln Ser Phe Thr Val Asn Ile Asp Asn Val Ile Asp Ser Val
 115 120 125

Ile Cys Ser Ser Leu Leu Ala Ser Ile Cys Ser Leu Leu Ser Ile Ala
 130 135 140

Val Asp Arg Tyr Phe Thr Ile Phe Tyr Ala Leu Gln Tyr His Asn Ile
 145 150 155 160

Met Thr Val Lys Trp Val Gly Ile Ile Ile Ser Cys Ile Trp Ala Ala
 165 170 175

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

Val Ile Ile Cys Leu Ile Thr Met Phe Phe Thr Met Leu Ala Leu Met
 195 200 205

Ala Ser Leu Tyr Val His Met Phe Leu Met Ala Arg Leu His Ile Lys
 210 215 220

Arg Ile Ala Val Leu Pro Gly Thr Gly Ala Ile Arg Gln Gly Ala Asn
 225 230 235 240

Met Lys Gly Ala Ile Thr Leu Thr Ile Leu Ile Gly Val Phe Val Val
 245 250 255

Cys Trp Ala Pro Phe Phe Leu His Leu Ile Phe Tyr Ile Ser Cys Pro
 260 265 270

Gln Asn Pro Tyr Cys Val Cys Phe Met Ser His Phe Asn Leu Tyr Leu
 275 280 285

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

Arg Ser Gln Glu Leu Arg Lys Thr Phe Lys Glu Ile Ile Cys Cys Tyr
 305 310 315 320

Pro Leu Gly Gly Leu Cys Asp Leu Ser Ser Arg Tyr
 325 330

<211> 941
<212> PRT
<213> Homo sapiens

<400> 50

Met Gly Cys Ile Lys Ser Lys Gly Lys Asp Ser Leu Ser Asn Ala Met
1 5 10 15

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

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

Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys
50 55 60

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

Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln
85 90 95

His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg
100 105 110

Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val
115 120 125

Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile
130 135 140

Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn
145 150 155 160

Tyr Asn Pro His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly
165 170 175

Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val
180 185 190

Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro
195 200 205

Val Leu Leu Pro Asp Asn His Tyr Leu Phe Thr Gln Ser Ala Leu Ser
210 215 220

Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val
225 230 235 240

Thr	Ala	Ala	Gly	Ile	Thr	Leu	Gly	Met	Asp	Glu	Leu	Tyr	Lys	Gly	Thr	245	250	255
Gly	Thr	Ala	Ala	Lys	Glu	Gly	Glu	Lys	Gln	Lys	Gly	Ala	Met	Gln	Pro	260	265	270
Ser	Glu	Gln	Gln	Arg	Gly	Lys	Glu	Ala	Gln	Lys	Glu	Lys	Asn	Gly	Lys	275	280	285
Glu	Pro	Asn	Pro	Arg	Pro	Glu	Gln	Pro	Lys	Pro	Ala	Lys	Val	Glu	Gln	290	295	300
Gln	Glu	Asp	Glu	Pro	Glu	Glu	Arg	Pro	Lys	Arg	Glu	Pro	Met	Gln	Leu	305	310	315
Glu	Pro	Ala	Glu	Ser	Ala	Lys	Gln	Gly	Arg	Asn	Leu	Pro	Gln	Lys	Val	325	330	335
Glu	Gln	Gly	Glu	Glu	Arg	Pro	Gln	Glu	Ala	Asp	Met	Pro	Gly	Gln	Ala	340	345	350
Gln	Ser	Ala	Met	Arg	Pro	Gln	Leu	Ser	Asn	Ser	Glu	Glu	Gly	Pro	Ala	355	360	365
Arg	Gly	Lys	Pro	Ala	Pro	Glu	Glu	Pro	Asp	Glu	Gln	Leu	Gly	Glu	Pro	370	375	380
Glu	Glu	Ala	Gln	Gly	Glu	His	Ala	Asp	Glu	Pro	Ala	Pro	Ser	Lys	Pro	385	390	395
Ser	Glu	Lys	His	Met	Val	Pro	Gln	Met	Ala	Glu	Pro	Glu	Lys	Gly	Glu	405	410	415
Glu	Ala	Arg	Glu	Pro	Gln	Gly	Ala	Glu	Asp	Lys	Pro	Ala	Pro	Val	His	420	425	430
Lys	Pro	Lys	Lys	Glu	Glu	Pro	Gln	Arg	Pro	Asn	Glu	Glu	Lys	Ala	Pro	435	440	445
Lys	Pro	Lys	Gly	Arg	His	Val	Gly	Arg	Gln	Glu	Asn	Asp	Asp	Ser	Ala	450	455	460
Gly	Lys	Pro	Glu	Pro	Gly	Arg	Pro	Asp	Arg	Lys	Gly	Lys	Glu	Lys	Glu	465	470	475
Pro	Glu	Glu	Glu	Pro	Ala	Gln	Gly	His	Ser	Leu	Pro	Gln	Glu	Pro	Glu	485	490	495

Pro	Met	Pro	Arg	Pro	Lys	Pro	Glu	Val	Arg	Lys	Lys	Pro	His	Pro	Gly			
			500					505					510					
Ala	Ser	Pro	His	Gln	Val	Ser	Asp	Val	Glu	Asp	Ala	Lys	Gly	Pro	Glu			
		515					520					525						
Arg	Lys	Val	Asn	Pro	Met	Glu	Gly	Glu	Glu	Ser	Ala	Lys	Gln	Ala	Gln			
	530					535					540							
Gln	Glu	Gly	Pro	Ala	Glu	Asn	Asp	Glu	Ala	Glu	Arg	Pro	Glu	Arg	Pro			
545					550					555					560			
Ala	Ser	Gly	Gly	Ala	Arg	Glu	Ala	Met	Thr	Ser	Lys	Val	Tyr	Asp	Pro			
				565					570					575				
Glu	Gln	Arg	Lys	Arg	Met	Ile	Thr	Gly	Pro	Gln	Trp	Trp	Ala	Arg	Cys			
			580					585					590					
Lys	Gln	Met	Asn	Val	Leu	Asp	Ser	Phe	Ile	Asn	Tyr	Tyr	Asp	Ser	Glu			
		595					600					605						
Lys	His	Ala	Glu	Asn	Ala	Val	Ile	Phe	Leu	His	Gly	Asn	Ala	Thr	Ser			
	610					615					620							
Ser	Tyr	Leu	Trp	Arg	His	Val	Val	Pro	His	Ile	Glu	Pro	Val	Ala	Arg			
625					630					635					640			
Cys	Ile	Ile	Pro	Asp	Leu	Ile	Gly	Met	Gly	Lys	Ser	Gly	Lys	Ser	Gly			
				645					650					655				
Asn	Gly	Ser	Tyr	Arg	Leu	Leu	Asp	His	Tyr	Lys	Tyr	Leu	Thr	Ala	Trp			
			660					665					670					
Phe	Glu	Leu	Leu	Asn	Leu	Pro	Lys	Lys	Ile	Ile	Phe	Val	Gly	His	Asp			
		675					680					685						
Trp	Gly	Ala	Ala	Leu	Ala	Phe	His	Tyr	Ser	Tyr	Glu	His	Gln	Asp	Lys			
	690					695					700							
Ile	Lys	Ala	Ile	Val	His	Ala	Glu	Ser	Val	Val	Asp	Val	Ile	Glu	Ser			
705					710					715				720				
Trp	Asp	Glu	Trp	Pro	Asp	Ile	Glu	Glu	Asp	Ile	Ala	Leu	Ile	Lys	Ser			
				725					730					735				
Glu	Glu	Gly	Glu	Lys	Met	Val	Leu	Glu	Asn	Asn	Phe	Phe	Val	Glu	Thr			
			740					745					750					

Val Leu Pro Ser Lys Ile Met Arg Lys Leu Glu Pro Glu Glu Phe Ala
755 760 765

Ala Tyr Leu Glu Pro Phe Lys Glu Lys Gly Glu Val Arg Arg Pro Thr
770 775 780

Leu Ser Trp Pro Arg Glu Ile Pro Leu Val Lys Gly Gly Lys Pro Asp
785 790 795 800

Val Val Gln Ile Val Arg Asn Tyr Asn Ala Tyr Leu Arg Ala Ser Asp
805 810 815

Asp Leu Pro Lys Met Phe Ile Glu Ser Asp Pro Gly Phe Phe Ser Asn
820 825 830

Ala Ile Val Glu Gly Ala Lys Lys Phe Pro Asn Thr Glu Phe Val Lys
835 840 845

Val Lys Gly Leu His Phe Ser Gln Glu Asp Ala Pro Asp Glu Met Gly
850 855 860

Lys Tyr Ile Lys Ser Phe Val Glu Arg Val Leu Lys Asn Glu Gln Gly
865 870 875 880

Ser Gly Ser Gly Phe Asn Ile Asp Met Pro His Arg Phe Lys Val His
885 890 895

Asn Tyr Met Ser Pro Thr Phe Cys Asp His Cys Gly Ser Leu Leu Trp
900 905 910

Gly Leu Val Lys Gln Gly Leu Lys Cys Glu Asp Cys Gly Met Asn Val
915 920 925

His His Lys Cys Arg Glu Lys Val Ala Asn Leu Cys Gly
930 935 940

<210> 51
<211> 1304
<212> PRT
<213> Homo sapiens

<400> 51

Met Gly Cys Ile Lys Ser Lys Gly Lys Asp Ser Leu Ser Asn Ala Met
1 5 10 15

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

Glu	Leu	Asp	Gly	Asp	Val	Asn	Gly	His	Lys	Phe	Ser	Val	Ser	Gly	Glu	35	40	45
Gly	Glu	Gly	Asp	Ala	Thr	Tyr	Gly	Lys	Leu	Thr	Leu	Lys	Phe	Ile	Cys	50	55	60
Thr	Thr	Gly	Lys	Leu	Pro	Val	Pro	Trp	Pro	Thr	Leu	Val	Thr	Thr	Leu	65	70	75
Ser	Tyr	Gly	Val	Gln	Cys	Phe	Ser	Arg	Tyr	Pro	Asp	His	Met	Lys	Gln	85	90	95
His	Asp	Phe	Phe	Lys	Ser	Ala	Met	Pro	Glu	Gly	Tyr	Val	Gln	Glu	Arg	100	105	110
Thr	Ile	Phe	Phe	Lys	Asp	Asp	Gly	Asn	Tyr	Lys	Thr	Arg	Ala	Glu	Val	115	120	125
Lys	Phe	Glu	Gly	Asp	Thr	Leu	Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly	Ile	130	135	140
Asp	Phe	Lys	Glu	Asp	Gly	Asn	Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr	Asn	145	150	155
Tyr	Asn	Pro	His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn	Gly	165	170	175
Ile	Lys	Val	Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Glu	Asp	Gly	Ser	Val	180	185	190
Gln	Leu	Ala	Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	Ile	Gly	Asp	Gly	Pro	195	200	205
Val	Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Phe	Thr	Gln	Ser	Ala	Leu	Ser	210	215	220
Lys	Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met	Val	Leu	Leu	Glu	Phe	Val	225	230	235
Thr	Ala	Ala	Gly	Ile	Thr	Leu	Gly	Met	Asp	Glu	Leu	Tyr	Lys	Gly	Thr	245	250	255
Gly	Thr	Ala	Ala	Lys	Glu	Gly	Glu	Lys	Gln	Lys	Gly	Ala	Met	Gln	Pro	260	265	270
Ser	Glu	Gln	Gln	Arg	Gly	Lys	Glu	Ala	Gln	Lys	Glu	Lys	Asn	Gly	Lys	275	280	285

Glu Pro Asn Pro Arg Pro Glu Gln Pro Lys Pro Ala Lys Val Glu Gln
 290 295 300

Gln Glu Asp Glu Pro Glu Glu Arg Pro Lys Arg Glu Pro Met Gln Leu
 305 310 315 320

Glu Pro Ala Glu Ser Ala Lys Gln Gly Arg Asn Leu Pro Gln Lys Val
 325 330 335

Glu Gln Gly Glu Glu Arg Pro Gln Glu Ala Asp Met Pro Gly Gln Ala
 340 345 350

Gln Ser Ala Met Arg Pro Gln Leu Ser Asn Ser Glu Glu Gly Pro Ala
 355 360 365

Arg Gly Lys Pro Ala Pro Glu Glu Pro Asp Glu Gln Leu Gly Glu Pro
 370 375 380

Glu Glu Ala Gln Gly Glu His Ala Asp Glu Pro Ala Pro Ser Lys Pro
 385 390 395 400

Ser Glu Lys His Met Val Pro Gln Met Ala Glu Pro Glu Lys Gly Glu
 405 410 415

Glu Ala Arg Glu Pro Gln Gly Ala Glu Asp Lys Pro Ala Pro Val His
 420 425 430

Lys Pro Lys Lys Glu Glu Pro Gln Arg Pro Asn Glu Glu Lys Ala Pro
 435 440 445

Lys Pro Lys Gly Arg His Val Gly Arg Gln Glu Asn Asp Asp Ser Ala
 450 455 460

Gly Lys Pro Glu Pro Gly Arg Pro Asp Arg Lys Gly Lys Glu Lys Glu
 465 470 475 480

Pro Glu Glu Glu Pro Ala Gln Gly His Ser Leu Pro Gln Glu Pro Glu
 485 490 495

Pro Met Pro Arg Pro Lys Pro Glu Val Arg Lys Lys Pro His Pro Gly
 500 505 510

Ala Ser Pro His Gln Val Ser Asp Val Glu Asp Ala Lys Gly Pro Glu
 515 520 525

Arg Lys Val Asn Pro Met Glu Gly Glu Glu Ser Ala Lys Gln Ala Gln
 530 535 540

Gln	Glu	Gly	Pro	Ala	Glu	Asn	Asp	Glu	Ala	Glu	Arg	Pro	Glu	Arg	Pro	545	550	555	560
Ala	Ser	Gly	Gly	Ala	Arg	Glu	Ala	Met	Thr	Ser	Lys	Val	Tyr	Asp	Pro	565	570	575	
Glu	Gln	Arg	Lys	Arg	Met	Ile	Thr	Gly	Pro	Gln	Trp	Trp	Ala	Arg	Cys	580	585	590	
Lys	Gln	Met	Asn	Val	Leu	Asp	Ser	Phe	Ile	Asn	Tyr	Tyr	Asp	Ser	Glu	595	600	605	
Lys	His	Ala	Glu	Asn	Ala	Val	Ile	Phe	Leu	His	Gly	Asn	Ala	Thr	Ser	610	615	620	
Ser	Tyr	Leu	Trp	Arg	His	Val	Val	Pro	His	Ile	Glu	Pro	Val	Ala	Arg	625	630	635	640
Cys	Ile	Ile	Pro	Asp	Leu	Ile	Gly	Met	Gly	Lys	Ser	Gly	Lys	Ser	Gly	645	650	655	
Asn	Gly	Ser	Tyr	Arg	Leu	Leu	Asp	His	Tyr	Lys	Tyr	Leu	Thr	Ala	Trp	660	665	670	
Phe	Glu	Leu	Leu	Asn	Leu	Pro	Lys	Lys	Ile	Ile	Phe	Val	Gly	His	Asp	675	680	685	
Trp	Gly	Ala	Ala	Leu	Ala	Phe	His	Tyr	Ser	Tyr	Glu	His	Gln	Asp	Lys	690	695	700	
Ile	Lys	Ala	Ile	Val	His	Ala	Glu	Ser	Val	Val	Asp	Val	Ile	Glu	Ser	705	710	715	720
Trp	Asp	Glu	Trp	Pro	Asp	Ile	Glu	Glu	Asp	Ile	Ala	Leu	Ile	Lys	Ser	725	730	735	
Glu	Glu	Gly	Glu	Lys	Met	Val	Leu	Glu	Asn	Asn	Phe	Phe	Val	Glu	Thr	740	745	750	
Val	Leu	Pro	Ser	Lys	Ile	Met	Arg	Lys	Leu	Glu	Pro	Glu	Glu	Phe	Ala	755	760	765	
Ala	Tyr	Leu	Glu	Pro	Phe	Lys	Glu	Lys	Gly	Glu	Val	Arg	Arg	Pro	Thr	770	775	780	
Leu	Ser	Trp	Pro	Arg	Glu	Ile	Pro	Leu	Val	Lys	Gly	Gly	Lys	Pro	Asp	785	790	795	800

Val	Val	Gln	Ile	Val	Arg	Asn	Tyr	Asn	Ala	Tyr	Leu	Arg	Ala	Ser	Asp		
				805					810					815			
Asp	Leu	Pro	Lys	Met	Phe	Ile	Glu	Ser	Asp	Pro	Gly	Phe	Phe	Ser	Asn		
			820					825					830				
Ala	Ile	Val	Glu	Gly	Ala	Lys	Lys	Phe	Pro	Asn	Thr	Glu	Phe	Val	Lys		
		835					840					845					
Val	Lys	Gly	Leu	His	Phe	Ser	Gln	Glu	Asp	Ala	Pro	Asp	Glu	Met	Gly		
	850					855					860						
Lys	Tyr	Ile	Lys	Ser	Phe	Val	Glu	Arg	Val	Leu	Lys	Asn	Glu	Gln	Gly		
865					870					875					880		
Ser	Gly	Ser	Ala	Gly	Thr	Ala	Gly	Asp	Lys	Gly	Thr	Arg	Val	Phe	Lys		
				885					890					895			
Lys	Ala	Ser	Pro	Asn	Gly	Lys	Leu	Thr	Val	Tyr	Leu	Gly	Lys	Arg	Asp		
			900					905					910				
Phe	Val	Asp	His	Ile	Asp	Leu	Val	Asp	Pro	Val	Asp	Gly	Val	Val	Leu		
		915					920					925					
Val	Asp	Pro	Glu	Tyr	Leu	Lys	Glu	Arg	Arg	Val	Tyr	Val	Thr	Leu	Thr		
	930					935					940						
Cys	Ala	Phe	Arg	Tyr	Gly	Arg	Glu	Asp	Leu	Asp	Val	Leu	Gly	Leu	Thr		
945					950					955					960		
Phe	Arg	Lys	Asp	Leu	Phe	Val	Ala	Asn	Val	Gln	Ser	Phe	Pro	Pro	Ala		
				965					970					975			
Pro	Glu	Asp	Lys	Lys	Pro	Leu	Thr	Arg	Leu	Gln	Glu	Arg	Leu	Ile	Lys		
			980					985					990				
Lys	Leu	Gly	Glu	His	Ala	Tyr	Pro	Phe	Thr	Phe	Glu	Ile	Pro	Pro	Asn		
		995					1000					1005					
Leu	Pro	Cys	Ser	Val	Thr	Leu	Gln	Pro	Gly	Pro	Glu	Asp	Thr	Gly			
	1010					1015					1020						
Lys	Ala	Cys	Gly	Val	Asp	Tyr	Glu	Val	Lys	Ala	Phe	Cys	Ala	Glu			
	1025					1030					1035						
Asn	Leu	Glu	Glu	Lys	Ile	His	Lys	Arg	Asn	Ser	Val	Arg	Leu	Val			
	1040					1045					1050						

Ile	Arg	Lys	Val	Gln	Tyr	Ala	Pro	Glu	Arg	Pro	Gly	Pro	Gln	Pro
1055						1060					1065			
Thr	Ala	Glu	Thr	Thr	Arg	Gln	Phe	Leu	Met	Ser	Asp	Lys	Pro	Leu
1070						1075					1080			
His	Leu	Glu	Ala	Ser	Leu	Asp	Lys	Glu	Ile	Tyr	Tyr	His	Gly	Glu
1085						1090					1095			
Pro	Ile	Ser	Val	Asn	Val	His	Val	Thr	Asn	Asn	Thr	Asn	Lys	Thr
1100						1105					1110			
Val	Lys	Lys	Ile	Lys	Ile	Ser	Val	Arg	Gln	Tyr	Ala	Asp	Ile	Cys
1115						1120					1125			
Leu	Phe	Asn	Thr	Ala	Gln	Tyr	Lys	Cys	Pro	Val	Ala	Met	Glu	Glu
1130						1135					1140			
Ala	Asp	Asp	Thr	Val	Ala	Pro	Ser	Ser	Thr	Phe	Cys	Lys	Val	Tyr
1145						1150					1155			
Thr	Leu	Thr	Pro	Phe	Leu	Ala	Asn	Asn	Arg	Glu	Lys	Arg	Gly	Leu
1160						1165					1170			
Ala	Leu	Asp	Gly	Lys	Leu	Lys	His	Glu	Asp	Thr	Asn	Leu	Ala	Ser
1175						1180					1185			
Ser	Thr	Leu	Leu	Arg	Glu	Gly	Ala	Asn	Arg	Glu	Ile	Leu	Gly	Ile
1190						1195					1200			
Ile	Val	Ser	Tyr	Lys	Val	Lys	Val	Lys	Leu	Val	Val	Ser	Arg	Gly
1205						1210					1215			
Gly	Leu	Leu	Gly	Asp	Leu	Ala	Ser	Ser	Asp	Val	Ala	Val	Glu	Leu
1220						1225					1230			
Pro	Phe	Thr	Leu	Met	His	Pro	Lys	Pro	Lys	Glu	Glu	Pro	Pro	His
1235						1240					1245			
Arg	Glu	Val	Pro	Glu	Asn	Glu	Thr	Pro	Val	Asp	Thr	Asn	Leu	Ile
1250						1255					1260			
Glu	Leu	Asp	Thr	Asn	Asp	Asp	Asp	Ile	Val	Phe	Glu	Asp	Phe	Ala
1265						1270					1275			
Arg	Gln	Arg	Leu	Lys	Gly	Met	Lys	Asp	Asp	Lys	Glu	Glu	Glu	Glu
1280						1285					1290			

Asp Gly Thr Gly Ser Pro Gln Leu Asn Asn Arg
1295 1300

<210> 52
<211> 1295
<212> PRT
<213> Homo sapiens

<400> 52

Met Gly Cys Ile Lys Ser Lys Gly Lys Asp Ser Leu Ser Asn Ala Met
1 5 10 15

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

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

Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys
50 55 60

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

Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln
85 90 95

His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg
100 105 110

Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val
115 120 125

Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile
130 135 140

Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn
145 150 155 160

Tyr Asn Pro His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly
165 170 175

Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val
180 185 190

Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro
195 200 205

Val	Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Phe	Thr	Gln	Ser	Ala	Leu	Ser
210						215					220				
Lys	Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met	Val	Leu	Leu	Glu	Phe	Val
225					230					235					240
Thr	Ala	Ala	Gly	Ile	Thr	Leu	Gly	Met	Asp	Glu	Leu	Tyr	Lys	Gly	Thr
				245					250					255	
Gly	Thr	Ala	Ala	Lys	Glu	Gly	Glu	Lys	Gln	Lys	Gly	Ala	Met	Gln	Pro
			260					265					270		
Ser	Glu	Gln	Gln	Arg	Gly	Lys	Glu	Ala	Gln	Lys	Glu	Lys	Asn	Gly	Lys
		275					280					285			
Glu	Pro	Asn	Pro	Arg	Pro	Glu	Gln	Pro	Lys	Pro	Ala	Lys	Val	Glu	Gln
	290					295					300				
Gln	Glu	Asp	Glu	Pro	Glu	Glu	Arg	Pro	Lys	Arg	Glu	Pro	Met	Gln	Leu
305					310					315					320
Glu	Pro	Ala	Glu	Ser	Ala	Lys	Gln	Gly	Arg	Asn	Leu	Pro	Gln	Lys	Val
				325					330					335	
Glu	Gln	Gly	Glu	Glu	Arg	Pro	Gln	Glu	Ala	Asp	Met	Pro	Gly	Gln	Ala
			340					345					350		
Gln	Ser	Ala	Met	Arg	Pro	Gln	Leu	Ser	Asn	Ser	Glu	Glu	Gly	Pro	Ala
		355					360					365			
Arg	Gly	Lys	Pro	Ala	Pro	Glu	Glu	Pro	Asp	Glu	Gln	Leu	Gly	Glu	Pro
	370					375					380				
Glu	Glu	Ala	Gln	Gly	Glu	His	Ala	Asp	Glu	Pro	Ala	Pro	Ser	Lys	Pro
385					390					395					400
Ser	Glu	Lys	His	Met	Val	Pro	Gln	Met	Ala	Glu	Pro	Glu	Lys	Gly	Glu
				405					410					415	
Glu	Ala	Arg	Glu	Pro	Gln	Gly	Ala	Glu	Asp	Lys	Pro	Ala	Pro	Val	His
			420					425					430		
Lys	Pro	Lys	Lys	Glu	Glu	Pro	Gln	Arg	Pro	Asn	Glu	Glu	Lys	Ala	Pro
		435					440					445			
Lys	Pro	Lys	Gly	Arg	His	Val	Gly	Arg	Gln	Glu	Asn	Asp	Asp	Ser	Ala
						455					460				

Gly	Lys	Pro	Glu	Pro	Gly	Arg	Pro	Asp	Arg	Lys	Gly	Lys	Glu	Lys	Glu	465	470	475	480
Pro	Glu	Glu	Glu	Pro	Ala	Gln	Gly	His	Ser	Leu	Pro	Gln	Glu	Pro	Glu		485	490	495
Pro	Met	Pro	Arg	Pro	Lys	Pro	Glu	Val	Arg	Lys	Lys	Pro	His	Pro	Gly		500	505	510
Ala	Ser	Pro	His	Gln	Val	Ser	Asp	Val	Glu	Asp	Ala	Lys	Gly	Pro	Glu		515	520	525
Arg	Lys	Val	Asn	Pro	Met	Glu	Gly	Glu	Glu	Ser	Ala	Lys	Gln	Ala	Gln	530	535	540	
Gln	Glu	Gly	Pro	Ala	Glu	Asn	Asp	Glu	Ala	Glu	Arg	Pro	Glu	Arg	Pro	545	550	555	560
Ala	Ser	Gly	Gly	Ala	Arg	Glu	Ala	Met	Thr	Ser	Lys	Val	Tyr	Asp	Pro		565	570	575
Glu	Gln	Arg	Lys	Arg	Met	Ile	Thr	Gly	Pro	Gln	Trp	Trp	Ala	Arg	Cys		580	585	590
Lys	Gln	Met	Asn	Val	Leu	Asp	Ser	Phe	Ile	Asn	Tyr	Tyr	Asp	Ser	Glu		595	600	605
Lys	His	Ala	Glu	Asn	Ala	Val	Ile	Phe	Leu	His	Gly	Asn	Ala	Thr	Ser	610	615	620	
Ser	Tyr	Leu	Trp	Arg	His	Val	Val	Pro	His	Ile	Glu	Pro	Val	Ala	Arg	625	630	635	640
Cys	Ile	Ile	Pro	Asp	Leu	Ile	Gly	Met	Gly	Lys	Ser	Gly	Lys	Ser	Gly		645	650	655
Asn	Gly	Ser	Tyr	Arg	Leu	Leu	Asp	His	Tyr	Lys	Tyr	Leu	Thr	Ala	Trp		660	665	670
Phe	Glu	Leu	Leu	Asn	Leu	Pro	Lys	Lys	Ile	Ile	Phe	Val	Gly	His	Asp		675	680	685
Trp	Gly	Ala	Ala	Leu	Ala	Phe	His	Tyr	Ser	Tyr	Glu	His	Gln	Asp	Lys	690	695	700	
Ile	Lys	Ala	Ile	Val	His	Ala	Glu	Ser	Val	Val	Asp	Val	Ile	Glu	Ser	705	710	715	720

Trp	Asp	Glu	Trp	Pro	Asp	Ile	Glu	Glu	Asp	Ile	Ala	Leu	Ile	Lys	Ser		
				725					730					735			
Glu	Glu	Gly	Glu	Lys	Met	Val	Leu	Glu	Asn	Asn	Phe	Phe	Val	Glu	Thr		
			740					745					750				
Val	Leu	Pro	Ser	Lys	Ile	Met	Arg	Lys	Leu	Glu	Pro	Glu	Glu	Phe	Ala		
		755					760					765					
Ala	Tyr	Leu	Glu	Pro	Phe	Lys	Glu	Lys	Gly	Glu	Val	Arg	Arg	Pro	Thr		
	770					775					780						
Leu	Ser	Trp	Pro	Arg	Glu	Ile	Pro	Leu	Val	Lys	Gly	Gly	Lys	Pro	Asp		
785					790					795					800		
Val	Val	Gln	Ile	Val	Arg	Asn	Tyr	Asn	Ala	Tyr	Leu	Arg	Ala	Ser	Asp		
			805						810					815			
Asp	Leu	Pro	Lys	Met	Phe	Ile	Glu	Ser	Asp	Pro	Gly	Phe	Phe	Ser	Asn		
			820					825					830				
Ala	Ile	Val	Glu	Gly	Ala	Lys	Lys	Phe	Pro	Asn	Thr	Glu	Phe	Val	Lys		
		835					840					845					
Val	Lys	Gly	Leu	His	Phe	Ser	Gln	Glu	Asp	Ala	Pro	Asp	Glu	Met	Gly		
	850					855					860						
Lys	Tyr	Ile	Lys	Ser	Phe	Val	Glu	Arg	Val	Leu	Lys	Asn	Glu	Gln	Gly		
865					870					875					880		
Ser	Gly	Ser	Ala	Gly	Thr	Ala	Gly	Glu	Lys	Pro	Gly	Thr	Arg	Val	Phe		
				885					890					895			
Lys	Lys	Ser	Ser	Pro	Asn	Cys	Lys	Leu	Thr	Val	Tyr	Leu	Gly	Lys	Arg		
			900					905					910				
Asp	Phe	Val	Asp	His	Leu	Asp	Lys	Val	Asp	Pro	Val	Asp	Gly	Val	Val		
		915					920					925					
Leu	Val	Asp	Pro	Asp	Tyr	Leu	Lys	Asp	Arg	Lys	Val	Phe	Val	Thr	Leu		
	930					935					940						
Thr	Cys	Ala	Phe	Arg	Tyr	Gly	Arg	Glu	Asp	Leu	Asp	Val	Leu	Gly	Leu		
945					950					955					960		
Ser	Phe	Arg	Lys	Asp	Leu	Phe	Ile	Ala	Thr	Tyr	Gln	Ala	Phe	Pro	Pro		
				965					970					975			

Val	Pro	Asn	Pro	Pro	Arg	Pro	Pro	Thr	Arg	Leu	Gln	Asp	Arg	Leu	Leu
			980					985					990		
Arg	Lys	Leu	Gly	Gln	His	Ala	His	Pro	Phe	Phe	Phe	Thr	Ile	Pro	Gln
		995					1000					1005			
Asn	Leu	Pro	Cys	Ser	Val	Thr	Leu	Gln	Pro	Gly	Pro	Glu	Asp	Thr	
	1010					1015					1020				
Gly	Lys	Ala	Cys	Gly	Val	Asp	Phe	Glu	Ile	Arg	Ala	Phe	Cys	Ala	
	1025					1030					1035				
Lys	Ser	Leu	Glu	Glu	Lys	Ser	His	Lys	Arg	Asn	Ser	Val	Arg	Leu	
	1040					1045					1050				
Val	Ile	Arg	Lys	Val	Gln	Phe	Ala	Pro	Glu	Lys	Pro	Gly	Pro	Gln	
	1055					1060					1065				
Pro	Ser	Ala	Glu	Thr	Thr	Arg	His	Phe	Leu	Met	Ser	Asp	Arg	Ser	
	1070					1075					1080				
Leu	His	Leu	Glu	Ala	Ser	Leu	Asp	Lys	Glu	Leu	Tyr	Tyr	His	Gly	
	1085					1090					1095				
Glu	Pro	Leu	Asn	Val	Asn	Val	His	Val	Thr	Asn	Asn	Ser	Thr	Lys	
	1100					1105					1110				
Thr	Val	Lys	Lys	Ile	Lys	Val	Ser	Val	Arg	Gln	Tyr	Ala	Asp	Ile	
	1115					1120					1125				
Cys	Leu	Phe	Ser	Thr	Ala	Gln	Tyr	Lys	Cys	Pro	Val	Ala	Gln	Leu	
	1130					1135					1140				
Glu	Gln	Asp	Asp	Gln	Val	Ser	Pro	Ser	Ser	Thr	Phe	Cys	Lys	Val	
	1145					1150					1155				
Tyr	Thr	Ile	Thr	Pro	Leu	Leu	Ser	Asp	Asn	Arg	Glu	Lys	Arg	Gly	
	1160					1165					1170				
Leu	Ala	Leu	Asp	Gly	Lys	Leu	Lys	His	Glu	Asp	Thr	Asn	Leu	Ala	
	1175					1180					1185				
Ser	Ser	Thr	Ile	Val	Lys	Glu	Gly	Ala	Asn	Lys	Glu	Val	Leu	Gly	
	1190					1195					1200				
Ile	Leu	Val	Ser	Tyr	Arg	Val	Lys	Val	Lys	Leu	Val	Val	Ser	Arg	
	1205					1210					1215				

Gly Gly Asp Val Ser Val Glu Leu Pro Phe Val Leu Met His Pro
1220 1225 1230

Lys Pro His Asp His Ile Pro Leu Pro Arg Pro Gln Ser Ala Ala
1235 1240 1245

Pro Glu Thr Asp Val Pro Val Asp Thr Asn Leu Ile Glu Phe Asp
1250 1255 1260

Thr Asn Tyr Ala Thr Asp Asp Asp Ile Val Phe Glu Asp Phe Ala
1265 1270 1275

Arg Leu Arg Leu Lys Gly Met Lys Asp Asp Asp Tyr Asp Asp Gln
1280 1285 1290

Leu Cys
1295

<210> 53
<211> 707
<212> PRT
<213> Homo sapiens

<400> 53

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

Ala Gly Gly Ala Arg Glu Arg Arg Ala Gly Ser Gly Ala Arg Asp Ala
20 25 30

Glu Arg Glu Ala Arg Arg Arg Ser Arg Asp Ile Asp Ala Leu Leu Ala
35 40 45

Arg Glu Arg Arg Ala Val Arg Arg Leu Val Lys Ile Leu Leu Leu Gly
50 55 60

Ala Gly Glu Ser Gly Lys Ser Thr Phe Leu Lys Gln Met Arg Ile Ile
65 70 75 80

His Gly Arg Glu Gly Ser Gly Gly Gly Gly Ser Met Thr Ser Lys Val
85 90 95

Tyr Asp Pro Glu Gln Arg Lys Arg Met Ile Thr Gly Pro Gln Trp Trp
100 105 110

Ala Arg Cys Lys Gln Met Asn Val Leu Asp Ser Phe Ile Asn Tyr Tyr
115 120 125

Asp Ser Glu Lys His Ala Glu Asn Ala Val Ile Phe Leu His Gly Asn

130

135

140

Ala Ala Ser Ser Tyr Leu Trp Arg His Val Val Pro His Ile Glu Pro
 145 150 155 160

Val Ala Arg Cys Ile Ile Pro Asp Leu Ile Gly Met Gly Lys Ser Gly
 165 170 175

Lys Ser Gly Asn Gly Ser Tyr Arg Leu Leu Asp His Tyr Lys Tyr Leu
 180 185 190

Thr Ala Trp Phe Glu Leu Leu Asn Leu Pro Lys Lys Ile Ile Phe Val
 195 200 205

Gly His Asp Trp Gly Ala Ala Leu Ala Phe His Tyr Ser Tyr Glu His
 210 215 220

Gln Asp Lys Ile Lys Ala Ile Val His Ala Glu Ser Val Val Asp Val
 225 230 235 240

Ile Glu Ser Trp Asp Glu Trp Pro Asp Ile Glu Glu Asp Ile Ala Leu
 245 250 255

Ile Lys Ser Glu Glu Gly Glu Lys Met Val Leu Glu Asn Asn Phe Phe
 260 265 270

Val Glu Thr Val Leu Pro Ser Lys Ile Met Arg Lys Leu Glu Pro Glu
 275 280 285

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

Arg Pro Thr Leu Ser Trp Pro Arg Glu Ile Pro Leu Val Lys Gly Gly
 305 310 315 320

Lys Pro Asp Val Val Gln Ile Val Arg Asn Tyr Asn Ala Tyr Leu Arg
 325 330 335

Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu Ser Asp Pro Gly Phe
 340 345 350

Phe Ser Asn Ala Ile Val Glu Gly Ala Lys Lys Phe Pro Asn Thr Glu
 355 360 365

Phe Val Lys Val Lys Gly Leu His Phe Ser Gln Glu Asp Ala Pro Asp
 370 375 380

Glu Met Gly Lys Tyr Ile Lys Ser Phe Val Glu Arg Val Leu Lys Asn

385		390		395		400
Glu Gln Ser Gly	Gly Gly Gly Ser Gly	Thr Phe Asp Gln Lys	Ala Leu			
	405	410	415			
Leu Glu Phe Arg	Asp Thr Ile Phe Asp	Asn Ile Leu Lys	Gly Ser Arg			
	420	425	430			
Val Leu Val	Asp Ala Arg Asp	Lys Leu Gly Ile	Pro Trp Gln Tyr Ser			
	435	440	445			
Glu Asn Glu Glu His	Gly Met Phe Leu Met	Ala Phe Glu Asn Lys	Ala			
	450	455	460			
Gly Leu Pro Val	Glu Pro Ala Thr Phe Gln	Leu Tyr Val Pro	Ala Leu			
	465	470	475	480		
Ser Ala Leu Trp	Arg Asp Ser Gly Ile	Arg Glu Ala Phe	Ser Arg Arg			
	485	490	495			
Ser Glu Phe	Gln Leu Gly Glu Ser	Val Lys Tyr Phe	Leu Asp Asn Leu			
	500	505	510			
Asp Arg Ile	Gly Gln Leu Glu Tyr	Met Pro Thr Glu	Gln Asp Ile Leu			
	515	520	525			
Leu Ala Arg	Lys Ala Thr Lys	Gly Ile Val Glu	His Asp Phe Val Ile			
	530	535	540			
Lys Lys Ile	Pro Phe Lys Met	Val Asp Val Gly	Gly Gln Arg Ser Gln			
	545	550	555	560		
Arg Gln Lys	Trp Phe Gln Cys Phe	Asp Gly Ile Thr	Ser Ile Leu Phe			
	565	570	575			
Met Val Ser	Ser Ser Glu Tyr Asp	Gln Val Leu Met	Glu Asp Arg Arg			
	580	585	590			
Thr Asn Arg	Leu Val Glu Ser	Met Asn Ile Phe	Glu Thr Ile Val Asn			
	595	600	605			
Asn Lys Leu	Phe Phe Asn Val	Ser Ile Ile Leu	Phe Leu Asn Lys Met			
	610	615	620			
Asp Leu Leu	Val Glu Lys Val	Lys Thr Val Ser	Ile Lys Lys His Phe			
	625	630	635	640		
Pro Asp Phe	Arg Gly Asp Pro	His Arg Leu Glu	Asp Val Gln Arg Tyr			

645

650

655

Leu Val Gln Cys Phe Asp Arg Lys Arg Arg Asn Arg Ser Lys Pro Leu
 660 665 670

Phe His His Phe Thr Thr Ala Ile Asp Thr Glu Asn Val Arg Phe Val
 675 680 685

Phe His Ala Val Lys Asp Thr Ile Leu Gln Glu Asn Leu Lys Asp Ile
 690 695 700

Met Leu Gln
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<210> 54
 <211> 686
 <212> PRT
 <213> Homo sapiens

<400> 54

Met Thr Leu Glu Ser Ile Met Ala Cys Cys Leu Ser Glu Glu Ala Lys
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Glu Ala Arg Arg Ile Asn Asp Glu Ile Glu Arg Gln Leu Arg Arg Asp
 20 25 30

Lys Arg Asp Ala Arg Arg Glu Leu Lys Leu Leu Leu Leu Gly Thr Gly
 35 40 45

Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile Ile His Gly
 50 55 60

Ser Gly Tyr Ser Asp Glu Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr
 65 70 75 80

Gln Asn Ile Phe Thr Ala Met Gln Ala Met Ile Arg Ala Met Asp Thr
 85 90 95

Leu Lys Ile Pro Tyr Lys Tyr Glu His Asn Lys Ala His Ala Gln Leu
 100 105 110

Val Arg Glu Val Asp Val Asn Ala Ala Ile Arg Ser Thr Arg Met Thr
 115 120 125

Ser Lys Val Tyr Asp Pro Glu Gln Arg Lys Arg Met Ile Thr Gly Pro
 130 135 140

Gln Trp Trp Ala Arg Cys Lys Gln Met Asn Val Leu Asp Ser Phe Ile
 145 150 155 160

Asn	Tyr	Tyr	Asp	Ser	Glu	Lys	His	Ala	Glu	Asn	Ala	Val	Ile	Phe	Leu	
				165					170					175		
His	Gly	Asn	Ala	Ala	Ser	Ser	Tyr	Leu	Trp	Arg	His	Val	Val	Pro	His	
			180					185					190			
Ile	Glu	Pro	Val	Ala	Arg	Cys	Ile	Ile	Pro	Asp	Leu	Ile	Gly	Met	Gly	
		195					200					205				
Lys	Ser	Gly	Lys	Ser	Gly	Asn	Gly	Ser	Tyr	Arg	Leu	Leu	Asp	His	Tyr	
	210					215					220					
Lys	Tyr	Leu	Thr	Ala	Trp	Phe	Glu	Leu	Leu	Asn	Leu	Pro	Lys	Lys	Ile	
225					230					235					240	
Ile	Phe	Val	Gly	His	Asp	Trp	Gly	Ala	Ala	Leu	Ala	Phe	His	Tyr	Ser	
				245					250					255		
Tyr	Glu	His	Gln	Asp	Lys	Ile	Lys	Ala	Ile	Val	His	Ala	Glu	Ser	Val	
			260					265					270			
Val	Asp	Val	Ile	Glu	Ser	Trp	Asp	Glu	Trp	Pro	Asp	Ile	Glu	Glu	Asp	
		275					280					285				
Ile	Ala	Leu	Ile	Lys	Ser	Glu	Glu	Gly	Glu	Lys	Met	Val	Leu	Glu	Asn	
	290					295					300					
Asn	Phe	Phe	Val	Glu	Thr	Val	Leu	Pro	Ser	Lys	Ile	Met	Arg	Lys	Leu	
305					310					315					320	
Glu	Pro	Glu	Glu	Phe	Ala	Ala	Tyr	Leu	Glu	Pro	Phe	Lys	Glu	Lys	Gly	
				325					330					335		
Glu	Val	Arg	Arg	Pro	Thr	Leu	Ser	Trp	Pro	Arg	Glu	Ile	Pro	Leu	Val	
			340					345					350			
Lys	Gly	Gly	Lys	Pro	Asp	Val	Val	Gln	Ile	Val	Arg	Asn	Tyr	Asn	Ala	
		355					360					365				
Tyr	Leu	Arg	Ala	Ser	Asp	Asp	Leu	Pro	Lys	Met	Phe	Ile	Glu	Ser	Asp	
	370					375					380					
Pro	Gly	Phe	Phe	Ser	Asn	Ala	Ile	Val	Glu	Gly	Ala	Lys	Lys	Phe	Pro	
385					390					395					400	
Asn	Thr	Glu	Phe	Val	Lys	Val	Lys	Gly	Leu	His	Phe	Ser	Gln	Glu	Asp	
				405					410					415		

Ala	Pro	Asp	Glu	Met	Gly	Lys	Tyr	Ile	Lys	Ser	Phe	Val	Glu	Arg	Val	420	425	430
Leu	Lys	Asn	Glu	Gln	Cys	Thr	Asn	Ala	Ala	Ile	Arg	Ser	Glu	Lys	Val	435	440	445
Ser	Ala	Phe	Glu	Asn	Pro	Tyr	Val	Asp	Ala	Ile	Lys	Ser	Leu	Trp	Asn	450	455	460
Asp	Pro	Gly	Ile	Gln	Glu	Cys	Tyr	Asp	Arg	Arg	Arg	Glu	Tyr	Gln	Leu	465	470	475
Ser	Asp	Ser	Thr	Lys	Tyr	Tyr	Leu	Asn	Asp	Leu	Asp	Arg	Val	Ala	Asp	485	490	495
Pro	Ala	Tyr	Leu	Pro	Thr	Gln	Gln	Asp	Val	Leu	Arg	Val	Arg	Val	Pro	500	505	510
Thr	Thr	Gly	Ile	Ile	Glu	Tyr	Pro	Phe	Asp	Leu	Gln	Ser	Val	Ile	Phe	515	520	525
Arg	Met	Val	Asp	Val	Gly	Gly	Gln	Arg	Ser	Glu	Arg	Arg	Lys	Trp	Ile	530	535	540
His	Cys	Phe	Glu	Asn	Val	Thr	Ser	Ile	Met	Phe	Leu	Val	Ala	Leu	Ser	545	550	555
Glu	Tyr	Asp	Gln	Val	Leu	Val	Glu	Ser	Asp	Asn	Glu	Asn	Arg	Met	Glu	565	570	575
Glu	Ser	Lys	Ala	Leu	Phe	Arg	Thr	Ile	Ile	Thr	Tyr	Pro	Trp	Phe	Gln	580	585	590
Asn	Ser	Ser	Val	Ile	Leu	Phe	Leu	Asn	Lys	Lys	Asp	Leu	Leu	Glu	Glu	595	600	605
Lys	Ile	Met	Tyr	Ser	His	Leu	Val	Asp	Tyr	Phe	Pro	Glu	Tyr	Asp	Gly	610	615	620
Pro	Gln	Arg	Asp	Ala	Gln	Ala	Ala	Arg	Glu	Phe	Ile	Leu	Lys	Met	Phe	625	630	635
Val	Asp	Leu	Asn	Pro	Asp	Ser	Asp	Lys	Ile	Ile	Tyr	Ser	His	Phe	Thr	645	650	655
Cys	Ala	Thr	Asp	Thr	Glu	Asn	Ile	Arg	Phe	Val	Phe	Ala	Ala	Val	Lys	660	665	670

Asp Thr Ile Leu Gln Leu Asn Leu Lys Glu Tyr Asn Leu Val
675 680 685

<210> 55
<211> 717
<212> PRT
<213> Homo sapiens

<400> 55

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

Lys Ala Gln Arg Glu Ala Asn Lys Lys Ile Glu Lys Gln Leu Gln Lys
20 25 30

Asp Lys Gln Val Tyr Arg Ala Thr His Arg Leu Leu Leu Leu Gly Ala
35 40 45

Gly Glu Ser Gly Lys Ser Thr Ile Val Lys Gln Met Arg Ile Leu His
50 55 60

Val Asn Gly Ser Gly Gly Gly Gly Ser Met Thr Ser Lys Val Tyr Asp
65 70 75 80

Pro Glu Gln Arg Lys Arg Met Ile Thr Gly Pro Gln Trp Trp Ala Arg
85 90 95

Cys Lys Gln Met Asn Val Leu Asp Ser Phe Ile Asn Tyr Tyr Asp Ser
100 105 110

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

Ser Ser Tyr Leu Trp Arg His Val Val Pro His Ile Glu Pro Val Ala
130 135 140

Arg Cys Ile Ile Pro Asp Leu Ile Gly Met Gly Lys Ser Gly Lys Ser
145 150 155 160

Gly Asn Gly Ser Tyr Arg Leu Leu Asp His Tyr Lys Tyr Leu Thr Ala
165 170 175

Trp Phe Glu Leu Leu Asn Leu Pro Lys Lys Ile Ile Phe Val Gly His
180 185 190

Asp Trp Gly Ala Ala Leu Ala Phe His Tyr Ser Tyr Glu His Gln Asp
195 200 205

Lys	Ile	Lys	Ala	Ile	Val	His	Ala	Glu	Ser	Val	Val	Asp	Val	Ile	Glu	210	215	220	
Ser	Trp	Asp	Glu	Trp	Pro	Asp	Ile	Glu	Glu	Asp	Ile	Ala	Leu	Ile	Lys	225	230	235	240
Ser	Glu	Glu	Gly	Glu	Lys	Met	Val	Leu	Glu	Asn	Asn	Phe	Phe	Val	Glu	245	250	255	
Thr	Val	Leu	Pro	Ser	Lys	Ile	Met	Arg	Lys	Leu	Glu	Pro	Glu	Glu	Phe	260	265	270	
Ala	Ala	Tyr	Leu	Glu	Pro	Phe	Lys	Glu	Lys	Gly	Glu	Val	Arg	Arg	Pro	275	280	285	
Thr	Leu	Ser	Trp	Pro	Arg	Glu	Ile	Pro	Leu	Val	Lys	Gly	Gly	Lys	Pro	290	295	300	
Asp	Val	Val	Gln	Ile	Val	Arg	Asn	Tyr	Asn	Ala	Tyr	Leu	Arg	Ala	Ser	305	310	315	320
Asp	Asp	Leu	Pro	Lys	Met	Phe	Ile	Glu	Ser	Asp	Pro	Gly	Phe	Phe	Ser	325	330	335	
Asn	Ala	Ile	Val	Glu	Gly	Ala	Lys	Lys	Phe	Pro	Asn	Thr	Glu	Phe	Val	340	345	350	
Lys	Val	Lys	Gly	Leu	His	Phe	Ser	Gln	Glu	Asp	Ala	Pro	Asp	Glu	Met	355	360	365	
Gly	Lys	Tyr	Ile	Lys	Ser	Phe	Val	Glu	Arg	Val	Leu	Lys	Asn	Glu	Gln	370	375	380	
Ser	Gly	Gly	Gly	Gly	Ser	Phe	Asn	Gly	Glu	Gly	Gly	Glu	Glu	Asp	Pro	385	390	395	400
Gln	Ala	Ala	Arg	Ser	Asn	Ser	Asp	Gly	Glu	Lys	Ala	Thr	Lys	Val	Gln	405	410	415	
Asp	Ile	Lys	Asn	Asn	Leu	Lys	Glu	Ala	Ile	Glu	Thr	Ile	Val	Ala	Ala	420	425	430	
Met	Ser	Asn	Leu	Val	Pro	Pro	Val	Glu	Leu	Ala	Asn	Pro	Glu	Asn	Gln	435	440	445	
Phe	Arg	Val	Asp	Tyr	Ile	Leu	Ser	Val	Met	Asn	Val	Pro	Asp	Phe	Asp	450	455	460	

Phe 465	Pro	Pro	Glu	Phe	Tyr 470	Glu	His	Ala	Lys	Ala 475	Leu	Trp	Glu	Asp	Glu 480
Gly	Val	Arg	Ala	Cys 485	Tyr	Glu	Arg	Ser	Asn 490	Glu	Tyr	Gln	Leu	Ile	Asp 495
Cys	Ala	Gln	Tyr 500	Phe	Leu	Asp	Lys	Ile 505	Asp	Val	Ile	Lys	Gln	Ala	Asp 510
Tyr	Val	Pro 515	Ser	Asp	Gln	Asp	Leu	Leu 520	Arg	Cys	Arg	Val	Leu	Thr	Ser 525
Gly	Ile 530	Phe	Glu	Thr	Lys	Phe 535	Gln	Val	Asp	Lys	Val	Asn	Phe	His	Met 540
Phe 545	Asp	Val	Gly	Gly	Gln	Arg	Asp	Glu	Arg	Arg 555	Lys	Trp	Ile	Gln	Cys 560
Phe	Asn	Asp	Val	Thr 565	Ala	Ile	Ile	Phe	Val 570	Val	Ala	Ser	Ser	Ser 575	Tyr
Asn	Met	Val	Ile 580	Arg	Glu	Asp	Asn	Gln 585	Thr	Asn	Arg	Leu	Gln	Glu	Ala 590
Leu	Asn	Leu	Phe	Lys	Ser	Ile	Trp 600	Asn	Asn	Arg	Trp	Leu	Arg	Thr	Ile 605
Ser	Val	Ile	Leu	Phe	Leu	Asn 615	Lys	Gln	Asp	Leu	Leu 620	Ala	Glu	Lys	Val
Leu 625	Ala	Gly	Lys	Ser	Lys 630	Ile	Glu	Asp	Tyr	Phe 635	Pro	Glu	Phe	Ala	Arg 640
Tyr	Thr	Thr	Pro	Glu	Asp	Ala	Thr	Pro	Glu 650	Pro	Gly	Glu	Asp	Pro	Arg 655
Val	Thr	Arg	Ala	Lys	Tyr	Phe	Ile	Arg 665	Asp	Glu	Phe	Leu	Arg	Ile	Ser 670
Thr	Ala	Ser 675	Gly	Asp	Gly	Arg	His 680	Tyr	Cys	Tyr	Pro	His 685	Phe	Thr	Cys
Ala	Val	Asp	Thr	Glu	Asn	Ile 695	Arg	Arg	Val	Phe	Asn	Asp	Cys	Arg	Asp 700
Ile 705	Ile	Gln	Arg	Met	His 710	Leu	Arg	Gln	Tyr	Glu	Leu	Leu			

<210> 56
<211> 340
<212> PRT
<213> Homo sapiens

<400> 56

Met Ser Glu Leu Asp Gln Leu Arg Gln Glu Ala Glu Gln Leu Lys Asn
1 5 10 15

Gln Ile Arg Asp Ala Arg Lys Ala Cys Ala Asp Ala Thr Leu Ser Gln
20 25 30

Ile Thr Asn Asn Ile Asp Pro Val Gly Arg Ile Gln Met Arg Thr Arg
35 40 45

Arg Thr Leu Arg Gly His Leu Ala Lys Ile Tyr Ala Met His Trp Gly
50 55 60

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

Ile Trp Asp Ser Tyr Thr Thr Asn Lys Val His Ala Ile Pro Leu Arg
85 90 95

Ser Ser Trp Val Met Thr Cys Ala Tyr Ala Pro Ser Gly Asn Tyr Val
100 105 110

Ala Cys Gly Gly Leu Asp Asn Ile Cys Ser Ile Tyr Asn Leu Lys Thr
115 120 125

Arg Glu Gly Asn Val Arg Val Ser Arg Glu Leu Ala Gly His Thr Gly
130 135 140

Tyr Leu Ser Cys Cys Arg Phe Leu Asp Asp Asn Gln Ile Val Thr Ser
145 150 155 160

Ser Gly Asp Thr Thr Cys Ala Leu Trp Asp Ile Glu Thr Gly Gln Gln
165 170 175

Thr Thr Thr Phe Thr Gly His Thr Gly Asp Val Met Ser Leu Ser Leu
180 185 190

Ala Pro Asp Thr Arg Leu Phe Val Ser Gly Ala Cys Asp Ala Ser Ala
195 200 205

Lys Leu Trp Asp Val Arg Glu Gly Met Cys Arg Gln Thr Phe Thr Gly
210 215 220

His Glu Ser Asp Ile Asn Ala Ile Cys Phe Phe Pro Asn Gly Asn Ala
225 230 235 240

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

Ala Asp Gln Glu Leu Met Thr Tyr Ser His Asp Asn Ile Ile Cys Gly
260 265 270

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

Tyr Asp Asp Phe Asn Cys Asn Val Trp Asp Ala Leu Lys Ala Asp Arg
290 295 300

Ala Gly Val Leu Ala Gly His Asp Asn Arg Val Ser Cys Leu Gly Val
305 310 315 320

Thr Asp Asp Gly Met Ala Val Ala Thr Gly Ser Trp Asp Ser Phe Leu
325 330 335

Lys Ile Trp Asn
340

<210> 57
<211> 74
<212> PRT
<213> Homo sapiens

<400> 57

Met Pro Val Ile Asn Ile Glu Asp Leu Thr Glu Lys Asp Lys Leu Lys
1 5 10 15

Met Glu Val Asp Gln Leu Lys Lys Glu Val Thr Leu Glu Arg Met Leu
20 25 30

Val Ser Lys Cys Cys Glu Glu Val Arg Asp Tyr Val Glu Glu Arg Ser
35 40 45

Gly Glu Asp Pro Leu Val Lys Gly Ile Pro Glu Asp Lys Asn Pro Phe
50 55 60

Lys Glu Leu Lys Gly Gly Cys Val Ile Ser
65 70

<210> 58
<211> 71
<212> PRT
<213> Homo sapiens

<400> 58

Met Ala Ser Asn Asn Thr Ala Ser Ile Ala Gln Ala Arg Lys Leu Val
1 5 10 15

Glu Gln Leu Lys Met Glu Ala Asn Ile Asp Arg Ile Lys Val Ser Lys
20 25 30

Ala Ala Ala Asp Leu Met Ala Tyr Cys Glu Ala His Ala Lys Glu Asp
35 40 45

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

Lys Phe Phe Cys Ala Ile Leu
65 70

<210> 59

<211> 75

<212> PRT

<213> Homo sapiens

<400> 59

Met Lys Gly Glu Thr Pro Val Asn Ser Thr Met Ser Ile Gly Gln Ala
1 5 10 15

Arg Lys Met Val Glu Gln Leu Lys Ile Glu Ala Ser Leu Cys Arg Ile
20 25 30

Lys Val Ser Lys Ala Ala Ala Asp Leu Met Thr Tyr Cys Asp Ala His
35 40 45

Ala Cys Glu Asp Pro Leu Ile Thr Pro Val Pro Thr Ser Glu Asn Pro
50 55 60

Phe Arg Glu Lys Lys Phe Phe Cys Ala Leu Leu
65 70 75

<210> 60

<211> 75

<212> PRT

<213> Homo sapiens

<400> 60

Met Lys Glu Gly Met Ser Asn Asn Ser Thr Thr Ser Ile Ser Gln Ala
1 5 10 15

Arg Lys Ala Val Glu Gln Leu Lys Met Glu Ala Cys Met Asp Arg Val
20 25 30

Lys Val Ser Gln Ala Ala Ala Asp Leu Leu Ala Tyr Cys Glu Ala His
35 40 45

Val Arg Glu Asp Pro Leu Ile Ile Pro Val Pro Ala Ser Glu Asn Pro
50 55 60

Phe Arg Glu Lys Lys Phe Phe Cys Thr Ile Leu
65 70 75

<210> 61
<211> 68
<212> PRT
<213> Homo sapiens

<400> 61

Met Ser Gly Ser Ser Ser Val Ala Ala Met Lys Lys Val Val Gln Gln
1 5 10 15

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

Ala Asp Leu Lys Gln Phe Cys Leu Gln Asn Ala Gln His Asp Pro Leu
35 40 45

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

Cys Ser Phe Leu
65

<210> 62
<211> 68
<212> PRT
<213> Homo sapiens

<400> 62

Met Ser Ala Thr Asn Asn Ile Ala Gln Ala Arg Lys Leu Val Glu Gln
1 5 10 15

Leu Arg Ile Glu Ala Gly Ile Glu Arg Ile Lys Val Ser Lys Ala Ala
20 25 30

Ser Asp Leu Met Ser Tyr Cys Glu Gln His Ala Arg Asn Asp Pro Leu
35 40 45

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

Cys Ile Ile Leu
65

<210> 63
<211> 70
<212> PRT
<213> Homo sapiens

<400> 63

Met Ser Asn Asn Met Ala Lys Ile Ala Glu Ala Arg Lys Thr Val Glu
1 5 10 15

Gln Leu Lys Leu Glu Val Asn Ile Asp Arg Met Lys Val Ser Gln Ala
20 25 30

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

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

Leu Phe Cys Val Leu Leu
65 70

<210> 64
<211> 69
<212> PRT
<213> Homo sapiens

<400> 64

Met Ala Gln Asp Leu Ser Glu Lys Asp Leu Leu Lys Met Glu Val Glu
1 5 10 15

Gln Leu Lys Lys Glu Val Lys Asn Thr Arg Ile Pro Ile Ser Lys Ala
20 25 30

Gly Lys Glu Ile Lys Glu Tyr Val Glu Ala Gln Ala Gly Asn Asp Pro
35 40 45

Phe Leu Lys Gly Ile Pro Glu Asp Lys Asn Pro Phe Lys Glu Lys Gly
50 55 60

Gly Cys Leu Ile Ser
65

<210> 65
<211> 68
<212> PRT
<213> Homo sapiens

<400> 65

Met Ser Ser Gly Ala Ser Ala Ser Ala Leu Gln Arg Leu Val Glu Gln

1 5 10 15
 Leu Lys Leu Glu Ala Gly Val Glu Arg Ile Lys Val Ser Gln Ala Ala
 20 25 30
 Ala Glu Leu Gln Gln Tyr Cys Met Gln Asn Ala Cys Lys Asp Ala Leu
 35 40 45
 Leu Val Gly Val Pro Ala Gly Ser Asn Pro Phe Arg Glu Pro Arg Ser
 50 55 60
 Cys Ala Leu Leu
 65

<210> 66
 <211> 73
 <212> PRT
 <213> Homo sapiens

<400> 66
 Met Pro Ala Leu His Ile Glu Asp Leu Pro Glu Lys Glu Lys Leu Lys
 1 5 10 15
 Met Glu Val Glu Gln Leu Arg Lys Glu Val Lys Leu Gln Arg Gln Gln
 20 25 30
 Val Ser Lys Cys Ser Glu Glu Ile Lys Asn Tyr Ile Glu Glu Arg Ser
 35 40 45
 Gly Glu Asp Pro Leu Val Lys Gly Ile Pro Glu Asp Lys Asn Pro Phe
 50 55 60
 Lys Glu Lys Gly Ser Cys Val Ile Ser
 65 70

<210> 67
 <211> 72
 <212> PRT
 <213> Homo sapiens

<400> 67
 Met Ser Ser Lys Thr Ala Ser Thr Asn Asn Ile Ala Gln Ala Arg Arg
 1 5 10 15
 Thr Val Gln Gln Leu Arg Leu Glu Ala Ser Ile Glu Arg Ile Lys Val
 20 25 30
 Ser Lys Ala Ser Ala Asp Leu Met Ser Tyr Cys Glu Glu His Ala Arg
 35 40 45

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

Asp Lys Lys Thr Cys Ile Ile Leu
65 70

<210> 68
<211> 67
<212> PRT
<213> Homo sapiens

<400> 68

Met Glu Glu Trp Asp Val Pro Gln Met Lys Lys Glu Val Glu Ser Leu
1 5 10 15

Lys Tyr Gln Leu Ala Phe Gln Arg Glu Met Ala Ser Lys Thr Ile Pro
20 25 30

Glu Leu Leu Lys Trp Ile Glu Asp Gly Ile Pro Lys Asp Pro Phe Leu
35 40 45

Asn Pro Asp Leu Met Lys Asn Asn Pro Trp Val Glu Lys Gly Lys Cys
50 55 60

Thr Ile Leu
65

<210> 69
<211> 374
<212> PRT
<213> Homo sapiens

<400> 69

Met Ala Arg Ser Leu Thr Trp Arg Cys Cys Pro Trp Cys Leu Thr Glu
1 5 10 15

Asp Glu Lys Ala Ala Ala Arg Val Asp Gln Glu Ile Asn Arg Ile Leu
20 25 30

Leu Glu Gln Lys Lys Gln Asp Arg Gly Glu Leu Lys Leu Leu Leu Leu
35 40 45

Gly Pro Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile
50 55 60

Ile His Gly Ala Gly Tyr Ser Glu Glu Glu Arg Lys Gly Phe Arg Pro
65 70 75 80

Leu Val Tyr Gln Asn Ile Phe Val Ser Met Arg Ala Met Ile Glu Ala

85

90

95

Met Glu Arg Leu Gln Ile Pro Phe Ser Arg Pro Glu Ser Lys His His
 100 105 110

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

Lys Arg Tyr Ala Ala Ala Met Gln Trp Leu Trp Arg Asp Ala Gly Ile
 130 135 140

Arg Ala Cys Tyr Glu Arg Arg Arg Glu Phe His Leu Leu Asp Ser Ala
 145 150 155 160

Val Tyr Tyr Leu Ser His Leu Glu Arg Ile Thr Glu Glu Gly Tyr Val
 165 170 175

Pro Thr Ala Gln Asp Val Leu Arg Ser Arg Met Pro Thr Thr Gly Ile
 180 185 190

Asn Glu Tyr Cys Phe Ser Val Gln Lys Thr Asn Leu Arg Ile Val Asp
 195 200 205

Val Gly Gly Gln Lys Ser Glu Arg Lys Lys Trp Ile His Cys Phe Glu
 210 215 220

Asn Val Ile Ala Leu Ile Tyr Leu Ala Ser Leu Ser Glu Tyr Asp Gln
 225 230 235 240

Cys Leu Glu Glu Asn Asn Gln Glu Asn Arg Met Lys Glu Ser Leu Ala
 245 250 255

Leu Phe Gly Thr Ile Leu Glu Leu Pro Trp Phe Lys Ser Thr Ser Val
 260 265 270

Ile Leu Phe Leu Asn Lys Thr Asp Ile Leu Glu Glu Lys Ile Pro Thr
 275 280 285

Ser His Leu Ala Thr Tyr Phe Pro Ser Phe Gln Gly Pro Lys Gln Asp
 290 295 300

Ala Glu Ala Ala Lys Arg Phe Ile Leu Asp Met Tyr Thr Arg Met Tyr
 305 310 315 320

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

Arg Arg Leu Phe Ser His Tyr Thr Cys Ala Thr Asp Thr Gln Asn Ile

340

345

350

Arg Lys Val Phe Lys Asp Val Arg Asp Ser Val Leu Ala Arg Tyr Leu
 355 360 365

Asp Glu Ile Asn Leu Leu
 370

<210> 70
 <211> 88
 <212> PRT
 <213> Homo sapiens

<400> 70

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

Ala Gly Ala Asp Leu Ala Ala Pro Gly Val Gln Gln Gln Leu Glu Leu
 20 25 30

Glu Arg Glu Arg Leu Arg Arg Glu Ile Arg Lys Glu Leu Lys Leu Lys
 35 40 45

Glu Gly Ala Glu Asn Leu Arg Arg Ala Thr Thr Asp Leu Gly Arg Ser
 50 55 60

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

Leu Leu His Gln Gln Leu Gln Glu
 85

<210> 71
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 71

Gly Ser Ala Ser Ala Gly Thr Ala Thr Met Ala Ser Asp Ala
 1 5 10

<210> 72
 <211> 57
 <212> PRT
 <213> Homo sapiens

<400> 72

Phe Asn Ile Asp Met Pro His Arg Phe Lys Val His Asn Tyr Met Ser
 1 5 10 15

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

Gln Gly Leu Lys Cys Glu Asp Cys Gly Met Asn Val His His Lys Cys
35 40 45

Arg Glu Lys Val Ala Asn Leu Cys Gly
50 55

<210> 73
<211> 477
<212> PRT
<213> Homo sapiens

<400> 73

Met Gly Ala Gly Val Leu Val Leu Gly Ala Ser Glu Pro Gly Asn Leu
1 5 10 15

Ser Ser Ala Ala Pro Leu Pro Asp Gly Ala Ala Thr Ala Ala Arg Leu
20 25 30

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

Ser Pro Glu Pro Leu Ser Gln Gln Trp Thr Ala Gly Met Gly Leu Leu
50 55 60

Met Ala Leu Ile Val Leu Leu Ile Val Ala Gly Asn Val Leu Val Ile
65 70 75 80

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

Ile Met Ser Leu Ala Ser Ala Asp Leu Val Met Gly Leu Leu Val Val
100 105 110

Pro Phe Gly Ala Thr Ile Val Val Trp Gly Arg Trp Glu Tyr Gly Ser
115 120 125

Phe Phe Cys Glu Leu Trp Thr Ser Val Asp Val Leu Cys Val Thr Ala
130 135 140

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

Thr Ser Pro Phe Arg Tyr Gln Ser Leu Leu Thr Arg Ala Arg Ala Arg
165 170 175

Gly Leu Val Cys Thr Val Trp Ala Ile Ser Ala Leu Val Ser Phe Leu

180					185					190					
Pro	Ile	Leu	Met	His	Trp	Trp	Arg	Ala	Glu	Ser	Asp	Glu	Ala	Arg	Arg
		195					200					205			
Cys	Tyr	Asn	Asp	Pro	Lys	Cys	Cys	Asp	Phe	Val	Thr	Asn	Arg	Ala	Tyr
	210					215					220				
Ala	Ile	Ala	Ser	Ser	Val	Val	Ser	Phe	Tyr	Val	Pro	Leu	Cys	Ile	Met
225					230					235					240
Ala	Phe	Val	Tyr	Leu	Arg	Val	Phe	Arg	Glu	Ala	Gln	Lys	Gln	Val	Lys
				245					250					255	
Lys	Ile	Asp	Ser	Cys	Glu	Arg	Arg	Phe	Leu	Gly	Gly	Pro	Ala	Arg	Pro
			260					265					270		
Pro	Ser	Pro	Ser	Pro	Ser	Pro	Val	Pro	Ala	Pro	Ala	Pro	Pro	Pro	Gly
		275					280					285			
Pro	Pro	Arg	Pro	Ala	Ala	Ala	Ala	Ala	Thr	Ala	Pro	Leu	Ala	Asn	Gly
	290					295					300				
Arg	Ala	Gly	Lys	Arg	Arg	Pro	Ser	Arg	Leu	Val	Ala	Leu	Arg	Glu	Gln
305					310					315					320
Lys	Ala	Leu	Lys	Thr	Leu	Gly	Ile	Ile	Met	Gly	Val	Phe	Thr	Leu	Cys
				325					330					335	
Trp	Leu	Pro	Phe	Phe	Leu	Ala	Asn	Val	Val	Lys	Ala	Phe	His	Arg	Glu
			340					345					350		
Leu	Val	Pro	Asp	Arg	Leu	Phe	Val	Phe	Phe	Asn	Trp	Leu	Gly	Tyr	Ala
		355					360					365			
Asn	Ser	Ala	Phe	Asn	Pro	Ile	Ile	Tyr	Cys	Arg	Ser	Pro	Asp	Phe	Arg
	370					375					380				
Lys	Ala	Phe	Gln	Gly	Leu	Leu	Cys	Cys	Ala	Arg	Arg	Ala	Ala	Arg	Arg
385					390					395					400
Arg	His	Ala	Thr	His	Gly	Asp	Arg	Pro	Arg	Ala	Ser	Gly	Cys	Leu	Ala
				405					410					415	
Arg	Pro	Gly	Pro	Pro	Pro	Ser	Pro	Gly	Ala	Ala	Ser	Asp	Asp	Asp	Asp
			420					425					430		
Asp	Asp	Val	Val	Gly	Ala	Thr	Pro	Pro	Ala	Arg	Leu	Leu	Glu	Pro	Trp

435

440

445

Ala Gly Cys Asn Gly Gly Ala Ala Ala Asp Ser Asp Ser Ser Leu Asp
 450 455 460

Glu Pro Cys Arg Pro Gly Phe Ala Ser Glu Ser Lys Val
 465 470 475

<210> 74

<211> 413

<212> PRT

<213> Homo sapiens

<400> 74

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

Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
 20 25 30

Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
 35 40 45

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

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

Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
 85 90 95

Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
 100 105 110

Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
 115 120 125

Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
 130 135 140

Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
 145 150 155 160

Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
 165 170 175

Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
 180 185 190

Phe	Phe	Thr	Asn	Gln	Ala	Tyr	Ala	Ile	Ala	Ser	Ser	Ile	Val	Ser	Phe
	195						200					205			
Tyr	Val	Pro	Leu	Val	Ile	Met	Val	Phe	Val	Tyr	Ser	Arg	Val	Phe	Gln
	210					215					220				
Glu	Ala	Lys	Arg	Gln	Leu	Gln	Lys	Ile	Asp	Lys	Ser	Glu	Gly	Arg	Phe
225					230					235					240
His	Val	Gln	Asn	Leu	Ser	Gln	Val	Glu	Gln	Asp	Gly	Arg	Thr	Gly	His
				245					250					255	
Gly	Leu	Arg	Arg	Ser	Ser	Lys	Phe	Cys	Leu	Lys	Glu	His	Lys	Ala	Leu
			260					265						270	
Lys	Thr	Leu	Gly	Ile	Ile	Met	Gly	Thr	Phe	Thr	Leu	Cys	Trp	Leu	Pro
		275					280						285		
Phe	Phe	Ile	Val	Asn	Ile	Val	His	Val	Ile	Gln	Asp	Asn	Leu	Ile	Arg
	290					295					300				
Lys	Glu	Val	Tyr	Ile	Leu	Leu	Asn	Trp	Ile	Gly	Tyr	Val	Asn	Ser	Gly
305					310					315					320
Phe	Asn	Pro	Leu	Ile	Tyr	Cys	Arg	Ser	Pro	Asp	Phe	Arg	Ile	Ala	Phe
				325					330					335	
Gln	Glu	Leu	Leu	Cys	Leu	Arg	Arg	Ser	Ser	Leu	Lys	Ala	Tyr	Gly	Asn
			340					345					350		
Gly	Tyr	Ser	Ser	Asn	Gly	Asn	Thr	Gly	Glu	Gln	Ser	Gly	Tyr	His	Val
		355					360					365			
Glu	Gln	Glu	Lys	Glu	Asn	Lys	Leu	Leu	Cys	Glu	Asp	Leu	Pro	Gly	Thr
	370					375					380				
Glu	Asp	Phe	Val	Gly	His	Gln	Gly	Thr	Val	Pro	Ser	Asp	Asn	Ile	Asp
385					390					395					400
Ser	Gln	Gly	Arg	Asn	Cys	Ser	Thr	Asn	Asp	Ser	Leu	Leu			
				405					410						

<210> 75
 <211> 359
 <212> PRT
 <213> Homo sapiens

 <400> 75

Met	Ser	Met	Asn	Asn	Ser	Lys	Gln	Leu	Val	Ser	Pro	Ala	Ala	Ala	Leu	1	5	10	15
Leu	Ser	Asn	Thr	Thr	Cys	Gln	Thr	Glu	Asn	Arg	Leu	Ser	Val	Phe	Phe	20	25	30	
Ser	Val	Ile	Phe	Met	Thr	Val	Gly	Ile	Leu	Ser	Asn	Ser	Leu	Ala	Ile	35	40	45	
Ala	Ile	Leu	Met	Lys	Ala	Tyr	Gln	Arg	Phe	Arg	Gln	Lys	Ser	Lys	Ala	50	55	60	
Ser	Phe	Leu	Leu	Leu	Ala	Ser	Gly	Leu	Val	Ile	Thr	Asp	Phe	Phe	Gly	65	70	75	80
His	Leu	Ile	Asn	Gly	Ala	Ile	Ala	Val	Phe	Val	Tyr	Ala	Ser	Asp	Lys	85	90	95	
Glu	Trp	Ile	Arg	Phe	Asp	Gln	Ser	Asn	Val	Leu	Cys	Ser	Ile	Phe	Gly	100	105	110	
Ile	Cys	Met	Val	Phe	Ser	Gly	Leu	Cys	Pro	Leu	Leu	Leu	Gly	Ser	Val	115	120	125	
Met	Ala	Ile	Glu	Arg	Cys	Ile	Gly	Val	Thr	Lys	Pro	Ile	Phe	His	Ser	130	135	140	
Thr	Lys	Ile	Thr	Ser	Lys	His	Val	Lys	Met	Met	Leu	Ser	Gly	Val	Cys	145	150	155	160
Leu	Phe	Ala	Val	Phe	Ile	Ala	Leu	Leu	Pro	Ile	Leu	Gly	His	Arg	Asp	165	170	175	
Tyr	Lys	Ile	Gln	Ala	Ser	Arg	Thr	Trp	Cys	Phe	Tyr	Asn	Thr	Glu	Asp	180	185	190	
Ile	Lys	Asp	Trp	Glu	Asp	Arg	Phe	Tyr	Leu	Leu	Leu	Phe	Ser	Phe	Leu	195	200	205	
Gly	Leu	Leu	Ala	Leu	Gly	Val	Ser	Leu	Leu	Cys	Asn	Ala	Ile	Thr	Gly	210	215	220	
Ile	Thr	Leu	Leu	Arg	Val	Lys	Phe	Lys	Ser	Gln	Gln	His	Arg	Gln	Gly	225	230	235	240
Arg	Ser	His	His	Leu	Glu	Met	Val	Ile	Gln	Leu	Leu	Ala	Ile	Met	Cys	245	250	255	

Val Ser Cys Ile Cys Trp Ser Pro Phe Leu Val Thr Met Ala Asn Ile
260 265 270

Gly Ile Asn Gly Asn His Ser Leu Glu Thr Cys Glu Thr Thr Leu Phe
275 280 285

Ala Leu Arg Met Ala Thr Trp Asn Gln Ile Leu Asp Pro Trp Val Tyr
290 295 300

Ile Leu Leu Arg Lys Ala Val Leu Lys Asn Leu Tyr Lys Leu Ala Ser
305 310 315 320

Gln Cys Cys Gly Val His Val Ile Ser Leu His Ile Trp Glu Leu Ser
325 330 335

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

Ala Glu Lys Ser Ala Ser Thr
355

<210> 76
<211> 343
<212> PRT
<213> Homo sapiens

<400> 76

Met Trp Pro Asn Gly Ser Ser Leu Gly Pro Cys Phe Arg Pro Thr Asn
1 5 10 15

Ile Thr Leu Glu Glu Arg Arg Leu Ile Ala Ser Pro Trp Phe Ala Ala
20 25 30

Ser Phe Cys Val Val Gly Leu Ala Ser Asn Leu Leu Ala Leu Ser Val
35 40 45

Leu Ala Gly Ala Arg Gln Gly Gly Ser His Thr Arg Ser Ser Phe Leu
50 55 60

Thr Phe Leu Cys Gly Leu Val Leu Thr Asp Phe Leu Gly Leu Leu Val
65 70 75 80

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

Ala Val Asp Pro Gly Cys Arg Leu Cys Arg Phe Met Gly Val Val Met
100 105 110

Ile Phe Phe Gly Leu Ser Pro Leu Leu Leu Gly Ala Ala Met Ala Ser
115 120 125

Glu Arg Tyr Leu Gly Ile Thr Arg Pro Phe Ser Arg Pro Ala Val Ala
130 135 140

Ser Gln Arg Arg Ala Trp Ala Thr Val Gly Leu Val Trp Ala Ala Ala
145 150 155 160

Leu Ala Leu Gly Leu Leu Pro Leu Leu Gly Val Gly Arg Tyr Thr Val
165 170 175

Gln Tyr Pro Gly Ser Trp Cys Phe Leu Thr Leu Gly Ala Glu Ser Gly
180 185 190

Asp Val Ala Phe Gly Leu Leu Phe Ser Met Leu Gly Gly Leu Ser Val
195 200 205

Gly Leu Ser Phe Leu Leu Asn Thr Val Ser Val Ala Thr Leu Cys His
210 215 220

Val Tyr His Gly Gln Glu Ala Ala Gln Gln Arg Pro Arg Asp Ser Glu
225 230 235 240

Val Glu Met Met Ala Gln Leu Leu Gly Ile Met Val Val Ala Ser Val
245 250 255

Cys Trp Leu Pro Leu Leu Val Phe Ile Ala Gln Thr Val Leu Arg Asn
260 265 270

Pro Pro Ala Met Ser Pro Ala Gly Gln Leu Ser Arg Thr Thr Glu Lys
275 280 285

Glu Leu Leu Ile Tyr Leu Arg Val Ala Thr Trp Asn Gln Ile Leu Asp
290 295 300

Pro Trp Val Tyr Ile Leu Phe Arg Arg Ala Val Leu Arg Arg Leu Gln
305 310 315 320

Pro Arg Leu Ser Thr Arg Pro Arg Ser Leu Ser Leu Gln Pro Gln Leu
325 330 335

Thr Gln Arg Ser Gly Leu Gln
340

<210> 77
<211> 389
<212> PRT
<213> Homo sapiens

<400> 77

Met Ala Leu Thr Pro Glu Ser Pro Ser Ser Phe Pro Gly Leu Ala Ala
1 5 10 15

Thr Gly Ser Ser Val Pro Glu Pro Pro Gly Gly Pro Asn Ala Thr Leu
20 25 30

Asn Ser Ser Trp Ala Ser Pro Thr Glu Pro Ser Ser Leu Glu Asp Leu
35 40 45

Val Ala Thr Gly Thr Ile Gly Thr Leu Leu Ser Ala Met Gly Val Val
50 55 60

Gly Val Val Gly Asn Ala Tyr Thr Leu Val Val Thr Cys Arg Ser Leu
65 70 75 80

Arg Ala Val Ala Ser Met Tyr Val Tyr Val Val Asn Leu Ala Leu Ala
85 90 95

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

Thr Lys Glu Trp His Phe Gly Asp Val Gly Cys Arg Val Leu Phe Gly
115 120 125

Leu Asp Phe Leu Thr Met His Ala Ser Ile Phe Thr Leu Thr Val Met
130 135 140

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

Arg Pro Lys Gly Tyr Arg Lys Leu Leu Ala Leu Gly Thr Trp Leu Leu
165 170 175

Ala Leu Leu Leu Thr Leu Pro Val Met Leu Ala Met Arg Leu Val Arg
180 185 190

Arg Gly Pro Lys Ser Leu Cys Leu Pro Ala Trp Gly Pro Arg Ala His
195 200 205

Arg Ala Tyr Leu Thr Leu Leu Phe Ala Thr Ser Ile Ala Gly Pro Gly
210 215 220

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

Ser Gln Arg Ala Ser Phe Lys Arg Ala Arg Arg Pro Gly Ala Arg Ala

245

250

255

Leu Arg Leu Val Leu Gly Ile Val Leu Leu Phe Trp Ala Cys Phe Leu
 260 265 270

Pro Phe Trp Leu Trp Gln Leu Leu Ala Gln Tyr His Gln Ala Pro Leu
 275 280 285

Ala Pro Arg Thr Ala Arg Ile Val Asn Tyr Leu Thr Thr Cys Leu Thr
 290 295 300

Tyr Gly Asn Ser Cys Ala Asn Pro Phe Leu Tyr Thr Leu Leu Thr Arg
 305 310 315 320

Asn Tyr Arg Asp His Leu Arg Gly Arg Val Arg Gly Pro Gly Ser Gly
 325 330 335

Gly Gly Arg Gly Pro Val Pro Ser Leu Gln Pro Arg Ala Arg Phe Gln
 340 345 350

Arg Cys Ser Gly Arg Ser Leu Ser Ser Cys Ser Pro Gln Pro Thr Asp
 355 360 365

Ser Leu Val Leu Ala Pro Ala Ala Pro Ala Arg Pro Ala Pro Glu Gly
 370 375 380

Pro Arg Ala Pro Ala
 385

<210> 78
 <211> 487
 <212> PRT
 <213> Homo sapiens

<400> 78

Met Ser Leu Pro Asn Ser Ser Cys Leu Leu Glu Asp Lys Met Cys Glu
 1 5 10 15

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

Val Leu Ser Thr Ile Cys Leu Val Thr Val Gly Leu Asn Leu Leu Val
 35 40 45

Leu Tyr Ala Val Arg Ser Glu Arg Lys Leu His Thr Val Gly Asn Leu
 50 55 60

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

Met Pro Met Asn Ile Leu Tyr Leu Leu Met Ser Lys Trp Ser Leu Gly
 85 90 95

Arg Pro Leu Cys Leu Phe Trp Leu Ser Met Asp Tyr Val Ala Ser Thr
 100 105 110

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

Val Gln Gln Pro Leu Arg Tyr Leu Lys Tyr Arg Thr Lys Thr Arg Ala
 130 135 140

Ser Ala Thr Ile Leu Gly Ala Trp Phe Leu Ser Phe Leu Trp Val Ile
 145 150 155 160

Pro Ile Leu Gly Trp Asn His Phe Met Gln Gln Thr Ser Val Arg Arg
 165 170 175

Glu Asp Lys Cys Glu Thr Asp Phe Tyr Asp Val Thr Trp Phe Lys Val
 180 185 190

Met Thr Ala Ile Ile Asn Phe Tyr Leu Pro Thr Leu Leu Met Leu Trp
 195 200 205

Phe Tyr Ala Lys Ile Tyr Lys Ala Val Arg Gln His Cys Gln His Arg
 210 215 220

Glu Leu Ile Asn Arg Ser Leu Pro Ser Phe Ser Glu Ile Lys Leu Arg
 225 230 235 240

Pro Glu Asn Pro Lys Gly Asp Ala Lys Lys Pro Gly Lys Glu Ser Pro
 245 250 255

Trp Glu Val Leu Lys Arg Lys Pro Lys Asp Ala Gly Gly Gly Ser Val
 260 265 270

Leu Lys Ser Pro Ser Gln Thr Pro Lys Glu Met Lys Ser Pro Val Val
 275 280 285

Phe Ser Gln Glu Asp Asp Arg Glu Val Asp Lys Leu Tyr Cys Phe Pro
 290 295 300

Leu Asp Ile Val His Met Gln Ala Ala Ala Glu Gly Ser Ser Arg Asp
 305 310 315 320

Tyr Val Ala Val Asn Arg Ser His Gly Gln Leu Lys Thr Asp Glu Gln
 325 330 335

Gly Leu Asn Thr His Gly Ala Ser Glu Ile Ser Glu Asp Gln Met Leu
340 345 350

Gly Asp Ser Gln Ser Phe Ser Arg Thr Asp Ser Asp Thr Thr Thr Glu
355 360 365

Thr Ala Pro Gly Lys Gly Lys Leu Arg Ser Gly Ser Asn Thr Gly Leu
370 375 380

Asp Tyr Ile Lys Phe Thr Trp Lys Arg Leu Arg Ser His Ser Arg Gln
385 390 395 400

Tyr Val Ser Gly Leu His Met Asn Arg Glu Arg Lys Ala Ala Lys Gln
405 410 415

Leu Gly Phe Ile Met Ala Ala Phe Ile Leu Cys Trp Ile Pro Tyr Phe
420 425 430

Ile Phe Phe Met Val Ile Ala Phe Cys Lys Asn Cys Cys Asn Glu His
435 440 445

Leu His Met Phe Thr Ile Trp Leu Gly Tyr Ile Asn Ser Thr Leu Asn
450 455 460

Pro Leu Ile Tyr Pro Leu Cys Asn Glu Asn Phe Lys Lys Thr Phe Lys
465 470 475 480

Arg Ile Leu His Ile Arg Ser
485

<210> 79
<211> 391
<212> PRT
<213> Homo sapiens

<400> 79

Met Phe Ser Pro Trp Lys Ile Ser Met Phe Leu Ser Val Arg Glu Asp
1 5 10 15

Ser Val Pro Thr Thr Ala Ser Phe Ser Ala Asp Met Leu Asn Val Thr
20 25 30

Leu Gln Gly Pro Thr Leu Asn Gly Thr Phe Ala Gln Ser Lys Cys Pro
35 40 45

Gln Val Glu Trp Leu Gly Trp Leu Asn Thr Ile Gln Pro Pro Phe Leu
50 55 60

Trp	Val	Leu	Phe	Val	Leu	Ala	Thr	Leu	Glu	Asn	Ile	Phe	Val	Leu	Ser	65	70	75	80
Val	Phe	Cys	Leu	His	Lys	Ser	Ser	Cys	Thr	Val	Ala	Glu	Ile	Tyr	Leu		85	90	95
Gly	Asn	Leu	Ala	Ala	Ala	Asp	Leu	Ile	Leu	Ala	Cys	Gly	Leu	Pro	Phe	100		105	110
Trp	Ala	Ile	Thr	Ile	Ser	Asn	Asn	Phe	Asp	Trp	Leu	Phe	Gly	Glu	Thr	115		120	125
Leu	Cys	Arg	Val	Val	Asn	Ala	Ile	Ile	Ser	Met	Asn	Leu	Tyr	Ser	Ser	130	135	140	
Ile	Cys	Phe	Leu	Met	Leu	Val	Ser	Ile	Asp	Arg	Tyr	Leu	Ala	Leu	Val	145	150	155	160
Lys	Thr	Met	Ser	Met	Gly	Arg	Met	Arg	Gly	Val	Arg	Trp	Ala	Lys	Leu		165	170	175
Tyr	Ser	Leu	Val	Ile	Trp	Gly	Cys	Thr	Leu	Leu	Leu	Ser	Ser	Pro	Met	180		185	190
Leu	Val	Phe	Arg	Thr	Met	Lys	Glu	Tyr	Ser	Asp	Glu	Gly	His	Asn	Val	195	200	205	
Thr	Ala	Cys	Val	Ile	Ser	Tyr	Pro	Ser	Leu	Ile	Trp	Glu	Val	Phe	Thr	210	215	220	
Asn	Met	Leu	Leu	Asn	Val	Val	Gly	Phe	Leu	Leu	Pro	Leu	Ser	Val	Ile	225	230	235	240
Thr	Phe	Cys	Thr	Met	Gln	Ile	Met	Gln	Val	Leu	Arg	Asn	Asn	Glu	Met		245	250	255
Gln	Lys	Phe	Lys	Glu	Ile	Gln	Thr	Glu	Arg	Arg	Ala	Thr	Val	Leu	Val	260		265	270
Leu	Val	Val	Leu	Leu	Leu	Phe	Ile	Ile	Cys	Trp	Leu	Pro	Phe	Gln	Ile	275		280	285
Ser	Thr	Phe	Leu	Asp	Thr	Leu	His	Arg	Leu	Gly	Ile	Leu	Ser	Ser	Cys	290	295	300	
Gln	Asp	Glu	Arg	Ile	Ile	Asp	Val	Ile	Thr	Gln	Ile	Ala	Ser	Phe	Met	305	310	315	320

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

Lys Arg Phe Arg Lys Lys Ser Trp Glu Val Tyr Gln Gly Val Cys Gln
 340 345 350

Lys Gly Gly Cys Arg Ser Glu Pro Ile Gln Met Glu Asn Ser Met Gly
 355 360 365

Thr Leu Arg Thr Ser Ile Ser Val Glu Arg Gln Ile His Lys Leu Gln
 370 375 380

Asp Trp Ala Gly Ser Arg Gln
 385 390

<210> 80
 <211> 443
 <212> PRT
 <213> Homo sapiens

<400> 80

Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
 1 5 10 15

Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
 20 25 30

His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
 35 40 45

Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
 50 55 60

Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
 65 70 75 80

Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
 85 90 95

Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
 100 105 110

Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
 115 120 125

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

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

Cys Asn Ile Pro Pro Val Leu Tyr Ser Ala Phe Thr Trp Leu Gly Tyr
405 410 415

Val Asn Ser Ala Val Asn Pro Ile Ile Tyr Thr Thr Phe Asn Ile Glu
420 425 430

Phe Arg Lys Ala Phe Leu Lys Ile Leu His Cys
435 440

<210> 81
<211> 569
<212> PRT
<213> Homo sapiens

<400> 81

Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu
1 5 10 15

Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly
20 25 30

Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile
35 40 45

Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr
50 55 60

Leu Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys
65 70 75 80

Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu
85 90 95

Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu
100 105 110

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

Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr
130 135 140

Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn
145 150 155 160

Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser
165 170 175

Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly

180

185

190

Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu
 195 200 205

Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe
 210 215 220

Val Thr Ala Ala Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys Gly
 225 230 235 240

Gly Gly Gly Gly Asp Ile Glu Phe Leu Gln Pro Gly Gly Ser Gly Gly
 245 250 255

Gly Gly Met Thr Ser Lys Val Tyr Asp Pro Glu Gln Arg Lys Arg Met
 260 265 270

Ile Thr Gly Pro Gln Trp Trp Ala Arg Cys Lys Gln Met Asn Val Leu
 275 280 285

Asp Ser Phe Ile Asn Tyr Tyr Asp Ser Glu Lys His Ala Glu Asn Ala
 290 295 300

Val Ile Phe Leu His Gly Asn Ala Ala Ser Ser Tyr Leu Trp Arg His
 305 310 315 320

Val Val Pro His Ile Glu Pro Val Ala Arg Cys Ile Ile Pro Asp Leu
 325 330 335

Ile Gly Met Gly Lys Ser Gly Lys Ser Gly Asn Gly Ser Tyr Arg Leu
 340 345 350

Leu Asp His Tyr Lys Tyr Leu Thr Ala Trp Phe Glu Leu Leu Asn Leu
 355 360 365

Pro Lys Lys Ile Ile Phe Val Gly His Asp Trp Gly Ala Ala Leu Ala
 370 375 380

Phe His Tyr Ser Tyr Glu His Gln Asp Lys Ile Lys Ala Ile Val His
 385 390 395 400

Ala Glu Ser Val Val Asp Val Ile Glu Ser Trp Asp Glu Trp Pro Asp
 405 410 415

Ile Glu Glu Asp Ile Ala Leu Ile Lys Ser Glu Glu Gly Glu Lys Met
 420 425 430

Val Leu Glu Asn Asn Phe Phe Val Glu Thr Val Leu Pro Ser Lys Ile

435

440

445

Met Arg Lys Leu Glu Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro Phe
 450 455 460

Lys Glu Lys Gly Glu Val Arg Arg Pro Thr Leu Ser Trp Pro Arg Glu
 465 470 475 480

Ile Pro Leu Val Lys Gly Gly Lys Pro Asp Val Val Gln Ile Val Arg
 485 490 495

Asn Tyr Asn Ala Tyr Leu Arg Ala Ser Asp Asp Leu Pro Lys Met Phe
 500 505 510

Ile Glu Ser Asp Pro Gly Phe Phe Ser Asn Ala Ile Val Glu Gly Ala
 515 520 525

Lys Lys Phe Pro Asn Thr Glu Phe Val Lys Val Lys Gly Leu His Phe
 530 535 540

Ser Gln Glu Asp Ala Pro Asp Glu Met Gly Lys Tyr Ile Lys Ser Phe
 545 550 555 560

Val Glu Arg Val Leu Lys Asn Glu Gln
 565

<210> 82
 <211> 563
 <212> PRT
 <213> Homo sapiens

<400> 82

Met Asp Leu Ala Lys Leu Gly Leu Lys Glu Val Met Pro Thr Lys Ile
 1 5 10 15

Asn Leu Glu Gly Leu Val Gly Asp His Ala Phe Ser Met Glu Gly Val
 20 25 30

Gly Glu Gly Asn Ile Leu Glu Gly Thr Gln Glu Val Lys Ile Ser Val
 35 40 45

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

Phe Ser Tyr Gly Asn Arg Ala Tyr Thr Gly Tyr Pro Glu Glu Ile Ser
 65 70 75 80

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

Ile	Arg	Tyr	Gln	Asp	Gly	Gly	Thr	Ala	Ile	Val	Lys	Ser	Asp	Ile	Ser	100	105	110	
Leu	Glu	Asp	Gly	Lys	Phe	Ile	Val	Asn	Val	Asp	Phe	Lys	Ala	Lys	Asp	115	120	125	
Leu	Arg	Arg	Met	Gly	Pro	Val	Met	Gln	Gln	Asp	Ile	Val	Gly	Met	Gln	130	135	140	
Pro	Ser	Tyr	Glu	Ser	Met	Tyr	Thr	Asn	Val	Thr	Ser	Val	Ile	Gly	Glu	145	150	155	160
Cys	Ile	Ile	Ala	Phe	Lys	Leu	Gln	Thr	Gly	Lys	His	Phe	Thr	Tyr	His	165	170	175	
Met	Arg	Thr	Val	Tyr	Lys	Ser	Lys	Lys	Pro	Val	Glu	Thr	Met	Pro	Leu	180	185	190	
Tyr	His	Phe	Ile	Gln	His	Arg	Leu	Val	Lys	Thr	Asn	Val	Asp	Thr	Ala	195	200	205	
Ser	Gly	Tyr	Val	Val	Gln	His	Glu	Thr	Ala	Ile	Ala	Ala	His	Ser	Thr	210	215	220	
Ile	Lys	Lys	Ile	Glu	Gly	Ser	Leu	Pro	Gly	Gly	Gly	Gly	Gly	Asp	Ile	225	230	235	240
Glu	Phe	Leu	Gln	Pro	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Met	Thr	Ser	Lys	245	250	255	
Val	Tyr	Asp	Pro	Glu	Gln	Arg	Lys	Arg	Met	Ile	Thr	Gly	Pro	Gln	Trp	260	265	270	
Trp	Ala	Arg	Cys	Lys	Gln	Met	Asn	Val	Leu	Asp	Ser	Phe	Ile	Asn	Tyr	275	280	285	
Tyr	Asp	Ser	Glu	Lys	His	Ala	Glu	Asn	Ala	Val	Ile	Phe	Leu	His	Gly	290	295	300	
Asn	Ala	Ala	Ser	Ser	Tyr	Leu	Trp	Arg	His	Val	Val	Pro	His	Ile	Glu	305	310	315	320
Pro	Val	Ala	Arg	Cys	Ile	Ile	Pro	Asp	Leu	Ile	Gly	Met	Gly	Lys	Ser	325	330	335	
Gly	Lys	Ser	Gly	Asn	Gly	Ser	Tyr	Arg	Leu	Leu	Asp	His	Tyr	Lys	Tyr	340	345	350	

Leu Thr Ala Trp Phe Glu Leu Leu Asn Leu Pro Lys Lys Ile Ile Phe
355 360 365

Val Gly His Asp Trp Gly Ala Ala Leu Ala Phe His Tyr Ser Tyr Glu
370 375 380

His Gln Asp Lys Ile Lys Ala Ile Val His Ala Glu Ser Val Val Asp
385 390 395 400

Val Ile Glu Ser Trp Asp Glu Trp Pro Asp Ile Glu Glu Asp Ile Ala
405 410 415

Leu Ile Lys Ser Glu Glu Gly Glu Lys Met Val Leu Glu Asn Asn Phe
420 425 430

Phe Val Glu Thr Val Leu Pro Ser Lys Ile Met Arg Lys Leu Glu Pro
435 440 445

Glu Glu Phe Ala Ala Tyr Leu Glu Pro Phe Lys Glu Lys Gly Glu Val
450 455 460

Arg Arg Pro Thr Leu Ser Trp Pro Arg Glu Ile Pro Leu Val Lys Gly
465 470 475 480

Gly Lys Pro Asp Val Val Gln Ile Val Arg Asn Tyr Asn Ala Tyr Leu
485 490 495

Arg Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu Ser Asp Pro Gly
500 505 510

Phe Phe Ser Asn Ala Ile Val Glu Gly Ala Lys Lys Phe Pro Asn Thr
515 520 525

Glu Phe Val Lys Val Lys Gly Leu His Phe Ser Gln Glu Asp Ala Pro
530 535 540

Asp Glu Met Gly Lys Tyr Ile Lys Ser Phe Val Glu Arg Val Leu Lys
545 550 555 560

Asn Glu Gln

<210> 83
<211> 569
<212> PRT
<213> Homo sapiens

<400> 83

Met	Val	Ser	Lys	Gly	Glu	Glu	Leu	Phe	Thr	Gly	Val	Val	Pro	Ile	Leu	1	5	10	15
Val	Glu	Leu	Asp	Gly	Asp	Val	Asn	Gly	His	Lys	Phe	Ser	Val	Ser	Gly	20	25	30	
Glu	Gly	Glu	Gly	Asp	Ala	Thr	Tyr	Gly	Lys	Leu	Thr	Leu	Lys	Leu	Ile	35	40	45	
Cys	Thr	Thr	Gly	Lys	Leu	Pro	Val	Pro	Trp	Pro	Thr	Leu	Val	Thr	Thr	50	55	60	
Leu	Gly	Tyr	Gly	Leu	Gln	Cys	Phe	Ala	Arg	Tyr	Pro	Asp	His	Met	Lys	65	70	75	80
Gln	His	Asp	Phe	Phe	Lys	Ser	Ala	Met	Pro	Glu	Gly	Tyr	Val	Gln	Glu	85	90	95	
Arg	Thr	Ile	Phe	Phe	Lys	Asp	Asp	Gly	Asn	Tyr	Lys	Thr	Arg	Ala	Glu	100	105	110	
Val	Lys	Phe	Glu	Gly	Asp	Thr	Leu	Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly	115	120	125	
Ile	Asp	Phe	Lys	Glu	Asp	Gly	Asn	Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr	130	135	140	
Asn	Tyr	Asn	Ser	His	Asn	Val	Tyr	Ile	Thr	Ala	Asp	Lys	Gln	Lys	Asn	145	150	155	160
Gly	Ile	Lys	Ala	Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Glu	Asp	Gly	Gly	165	170	175	
Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	Ile	Gly	Asp	Gly	180	185	190	
Pro	Val	Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Ser	Tyr	Gln	Ser	Ala	Leu	195	200	205	
Ser	Lys	Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met	Val	Leu	Leu	Glu	Phe	210	215	220	
Val	Thr	Ala	Ala	Gly	Ile	Thr	Leu	Gly	Met	Asp	Glu	Leu	Tyr	Lys	Gly	225	230	235	240
Gly	Gly	Gly	Gly	Asp	Ile	Glu	Phe	Leu	Gln	Pro	Gly	Gly	Ser	Gly	Gly	245	250	255	

Gly	Gly	Met	Thr	Ser	Lys	Val	Tyr	Asp	Pro	Glu	Gln	Arg	Lys	Arg	Met	260	265	270
Ile	Thr	Gly	Pro	Gln	Trp	Trp	Ala	Arg	Cys	Lys	Gln	Met	Asn	Val	Leu	275	280	285
Asp	Ser	Phe	Ile	Asn	Tyr	Tyr	Asp	Ser	Glu	Lys	His	Ala	Glu	Asn	Ala	290	295	300
Val	Ile	Phe	Leu	His	Gly	Asn	Ala	Ala	Ser	Ser	Tyr	Leu	Trp	Arg	His	305	310	315
Val	Val	Pro	His	Ile	Glu	Pro	Val	Ala	Arg	Cys	Ile	Ile	Pro	Asp	Leu	325	330	335
Ile	Gly	Met	Gly	Lys	Ser	Gly	Lys	Ser	Gly	Asn	Gly	Ser	Tyr	Arg	Leu	340	345	350
Leu	Asp	His	Tyr	Lys	Tyr	Leu	Thr	Ala	Trp	Phe	Glu	Leu	Leu	Asn	Leu	355	360	365
Pro	Lys	Lys	Ile	Ile	Phe	Val	Gly	His	Asp	Trp	Gly	Ala	Ala	Leu	Ala	370	375	380
Phe	His	Tyr	Ser	Tyr	Glu	His	Gln	Asp	Lys	Ile	Lys	Ala	Ile	Val	His	385	390	395
Ala	Glu	Ser	Val	Val	Asp	Val	Ile	Glu	Ser	Trp	Asp	Glu	Trp	Pro	Asp	405	410	415
Ile	Glu	Glu	Asp	Ile	Ala	Leu	Ile	Lys	Ser	Glu	Glu	Gly	Glu	Lys	Met	420	425	430
Val	Leu	Glu	Asn	Asn	Phe	Phe	Val	Glu	Thr	Val	Leu	Pro	Ser	Lys	Ile	435	440	445
Met	Arg	Lys	Leu	Glu	Pro	Glu	Glu	Phe	Ala	Ala	Tyr	Leu	Glu	Pro	Phe	450	455	460
Lys	Glu	Lys	Gly	Glu	Val	Arg	Arg	Pro	Thr	Leu	Ser	Trp	Pro	Arg	Glu	465	470	475
Ile	Pro	Leu	Val	Lys	Gly	Gly	Lys	Pro	Asp	Val	Val	Gln	Ile	Val	Arg	485	490	495
Asn	Tyr	Asn	Ala	Tyr	Leu	Arg	Ala	Ser	Asp	Asp	Leu	Pro	Lys	Met	Phe	500	505	510

Ile Glu Ser Asp Pro Gly Phe Phe Ser Asn Ala Ile Val Glu Gly Ala
515 520 525

Lys Lys Phe Pro Asn Thr Glu Phe Val Lys Val Lys Gly Leu His Phe
530 535 540

Ser Gln Glu Asp Ala Pro Asp Glu Met Gly Lys Tyr Ile Lys Ser Phe
545 550 555 560

Val Glu Arg Val Leu Lys Asn Glu Gln
565

<210> 84
<211> 5
<212> PRT
<213> Homo sapiens

<400> 84

Lys Leu Pro Ala Thr
1 5

<210> 85
<211> 418
<212> PRT
<213> Homo sapiens

<400> 85

Met Gly Asp Lys Gly Thr Arg Val Phe Lys Lys Ala Ser Pro Asn Gly
1 5 10 15

Lys Leu Thr Val Tyr Leu Gly Lys Arg Asp Phe Val Asp His Ile Asp
20 25 30

Leu Val Asp Pro Val Asp Gly Val Val Leu Val Asp Pro Glu Tyr Leu
35 40 45

Lys Glu Arg Arg Val Tyr Val Thr Leu Thr Cys Ala Phe Arg Tyr Gly
50 55 60

Arg Glu Asp Leu Asp Val Leu Gly Leu Thr Phe Arg Lys Asp Leu Phe
65 70 75 80

Val Ala Asn Val Gln Ser Phe Pro Pro Ala Pro Glu Asp Lys Lys Pro
85 90 95

Leu Thr Arg Leu Gln Glu Arg Leu Ile Lys Lys Leu Gly Glu His Ala
100 105 110

Tyr Pro Phe Thr Phe Glu Ile Pro Pro Asn Leu Pro Cys Ser Val Thr

115

120

125

Leu Gln Pro Gly Pro Glu Asp Thr Gly Lys Ala Cys Gly Val Asp Tyr
 130 135 140

Glu Val Lys Ala Phe Cys Ala Glu Asn Leu Glu Glu Lys Ile His Lys
 145 150 155 160

Arg Asn Ser Val Arg Leu Val Ile Arg Lys Val Gln Tyr Ala Pro Glu
 165 170 175

Arg Pro Gly Pro Gln Pro Thr Ala Glu Thr Thr Arg Gln Phe Leu Met
 180 185 190

Ser Asp Lys Pro Leu His Leu Glu Ala Ser Leu Asp Lys Glu Ile Tyr
 195 200 205

Tyr His Gly Glu Pro Ile Ser Val Asn Val His Val Thr Asn Asn Thr
 210 215 220

Asn Lys Thr Val Lys Lys Ile Lys Ile Ser Val Arg Gln Tyr Ala Asp
 225 230 235 240

Ile Cys Leu Phe Asn Thr Ala Gln Tyr Lys Cys Pro Val Ala Met Glu
 245 250 255

Glu Ala Asp Asp Thr Val Ala Pro Ser Ser Thr Phe Cys Lys Val Tyr
 260 265 270

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

Leu Asp Gly Lys Leu Lys His Glu Asp Thr Asn Leu Ala Ser Ser Thr
 290 295 300

Leu Leu Arg Glu Gly Ala Asn Arg Glu Ile Leu Gly Ile Ile Val Ser
 305 310 315 320

Tyr Lys Val Lys Val Lys Leu Val Val Ser Arg Gly Gly Leu Leu Gly
 325 330 335

Asp Leu Ala Ser Ser Asp Val Ala Val Glu Leu Pro Phe Thr Leu Met
 340 345 350

His Pro Lys Pro Lys Glu Glu Pro Pro His Arg Glu Val Pro Glu Asn
 355 360 365

Glu Thr Pro Val Asp Thr Asn Leu Ile Glu Leu Asp Thr Asn Asp Asp

370

375

380

Asp Ile Val Phe Glu Asp Phe Ala Arg Gln Arg Leu Lys Gly Met Lys
 385 390 395 400

Asp Asp Lys Glu Glu Glu Glu Asp Gly Thr Gly Ser Pro Gln Leu Asn
 405 410 415

Asn Arg

<210> 86
 <211> 409
 <212> PRT
 <213> Homo sapiens

<400> 86

Met Gly Glu Lys Pro Gly Thr Arg Val Phe Lys Lys Ser Ser Pro Asn
 1 5 10 15

Cys Lys Leu Thr Val Tyr Leu Gly Lys Arg Asp Phe Val Asp His Leu
 20 25 30

Asp Lys Val Asp Pro Val Asp Gly Val Val Leu Val Asp Pro Asp Tyr
 35 40 45

Leu Lys Asp Arg Lys Val Phe Val Thr Leu Thr Cys Ala Phe Arg Tyr
 50 55 60

Gly Arg Glu Asp Leu Asp Val Leu Gly Leu Ser Phe Arg Lys Asp Leu
 65 70 75 80

Phe Ile Ala Thr Tyr Gln Ala Phe Pro Pro Val Pro Asn Pro Pro Arg
 85 90 95

Pro Pro Thr Arg Leu Gln Asp Arg Leu Leu Arg Lys Leu Gly Gln His
 100 105 110

Ala His Pro Phe Phe Phe Thr Ile Pro Gln Asn Leu Pro Cys Ser Val
 115 120 125

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

Phe Glu Ile Arg Ala Phe Cys Ala Lys Ser Leu Glu Glu Lys Ser His
 145 150 155 160

Lys Arg Asn Ser Val Arg Leu Val Ile Arg Lys Val Gln Phe Ala Pro
 165 170 175

Glu	Lys	Pro	Gly	Pro	Gln	Pro	Ser	Ala	Glu	Thr	Thr	Arg	His	Phe	Leu			
			180					185					190					
Met	Ser	Asp	Arg	Ser	Leu	His	Leu	Glu	Ala	Ser	Leu	Asp	Lys	Glu	Leu			
		195					200					205						
Tyr	Tyr	His	Gly	Glu	Pro	Leu	Asn	Val	Asn	Val	His	Val	Thr	Asn	Asn			
	210					215					220							
Ser	Thr	Lys	Thr	Val	Lys	Lys	Ile	Lys	Val	Ser	Val	Arg	Gln	Tyr	Ala			
225					230					235					240			
Asp	Ile	Cys	Leu	Phe	Ser	Thr	Ala	Gln	Tyr	Lys	Cys	Pro	Val	Ala	Gln			
				245					250					255				
Leu	Glu	Gln	Asp	Asp	Gln	Val	Ser	Pro	Ser	Ser	Thr	Phe	Cys	Lys	Val			
			260					265					270					
Tyr	Thr	Ile	Thr	Pro	Leu	Leu	Ser	Asp	Asn	Arg	Glu	Lys	Arg	Gly	Leu			
		275					280					285						
Ala	Leu	Asp	Gly	Lys	Leu	Lys	His	Glu	Asp	Thr	Asn	Leu	Ala	Ser	Ser			
	290					295					300							
Thr	Ile	Val	Lys	Glu	Gly	Ala	Asn	Lys	Glu	Val	Leu	Gly	Ile	Leu	Val			
305					310					315					320			
Ser	Tyr	Arg	Val	Lys	Val	Lys	Leu	Val	Val	Ser	Arg	Gly	Gly	Asp	Val			
				325					330					335				
Ser	Val	Glu	Leu	Pro	Phe	Val	Leu	Met	His	Pro	Lys	Pro	His	Asp	His			
			340					345					350					
Ile	Pro	Leu	Pro	Arg	Pro	Gln	Ser	Ala	Ala	Pro	Glu	Thr	Asp	Val	Pro			
		355					360					365						
Val	Asp	Thr	Asn	Leu	Ile	Glu	Phe	Asp	Thr	Asn	Tyr	Ala	Thr	Asp	Asp			
	370					375					380							
Asp	Ile	Val	Phe	Glu	Asp	Phe	Ala	Arg	Leu	Arg	Leu	Lys	Gly	Met	Lys			
385					390					395					400			
Asp	Asp	Asp	Tyr	Asp	Asp	Gln	Leu	Cys										
				405														

<210> 87

<211> 30

<212> PRT
<213> Homo sapiens

<400> 87

Arg	Lys	Gly	Gln	Glu	Arg	Phe	Asn	Arg	Trp	Phe	Leu	Thr	Gly	Met	Thr
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Val	Ala	Gly	Val	Val	Leu	Leu	Gly	Ser	Leu	Phe	Ser	Arg	Lys
			20					25					30

<210> 88
<211> 17
<212> PRT
<213> Homo sapiens

<400> 88

Met	Gly	Val	Ala	Asp	Leu	Ile	Lys	Lys	Phe	Glu	Ser	Ile	Ser	Lys	Glu
1				5					10					15	

Glu