

SEQUENCE LISTING

<110> UNIVERSITE DE MONTREAL
DOMAIN THERAPEUTICS

<120> SYSTEMS AND METHODS FOR THE ASSESSMENT OF G-PROTEIN ACTIVATION

<130> G15691.00141

<150> US 62/573,853

<151> 2017-10-18

<160> 63

<170> PatentIn version 3.5

<210> 1

<211> 15

<212> PRT

<213> Homo sapiens

<400> 1

Gly	Lys	Lys	Lys	Lys	Lys	Lys	Ser	Lys	Thr	Lys	Cys	Val	Ile	Met
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<210> 2

<211> 11

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<213> Homo sapiens

<400> 2

Met	Gly	Cys	Ile	Lys	Ser	Lys	Gly	Lys	Asp	Ser
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<210> 3

<211> 9

<212> PRT

<213> Homo sapiens

<400> 3

Cys	Met	Ser	Cys	Lys	Cys	Val	Leu	Ser
1				5				

<210> 4

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

<400> 4

Cys Met Ser Cys Lys Cys Cys Ile Leu
1 5

<210> 5
<211> 21
<212> PRT
<213> Homo sapiens

<400> 5

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> 6
<211> 10
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<213> Artificial Sequence

<220>
<223> Synthetic peptide linker

<400> 6

Gly Ser Gly Gly Gly Ser Gly Gly Gly Ala
1 5 10

<210> 7
<211> 17
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<400> 7

Gly Ser Ala Gly Thr Gly Gly Arg Ala Ile Asp Ile Lys Leu Pro Ala

1 5 10 15

Thr

<210> 8
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<213> Homo sapiens

<400> 8

Met Ile Glu Lys Met Gln Gly Ser Arg Met Asp Glu Gln Arg Cys Ser
1 5 10 15

Phe Pro Pro Pro Leu Lys Thr Glu Glu Asp Tyr Ile Pro Tyr Pro Ser
20 25 30

Val His Glu Val Leu Gly Arg Glu Gly Pro Phe Pro Leu Ile Leu Leu
35 40 45

Pro Gln Phe Gly Gly Tyr Trp Ile Glu Gly Thr Asn His Glu Ile Thr
50 55 60

Ser Ile Pro Glu Thr Glu Pro Leu Gln Ser Pro Thr Thr Lys Val Lys
65 70 75 80

Leu Glu Cys Asn Pro Thr Ala Arg Ile Tyr Arg Lys His Phe Leu Gly
85 90 95

Lys Glu His Phe Asn Tyr Tyr Ser Leu Asp Ala Ala Leu Gly His Leu
100 105 110

Val Phe Ser Leu Lys Tyr Asp Val Ile Gly Asp Gln Glu His Leu Arg
115 120 125

Leu Leu Leu Arg Thr Lys Cys Arg Thr Tyr His Asp Val Ile Pro Ile
130 135 140

Ser Cys Leu Thr Glu Phe Pro Asn Val Val Gln Met Ala Lys Leu Val
145 150 155 160

Cys Glu Asp Val Asn Val Asp Arg Phe Tyr Pro Val Leu Tyr Pro Lys
165 170 175

Ala Ser Arg Leu Ile Val Thr Phe Asp Glu His Val Ile Ser Asn Asn
180 185 190

Phe Lys Phe Gly Val Ile Tyr Gln Lys Leu Gly Gln Thr Ser Glu Glu
195 200 205

Glu Leu Phe Ser Thr Asn Glu Glu Ser Pro Ala Phe Val Glu Phe Leu
210 215 220

Glu Phe Leu Gly Gln Lys Val Lys Leu Gln Asp Phe Lys Gly Phe Arg
225 230 235 240

Gly Gly Leu Asp Val Thr His Gly Gln Thr Gly Thr Glu Ser Val Tyr
245 250 255

Cys Asn Phe Arg Asn Lys Glu Ile Met Phe His Val Ser Thr Lys Leu
260 265 270

Pro Tyr Thr Glu Gly Asp Ala Gln Gln Leu Gln Arg Lys Arg His Ile
275 280 285

Gly Ala Ala Ile Val Ala Val Val Phe Gln Asp Glu Asn Thr Pro Phe
290 295 300

Val Pro Asp Met Ile Ala Ser Asn Phe Leu His Ala Tyr Val Val Val
305 310 315 320

Gln Ala Glu Gly Gly Gly Pro Asp Gly Pro Leu Tyr Lys Val Ser Val
325 330 335

Thr Ala Arg Asp Asp Val Pro Phe Phe Gly Pro Pro Leu Pro Asp Pro
340 345 350

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

Leu Ile Asn Ala Glu Tyr Ala Cys Tyr Lys Ala Glu Lys Phe Ala Lys
370 375 380

Leu Glu Glu Arg Thr Arg Ala Ala Leu Leu Glu Thr Leu Tyr Glu Glu
385 390 395 400

Leu His Ile His Ser Gln Ser Met Met Gly Leu Gly Gly Asp Glu Asp
405 410 415

Lys Met Glu Asn Gly Ser Gly Gly Gly Gly Phe Phe Glu Ser Phe Lys
420 425 430

Arg Val Ile Arg Ser Arg Ser Gln Ser Met
435 440

<210> 9
<211> 436
<212> PRT
<213> Homo sapiens

<400> 9

Met Ile Glu Lys Met Gln Gly Ser Arg Met Asp Glu Gln Arg Cys Ser
1 5 10 15

Phe Pro Pro Pro Leu Lys Thr Glu Glu Asp Tyr Ile Pro Tyr Pro Ser
20 25 30

Val His Glu Val Leu Gly Arg Glu Gly Pro Phe Pro Leu Ile Leu Leu
35 40 45

Pro Gln Phe Gly Gly Tyr Trp Ile Glu Gly Thr Asn His Glu Ile Thr
50 55 60

Ser Ile Pro Glu Thr Glu Pro Leu Gln Ser Pro Thr Thr Lys Val Lys

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

Pro Tyr Thr Glu Gly Asp Ala Gln Gln Leu Gln Arg Lys Arg His Ile
275 280 285

Gly Ala Ala Ile Val Ala Val Val Phe Gln Asp Glu Asn Thr Pro Phe
290 295 300

Val Pro Asp Met Ile Ala Ser Asn Phe Leu His Ala Tyr Val Val Val
305 310 315 320

Gln Ala Glu Gly Gly Gly Pro Asp Gly Pro Leu Tyr Lys Val Ser Val
325 330 335

Thr Ala Arg Asp Asp Val Pro Phe Phe Gly Pro Pro Leu Pro Asp Pro
340 345 350

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

Leu Ile Asn Ala Glu Tyr Ala Cys Tyr Lys Ala Glu Lys Phe Ala Lys
370 375 380

Leu Glu Glu Arg Thr Arg Ala Ala Leu Leu Glu Thr Leu Tyr Glu Glu
385 390 395 400

Leu His Ile His Ser Gln Ser Met Met Gly Leu Gly Gly Asp Glu Asp
405 410 415

Lys Met Glu Asn Gly Ser Gly Gly Gly Gly Phe Phe Glu Ser Phe Lys
420 425 430

Arg Val Ile Arg
435

<210> 10
<211> 420
<212> PRT
<213> Homo sapiens

<400> 10

Met Ile Glu Lys Met Gln Gly Ser Arg Met Asp Glu Gln Arg Cys Ser
1 5 10 15

Phe Pro Pro Pro Leu Lys Thr Glu Glu Asp Tyr Ile Pro Tyr Pro Ser
20 25 30

Val His Glu Val Leu Gly Arg Glu Gly Pro Phe Pro Leu Ile Leu Leu
35 40 45

Pro Gln Phe Gly Gly Tyr Trp Ile Glu Gly Thr Asn His Glu Ile Thr
50 55 60

Ser Ile Pro Glu Thr Glu Pro Leu Gln Ser Pro Thr Thr Lys Val Lys
65 70 75 80

Leu Glu Cys Asn Pro Thr Ala Arg Ile Tyr Arg Lys His Phe Leu Gly
85 90 95

Lys Glu His Phe Asn Tyr Tyr Ser Leu Asp Ala Ala Leu Gly His Leu
100 105 110

Val Phe Ser Leu Lys Tyr Asp Val Ile Gly Asp Gln Glu His Leu Arg
115 120 125

Leu Leu Leu Arg Thr Lys Cys Arg Thr Tyr His Asp Val Ile Pro Ile
130 135 140

Ser Cys Leu Thr Glu Phe Pro Asn Val Val Gln Met Ala Lys Leu Val
145 150 155 160

Cys Glu Asp Val Asn Val Asp Arg Phe Tyr Pro Val Leu Tyr Pro Lys
165 170 175

Ala Ser Arg Leu Ile Val Thr Phe Asp Glu His Val Ile Ser Asn Asn
180 185 190

Phe Lys Phe Gly Val Ile Tyr Gln Lys Leu Gly Gln Thr Ser Glu Glu
195 200 205

Glu Leu Phe Ser Thr Asn Glu Glu Ser Pro Ala Phe Val Glu Phe Leu
210 215 220

Glu Phe Leu Gly Gln Lys Val Lys Leu Gln Asp Phe Lys Gly Phe Arg
225 230 235 240

Gly Gly Leu Asp Val Thr His Gly Gln Thr Gly Thr Glu Ser Val Tyr
245 250 255

Cys Asn Phe Arg Asn Lys Glu Ile Met Phe His Val Ser Thr Lys Leu
260 265 270

Pro Tyr Thr Glu Gly Asp Ala Gln Gln Leu Gln Arg Lys Arg His Ile
275 280 285

Gly Ala Ala Ile Val Ala Val Val Phe Gln Asp Glu Asn Thr Pro Phe
290 295 300

Val Pro Asp Met Ile Ala Ser Asn Phe Leu His Ala Tyr Val Val Val
305 310 315 320

Gln Ala Glu Gly Gly Gly Pro Asp Gly Pro Leu Tyr Lys Val Ser Val
325 330 335

Thr Ala Arg Asp Asp Val Pro Phe Phe Gly Pro Pro Leu Pro Asp Pro
340 345 350

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

Leu Ile Asn Ala Glu Tyr Ala Cys Tyr Lys Ala Glu Lys Phe Ala Lys
370 375 380

Leu Glu Glu Arg Thr Arg Ala Ala Leu Leu Glu Thr Leu Tyr Glu Glu
385 390 395 400

Leu His Ile His Ser Gln Ser Met Met Gly Leu Gly Gly Asp Glu Asp
405 410 415

Lys Met Glu Asn
420

<210> 11
<211> 442
<212> PRT
<213> Homo sapiens

<400> 11

Met Ile Glu Lys Met Gln Gly Ser Arg Met Asp Glu Gln Arg Cys Ser
1 5 10 15

Phe Pro Pro Pro Leu Lys Thr Glu Glu Asp Tyr Ile Pro Tyr Pro Ser
20 25 30

Val His Glu Val Leu Gly Arg Glu Gly Pro Phe Pro Leu Ile Leu Leu
35 40 45

Pro Gln Phe Gly Gly Tyr Trp Ile Glu Gly Thr Asn His Glu Ile Thr
50 55 60

Ser Ile Pro Glu Thr Glu Pro Leu Gln Ser Pro Thr Thr Lys Val Lys
65 70 75 80

Leu Glu Cys Asn Pro Thr Ala Arg Ile Tyr Arg Lys His Phe Leu Gly
85 90 95

Lys Glu His Phe Asn Tyr Tyr Ser Leu Asp Ala Ala Leu Gly His Leu
100 105 110

Val Phe Ser Leu Lys Tyr Asp Val Ile Gly Asp Gln Glu His Leu Arg
115 120 125

Leu Leu Leu Arg Thr Lys Cys Arg Thr Tyr His Asp Val Ile Pro Ile

130

135

140

Ser Cys Leu Thr Glu Phe Pro Asn Val Val Gln Met Ala Lys Leu Val
 145 150 155 160

Cys Glu Asp Val Asn Val Asp Arg Phe Tyr Pro Val Leu Tyr Pro Lys
 165 170 175

Ala Ser Arg Leu Ile Val Thr Phe Asp Glu His Val Ile Ser Asn Asn
 180 185 190

Phe Lys Phe Gly Val Ile Tyr Gln Lys Leu Gly Gln Thr Ser Glu Glu
 195 200 205

Glu Leu Phe Ser Thr Asn Glu Glu Ser Pro Ala Phe Val Glu Phe Leu
 210 215 220

Glu Phe Leu Gly Gln Lys Val Lys Leu Gln Asp Phe Lys Gly Phe Arg
 225 230 235 240

Gly Gly Leu Asp Val Thr His Gly Gln Thr Gly Thr Glu Ser Val Tyr
 245 250 255

Cys Asn Phe Arg Asn Lys Glu Ile Met Phe His Val Ser Thr Lys Leu
 260 265 270

Pro Tyr Thr Glu Gly Asp Ala Gln Gln Leu Gln Arg Lys Arg His Ile
 275 280 285

Gly Ala Ala Ile Val Ala Val Val Phe Gln Asp Glu Asn Thr Pro Phe
 290 295 300

Val Pro Asp Met Ile Ala Ser Asn Phe Leu His Ala Tyr Val Val Val
 305 310 315 320

Gln Ala Glu Gly Gly Gly Pro Asp Gly Pro Leu Tyr Lys Val Ser Val
 325 330 335

Thr Ala Arg Asp Asp Val Pro Phe Phe Gly Pro Pro Leu Pro Asp Pro
340 345 350

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

Leu Ile Asn Ala Glu Tyr Ala Cys Tyr Lys Ala Glu Lys Phe Ala Lys
370 375 380

Leu Glu Glu Arg Thr Arg Ala Ala Leu Leu Glu Thr Leu Tyr Glu Glu
385 390 395 400

Leu His Ile His Ser Gln Ser Met Met Gly Leu Gly Gly Asp Glu Asp
405 410 415

Lys Met Glu Asn Gly Ser Gly Gly Gly Gly Phe Phe Glu Ser Phe Lys
420 425 430

Arg Val Ile Arg Ala Arg Ala Gln Ala Met
435 440

<210> 12
<211> 442
<212> PRT
<213> Homo sapiens

<400> 12

Met Ile Glu Lys Met Gln Gly Ser Arg Met Asp Glu Gln Arg Cys Ser
1 5 10 15

Phe Pro Pro Pro Leu Lys Thr Glu Glu Asp Tyr Ile Pro Tyr Pro Ser
20 25 30

Val His Glu Val Leu Gly Arg Glu Gly Pro Phe Pro Leu Ile Leu Leu
35 40 45

Pro Gln Phe Gly Gly Tyr Trp Ile Glu Gly Thr Asn His Glu Ile Thr
50 55 60

Ser Ile Pro Glu Thr Glu Pro Leu Gln Ser Pro Thr Thr Lys Val Lys
65 70 75 80

Leu Glu Cys Asn Pro Thr Ala Arg Ile Tyr Arg Lys His Phe Leu Gly
85 90 95

Lys Glu His Phe Asn Tyr Tyr Ser Leu Asp Ala Ala Leu Gly His Leu
100 105 110

Val Phe Ser Leu Lys Tyr Asp Val Ile Gly Asp Gln Glu His Leu Arg
115 120 125

Leu Leu Leu Arg Thr Lys Cys Arg Thr Tyr His Asp Val Ile Pro Ile
130 135 140

Ser Cys Leu Thr Glu Phe Pro Asn Val Val Gln Met Ala Lys Leu Val
145 150 155 160

Cys Glu Asp Val Asn Val Asp Arg Phe Tyr Pro Val Leu Tyr Pro Lys
165 170 175

Ala Ser Arg Leu Ile Val Thr Phe Asp Glu His Val Ile Ser Asn Asn
180 185 190

Phe Lys Phe Gly Val Ile Tyr Gln Lys Leu Gly Gln Thr Ser Glu Glu
195 200 205

Glu Leu Phe Ser Thr Asn Glu Glu Ser Pro Ala Phe Val Glu Phe Leu
210 215 220

Glu Phe Leu Gly Gln Lys Val Lys Leu Gln Asp Phe Lys Gly Phe Arg
225 230 235 240

Gly Gly Leu Asp Val Thr His Gly Gln Thr Gly Thr Glu Ser Val Tyr
245 250 255

Cys Asn Phe Arg Asn Lys Glu Ile Met Phe His Val Ser Thr Lys Leu
260 265 270

Pro Tyr Thr Glu Gly Asp Ala Gln Gln Leu Gln Arg Lys Arg His Ile
275 280 285

Gly Ala Ala Ile Val Ala Val Val Phe Gln Asp Glu Asn Thr Pro Phe
290 295 300

Val Pro Asp Met Ile Ala Ser Asn Phe Leu His Ala Tyr Val Val Val
305 310 315 320

Gln Ala Glu Gly Gly Gly Pro Asp Gly Pro Leu Tyr Lys Val Ser Val
325 330 335

Thr Ala Arg Asp Asp Val Pro Phe Phe Gly Pro Pro Leu Pro Asp Pro
340 345 350

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

Leu Ile Asn Ala Glu Tyr Ala Cys Tyr Lys Ala Glu Lys Phe Ala Lys
370 375 380

Leu Glu Glu Arg Thr Arg Ala Ala Leu Leu Glu Thr Leu Tyr Glu Glu
385 390 395 400

Leu His Ile His Ser Gln Ser Met Met Gly Leu Gly Gly Asp Glu Asp
405 410 415

Lys Met Glu Asn Gly Ser Gly Gly Gly Gly Phe Phe Glu Ser Phe Lys
420 425 430

Arg Val Ile Arg Thr Arg Thr Gln Thr Met
435 440

<210> 13
<211> 442

<212> PRT

<213> Homo sapiens

<400> 13

Met Ile Glu Lys Met Gln Gly Ser Arg Met Asp Glu Gln Arg Cys Ser
1 5 10 15

Phe Pro Pro Pro Leu Lys Thr Glu Glu Asp Tyr Ile Pro Tyr Pro Ser
20 25 30

Val His Glu Val Leu Gly Arg Glu Gly Pro Phe Pro Leu Ile Leu Leu
35 40 45

Pro Gln Phe Gly Gly Tyr Trp Ile Glu Gly Thr Asn His Glu Ile Thr
50 55 60

Ser Ile Pro Glu Thr Glu Pro Leu Gln Ser Pro Thr Thr Lys Val Lys
65 70 75 80

Leu Glu Cys Asn Pro Thr Ala Arg Ile Tyr Arg Lys His Phe Leu Gly
85 90 95

Lys Glu His Phe Asn Tyr Tyr Ser Leu Asp Ala Ala Leu Gly His Leu
100 105 110

Val Phe Ser Leu Lys Tyr Asp Val Ile Gly Asp Gln Glu His Leu Arg
115 120 125

Leu Leu Leu Arg Thr Lys Cys Arg Thr Tyr His Asp Val Ile Pro Ile
130 135 140

Ser Cys Leu Thr Glu Phe Pro Asn Val Val Gln Met Ala Lys Leu Val
145 150 155 160

Cys Glu Asp Val Asn Val Asp Arg Phe Tyr Pro Val Leu Tyr Pro Lys
165 170 175

Ala Ser Arg Leu Ile Val Thr Phe Asp Glu His Val Ile Ser Asn Asn

180

185

190

Phe Lys Phe Gly Val Ile Tyr Gln Lys Leu Gly Gln Thr Ser Glu Glu
 195 200 205

Glu Leu Phe Ser Thr Asn Glu Glu Ser Pro Ala Phe Val Glu Phe Leu
 210 215 220

Glu Phe Leu Gly Gln Lys Val Lys Leu Gln Asp Phe Lys Gly Phe Arg
 225 230 235 240

Gly Gly Leu Asp Val Thr His Gly Gln Thr Gly Thr Glu Ser Val Tyr
 245 250 255

Cys Asn Phe Arg Asn Lys Glu Ile Met Phe His Val Ser Thr Lys Leu
 260 265 270

Pro Tyr Thr Glu Gly Asp Ala Gln Gln Leu Gln Arg Lys Arg His Ile
 275 280 285

Gly Ala Ala Ile Val Ala Val Val Phe Gln Asp Glu Asn Thr Pro Phe
 290 295 300

Val Pro Asp Met Ile Ala Ser Asn Phe Leu His Ala Tyr Val Val Val
 305 310 315 320

Gln Ala Glu Gly Gly Gly Pro Asp Gly Pro Leu Tyr Lys Val Ser Val
 325 330 335

Thr Ala Arg Asp Asp Val Pro Phe Phe Gly Pro Pro Leu Pro Asp Pro
 340 345 350

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

Leu Ile Asn Ala Glu Tyr Ala Cys Tyr Lys Ala Glu Lys Phe Ala Lys
 370 375 380

Leu Glu Glu Arg Thr Arg Ala Ala Leu Leu Glu Thr Leu Tyr Glu Glu
385 390 395 400

Leu His Ile His Ser Gln Ser Met Met Gly Leu Gly Gly Asp Glu Asp
405 410 415

Lys Met Glu Asn Gly Ser Gly Gly Gly Gly Phe Phe Glu Ser Phe Lys
420 425 430

Arg Val Ile Arg Ala Arg Ser Gln Ala Met
435 440

<210> 14
<211> 442
<212> PRT
<213> Homo sapiens

<400> 14

Met Ile Glu Lys Met Gln Gly Ser Arg Met Asp Glu Gln Arg Cys Ser
1 5 10 15

Phe Pro Pro Pro Leu Lys Thr Glu Glu Asp Tyr Ile Pro Tyr Pro Ser
20 25 30

Val His Glu Val Leu Gly Arg Glu Gly Pro Phe Pro Leu Ile Leu Leu
35 40 45

Pro Gln Phe Gly Gly Tyr Trp Ile Glu Gly Thr Asn His Glu Ile Thr
50 55 60

Ser Ile Pro Glu Thr Glu Pro Leu Gln Ser Pro Thr Thr Lys Val Lys
65 70 75 80

Leu Glu Cys Asn Pro Thr Ala Arg Ile Tyr Arg Lys His Phe Leu Gly
85 90 95

Lys Glu His Phe Asn Tyr Tyr Ser Leu Asp Ala Ala Leu Gly His Leu
100 105 110

Val Phe Ser Leu Lys Tyr Asp Val Ile Gly Asp Gln Glu His Leu Arg
115 120 125

Leu Leu Leu Arg Thr Lys Cys Arg Thr Tyr His Asp Val Ile Pro Ile
130 135 140

Ser Cys Leu Thr Glu Phe Pro Asn Val Val Gln Met Ala Lys Leu Val
145 150 155 160

Cys Glu Asp Val Asn Val Asp Arg Phe Tyr Pro Val Leu Tyr Pro Lys
165 170 175

Ala Ser Arg Leu Ile Val Thr Phe Asp Glu His Val Ile Ser Asn Asn
180 185 190

Phe Lys Phe Gly Val Ile Tyr Gln Lys Leu Gly Gln Thr Ser Glu Glu
195 200 205

Glu Leu Phe Ser Thr Asn Glu Glu Ser Pro Ala Phe Val Glu Phe Leu
210 215 220

Glu Phe Leu Gly Gln Lys Val Lys Leu Gln Asp Phe Lys Gly Phe Arg
225 230 235 240

Gly Gly Leu Asp Val Thr His Gly Gln Thr Gly Thr Glu Ser Val Tyr
245 250 255

Cys Asn Phe Arg Asn Lys Glu Ile Met Phe His Val Ser Thr Lys Leu
260 265 270

Pro Tyr Thr Glu Gly Asp Ala Gln Gln Leu Gln Arg Lys Arg His Ile
275 280 285

Gly Ala Ala Ile Val Ala Val Val Phe Gln Asp Glu Asn Thr Pro Phe
290 295 300

Val Pro Asp Met Ile Ala Ser Asn Phe Leu His Ala Tyr Val Val Val
305 310 315 320

Gln Ala Glu Gly Gly Gly Pro Asp Gly Pro Leu Tyr Lys Val Ser Val
325 330 335

Thr Ala Arg Asp Asp Val Pro Phe Phe Gly Pro Pro Leu Pro Asp Pro
340 345 350

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

Leu Ile Asn Ala Glu Tyr Ala Cys Tyr Lys Ala Glu Lys Phe Ala Lys
370 375 380

Leu Glu Glu Arg Thr Arg Ala Ala Leu Leu Glu Thr Leu Tyr Glu Glu
385 390 395 400

Leu His Ile His Ser Gln Ser Met Met Gly Leu Gly Gly Asp Glu Asp
405 410 415

Lys Met Glu Asn Gly Ser Gly Gly Gly Gly Phe Phe Glu Ser Phe Lys
420 425 430

Arg Val Ile Arg Asp Arg Ser Gln Ala Met
435 440

<210> 15
<211> 442
<212> PRT
<213> Homo sapiens

<400> 15

Met Ile Glu Lys Met Gln Gly Ser Arg Met Asp Glu Gln Arg Cys Ser
1 5 10 15

Phe Pro Pro Pro Leu Lys Thr Glu Glu Asp Tyr Ile Pro Tyr Pro Ser
20 25 30

Val His Glu Val Leu Gly Arg Glu Gly Pro Phe Pro Leu Ile Leu Leu
35 40 45

Pro Gln Phe Gly Gly Tyr Trp Ile Glu Gly Thr Asn His Glu Ile Thr
50 55 60

Ser Ile Pro Glu Thr Glu Pro Leu Gln Ser Pro Thr Thr Lys Val Lys
65 70 75 80

Leu Glu Cys Asn Pro Thr Ala Arg Ile Tyr Arg Lys His Phe Leu Gly
85 90 95

Lys Glu His Phe Asn Tyr Tyr Ser Leu Asp Ala Ala Leu Gly His Leu
100 105 110

Val Phe Ser Leu Lys Tyr Asp Val Ile Gly Asp Gln Glu His Leu Arg
115 120 125

Leu Leu Leu Arg Thr Lys Cys Arg Thr Tyr His Asp Val Ile Pro Ile
130 135 140

Ser Cys Leu Thr Glu Phe Pro Asn Val Val Gln Met Ala Lys Leu Val
145 150 155 160

Cys Glu Asp Val Asn Val Asp Arg Phe Tyr Pro Val Leu Tyr Pro Lys
165 170 175

Ala Ser Arg Leu Ile Val Thr Phe Asp Glu His Val Ile Ser Asn Asn
180 185 190

Phe Lys Phe Gly Val Ile Tyr Gln Lys Leu Gly Gln Thr Ser Glu Glu
195 200 205

Glu Leu Phe Ser Thr Asn Glu Glu Ser Pro Ala Phe Val Glu Phe Leu
210 215 220

Glu Phe Leu Gly Gln Lys Val Lys Leu Gln Asp Phe Lys Gly Phe Arg

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

Arg Val Ile Arg Ala Arg Ser Gln Asp Met
435 440

<210> 16
<211> 442
<212> PRT
<213> Homo sapiens

<400> 16

Met Ile Glu Lys Met Gln Gly Ser Arg Met Asp Glu Gln Arg Cys Ser
1 5 10 15

Phe Pro Pro Pro Leu Lys Thr Glu Glu Asp Tyr Ile Pro Tyr Pro Ser
20 25 30

Val His Glu Val Leu Gly Arg Glu Gly Pro Phe Pro Leu Ile Leu Leu
35 40 45

Pro Gln Phe Gly Gly Tyr Trp Ile Glu Gly Thr Asn His Glu Ile Thr
50 55 60

Ser Ile Pro Glu Thr Glu Pro Leu Gln Ser Pro Thr Thr Lys Val Lys
65 70 75 80

Leu Glu Cys Asn Pro Thr Ala Arg Ile Tyr Arg Lys His Phe Leu Gly
85 90 95

Lys Glu His Phe Asn Tyr Tyr Ser Leu Asp Ala Ala Leu Gly His Leu
100 105 110

Val Phe Ser Leu Lys Tyr Asp Val Ile Gly Asp Gln Glu His Leu Arg
115 120 125

Leu Leu Leu Arg Thr Lys Cys Arg Thr Tyr His Asp Val Ile Pro Ile
130 135 140

Ser Cys Leu Thr Glu Phe Pro Asn Val Val Gln Met Ala Lys Leu Val
145 150 155 160

Cys Glu Asp Val Asn Val Asp Arg Phe Tyr Pro Val Leu Tyr Pro Lys
165 170 175

Ala Ser Arg Leu Ile Val Thr Phe Asp Glu His Val Ile Ser Asn Asn
180 185 190

Phe Lys Phe Gly Val Ile Tyr Gln Lys Leu Gly Gln Thr Ser Glu Glu
195 200 205

Glu Leu Phe Ser Thr Asn Glu Glu Ser Pro Ala Phe Val Glu Phe Leu
210 215 220

Glu Phe Leu Gly Gln Lys Val Lys Leu Gln Asp Phe Lys Gly Phe Arg
225 230 235 240

Gly Gly Leu Asp Val Thr His Gly Gln Thr Gly Thr Glu Ser Val Tyr
245 250 255

Cys Asn Phe Arg Asn Lys Glu Ile Met Phe His Val Ser Thr Lys Leu
260 265 270

Pro Tyr Thr Glu Gly Asp Ala Gln Gln Leu Gln Arg Lys Arg His Ile
275 280 285

Gly Ala Ala Ile Val Ala Val Val Phe Gln Asp Glu Asn Thr Pro Phe
290 295 300

Val Pro Asp Met Ile Ala Ser Asn Phe Leu His Ala Tyr Val Val Val
305 310 315 320

Gln Ala Glu Gly Gly Gly Pro Asp Gly Pro Leu Tyr Lys Val Ser Val
325 330 335

Thr Ala Arg Asp Asp Val Pro Phe Phe Gly Pro Pro Leu Pro Asp Pro
340 345 350

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

Leu Ile Asn Ala Glu Tyr Ala Cys Tyr Lys Ala Glu Lys Phe Ala Lys
370 375 380

Leu Glu Glu Arg Thr Arg Ala Ala Leu Leu Glu Thr Leu Tyr Glu Glu
385 390 395 400

Leu His Ile His Ser Gln Ser Met Met Gly Leu Gly Gly Asp Glu Asp
405 410 415

Lys Met Glu Asn Gly Ser Gly Gly Gly Gly Phe Phe Glu Ser Phe Lys
420 425 430

Arg Val Ile Arg Asp Arg Ser Gln Asp Met
435 440

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

<400> 17

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

Gln Ala Pro Gly Asn Gln Arg Pro Asn Asn Thr Cys Cys Phe Cys Trp
20 25 30

Cys Cys Cys Cys Ser Cys Ser Cys Leu Thr Val Arg Asn Glu Glu Arg
35 40 45

Gly Glu Asn Ala Gly Arg Pro Thr His Thr Thr Lys Met Glu Ser Ile
50 55 60

Gln Val Leu Glu Glu Cys Gln Asn Pro Thr Ala Glu Glu Val Leu Ser
65 70 75 80

Trp Ser Gln Asn Phe Asp Lys Met Met Lys Ala Pro Ala Gly Arg Asn
85 90 95

Leu Phe Arg Glu Phe Leu Arg Thr Glu Tyr Ser Glu Glu Asn Leu Leu
100 105 110

Phe Trp Leu Ala Cys Glu Asp Leu Lys Lys Glu Gln Asn Lys Lys Val
115 120 125

Ile Glu Glu Lys Ala Arg Met Ile Tyr Glu Asp Tyr Ile Ser Ile Leu
130 135 140

Ser Pro Lys Glu Val Ser Leu Asp Ser Arg Val Arg Glu Val Ile Asn
145 150 155 160

Arg Asn Leu Leu Asp Pro Asn Pro His Met Tyr Glu Asp Ala Gln Leu
165 170 175

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

Ser Gln Ile Tyr Lys Ser Phe Val Glu Ser Thr Ala Gly Ser Ser Ser
195 200 205

Glu Ser
210

<210> 18
<211> 217
<212> PRT
<213> Homo sapiens

<400> 18

Met Pro Thr Pro His Glu Ala Glu Lys Gln Ile Thr Gly Pro Glu Glu
1 5 10 15

Ala Asp Arg Pro Pro Ser Met Ser Ser His Asp Thr Ala Ser Pro Ala
20 25 30

Ala Pro Ser Arg Asn Pro Cys Cys Leu Cys Trp Cys Cys Cys Cys Ser
35 40 45

Cys Ser Trp Asn Gln Glu Arg Arg Arg Ala Trp Gln Ala Ser Arg Glu
50 55 60

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

Pro Glu Glu Val Gln Ser Trp Ala Gln Ser Phe Asp Lys Leu Met His
85 90 95

Ser Pro Ala Gly Arg Ser Val Phe Arg Ala Phe Leu Arg Thr Glu Tyr
100 105 110

Ser Glu Glu Asn Met Leu Phe Trp Leu Ala Cys Glu Glu Leu Lys Ala
115 120 125

Glu Ala Asn Gln His Val Val Asp Glu Lys Ala Arg Leu Ile Tyr Glu
130 135 140

Asp Tyr Val Ser Ile Leu Ser Pro Lys Glu Val Ser Leu Asp Ser Arg
145 150 155 160

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

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

Tyr Pro Arg Phe Leu Ser Ser Pro Thr Tyr Arg Ala Leu Leu Leu Gln
195 200 205

Gly Pro Ser Gln Ser Ser Ser Glu Ala
210 215

<210> 19
<211> 388
<212> PRT
<213> Homo sapiens

<400> 19

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

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

Arg Tyr Asn Thr Asp Ile His Gln Ile Thr Glu Asn Glu Gly Asp Leu
35 40 45

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

Ser Pro Ala Ala Pro Lys Leu Phe Gly Leu Leu Ser Ser Pro Leu Ser
65 70 75 80

Ser Leu Ala Arg Phe Phe Ser His Leu Leu Arg Arg Pro Pro Pro Glu
85 90 95

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

Ala Ala Arg Leu Ser Arg Gly His Glu Glu Leu Pro Gly Arg Leu Ser
115 120 125

Leu Leu Leu Gly Ala Ala Leu Ala Leu Pro Gly Arg Pro Ser Gly Gly
130 135 140

Arg Pro Leu Arg Pro Pro His Pro Val Ala Lys Pro Arg Glu Glu Asp
145 150 155 160

Ala Thr Ala Gly Gln Ser Ser Pro Met Pro Gln Met Gly Ser Glu Arg
165 170 175

Met Glu Met Arg Lys Arg Gln Met Pro Ala Ala Gln Asp Thr Pro Gly
180 185 190

Ala Ala Pro Gly Gln Pro Gly Ala Gly Ser Arg Gly Ser Asn Ala Cys
195 200 205

Cys Phe Cys Trp Cys Cys Cys Cys Ser Cys Ser Cys Leu Thr Val Arg
210 215 220

Asn Gln Glu Asp Gln Arg Pro Thr Ile Ala Ser His Glu Leu Arg Ala
225 230 235 240

Asp Leu Pro Thr Trp Glu Glu Ser Pro Ala Pro Thr Leu Glu Glu Val
245 250 255

Asn Ala Trp Ala Gln Ser Phe Asp Lys Leu Met Val Thr Pro Ala Gly
260 265 270

Arg Asn Ala Phe Arg Glu Phe Leu Arg Thr Glu Phe Ser Glu Glu Asn
275 280 285

Met Leu Phe Trp Met Ala Cys Glu Glu Leu Lys Lys Glu Ala Asn Lys
290 295 300

Asn Ile Ile Glu Glu Lys Ala Arg Ile Ile Tyr Glu Asp Tyr Ile Ser
305 310 315 320

Ile Leu Ser Pro Lys Glu Val Ser Leu Asp Ser Arg Val Arg Glu Val
325 330 335

Ile Asn Arg Asn Met Val Glu Pro Ser Gln His Ile Phe Asp Asp Ala
340 345 350

Gln Leu Gln Ile Tyr Thr Leu Met His Arg Asp Ser Tyr Pro Arg Phe
355 360 365

Met Asn Ser Ala Val Tyr Lys Asp Leu Leu Gln Ser Leu Ser Glu Lys

370

375

380

Ser Ile Glu Ala
385

<210> 20
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide linker

<400> 20

Gly Ser Ala Gly Thr Gly Gly Arg Ala Ile Asp Ile Lys Leu Ala Ser
1 5 10 15

Ala Thr

<210> 21
<211> 1522
<212> PRT
<213> Homo sapiens

<400> 21

Met Ser Val Arg Leu Pro Gln Ser Ile Asp Arg Leu Ser Ser Leu Ser
1 5 10 15

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

Gln Pro Ser Asp Ala Ser Glu Thr Thr Gly Leu Val Gln Arg Cys Val
35 40 45

Ile Ile Gln Lys Asp Gln His Gly Phe Gly Phe Thr Val Ser Gly Asp
50 55 60

Arg Ile Val Leu Val Gln Ser Val Arg Pro Gly Gly Ala Ala Met Lys
65 70 75 80

Ala Gly Val Lys Glu Gly Asp Arg Ile Ile Lys Val Asn Gly Thr Met
85 90 95

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

Ala Tyr Val Ala Leu Thr Leu Leu Gly Ser Ser Pro Ser Ser Met Gly
115 120 125

Ile Ser Gly Leu Gln Gln Asp Pro Ser Pro Ala Gly Ala Pro Arg Ile
130 135 140

Thr Ser Val Ile Pro Ser Pro Pro Pro Pro Pro Pro Leu Pro Pro Pro
145 150 155 160

Gln Arg Ile Thr Gly Pro Lys Pro Leu Gln Asp Pro Glu Val Gln Lys
165 170 175

His Ala Thr Gln Ile Leu Arg Asn Met Leu Arg Gln Glu Glu Lys Glu
180 185 190

Leu Gln Asp Ile Leu Pro Leu Tyr Gly Asp Thr Ser Gln Arg Pro Ser
195 200 205

Glu Gly Arg Leu Ser Leu Asp Ser Gln Glu Gly Asp Ser Gly Leu Asp
210 215 220

Ser Gly Thr Glu Arg Phe Pro Ser Leu Ser Glu Ser Leu Met Asn Arg
225 230 235 240

Asn Ser Val Leu Ser Asp Pro Gly Leu Asp Ser Pro Arg Thr Ser Pro
245 250 255

Val Ile Met Ala Arg Val Ala Gln His His Arg Arg Gln Gly Ser Asp
260 265 270

Ala Ala Val Pro Ser Thr Gly Asp Gln Gly Val Asp Gln Ser Pro Lys
275 280 285

Pro Leu Ile Ile Gly Pro Glu Glu Asp Tyr Asp Pro Gly Tyr Phe Asn
290 295 300

Asn Glu Ser Asp Ile Ile Phe Gln Asp Leu Glu Lys Leu Lys Ser Arg
305 310 315 320

Pro Ala His Leu Gly Val Phe Leu Arg Tyr Ile Phe Ser Gln Ala Asp
325 330 335

Pro Ser Pro Leu Leu Phe Tyr Leu Cys Ala Glu Val Tyr Gln Gln Ala
340 345 350

Ser Pro Lys Asp Ser Arg Ser Leu Gly Lys Asp Ile Trp Asn Ile Phe
355 360 365

Leu Glu Lys Asn Ala Pro Leu Arg Val Lys Ile Pro Glu Met Leu Gln
370 375 380

Ala Glu Ile Asp Ser Arg Leu Arg Asn Ser Glu Asp Ala Arg Gly Val
385 390 395 400

Leu Cys Glu Ala Gln Glu Ala Ala Met Pro Glu Ile Gln Glu Gln Ile
405 410 415

His Asp Tyr Arg Thr Lys Arg Thr Leu Gly Leu Gly Ser Leu Tyr Gly
420 425 430

Glu Asn Asp Leu Leu Asp Leu Asp Gly Asp Pro Leu Arg Glu Arg Gln
435 440 445

Val Ala Glu Lys Gln Leu Ala Ala Leu Gly Asp Ile Leu Ser Lys Tyr
450 455 460

Glu Glu Asp Arg Ser Ala Pro Met Asp Phe Ala Leu Asn Thr Tyr Met
465 470 475 480

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

Glu Lys Ala Gln Ser Ala Pro Asp Lys Asp Lys Trp Leu Pro Phe Phe
500 505 510

Pro Lys Thr Lys Lys Ser Ser Asn Ser Lys Lys Glu Lys Asp Ala Leu
515 520 525

Glu Asp Lys Lys Arg Asn Pro Ile Leu Lys Tyr Ile Gly Lys Pro Lys
530 535 540

Ser Ser Ser Gln Ser Thr Phe His Ile Pro Leu Ser Pro Val Glu Val
545 550 555 560

Lys Pro Gly Asn Val Arg Asn Ile Ile Gln His Phe Glu Asn Asn Gln
565 570 575

Gln Tyr Asp Ala Pro Glu Pro Gly Thr Gln Arg Leu Ser Thr Gly Ser
580 585 590

Phe Pro Glu Asp Leu Leu Glu Ser Asp Ser Ser Arg Ser Glu Ile Arg
595 600 605

Leu Gly Arg Ser Glu Ser Leu Lys Gly Arg Glu Glu Met Lys Arg Ser
610 615 620

Arg Lys Ala Glu Asn Val Pro Arg Ser Arg Ser Asp Val Asp Met Asp
625 630 635 640

Ala Ala Ala Glu Ala Thr Arg Leu His Gln Ser Ala Ser Ser Ser Thr
645 650 655

Ser Ser Leu Ser Thr Arg Ser Leu Glu Asn Pro Thr Pro Pro Phe Thr
660 665 670

Pro Lys Met Gly Arg Arg Ser Ile Glu Ser Pro Ser Leu Gly Phe Cys
675 680 685

Thr Asp Thr Leu Leu Pro His Leu Leu Glu Asp Asp Leu Gly Gln Leu
690 695 700

Ser Asp Leu Glu Pro Glu Pro Asp Ala Gln Asn Trp Gln His Thr Val
705 710 715 720

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

Glu Val Ile Asn Glu Leu Phe Val Thr Glu Ala Ser His Leu Arg Thr
740 745 750

Leu Arg Val Leu Asp Leu Ile Phe Tyr Gln Arg Met Lys Lys Glu Asn
755 760 765

Leu Met Pro Arg Glu Glu Leu Ala Arg Leu Phe Pro Asn Leu Pro Glu
770 775 780

Leu Ile Glu Ile His Asn Ser Trp Cys Glu Ala Met Lys Lys Leu Arg
785 790 795 800

Glu Glu Gly Pro Ile Ile Lys Glu Ile Ser Asp Leu Met Leu Ala Arg
805 810 815

Phe Asp Gly Pro Ala Arg Glu Glu Leu Gln Gln Val Ala Ala Gln Phe
820 825 830

Cys Ser Tyr Gln Ser Ile Ala Leu Glu Leu Ile Lys Thr Lys Gln Arg
835 840 845

Lys Glu Ser Arg Phe Gln Leu Phe Met Gln Glu Ala Glu Ser His Pro
850 855 860

Gln Cys Arg Arg Leu Gln Leu Arg Asp Leu Ile Ile Ser Glu Met Gln
865 870 875 880

Arg Leu Thr Lys Tyr Pro Leu Leu Leu Glu Ser Ile Ile Lys His Thr
885 890 895

Glu Gly Gly Thr Ser Glu His Glu Lys Leu Cys Arg Ala Arg Asp Gln
900 905 910

Cys Arg Glu Ile Leu Lys Tyr Val Asn Glu Ala Val Lys Gln Thr Glu
915 920 925

Asn Arg His Arg Leu Glu Gly Tyr Gln Lys Arg Leu Asp Ala Thr Ala
930 935 940

Leu Glu Arg Ala Ser Asn Pro Leu Ala Ala Glu Phe Lys Ser Leu Asp
945 950 955 960

Leu Thr Thr Arg Lys Met Ile His Glu Gly Pro Leu Thr Trp Arg Ile
965 970 975

Ser Lys Asp Lys Thr Leu Asp Leu His Val Leu Leu Leu Glu Asp Leu
980 985 990

Leu Val Leu Leu Gln Lys Gln Asp Glu Lys Leu Leu Leu Lys Cys His
995 1000 1005

Ser Lys Thr Ala Val Gly Ser Ser Asp Ser Lys Gln Thr Phe Ser
1010 1015 1020

Pro Val Leu Lys Leu Asn Ala Val Leu Ile Arg Ser Val Ala Thr
1025 1030 1035

Asp Lys Arg Ala Phe Phe Ile Ile Cys Thr Ser Lys Leu Gly Pro
1040 1045 1050

Pro Gln Ile Tyr Glu Leu Val Ala Leu Thr Ser Ser Asp Lys Asn
1055 1060 1065

Thr Trp Met Glu Leu Leu Glu Glu Ala Val Arg Asn Ala Thr Arg
1070 1075 1080

His Pro Gly Ala Ala Pro Met Pro Val His Pro Pro Pro Gly
1085 1090 1095

Pro Arg Glu Pro Ala Gln Gln Gly Pro Thr Pro Ser Arg Val Glu
1100 1105 1110

Leu Asp Asp Ser Asp Val Phe His Gly Glu Pro Glu Pro Glu Glu
1115 1120 1125

Leu Pro Gly Gly Thr Gly Ser Gln Gln Arg Val Gln Gly Lys His
1130 1135 1140

Gln Val Leu Leu Glu Asp Pro Glu Gln Glu Gly Ser Ala Glu Glu
1145 1150 1155

Glu Glu Leu Gly Val Leu Pro Cys Pro Ser Thr Ser Leu Asp Gly
1160 1165 1170

Glu Asn Arg Gly Ile Arg Thr Arg Asn Pro Ile His Leu Ala Phe
1175 1180 1185

Pro Gly Pro Leu Phe Met Glu Gly Leu Ala Asp Ser Ala Leu Glu
1190 1195 1200

Asp Val Glu Asn Leu Arg His Leu Ile Leu Trp Ser Leu Leu Pro
1205 1210 1215

Gly His Thr Met Glu Thr Gln Ala Ala Gln Glu Pro Glu Asp Asp
1220 1225 1230

Leu Thr Pro Thr Pro Ser Val Ile Ser Val Thr Ser His Pro Trp
1235 1240 1245

Asp Pro Gly Ser Pro Gly Gln Ala Pro Pro Gly Gly Glu Gly Asp
1250 1255 1260

Asn Thr Gln Leu Ala Gly Leu Glu Gly Glu Arg Pro Glu Gln Glu
1265 1270 1275

Asp Met Gly Leu Cys Ser Leu Glu His Leu Pro Pro Arg Thr Arg
1280 1285 1290

Asn Ser Gly Ile Trp Glu Ser Pro Glu Leu Asp Arg Asn Leu Ala
1295 1300 1305

Glu Asp Ala Ser Ser Thr Glu Ala Ala Gly Gly Tyr Lys Val Val
1310 1315 1320

Arg Lys Ala Glu Val Ala Gly Ser Lys Val Val Pro Ala Leu Pro
1325 1330 1335

Glu Ser Gly Gln Ser Glu Pro Gly Pro Pro Glu Val Glu Gly Gly
1340 1345 1350

Thr Lys Ala Thr Gly Asn Cys Phe Tyr Val Ser Met Pro Ser Gly
1355 1360 1365

Pro Pro Asp Ser Ser Thr Asp His Ser Glu Ala Pro Met Ser Pro
1370 1375 1380

Pro Gln Pro Asp Ser Leu Pro Ala Gly Gln Thr Glu Pro Gln Pro
1385 1390 1395

Gln Leu Gln Gly Gly Asn Asp Asp Pro Arg Arg Pro Ser Arg Ser
1400 1405 1410

Pro Pro Ser Leu Ala Leu Arg Asp Val Gly Met Ile Phe His Thr
1415 1420 1425

Ile Glu Gln Leu Thr Leu Lys Leu Asn Arg Leu Lys Asp Met Glu
1430 1435 1440

Leu Ala His Arg Glu Leu Leu Lys Ser Leu Gly Gly Glu Ser Ser
1445 1450 1455

Gly Gly Thr Thr Pro Val Gly Ser Phe His Thr Glu Ala Ala Arg
1460 1465 1470

Trp Thr Asp Gly Ser Leu Ser Pro Pro Ala Lys Glu Pro Leu Ala
1475 1480 1485

Ser Asp Ser Arg Asn Ser His Glu Leu Gly Pro Cys Pro Glu Asp
1490 1495 1500

Gly Ser Asp Ala Pro Leu Glu Asp Ser Thr Ala Asp Ala Ala Ala
1505 1510 1515

Ser Pro Gly Pro
1520

<210> 22
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide linker

<400> 22

Gly Ile Arg Leu Arg Glu Ala Leu Lys Leu Pro Ala Thr
1 5 10

<210> 23
<211> 912
<212> PRT
<213> Homo sapiens

<400> 23

Met Glu Asp Phe Ala Arg Gly Ala Ala Ser Pro Gly Pro Ser Arg Pro
1 5 10 15

Gly Leu Val Pro Val Ser Ile Ile Gly Ala Glu Asp Glu Asp Phe Glu

20

25

30

Asn Glu Leu Glu Thr Asn Ser Glu Glu Gln Asn Ser Gln Phe Gln Ser
 35 40 45

Leu Glu Gln Val Lys Arg Arg Pro Ala His Leu Met Ala Leu Leu Gln
 50 55 60

His Val Ala Leu Gln Phe Glu Pro Gly Pro Leu Leu Cys Cys Leu His
 65 70 75 80

Ala Asp Met Leu Gly Ser Leu Gly Pro Lys Glu Ala Lys Lys Ala Phe
 85 90 95

Leu Asp Phe Tyr His Ser Phe Leu Glu Lys Thr Ala Val Leu Arg Val
 100 105 110

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

Leu Ile Ser Glu Asp Val Gln Arg Arg Phe Val Gln Glu Val Val Gln
 130 135 140

Ser Gln Gln Val Ala Val Gly Arg Gln Leu Glu Asp Phe Arg Ser Lys
 145 150 155 160

Arg Leu Met Gly Met Thr Pro Trp Glu Gln Glu Leu Ala Gln Leu Glu
 165 170 175

Ala Trp Val Gly Arg Asp Arg Ala Ser Tyr Glu Ala Arg Glu Arg His
 180 185 190

Val Ala Glu Arg Leu Leu Met His Leu Glu Glu Met Gln His Thr Ile
 195 200 205

Ser Thr Asp Glu Glu Lys Ser Ala Ala Val Val Asn Ala Ile Gly Leu
 210 215 220

Tyr Met Arg His Leu Gly Val Arg Thr Lys Ser Gly Asp Lys Lys Ser
225 230 235 240

Gly Arg Asn Phe Phe Arg Lys Lys Val Met Gly Asn Arg Arg Ser Asp
245 250 255

Glu Pro Ala Lys Thr Lys Lys Gly Leu Ser Ser Ile Leu Asp Ala Ala
260 265 270

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

Ala Glu Val Asp Ala Glu Lys Pro Gly Ala Thr Asp Arg Lys Gly Gly
290 295 300

Val Gly Met Pro Ser Arg Asp Arg Asn Ile Gly Ala Pro Gly Gln Asp
305 310 315 320

Thr Pro Gly Val Ser Leu His Pro Leu Ser Leu Asp Ser Pro Asp Arg
325 330 335

Glu Pro Gly Ala Asp Ala Pro Leu Glu Leu Gly Asp Ser Ser Pro Gln
340 345 350

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

Gly Ala Glu Thr Glu Ser Pro Glu Pro Gly Asp Glu Gly Glu Pro Gly
370 375 380

Arg Ser Gly Leu Glu Leu Glu Pro Glu Glu Pro Pro Gly Trp Arg Glu
385 390 395 400

Leu Val Pro Pro Asp Thr Leu His Ser Leu Pro Lys Ser Gln Val Lys
405 410 415

Arg Gln Glu Val Ile Ser Glu Leu Leu Val Thr Glu Ala Ala His Val

420

425

430

Arg Met Leu Arg Val Leu His Asp Leu Phe Phe Gln Pro Met Ala Glu
 435 440 445

Cys Leu Phe Phe Pro Leu Glu Glu Leu Gln Asn Ile Phe Pro Ser Leu
 450 455 460

Asp Glu Leu Ile Glu Val His Ser Leu Phe Leu Asp Arg Leu Met Lys
 465 470 475 480

Arg Arg Gln Glu Ser Gly Tyr Leu Ile Glu Glu Ile Gly Asp Val Leu
 485 490 495

Leu Ala Arg Phe Asp Gly Ala Glu Gly Ser Trp Phe Gln Lys Ile Ser
 500 505 510

Ser Arg Phe Cys Ser Arg Gln Ser Phe Ala Leu Glu Gln Leu Lys Ala
 515 520 525

Lys Gln Arg Lys Asp Pro Arg Phe Cys Ala Phe Val Gln Glu Ala Glu
 530 535 540

Ser Arg Pro Arg Cys Arg Arg Leu Gln Leu Lys Asp Met Ile Pro Thr
 545 550 555 560

Glu Met Gln Arg Leu Thr Lys Tyr Pro Leu Leu Leu Gln Ser Ile Gly
 565 570 575

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

Glu Cys Cys Arg Glu Ile Leu His His Val Asn Gln Ala Val Arg Asp
 595 600 605

Met Glu Asp Leu Leu Arg Leu Lys Asp Tyr Gln Arg Arg Leu Asp Leu
 610 615 620

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

Leu Asp Ile Thr Lys Lys Lys Leu Val His Glu Gly Pro Leu Thr Trp
645 650 655

Arg Val Thr Lys Asp Lys Ala Val Glu Val His Val Leu Leu Leu Asp
660 665 670

Asp Leu Leu Leu Leu Leu Gln Arg Gln Asp Glu Arg Leu Leu Leu Lys
675 680 685

Ser His Ser Arg Thr Leu Thr Pro Thr Pro Asp Gly Lys Thr Met Leu
690 695 700

Arg Pro Val Leu Arg Leu Thr Ser Ala Met Thr Arg Glu Val Ala Thr
705 710 715 720

Asp His Lys Ala Phe Tyr Val Leu Phe Thr Trp Asp Gln Glu Ala Gln
725 730 735

Ile Tyr Glu Leu Val Ala Gln Thr Val Ser Glu Arg Lys Asn Trp Cys
740 745 750

Ala Leu Ile Thr Glu Thr Ala Gly Ser Leu Lys Val Pro Ala Pro Ala
755 760 765

Ser Arg Pro Lys Pro Arg Pro Ser Pro Ser Ser Thr Arg Glu Pro Leu
770 775 780

Leu Ser Ser Ser Glu Asn Gly Asn Gly Gly Arg Glu Thr Ser Pro Ala
785 790 795 800

Asp Ala Arg Thr Glu Arg Ile Leu Ser Asp Leu Leu Pro Phe Cys Arg
805 810 815

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

820

825

830

Ser Leu Lys Gln Leu Leu Phe Pro Ala Glu Glu Asp Asn Gly Ala Gly
 835 840 845

Pro Pro Arg Asp Gly Asp Gly Val Pro Gly Gly Gly Pro Leu Ser Pro
 850 855 860

Ala Arg Thr Gln Glu Ile Gln Glu Asn Leu Leu Ser Leu Glu Glu Thr
 865 870 875 880

Met Lys Gln Leu Glu Glu Leu Glu Glu Glu Phe Cys Arg Leu Arg Pro
 885 890 895

Leu Leu Ser Gln Leu Gly Gly Asn Ser Val Pro Gln Pro Gly Cys Thr
 900 905 910

<210> 24
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide linker

<400> 24

Arg Leu Lys Leu Pro Ala Thr
 1 5

<210> 25
 <211> 580
 <212> PRT
 <213> Homo sapiens

<400> 25

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

Arg Lys Val Leu Ala Lys Cys Gly Cys Cys Phe Ala Arg Gly Gly Arg
 20 25 30

Glu Ser Tyr Ser Ile Ala Gly Ser Glu Gly Ser Ile Ser Ala Ser Ala
35 40 45

Ala Ser Gly Leu Ala Ala Pro Ser Gly Pro Ser Ser Gly Leu Ser Ser
50 55 60

Gly Pro Cys Ser Pro Gly Pro Pro Gly Pro Val Ser Gly Leu Arg Arg
65 70 75 80

Trp Leu Asp His Ser Lys His Cys Leu Ser Val Glu Thr Glu Ala Asp
85 90 95

Ser Gly Gln Ala Gly Pro Tyr Glu Asn Trp Met Leu Glu Pro Ala Leu
100 105 110

Ala Thr Gly Glu Glu Leu Pro Glu Leu Thr Leu Leu Thr Thr Leu Leu
115 120 125

Glu Gly Pro Gly Asp Lys Thr Gln Pro Pro Glu Glu Glu Thr Leu Ser
130 135 140

Gln Ala Pro Glu Ser Glu Glu Glu Gln Lys Lys Lys Ala Leu Glu Arg
145 150 155 160

Ser Met Tyr Val Leu Ser Glu Leu Val Glu Thr Glu Lys Met Tyr Val
165 170 175

Asp Asp Leu Gly Gln Ile Val Glu Gly Tyr Met Ala Thr Met Ala Ala
180 185 190

Gln Gly Val Pro Glu Ser Leu Arg Gly Arg Asp Arg Ile Val Phe Gly
195 200 205

Asn Ile Gln Gln Ile Tyr Glu Trp His Arg Asp Tyr Phe Leu Gln Glu
210 215 220

Leu Gln Arg Cys Leu Lys Asp Pro Asp Trp Leu Ala Gln Leu Phe Ile
225 230 235 240

Lys His Glu Arg Arg Leu His Met Tyr Val Val Tyr Cys Gln Asn Lys
245 250 255

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

Glu Leu Arg Gln Gln Leu Gly His Arg Leu Gln Leu Asn Asp Leu Leu
275 280 285

Ile Lys Pro Val Gln Arg Ile Met Lys Tyr Gln Leu Leu Leu Lys Asp
290 295 300

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

Gln Ala Val Glu Val Met Cys Phe Val Pro Lys Arg Cys Asn Asp Met
325 330 335

Met Thr Leu Gly Arg Leu Arg Gly Phe Glu Gly Lys Leu Thr Ala Gln
340 345 350

Gly Lys Leu Leu Gly Gln Asp Thr Phe Trp Val Thr Glu Pro Glu Ala
355 360 365

Gly Gly Leu Leu Ser Ser Arg Gly Arg Glu Arg Arg Val Phe Leu Phe
370 375 380

Glu Gln Ile Ile Ile Phe Ser Glu Ala Leu Gly Gly Gly Val Arg Gly
385 390 395 400

Gly Thr Gln Pro Gly Tyr Val Tyr Lys Asn Ser Ile Lys Val Ser Cys
405 410 415

Leu Gly Leu Glu Gly Asn Leu Gln Gly Asp Pro Cys Arg Phe Ala Leu
420 425 430

Thr Ser Arg Gly Pro Glu Gly Gly Ile Gln Arg Tyr Val Leu Gln Ala
435 440 445

Ala Asp Pro Ala Ile Ser Gln Ala Trp Ile Lys His Val Ala Gln Ile
450 455 460

Leu Glu Ser Gln Arg Asp Phe Leu Asn Ala Leu Gln Ser Pro Ile Glu
465 470 475 480

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

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

Gly Ser Thr His Thr Pro Ile Asn Gly Ser Leu Pro Ser Leu Leu Leu
515 520 525

Ser Pro Lys Gly Glu Val Ala Arg Ala Leu Leu Pro Leu Asp Lys Gln
530 535 540

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

Pro Thr Pro Lys Thr Pro Pro Cys Gln Ala Arg Leu Ala Lys Leu Asp
565 570 575

Glu Asp Glu Leu
580

<210> 26

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Syntehtic peptide linker

<400> 26

Ala Ser Gly Ser Ala Gly Thr Gly Gly Arg Ala Ile Asp Ile Lys Leu
1 5 10 15

Pro Ala Thr

<210> 27

<211> 689

<212> PRT

<213> Homo sapiens

<400> 27

Met Ala Asp Leu Glu Ala Val Leu Ala Asp Val Ser Tyr Leu Met Ala
1 5 10 15

Met Glu Lys Ser Lys Ala Thr Pro Ala Ala Arg Ala Ser Lys Lys Ile
20 25 30

Leu Leu Pro Glu Pro Ser Ile Arg Ser Val Met Gln Lys Tyr Leu Glu
35 40 45

Asp Arg Gly Glu Val Thr Phe Glu Lys Ile Phe Ser Gln Lys Leu Gly
50 55 60

Tyr Leu Leu Phe Arg Asp Phe Cys Leu Asn His Leu Glu Glu Ala Arg
65 70 75 80

Pro Leu Val Glu Phe Tyr Glu Glu Ile Lys Lys Tyr Glu Lys Leu Glu
85 90 95

Thr Glu Glu Glu Arg Val Ala Arg Ser Arg Glu Ile Phe Asp Ser Tyr
100 105 110

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

Thr Glu His Val Gln Gly His Leu Gly Lys Lys Gln Val Pro Pro Asp

130

135

140

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

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

Trp Lys Asn Val Glu Leu Asn Ile His Leu Thr Met Asn Asp Phe Ser
 180 185 190

Val His Arg Ile Ile Gly Arg Gly Gly Phe Gly Glu Val Tyr Gly Cys
 195 200 205

Arg Lys Ala Asp Thr Gly Lys Met Tyr Ala Met Lys Cys Leu Asp Lys
 210 215 220

Lys Arg Ile Lys Met Lys Gln Gly Glu Thr Leu Ala Leu Asn Glu Arg
 225 230 235 240

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

Met Ser Tyr Ala Phe His Thr Pro Asp Lys Leu Ser Phe Ile Leu Asp
 260 265 270

Leu Met Asn Gly Gly Asp Leu His Tyr His Leu Ser Gln His Gly Val
 275 280 285

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

Leu Glu His Met His Asn Arg Phe Val Val Tyr Arg Asp Leu Lys Pro
 305 310 315 320

Ala Asn Ile Leu Leu Asp Glu His Gly His Val Arg Ile Ser Asp Leu
 325 330 335

Gly Leu Ala Cys Asp Phe Ser Lys Lys Lys Pro His Ala Ser Val Gly
340 345 350

Thr His Gly Tyr Met Ala Pro Glu Val Leu Gln Lys Gly Val Ala Tyr
355 360 365

Asp Ser Ser Ala Asp Trp Phe Ser Leu Gly Cys Met Leu Phe Lys Leu
370 375 380

Leu Arg Gly His Ser Pro Phe Arg Gln His Lys Thr Lys Asp Lys His
385 390 395 400

Glu Ile Asp Arg Met Thr Leu Thr Met Ala Val Glu Leu Pro Asp Ser
405 410 415

Phe Ser Pro Glu Leu Arg Ser Leu Leu Glu Gly Leu Leu Gln Arg Asp
420 425 430

Val Asn Arg Arg Leu Gly Cys Leu Gly Arg Gly Ala Gln Glu Val Lys
435 440 445

Glu Ser Pro Phe Phe Arg Ser Leu Asp Trp Gln Met Val Phe Leu Gln
450 455 460

Lys Tyr Pro Pro Pro Leu Ile Pro Pro Arg Gly Glu Val Asn Ala Ala
465 470 475 480

Asp Ala Phe Asp Ile Gly Ser Phe Asp Glu Glu Asp Thr Lys Gly Ile
485 490 495

Lys Leu Leu Asp Ser Asp Gln Glu Leu Tyr Arg Asn Phe Pro Leu Thr
500 505 510

Ile Ser Glu Arg Trp Gln Gln Glu Val Ala Glu Thr Val Phe Asp Thr
515 520 525

Ile Asn Ala Glu Thr Asp Arg Leu Glu Ala Arg Lys Lys Ala Lys Asn

530

535

540

Lys Gln Leu Gly His Glu Glu Asp Tyr Ala Leu Gly Lys Asp Cys Ile
 545 550 555 560

Met His Gly Tyr Met Ser Lys Met Gly Asn Pro Phe Leu Thr Gln Trp
 565 570 575

Gln Arg Arg Tyr Phe Tyr Leu Phe Pro Asn Arg Leu Glu Trp Arg Gly
 580 585 590

Glu Gly Glu Ala Pro Gln Ser Leu Leu Thr Met Glu Glu Ile Gln Ser
 595 600 605

Val Glu Glu Thr Gln Ile Lys Glu Arg Lys Cys Leu Leu Leu Lys Ile
 610 615 620

Arg Gly Gly Lys Gln Phe Ile Leu Gln Cys Asp Ser Asp Pro Glu Leu
 625 630 635 640

Val Gln Trp Lys Lys Glu Leu Arg Asp Ala Tyr Arg Glu Ala Gln Gln
 645 650 655

Leu Val Gln Arg Val Pro Lys Met Lys Asn Lys Pro Arg Ser Pro Val
 660 665 670

Val Glu Leu Ser Lys Val Pro Leu Val Gln Arg Gly Ser Ala Asn Gly
 675 680 685

Leu

<210> 28

<211> 350

<212> PRT

<213> Homo sapiens

<400> 28

Met Gly Cys Thr Val Ser Ala Glu Asp Lys Ala Ala Ala Glu Arg Ser
1 5 10 15

Lys Met Ile Asp Lys Asn Leu Arg Glu Asp Gly Glu Lys Ala Ala Arg
20 25 30

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

Ile Val Lys Gln Met Lys Ile Ile His Glu Asp Gly Tyr Ser Glu Glu
50 55 60

Glu Cys Arg Gln Tyr Arg Ala Val Val Tyr Ser Asn Thr Ile Gln Ser
65 70 75 80

Ile Met Ala Ile Val Lys Ala Met Gly Asn Leu Gln Ile Asp Phe Ala
85 90 95

Asp Pro Ser Arg Ala Asp Asp Ala Arg Gln Leu Phe Ala Leu Ser Cys
100 105 110

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

Arg Arg Leu Trp Ala Asp His Gly Val Gln Ala Cys Phe Gly Arg Ser
130 135 140

Arg Glu Tyr Gln Leu Asn Asp Ser Ala Ala Tyr Tyr Leu Asn Asp Leu
145 150 155 160

Glu Arg Ile Ala Gln Ser Asp Tyr Ile Pro Thr Gln Gln Asp Val Leu
165 170 175

Arg Thr Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe
180 185 190

Lys Asp Leu His Phe Lys Met Phe Asp Val Gly Gly Gln Arg Ser Glu
195 200 205

Arg Lys Lys Trp Ile His Cys Phe Glu Gly Val Thr Ala Ile Ile Phe
210 215 220

Cys Val Ala Leu Ser Ala Tyr Asp Leu Val Leu Ala Glu Asp Glu Glu
225 230 235 240

Met Asn Arg Met His Glu Ser Met Lys Leu Phe Asp Ser Ile Cys Asn
245 250 255

Asn Lys Trp Phe Thr Asp Thr Ser Ile Ile Leu Phe Leu Asn Lys Lys
260 265 270

Asp Leu Phe Glu Glu Lys Ile Thr His Ser Pro Leu Thr Ile Cys Phe
275 280 285

Pro Glu Tyr Thr Gly Ala Asn Lys Tyr Asp Glu Ala Ala Ser Tyr Ile
290 295 300

Gln Ser Lys Phe Glu Asp Leu Asn Lys Arg Lys Asp Thr Lys Glu Ile
305 310 315 320

Tyr Thr His Phe Thr Cys Ala Thr Asp Thr Lys Asn Val Gln Phe Val
325 330 335

Phe Asp Ala Val Thr Asp Val Ile Ile Lys Asn Asn Leu Lys
340 345 350

<210> 29
<211> 353
<212> PRT
<213> Homo sapiens

<400> 29

Met Gly Cys Thr Val Ser Ala Glu Asp Lys Ala Ala Ala Glu Arg Ser
1 5 10 15

Lys Met Ile Asp Lys Asn Leu Arg Glu Asp Gly Glu Lys Ala Ala Arg

20

25

30

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

Ile Val Lys Gln Met Lys Ile Ile His Glu Asp Gly Tyr Ser Glu Glu
 50 55 60

Glu Cys Arg Gln Tyr Arg Ala Val Val Tyr Ser Asn Thr Ile Gln Ser
 65 70 75 80

Ile Met Ala Ile Val Lys Ala Met Gly Asn Leu Gln Ile Asp Phe Ala
 85 90 95

Asp Pro Ser Arg Ala Asp Asp Ala Arg Gln Leu Phe Ala Leu Ser Cys
 100 105 110

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

Arg Arg Leu Trp Ala Asp His Gly Val Gln Ala Cys Phe Gly Arg Ser
 130 135 140

Arg Glu Tyr Gln Leu Asn Asp Ser Ala Ala Tyr Tyr Leu Asn Asp Leu
 145 150 155 160

Glu Arg Ile Ala Gln Ser Asp Tyr Ile Pro Thr Gln Gln Asp Val Leu
 165 170 175

Arg Thr Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe
 180 185 190

Lys Asp Leu His Phe Lys Met Phe Asp Val Gly Gly Gln Arg Ser Glu
 195 200 205

Arg Lys Lys Trp Ile His Cys Phe Glu Gly Val Thr Ala Ile Ile Phe
 210 215 220

Cys Val Ala Leu Ser Ala Tyr Asp Leu Val Leu Ala Glu Asp Glu Glu
225 230 235 240

Met Asn Arg Met His Glu Ser Met Lys Leu Phe Asp Ser Ile Cys Asn
245 250 255

Asn Lys Trp Phe Thr Asp Thr Ser Ile Ile Leu Phe Leu Asn Lys Lys
260 265 270

Asp Leu Phe Glu Glu Lys Ile Thr His Ser Pro Leu Thr Ile Cys Phe
275 280 285

Pro Glu Tyr Thr Gly Ala Asn Lys Tyr Asp Glu Ala Ala Ser Tyr Ile
290 295 300

Gln Ser Lys Phe Glu Asp Leu Asn Lys Arg Lys Asp Thr Lys Glu Ile
305 310 315 320

Tyr Thr His Phe Thr Cys Ala Thr Asp Thr Lys Asn Val Gln Phe Val
325 330 335

Phe Asp Ala Val Thr Asp Val Ile Ile Lys Asn Asn Leu Lys Asp Cys
340 345 350

Gly

<210> 30
<211> 355
<212> PRT
<213> Homo sapiens

<400> 30

Met Gly Cys Thr Val Ser Ala Glu Asp Lys Ala Ala Ala Glu Arg Ser
1 5 10 15

Lys Met Ile Asp Lys Asn Leu Arg Glu Asp Gly Glu Lys Ala Ala Arg
20 25 30

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

Ile Val Lys Gln Met Lys Ile Ile His Glu Asp Gly Tyr Ser Glu Glu
50 55 60

Glu Cys Arg Gln Tyr Arg Ala Val Val Tyr Ser Asn Thr Ile Gln Ser
65 70 75 80

Ile Met Ala Ile Val Lys Ala Met Gly Asn Leu Gln Ile Asp Phe Ala
85 90 95

Asp Pro Ser Arg Ala Asp Asp Ala Arg Gln Leu Phe Ala Leu Ser Cys
100 105 110

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

Arg Arg Leu Trp Ala Asp His Gly Val Gln Ala Cys Phe Gly Arg Ser
130 135 140

Arg Glu Tyr Gln Leu Asn Asp Ser Ala Ala Tyr Tyr Leu Asn Asp Leu
145 150 155 160

Glu Arg Ile Ala Gln Ser Asp Tyr Ile Pro Thr Gln Gln Asp Val Leu
165 170 175

Arg Thr Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe
180 185 190

Lys Asp Leu His Phe Lys Met Phe Asp Val Gly Gly Gln Arg Ser Glu
195 200 205

Arg Lys Lys Trp Ile His Cys Phe Glu Gly Val Thr Ala Ile Ile Phe
210 215 220

Cys Val Ala Leu Ser Ala Tyr Asp Leu Val Leu Ala Glu Asp Glu Glu
225 230 235 240

Met Asn Arg Met His Glu Ser Met Lys Leu Phe Asp Ser Ile Cys Asn
245 250 255

Asn Lys Trp Phe Thr Asp Thr Ser Ile Ile Leu Phe Leu Asn Lys Lys
260 265 270

Asp Leu Phe Glu Glu Lys Ile Thr His Ser Pro Leu Thr Ile Cys Phe
275 280 285

Pro Glu Tyr Thr Gly Ala Asn Lys Tyr Asp Glu Ala Ala Ser Tyr Ile
290 295 300

Gln Ser Lys Phe Glu Asp Leu Asn Lys Arg Lys Asp Thr Lys Glu Ile
305 310 315 320

Tyr Thr His Phe Thr Cys Ala Thr Asp Thr Lys Asn Val Gln Phe Val
325 330 335

Phe Asp Ala Val Thr Asp Val Ile Ile Lys Asn Asn Gly Lys Asp Cys
340 345 350

Gly Leu Phe
355

<210> 31
<211> 355
<212> PRT
<213> Homo sapiens

<400> 31

Met Gly Cys Thr Val Ser Ala Glu Asp Lys Ala Ala Ala Glu Arg Ser
1 5 10 15

Lys Met Ile Asp Lys Asn Leu Arg Glu Asp Gly Glu Lys Ala Ala Arg
20 25 30

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

Ile Val Lys Gln Met Lys Ile Ile His Glu Asp Gly Tyr Ser Glu Glu
50 55 60

Glu Cys Arg Gln Tyr Arg Ala Val Val Tyr Ser Asn Thr Ile Gln Ser
65 70 75 80

Ile Met Ala Ile Val Lys Ala Met Gly Asn Leu Gln Ile Asp Phe Ala
85 90 95

Asp Pro Ser Arg Ala Asp Asp Ala Arg Gln Leu Phe Ala Leu Ser Cys
100 105 110

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

Arg Arg Leu Trp Ala Asp His Gly Val Gln Ala Cys Phe Gly Arg Ser
130 135 140

Arg Glu Tyr Gln Leu Asn Asp Ser Ala Ala Tyr Tyr Leu Asn Asp Leu
145 150 155 160

Glu Arg Ile Ala Gln Ser Asp Tyr Ile Pro Thr Gln Gln Asp Val Leu
165 170 175

Arg Thr Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe
180 185 190

Lys Asp Leu His Phe Lys Met Phe Asp Val Gly Gly Gln Arg Ser Glu
195 200 205

Arg Lys Lys Trp Ile His Cys Phe Glu Gly Val Thr Ala Ile Ile Phe
210 215 220

Cys Val Ala Leu Ser Ala Tyr Asp Leu Val Leu Ala Glu Asp Glu Glu

225 230 235 240

Met Asn Arg Met His Glu Ser Met Lys Leu Phe Asp Ser Ile Cys Asn
245 250 255

Asn Lys Trp Phe Thr Asp Thr Ser Ile Ile Leu Phe Leu Asn Lys Lys
260 265 270

Asp Leu Phe Glu Glu Lys Ile Thr His Ser Pro Leu Thr Ile Cys Phe
275 280 285

Pro Glu Tyr Thr Gly Ala Asn Lys Tyr Asp Glu Ala Ala Ser Tyr Ile
290 295 300

Gln Ser Lys Phe Glu Asp Leu Asn Lys Arg Lys Asp Thr Lys Glu Ile
305 310 315 320

Tyr Thr His Phe Thr Cys Ala Thr Asp Thr Lys Asn Val Gln Phe Val
325 330 335

Phe Asp Ala Val Thr Asp Val Ile Ile Lys Asn Asn Leu Lys Asp Cys
340 345 350

Gly Gly Phe
355

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<210> 32
<211> 355
<212> PRT
<213> Homo sapiens
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<400> 32

Met Gly Cys Thr Val Ser Ala Glu Asp Lys Ala Ala Ala Glu Arg Ser
1 5 10 15

Lys Met Ile Asp Lys Asn Leu Arg Glu Asp Gly Glu Lys Ala Ala Arg
20 25 30

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

Ile Val Lys Gln Met Lys Ile Ile His Glu Asp Gly Tyr Ser Glu Glu
50 55 60

Glu Cys Arg Gln Tyr Arg Ala Val Val Tyr Ser Asn Thr Ile Gln Ser
65 70 75 80

Ile Met Ala Ile Val Lys Ala Met Gly Asn Leu Gln Ile Asp Phe Ala
85 90 95

Asp Pro Ser Arg Ala Asp Asp Ala Arg Gln Leu Phe Ala Leu Ser Cys
100 105 110

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

Arg Arg Leu Trp Ala Asp His Gly Val Gln Ala Cys Phe Gly Arg Ser
130 135 140

Arg Glu Tyr Gln Leu Asn Asp Ser Ala Ala Tyr Tyr Leu Asn Asp Leu
145 150 155 160

Glu Arg Ile Ala Gln Ser Asp Tyr Ile Pro Thr Gln Gln Asp Val Leu
165 170 175

Arg Thr Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe
180 185 190

Lys Asp Leu His Phe Lys Met Phe Asp Val Gly Gly Gln Arg Ser Glu
195 200 205

Arg Lys Lys Trp Ile His Cys Phe Glu Gly Val Thr Ala Ile Ile Phe
210 215 220

Cys Val Ala Leu Ser Ala Tyr Asp Leu Val Leu Ala Glu Asp Glu Glu
225 230 235 240

Met Asn Arg Met His Glu Ser Met Lys Leu Phe Asp Ser Ile Cys Asn
245 250 255

Asn Lys Trp Phe Thr Asp Thr Ser Ile Ile Leu Phe Leu Asn Lys Lys
260 265 270

Asp Leu Phe Glu Glu Lys Ile Thr His Ser Pro Leu Thr Ile Cys Phe
275 280 285

Pro Glu Tyr Thr Gly Ala Asn Lys Tyr Asp Glu Ala Ala Ser Tyr Ile
290 295 300

Gln Ser Lys Phe Glu Asp Leu Asn Lys Arg Lys Asp Thr Lys Glu Ile
305 310 315 320

Tyr Thr His Phe Thr Cys Ala Thr Asp Thr Lys Asn Val Gln Phe Val
325 330 335

Phe Asp Ala Val Thr Asp Val Ile Ile Lys Asn Asn Leu Lys Asp Cys
340 345 350

Gly Asp Phe
355

<210> 33
<211> 355
<212> PRT
<213> Homo sapiens

<400> 33

Met Gly Cys Thr Val Ser Ala Glu Asp Lys Ala Ala Ala Glu Arg Ser
1 5 10 15

Lys Met Ile Asp Lys Asn Leu Arg Glu Asp Gly Glu Lys Ala Ala Arg
20 25 30

Glu Val Lys Leu Leu Leu Leu Gly Ala Gly Glu Ser Gly Lys Ser Thr

35

40

45

Ile Val Lys Gln Met Lys Ile Ile His Glu Asp Gly Tyr Ser Glu Glu
50 55 60

Glu Cys Arg Gln Tyr Arg Ala Val Val Tyr Ser Asn Thr Ile Gln Ser
65 70 75 80

Ile Met Ala Ile Val Lys Ala Met Gly Asn Leu Gln Ile Asp Phe Ala
85 90 95

Asp Pro Ser Arg Ala Asp Asp Ala Arg Gln Leu Phe Ala Leu Ser Cys
100 105 110

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

Arg Arg Leu Trp Ala Asp His Gly Val Gln Ala Cys Phe Gly Arg Ser
130 135 140

Arg Glu Tyr Gln Leu Asn Asp Ser Ala Ala Tyr Tyr Leu Asn Asp Leu
145 150 155 160

Glu Arg Ile Ala Gln Ser Asp Tyr Ile Pro Thr Gln Gln Asp Val Leu
165 170 175

Arg Thr Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe
180 185 190

Lys Asp Leu His Phe Lys Met Phe Asp Val Gly Gly Gln Arg Ser Glu
195 200 205

Arg Lys Lys Trp Ile His Cys Phe Glu Gly Val Thr Ala Ile Ile Phe
210 215 220

Cys Val Ala Leu Ser Ala Tyr Asp Leu Val Leu Ala Glu Asp Glu Glu
225 230 235 240

Met Asn Arg Met His Glu Ser Met Lys Leu Phe Asp Ser Ile Cys Asn
245 250 255

Asn Lys Trp Phe Thr Asp Thr Ser Ile Ile Leu Phe Leu Asn Lys Lys
260 265 270

Asp Leu Phe Glu Glu Lys Ile Thr His Ser Pro Leu Thr Ile Cys Phe
275 280 285

Pro Glu Tyr Thr Gly Ala Asn Lys Tyr Asp Glu Ala Ala Ser Tyr Ile
290 295 300

Gln Ser Lys Phe Glu Asp Leu Asn Lys Arg Lys Asp Thr Lys Glu Ile
305 310 315 320

Tyr Thr His Phe Thr Cys Ala Thr Asp Thr Lys Asn Val Gln Phe Val
325 330 335

Phe Asp Ala Val Thr Asp Val Ile Ile Lys Asn Asn Leu Lys Asp Cys
340 345 350

Gly Pro Phe
355

<210> 34
<211> 355
<212> PRT
<213> Homo sapiens

<400> 34

Met Gly Cys Thr Val Ser Ala Glu Asp Lys Ala Ala Ala Glu Arg Ser
1 5 10 15

Lys Met Ile Asp Lys Asn Leu Arg Glu Asp Gly Glu Lys Ala Ala Arg
20 25 30

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

Ile Val Lys Gln Met Lys Ile Ile His Glu Asp Gly Tyr Ser Glu Glu
50 55 60

Glu Cys Arg Gln Tyr Arg Ala Val Val Tyr Ser Asn Thr Ile Gln Ser
65 70 75 80

Ile Met Ala Ile Val Lys Ala Met Gly Asn Leu Gln Ile Asp Phe Ala
85 90 95

Asp Pro Ser Arg Ala Asp Asp Ala Arg Gln Leu Phe Ala Leu Ser Cys
100 105 110

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

Arg Arg Leu Trp Ala Asp His Gly Val Gln Ala Cys Phe Gly Arg Ser
130 135 140

Arg Glu Tyr Gln Leu Asn Asp Ser Ala Ala Tyr Tyr Leu Asn Asp Leu
145 150 155 160

Glu Arg Ile Ala Gln Ser Asp Tyr Ile Pro Thr Gln Gln Asp Val Leu
165 170 175

Arg Thr Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe
180 185 190

Lys Asp Leu His Phe Lys Met Phe Asp Val Gly Gly Gln Arg Ser Glu
195 200 205

Arg Lys Lys Trp Ile His Cys Phe Glu Gly Val Thr Ala Ile Ile Phe
210 215 220

Cys Val Ala Leu Ser Ala Tyr Asp Leu Val Leu Ala Glu Asp Glu Glu
225 230 235 240

Met Asn Arg Met His Glu Ser Met Lys Leu Phe Asp Ser Ile Cys Asn
245 250 255

Asn Lys Trp Phe Thr Asp Thr Ser Ile Ile Leu Phe Leu Asn Lys Lys
260 265 270

Asp Leu Phe Glu Glu Lys Ile Thr His Ser Pro Leu Thr Ile Cys Phe
275 280 285

Pro Glu Tyr Thr Gly Ala Asn Lys Tyr Asp Glu Ala Ala Ser Tyr Ile
290 295 300

Gln Ser Lys Phe Glu Asp Leu Asn Lys Arg Lys Asp Thr Lys Glu Ile
305 310 315 320

Tyr Thr His Phe Thr Cys Ala Thr Asp Thr Lys Asn Val Gln Phe Val
325 330 335

Phe Asp Ala Val Thr Asp Val Ile Ile Lys Asn Asn Leu Lys Asp Cys
340 345 350

Gly Arg Phe
355

<210> 35
<211> 354
<212> PRT
<213> Homo sapiens

<400> 35

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

Lys Ala Ile Glu Lys Asn Leu Lys Glu Asp Gly Ile Ser Ala Ala Lys
20 25 30

Asp Val Lys Leu Leu Leu Leu Gly Ala Gly Glu Ser Gly Lys Ser Thr
35 40 45

Ile Val Lys Gln Met Lys Ile Ile His Glu Asp Gly Phe Ser Gly Glu
50 55 60

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

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

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

Arg Met Glu Asp Thr Glu Pro Phe Ser Ala Glu Leu Leu Ser Ala Met
115 120 125

Met Arg Leu Trp Gly Asp Ser Gly Ile Gln Glu Cys Phe Asn Arg Ser
130 135 140

Arg Glu Tyr Gln Leu Asn Asp Ser Ala Lys Tyr Tyr Leu Asp Ser Leu
145 150 155 160

Asp Arg Ile Gly Ala Ala Asp Tyr Gln Pro Thr Glu Gln Asp Ile Leu
165 170 175

Arg Thr Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe
180 185 190

Lys Asn Leu His Phe Arg Leu Phe Asp Val Gly Gly Gln Arg Ser Glu
195 200 205

Arg Lys Lys Trp Ile His Cys Phe Glu Asp Val Thr Ala Ile Ile Phe
210 215 220

Cys Val Ala Leu Ser Gly Tyr Asp Gln Val Leu His Glu Asp Glu Thr
225 230 235 240

Thr Asn Arg Met His Glu Ser Leu Lys Leu Phe Asp Ser Ile Cys Asn

245

250

255

Asn Lys Trp Phe Thr Asp Thr Ser Ile Ile Leu Phe Leu Asn Lys Lys
 260 265 270

Asp Ile Phe Glu Glu Lys Ile Lys Lys Ser Pro Leu Thr Ile Cys Phe
 275 280 285

Pro Glu Tyr Thr Gly Pro Ser Ala Phe Thr Glu Ala Val Ala Tyr Ile
 290 295 300

Gln Ala Gln Tyr Glu Ser Lys Asn Lys Ser Ala His Lys Glu Ile Tyr
 305 310 315 320

Thr His Val Thr Cys Ala Thr Asp Thr Asn Asn Ile Gln Phe Val Phe
 325 330 335

Asp Ala Val Thr Asp Val Ile Ile Ala Lys Asn Leu Arg Gly Cys Gly
 340 345 350

Gly Tyr

<210> 36

<211> 349

<212> PRT

<213> Homo sapiens

<400> 36

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

Lys Ala Ile Glu Lys Asn Leu Lys Glu Asp Gly Ile Ser Ala Ala Lys
 20 25 30

Asp Val Lys Leu Leu Leu Leu Gly Ala Gly Glu Ser Gly Lys Ser Thr
 35 40 45

Ile Val Lys Gln Met Lys Ile Ile His Glu Asp Gly Phe Ser Gly Glu
50 55 60

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

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

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

Arg Met Glu Asp Thr Glu Pro Phe Ser Ala Glu Leu Leu Ser Ala Met
115 120 125

Met Arg Leu Trp Gly Asp Ser Gly Ile Gln Glu Cys Phe Asn Arg Ser
130 135 140

Arg Glu Tyr Gln Leu Asn Asp Ser Ala Lys Tyr Tyr Leu Asp Ser Leu
145 150 155 160

Asp Arg Ile Gly Ala Ala Asp Tyr Gln Pro Thr Glu Gln Asp Ile Leu
165 170 175

Arg Thr Arg Val Lys Thr Thr Gly Ile Val Glu Thr His Phe Thr Phe
180 185 190

Lys Asn Leu His Phe Arg Leu Phe Asp Val Gly Gly Gln Arg Ser Glu
195 200 205

Arg Lys Lys Trp Ile His Cys Phe Glu Asp Val Thr Ala Ile Ile Phe
210 215 220

Cys Val Ala Leu Ser Gly Tyr Asp Gln Val Leu His Glu Asp Glu Thr
225 230 235 240

Thr Asn Arg Met His Glu Ser Leu Lys Leu Phe Asp Ser Ile Cys Asn
245 250 255

Asn Lys Trp Phe Thr Asp Thr Ser Ile Ile Leu Phe Leu Asn Lys Lys
260 265 270

Asp Ile Phe Glu Glu Lys Ile Lys Lys Ser Pro Leu Thr Ile Cys Phe
275 280 285

Pro Glu Tyr Thr Gly Pro Ser Ala Phe Thr Glu Ala Val Ala Tyr Ile
290 295 300

Gln Ala Gln Tyr Glu Ser Lys Asn Lys Ser Ala His Lys Glu Ile Tyr
305 310 315 320

Thr His Val Thr Cys Ala Thr Asp Thr Asn Asn Ile Gln Phe Val Phe
325 330 335

Asp Ala Val Thr Asp Val Ile Ile Ala Lys Asn Leu Arg
340 345

<210> 37

<211> 311

<212> PRT

<213> Renilla reniformis

<400> 37

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

80

95

110

125

140

160

175

190

205

220

240

255

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> 38

<211> 233

<212> PRT

<213> Renilla reniformis

<400> 38

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> 39
<211> 1539
<212> PRT
<213> Homo sapiens

<400> 39

Met Asp Ser Tyr Phe Lys Ala Ala Val Ser Asp Leu Asp Lys Leu Leu
1 5 10 15

Asp Asp Phe Glu Gln Asn Pro Asp Glu Gln Asp Tyr Leu Gln Asp Val
20 25 30

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

Ser Ser Gln Arg Thr Ser Leu Leu Pro Lys Asp Gln Glu Cys Val Asn

50

55

60

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

Asn Glu Lys Thr Leu Lys Gly Leu Thr Ser Ile Gln Asn Glu Lys Asn
85 90 95

Val Thr Gly Leu Asp Leu Leu Ser Ser Val Asp Gly Gly Thr Ser Asp
100 105 110

Glu Ile Gln Pro Leu Tyr Met Gly Arg Cys Ser Lys Pro Ile Cys Asp
115 120 125

Leu Ile Ser Asp Met Gly Asn Leu Val His Ala Thr Asn Ser Glu Glu
130 135 140

Asp Ile Lys Lys Leu Leu Pro Asp Asp Phe Lys Ser Asn Ala Asp Ser
145 150 155 160

Leu Ile Gly Leu Asp Leu Ser Ser Val Ser Asp Thr Pro Cys Val Ser
165 170 175

Ser Thr Asp His Asp Ser Asp Thr Val Arg Glu Gln Gln Asn Asp Ile
180 185 190

Ser Ser Glu Leu Gln Asn Arg Glu Ile Gly Gly Ile Lys Glu Leu Gly
195 200 205

Ile Lys Val Asp Thr Thr Leu Ser Asp Ser Tyr Asn Tyr Ser Gly Thr
210 215 220

Glu Asn Leu Lys Asp Lys Lys Ile Phe Asn Gln Leu Glu Ser Ile Val
225 230 235 240

Asp Phe Asn Met Ser Ser Ala Leu Thr Arg Gln Ser Ser Lys Met Phe
245 250 255

His Ala Lys Asp Lys Leu Gln His Lys Ser Gln Pro Cys Gly Leu Leu
260 265 270

Lys Asp Val Gly Leu Val Lys Glu Glu Val Asp Val Ala Val Ile Thr
275 280 285

Ala Ala Glu Cys Leu Lys Glu Glu Gly Lys Thr Ser Ala Leu Thr Cys
290 295 300

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

Asp Glu Asn Phe Lys Leu Pro Asp Phe Ser Phe Gln Glu Asp Lys Thr
325 330 335

Val Ile Lys Gln Ser Ala Gln Glu Asp Ser Lys Ser Leu Asp Leu Lys
340 345 350

Asp Asn Asp Val Ile Gln Asp Ser Ser Ser Ala Leu His Val Ser Ser
355 360 365

Lys Asp Val Pro Ser Ser Leu Ser Cys Leu Pro Ala Ser Gly Ser Met
370 375 380

Cys Gly Ser Leu Ile Glu Ser Lys Ala Arg Gly Asp Phe Leu Pro Gln
385 390 395 400

His Glu His Lys Asp Asn Ile Gln Asp Ala Val Thr Ile His Glu Glu
405 410 415

Ile Gln Asn Ser Val Val Leu Gly Gly Glu Pro Phe Lys Glu Asn Asp
420 425 430

Leu Leu Lys Gln Glu Lys Cys Lys Ser Ile Leu Leu Gln Ser Leu Ile
435 440 445

Glu Gly Met Glu Asp Arg Lys Ile Asp Pro Asp Gln Thr Val Ile Arg

450

455

460

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

Gln Glu Gly Leu Ser Gly Thr His Val Pro Glu Ser Ser Asp Cys Cys
485 490 495

Glu Gly Phe Ile Asn Thr Phe Ser Ser Asn Asp Met Asp Gly Gln Asp
500 505 510

Leu Asp Tyr Phe Asn Ile Asp Glu Gly Ala Lys Ser Gly Pro Leu Ile
515 520 525

Ser Asp Ala Glu Leu Asp Ala Phe Leu Thr Glu Gln Tyr Leu Gln Thr
530 535 540

Thr Asn Ile Lys Ser Phe Glu Glu Asn Val Asn Asp Ser Lys Ser Gln
545 550 555 560

Met Asn Gln Ile Asp Met Lys Gly Leu Asp Asp Gly Asn Ile Asn Asn
565 570 575

Ile Tyr Phe Asn Ala Glu Ala Gly Ala Ile Gly Glu Ser His Gly Ile
580 585 590

Asn Ile Ile Cys Glu Ile Val Asp Lys Gln Asn Thr Ile Glu Asn Gly
595 600 605

Leu Ser Leu Gly Glu Lys Ser Thr Ile Pro Val Gln Gln Gly Leu Pro
610 615 620

Thr Ser Lys Ser Glu Ile Thr Asn Gln Leu Ser Val Ser Asp Ile Asn
625 630 635 640

Ser Gln Ser Val Gly Gly Ala Arg Pro Lys Gln Leu Phe Ser Leu Pro
645 650 655

Ser Arg Thr Arg Ser Ser Lys Asp Leu Asn Lys Pro Asp Val Pro Asp
660 665 670

Thr Ile Glu Ser Glu Pro Ser Thr Ala Asp Thr Val Val Pro Ile Thr
675 680 685

Cys Ala Ile Asp Ser Thr Ala Asp Pro Gln Val Ser Phe Asn Ser Asn
690 695 700

Tyr Ile Asp Ile Glu Ser Asn Ser Glu Gly Gly Ser Ser Phe Val Thr
705 710 715 720

Ala Asn Glu Asp Ser Val Pro Glu Asn Thr Cys Lys Glu Gly Leu Val
725 730 735

Leu Gly Gln Lys Gln Pro Thr Trp Val Pro Asp Ser Glu Ala Pro Asn
740 745 750

Cys Met Asn Cys Gln Val Lys Phe Thr Phe Thr Lys Arg Arg His His
755 760 765

Cys Arg Ala Cys Gly Lys Val Phe Cys Gly Val Cys Cys Asn Arg Lys
770 775 780

Cys Lys Leu Gln Tyr Leu Glu Lys Glu Ala Arg Val Cys Val Val Cys
785 790 795 800

Tyr Glu Thr Ile Ser Lys Ala Gln Ala Phe Glu Arg Met Met Ser Pro
805 810 815

Thr Gly Ser Asn Leu Lys Ser Asn His Ser Asp Glu Cys Thr Thr Val
820 825 830

Gln Pro Pro Gln Glu Asn Gln Thr Ser Ser Ile Pro Ser Pro Ala Thr
835 840 845

Leu Pro Val Ser Ala Leu Lys Gln Pro Gly Val Glu Gly Leu Cys Ser

850

855

860

Lys Glu Gln Lys Arg Val Trp Phe Ala Asp Gly Ile Leu Pro Asn Gly
 865 870 875 880

Glu Val Ala Asp Thr Thr Lys Leu Ser Ser Gly Ser Lys Arg Cys Ser
 885 890 895

Glu Asp Phe Ser Pro Leu Ser Pro Asp Val Pro Met Thr Val Asn Thr
 900 905 910

Val Asp His Ser His Ser Thr Thr Val Glu Lys Pro Asn Asn Glu Thr
 915 920 925

Gly Asp Ile Thr Arg Asn Glu Ile Ile Gln Ser Pro Ile Ser Gln Val
 930 935 940

Pro Ser Val Glu Lys Leu Ser Met Asn Thr Gly Asn Glu Gly Leu Pro
 945 950 955 960

Thr Ser Gly Ser Phe Thr Leu Asp Asp Asp Val Phe Ala Glu Thr Glu
 965 970 975

Glu Pro Ser Ser Pro Thr Gly Val Leu Val Asn Ser Asn Leu Pro Ile
 980 985 990

Ala Ser Ile Ser Asp Tyr Arg Leu Leu Cys Asp Ile Asn Lys Tyr Val
 995 1000 1005

Cys Asn Lys Ile Ser Leu Leu Pro Asn Asp Glu Asp Ser Leu Pro
 1010 1015 1020

Pro Leu Leu Val Ala Ser Gly Glu Lys Gly Ser Val Pro Val Val
 1025 1030 1035

Glu Glu His Pro Ser His Glu Gln Ile Ile Leu Leu Leu Glu Gly
 1040 1045 1050

Glu Ser Phe His Pro Val Thr Phe Val Leu Asn Ala Asn Leu Leu
1055 1060 1065

Val Asn Val Lys Phe Ile Phe Tyr Ser Ser Asp Lys Tyr Trp Tyr
1070 1075 1080

Phe Ser Thr Asn Gly Leu His Gly Leu Gly Gln Ala Glu Ile Ile
1085 1090 1095

Ile Leu Leu Leu Cys Leu Pro Asn Glu Asp Thr Ile Pro Lys Asp
1100 1105 1110

Ile Phe Arg Leu Phe Ile Thr Ile Tyr Lys Asp Ala Leu Lys Gly
1115 1120 1125

Lys Tyr Ile Glu Asn Leu Asp Asn Ile Thr Phe Thr Glu Ser Phe
1130 1135 1140

Leu Ser Ser Lys Asp His Gly Gly Phe Leu Phe Ile Thr Pro Thr
1145 1150 1155

Phe Gln Lys Leu Asp Asp Leu Ser Leu Pro Ser Asn Pro Phe Leu
1160 1165 1170

Cys Gly Ile Leu Ile Gln Lys Leu Glu Ile Pro Trp Ala Lys Val
1175 1180 1185

Phe Pro Met Arg Leu Met Leu Arg Leu Gly Ala Glu Tyr Lys Ala
1190 1195 1200

Tyr Pro Ala Pro Leu Thr Ser Ile Arg Gly Arg Lys Pro Leu Phe
1205 1210 1215

Gly Glu Ile Gly His Thr Ile Met Asn Leu Leu Val Asp Leu Arg
1220 1225 1230

Asn Tyr Gln Tyr Thr Leu His Asn Ile Asp Gln Leu Leu Ile His

1235		1240		1245
Met Glu Met Gly Lys Ser Cys Ile Lys Ile Pro Arg Lys Lys Tyr				
1250		1255		1260
Ser Asp Val Met Lys Val Leu Asn Ser Ser Asn Glu His Val Ile				
1265		1270		1275
Ser Ile Gly Ala Ser Phe Ser Thr Glu Ala Asp Ser His Leu Val				
1280		1285		1290
Cys Ile Gln Asn Asp Gly Ile Tyr Glu Thr Gln Ala Asn Ser Ala				
1295		1300		1305
Thr Gly His Pro Arg Lys Val Thr Gly Ala Ser Phe Val Val Phe				
1310		1315		1320
Asn Gly Ala Leu Lys Thr Ser Ser Gly Phe Leu Ala Lys Ser Ser				
1325		1330		1335
Ile Val Glu Asp Gly Leu Met Val Gln Ile Thr Pro Glu Thr Met				
1340		1345		1350
Asn Gly Leu Arg Leu Ala Leu Arg Glu Gln Lys Asp Phe Lys Ile				
1355		1360		1365
Thr Cys Gly Lys Val Asp Ala Val Asp Leu Arg Glu Tyr Val Asp				
1370		1375		1380
Ile Cys Trp Val Asp Ala Glu Glu Lys Gly Asn Lys Gly Val Ile				
1385		1390		1395
Ser Ser Val Asp Gly Ile Ser Leu Gln Gly Phe Pro Ser Glu Lys				
1400		1405		1410
Ile Lys Leu Glu Ala Asp Phe Glu Thr Asp Glu Lys Ile Val Lys				
1415		1420		1425

Cys Thr Glu Val Phe Tyr Phe Leu Lys Asp Gln Asp Leu Ser Ile
1430 1435 1440

Leu Ser Thr Ser Tyr Gln Phe Ala Lys Glu Ile Ala Met Ala Cys
1445 1450 1455

Ser Ala Ala Leu Cys Pro His Leu Lys Thr Leu Lys Ser Asn Gly
1460 1465 1470

Met Asn Lys Ile Gly Leu Arg Val Ser Ile Asp Thr Asp Met Val
1475 1480 1485

Glu Phe Gln Ala Gly Ser Glu Gly Gln Leu Leu Pro Gln His Tyr
1490 1495 1500

Leu Asn Asp Leu Asp Ser Ala Leu Ile Pro Val Ile His Gly Gly
1505 1510 1515

Thr Ser Asn Ser Ser Leu Pro Leu Glu Ile Glu Leu Val Phe Phe
1520 1525 1530

Ile Ile Glu His Leu Phe
1535

<210> 40

<211> 343

<212> PRT

<213> Homo sapiens

<400> 40

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> 41
<211> 20
<212> PRT
<213> Homo sapiens

<400> 41

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> 42
<211> 20
<212> PRT
<213> Homo sapiens

<400> 42

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> 43
<211> 20
<212> PRT
<213> Homo sapiens

<400> 43

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> 44
<211> 20
<212> PRT
<213> Homo sapiens

<400> 44

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

Cys Val Ile Met
20

<210> 45
<211> 21
<212> PRT
<213> Homo sapiens

<400> 45

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

<210> 46
 <211> 1203
 <212> PRT
 <213> Homo sapiens

<400> 46

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 Trp Glu Val Gly Ser Ile Thr
 65 70 75 80

Tyr Asp Thr Leu Ser Ala Gln Ala Gln Gln Asp Gly Pro Cys Thr Pro
 85 90 95

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

Pro Ser Pro Gly Pro Pro Ala Pro Glu Gln Leu Leu Ser Gln Ala Arg
 115 120 125

Asp Phe Ile Asn Gln Tyr Tyr Ser Ser Ile Lys Arg Ser Gly Ser Gln
 130 135 140

Ala His Glu Gln Arg Leu Gln Glu Val Glu Ala Glu Val Ala Ala Thr
 145 150 155 160

Gly Thr Tyr Gln Leu Arg Glu Ser Glu Leu Val Phe Gly Ala Lys Gln
165 170 175

Ala Trp Arg Asn Ala Pro Arg Cys Val Gly Arg Ile Gln Trp Gly Lys
180 185 190

Leu Gln Val Phe Asp Ala Arg Asp Cys Arg Ser Ala Gln Glu Met Phe
195 200 205

Thr Tyr Ile Cys Asn His Ile Lys Tyr Ala Thr Asn Arg Gly Asn Leu
210 215 220

Arg Ser Ala Ile Thr Val Phe Pro Gln Arg Cys Pro Gly Arg Gly Asp
225 230 235 240

Phe Arg Ile Trp Asn Ser Gln Leu Val Arg Tyr Ala Gly Tyr Arg Gln
245 250 255

Gln Asp Gly Ser Val Arg Gly Asp Pro Ala Asn Val Glu Ile Thr Glu
260 265 270

Leu Cys Ile Gln His Gly Trp Thr Pro Gly Asn Gly Arg Phe Asp Val
275 280 285

Leu Pro Leu Leu Leu Gln Ala Pro Asp Asp Pro Pro Glu Leu Phe Leu
290 295 300

Leu Pro Pro Glu Leu Val Leu Glu Val Pro Leu Glu His Pro Thr Leu
305 310 315 320

Glu Trp Phe Ala Ala Leu Gly Leu Arg Trp Tyr Ala Leu Pro Ala Val
325 330 335

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

Phe Ser Gly Trp Tyr Met Ser Thr Glu Ile Gly Thr Arg Asn Leu Cys
355 360 365

Asp Pro His Arg Tyr Asn Ile Leu Glu Asp Val Ala Val Cys Met Asp
370 375 380

Leu Asp Thr Arg Thr Thr Ser Ser Leu Trp Lys Asp Lys Ala Ala Val
385 390 395 400

Glu Ile Asn Val Ala Val Leu His Ser Tyr Gln Leu Ala Lys Val Thr
405 410 415

Ile Val Asp His His Ala Ala Thr Ala Ser Phe Met Lys His Leu Glu
420 425 430

Asn Glu Gln Lys Ala Arg Gly Gly Cys Pro Ala Asp Trp Ala Trp Ile
435 440 445

Val Pro Pro Ile Ser Gly Ser Leu Thr Pro Val Phe His Gln Glu Met
450 455 460

Val Asn Tyr Phe Leu Ser Pro Ala Phe Arg Tyr Gln Pro Asp Pro Trp
465 470 475 480

Lys Gly Ser Ala Ala Lys Gly Thr Gly Ile Thr Arg Lys Lys Thr Phe
485 490 495

Lys Glu Val Ala Asn Ala Val Lys Ile Ser Ala Ser Leu Met Gly Thr
500 505 510

Val Met Ala Lys Arg Val Lys Ala Thr Ile Leu Tyr Gly Ser Glu Thr
515 520 525

Gly Arg Ala Gln Ser Tyr Ala Gln Gln Leu Gly Arg Leu Phe Arg Lys
530 535 540

Ala Phe Asp Pro Arg Val Leu Cys Met Asp Glu Tyr Asp Val Val Ser
545 550 555 560

Leu Glu His Glu Thr Leu Val Leu Val Val Thr Ser Thr Phe Gly Asn
565 570 575

Gly Asp Pro Pro Glu Asn Gly Glu Ser Phe Ala Ala Ala Leu Met Glu
580 585 590

Met Ser Gly Pro Tyr Asn Ser Ser Pro Arg Pro Glu Gln His Lys Ser
595 600 605

Tyr Lys Ile Arg Phe Asn Ser Ile Ser Cys Ser Asp Pro Leu Val Ser
610 615 620

Ser Trp Arg Arg Lys Arg Lys Glu Ser Ser Asn Thr Asp Ser Ala Gly
625 630 635 640

Ala Leu Gly Thr Leu Arg Phe Cys Val Phe Gly Leu Gly Ser Arg Ala
645 650 655

Tyr Pro His Phe Cys Ala Phe Ala Arg Ala Val Asp Thr Arg Leu Glu
660 665 670

Glu Leu Gly Gly Glu Arg Leu Leu Gln Leu Gly Gln Gly Asp Glu Leu
675 680 685

Cys Gly Gln Glu Glu Ala Phe Arg Gly Trp Ala Gln Ala Ala Phe Gln
690 695 700

Ala Ala Cys Glu Thr Phe Cys Val Gly Glu Asp Ala Lys Ala Ala Ala
705 710 715 720

Arg Asp Ile Phe Ser Pro Lys Arg Ser Trp Lys Arg Gln Arg Tyr Arg
725 730 735

Leu Ser Ala Gln Ala Glu Gly Leu Gln Leu Leu Pro Gly Leu Ile His
740 745 750

Val His Arg Arg Lys Met Phe Gln Ala Thr Ile Arg Ser Val Glu Asn
755 760 765

Leu Gln Ser Ser Lys Ser Thr Arg Ala Thr Ile Leu Val Arg Leu Asp
770 775 780

Thr Gly Gly Gln Glu Gly Leu Gln Tyr Gln Pro Gly Asp His Ile Gly
785 790 795 800

Val Cys Pro Pro Asn Arg Pro Gly Leu Val Glu Ala Leu Leu Ser Arg
805 810 815

Val Glu Asp Pro Pro Ala Pro Thr Glu Pro Val Ala Val Glu Gln Leu
820 825 830

Glu Lys Gly Ser Pro Gly Gly Pro Pro Pro Gly Trp Val Arg Asp Pro
835 840 845

Arg Leu Pro Pro Cys Thr Leu Arg Gln Ala Leu Thr Phe Phe Leu Asp
850 855 860

Ile Thr Ser Pro Pro Ser Pro Gln Leu Leu Arg Leu Leu Ser Thr Leu
865 870 875 880

Ala Glu Glu Pro Arg Glu Gln Gln Glu Leu Glu Ala Leu Ser Gln Asp
885 890 895

Pro Arg Arg Tyr Glu Glu Trp Lys Trp Phe Arg Cys Pro Thr Leu Leu
900 905 910

Glu Val Leu Glu Gln Phe Pro Ser Val Ala Leu Pro Ala Pro Leu Leu
915 920 925

Leu Thr Gln Leu Pro Leu Leu Gln Pro Arg Tyr Tyr Ser Val Ser Ser
930 935 940

Ala Pro Ser Thr His Pro Gly Glu Ile His Leu Thr Val Ala Val Leu
945 950 955 960

Ala Tyr Arg Thr Gln Asp Gly Leu Gly Pro Leu His Tyr Gly Val Cys
965 970 975

Ser Thr Trp Leu Ser Gln Leu Lys Pro Gly Asp Pro Val Pro Cys Phe
980 985 990

Ile Arg Gly Ala Pro Ser Phe Arg Leu Pro Pro Asp Pro Ser Leu Pro
995 1000 1005

Cys Ile Leu Val Gly Pro Gly Thr Gly Ile Ala Pro Phe Arg Gly
1010 1015 1020

Phe Trp Gln Glu Arg Leu His Asp Ile Glu Ser Lys Gly Leu Gln
1025 1030 1035

Pro Thr Pro Met Thr Leu Val Phe Gly Cys Arg Cys Ser Gln Leu
1040 1045 1050

Asp His Leu Tyr Arg Asp Glu Val Gln Asn Ala Gln Gln Arg Gly
1055 1060 1065

Val Phe Gly Arg Val Leu Thr Ala Phe Ser Arg Glu Pro Asp Asn
1070 1075 1080

Pro Lys Thr Tyr Val Gln Asp Ile Leu Arg Thr Glu Leu Ala Ala
1085 1090 1095

Glu Val His Arg Val Leu Cys Leu Glu Arg Gly His Met Phe Val
1100 1105 1110

Cys Gly Asp Val Thr Met Ala Thr Asn Val Leu Gln Thr Val Gln
1115 1120 1125

Arg Ile Leu Ala Thr Glu Gly Asp Met Glu Leu Asp Glu Ala Gly
1130 1135 1140

Asp Val Ile Gly Val Leu Arg Asp Gln Gln Arg Tyr His Glu Asp
1145 1150 1155

Ile Phe Gly Leu Thr Leu Arg Thr Gln Glu Val Thr Ser Arg Ile
1160 1165 1170

Arg Thr Gln Ser Phe Ser Leu Gln Glu Arg Gln Leu Arg Gly Ala
1175 1180 1185

Val Pro Trp Ala Phe Asp Pro Pro Gly Ser Asp Thr Asn Ser Pro
1190 1195 1200

<210> 47

<211> 663

<212> PRT

<213> Homo sapiens

<400> 47

Met Ile Glu Lys Met Gln Gly Ser Arg Met Asp Glu Gln Arg Cys Ser
1 5 10 15

Phe Pro Pro Pro Leu Lys Thr Glu Glu Asp Tyr Ile Pro Tyr Pro Ser
20 25 30

Val His Glu Val Leu Gly Arg Glu Gly Pro Phe Pro Leu Ile Leu Leu
35 40 45

Pro Gln Phe Gly Gly Tyr Trp Ile Glu Gly Thr Asn His Glu Ile Thr
50 55 60

Ser Ile Pro Glu Thr Glu Pro Leu Gln Ser Pro Thr Thr Lys Val Lys
65 70 75 80

Leu Glu Cys Asn Pro Thr Ala Arg Ile Tyr Arg Lys His Phe Leu Gly
85 90 95

Lys Glu His Phe Asn Tyr Tyr Ser Leu Asp Ala Ala Leu Gly His Leu
100 105 110

Val Phe Ser Leu Lys Tyr Asp Val Ile Gly Asp Gln Glu His Leu Arg

115

120

125

Leu Leu Leu Arg Thr Lys Cys Arg Thr Tyr His Asp Val Ile Pro Ile
 130 135 140

Ser Cys Leu Thr Glu Phe Pro Asn Val Val Gln Met Ala Lys Leu Val
 145 150 155 160

Cys Glu Asp Val Asn Val Asp Arg Phe Tyr Pro Val Leu Tyr Pro Lys
 165 170 175

Ala Ser Arg Leu Ile Val Thr Phe Asp Glu His Val Ile Ser Asn Asn
 180 185 190

Phe Lys Phe Gly Val Ile Tyr Gln Lys Leu Gly Gln Thr Ser Glu Glu
 195 200 205

Glu Leu Phe Ser Thr Asn Glu Glu Ser Pro Ala Phe Val Glu Phe Leu
 210 215 220

Glu Phe Leu Gly Gln Lys Val Lys Leu Gln Asp Phe Lys Gly Phe Arg
 225 230 235 240

Gly Gly Leu Asp Val Thr His Gly Gln Thr Gly Thr Glu Ser Val Tyr
 245 250 255

Cys Asn Phe Arg Asn Lys Glu Ile Met Phe His Val Ser Thr Lys Leu
 260 265 270

Pro Tyr Thr Glu Gly Asp Ala Gln Gln Leu Gln Arg Lys Arg His Ile
 275 280 285

Gly Asn Asp Ile Val Ala Val Val Phe Gln Asp Glu Asn Thr Pro Phe
 290 295 300

Val Pro Asp Met Ile Ala Ser Asn Phe Leu His Ala Tyr Val Val Val
 305 310 315 320

Gln Ala Glu Gly Gly Gly Pro Asp Gly Pro Leu Tyr Lys Val Ser Val
325 330 335

Thr Ala Arg Asp Asp Val Pro Phe Phe Gly Pro Pro Leu Pro Asp Pro
340 345 350

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

Leu Ile Asn Ala Glu Tyr Ala Cys Tyr Lys Ala Glu Lys Phe Ala Lys
370 375 380

Leu Glu Glu Arg Thr Arg Ala Ala Leu Leu Glu Thr Leu Tyr Glu Glu
385 390 395 400

Leu His Ile His Ser Gln Ser Met Met Gly Leu Gly Gly Asp Glu Asp
405 410 415

Lys Met Glu Asn Gly Ser Gly Gly Gly Gly Phe Phe Glu Ser Phe Lys
420 425 430

Arg Val Ile Arg Ser Arg Ser Gln Ser Met Asp Ala Met Gly Leu Ser
435 440 445

Asn Lys Lys Pro Asn Thr Val Ser Thr Ser His Ser Gly Ser Phe Ala
450 455 460

Pro Asn Asn Pro Asp Leu Ala Lys Ala Ala Gly Ile Ser Leu Ile Val
465 470 475 480

Pro Gly Lys Ser Pro Thr Arg Lys Lys Ser Gly Pro Phe Gly Ser Arg
485 490 495

Arg Ser Ser Ala Ile Gly Ile Glu Asn Ile Gln Glu Val Gln Glu Lys
500 505 510

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

515

520

525

Ser Gln Glu Pro Lys Ser Glu Asn Ser Ser Thr Gln Ser Ser Pro Glu
 530 535 540

Met Pro Thr Thr Lys Asn Arg Ala Glu Thr Ala Ala Gln Arg Ala Glu
 545 550 555 560

Ala Leu Lys Asp Phe Ser Arg Ser Ser Ser Ser Ala Ser Ser Phe Ala
 565 570 575

Ser Val Val Glu Glu Thr Glu Gly Val Asp Gly Glu Asp Thr Gly Leu
 580 585 590

Glu Ser Val Ser Ser Ser Gly Thr Pro His Lys Arg Asp Ser Phe Ile
 595 600 605

Tyr Ser Thr Trp Leu Glu Asp Ser Val Ser Thr Thr Ser Gly Gly Ser
 610 615 620

Ser Pro Gly Pro Ser Arg Ser Pro His Pro Asp Ala Gly Lys Leu Gly
 625 630 635 640

Asp Pro Ala Cys Pro Glu Ile Lys Ile Gln Leu Glu Ala Ser Glu Gln
 645 650 655

His Met Pro Gln Leu Gly Cys
 660

<210> 48
 <211> 198
 <212> PRT
 <213> Homo sapiens

<400> 48

Met His Ser Glu Ala Glu Glu Ser Lys Glu Val Ala Thr Asp Val Phe
 1 5 10 15

Asn Ser Lys Asn Leu Ala Val Gln Ala Gln Lys Lys Ile Leu Gly Lys
20 25 30

Met Val Ser Lys Ser Ile Ala Thr Thr Leu Ile Asp Asp Thr Ser Ser
35 40 45

Glu Val Leu Asp Glu Leu Tyr Arg Val Thr Arg Glu Tyr Thr Gln Asn
50 55 60

Lys Lys Glu Ala Glu Lys Ile Ile Lys Asn Leu Ile Lys Thr Val Ile
65 70 75 80

Lys Leu Ala Ile Leu Tyr Arg Asn Asn Gln Phe Asn Gln Asp Glu Leu
85 90 95

Ala Leu Met Glu Lys Phe Lys Lys Lys Val His Gln Leu Ala Met Thr
100 105 110

Val Val Ser Phe His Gln Val Asp Tyr Thr Phe Asp Arg Asn Val Leu
115 120 125

Ser Arg Leu Leu Asn Glu Cys Arg Glu Met Leu His Gln Ile Ile Gln
130 135 140

Arg His Leu Thr Ala Lys Ser His Gly Arg Val Asn Asn Val Phe Asp
145 150 155 160

His Phe Ser Asp Cys Glu Phe Leu Ala Ala Leu Tyr Asn Pro Phe Gly
165 170 175

Asn Phe Lys Pro His Leu Gln Lys Leu Cys Asp Gly Ile Asn Lys Met
180 185 190

Leu Asp Glu Glu Asn Ile
195

<210> 49
<211> 1544

<212> PRT

<213> Homo sapiens

<400> 49

Met Ser Gly Thr Gln Ser Thr Ile Thr Asp Arg Phe Pro Leu Lys Lys
1 5 10 15

Pro Ile Arg His Gly Ser Ile Leu Asn Arg Glu Ser Pro Thr Asp Lys
20 25 30

Lys Gln Lys Val Glu Arg Ile Ala Ser His Asp Phe Asp Pro Thr Asp
35 40 45

Ser Ser Ser Lys Lys Thr Lys Ser Ser Ser Glu Glu Ser Arg Ser Glu
50 55 60

Ile Tyr Gly Leu Val Gln Arg Cys Val Ile Ile Gln Lys Asp Asp Asn
65 70 75 80

Gly Phe Gly Leu Thr Val Ser Gly Asp Asn Pro Val Phe Val Gln Ser
85 90 95

Val Lys Glu Asp Gly Ala Ala Met Arg Ala Gly Val Gln Thr Gly Asp
100 105 110

Arg Ile Ile Lys Val Asn Gly Thr Leu Val Thr His Ser Asn His Leu
115 120 125

Glu Val Val Lys Leu Ile Lys Ser Gly Ser Tyr Val Ala Leu Thr Val
130 135 140

Gln Gly Arg Pro Pro Gly Ser Pro Gln Ile Pro Leu Ala Asp Ser Glu
145 150 155 160

Val Glu Pro Ser Val Ile Gly His Met Ser Pro Ile Met Thr Ser Pro
165 170 175

His Ser Pro Gly Ala Ser Gly Asn Met Glu Arg Ile Thr Ser Pro Val

180

185

190

Leu Met Gly Glu Glu Asn Asn Val Val His Asn Gln Lys Val Glu Ile
 195 200 205

Leu Arg Lys Met Leu Gln Lys Glu Gln Glu Arg Leu Gln Leu Leu Gln
 210 215 220

Glu Asp Tyr Asn Arg Thr Pro Ala Gln Arg Leu Leu Lys Glu Ile Gln
 225 230 235 240

Glu Ala Lys Lys His Ile Pro Gln Leu Gln Glu Gln Leu Ser Lys Ala
 245 250 255

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

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

Leu Gly Arg Thr Asp Cys Ser Ser Gly Asp Ala Ser Arg Pro Ser Ser
 290 295 300

Asp Asn Ala Asp Ser Pro Lys Ser Gly Pro Lys Glu Arg Ile Tyr Leu
 305 310 315 320

Glu Glu Asn Pro Glu Lys Ser Glu Thr Ile Gln Asp Thr Asp Thr Gln
 325 330 335

Ser Leu Val Gly Ser Pro Ser Thr Arg Ile Ala Pro His Ile Ile Gly
 340 345 350

Ala Glu Asp Asp Asp Phe Gly Thr Glu His Glu Gln Ile Asn Gly Gln
 355 360 365

Cys Ser Cys Phe Gln Ser Ile Glu Leu Leu Lys Ser Arg Pro Ala His
 370 375 380

Leu Ala Val Phe Leu His His Val Val Ser Gln Phe Asp Pro Ala Thr
385 390 395 400

Leu Leu Cys Tyr Leu Tyr Ser Asp Leu Tyr Lys His Thr Asn Ser Lys
405 410 415

Glu Thr Arg Arg Ile Phe Leu Glu Phe His Gln Phe Phe Leu Asp Arg
420 425 430

Ser Ala His Leu Lys Val Ser Val Pro Asp Glu Met Ser Ala Asp Leu
435 440 445

Glu Lys Arg Arg Pro Glu Leu Ile Pro Glu Asp Leu His Arg His Tyr
450 455 460

Ile Gln Thr Met Gln Glu Arg Val His Pro Glu Val Gln Arg His Leu
465 470 475 480

Glu Asp Phe Arg Gln Lys Arg Ser Met Gly Leu Thr Leu Ala Glu Ser
485 490 495

Glu Leu Thr Lys Leu Asp Ala Glu Arg Asp Lys Asp Arg Leu Thr Leu
500 505 510

Glu Lys Glu Arg Thr Cys Ala Glu Gln Ile Val Ala Lys Ile Glu Glu
515 520 525

Val Leu Met Thr Ala Gln Ala Val Glu Glu Asp Lys Ser Ser Thr Met
530 535 540

Gln Tyr Val Ile Leu Met Tyr Met Lys His Leu Gly Val Lys Val Lys
545 550 555 560

Glu Pro Arg Asn Leu Glu His Lys Arg Gly Arg Ile Gly Phe Leu Pro
565 570 575

Lys Ile Lys Gln Ser Met Lys Lys Asp Lys Glu Gly Glu Glu Lys Gly

580

585

590

Lys Arg Arg Gly Phe Pro Ser Ile Leu Gly Pro Pro Arg Arg Pro Ser
 595 600 605

Arg His Asp Asn Ser Ala Ile Gly Arg Ala Met Glu Leu Gln Lys Ala
 610 615 620

Arg His Pro Lys His Leu Ser Thr Pro Ser Ser Val Ser Pro Glu Pro
 625 630 635 640

Gln Asp Ser Ala Lys Leu Arg Gln Ser Gly Leu Ala Asn Glu Gly Thr
 645 650 655

Asp Ala Gly Tyr Leu Pro Ala Asn Ser Met Ser Ser Val Ala Ser Gly
 660 665 670

Ala Ser Phe Ser Gln Glu Gly Gly Lys Glu Asn Asp Thr Gly Ser Lys
 675 680 685

Gln Val Gly Glu Thr Ser Ala Pro Gly Asp Thr Leu Asp Gly Thr Pro
 690 695 700

Arg Thr Leu Asn Thr Val Phe Asp Phe Pro Pro Pro Pro Leu Asp Gln
 705 710 715 720

Val Gln Glu Glu Glu Cys Glu Val Glu Arg Val Thr Glu His Gly Thr
 725 730 735

Pro Lys Pro Phe Arg Lys Phe Asp Ser Val Ala Phe Gly Glu Ser Gln
 740 745 750

Ser Glu Asp Glu Gln Phe Glu Asn Asp Leu Glu Thr Asp Pro Pro Asn
 755 760 765

Trp Gln Gln Leu Val Ser Arg Glu Val Leu Leu Gly Leu Lys Pro Cys
 770 775 780

Glu Ile Lys Arg Gln Glu Val Ile Asn Glu Leu Phe Tyr Thr Glu Arg
785 790 795 800

Ala His Val Arg Thr Leu Lys Val Leu Asp Gln Val Phe Tyr Gln Arg
805 810 815

Val Ser Arg Glu Gly Ile Leu Ser Pro Ser Glu Leu Arg Lys Ile Phe
820 825 830

Ser Asn Leu Glu Asp Ile Leu Gln Leu His Ile Gly Leu Asn Glu Gln
835 840 845

Met Lys Ala Val Arg Lys Arg Asn Glu Thr Ser Val Ile Asp Gln Ile
850 855 860

Gly Glu Asp Leu Leu Thr Trp Phe Ser Gly Pro Gly Glu Glu Lys Leu
865 870 875 880

Lys His Ala Ala Ala Thr Phe Cys Ser Asn Gln Pro Phe Ala Leu Glu
885 890 895

Met Ile Lys Ser Arg Gln Lys Lys Asp Ser Arg Phe Gln Thr Phe Val
900 905 910

Gln Asp Ala Glu Ser Asn Pro Leu Cys Arg Arg Leu Gln Leu Lys Asp
915 920 925

Ile Ile Pro Thr Gln Met Gln Arg Leu Thr Lys Tyr Pro Leu Leu Leu
930 935 940

Asp Asn Ile Ala Lys Tyr Thr Glu Trp Pro Thr Glu Arg Glu Lys Val
945 950 955 960

Lys Lys Ala Ala Asp His Cys Arg Gln Ile Leu Asn Tyr Val Asn Gln
965 970 975

Ala Val Lys Glu Ala Glu Asn Lys Gln Arg Leu Glu Asp Tyr Gln Arg

980

985

990

Arg Leu Asp Thr Ser Ser Leu Lys Leu Ser Glu Tyr Pro Asn Val Glu
 995 1000 1005

Glu Leu Arg Asn Leu Asp Leu Thr Lys Arg Lys Met Ile His Glu
 1010 1015 1020

Gly Pro Leu Val Trp Lys Val Asn Arg Asp Lys Thr Ile Asp Leu
 1025 1030 1035

Tyr Thr Leu Leu Leu Glu Asp Ile Leu Val Leu Leu Gln Lys Gln
 1040 1045 1050

Asp Asp Arg Leu Val Leu Arg Cys His Ser Lys Ile Leu Ala Ser
 1055 1060 1065

Thr Ala Asp Ser Lys His Thr Phe Ser Pro Val Ile Lys Leu Ser
 1070 1075 1080

Thr Val Leu Val Arg Gln Val Ala Thr Asp Asn Lys Ala Leu Phe
 1085 1090 1095

Val Ile Ser Met Ser Asp Asn Gly Ala Gln Ile Tyr Glu Leu Val
 1100 1105 1110

Ala Gln Thr Val Ser Glu Lys Thr Val Trp Gln Asp Leu Ile Cys
 1115 1120 1125

Arg Met Ala Ala Ser Val Lys Glu Gln Ser Thr Lys Pro Ile Pro
 1130 1135 1140

Leu Pro Gln Ser Thr Pro Gly Glu Gly Asp Asn Asp Glu Glu Asp
 1145 1150 1155

Pro Ser Lys Leu Lys Glu Glu Gln His Gly Ile Ser Val Thr Gly
 1160 1165 1170

Leu Gln Ser Pro Asp Arg Asp Leu Gly Leu Glu Ser Thr Leu Ile
1175 1180 1185

Ser Ser Lys Pro Gln Ser His Ser Leu Ser Thr Ser Gly Lys Ser
1190 1200

Glu Val Arg Asp Leu Phe Val Ala Glu Arg Gln Phe Ala Lys Glu
1205 1210 1215

Gln His Thr Asp Gly Thr Leu Lys Glu Val Gly Glu Asp Tyr Gln
1220 1225 1230

Ile Ala Ile Pro Asp Ser His Leu Pro Val Ser Glu Glu Arg Trp
1235 1240 1245

Ala Leu Asp Ala Leu Arg Asn Leu Gly Leu Leu Lys Gln Leu Leu
1250 1255 1260

Val Gln Gln Leu Gly Leu Thr Glu Lys Ser Val Gln Glu Asp Trp
1265 1270 1275

Gln His Phe Pro Arg Tyr Arg Thr Ala Ser Gln Gly Pro Gln Thr
1280 1285 1290

Asp Ser Val Ile Gln Asn Ser Glu Asn Ile Lys Ala Tyr His Ser
1295 1300 1305

Gly Glu Gly His Met Pro Phe Arg Thr Gly Thr Gly Asp Ile Ala
1310 1315 1320

Thr Cys Tyr Ser Pro Arg Thr Ser Thr Glu Ser Phe Ala Pro Arg
1325 1330 1335

Asp Ser Val Gly Leu Ala Pro Gln Asp Ser Gln Ala Ser Asn Ile
1340 1345 1350

Leu Val Met Asp His Met Ile Met Thr Pro Glu Met Pro Thr Met

1355

1360

1365

Glu Pro Glu Gly Gly Leu Asp Asp Ser Gly Glu His Phe Phe Asp
 1370 1375 1380

Ala Arg Glu Ala His Ser Asp Glu Asn Pro Ser Glu Gly Asp Gly
 1385 1390 1395

Ala Val Asn Lys Glu Glu Lys Asp Val Asn Leu Arg Ile Ser Gly
 1400 1405 1410

Asn Tyr Leu Ile Leu Asp Gly Tyr Asp Pro Val Gln Glu Ser Ser
 1415 1420 1425

Thr Asp Glu Glu Val Ala Ser Ser Leu Thr Leu Gln Pro Met Thr
 1430 1435 1440

Gly Ile Pro Ala Val Glu Ser Thr His Gln Gln Gln His Ser Pro
 1445 1450 1455

Gln Asn Thr His Ser Asp Gly Ala Ile Ser Pro Phe Thr Pro Glu
 1460 1465 1470

Phe Leu Val Gln Gln Arg Trp Gly Ala Met Glu Tyr Ser Cys Phe
 1475 1480 1485

Glu Ile Gln Ser Pro Ser Ser Cys Ala Asp Ser Gln Ser Gln Ile
 1490 1495 1500

Met Glu Tyr Ile His Lys Ile Glu Ala Asp Leu Glu His Leu Lys
 1505 1510 1515

Lys Val Glu Glu Ser Tyr Thr Ile Leu Cys Gln Arg Leu Ala Gly
 1520 1525 1530

Ser Ala Leu Thr Asp Lys His Ser Asp Lys Ser
 1535 1540

<210> 50
<211> 862
<212> PRT
<213> Homo sapiens

<400> 50

Met Asn Ile Gln Glu Gln Gly Phe Pro Leu Asp Leu Gly Ala Ser Phe
1 5 10 15

Thr Glu Asp Ala Pro Arg Pro Pro Val Pro Gly Glu Glu Gly Glu Leu
20 25 30

Val Ser Thr Asp Pro Arg Pro Ala Ser Tyr Ser Phe Cys Ser Gly Lys
35 40 45

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

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

Pro Tyr Leu Lys Trp Ala Glu Ser Leu His Ser Leu Leu Asp Asp Gln
85 90 95

Asp Gly Ile Ser Leu Phe Arg Thr Phe Leu Lys Gln Glu Gly Cys Ala
100 105 110

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

Pro Cys Asp Ser Asn Glu Glu Lys Arg Leu Lys Leu Ala Arg Ala Ile
130 135 140

Tyr Arg Lys Tyr Ile Leu Asp Asn Asn Gly Ile Val Ser Arg Gln Thr
145 150 155 160

Lys Pro Ala Thr Lys Ser Phe Ile Lys Gly Cys Ile Met Lys Gln Leu
165 170 175

Ile Asp Pro Ala Met Phe Asp Gln Ala Gln Thr Glu Ile Gln Ala Thr
180 185 190

Met Glu Glu Asn Thr Tyr Pro Ser Phe Leu Lys Ser Asp Ile Tyr Leu
195 200 205

Glu Tyr Thr Arg Thr Gly Ser Glu Ser Pro Lys Val Cys Ser Asp Gln
210 215 220

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

Leu Asn Glu Asp Glu Glu Trp Lys Cys Asp Gln Asp Met Asp Glu Asp
245 250 255

Asp Gly Arg Asp Ala Ala Pro Pro Gly Arg Leu Pro Gln Lys Leu Leu
260 265 270

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

Gly Arg Glu Phe Arg Tyr Gly Ser Trp Arg Glu Pro Val Asn Pro Tyr
290 295 300

Tyr Val Asn Ala Gly Tyr Ala Leu Ala Pro Ala Thr Ser Ala Asn Asp
305 310 315 320

Ser Glu Gln Gln Ser Leu Ser Ser Asp Ala Asp Thr Leu Ser Leu Thr
325 330 335

Asp Ser Ser Val Asp Gly Ile Pro Pro Tyr Arg Ile Arg Lys Gln His
340 345 350

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

Pro His Ile Pro Arg Thr Tyr Arg Val Pro Lys Glu Val Arg Val Glu
370 375 380

Pro Gln Lys Phe Ala Glu Glu Leu Ile His Arg Leu Glu Ala Val Gln
385 390 395 400

Arg Thr Arg Glu Ala Glu Glu Lys Leu Glu Glu Arg Leu Lys Arg Val
405 410 415

Arg Met Glu Glu Glu Gly Glu Asp Gly Asp Pro Ser Ser Gly Pro Pro
420 425 430

Gly Pro Cys His Lys Leu Pro Pro Ala Pro Ala Trp His His Phe Pro
435 440 445

Pro Arg Cys Val Asp Met Gly Cys Ala Gly Leu Arg Asp Ala His Glu
450 455 460

Glu Asn Pro Glu Ser Ile Leu Asp Glu His Val Gln Arg Val Leu Arg
465 470 475 480

Thr Pro Gly Arg Gln Ser Pro Gly Pro Gly His Arg Ser Pro Asp Ser
485 490 495

Gly His Val Ala Lys Met Pro Val Ala Leu Gly Gly Ala Ala Ser Gly
500 505 510

His Gly Lys His Val Pro Lys Ser Gly Ala Lys Leu Asp Ala Ala Gly
515 520 525

Leu His His His Arg His Val His His His Val His His Ser Thr Ala
530 535 540

Arg Pro Lys Glu Gln Val Glu Ala Glu Ala Thr Arg Arg Ala Gln Ser
545 550 555 560

Ser Phe Ala Trp Gly Leu Glu Pro His Ser His Gly Ala Arg Ser Arg
565 570 575

Gly Tyr Ser Glu Ser Val Gly Ala Ala Pro Asn Ala Ser Asp Gly Leu
580 585 590

Ala His Ser Gly Lys Val Gly Val Ala Cys Lys Arg Asn Ala Lys Lys
595 600 605

Ala Glu Ser Gly Lys Ser Ala Ser Thr Glu Val Pro Gly Ala Ser Glu
610 615 620

Asp Ala Glu Lys Asn Gln Lys Ile Met Gln Trp Ile Ile Glu Gly Glu
625 630 635 640

Lys Glu Ile Ser Arg His Arg Arg Thr Gly His Gly Ser Ser Gly Thr
645 650 655

Arg Lys Pro Gln Pro His Glu Asn Ser Arg Pro Leu Ser Leu Glu His
660 665 670

Pro Trp Ala Gly Pro Gln Leu Arg Thr Ser Val Gln Pro Ser His Leu
675 680 685

Phe Ile Gln Asp Pro Thr Met Pro Pro His Pro Ala Pro Asn Pro Leu
690 695 700

Thr Gln Leu Glu Glu Ala Arg Arg Arg Leu Glu Glu Glu Lys Arg
705 710 715 720

Ala Ser Arg Ala Pro Ser Lys Gln Arg Tyr Val Gln Glu Val Met Arg
725 730 735

Arg Gly Arg Ala Cys Val Arg Pro Ala Cys Ala Pro Val Leu His Val
740 745 750

Val Pro Ala Val Ser Asp Met Glu Leu Ser Glu Thr Glu Thr Arg Ser
755 760 765

Gln Arg Lys Val Gly Gly Gly Ser Ala Gln Pro Cys Asp Ser Ile Val
770 775 780

Val Ala Tyr Tyr Phe Cys Gly Glu Pro Ile Pro Tyr Arg Thr Leu Val
785 790 795 800

Arg Gly Arg Ala Val Thr Leu Gly Gln Phe Lys Glu Leu Leu Thr Lys
805 810 815

Lys Gly Ser Tyr Arg Tyr Tyr Phe Lys Lys Val Ser Asp Glu Phe Asp
820 825 830

Cys Gly Val Val Phe Glu Glu Val Arg Glu Asp Glu Ala Val Leu Pro
835 840 845

Val Phe Glu Glu Lys Ile Ile Gly Lys Val Glu Lys Val Asp
850 855 860

<210> 51
<211> 295
<212> PRT
<213> Homo sapiens

<400> 51

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

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

Gly Gly Ser Ser Lys Ile Glu Glu Ala Cys Glu Ile Tyr Ala Arg Ala
35 40 45

Ala Asn Met Phe Lys Met Ala Lys Asn Trp Ser Ala Ala Gly Asn Ala
50 55 60

Phe Cys Gln Ala Ala Gln Leu His Leu Gln Leu Gln Ser Lys His Asp
65 70 75 80

Ala Ala Thr Cys Phe Val Asp Ala Gly Asn Ala Phe Lys Lys Ala Asp
85 90 95

Pro Gln Glu Ala Ile Asn Cys Leu Met Arg Ala Ile Glu Ile Tyr Thr
100 105 110

Asp Met Gly Arg Phe Thr Ile Ala Ala Lys His His Ile Ser Ile Ala
115 120 125

Glu Ile Tyr Glu Thr Glu Leu Val Asp Ile Glu Lys Ala Ile Ala His
130 135 140

Tyr Glu Gln Ser Ala Asp Tyr Tyr Lys Gly Glu Glu Ser Asn Ser Ser
145 150 155 160

Ala Asn Lys Cys Leu Leu Lys Val Ala Gly Tyr Ala Ala Leu Leu Glu
165 170 175

Gln Tyr Gln Lys Ala Ile Asp Ile Tyr Glu Gln Val Gly Thr Asn Ala
180 185 190

Met Asp Ser Pro Leu Leu Lys Tyr Ser Ala Lys Asp Tyr Phe Phe Lys
195 200 205

Ala Ala Leu Cys His Phe Cys Ile Asp Met Leu Asn Ala Lys Leu Ala
210 215 220

Val Gln Lys Tyr Glu Glu Leu Phe Pro Ala Phe Ser Asp Ser Arg Glu
225 230 235 240

Cys Lys Leu Met Lys Lys Leu Leu Glu Ala His Glu Glu Gln Asn Val
245 250 255

Asp Ser Tyr Thr Glu Ser Val Lys Glu Tyr Asp Ser Ile Ser Arg Leu
260 265 270

Asp Gln Trp Leu Thr Thr Met Leu Leu Arg Ile Lys Lys Thr Ile Gln

275

280

285

Gly Asp Glu Glu Asp Leu Arg
 290 295

<210> 52
 <211> 4303
 <212> PRT
 <213> Homo sapiens

<400> 52

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

Leu Trp Leu Gly Ala Leu Ala Gly Gly Pro Gly Arg Gly Cys Gly Pro
 20 25 30

Cys Glu Pro Pro Cys Leu Cys Gly Pro Ala Pro Gly Ala Ala Cys Arg
 35 40 45

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

Ile Pro Ala Asp Ala Thr Ala Leu Asp Val Ser His Asn Leu Leu Arg
 65 70 75 80

Ala Leu Asp Val Gly Leu Leu Ala Asn Leu Ser Ala Leu Ala Glu Leu
 85 90 95

Asp Ile Ser Asn Asn Lys Ile Ser Thr Leu Glu Glu Gly Ile Phe Ala
 100 105 110

Asn Leu Phe Asn Leu Ser Glu Ile Asn Leu Ser Gly Asn Pro Phe Glu
 115 120 125

Cys Asp Cys Gly Leu Ala Trp Leu Pro Arg Trp Ala Glu Glu Gln Gln
 130 135 140

Val Arg Val Val Gln Pro Glu Ala Ala Thr Cys Ala Gly Pro Gly Ser
145 150 155 160

Leu Ala Gly Gln Pro Leu Leu Gly Ile Pro Leu Leu Asp Ser Gly Cys
165 170 175

Gly Glu Glu Tyr Val Ala Cys Leu Pro Asp Asn Ser Ser Gly Thr Val
180 185 190

Ala Ala Val Ser Phe Ser Ala Ala His Glu Gly Leu Leu Gln Pro Glu
195 200 205

Ala Cys Ser Ala Phe Cys Phe Ser Thr Gly Gln Gly Leu Ala Ala Leu
210 215 220

Ser Glu Gln Gly Trp Cys Leu Cys Gly Ala Ala Gln Pro Ser Ser Ala
225 230 235 240

Ser Phe Ala Cys Leu Ser Leu Cys Ser Gly Pro Pro Pro Pro Pro Ala
245 250 255

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

Pro Gly Ala Thr Leu Val Gly Pro His Gly Pro Leu Ala Ser Gly Gln
275 280 285

Leu Ala Ala Phe His Ile Ala Ala Pro Leu Pro Val Thr Ala Thr Arg
290 295 300

Trp Asp Phe Gly Asp Gly Ser Ala Glu Val Asp Ala Ala Gly Pro Ala
305 310 315 320

Ala Ser His Arg Tyr Val Leu Pro Gly Arg Tyr His Val Thr Ala Val
325 330 335

Leu Ala Leu Gly Ala Gly Ser Ala Leu Leu Gly Thr Asp Val Gln Val
340 345 350

Glu Ala Ala Pro Ala Ala Leu Glu Leu Val Cys Pro Ser Ser Val Gln
355 360 365

Ser Asp Glu Ser Leu Asp Leu Ser Ile Gln Asn Arg Gly Gly Ser Gly
370 375 380

Leu Glu Ala Ala Tyr Ser Ile Val Ala Leu Gly Glu Glu Pro Ala Arg
385 390 395 400

Ala Val His Pro Leu Cys Pro Ser Asp Thr Glu Ile Phe Pro Gly Asn
405 410 415

Gly His Cys Tyr Arg Leu Val Val Glu Lys Ala Ala Trp Leu Gln Ala
420 425 430

Gln Glu Gln Cys Gln Ala Trp Ala Gly Ala Ala Leu Ala Met Val Asp
435 440 445

Ser Pro Ala Val Gln Arg Phe Leu Val Ser Arg Val Thr Arg Ser Leu
450 455 460

Asp Val Trp Ile Gly Phe Ser Thr Val Gln Gly Val Glu Val Gly Pro
465 470 475 480

Ala Pro Gln Gly Glu Ala Phe Ser Leu Glu Ser Cys Gln Asn Trp Leu
485 490 495

Pro Gly Glu Pro His Pro Ala Thr Ala Glu His Cys Val Arg Leu Gly
500 505 510

Pro Thr Gly Trp Cys Asn Thr Asp Leu Cys Ser Ala Pro His Ser Tyr
515 520 525

Val Cys Glu Leu Gln Pro Gly Gly Pro Val Gln Asp Ala Glu Asn Leu
530 535 540

Leu Val Gly Ala Pro Ser Gly Asp Leu Gln Gly Pro Leu Thr Pro Leu
545 550 555 560

Ala Gln Gln Asp Gly Leu Ser Ala Pro His Glu Pro Val Glu Val Met
565 570 575

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

Glu Phe Gly Thr Gln Glu Leu Arg Arg Pro Ala Gln Leu Arg Leu Gln
595 600 605

Val Tyr Arg Leu Leu Ser Thr Ala Gly Thr Pro Glu Asn Gly Ser Glu
610 615 620

Pro Glu Ser Arg Ser Pro Asp Asn Arg Thr Gln Leu Ala Pro Ala Cys
625 630 635 640

Met Pro Gly Gly Arg Trp Cys Pro Gly Ala Asn Ile Cys Leu Pro Leu
645 650 655

Asp Ala Ser Cys His Pro Gln Ala Cys Ala Asn Gly Cys Thr Ser Gly
660 665 670

Pro Gly Leu Pro Gly Ala Pro Tyr Ala Leu Trp Arg Glu Phe Leu Phe
675 680 685

Ser Val Pro Ala Gly Pro Pro Ala Gln Tyr Ser Val Thr Leu His Gly
690 695 700

Gln Asp Val Leu Met Leu Pro Gly Asp Leu Val Gly Leu Gln His Asp
705 710 715 720

Ala Gly Pro Gly Ala Leu Leu His Cys Ser Pro Ala Pro Gly His Pro
725 730 735

Gly Pro Arg Ala Pro Tyr Leu Ser Ala Asn Ala Ser Ser Trp Leu Pro
740 745 750

His Leu Pro Ala Gln Leu Glu Gly Thr Trp Ala Cys Pro Ala Cys Ala
755 760 765

Leu Arg Leu Leu Ala Ala Thr Glu Gln Leu Thr Val Leu Leu Gly Leu
770 775 780

Arg Pro Asn Pro Gly Leu Arg Leu Pro Gly Arg Tyr Glu Val Arg Ala
785 790 795 800

Glu Val Gly Asn Gly Val Ser Arg His Asn Leu Ser Cys Ser Phe Asp
805 810 815

Val Val Ser Pro Val Ala Gly Leu Arg Val Ile Tyr Pro Ala Pro Arg
820 825 830

Asp Gly Arg Leu Tyr Val Pro Thr Asn Gly Ser Ala Leu Val Leu Gln
835 840 845

Val Asp Ser Gly Ala Asn Ala Thr Ala Thr Ala Arg Trp Pro Gly Gly
850 855 860

Ser Val Ser Ala Arg Phe Glu Asn Val Cys Pro Ala Leu Val Ala Thr
865 870 875 880

Phe Val Pro Gly Cys Pro Trp Glu Thr Asn Asp Thr Leu Phe Ser Val
885 890 895

Val Ala Leu Pro Trp Leu Ser Glu Gly Glu His Val Val Asp Val Val
900 905 910

Val Glu Asn Ser Ala Ser Arg Ala Asn Leu Ser Leu Arg Val Thr Ala
915 920 925

Glu Glu Pro Ile Cys Gly Leu Arg Ala Thr Pro Ser Pro Glu Ala Arg
930 935 940

Val Leu Gln Gly Val Leu Val Arg Tyr Ser Pro Val Val Glu Ala Gly
945 950 955 960

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

Phe Gln Asn Val Val Phe Asn Val Ile Tyr Gln Ser Ala Ala Val Phe
980 985 990

Lys Leu Ser Leu Thr Ala Ser Asn His Val Ser Asn Val Thr Val Asn
995 1000 1005

Tyr Asn Val Thr Val Glu Arg Met Asn Arg Met Gln Gly Leu Gln
1010 1015 1020

Val Ser Thr Val Pro Ala Val Leu Ser Pro Asn Ala Thr Leu Ala
1025 1030 1035

Leu Thr Ala Gly Val Leu Val Asp Ser Ala Val Glu Val Ala Phe
1040 1045 1050

Leu Trp Thr Phe Gly Asp Gly Glu Gln Ala Leu His Gln Phe Gln
1055 1060 1065

Pro Pro Tyr Asn Glu Ser Phe Pro Val Pro Asp Pro Ser Val Ala
1070 1075 1080

Gln Val Leu Val Glu His Asn Val Met His Thr Tyr Ala Ala Pro
1085 1090 1095

Gly Glu Tyr Leu Leu Thr Val Leu Ala Ser Asn Ala Phe Glu Asn
1100 1105 1110

Leu Thr Gln Gln Val Pro Val Ser Val Arg Ala Ser Leu Pro Ser
1115 1120 1125

Val Ala Val Gly Val Ser Asp Gly Val Leu Val Ala Gly Arg Pro
1130 1135 1140

Val Thr Phe Tyr Pro His Pro Leu Pro Ser Pro Gly Gly Val Leu
1145 1150 1155

Tyr Thr Trp Asp Phe Gly Asp Gly Ser Pro Val Leu Thr Gln Ser
1160 1165 1170

Gln Pro Ala Ala Asn His Thr Tyr Ala Ser Arg Gly Thr Tyr His
1175 1180 1185

Val Arg Leu Glu Val Asn Asn Thr Val Ser Gly Ala Ala Ala Gln
1190 1195 1200

Ala Asp Val Arg Val Phe Glu Glu Leu Arg Gly Leu Ser Val Asp
1205 1210 1215

Met Ser Leu Ala Val Glu Gln Gly Ala Pro Val Val Val Ser Ala
1220 1225 1230

Ala Val Gln Thr Gly Asp Asn Ile Thr Trp Thr Phe Asp Met Gly
1235 1240 1245

Asp Gly Thr Val Leu Ser Gly Pro Glu Ala Thr Val Glu His Val
1250 1255 1260

Tyr Leu Arg Ala Gln Asn Cys Thr Val Thr Val Gly Ala Ala Ser
1265 1270 1275

Pro Ala Gly His Leu Ala Arg Ser Leu His Val Leu Val Phe Val
1280 1285 1290

Leu Glu Val Leu Arg Val Glu Pro Ala Ala Cys Ile Pro Thr Gln
1295 1300 1305

Pro Asp Ala Arg Leu Thr Ala Tyr Val Thr Gly Asn Pro Ala His
1310 1315 1320

Tyr Leu Phe Asp Trp Thr Phe Gly Asp Gly Ser Ser Asn Thr Thr
1325 1330 1335

Val Arg Gly Cys Pro Thr Val Thr His Asn Phe Thr Arg Ser Gly
1340 1345 1350

Thr Phe Pro Leu Ala Leu Val Leu Ser Ser Arg Val Asn Arg Ala
1355 1360 1365

His Tyr Phe Thr Ser Ile Cys Val Glu Pro Glu Val Gly Asn Val
1370 1375 1380

Thr Leu Gln Pro Glu Arg Gln Phe Val Gln Leu Gly Asp Glu Ala
1385 1390 1395

Trp Leu Val Ala Cys Ala Trp Pro Pro Phe Pro Tyr Arg Tyr Thr
1400 1405 1410

Trp Asp Phe Gly Thr Glu Glu Ala Ala Pro Thr Arg Ala Arg Gly
1415 1420 1425

Pro Glu Val Thr Phe Ile Tyr Arg Asp Pro Gly Ser Tyr Leu Val
1430 1435 1440

Thr Val Thr Ala Ser Asn Asn Ile Ser Ala Ala Asn Asp Ser Ala
1445 1450 1455

Leu Val Glu Val Gln Glu Pro Val Leu Val Thr Ser Ile Lys Val
1460 1465 1470

Asn Gly Ser Leu Gly Leu Glu Leu Gln Gln Pro Tyr Leu Phe Ser
1475 1480 1485

Ala Val Gly Arg Gly Arg Pro Ala Ser Tyr Leu Trp Asp Leu Gly
1490 1495 1500

Asp Gly Gly Trp Leu Glu Gly Pro Glu Val Thr His Ala Tyr Asn
1505 1510 1515

Ser Thr Gly Asp Phe Thr Val Arg Val Ala Gly Trp Asn Glu Val
1520 1525 1530

Ser Arg Ser Glu Ala Trp Leu Asn Val Thr Val Lys Arg Arg Val
1535 1540 1545

Arg Gly Leu Val Val Asn Ala Ser Arg Thr Val Val Pro Leu Asn
1550 1555 1560

Gly Ser Val Ser Phe Ser Thr Ser Leu Glu Ala Gly Ser Asp Val
1565 1570 1575

Arg Tyr Ser Trp Val Leu Cys Asp Arg Cys Thr Pro Ile Pro Gly
1580 1585 1590

Gly Pro Thr Ile Ser Tyr Thr Phe Arg Ser Val Gly Thr Phe Asn
1595 1600 1605

Ile Ile Val Thr Ala Glu Asn Glu Val Gly Ser Ala Gln Asp Ser
1610 1615 1620

Ile Phe Val Tyr Val Leu Gln Leu Ile Glu Gly Leu Gln Val Val
1625 1630 1635

Gly Gly Gly Arg Tyr Phe Pro Thr Asn His Thr Val Gln Leu Gln
1640 1645 1650

Ala Val Val Arg Asp Gly Thr Asn Val Ser Tyr Ser Trp Thr Ala
1655 1660 1665

Trp Arg Asp Arg Gly Pro Ala Leu Ala Gly Ser Gly Lys Gly Phe
1670 1675 1680

Ser Leu Thr Val Leu Glu Ala Gly Thr Tyr His Val Gln Leu Arg
1685 1690 1695

Ala Thr Asn Met Leu Gly Ser Ala Trp Ala Asp Cys Thr Met Asp
1700 1705 1710

Phe Val Glu Pro Val Gly Trp Leu Met Val Ala Ala Ser Pro Asn
1715 1720 1725

Pro Ala Ala Val Asn Thr Ser Val Thr Leu Ser Ala Glu Leu Ala
1730 1735 1740

Gly Gly Ser Gly Val Val Tyr Thr Trp Ser Leu Glu Glu Gly Leu
1745 1750 1755

Ser Trp Glu Thr Ser Glu Pro Phe Thr Thr His Ser Phe Pro Thr
1760 1765 1770

Pro Gly Leu His Leu Val Thr Met Thr Ala Gly Asn Pro Leu Gly
1775 1780 1785

Ser Ala Asn Ala Thr Val Glu Val Asp Val Gln Val Pro Val Ser
1790 1795 1800

Gly Leu Ser Ile Arg Ala Ser Glu Pro Gly Gly Ser Phe Val Ala
1805 1810 1815

Ala Gly Ser Ser Val Pro Phe Trp Gly Gln Leu Ala Thr Gly Thr
1820 1825 1830

Asn Val Ser Trp Cys Trp Ala Val Pro Gly Gly Ser Ser Lys Arg
1835 1840 1845

Gly Pro His Val Thr Met Val Phe Pro Asp Ala Gly Thr Phe Ser
1850 1855 1860

Ile Arg Leu Asn Ala Ser Asn Ala Val Ser Trp Val Ser Ala Thr
1865 1870 1875

Tyr Asn Leu Thr Ala Glu Glu Pro Ile Val Gly Leu Val Leu Trp
1880 1885 1890

Ala Ser Ser Lys Val Val Ala Pro Gly Gln Leu Val His Phe Gln
1895 1900 1905

Ile Leu Leu Ala Ala Gly Ser Ala Val Thr Phe Arg Leu Gln Val
1910 1915 1920

Gly Gly Ala Asn Pro Glu Val Leu Pro Gly Pro Arg Phe Ser His
1925 1930 1935

Ser Phe Pro Arg Val Gly Asp His Val Val Ser Val Arg Gly Lys
1940 1945 1950

Asn His Val Ser Trp Ala Gln Ala Gln Val Arg Ile Val Val Leu
1955 1960 1965

Glu Ala Val Ser Gly Leu Gln Val Pro Asn Cys Cys Glu Pro Gly
1970 1975 1980

Ile Ala Thr Gly Thr Glu Arg Asn Phe Thr Ala Arg Val Gln Arg
1985 1990 1995

Gly Ser Arg Val Ala Tyr Ala Trp Tyr Phe Ser Leu Gln Lys Val
2000 2005 2010

Gln Gly Asp Ser Leu Val Ile Leu Ser Gly Arg Asp Val Thr Tyr
2015 2020 2025

Thr Pro Val Ala Ala Gly Leu Leu Glu Ile Gln Val Arg Ala Phe
2030 2035 2040

Asn Ala Leu Gly Ser Glu Asn Arg Thr Leu Val Leu Glu Val Gln
2045 2050 2055

Asp Ala Val Gln Tyr Val Ala Leu Gln Ser Gly Pro Cys Phe Thr
2060 2065 2070

Asn Arg Ser Ala Gln Phe Glu Ala Ala Thr Ser Pro Ser Pro Arg
2075 2080 2085

Arg Val Ala Tyr His Trp Asp Phe Gly Asp Gly Ser Pro Gly Gln
2090 2095 2100

Asp Thr Asp Glu Pro Arg Ala Glu His Ser Tyr Leu Arg Pro Gly
2105 2110 2115

Asp Tyr Arg Val Gln Val Asn Ala Ser Asn Leu Val Ser Phe Phe
2120 2125 2130

Val Ala Gln Ala Thr Val Thr Val Gln Val Leu Ala Cys Arg Glu
2135 2140 2145

Pro Glu Val Asp Val Val Leu Pro Leu Gln Val Leu Met Arg Arg
2150 2155 2160

Ser Gln Arg Asn Tyr Leu Glu Ala His Val Asp Leu Arg Asp Cys
2165 2170 2175

Val Thr Tyr Gln Thr Glu Tyr Arg Trp Glu Val Tyr Arg Thr Ala
2180 2185 2190

Ser Cys Gln Arg Pro Gly Arg Pro Ala Arg Val Ala Leu Pro Gly
2195 2200 2205

Val Asp Val Ser Arg Pro Arg Leu Val Leu Pro Arg Leu Ala Leu
2210 2215 2220

Pro Val Gly His Tyr Cys Phe Val Phe Val Val Ser Phe Gly Asp
2225 2230 2235

Thr Pro Leu Thr Gln Ser Ile Gln Ala Asn Val Thr Val Ala Pro
2240 2245 2250

Glu Arg Leu Val Pro Ile Ile Glu Gly Gly Ser Tyr Arg Val Trp
2255 2260 2265

Ser Asp Thr Arg Asp Leu Val Leu Asp Gly Ser Glu Ser Tyr Asp
2270 2275 2280

Pro Asn Leu Glu Asp Gly Asp Gln Thr Pro Leu Ser Phe His Trp
2285 2290 2295

Ala Cys Val Ala Ser Thr Gln Arg Glu Ala Gly Gly Cys Ala Leu
2300 2305 2310

Asn Phe Gly Pro Arg Gly Ser Ser Thr Val Thr Ile Pro Arg Glu
2315 2320 2325

Arg Leu Ala Ala Gly Val Glu Tyr Thr Phe Ser Leu Thr Val Trp
2330 2335 2340

Lys Ala Gly Arg Lys Glu Glu Ala Thr Asn Gln Thr Val Leu Ile
2345 2350 2355

Arg Ser Gly Arg Val Pro Ile Val Ser Leu Glu Cys Val Ser Cys
2360 2365 2370

Lys Ala Gln Ala Val Tyr Glu Val Ser Arg Ser Ser Tyr Val Tyr
2375 2380 2385

Leu Glu Gly Arg Cys Leu Asn Cys Ser Ser Gly Ser Lys Arg Gly
2390 2395 2400

Arg Trp Ala Ala Arg Thr Phe Ser Asn Lys Thr Leu Val Leu Asp
2405 2410 2415

Glu Thr Thr Thr Ser Thr Gly Ser Ala Gly Met Arg Leu Val Leu
2420 2425 2430

Arg Arg Gly Val Leu Arg Asp Gly Glu Gly Tyr Thr Phe Thr Leu
2435 2440 2445

Thr Val Leu Gly Arg Ser Gly Glu Glu Glu Gly Cys Ala Ser Ile
2450 2455 2460

Arg Leu Ser Pro Asn Arg Pro Pro Leu Gly Gly Ser Cys Arg Leu
2465 2470 2475

Phe Pro Leu Gly Ala Val His Ala Leu Thr Thr Lys Val His Phe
2480 2485 2490

Glu Cys Thr Gly Trp His Asp Ala Glu Asp Ala Gly Ala Pro Leu
2495 2500 2505

Val Tyr Ala Leu Leu Leu Arg Arg Cys Arg Gln Gly His Cys Glu
2510 2515 2520

Glu Phe Cys Val Tyr Lys Gly Ser Leu Ser Ser Tyr Gly Ala Val
2525 2530 2535

Leu Pro Pro Gly Phe Arg Pro His Phe Glu Val Gly Leu Ala Val
2540 2545 2550

Val Val Gln Asp Gln Leu Gly Ala Ala Val Val Ala Leu Asn Arg
2555 2560 2565

Ser Leu Ala Ile Thr Leu Pro Glu Pro Asn Gly Ser Ala Thr Gly
2570 2575 2580

Leu Thr Val Trp Leu His Gly Leu Thr Ala Ser Val Leu Pro Gly
2585 2590 2595

Leu Leu Arg Gln Ala Asp Pro Gln His Val Ile Glu Tyr Ser Leu
2600 2605 2610

Ala Leu Val Thr Val Leu Asn Glu Tyr Glu Arg Ala Leu Asp Val
2615 2620 2625

Ala Ala Glu Pro Lys His Glu Arg Gln His Arg Ala Gln Ile Arg
2630 2635 2640

Lys Asn Ile Thr Glu Thr Leu Val Ser Leu Arg Val His Thr Val
2645 2650 2655

Asp Asp Ile Gln Gln Ile Ala Ala Ala Leu Ala Gln Cys Met Gly
2660 2665 2670

Pro Ser Arg Glu Leu Val Cys Arg Ser Cys Leu Lys Gln Thr Leu
2675 2680 2685

His Lys Leu Glu Ala Met Met Leu Ile Leu Gln Ala Glu Thr Thr
2690 2695 2700

Ala Gly Thr Val Thr Pro Thr Ala Ile Gly Asp Ser Ile Leu Asn
2705 2710 2715

Ile Thr Gly Asp Leu Ile His Leu Ala Ser Ser Asp Val Arg Ala
2720 2725 2730

Pro Gln Pro Ser Glu Leu Gly Ala Glu Ser Pro Ser Arg Met Val
2735 2740 2745

Ala Ser Gln Ala Tyr Asn Leu Thr Ser Ala Leu Met Arg Ile Leu
2750 2755 2760

Met Arg Ser Arg Val Leu Asn Glu Glu Pro Leu Thr Leu Ala Gly
2765 2770 2775

Glu Glu Ile Val Ala Gln Gly Lys Arg Ser Asp Pro Arg Ser Leu
2780 2785 2790

Leu Cys Tyr Gly Gly Ala Pro Gly Pro Gly Cys His Phe Ser Ile
2795 2800 2805

Pro Glu Ala Phe Ser Gly Ala Leu Ala Asn Leu Ser Asp Val Val
2810 2815 2820

Gln Leu Ile Phe Leu Val Asp Ser Asn Pro Phe Pro Phe Gly Tyr
2825 2830 2835

Ile Ser Asn Tyr Thr Val Ser Thr Lys Val Ala Ser Met Ala Phe
2840 2845 2850

Gln Thr Gln Ala Gly Ala Gln Ile Pro Ile Glu Arg Leu Ala Ser
2855 2860 2865

Glu Arg Ala Ile Thr Val Lys Val Pro Asn Asn Ser Asp Trp Ala
2870 2875 2880

Ala Arg Gly His Arg Ser Ser Ala Asn Ser Ala Asn Ser Val Val
2885 2890 2895

Val Gln Pro Gln Ala Ser Val Gly Ala Val Val Thr Leu Asp Ser
2900 2905 2910

Ser Asn Pro Ala Ala Gly Leu His Leu Gln Leu Asn Tyr Thr Leu
2915 2920 2925

Leu Asp Gly His Tyr Leu Ser Glu Glu Pro Glu Pro Tyr Leu Ala
2930 2935 2940

Val Tyr Leu His Ser Glu Pro Arg Pro Asn Glu His Asn Cys Ser
2945 2950 2955

Ala Ser Arg Arg Ile Arg Pro Glu Ser Leu Gln Gly Ala Asp His
2960 2965 2970

Arg Pro Tyr Thr Phe Phe Ile Ser Pro Gly Ser Arg Asp Pro Ala
2975 2980 2985

Gly Ser Tyr His Leu Asn Leu Ser Ser His Phe Arg Trp Ser Ala
2990 2995 3000

Leu Gln Val Ser Val Gly Leu Tyr Thr Ser Leu Cys Gln Tyr Phe
3005 3010 3015

Ser Glu Glu Asp Met Val Trp Arg Thr Glu Gly Leu Leu Pro Leu
3020 3025 3030

Glu Glu Thr Ser Pro Arg Gln Ala Val Cys Leu Thr Arg His Leu
3035 3040 3045

Thr Ala Phe Gly Ala Ser Leu Phe Val Pro Pro Ser His Val Arg
3050 3055 3060

Phe Val Phe Pro Glu Pro Thr Ala Asp Val Asn Tyr Ile Val Met
3065 3070 3075

Leu Thr Cys Ala Val Cys Leu Val Thr Tyr Met Val Met Ala Ala
3080 3085 3090

Ile Leu His Lys Leu Asp Gln Leu Asp Ala Ser Arg Gly Arg Ala
3095 3100 3105

Ile Pro Phe Cys Gly Gln Arg Gly Arg Phe Lys Tyr Glu Ile Leu
3110 3115 3120

Val Lys Thr Gly Trp Gly Arg Gly Ser Gly Thr Thr Ala His Val
3125 3130 3135

Gly Ile Met Leu Tyr Gly Val Asp Ser Arg Ser Gly His Arg His
3140 3145 3150

Leu Asp Gly Asp Arg Ala Phe His Arg Asn Ser Leu Asp Ile Phe
3155 3160 3165

Arg Ile Ala Thr Pro His Ser Leu Gly Ser Val Trp Lys Ile Arg
3170 3175 3180

Val Trp His Asp Asn Lys Gly Leu Ser Pro Ala Trp Phe Leu Gln
3185 3190 3195

His Val Ile Val Arg Asp Leu Gln Thr Ala Arg Ser Ala Phe Phe
3200 3205 3210

Leu Val Asn Asp Trp Leu Ser Val Glu Thr Glu Ala Asn Gly Gly
3215 3220 3225

Leu Val Glu Lys Glu Val Leu Ala Ala Ser Asp Ala Ala Leu Leu
3230 3235 3240

Arg Phe Arg Arg Leu Leu Val Ala Glu Leu Gln Arg Gly Phe Phe
3245 3250 3255

Asp Lys His Ile Trp Leu Ser Ile Trp Asp Arg Pro Pro Arg Ser
3260 3265 3270

Arg Phe Thr Arg Ile Gln Arg Ala Thr Cys Cys Val Leu Leu Ile
3275 3280 3285

Cys Leu Phe Leu Gly Ala Asn Ala Val Trp Tyr Gly Ala Val Gly
3290 3295 3300

Asp Ser Ala Tyr Ser Thr Gly His Val Ser Arg Leu Ser Pro Leu
3305 3310 3315

Ser Val Asp Thr Val Ala Val Gly Leu Val Ser Ser Val Val Val
3320 3325 3330

Tyr Pro Val Tyr Leu Ala Ile Leu Phe Leu Phe Arg Met Ser Arg
3335 3340 3345

Ser Lys Val Ala Gly Ser Pro Ser Pro Thr Pro Ala Gly Gln Gln
3350 3355 3360

Val Leu Asp Ile Asp Ser Cys Leu Asp Ser Ser Val Leu Asp Ser
3365 3370 3375

Ser Phe Leu Thr Phe Ser Gly Leu His Ala Glu Gln Ala Phe Val
3380 3385 3390

Gly Gln Met Lys Ser Asp Leu Phe Leu Asp Asp Ser Lys Ser Leu
3395 3400 3405

Val Cys Trp Pro Ser Gly Glu Gly Thr Leu Ser Trp Pro Asp Leu
3410 3415 3420

Leu Ser Asp Pro Ser Ile Val Gly Ser Asn Leu Arg Gln Leu Ala
3425 3430 3435

Arg Gly Gln Ala Gly His Gly Leu Gly Pro Glu Glu Asp Gly Phe
3440 3445 3450

Ser Leu Ala Ser Pro Tyr Ser Pro Ala Lys Ser Phe Ser Ala Ser
3455 3460 3465

Asp Glu Asp Leu Ile Gln Gln Val Leu Ala Glu Gly Val Ser Ser
3470 3475 3480

Pro Ala Pro Thr Gln Asp Thr His Met Glu Thr Asp Leu Leu Ser
3485 3490 3495

Ser Leu Ser Ser Thr Pro Gly Glu Lys Thr Glu Thr Leu Ala Leu
3500 3505 3510

Gln Arg Leu Gly Glu Leu Gly Pro Pro Ser Pro Gly Leu Asn Trp
3515 3520 3525

Glu Gln Pro Gln Ala Ala Arg Leu Ser Arg Thr Gly Leu Val Glu
3530 3535 3540

Gly Leu Arg Lys Arg Leu Leu Pro Ala Trp Cys Ala Ser Leu Ala
3545 3550 3555

His Gly Leu Ser Leu Leu Leu Val Ala Val Ala Val Ala Val Ser
3560 3565 3570

Gly Trp Val Gly Ala Ser Phe Pro Pro Gly Val Ser Val Ala Trp
3575 3580 3585

Leu Leu Ser Ser Ser Ala Ser Phe Leu Ala Ser Phe Leu Gly Trp
3590 3595 3600

Glu Pro Leu Lys Val Leu Leu Glu Ala Leu Tyr Phe Ser Leu Val
3605 3610 3615

Ala Lys Arg Leu His Pro Asp Glu Asp Asp Thr Leu Val Glu Ser
3620 3625 3630

Pro Ala Val Thr Pro Val Ser Ala Arg Val Pro Arg Val Arg Pro
3635 3640 3645

Pro His Gly Phe Ala Leu Phe Leu Ala Lys Glu Glu Ala Arg Lys
3650 3655 3660

Val Lys Arg Leu His Gly Met Leu Arg Ser Leu Leu Val Tyr Met
3665 3670 3675

Leu Phe Leu Leu Val Thr Leu Leu Ala Ser Tyr Gly Asp Ala Ser
3680 3685 3690

Cys His Gly His Ala Tyr Arg Leu Gln Ser Ala Ile Lys Gln Glu
3695 3700 3705

Leu His Ser Arg Ala Phe Leu Ala Ile Thr Arg Ser Glu Glu Leu
3710 3715 3720

Trp Pro Trp Met Ala His Val Leu Leu Pro Tyr Val His Gly Asn
3725 3730 3735

Gln Ser Ser Pro Glu Leu Gly Pro Pro Arg Leu Arg Gln Val Arg
3740 3745 3750

Leu Gln Glu Ala Leu Tyr Pro Asp Pro Pro Gly Pro Arg Val His
3755 3760 3765

Thr Cys Ser Ala Ala Gly Gly Phe Ser Thr Ser Asp Tyr Asp Val
3770 3775 3780

Gly Trp Glu Ser Pro His Asn Gly Ser Gly Thr Trp Ala Tyr Ser
3785 3790 3795

Ala Pro Asp Leu Leu Gly Ala Trp Ser Trp Gly Ser Cys Ala Val
3800 3805 3810

Tyr Asp Ser Gly Gly Tyr Val Gln Glu Leu Gly Leu Ser Leu Glu
3815 3820 3825

Glu Ser Arg Asp Arg Leu Arg Phe Leu Gln Leu His Asn Trp Leu
3830 3835 3840

Asp Asn Arg Ser Arg Ala Val Phe Leu Glu Leu Thr Arg Tyr Ser
3845 3850 3855

Pro Ala Val Gly Leu His Ala Ala Val Thr Leu Arg Leu Glu Phe
3860 3865 3870

Pro Ala Ala Gly Arg Ala Leu Ala Ala Leu Ser Val Arg Pro Phe
3875 3880 3885

Ala Leu Arg Arg Leu Ser Ala Gly Leu Ser Leu Pro Leu Leu Thr
3890 3895 3900

Ser Val Cys Leu Leu Leu Phe Ala Val His Phe Ala Val Ala Glu
3905 3910 3915

Ala Arg Thr Trp His Arg Glu Gly Arg Trp Arg Val Leu Arg Leu
3920 3925 3930

Gly Ala Trp Ala Arg Trp Leu Leu Val Ala Leu Thr Ala Ala Thr
3935 3940 3945

Ala Leu Val Arg Leu Ala Gln Leu Gly Ala Ala Asp Arg Gln Trp
3950 3955 3960

Thr Arg Phe Val Arg Gly Arg Pro Arg Arg Phe Thr Ser Phe Asp
3965 3970 3975

Gln Val Ala Gln Leu Ser Ser Ala Ala Arg Gly Leu Ala Ala Ser
3980 3985 3990

Leu Leu Phe Leu Leu Leu Val Lys Ala Ala Gln Gln Leu Arg Phe
3995 4000 4005

Val Arg Gln Trp Ser Val Phe Gly Lys Thr Leu Cys Arg Ala Leu
4010 4015 4020

Pro Glu Leu Leu Gly Val Thr Leu Gly Leu Val Val Leu Gly Val
4025 4030 4035

Ala Tyr Ala Gln Leu Ala Ile Leu Leu Val Ser Ser Cys Val Asp
4040 4045 4050

Ser Leu Trp Ser Val Ala Gln Ala Leu Leu Val Leu Cys Pro Gly
4055 4060 4065

Thr Gly Leu Ser Thr Leu Cys Pro Ala Glu Ser Trp His Leu Ser
4070 4075 4080

Pro Leu Leu Cys Val Gly Leu Trp Ala Leu Arg Leu Trp Gly Ala
4085 4090 4095

Leu Arg Leu Gly Ala Val Ile Leu Arg Trp Arg Tyr His Ala Leu
4100 4105 4110

Arg Gly Glu Leu Tyr Arg Pro Ala Trp Glu Pro Gln Asp Tyr Glu
4115 4120 4125

Met Val Glu Leu Phe Leu Arg Arg Leu Arg Leu Trp Met Gly Leu
4130 4135 4140

Ser Lys Val Lys Glu Phe Arg His Lys Val Arg Phe Glu Gly Met
4145 4150 4155

Glu Pro Leu Pro Ser Arg Ser Ser Arg Gly Ser Lys Val Ser Pro
4160 4165 4170

Asp Val Pro Pro Pro Ser Ala Gly Ser Asp Ala Ser His Pro Ser
4175 4180 4185

Thr Ser Ser Ser Gln Leu Asp Gly Leu Ser Val Ser Leu Gly Arg
4190 4195 4200

Leu Gly Thr Arg Cys Glu Pro Glu Pro Ser Arg Leu Gln Ala Val
4205 4210 4215

Phe Glu Ala Leu Leu Thr Gln Phe Asp Arg Leu Asn Gln Ala Thr
4220 4225 4230

Glu Asp Val Tyr Gln Leu Glu Gln Gln Leu His Ser Leu Gln Gly
4235 4240 4245

Arg Arg Ser Ser Arg Ala Pro Ala Gly Ser Ser Arg Gly Pro Ser
4250 4255 4260

Pro Gly Leu Arg Pro Ala Leu Pro Ser Arg Leu Ala Arg Ala Ser
4265 4270 4275

Arg Gly Val Asp Leu Ala Thr Gly Pro Ser Arg Thr Pro Leu Arg
4280 4285 4290

Ala Lys Asn Lys Val His Pro Ser Ser Thr
4295 4300

<210> 53
<211> 202
<212> PRT
<213> Homo sapiens

<400> 53

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

Lys Glu Phe Lys Thr Arg Leu Gly Ile Phe Leu His Lys Ser Glu Leu
20 25 30

Gly Cys Asp Thr Gly Ser Thr Gly Lys Phe Glu Trp Gly Ser Lys His
35 40 45

Ser Lys Glu Asn Arg Asn Phe Ser Glu Asp Val Leu Gly Trp Arg Glu
50 55 60

Ser Phe Asp Leu Leu Leu Ser Ser Lys Asn Gly Val Ala Ala Phe His
65 70 75 80

Ala Phe Leu Lys Thr Glu Phe Ser Glu Glu Asn Leu Glu Phe Trp Leu
85 90 95

Ala Cys Glu Glu Phe Lys Lys Ile Arg Ser Ala Thr Lys Leu Ala Ser
100 105 110

Arg Ala His Gln Ile Phe Glu Glu Phe Ile Cys Ser Glu Ala Pro Lys
115 120 125

Glu Val Asn Ile Asp His Glu Thr His Glu Leu Thr Arg Met Asn Leu
130 135 140

Gln Thr Ala Thr Ala Thr Cys Phe Asp Ala Ala Gln Gly Lys Thr Arg
145 150 155 160

Thr Leu Met Glu Lys Asp Ser Tyr Pro Arg Phe Leu Lys Ser Pro Ala
165 170 175

Tyr Arg Asp Leu Ala Ala Gln Ala Ser Ala Ala Ser Ala Thr Leu Ser
180 185 190

Ser Cys Ser Leu Asp Glu Pro Ser His Thr
195 200

<210> 54
<211> 853
<212> PRT
<213> Homo sapiens

<400> 54

Met Ser Glu Lys Val Asp Trp Leu Gln Ser Gln Asn Gly Val Cys Lys
1 5 10 15

Val Asp Val Tyr Ser Pro Gly Asp Asn Gln Ala Gln Asp Trp Lys Met
20 25 30

Asp Thr Ser Thr Asp Pro Val Arg Val Leu Ser Trp Leu Arg Arg Asp
35 40 45

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

Glu Ser Phe Gly Gly Glu Thr Ser Asn Ser Gly Asp Pro His Lys Gly
65 70 75 80

Phe Ser Val Asp Tyr Tyr Asn Thr Thr Thr Lys Gly Thr Pro Glu Arg
85 90 95

Leu His Phe Glu Met Thr His Lys Glu Ile Pro Cys Gln Gly Pro Arg
100 105 110

Ala Gln Leu Gly Asn Gly Ser Ser Val Asp Glu Val Ser Phe Tyr Ala
115 120 125

Asn Arg Leu Thr Asn Leu Val Ile Ala Met Ala Arg Lys Glu Ile Asn
130 135 140

Glu Lys Ile Asp Gly Ser Glu Asn Lys Cys Val Tyr Gln Ser Leu Tyr
145 150 155 160

Met Gly Asn Glu Pro Thr Pro Thr Lys Ser Leu Ser Lys Ile Ala Ser
165 170 175

Glu Leu Val Asn Glu Thr Val Ser Ala Cys Ser Arg Asn Ala Ala Pro
180 185 190

Asp Lys Ala Pro Gly Ser Gly Asp Arg Val Ser Gly Ser Ser Gln Ser
195 200 205

Pro Pro Asn Leu Lys Tyr Lys Ser Thr Leu Lys Ile Lys Glu Ser Thr
210 215 220

Lys Glu Arg Gln Gly Pro Asp Asp Lys Pro Pro Ser Lys Lys Ser Phe
225 230 235 240

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

Gly Gly Arg Phe Phe Pro Arg Glu Arg Lys Arg Phe Arg Gly Gln Glu
260 265 270

Arg Pro Asp Asp Phe Thr Ala Ser Val Ser Glu Gly Ile Met Thr Tyr
275 280 285

Ala Asn Ser Val Val Ser Asp Met Met Val Ser Ile Met Lys Thr Leu
290 295 300

Lys Ile Gln Val Lys Asp Thr Thr Ile Ala Thr Ile Leu Leu Lys Lys
305 310 315 320

Val Leu Leu Lys His Ala Lys Glu Val Val Ser Asp Leu Ile Asp Ser
325 330 335

Phe Leu Arg Asn Leu His Ser Val Thr Gly Thr Leu Met Thr Asp Thr
340 345 350

Gln Phe Val Ser Ala Val Lys Arg Thr Val Phe Ser His Gly Ser Gln
355 360 365

Lys Ala Thr Asp Ile Met Asp Ala Met Leu Arg Lys Leu Tyr Asn Val
370 375 380

Met Phe Ala Lys Lys Val Pro Glu His Val Arg Lys Ala Gln Asp Lys
385 390 395 400

Ala Glu Ser Tyr Ser Leu Ile Ser Met Lys Gly Met Gly Asp Pro Lys
405 410 415

Asn Arg Asn Val Asn Phe Ala Met Lys Ser Glu Thr Lys Leu Arg Glu
420 425 430

Lys Met Tyr Ser Glu Pro Lys Ser Glu Glu Glu Thr Cys Ala Lys Thr
435 440 445

Leu Gly Glu His Ile Ile Lys Glu Gly Leu Thr Leu Trp His Lys Thr
450 455 460

Gln Gln Lys Glu Cys Lys Ser Leu Gly Phe Gln His Ala Ala Phe Glu
465 470 475 480

Ala Pro Asn Thr Gln Arg Lys Pro Ala Ser Asp Ile Ser Phe Glu Tyr
485 490 495

Pro Glu Asp Ile Gly Asn Leu Ser Leu Pro Pro Tyr Pro Pro Glu Lys
500 505 510

Pro Glu Asn Phe Met Tyr Asp Ser Asp Ser Trp Ala Glu Asp Leu Ile
515 520 525

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

Arg Asp Ala Arg Ser Phe Val Glu Ala Ala Gly Thr Thr Asn Phe Pro
545 550 555 560

Ala Asn Glu Pro Pro Val Ala Pro Asp Glu Ser Cys Leu Lys Ser Ala
565 570 575

Pro Ile Val Gly Asp Gln Glu Gln Ala Glu Lys Lys Asp Leu Arg Ser
580 585 590

Val Phe Phe Asn Phe Ile Arg Asn Leu Leu Ser Glu Thr Ile Phe Lys
595 600 605

Arg Asp Gln Ser Pro Glu Pro Lys Val Pro Glu Gln Pro Val Lys Glu
610 615 620

Asp Arg Lys Leu Cys Glu Arg Pro Leu Ala Ser Ser Pro Pro Arg Leu
625 630 635 640

Tyr Glu Asp Asp Glu Thr Pro Gly Ala Leu Ser Gly Leu Thr Lys Met
645 650 655

Ala Val Ser Gln Ile Asp Gly His Met Ser Gly Gln Met Val Glu His
660 665 670

Leu Met Asn Ser Val Met Lys Leu Cys Val Ile Ile Ala Lys Ser Cys
675 680 685

Asp Ala Ser Leu Ala Glu Leu Gly Asp Asp Lys Ser Gly Asp Ala Ser
690 695 700

Arg Leu Thr Ser Ala Phe Pro Asp Ser Leu Tyr Glu Cys Leu Pro Ala
705 710 715 720

Lys Gly Thr Gly Ser Ala Glu Ala Val Leu Gln Asn Ala Tyr Gln Ala
725 730 735

Ile His Asn Glu Met Arg Gly Thr Ser Gly Gln Pro Pro Glu Gly Cys
740 745 750

Ala Ala Pro Thr Val Ile Val Ser Asn His Asn Leu Thr Asp Thr Val
755 760 765

Gln Asn Lys Gln Leu Gln Ala Val Leu Gln Trp Val Ala Ala Ser Glu
770 775 780

Leu Asn Val Pro Ile Leu Tyr Phe Ala Gly Asp Asp Glu Gly Ile Gln
785 790 795 800

Glu Lys Leu Leu Gln Leu Ser Ala Ala Ala Val Asp Lys Gly Cys Ser
805 810 815

Val Gly Glu Val Leu Gln Ser Val Leu Arg Tyr Glu Lys Glu Arg Gln
820 825 830

Leu Asn Glu Ala Val Gly Asn Val Thr Pro Leu Gln Leu Leu Asp Trp
835 840 845

Leu Met Val Asn Leu
850

<210> 55
<211> 279
<212> PRT
<213> Homo sapiens

<400> 55

Met Ser Leu Phe Asp Leu Phe Arg Gly Phe Phe Gly Phe Pro Gly Pro
1 5 10 15

Arg Ser His Arg Asp Pro Phe Phe Gly Gly Met Thr Arg Asp Glu Asp
20 25 30

Asp Asp Glu Glu Glu Glu Glu Gly Gly Ser Trp Gly Arg Gly Asn
35 40 45

Pro Arg Phe His Ser Pro Gln His Pro Pro Glu Glu Phe Gly Phe Gly
50 55 60

Phe Ser Phe Ser Pro Gly Gly Gly Ile Arg Phe His Asp Asn Phe Gly
65 70 75 80

Phe Asp Asp Leu Val Arg Asp Phe Asn Ser Ile Phe Ser Asp Met Gly
85 90 95

Ala Trp Thr Leu Pro Ser His Pro Pro Glu Leu Pro Gly Pro Glu Ser
100 105 110

Glu Thr Pro Gly Glu Arg Leu Arg Glu Gly Gln Thr Leu Arg Asp Ser
115 120 125

Met Leu Lys Tyr Pro Asp Ser His Gln Pro Arg Ile Phe Gly Gly Val
130 135 140

Leu Glu Ser Asp Ala Arg Ser Glu Ser Pro Gln Pro Ala Pro Asp Trp
145 150 155 160

Gly Ser Gln Arg Pro Phe His Arg Phe Asp Asp Val Trp Pro Met Asp
165 170 175

Pro His Pro Arg Thr Arg Glu Asp Asn Asp Leu Asp Ser Gln Val Ser
180 185 190

Gln Glu Gly Leu Gly Pro Val Leu Gln Pro Gln Pro Lys Ser Tyr Phe
195 200 205

Lys Ser Ile Ser Val Thr Lys Ile Thr Lys Pro Asp Gly Ile Val Glu
210 215 220

Glu Arg Arg Thr Val Val Asp Ser Glu Gly Arg Thr Glu Thr Thr Val
225 230 235 240

Thr Arg His Glu Ala Asp Ser Ser Pro Arg Gly Asp Pro Glu Ser Pro
245 250 255

Arg Pro Pro Ala Leu Asp Asp Ala Phe Ser Ile Leu Asp Leu Phe Leu

260

265

270

Gly Arg Trp Phe Arg Ser Arg
275

<210> 56
<211> 968
<212> PRT
<213> Homo sapiens

<400> 56

Met Leu Thr Glu Ala Ser Leu Ser Ile Trp Gly Trp Gly Ser Leu Gly
1 5 10 15

Ile Val Leu Phe Leu Ile Thr Phe Gly Pro Phe Val Ile Phe Tyr Leu
20 25 30

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

Leu Phe Gly Lys Thr Asn Ser Glu Lys Tyr Leu Glu Gln Cys Glu His
50 55 60

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

Met Lys Arg Glu Ala Arg Thr Ile Lys Ile Asp Arg Arg Leu Thr Gly
85 90 95

Ala Asn Ile Ile Asp Glu Pro Leu Gln Gln Val Ile Gln Phe Ser Leu
100 105 110

Arg Asp Tyr Val Gln Tyr Trp Tyr Tyr Thr Leu Ser Asp Asp Glu Ser
115 120 125

Phe Leu Leu Glu Ile Arg Gln Thr Leu Gln Asn Ala Leu Ile Gln Phe
130 135 140

Ala Thr Arg Ser Lys Glu Ile Asp Trp Gln Pro Tyr Phe Thr Thr Arg
145 150 155 160

Ile Val Asp Asp Phe Gly Thr His Leu Arg Val Phe Arg Lys Ala Gln
165 170 175

Gln Lys Ile Thr Glu Lys Asp Asp Gln Val Lys Gly Thr Ala Glu Asp
180 185 190

Leu Val Asp Thr Phe Phe Glu Val Glu Val Glu Met Glu Lys Glu Val
195 200 205

Cys Arg Asp Leu Val Cys Thr Ser Pro Lys Asp Glu Glu Gly Phe Leu
210 215 220

Arg Asp Leu Cys Glu Val Leu Leu Tyr Leu Leu Leu Pro Pro Gly Asp
225 230 235 240

Phe Gln Asn Lys Ile Met Arg Tyr Phe Val Arg Glu Ile Leu Ala Arg
245 250 255

Gly Ile Leu Leu Pro Leu Ile Asn Gln Leu Ser Asp Pro Asp Tyr Ile
260 265 270

Asn Gln Tyr Val Ile Trp Met Ile Arg Asp Ser Asn Cys Asn Tyr Glu
275 280 285

Ala Phe Met Asn Ile Ile Lys Leu Ser Asp Asn Ile Gly Glu Leu Glu
290 295 300

Ala Val Arg Asp Lys Ala Ala Glu Glu Leu Gln Tyr Leu Arg Ser Leu
305 310 315 320

Asp Thr Ala Gly Asp Asp Ile Asn Thr Ile Lys Asn Gln Ile Asn Ser
325 330 335

Leu Leu Phe Val Lys Lys Val Cys Asp Ser Arg Ile Gln Arg Leu Gln
340 345 350

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

Leu Cys Thr Val Pro Leu Asp Ser Ile Leu Val Asp Asn Val Ala Leu
370 375 380

Gln Phe Phe Met Asp Tyr Met Gln Gln Thr Gly Gly Gln Ala His Leu
385 390 395 400

Phe Phe Trp Met Thr Val Glu Gly Tyr Arg Val Thr Ala Gln Gln Gln
405 410 415

Leu Glu Val Leu Leu Ser Arg Gln Arg Asp Gly Lys His Gln Thr Asn
420 425 430

Gln Thr Lys Gly Leu Leu Arg Ala Ala Ala Val Gly Ile Tyr Glu Gln
435 440 445

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

Val Ala Lys Leu Ala Asp Thr Leu Asn His Glu Asp Pro Thr Pro Glu
465 470 475 480

Ile Phe Asp Asp Ile Gln Arg Lys Val Tyr Glu Leu Met Leu Arg Asp
485 490 495

Glu Arg Phe Tyr Pro Ser Phe Arg Gln Asn Ala Leu Tyr Val Arg Met
500 505 510

Leu Ala Glu Leu Asp Met Leu Lys Asp Pro Ser Phe Arg Gly Ser Asp
515 520 525

Asp Gly Asp Gly Glu Ser Phe Asn Gly Ser Pro Thr Gly Ser Ile Asn
530 535 540

Leu Ser Leu Asp Asp Leu Ser Asn Val Ser Ser Asp Asp Ser Val Gln
545 550 555 560

Leu His Ala Tyr Ile Ser Asp Thr Val Tyr Ala Asp Tyr Asp Pro Tyr
565 570 575

Ala Val Ala Gly Val Cys Asn Asp His Gly Lys Thr Tyr Ala Leu Tyr
580 585 590

Ala Ile Thr Val His Arg Arg Asn Leu Asn Ser Glu Glu Met Trp Lys
595 600 605

Thr Tyr Arg Arg Tyr Ser Asp Phe His Asp Phe His Met Arg Ile Thr
610 615 620

Glu Gln Phe Glu Ser Leu Ser Ser Ile Leu Lys Leu Pro Gly Lys Lys
625 630 635 640

Thr Phe Asn Asn Met Asp Arg Asp Phe Leu Glu Lys Arg Lys Lys Asp
645 650 655

Leu Asn Ala Tyr Leu Gln Leu Leu Leu Ala Pro Glu Met Met Lys Ala
660 665 670

Ser Pro Ala Leu Ala His Tyr Val Tyr Asp Phe Leu Glu Asn Lys Ala
675 680 685

Tyr Ser Lys Gly Lys Gly Asp Phe Ala Arg Lys Met Asp Thr Phe Val
690 695 700

Asn Pro Leu Arg Asn Ser Met Arg Asn Val Ser Asn Ala Val Lys Ser
705 710 715 720

Leu Pro Asp Ser Leu Ala Glu Gly Met Thr Lys Met Ser Asp Asn Met
725 730 735

Gly Lys Met Ser Glu Arg Leu Gly Gln Asp Ile Lys Gln Ser Phe Phe
740 745 750

Lys Val Pro Pro Leu Ile Pro Lys Thr Asp Ser Asp Pro Glu His Arg
755 760 765

Arg Val Ser Ala Gln Leu Asp Asp Asn Val Asp Asp Asn Ile Pro Leu
770 775 780

Arg Val Met Leu Leu Leu Met Asp Glu Val Phe Asp Leu Lys Glu Arg
785 790 795 800

Asn Gln Trp Leu Arg Arg Asn Ile Lys Asn Leu Leu Gln Gln Leu Ile
805 810 815

Arg Ala Thr Tyr Gly Asp Thr Ile Asn Arg Lys Ile Val Asp His Val
820 825 830

Asp Trp Met Thr Ser Pro Glu Gln Val Ala Asp Ser Val Lys Arg Phe
835 840 845

Arg Asp Ala Phe Trp Pro Asn Gly Ile Leu Ala Glu Ala Val Pro Cys
850 855 860

Arg Asp Lys Ser Ile Arg Met Arg Thr Arg Val Ala Gly Lys Thr Lys
865 870 875 880

Leu Leu Ala Ile Met Pro Asp Glu Leu Lys His Ile Ile Gly Ala Glu
885 890 895

Thr Thr Arg Lys Gly Ile Leu Arg Val Phe Glu Met Phe Gln His Asn
900 905 910

Gln Leu Asn Arg Arg Met Val Tyr Val Phe Leu Glu Gly Phe Leu Glu
915 920 925

Thr Leu Phe Pro Gln Tyr Lys Phe Arg Glu Leu Phe Asn Lys Leu His
930 935 940

Ser Arg Ser Lys Gln Met Gln Lys Tyr Lys Gln Lys Leu Gln Thr Thr
945 950 955 960

Gln Ala Pro Ser Leu Gln Lys Arg
965

<210> 57
<211> 292
<212> PRT
<213> Homo sapiens

<400> 57

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

Gly Leu Lys Val Thr Asp Thr Gln Glu Ala Glu Cys Ala Gly Pro Pro
20 25 30

Val Pro Asp Pro Lys Asn Gln His Ser Gln Ser Lys Leu Leu Arg Asp
35 40 45

Asp Glu Ala His Leu Gln Glu Asp Gln Gly Glu Glu Glu Cys Phe His
50 55 60

Asp Cys Ser Ala Ser Phe Glu Glu Glu Pro Gly Ala Asp Lys Val Glu
65 70 75 80

Asn Lys Ser Asn Glu Asp Val Asn Ser Ser Glu Leu Asp Glu Glu Tyr
85 90 95

Leu Ile Glu Leu Glu Lys Asn Met Ser Asp Glu Glu Lys Gln Lys Arg
100 105 110

Arg Glu Glu Ser Thr Arg Leu Lys Glu Glu Gly Asn Glu Gln Phe Lys
115 120 125

Lys Gly Asp Tyr Ile Glu Ala Glu Ser Ser Tyr Ser Arg Ala Leu Glu
130 135 140

Met Cys Pro Ser Cys Phe Gln Lys Glu Arg Ser Ile Leu Phe Ser Asn
145 150 155 160

Arg Ala Ala Ala Arg Met Lys Gln Asp Lys Lys Glu Met Ala Ile Asn
165 170 175

Asp Cys Ser Lys Ala Ile Gln Leu Asn Pro Ser Tyr Ile Arg Ala Ile
180 185 190

Leu Arg Arg Ala Glu Leu Tyr Glu Lys Thr Asp Lys Leu Asp Glu Ala
195 200 205

Leu Glu Asp Tyr Lys Ser Ile Leu Glu Lys Asp Pro Ser Ile His Gln
210 215 220

Ala Arg Glu Ala Cys Met Arg Leu Pro Lys Gln Ile Glu Glu Arg Asn
225 230 235 240

Glu Arg Leu Lys Glu Glu Met Leu Gly Lys Leu Lys Asp Leu Gly Asn
245 250 255

Leu Val Leu Arg Pro Phe Gly Leu Ser Thr Glu Asn Phe Gln Ile Lys
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Asn Asn Asn Arg
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