

1914427_1
SEQUENCE LISTING

<110> Wayne State University
Henry Ford Health System

<120> METHODS, SYSTEMS AND COMPOSITIONS RELATING TO CELL CONVERSION VIA
PROTEIN-INDUCED IN-VIVO CELL REPROGRAMMING

<130> WAY-10252/47

<150> 61/895,562

<151> 2013-10-25

<160> 127

<170> PatentIn version 3.5

<210> 1

<211> 317

<212> PRT

<213> Homo sapiens

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Asn Gln Lys Asn Ser Pro Asp Arg Val Lys Arg Pro Met Asn Ala Phe
35 40 45

Met Val Trp Ser Arg Gly Gln Arg Arg Lys Met Ala Gln Glu Asn Pro
50 55 60

Lys Met His Asn Ser Glu Ile Ser Lys Arg Leu Gly Ala Glu Trp Lys
65 70 75 80

Leu Leu Ser Glu Thr Glu Lys Arg Pro Phe Ile Asp Glu Ala Lys Arg
85 90 95

Leu Arg Ala Leu His Met Lys Glu His Pro Asp Tyr Lys Tyr Arg Pro
100 105 110

Arg Arg Lys Thr Lys Thr Leu Met Lys Lys Asp Lys Tyr Thr Leu Pro
115 120 125

Gly Gly Leu Leu Ala Pro Gly Gly Asn Ser Met Ala Ser Gly Val Gly
130 135 140

Val Gly Ala Gly Leu Gly Ala Gly Val Asn Gln Arg Met Asp Ser Tyr
145 150 155 160

Ala His Met Asn Gly Trp Ser Asn Gly Ser Tyr Ser Met Met Gln Asp
165 170 175

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Gln Leu Gly Tyr Pro Gln His Pro Gly Leu Asn Ala His Gly Ala Ala
180 185 190

Gln Met Gln Pro Met His Arg Tyr Asp Val Ser Ala Leu Gln Tyr Asn
195 200 205

Ser Met Thr Ser Ser Gln Thr Tyr Met Asn Gly Ser Pro Thr Tyr Ser
210 215 220

Met Ser Tyr Ser Gln Gln Gly Thr Pro Gly Met Ala Leu Gly Ser Met
225 230 235 240

Gly Ser Val Val Lys Ser Glu Ala Ser Ser Ser Pro Pro Val Val Thr
245 250 255

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

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

Pro Gly Val Gly Pro Gly Ser Glu Val Trp Gly Ile Pro Pro Cys Pro
50 55 60

Pro Pro Tyr Glu Phe Cys Gly Gly Met Ala Tyr Cys Gly Pro Gln Val
65 70 75 80

Gly Val Gly Leu Val Pro Gln Gly Gly Leu Glu Thr Ser Gln Pro Glu
85 90 95

Gly Glu Ala Gly Val Gly Val Glu Ser Asn Ser Asp Gly Ala Ser Pro
Page 2

100

105

110

Glu Pro Cys Thr Val Thr Pro Gly Ala Val Lys Leu Glu Lys Glu Lys
 115 120 125
 Leu Glu Gln Asn Pro Glu Glu Ser Gln Asp Ile Lys Ala Leu Gln Lys
 130 135 140
 Glu Leu Glu Gln Phe Ala Lys Leu Leu Lys Gln Lys Arg Ile Thr Leu
 145 150 155 160
 Gly Tyr Thr Gln Ala Asp Val Gly Leu Thr Leu Gly Val Leu Phe Gly
 165 170 175
 Lys Val Phe Ser Gln Thr Thr Ile Cys Arg Phe Glu Ala Leu Gln Leu
 180 185 190
 Ser Phe Lys Asn Met Cys Lys Leu Arg Pro Leu Leu Gln Lys Trp Val
 195 200 205
 Glu Glu Ala Asp Asn Asn Glu Asn Leu Gln Glu Ile Cys Lys Ala Glu
 210 215 220
 Thr Leu Val Gln Ala Arg Lys Arg Lys Arg Thr Ser Ile Glu Asn Arg
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 Val Arg Gly Asn Leu Glu Asn Leu Phe Leu Gln Cys Pro Lys Pro Thr
 245 250 255
 Leu Gln Gln Ile Ser His Ile Ala Gln Gln Leu Gly Leu Glu Lys Asp
 260 265 270
 Val Val Arg Val Trp Phe Cys Asn Arg Arg Gln Lys Gly Lys Arg Ser
 275 280 285
 Ser Ser Asp Tyr Ala Gln Arg Glu Asp Phe Glu Ala Ala Gly Ser Pro
 290 295 300
 Phe Ser Gly Gly Pro Val Ser Phe Pro Leu Ala Pro Gly Pro His Phe
 305 310 315 320
 Gly Thr Pro Gly Tyr Gly Ser Pro His Phe Thr Ala Leu Tyr Ser Ser
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 Val Pro Phe Pro Glu Gly Glu Ala Phe Pro Pro Val Ser Val Thr Thr
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 Leu Gly Ser Pro Met His Ser Asn
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Glu Asn Tyr Pro Ser Leu Gln Met Ser Ser Ala Glu Met Pro His Thr
35      40      45

Glu Thr Val Ser Pro Leu Pro Ser Ser Met Asp Leu Leu Ile Gln Asp
50      55      60

Ser Pro Asp Ser Ser Thr Ser Pro Lys Gly Lys Gln Pro Thr Ser Ala
65      70      75      80

Glu Lys Ser Val Ala Lys Lys Glu Asp Lys Val Pro Val Lys Lys Gln
85      90      95

Lys Thr Arg Thr Val Phe Ser Ser Thr Gln Leu Cys Val Leu Asn Asp
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Arg Phe Gln Arg Gln Lys Tyr Leu Ser Leu Gln Gln Met Gln Glu Leu
115     120     125

Ser Asn Ile Leu Asn Leu Ser Tyr Lys Gln Val Lys Thr Trp Phe Gln
130     135     140

Asn Gln Arg Met Lys Ser Lys Arg Trp Gln Lys Asn Asn Trp Pro Lys
145     150     155     160

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

Leu Tyr Ser Ser Tyr His Gln Gly Cys Leu Val Asn Pro Thr Gly Asn
180     185     190

Leu Pro Met Trp Ser Asn Gln Thr Trp Asn Asn Ser Thr Trp Ser Asn
195     200     205

Gln Thr Gln Asn Ile Gln Ser Trp Ser Asn His Ser Trp Asn Thr Gln
210     215     220

Thr Trp Cys Thr Gln Ser Trp Asn Asn Gln Ala Trp Asn Ser Pro Phe
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Tyr Asn Cys Gly Glu Glu Ser Leu Gln Ser Cys Met Gln Phe Gln Pro
245     250     255

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Asn Ser Pro Ala Ser Asp Leu Glu Ala Ala Leu Glu Ala Ala Gly Glu
260 265 270

Gly Leu Asn Val Ile Gln Gln Thr Thr Arg Tyr Phe Ser Thr Pro Gln
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Thr Met Asp Leu Phe Leu Asn Tyr Ser Met Asn Met Gln Pro Glu Asp
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Val
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Asp Glu Pro Gln Leu Leu His Gly Ala Gly Ile Cys Lys Trp Phe Asn
35 40 45

Val Arg Met Gly Phe Gly Phe Leu Ser Met Thr Ala Arg Ala Gly Val
50 55 60

Ala Leu Asp Pro Pro Val Asp Val Phe Val His Gln Ser Lys Leu His
65 70 75 80

Met Glu Gly Phe Arg Ser Leu Lys Glu Gly Glu Ala Val Glu Phe Thr
85 90 95

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

Gly Gly Val Phe Cys Ile Gly Ser Glu Arg Arg Pro Lys Gly Lys Ser
115 120 125

Met Gln Lys Arg Arg Ser Lys Gly Asp Arg Cys Tyr Asn Cys Gly Gly
130 135 140

Leu Asp His His Ala Lys Glu Cys Lys Leu Pro Pro Gln Pro Lys Lys
145 150 155 160

Cys His Phe Cys Gln Ser Ile Ser His Met Val Ala Ser Cys Pro Leu
165 170 175

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Lys Ala Gln Gln Gly Pro Ser Ala Gln Gly Lys Pro Thr Tyr Phe Arg
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Glu Glu Glu Glu Glu Ile His Ser Pro Thr Leu Leu Pro Glu Ala Gln
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Asn

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Thr Leu Arg Gln Ala Gly Ala Pro Asn Asn Arg Trp Arg Glu Glu Leu
35 40 45

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

Leu Ala Ala Ala Thr Val Ala Thr Asp Leu Glu Ser Gly Gly Ala Gly
65 70 75 80

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

Glu Glu Phe Asn Asp Leu Leu Asp Leu Asp Phe Ile Leu Ser Asn Ser
100 105 110

Leu Thr His Pro Pro Glu Ser Val Ala Ala Thr Val Ser Ser Ser Ala
115 120 125

Ser Ala Ser Ser Ser Ser Ser Pro Ser Ser Ser Gly Pro Ala Ser Ala
130 135 140

Pro Ser Thr Cys Ser Phe Thr Tyr Pro Ile Arg Ala Gly Asn Asp Pro
145 150 155 160

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

Ser Ala Pro Pro Pro Thr Ala Pro Phe Asn Leu Ala Asp Ile Asn Asp
180 185 190

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Val Ser Pro Ser Gly Gly Phe Val Ala Glu Leu Leu Arg Pro Glu Leu
195 200 205

Asp Pro Val Tyr Ile Pro Pro Gln Gln Pro Gln Pro Pro Gly Gly Gly
210 215 220

Leu Met Gly Lys Phe Val Leu Lys Ala Ser Leu Ser Ala Pro Gly Ser
225 230 235 240

Glu Tyr Gly Ser Pro Ser Val Ile Ser Val Ser Lys Gly Ser Pro Asp
245 250 255

Gly Ser His Pro Val Val Val Ala Pro Tyr Asn Gly Gly Pro Pro Arg
260 265 270

Thr Cys Pro Lys Ile Lys Gln Glu Ala Val Ser Ser Cys Thr His Leu
275 280 285

Gly Ala Gly Pro Pro Leu Ser Asn Gly His Arg Pro Ala Ala His Asp
290 295 300

Phe Pro Leu Gly Arg Gln Leu Pro Ser Arg Thr Thr Pro Thr Leu Gly
305 310 315 320

Leu Glu Glu Val Leu Ser Ser Arg Asp Cys His Pro Ala Leu Pro Leu
325 330 335

Pro Pro Gly Phe His Pro His Pro Gly Pro Asn Tyr Pro Ser Phe Leu
340 345 350

Pro Asp Gln Met Gln Pro Gln Val Pro Pro Leu His Tyr Gln Glu Leu
355 360 365

Met Pro Pro Gly Ser Cys Met Pro Glu Glu Pro Lys Pro Lys Arg Gly
370 375 380

Arg Arg Ser Trp Pro Arg Lys Arg Thr Ala Thr His Thr Cys Asp Tyr
385 390 395 400

Ala Gly Cys Gly Lys Thr Tyr Thr Lys Ser Ser His Leu Lys Ala His
405 410 415

Leu Arg Thr His Thr Gly Glu Lys Pro Tyr His Cys Asp Trp Asp Gly
420 425 430

Cys Gly Trp Lys Phe Ala Arg Ser Asp Glu Leu Thr Arg His Tyr Arg
435 440 445

Lys His Thr Gly His Arg Pro Phe Gln Cys Gln Lys Cys Asp Arg Ala
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Phe Ser Arg Ser Asp His Leu Ala Leu His Met Lys Arg His Phe
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 35 40 45

Gln Gln Gln Gln Ser Glu Leu Gln Pro Pro Ala Pro Ser Glu Asp Ile
 50 55 60

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

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

Leu Arg Gly Asp Asn Asp Gly Gly Gly Ser Phe Ser Thr Ala Asp
 100 105 110

Gln Leu Glu Met Val Thr Glu Leu Leu Gly Gly Asp Met Val Asn Gln
 115 120 125

Ser Phe Ile Cys Asp Pro Asp Asp Glu Thr Phe Ile Lys Asn Ile Ile
 130 135 140

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

Ser Glu Lys Leu Ala Ser Tyr Gln Ala Ala Arg Lys Asp Ser Gly Ser
 165 170 175

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

Leu Gln Asp Leu Ser Ala Ala Ala Ser Glu Cys Ile Asp Pro Ser Val
 195 200 205

Val Phe Pro Tyr Pro Leu Asn Asp Ser Ser Ser Pro Lys Ser Cys Ala
 210 215 220

Ser Gln Asp Ser Ser Ala Phe Ser Pro Ser Ser Asp Ser Leu Leu Ser
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225						230	1914427_1					240				
Ser	Thr	Glu	Ser	Ser 245	Pro	Gln	Gly	Ser	Pro 250	Glu	Pro	Leu	Val	Leu 255	His	
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Asp	Glu	Glu 275	Glu	Ile	Asp	Val	Val 280	Ser	Val	Glu	Lys	Arg 285	Gln	Ala	Pro	
Gly	Lys 290	Arg	Ser	Glu	Ser	Gly 295	Ser	Pro	Ser	Ala	Gly 300	Gly	His	Ser	Lys	
Pro 305	Pro	His	Ser	Pro	Leu 310	Val	Leu	Lys	Arg	Cys 315	His	Val	Ser	Thr	His 320	
Gln	His	Asn	Tyr	Ala 325	Ala	Pro	Pro	Ser	Thr 330	Arg	Lys	Asp	Tyr	Pro 335	Ala	
Ala	Lys	Arg	Val 340	Lys	Leu	Asp	Ser	Val 345	Arg	Val	Leu	Arg	Gln 350	Ile	Ser	
Asn	Asn	Arg 355	Lys	Cys	Thr	Ser	Pro 360	Arg	Ser	Ser	Asp	Thr 365	Glu	Glu	Asn	
Val	Lys 370	Arg	Arg	Thr	His	Asn 375	Val	Leu	Glu	Arg	Gln 380	Arg	Arg	Asn	Glu	
Leu 385	Lys	Arg	Ser	Phe	Phe 390	Ala	Leu	Arg	Asp	Gln 395	Ile	Pro	Glu	Leu	Glu 400	
Asn	Asn	Glu	Lys	Ala 405	Pro	Lys	Val	Val	Ile 410	Leu	Lys	Lys	Ala	Thr 415	Ala	
Tyr	Ile	Leu	Ser 420	Val	Gln	Ala	Glu	Glu 425	Gln	Lys	Leu	Ile	Ser 430	Glu	Glu	
Asp	Leu	Leu 435	Arg	Lys	Arg	Arg	Glu 440	Gln	Leu	Lys	His	Lys 445	Leu	Glu	Gln	
Leu	Arg 450	Asn	Ser	Cys	Ala											

Met Tyr Gln Ser Leu Ala Met Ala Ala Asn His Gly Pro Pro Pro Gly
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1914427_1

Ala Tyr Glu Ala Gly Gly Pro Gly Ala Phe Met His Gly Ala Gly Ala
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Ala Ser Ser Pro Val Tyr Val Pro Thr Pro Arg Val Pro Ser Ser Val
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Leu Gly Leu Ser Tyr Leu Gln Gly Gly Gly Ala Gly Ser Ala Ser Gly
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Gly Ala Ser Gly Gly Ser Ser Gly Gly Ala Ala Ser Gly Ala Gly Pro
65 70 75 80

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

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

Ala Ala Ala Tyr Ser Ser Gly Gly Gly Ala Ala Gly Ala Gly Leu Ala
130 135 140

Gly Arg Glu Gln Tyr Gly Arg Ala Gly Phe Ala Gly Ser Tyr Ser Ser
145 150 155 160

Pro Tyr Pro Ala Tyr Met Ala Asp Val Gly Ala Ser Trp Ala Ala Ala
165 170 175

Ala Ala Ala Ser Ala Gly Pro Phe Asp Ser Pro Val Leu His Ser Leu
180 185 190

Pro Gly Arg Ala Asn Pro Ala Ala Arg His Pro Asn Leu Asp Met Phe
195 200 205

Asp Asp Phe Ser Glu Gly Arg Glu Cys Val Asn Cys Gly Ala Met Ser
210 215 220

Thr Pro Leu Trp Arg Arg Asp Gly Thr Gly His Tyr Leu Cys Asn Ala
225 230 235 240

Cys Gly Leu Tyr His Lys Met Asn Gly Ile Asn Arg Pro Leu Ile Lys
245 250 255

Pro Gln Arg Arg Leu Ser Ala Ser Arg Arg Val Gly Leu Ser Cys Ala
260 265 270

Asn Cys Gln Thr Thr Thr Thr Thr Leu Trp Arg Arg Asn Ala Glu Gly
275 280 285

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Glu Pro Val Cys Asn Ala Cys Gly Leu Tyr Met Lys Leu His Gly Val
290 295 300

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

Ser Glu Ser Leu Pro Pro Ala Ser Gly Ala Ser Ser Asn Ser Ser Asn
340 345 350

Ala Thr Thr Ser Ser Ser Glu Glu Met Arg Pro Ile Lys Thr Glu Pro
355 360 365

Gly Leu Ser Ser His Tyr Gly His Ser Ser Ser Val Ser Gln Thr Phe
370 375 380

Ser Val Ser Ala Met Ser Gly His Gly Pro Ser Ile His Pro Val Leu
385 390 395 400

Ser Ala Leu Lys Leu Ser Pro Gln Gly Tyr Ala Ser Pro Val Ser Gln
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Ser Pro Gln Thr Ser Ser Lys Gln Asp Ser Trp Asn Ser Leu Val Leu
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Ala Asp Ser His Gly Asp Ile Ile Thr Ala
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Gly His Pro Glu Met Ser Pro Pro Asp Tyr Ser Met Ala Leu Ser Tyr
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Ser Pro Glu Tyr Ala Ser Gly Ala Ala Gly Leu Asp His Ser His Tyr
65 70 75 80

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Gly Gly Val Pro Pro Gly Ala Gly Pro Pro Gly Leu Gly Gly Pro Arg
85 90 95

Pro Val Lys Arg Arg Gly Thr Ala Asn Arg Lys Glu Arg Arg Arg Thr
100 105 110

Gln Ser Ile Asn Ser Ala Phe Ala Glu Leu Arg Glu Cys Ile Pro Asn
115 120 125

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

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

Asn Gly Glu Ala Glu Ala Phe Lys Ala Glu Ile Lys Lys Thr Asp Val
165 170 175

Lys Glu Glu Lys Arg Lys Lys Glu Leu Asn Glu Ile Leu Lys Ser Thr
180 185 190

Val Ser Ser Asn Asp Lys Lys Thr Lys Gly Arg Thr Gly Trp Pro Gln
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His Val Trp Ala Leu Glu Leu Lys Gln
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Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Ile Phe
35 40 45

Asn Ser Thr Asn Lys Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp Lys
50 55 60

Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg Thr
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Asn Ser Asp Ile Val Glu Thr Leu Arg Lys Lys Gly Leu Asn Gly Cys
85 90 95

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Asp Ser Pro Asp₁₀₀ Pro Asp Ala Asp Asp₁₀₅ Ser Val Gly His Ser₁₁₀ Pro Glu
 Ser Glu Asp₁₁₅ Lys Tyr Arg Lys Ile₁₂₀ Asn Glu Asp Ile Asp₁₂₅ Leu Met Ile
 Ser Arg Gln Arg Leu Cys Ala₁₃₅ Val Pro Pro Pro Asn₁₄₀ Phe Glu Met Pro
 Val₁₄₅ Ser Ile Pro Val₁₅₀ Ser His Asn Ser Leu₁₅₅ Val Tyr Ser Asn Pro₁₆₀
 Val Ser Ser Leu Gly₁₆₅ Asn Pro Asn Leu Leu₁₇₀ Pro Leu Ala His Pro₁₇₅ Ser
 Leu Gln Arg Asn₁₈₀ Ser Met Ser Pro Gly₁₈₅ Val Thr His Arg Pro₁₉₀ Pro Ser
 Ala Gly Asn₁₉₅ Thr Gly Gly Leu Met₂₀₀ Gly Gly Asp Leu Thr₂₀₅ Ser Gly Ala
 Gly Thr₂₁₀ Ser Ala Gly Asn Gly₂₁₅ Tyr Gly Asn Pro Arg₂₂₀ Asn Ser Pro Gly
 Leu₂₂₅ Leu Val Ser Pro Gly₂₃₀ Asn Leu Asn Lys Asn₂₃₅ Met Gln Ala Lys Ser₂₄₀
 Pro Pro Pro Met Asn₂₄₅ Leu Gly Met Asn Asn₂₅₀ Arg Lys Pro Asp Leu₂₅₅ Arg
 Val Leu Ile Pro₂₆₀ Pro Gly Ser Lys Asn₂₆₅ Thr Met Pro Ser Val₂₇₀ Ser Glu
 Asp Val Asp₂₇₅ Leu Leu Leu Asn Gln₂₈₀ Arg Ile Asn Asn Ser₂₈₅ Gln Ser Ala
 Gln Ser₂₉₀ Leu Ala Thr Pro Val₂₉₅ Val Ser Val Ala Thr₃₀₀ Pro Thr Leu Pro
 Gly₃₀₅ Gln Gly Met Gly Gly₃₁₀ Tyr Pro Ser Ala Ile₃₁₅ Ser Thr Thr Tyr Gly₃₂₀
 Thr Glu Tyr Ser Leu₃₂₅ Ser Ser Ala Asp Leu₃₃₀ Ser Ser Leu Ser Gly₃₃₅ Phe
 Asn Thr Ala Ser₃₄₀ Ala Leu His Leu Gly₃₄₅ Ser Val Thr Gly Trp₃₅₀ Gln Gln
 Gln His Leu₃₅₅ His Asn Met Pro Pro₃₆₀ Ser Ala Leu Ser Gln₃₆₅ Leu Gly Ala

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Cys Thr Ser Thr His Leu Ser Gln Ser Ser Asn Leu Ser Leu Pro Ser
370 375 380

Thr Gln Ser Leu Asn Ile Lys Ser Glu Pro Val Ser Pro Pro Arg Asp
385 390 395 400

Arg Thr Thr Thr Pro Ser Arg Tyr Pro Gln His Thr Arg His Glu Ala
405 410 415

Gly Arg Ser Pro Val Asp Ser Leu Ser Ser Cys Ser Ser Ser Tyr Asp
420 425 430

Gly Ser Asp Arg Glu Asp His Arg Asn Glu Phe His Ser Pro Ile Gly
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Gly Ala Pro Ser Lys Ser Pro Ser Ser Pro Gln Ala Ala Phe Thr Gln
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Gln Gly Met Glu Gly Ile Lys Val Phe Leu His Glu Arg Glu Leu Trp
50 55 60

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

Lys Thr Lys Tyr Ile Leu Leu Met Asp Ile Val Pro Ala Asp Asp His
100 105 110

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

Pro Ala Met Pro Gly Arg Leu Tyr Val His Pro Asp Ser Pro Ala Thr

1914427_1
140

130

135

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

His Lys Tyr Gln Pro Arg Leu His Ile Val Lys Ala Asp Glu Asn Asn
180 185 190

Gly Phe Gly Ser Lys Asn Thr Ala Phe Cys Thr His Val Phe Pro Glu
195 200 205

Thr Ala Phe Ile Ala Val Thr Ser Tyr Gln Asn His Lys Ile Thr Gln
210 215 220

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

Asp Met Glu Leu His Arg Met Ser Arg Met Gln Ser Lys Glu Tyr Pro
245 250 255

Val Val Pro Arg Ser Thr Val Arg Gln Lys Val Ala Ser Asn His Ser
260 265 270

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

Ser Gln Tyr Gln Cys Glu Asn Gly Val Ser Gly Pro Ser Gln Asp Leu
290 295 300

Leu Pro Pro Pro Asn Pro Tyr Pro Leu Pro Gln Glu His Ser Gln Ile
305 310 315 320

Tyr His Cys Thr Lys Arg Lys Gly Glu Cys Asp His Pro Trp Ser Ile
325 330 335

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340 345

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35 40 45

Ala Glu Glu Gly Gly Cys Arg Gly Ala Pro Arg Lys Leu Arg Ala Arg
50 55 60

Arg Gly Gly Arg Ser Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln
65 70 75 80

Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met
85 90 95

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

Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala
115 120 125

His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His
130 135 140

Ser Leu Tyr Ala Leu Glu Pro Pro Ala Pro His Cys Gly Glu Leu Gly
145 150 155 160

Ser Pro Gly Gly Ser Pro Gly Asp Trp Gly Ser Leu Tyr Ser Pro Val
165 170 175

Ser Gln Ala Gly Ser Leu Ser Pro Ala Ala Ser Leu Glu Glu Arg Pro
180 185 190

Gly Leu Leu Gly Ala Thr Phe Ser Ala Cys Leu Ser Pro Gly Ser Leu
195 200 205

Ala Phe Ser Asp Phe Leu
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Met Asn Gln Leu Gly Gly Leu Phe Val Asn Gly Arg Pro Leu Pro Leu
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Asp Thr Arg Gln Gln Ile Val Arg Leu Ala Val Ser Gly Met Arg Pro
20 25 30

Cys Asp Ile Ser Arg Ile Leu Lys Val Ser Asn Gly Cys Val Ser Lys
35 40 45

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Ile Leu Gly Arg Tyr Tyr Arg Thr Gly Val Leu Glu Pro Lys Gly Ile
 50 55 60
 Gly Gly Ser Lys Pro Arg Leu Ala Thr Pro Pro Val Val Ala Arg Ile
 65 70 75 80
 Ala Gln Leu Lys Gly Glu Cys Pro Ala Leu Phe Ala Trp Glu Ile Gln
 85 90 95
 Arg Gln Leu Cys Ala Glu Gly Leu Cys Thr Gln Asp Lys Thr Pro Ser
 100 105 110
 Val Ser Ser Ile Asn Arg Val Leu Arg Ala Leu Gln Glu Asp Gln Gly
 115 120 125
 Leu Pro Cys Thr Arg Leu Arg Ser Pro Ala Val Leu Ala Pro Ala Val
 130 135 140
 Leu Thr Pro His Ser Gly Ser Glu Thr Pro Arg Gly Thr His Pro Gly
 145 150 155 160
 Thr Gly His Arg Asn Arg Thr Ile Phe Ser Pro Ser Gln Ala Glu Ala
 165 170 175
 Leu Glu Lys Glu Phe Gln Arg Gly Gln Tyr Pro Asp Ser Val Ala Arg
 180 185 190
 Gly Lys Leu Ala Thr Ala Thr Ser Leu Pro Glu Asp Thr Val Arg Val
 195 200 205
 Trp Phe Ser Asn Arg Arg Ala Lys Trp Arg Arg Gln Glu Lys Leu Lys
 210 215 220
 Trp Glu Met Gln Leu Pro Gly Ala Ser Gln Gly Leu Thr Val Pro Arg
 225 230 235 240
 Val Ala Pro Gly Ile Ile Ser Ala Gln Gln Ser Pro Gly Ser Val Pro
 245 250 255
 Thr Ala Ala Leu Pro Ala Leu Glu Pro Leu Gly Pro Ser Cys Tyr Gln
 260 265 270
 Leu Cys Trp Ala Thr Ala Pro Glu Arg Cys Leu Ser Asp Thr Pro Pro
 275 280 285
 Lys Ala Cys Leu Lys Pro Cys Trp Gly His Leu Pro Pro Gln Pro Asn
 290 295 300
 Ser Leu Asp Ser Gly Leu Leu Cys Leu Pro Cys Pro Ser Ser His Cys
 305 310 315 320

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His Leu Ala Ser Leu Ser Gly Ser Gln Ala Leu Leu Trp Pro Gly Cys
325 330 335

Pro Leu Leu Tyr Gly Leu Glu
340

<210> 13
<211> 283
<212> PRT
<213> Homo sapiens

<400> 13

Met Asn Gly Glu Glu Gln Tyr Tyr Ala Ala Thr Gln Leu Tyr Lys Asp
1 5 10 15

Pro Cys Ala Phe Gln Arg Gly Pro Ala Pro Glu Phe Ser Ala Ser Pro
20 25 30

Pro Ala Cys Leu Tyr Met Gly Arg Gln Pro Pro Pro Pro Pro Pro His
35 40 45

Pro Phe Pro Gly Ala Leu Gly Ala Leu Glu Gln Gly Ser Pro Pro Asp
50 55 60

Ile Ser Pro Tyr Glu Val Pro Pro Leu Ala Asp Asp Pro Ala Val Ala
65 70 75 80

His Leu His His His Leu Pro Ala Gln Leu Ala Leu Pro His Pro Pro
85 90 95

Ala Gly Pro Phe Pro Glu Gly Ala Glu Pro Gly Val Leu Glu Glu Pro
100 105 110

Asn Arg Val Gln Leu Pro Phe Pro Trp Met Lys Ser Thr Lys Ala His
115 120 125

Ala Trp Lys Gly Gln Trp Ala Gly Gly Ala Tyr Ala Ala Glu Pro Glu
130 135 140

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

Leu Glu Lys Glu Phe Leu Phe Asn Lys Tyr Ile Ser Arg Pro Arg Arg
165 170 175

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

Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys Glu Glu Asp Lys Lys
195 200 205

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

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

Pro Pro Pro Pro Gly Gly Ala Val Pro Pro Ala Ala Pro Val Ala Ala
 245 250 255

Arg Glu Gly Arg Leu Pro Pro Gly Leu Ser Ala Ser Pro Gln Pro Ser
 260 265 270

Ser Val Ala Pro Arg Arg Pro Gln Glu Pro Arg
 275 280

<210> 14
 <211> 509
 <212> PRT
 <213> Homo sapiens

<400> 14

Met Asn Leu Leu Asp Pro Phe Met Lys Met Thr Asp Glu Gln Glu Lys
 1 5 10 15

Gly Leu Ser Gly Ala Pro Ser Pro Thr Met Ser Glu Asp Ser Ala Gly
 20 25 30

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

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

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

Leu Lys Gly Tyr Asp Trp Thr Leu Val Pro Met Pro Val Arg Val Asn
 85 90 95

Gly Ser Ser Lys Asn Lys Pro His Val Lys Arg Pro Met Asn Ala Phe
 100 105 110

Met Val Trp Ala Gln Ala Ala Arg Arg Lys Leu Ala Asp Gln Tyr Pro
 115 120 125

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

Leu Leu Asn Glu Ser Glu Lys Arg Pro Phe Val Glu Glu Ala Glu Arg
 145 150 155 160

Leu Arg Val Gln His Lys Lys Asp His Pro Asp Tyr Lys Tyr Gln Pro
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Arg Arg Arg Lys Ser Val Lys Asn Gly Gln Ala Glu Ala Glu Glu Ala
180 185 190

Thr Glu Gln Thr His Ile Ser Pro Asn Ala Ile Phe Lys Ala Leu Gln
195 200 205

Ala Asp Ser Pro His Ser Ser Ser Gly Met Ser Glu Val His Ser Pro
210 215 220

Gly Glu His Ser Gly Gln Ser Gln Gly Pro Pro Thr Pro Pro Thr Thr
225 230 235 240

Pro Lys Thr Asp Val Gln Pro Gly Lys Ala Asp Leu Lys Arg Glu Gly
245 250 255

Arg Pro Leu Pro Glu Gly Gly Arg Gln Pro Pro Ile Asp Phe Arg Asp
260 265 270

Val Asp Ile Gly Glu Leu Ser Ser Asp Val Ile Ser Asn Ile Glu Thr
275 280 285

Phe Asp Val Asn Glu Phe Asp Gln Tyr Leu Pro Pro Asn Gly His Pro
290 295 300

Gly Val Pro Ala Thr His Gly Gln Val Thr Tyr Thr Gly Ser Tyr Gly
305 310 315 320

Ile Ser Ser Thr Ala Ala Thr Pro Ala Ser Ala Gly His Val Trp Met
325 330 335

Ser Lys Gln Gln Ala Pro Pro Pro Pro Gln Gln Pro Pro Gln Ala
340 345 350

Pro Pro Ala Pro Gln Ala Pro Pro Gln Pro Gln Ala Ala Pro Pro Gln
355 360 365

Gln Pro Ala Ala Pro Pro Gln Gln Pro Gln Ala His Thr Leu Thr Thr
370 375 380

Leu Ser Ser Glu Pro Gly Gln Ser Gln Arg Thr His Ile Lys Thr Glu
385 390 395 400

Gln Leu Ser Pro Ser His Tyr Ser Glu Gln Gln Gln His Ser Pro Gln
405 410 415

Gln Ile Ala Tyr Ser Pro Phe Asn Leu Pro His Tyr Ser Pro Ser Tyr
420 425 430

Pro Pro Ile Thr Arg Ser Gln Tyr Asp Tyr Thr Asp His Gln Asn Ser
Page 20

435

440

445

Ser Ser Tyr Tyr Ser His Ala Ala Gly Gln Gly Thr Gly Leu Tyr Ser
 450 455 460

Thr Phe Thr Tyr Met Asn Pro Ala Gln Arg Pro Met Tyr Thr Pro Ile
 465 470 475 480

Ala Asp Thr Ser Gly Val Pro Ser Ile Pro Gln Thr His Ser Pro Gln
 485 490 495

His Trp Glu Gln Pro Val Tyr Thr Gln Leu Thr Arg Pro
 500 505

<210> 15

<211> 268

<212> PRT

<213> Homo sapiens

<400> 15

Met Pro Arg Ser Phe Leu Val Lys Lys His Phe Asn Ala Ser Lys Lys
 1 5 10 15

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

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

Ser Ser Gly Ala Tyr Ser Pro Ile Thr Val Trp Thr Thr Ala Ala Pro
 50 55 60

Phe His Ala Gln Leu Pro Asn Gly Leu Ser Pro Leu Ser Gly Tyr Ser
 65 70 75 80

Ser Ser Leu Gly Arg Val Ser Pro Pro Pro Ser Asp Thr Ser Ser
 85 90 95

Lys Asp His Ser Gly Ser Glu Ser Pro Ile Ser Asp Glu Glu Glu Arg
 100 105 110

Leu Gln Ser Lys Leu Ser Asp Pro His Ala Ile Glu Ala Glu Lys Phe
 115 120 125

Gln Cys Asn Leu Cys Asn Lys Thr Tyr Ser Thr Phe Ser Gly Leu Ala
 130 135 140

Lys His Lys Gln Leu His Cys Asp Ala Gln Ser Arg Lys Ser Phe Ser
 145 150 155 160

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

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His Ile Arg Thr His Thr Leu Pro Cys Val Cys Lys Ile Cys Gly Lys
180 185 190

Ala Phe Ser Arg Pro Trp Leu Leu Gln Gly His Ile Arg Thr His Thr
195 200 205

Gly Glu Lys Pro Phe Ser Cys Pro His Cys Asn Arg Ala Phe Ala Asp
210 215 220

Arg Ser Asn Leu Arg Ala His Leu Gln Thr His Ser Asp Val Lys Lys
225 230 235 240

Tyr Gln Cys Lys Asn Cys Ser Lys Thr Phe Ser Arg Met Ser Leu Leu
245 250 255

His Lys His Glu Glu Ser Gly Cys Cys Val Ala His
260 265

<210> 16
<211> 353
<212> PRT
<213> Homo sapiens

<400> 16

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

Ala Ile Glu Tyr Val Asn Asp Phe Asp Leu Met Lys Phe Glu Val Lys
20 25 30

Lys Glu Pro Pro Glu Ala Glu Arg Phe Cys His Arg Leu Pro Pro Gly
35 40 45

Ser Leu Ser Ser Thr Pro Leu Ser Thr Pro Cys Ser Ser Val Pro Ser
50 55 60

Ser Pro Ser Phe Cys Ala Pro Ser Pro Gly Thr Gly Gly Gly Gly Gly
65 70 75 80

Ala Gly Gly Gly Gly Gly Ser Ser Gln Ala Gly Gly Ala Pro Gly Pro
85 90 95

Pro Ser Gly Gly Pro Gly Ala Val Gly Gly Thr Ser Gly Lys Pro Ala
100 105 110

Leu Glu Asp Leu Tyr Trp Met Ser Gly Tyr Gln His His Leu Asn Pro
115 120 125

Glu Ala Leu Asn Leu Thr Pro Glu Asp Ala Val Glu Ala Leu Ile Gly
130 135 140

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Ser Gly His His Gly Ala His His Gly Ala His His Pro Ala Ala Ala
145 150 155 160

Ala Ala Tyr Glu Ala Phe Arg Gly Pro Gly Phe Ala Gly Gly Gly Gly
165 170 175

Ala Asp Asp Met Gly Ala Gly His His His Gly Ala His His Ala Ala
180 185 190

His His His His Ala Ala His His His His His His His His His
195 200 205

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

Glu Arg Phe Ser Asp Asp Gln Leu Val Ser Met Ser Val Arg Glu Leu
225 230 235 240

Asn Arg Gln Leu Arg Gly Phe Ser Lys Glu Glu Val Ile Arg Leu Lys
245 250 255

Gln Lys Arg Arg Thr Leu Lys Asn Arg Gly Tyr Ala Gln Ser Cys Arg
260 265 270

Phe Lys Arg Val Gln Gln Arg His Ile Leu Glu Ser Glu Lys Cys Gln
275 280 285

Leu Gln Ser Gln Val Glu Gln Leu Lys Leu Glu Val Gly Arg Leu Ala
290 295 300

Lys Glu Arg Asp Leu Tyr Lys Glu Lys Tyr Glu Lys Leu Ala Gly Arg
305 310 315 320

Gly Gly Pro Gly Ser Ala Gly Gly Ala Gly Phe Pro Arg Glu Pro Ser
325 330 335

Pro Pro Gln Ala Gly Pro Gly Gly Ala Lys Gly Thr Ala Asp Phe Phe
340 345 350

Leu

<210> 17
<211> 356
<212> PRT
<213> Homo sapiens

<400> 17

Met Thr Lys Ser Tyr Ser Glu Ser Gly Leu Met Gly Glu Pro Gln Pro
1 5 10 15

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Gln Gly Pro Pro Ser Trp Thr Asp Glu Cys Leu Ser Ser Gln Asp Glu
 20 25 30
 Glu His Glu Ala Asp Lys Lys Glu Asp Asp Leu Glu Ala Met Asn Ala
 35 40 45
 Glu Glu Asp Ser Leu Arg Asn Gly Gly Glu Glu Glu Asp Glu Asp Glu
 50 55 60
 Asp Leu Glu Glu Glu Glu Glu Glu Glu Glu Asp Asp Asp Gln Lys
 65 70 75 80
 Pro Lys Arg Arg Gly Pro Lys Lys Lys Lys Met Thr Lys Ala Arg Leu
 85 90 95
 Glu Arg Phe Lys Leu Arg Arg Met Lys Ala Asn Ala Arg Glu Arg Asn
 100 105 110
 Arg Met His Gly Leu Asn Ala Ala Leu Asp Asn Leu Arg Lys Val Val
 115 120 125
 Pro Cys Tyr Ser Lys Thr Gln Lys Leu Ser Lys Ile Glu Thr Leu Arg
 130 135 140
 Leu Ala Lys Asn Tyr Ile Trp Ala Leu Ser Glu Ile Leu Arg Ser Gly
 145 150 155 160
 Lys Ser Pro Asp Leu Val Ser Phe Val Gln Thr Leu Cys Lys Gly Leu
 165 170 175
 Ser Gln Pro Thr Thr Asn Leu Val Ala Gly Cys Leu Gln Leu Asn Pro
 180 185 190
 Arg Thr Phe Leu Pro Glu Gln Asn Gln Asp Met Pro Pro His Leu Pro
 195 200 205
 Thr Ala Ser Ala Ser Phe Pro Val His Pro Tyr Ser Tyr Gln Ser Pro
 210 215 220
 Gly Leu Pro Ser Pro Pro Tyr Gly Thr Met Asp Ser Ser His Val Phe
 225 230 235 240
 His Val Lys Pro Pro Pro His Ala Tyr Ser Ala Ala Leu Glu Pro Phe
 245 250 255
 Phe Glu Ser Pro Leu Thr Asp Cys Thr Ser Pro Ser Phe Asp Gly Pro
 260 265 270
 Leu Ser Pro Pro Leu Ser Ile Asn Gly Asn Phe Ser Phe Lys His Glu
 275 280 285

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Pro Ser Ala Glu Phe Glu Lys Asn Tyr Ala Phe Thr Met His Tyr Pro
 290 295 300

Ala Ala Thr Leu Ala Gly Ala Gln Ser His Gly Ser Ile Phe Ser Gly
 305 310 315 320

Thr Ala Ala Pro Arg Cys Glu Ile Pro Ile Asp Asn Ile Met Ser Phe
 325 330 335

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

Ile Phe His Asp
 355

<210> 18
 <211> 255
 <212> PRT
 <213> Homo sapiens

<400> 18

Met Asp Val Met Asp Gly Cys Gln Phe Ser Pro Ser Glu Tyr Phe Tyr
 1 5 10 15

Asp Gly Ser Cys Ile Pro Ser Pro Glu Gly Glu Phe Gly Asp Glu Phe
 20 25 30

Val Pro Arg Val Ala Ala Phe Gly Ala His Lys Ala Glu Leu Gln Gly
 35 40 45

Ser Asp Glu Asp Glu His Val Arg Ala Pro Thr Gly His His Gln Ala
 50 55 60

Gly His Cys Leu Met Trp Ala Cys Lys Ala Cys Lys Arg Lys Ser Thr
 65 70 75 80

Thr Met Asp Arg Arg Lys Ala Ala Thr Met Arg Glu Arg Arg Arg Leu
 85 90 95

Lys Lys Val Asn Gln Ala Phe Glu Thr Leu Lys Arg Cys Thr Thr Thr
 100 105 110

Asn Pro Asn Gln Arg Leu Pro Lys Val Glu Ile Leu Arg Asn Ala Ile
 115 120 125

Arg Tyr Ile Glu Ser Leu Gln Glu Leu Leu Arg Glu Gln Val Glu Asn
 130 135 140

Tyr Tyr Ser Leu Pro Gly Gln Ser Cys Ser Glu Pro Thr Ser Pro Thr
 145 150 155 160

Ser Asn Cys Ser Asp Gly Met Pro Glu Cys Asn Ser Pro Val Trp Ser
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Arg Lys Ser Ser Thr Phe Asp Ser Ile Tyr Cys Pro Asp Val Ser Asn
180 185 190

Val Tyr Ala Thr Asp Lys Asn Ser Leu Ser Ser Leu Asp Cys Leu Ser
195 200 205

Asn Ile Val Asp Arg Ile Thr Ser Ser Glu Gln Pro Gly Leu Pro Leu
210 215 220

Gln Asp Leu Ala Ser Leu Ser Pro Val Ala Ser Thr Asp Ser Gln Pro
225 230 235 240

Ala Thr Pro Gly Ala Ser Ser Ser Arg Leu Ile Tyr His Val Leu
245 250 255

<210> 19
<211> 1276
<212> PRT
<213> Homo sapiens

<400> 19

Met Arg Ser Lys Ala Arg Ala Arg Lys Leu Ala Lys Ser Asp Gly Asp
1 5 10 15

Val Val Asn Asn Met Tyr Glu Pro Asn Arg Asp Leu Leu Ala Ser His
20 25 30

Ser Ala Glu Asp Glu Ala Glu Asp Ser Ala Met Ser Pro Ile Pro Val
35 40 45

Gly Ser Pro Pro Pro Phe Pro Thr Ser Glu Asp Phe Thr Pro Lys Glu
50 55 60

Gly Ser Pro Tyr Glu Ala Pro Val Tyr Ile Pro Glu Asp Ile Pro Ile
65 70 75 80

Pro Ala Asp Phe Glu Leu Arg Glu Ser Ser Ile Pro Gly Ala Gly Leu
85 90 95

Gly Val Trp Ala Lys Arg Lys Met Glu Ala Gly Glu Arg Leu Gly Pro
100 105 110

Cys Val Val Val Pro Arg Ala Ala Ala Lys Glu Thr Asp Phe Gly Trp
115 120 125

Glu Gln Ile Leu Thr Asp Val Glu Val Ser Pro Gln Glu Gly Cys Ile
130 135 140

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

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

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Phe Ser Thr Thr Ser Ser Leu Asn Lys His Arg Arg Phe Cys Glu Gly
 435 440 445
 Lys Asn His Tyr Thr Pro Gly Gly Ile Phe Ala Pro Gly Leu Pro Leu
 450 455 460
 Thr Pro Ser Pro Met Met Asp Lys Ala Lys Pro Ser Pro Ser Leu Asn
 465 470 475 480
 His Ala Ser Leu Gly Phe Asn Glu Tyr Phe Pro Tyr Arg Pro His Pro
 485 490 495
 Gly Ser Leu Pro Phe Ser Thr Ala Pro Pro Thr Phe Pro Ala Leu Thr
 500 505 510
 Pro Gly Phe Pro Gly Ile Phe Pro Pro Ser Leu Tyr Pro Arg Pro Pro
 515 520 525
 Leu Leu Pro Pro Thr Ser Leu Leu Lys Ser Pro Leu Asn His Thr Gln
 530 535 540
 Asp Ala Lys Leu Pro Ser Pro Leu Gly Asn Pro Ala Leu Pro Leu Val
 545 550 555 560
 Ser Ala Val Ser Asn Ser Ser Gln Gly Thr Thr Ala Ala Ala Gly Pro
 565 570 575
 Glu Glu Lys Phe Glu Ser Arg Leu Glu Asp Ser Cys Val Glu Lys Leu
 580 585 590
 Lys Thr Arg Ser Ser Asp Met Ser Asp Gly Ser Asp Phe Glu Asp Val
 595 600 605
 Asn Thr Thr Thr Gly Thr Asp Leu Asp Thr Thr Thr Gly Thr Gly Ser
 610 615 620
 Asp Leu Asp Ser Asp Val Asp Ser Asp Pro Asp Lys Asp Lys Gly Lys
 625 630 635 640
 Gly Lys Ser Ala Glu Gly Gln Pro Lys Phe Gly Gly Gly Leu Ala Pro
 645 650 655
 Pro Gly Ala Pro Asn Ser Val Ala Glu Val Pro Val Phe Tyr Ser Gln
 660 665 670
 His Ser Phe Phe Pro Pro Pro Asp Glu Gln Leu Leu Thr Ala Thr Gly
 675 680 685
 Ala Ala Gly Asp Ser Ile Lys Ala Ile Ala Ser Ile Ala Glu Lys Tyr
 690 695 700

Phe Gly Pro Gly Phe Met Gly Met Gln Glu Lys Lys Leu Gly Ser Leu
 705 710 715 720
 Pro Tyr His Ser Ala Phe Pro Phe Gln Phe Leu Pro Asn Phe Pro His
 725 730 735
 Ser Leu Tyr Pro Phe Thr Asp Arg Ala Leu Ala His Asn Leu Leu Val
 740 745 750
 Lys Ala Glu Pro Lys Ser Pro Arg Asp Ala Leu Lys Val Gly Gly Pro
 755 760 765
 Ser Ala Glu Cys Pro Phe Asp Leu Thr Thr Lys Pro Lys Asp Val Lys
 770 775 780
 Pro Ile Leu Pro Met Pro Lys Gly Pro Ser Ala Pro Ala Ser Gly Glu
 785 790 795 800
 Glu Gln Pro Leu Asp Leu Ser Ile Gly Ser Arg Ala Arg Ala Ser Gln
 805 810 815
 Asn Gly Gly Gly Arg Glu Pro Arg Lys Asn His Val Tyr Gly Glu Arg
 820 825 830
 Lys Leu Gly Ala Gly Glu Gly Leu Pro Gln Val Cys Pro Ala Arg Met
 835 840 845
 Pro Gln Gln Pro Pro Leu His Tyr Ala Lys Pro Ser Pro Phe Phe Met
 850 855 860
 Asp Pro Ile Tyr Arg Val Glu Lys Arg Lys Val Thr Asp Pro Val Gly
 865 870 875 880
 Ala Leu Lys Glu Lys Tyr Leu Arg Pro Ser Pro Leu Leu Phe His Pro
 885 890 895
 Gln Met Ser Ala Ile Glu Thr Met Thr Glu Lys Leu Glu Ser Phe Ala
 900 905 910
 Ala Met Lys Ala Asp Ser Gly Ser Ser Leu Gln Pro Leu Pro His His
 915 920 925
 Pro Phe Asn Phe Arg Ser Pro Pro Pro Thr Leu Ser Asp Pro Ile Leu
 930 935 940
 Arg Lys Gly Lys Glu Arg Tyr Thr Cys Arg Tyr Cys Gly Lys Ile Phe
 945 950 955 960
 Pro Arg Ser Ala Asn Leu Thr Arg His Leu Arg Thr His Thr Gly Glu
 965 970 975

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Gln Pro Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Ile Ser Ser
980 985 990

Asn Leu Gln Arg His Val Arg Asn Ile His Asn Lys Glu Lys Pro Phe
995 1000 1005

Lys Cys His Leu Cys Asn Arg Cys Phe Gly Gln Gln Thr Asn Leu
1010 1015 1020

Asp Arg His Leu Lys Lys His Glu His Glu Asn Ala Pro Val Ser
1025 1030 1035

Gln His Pro Gly Val Leu Thr Asn His Leu Gly Thr Ser Ala Ser
1040 1045 1050

Ser Pro Thr Ser Glu Ser Asp Asn His Ala Leu Leu Asp Glu Lys
1055 1060 1065

Glu Asp Ser Tyr Phe Ser Glu Ile Arg Asn Phe Ile Ala Asn Ser
1070 1075 1080

Glu Met Asn Gln Ala Ser Thr Arg Thr Glu Lys Arg Ala Asp Met
1085 1090 1095

Gln Ile Val Asp Gly Ser Ala Gln Cys Pro Gly Leu Ala Ser Glu
1100 1105 1110

Lys Gln Glu Asp Val Glu Glu Glu Asp Asp Asp Asp Leu Glu Glu
1115 1120 1125

Asp Asp Glu Asp Ser Leu Ala Gly Lys Ser Gln Asp Asp Thr Val
1130 1135 1140

Ser Pro Ala Pro Glu Pro Gln Ala Ala Tyr Glu Asp Glu Glu Asp
1145 1150 1155

Glu Glu Pro Ala Ala Ser Leu Ala Val Gly Phe Asp His Thr Arg
1160 1165 1170

Arg Cys Ala Glu Asp His Glu Gly Gly Leu Leu Ala Leu Glu Pro
1175 1180 1185

Met Pro Thr Phe Gly Lys Gly Leu Asp Leu Arg Arg Ala Ala Glu
1190 1195 1200

Glu Ala Phe Glu Val Lys Asp Val Leu Asn Ser Thr Leu Asp Ser
1205 1210 1215

Glu Ala Leu Lys His Thr Leu Cys Arg Gln Ala Lys Asn Gln Ala
1220 1225 1230

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Tyr Ala Met Met Leu Ser Leu Ser Glu Asp Thr Pro Leu His Thr
1235 1240 1245

Pro Ser Gln Gly Ser Leu Asp Ala Trp Leu Lys Val Thr Gly Ala
1250 1255 1260

Thr Ser Glu Ser Gly Ala Phe His Pro Ile Asn His Leu
1265 1270 1275

<210> 20
<211> 436
<212> PRT
<213> Homo sapiens

<400> 20

Met Gln Asn Ser His Ser Gly Val Asn Gln Leu Gly Gly Val Phe Val
1 5 10 15

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

Ala His Ser Gly Ala Arg Pro Cys Asp Ile Ser Arg Ile Leu Gln Thr
35 40 45

His Ala Asp Ala Lys Val Gln Val Leu Asp Asn Gln Asn Val Ser Asn
50 55 60

Gly Cys Val Ser Lys Ile Leu Gly Arg Tyr Tyr Glu Thr Gly Ser Ile
65 70 75 80

Arg Pro Arg Ala Ile Gly Gly Ser Lys Pro Arg Val Ala Thr Pro Glu
85 90 95

Val Val Ser Lys Ile Ala Gln Tyr Lys Arg Glu Cys Pro Ser Ile Phe
100 105 110

Ala Trp Glu Ile Arg Asp Arg Leu Leu Ser Glu Gly Val Cys Thr Asn
115 120 125

Asp Asn Ile Pro Ser Val Ser Ser Ile Asn Arg Val Leu Arg Asn Leu
130 135 140

Ala Ser Glu Lys Gln Gln Met Gly Ala Asp Gly Met Tyr Asp Lys Leu
145 150 155 160

Arg Met Leu Asn Gly Gln Thr Gly Ser Trp Gly Thr Arg Pro Gly Trp
165 170 175

Tyr Pro Gly Thr Ser Val Pro Gly Gln Pro Thr Gln Asp Gly Cys Gln
180 185 190

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Gln Gln Glu Gly Gly Gly Glu Asn Thr Asn Ser Ile Ser Ser Asn Gly
195 200 205

Glu Asp Ser Asp Glu Ala Gln Met Arg Leu Gln Leu Lys Arg Lys Leu
210 215 220

Gln Arg Asn Arg Thr Ser Phe Thr Gln Glu Gln Ile Glu Ala Leu Glu
225 230 235 240

Lys Glu Phe Glu Arg Thr His Tyr Pro Asp Val Phe Ala Arg Glu Arg
245 250 255

Leu Ala Ala Lys Ile Asp Leu Pro Glu Ala Arg Ile Gln Val Trp Phe
260 265 270

Ser Asn Arg Arg Ala Lys Trp Arg Arg Glu Glu Lys Leu Arg Asn Gln
275 280 285

Arg Arg Gln Ala Ser Asn Thr Pro Ser His Ile Pro Ile Ser Ser Ser
290 295 300

Phe Ser Thr Ser Val Tyr Gln Pro Ile Pro Gln Pro Thr Thr Pro Val
305 310 315 320

Ser Ser Phe Thr Ser Gly Ser Met Leu Gly Arg Thr Asp Thr Ala Leu
325 330 335

Thr Asn Thr Tyr Ser Ala Leu Pro Pro Met Pro Ser Phe Thr Met Ala
340 345 350

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

Ser Cys Met Leu Pro Thr Ser Pro Ser Val Asn Gly Arg Ser Tyr Asp
370 375 380

Thr Tyr Thr Pro Pro His Met Gln Thr His Met Asn Ser Gln Pro Met
385 390 395 400

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

Val Pro Val Gln Val Pro Gly Ser Glu Pro Asp Met Ser Gln Tyr Trp
420 425 430

Pro Arg Leu Gln
435

<210> 21
<211> 631
<212> PRT

<213> Homo sapiens

<400> 21

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

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Asn Leu Val Thr Glu Val Arg Val Tyr Asn Trp Phe Ala Asn Arg Arg
260 265 270

Lys Glu Glu Ala Phe Arg His Lys Leu Ala Met Asp Thr Tyr Ser Gly
275 280 285

Pro Pro Pro Gly Pro Gly Pro Gly Pro Ala Leu Pro Ala His Ser Ser
290 295 300

Pro Gly Leu Pro Pro Pro Ala Leu Ser Pro Ser Lys Val His Gly Val
305 310 315 320

Arg Tyr Gly Gln Pro Ala Thr Ser Glu Thr Ala Glu Val Pro Ser Ser
325 330 335

Ser Gly Gly Pro Leu Val Thr Val Ser Thr Pro Leu His Gln Val Ser
340 345 350

Pro Thr Gly Leu Glu Pro Ser His Ser Leu Leu Ser Thr Glu Ala Lys
355 360 365

Leu Val Ser Ala Ala Gly Gly Pro Leu Pro Pro Val Ser Thr Leu Thr
370 375 380

Ala Leu His Ser Leu Glu Gln Thr Ser Pro Gly Leu Asn Gln Gln Pro
385 390 395 400

Gln Asn Leu Ile Met Ala Ser Leu Pro Gly Val Met Thr Ile Gly Pro
405 410 415

Gly Glu Pro Ala Ser Leu Gly Pro Thr Phe Thr Asn Thr Gly Ala Ser
420 425 430

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

Ile Asn Ser Met Gly Ser Ser Leu Thr Thr Leu Gln Pro Val Gln Phe
450 455 460

Ser Gln Pro Leu His Pro Ser Tyr Gln Gln Pro Leu Met Pro Pro Val
465 470 475 480

Gln Ser His Val Thr Gln Ser Pro Phe Met Ala Thr Met Ala Gln Leu
485 490 495

Gln Ser Pro His Ala Leu Tyr Ser His Lys Pro Glu Val Ala Gln Tyr
500 505 510

Thr His Thr Gly Leu Leu Pro Gln Thr Met Leu Ile Thr Asp Thr Thr
515 520 525

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Asn Leu Ser Ala Leu Ala Ser Leu Thr Pro Thr Lys Gln Val Phe Thr
 530 535 540

Ser Asp Thr Glu Ala Ser Ser Glu Ser Gly Leu His Thr Pro Ala Ser
 545 550 555 560

Gln Ala Thr Thr Leu His Val Pro Ser Gln Asp Pro Ala Gly Ile Gln
 565 570 575

His Leu Gln Pro Ala His Arg Leu Ser Ala Ser Pro Thr Val Ser Ser
 580 585 590

Ser Ser Leu Val Leu Tyr Gln Ser Ser Asp Ser Ser Asn Gly Gln Ser
 595 600 605

His Leu Leu Pro Ser Asn His Ser Val Ile Glu Thr Phe Ile Ser Thr
 610 615 620

Gln Met Ala Ser Ser Ser Gln
 625 630

<210> 22
 <211> 350
 <212> PRT
 <213> Homo sapiens

<400> 22

Met Leu Gly Ser Val Lys Met Glu Ala His Asp Leu Ala Glu Trp Ser
 1 5 10 15

Tyr Tyr Pro Glu Ala Gly Glu Val Tyr Ser Pro Val Thr Pro Val Pro
 20 25 30

Thr Met Ala Pro Leu Asn Ser Tyr Met Thr Leu Asn Pro Leu Ser Ser
 35 40 45

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

Leu Ala Pro Pro Ala Pro Ala Ala Pro Leu Gly Pro Thr Phe Pro Gly
 65 70 75 80

Leu Gly Val Ser Gly Gly Ser Ser Ser Ser Gly Tyr Gly Ala Pro Gly
 85 90 95

Pro Gly Leu Val His Gly Lys Glu Met Pro Lys Gly Tyr Arg Arg Pro
 100 105 110

Leu Ala His Ala Lys Pro Pro Tyr Ser Tyr Ile Ser Leu Ile Thr Met
 115 120 125

Ala Ile Gln Gln Ala Pro Gly Lys Met Leu Thr Leu Ser Glu Ile Tyr
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140

130

135

Gln Trp Ile Met Asp Leu Phe Pro Tyr Tyr Arg Glu Asn Gln Gln Arg
145 150 155 160

Trp Gln Asn Ser Ile Arg His Ser Leu Ser Phe Asn Asp Cys Phe Val
165 170 175

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

Leu His Pro Ser Ser Gly Asn Met Phe Glu Asn Gly Cys Tyr Leu Arg
195 200 205

Arg Gln Lys Arg Phe Lys Leu Glu Glu Lys Val Lys Lys Gly Gly Ser
210 215 220

Gly Ala Ala Thr Thr Thr Arg Asn Gly Thr Gly Ser Ala Ala Ser Thr
225 230 235 240

Thr Thr Pro Ala Ala Thr Val Thr Ser Pro Pro Gln Pro Pro Pro Pro
245 250 255

Ala Pro Glu Pro Glu Ala Gln Gly Gly Glu Asp Val Gly Ala Leu Asp
260 265 270

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

Pro Gly Glu Leu Lys Leu Asp Ala Pro Tyr Asn Phe Asn His Pro Phe
290 295 300

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

<400> 23

Met Leu Gly Thr Val Lys Met Glu Gly His Glu Thr Ser Asp Trp Asn
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Ser Tyr Tyr Ala Asp Thr Gln Glu Ala Tyr Ser Ser Val Pro Val Ser
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1914427_1

Asn Met Asn Ser Gly Leu Gly Ser Met Asn Ser Met Asn Thr Tyr Met
 35 40 45
 Thr Met Asn Thr Met Thr Thr Ser Gly Asn Met Thr Pro Ala Ser Phe
 50 55 60
 Asn Met Ser Tyr Ala Asn Pro Gly Leu Gly Ala Gly Leu Ser Pro Gly
 65 70 75 80
 Ala Val Ala Gly Met Pro Gly Gly Ser Ala Gly Ala Met Asn Ser Met
 85 90 95
 Thr Ala Ala Gly Val Thr Ala Met Gly Thr Ala Leu Ser Pro Ser Gly
 100 105 110
 Met Gly Ala Met Gly Ala Gln Gln Ala Ala Ser Met Asn Gly Leu Gly
 115 120 125
 Pro Tyr Ala Ala Ala Met Asn Pro Cys Met Ser Pro Met Ala Tyr Ala
 130 135 140
 Pro Ser Asn Leu Gly Arg Ser Arg Ala Gly Gly Gly Gly Asp Ala Lys
 145 150 155 160
 Thr Phe Lys Arg Ser Tyr Pro His Ala Lys Pro Pro Tyr Ser Tyr Ile
 165 170 175
 Ser Leu Ile Thr Met Ala Ile Gln Gln Ala Pro Ser Lys Met Leu Thr
 180 185 190
 Leu Ser Glu Ile Tyr Gln Trp Ile Met Asp Leu Phe Pro Tyr Tyr Arg
 195 200 205
 Gln Asn Gln Gln Arg Trp Gln Asn Ser Ile Arg His Ser Leu Ser Phe
 210 215 220
 Asn Asp Cys Phe Val Lys Val Ala Arg Ser Pro Asp Lys Pro Gly Lys
 225 230 235 240
 Gly Ser Tyr Trp Thr Leu His Pro Asp Ser Gly Asn Met Phe Glu Asn
 245 250 255
 Gly Cys Tyr Leu Arg Arg Gln Lys Arg Phe Lys Cys Glu Lys Gln Pro
 260 265 270
 Gly Ala Gly Gly Gly Gly Gly ser Gly Ser Gly Gly Ser Gly Ala Lys
 275 280 285
 Gly Gly Pro Glu Ser Arg Lys Asp Pro Ser Gly Ala Ser Asn Pro Ser
 290 295 300

1914427_1

Ala Asp Ser Pro Leu His Arg Gly Val His Gly Lys Thr Gly Gln Leu
305 310 315 320

Glu Gly Ala Pro Ala Pro Gly Pro Ala Ala Ser Pro Gln Thr Leu Asp
325 330 335

His Ser Gly Ala Thr Ala Thr Gly Gly Ala Ser Glu Leu Lys Thr Pro
340 345 350

Ala Ser Ser Thr Ala Pro Pro Ile Ser Ser Gly Pro Gly Ala Leu Ala
355 360 365

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

Gln Leu His Leu Lys Gly Asp Pro His Tyr Ser Phe Asn His Pro Phe
385 390 395 400

Ser Ile Asn Asn Leu Met Ser Ser Ser Glu Gln Gln His Lys Leu Asp
405 410 415

Phe Lys Ala Tyr Glu Gln Ala Leu Gln Tyr Ser Pro Tyr Gly Ser Thr
420 425 430

Leu Pro Ala Ser Leu Pro Leu Gly Ser Ala Ser Val Thr Thr Arg Ser
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Pro Ile Glu Pro Ser Ala Leu Glu Pro Ala Tyr Tyr Gln Gly Val Tyr
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Ser Arg Pro Val Leu Asn Thr Ser
465 470

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<213> Homo sapiens

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Glu Pro Ser Asp Trp Ser Ser Tyr Tyr Ala Glu Pro Glu Gly Tyr Ser
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Ser Val Ser Asn Met Asn Ala Gly Leu Gly Met Asn Gly Met Asn Thr
35 40 45

Tyr Met Ser Met Ser Ala Ala Ala Met Gly Ser Gly Ser Gly Asn Met
50 55 60

1914427_1

Ser Ala Gly Ser Met Asn Met Ser Ser Tyr Val Gly Ala Gly Met Ser
65 70 75 80

Pro Ser Leu Ala Gly Met Ser Pro Gly Ala Gly Ala Met Ala Gly Met
85 90 95

Gly Gly Ser Ala Gly Ala Ala Gly Val Ala Gly Met Gly Pro His Leu
100 105 110

Ser Pro Ser Leu Ser Pro Leu Gly Gly Gln Ala Ala Gly Ala Met Gly
115 120 125

Gly Leu Ala Pro Tyr Ala Asn Met Asn Ser Met Ser Pro Met Tyr Gly
130 135 140

Gln Ala Gly Leu Ser Arg Ala Arg Asp Pro Lys Thr Tyr Arg Arg Ser
145 150 155 160

Tyr Thr His Ala Lys Pro Pro Tyr Ser Tyr Ile Ser Leu Ile Thr Met
165 170 175

Ala Ile Gln Gln Ser Pro Asn Lys Met Leu Thr Leu Ser Glu Ile Tyr
180 185 190

Gln Trp Ile Met Asp Leu Phe Pro Phe Tyr Arg Gln Asn Gln Gln Arg
195 200 205

Trp Gln Asn Ser Ile Arg His Ser Leu Ser Phe Asn Asp Cys Phe Leu
210 215 220

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

Leu His Pro Asp Ser Gly Asn Met Phe Glu Asn Gly Cys Tyr Leu Arg
245 250 255

Arg Gln Lys Arg Phe Lys Cys Glu Lys Gln Leu Ala Leu Lys Glu Ala
260 265 270

Ala Gly Ala Ala Gly Ser Gly Lys Lys Ala Ala Ala Gly Ala Gln Ala
275 280 285

Ser Gln Ala Gln Leu Gly Glu Ala Ala Gly Pro Ala Ser Glu Thr Pro
290 295 300

Ala Gly Thr Glu Ser Pro His Ser Ser Ala Ser Pro Cys Gln Glu His
305 310 315 320

Lys Arg Gly Gly Leu Gly Glu Leu Lys Gly Thr Pro Ala Ala Ala Leu
325 330 335

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

Ala His Leu Leu Gly Pro Pro His His Pro Gly Leu Pro Pro Glu Ala
355 360 365

His Leu Lys Pro Glu His His Tyr Ala Phe Asn His Pro Phe Ser Ile
370 375 380

Asn Asn Leu Met Ser Ser Glu Gln Gln His His His Ser His His His
385 390 395 400

His Gln Pro His Lys Met Asp Leu Lys Ala Tyr Glu Gln Val Met His
405 410 415

Tyr Pro Gly Tyr Gly Ser Pro Met Pro Gly Ser Leu Ala Met Gly Pro
420 425 430

Val Thr Asn Lys Thr Gly Leu Asp Ala Ser Pro Leu Ala Ala Asp Thr
435 440 445

Ser Tyr Tyr Gln Gly Val Tyr Ser Arg Pro Ile Met Asn Ser Ser
450 455 460

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<400> 25

Met Ser Ser His Leu Gln Ser Pro Pro His Ala Pro Ser Ser Ala Ala
1 5 10 15

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20 25 30

Ala Ala Pro Glu Pro Leu Gly Gly Ile Cys Glu His Glu Thr Ser Ile
35 40 45

Asp Ile Ser Ala Tyr Ile Asp Pro Ala Ala Phe Asn Asp Glu Phe Leu
50 55 60

Ala Asp Leu Phe Gln His Ser Arg Gln Gln Glu Lys Ala Lys Ala Ala
65 70 75 80

Val Gly Pro Thr Gly Gly Gly Gly Gly Gly Asp Phe Asp Tyr Pro Gly
85 90 95

Ala Pro Ala Gly Pro Gly Gly Ala Val Met Pro Gly Gly Ala His Gly
100 105 110

1914427_1

Pro Pro Pro Gly Tyr Gly Cys Ala Ala Ala Gly Tyr Leu Asp Gly Arg
115 120 125

Leu Glu Pro Leu Tyr Glu Arg Val Gly Ala Pro Ala Leu Arg Pro Leu
130 135 140

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

Leu Ala Gly Leu Phe Pro Tyr Gln Pro Pro Pro Pro Pro Pro Ser
165 170 175

His Pro His Pro His Pro Pro Pro Ala His Leu Ala Ala Pro His Leu
180 185 190

Gln Phe Gln Ile Ala His Cys Gly Gln Thr Thr Met His Leu Gln Pro
195 200 205

Gly His Pro Thr Pro Pro Pro Thr Pro Val Pro Ser Pro His Pro Ala
210 215 220

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

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

Ala Gly Lys Ala Lys Lys Ser Val Asp Lys Asn Ser Asn Glu Tyr Arg
260 265 270

Val Arg Arg Glu Arg Asn Asn Ile Ala Val Arg Lys Ser Arg Asp Lys
275 280 285

Ala Lys Gln Arg Asn Val Glu Thr Gln Gln Lys Val Leu Glu Leu Thr
290 295 300

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

Leu Asp Thr Leu Arg Gly Ile Phe Arg Gln Leu Pro Glu Ser Ser Leu
325 330 335

Val Lys Ala Met Gly Asn Cys Ala
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<210> 26
<211> 271
<212> PRT
<213> Homo sapiens

<400> 26

Met Leu Gln Ala Cys Lys Met Glu Gly Phe Pro Leu Val Pro Pro Gln
Page 41

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 Pro Ser Glu Asp₂₀ Leu Val Pro Tyr Asp₂₅ Thr Asp Leu Tyr Gln Arg Gln
 Thr His Glu₃₅ Tyr Tyr Pro Tyr Leu₄₀ Ser Ser Asp Gly Glu₄₅ Ser His Ser
 Asp His₅₀ Tyr Trp Asp Phe His₅₅ Pro His His Val His₆₀ Ser Glu Phe Glu
 Ser Phe Ala Glu Asn Asn₇₀ Phe Thr Glu Leu Gln₇₅ Ser Val Gln Pro Pro₈₀
 Gln Leu Gln Gln Leu₈₅ Tyr Arg His Met Glu₉₀ Leu Glu Gln Met His₉₅ Val
 Leu Asp Thr Pro₁₀₀ Met Val Pro Pro His₁₀₅ Pro Ser Leu Gly His₁₁₀ Gln Val
 Ser Tyr Leu₁₁₅ Pro Arg Met Cys Leu₁₂₀ Gln Tyr Pro Ser Leu₁₂₅ Ser Pro Ala
 Gln Pro₁₃₀ Ser Ser Asp Glu Glu₁₃₅ Glu Gly Glu Arg Gln₁₄₀ Ser Pro Pro Leu
 Glu Val Ser Asp Gly Glu₁₅₀ Ala Asp Gly Leu Glu₁₅₅ Pro Gly Pro Gly Leu₁₆₀
 Leu Pro Gly Glu Thr₁₆₅ Gly Ser Lys Lys Lys₁₇₀ Ile Arg Leu Tyr Gln₁₇₅ Phe
 Leu Leu Asp Leu₁₈₀ Leu Arg Ser Gly Asp₁₈₅ Met Lys Asp Ser Ile₁₉₀ Trp Trp
 Val Asp Lys₁₉₅ Asp Lys Gly Thr Phe₂₀₀ Gln Phe Ser Ser Lys₂₀₅ His Lys Glu
 Ala Leu₂₁₀ Ala His Arg Trp Gly₂₁₅ Ile Gln Lys Gly Asn₂₂₀ Arg Lys Lys Met
 Thr Tyr Gln Lys Met Ala₂₃₀ Arg Ala Leu Arg Asn₂₃₅ Tyr Gly Lys Thr Gly₂₄₀
 Glu Val Lys Lys Val₂₄₅ Lys Lys Lys Leu Thr₂₅₀ Tyr Gln Phe Ser Gly₂₅₅ Glu
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 Gly Tyr Arg Glu Ala Gln Ser Leu Val Gln Gly Asp Tyr Gly Ala Leu
 35 40 45
 Gln Ser Asn Gly His Pro Leu Ser His Ala His Gln Trp Ile Thr Ala
 50 55 60
 Leu Ser His Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
 65 70 75 80
 Gly Gly Gly Gly Gly Gly Gly Gly Asp Gly Ser Pro Trp Ser Thr Ser
 85 90 95
 Pro Leu Gly Gln Pro Asp Ile Lys Pro Ser Val Val Val Gln Gln Gly
 100 105 110
 Gly Arg Gly Asp Glu Leu His Gly Pro Gly Ala Leu Gln Gln Gln His
 115 120 125
 Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
 130 135 140
 Gln Gln Gln Gln Gln Arg Pro Pro His Leu Val His His Ala Ala Asn
 145 150 155 160
 His His Pro Gly Pro Gly Ala Trp Arg Ser Ala Ala Ala Ala Ala His
 165 170 175
 Leu Pro Pro Ser Met Gly Ala Ser Asn Gly Gly Leu Leu Tyr Ser Gln
 180 185 190
 Pro Ser Phe Thr Val Asn Gly Met Leu Gly Ala Gly Gly Gln Pro Ala
 195 200 205
 Gly Leu His His His Gly Leu Arg Asp Ala His Asp Glu Pro His His
 210 215 220
 Ala Asp His His Pro His Pro His Ser His Pro His Gln Gln Pro Pro
 225 230 235 240
 Pro Pro Pro Pro Pro Gln Gly Pro Pro Gly His Pro Gly Ala His His
 245 250 255

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Asp Pro His Ser Asp Glu Asp Thr Pro Thr Ser Asp Asp Leu Glu Gln
 260 265 270
 Phe Ala Lys Gln Phe Lys Gln Arg Arg Ile Lys Leu Gly Phe Thr Gln
 275 280 285
 Ala Asp Val Gly Leu Ala Leu Gly Thr Leu Tyr Gly Asn Val Phe Ser
 290 295 300
 Gln Thr Thr Ile Cys Arg Phe Glu Ala Leu Gln Leu Ser Phe Lys Asn
 305 310 315 320
 Met Cys Lys Leu Lys Pro Leu Leu Asn Lys Trp Leu Glu Glu Ala Asp
 325 330 335
 Ser Ser Ser Gly Ser Pro Thr Ser Ile Asp Lys Ile Ala Ala Gln Gly
 340 345 350
 Arg Lys Arg Lys Lys Arg Thr Ser Ile Glu Val Ser Val Lys Gly Ala
 355 360 365
 Leu Glu Ser His Phe Leu Lys Cys Pro Lys Pro Ser Ala Gln Glu Ile
 370 375 380
 Thr Ser Leu Ala Asp Ser Leu Gln Leu Glu Lys Glu Val Val Arg Val
 385 390 395 400
 Trp Phe Cys Asn Arg Arg Gln Lys Glu Lys Arg Met Thr Pro Pro Gly
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 Gly Thr Leu Pro Gly Ala Glu Asp Val Tyr Gly Gly Ser Arg Asp Thr
 420 425 430
 Pro Pro His His Gly Val Gln Thr Pro Val Gln
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 Met Leu Asp Met Gly Asp Arg Lys Glu Val Lys Met Ile Pro Lys Ser
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 Ser Phe Ser Ile Asn Ser Leu Val Pro Glu Ala Val Gln Asn Asp Asn
 20 25 30
 His His Ala Ser His Gly His His Asn Ser His His Pro Gln His His
 35 40 45

1914427_1

His His His His His His His His His Pro Pro Pro Pro Ala Pro Gln
50 55 60

Pro Pro Pro Pro Pro Gln Gln Gln Gln Pro Pro Pro Pro Pro Pro
65 70 75 80

Ala Pro Gln Pro Pro Gln Thr Arg Gly Ala Pro Ala Ala Asp Asp Asp
85 90 95

Lys Gly Pro Gln Gln Leu Leu Leu Pro Pro Pro Pro Pro Pro Pro
100 105 110

Ala Ala Ala Leu Asp Gly Ala Lys Ala Asp Gly Leu Gly Gly Lys Gly
115 120 125

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

Lys Glu Lys Gly Ala Gly Ala Gly Gly Glu Glu Lys Lys Gly Ala Gly
145 150 155 160

Glu Gly Gly Lys Asp Gly Glu Gly Gly Lys Glu Gly Glu Lys Lys Asn
165 170 175

Gly Lys Tyr Glu Lys Pro Pro Phe Ser Tyr Asn Ala Leu Ile Met Met
180 185 190

Ala Ile Arg Gln Ser Pro Glu Lys Arg Leu Thr Leu Asn Gly Ile Tyr
195 200 205

Glu Phe Ile Met Lys Asn Phe Pro Tyr Tyr Arg Glu Asn Lys Gln Gly
210 215 220

Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Lys Cys Phe Val
225 230 235 240

Lys Val Pro Arg His Tyr Asp Asp Pro Gly Lys Gly Asn Tyr Trp Met
245 250 255

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

Leu Arg Arg Arg Ser Thr Thr Ser Arg Ala Lys Leu Ala Phe Lys Arg
275 280 285

Gly Ala Arg Leu Thr Ser Thr Gly Leu Thr Phe Met Asp Arg Ala Gly
290 295 300

Ser Leu Tyr Trp Pro Met Ser Pro Phe Leu Ser Leu His His Pro Arg
305 310 315 320

1914427_1

Ala Ser Ser Thr Leu Ser Tyr Asn Gly Thr Thr Ser Ala Tyr Pro Ser
325 330 335

His Pro Met Pro Tyr Ser Ser Val Leu Thr Gln Asn Ser Leu Gly Asn
340 345 350

Asn His Ser Phe Ser Thr Ala Asn Gly Leu Ser Val Asp Arg Leu Val
355 360 365

Asn Gly Glu Ile Pro Tyr Ala Thr His His Leu Thr Ala Ala Ala Leu
370 375 380

Ala Ala Ser Val Pro Cys Gly Leu Ser Val Pro Cys Ser Gly Thr Tyr
385 390 395 400

Ser Leu Asn Pro Cys Ser Val Asn Leu Leu Ala Gly Gln Thr Ser Tyr
405 410 415

Phe Phe Pro His Val Pro His Pro Ser Met Thr Ser Gln Ser Ser Thr
420 425 430

Ser Met Ser Ala Arg Ala Ala Ser Ser Ser Thr Ser Pro Gln Ala Pro
435 440 445

Ser Thr Leu Pro Cys Glu Ser Leu Arg Pro Ser Leu Pro Ser Phe Thr
450 455 460

Thr Gly Leu Ser Gly Gly Leu Ser Asp Tyr Phe Thr His Gln Asn Gln
465 470 475 480

Gly Ser Ser Ser Asn Pro Leu Ile His
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<210> 29
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<212> PRT
<213> Homo sapiens

<400> 29

Met Ala Gly His Thr Gln Gln Pro Ser Gly Arg Gly Asn Pro Arg Pro
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Ala Pro Ser Pro Ser Pro Val Pro Gly Thr Val Pro Gly Ala Ser Glu
20 25 30

Arg Val Ala Leu Lys Lys Glu Ile Gly Leu Leu Ser Ala Cys Thr Ile
35 40 45

Ile Ile Gly Asn Ile Ile Gly Ser Gly Ile Phe Ile Ser Pro Lys Gly
50 55 60

Val₆₅ Leu Glu His Ser Gly₇₀ Ser Val Gly₇₅ Leu₇₅ Ala₇₅ Leu Phe Val Trp Val₈₀
 Leu Gly Gly Gly Val₈₅ Thr Ala Leu Gly₉₀ Ser₉₀ Leu Cys Tyr Ala Glu₉₅ Leu₉₅
 Gly Val Ala Ile₁₀₀ Pro Lys Ser Gly₁₀₅ Gly₁₀₅ Asp Tyr Ala Tyr Val₁₁₀ Thr Glu₁₁₀
 Ile Phe Gly₁₁₅ Gly Leu Ala Gly₁₂₀ Phe₁₂₀ Leu Leu Leu Trp Ser₁₂₅ Ala Val Leu₁₂₅
 Ile Met₁₃₀ Tyr Pro Thr Ser₁₃₅ Leu₁₃₅ Ala Val Ile Ser₁₄₀ Met₁₄₀ Thr Phe Ser Asn₁₄₀
 Tyr Val₁₄₅ Leu Gln Pro Val₁₅₀ Phe Pro Asn Cys Ile₁₅₅ Pro Pro Thr Thr Ala₁₆₀
 Ser Arg Val₁₆₅ Leu Ser₁₆₅ Met Ala Cys Leu₁₇₀ Met₁₇₀ Leu Leu Thr Trp Val₁₇₅ Asn₁₇₅
 Ser Ser Ser Val₁₈₀ Arg Trp Ala Thr Arg₁₈₅ Ile Gln Asp Met₁₉₀ Phe₁₉₀ Thr Gly₁₉₀
 Gly Lys Leu₁₉₅ Leu Ala Leu Ser₂₀₀ Leu₂₀₀ Ile Ile Gly Val₂₀₅ Gly₂₀₅ Leu Leu Gln₂₀₅
 Ile Phe₂₁₀ Gln Gly His Phe₂₁₅ Glu₂₁₅ Glu Leu Arg Pro Ser₂₂₀ Asn Ala Phe Ala₂₂₀
 Phe Trp Met Thr Pro Ser₂₃₀ Val Gly His Leu₂₃₅ Ala₂₃₅ Leu Ala Phe Leu Gln₂₄₀
 Gly Ser Phe Ala Phe₂₄₅ Ser Gly Trp Asn Phe₂₅₀ Leu Asn Tyr Val₂₅₅ Thr₂₅₅ Glu₂₅₅
 Glu Met Val₂₆₀ Asp₂₆₀ Ala Arg Lys Asn₂₆₅ Leu₂₆₅ Pro Arg Ala Ile Phe₂₇₀ Ile₂₇₀ Ser₂₇₀
 Ile Pro Leu₂₇₅ Val Thr Phe Val₂₈₀ Tyr₂₈₀ Thr Phe Thr Asn Ile₂₈₅ Ala Tyr Phe₂₈₅
 Thr Ala Met Ser Pro Gln Glu₂₉₅ Leu₂₉₅ Leu Ser Ser₃₀₀ Asn Ala Val Ala Val₃₀₀
 Thr Phe Gly Glu Lys Leu₃₁₀ Leu Gly Tyr Phe Ser₃₁₅ Trp Val Met Pro Val₃₂₀
 Ser Val Ala Leu Ser₃₂₅ Thr Phe Gly Gly Ile₃₃₀ Asn Gly Tyr Leu Phe₃₃₅ Thr₃₃₅

1914427_1

Tyr Ser Arg Leu Cys Phe Ser Gly Ala Arg Glu Gly His Leu Pro Ser
340 345 350

Leu Leu Ala Met Ile His Val Arg His Cys Thr Pro Ile Pro Ala Leu
355 360 365

Leu Val Cys Cys Gly Ala Thr Ala Val Ile Met Leu Val Gly Asp Thr
370 375 380

Tyr Thr Leu Ile Asn Tyr Val Ser Phe Ile Asn Tyr Leu Cys Tyr Gly
385 390 395 400

Val Thr Ile Leu Gly Leu Leu Leu Leu Arg Trp Arg Arg Pro Ala Leu
405 410 415

His Arg Pro Ile Lys Val Asn Leu Leu Ile Pro Val Ala Tyr Leu Val
420 425 430

Phe Trp Ala Phe Leu Leu Val Phe Ser Phe Ile Ser Glu Pro Met Val
435 440 445

Cys Gly Val Gly Val Ile Ile Ile Leu Thr Gly Val Pro Ile Phe Phe
450 455 460

Leu Gly Val Phe Trp Arg Ser Lys Pro Lys Cys Val His Arg Leu Thr
465 470 475 480

Glu Ser Met Thr His Trp Gly Gln Glu Leu Cys Phe Val Val Tyr Pro
485 490 495

Gln Asp Ala Pro Glu Glu Glu Glu Asn Gly Pro Cys Pro Pro Ser Leu
500 505 510

Leu Pro Ala Thr Asp Lys Pro Ser Lys Pro Gln
515 520

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<213> Homo sapiens

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Met Glu Ser Ser Ala Lys Met Glu Ser Gly Gly Ala Gly Gln Gln Pro
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Gln Pro Gln Pro Gln Gln Pro Phe Leu Pro Pro Ala Ala Cys Phe Phe
20 25 30

Ala Thr Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Gln
35 40 45

Ser Ala Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Ala Pro

50

55

Gln Leu Arg Pro Ala Ala Asp Gly Gln Pro Ser Gly Gly Gly His Lys
65 70 75 80

Ser Ala Pro Lys Gln Val Lys Arg Gln Arg Ser Ser Ser Pro Glu Leu
85 90 95

Met Arg Cys Lys Arg Arg Leu Asn Phe Ser Gly Phe Gly Tyr Ser Leu
100 105 110

Pro Gln Gln Gln Pro Ala Ala Val Ala Arg Arg Asn Glu Arg Glu Arg
115 120 125

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

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

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

His Asp Ala Val Ser Ala Ala Phe Gln Ala Gly Val Leu Ser Pro Thr
180 185 190

Ile Ser Pro Asn Tyr Ser Asn Asp Leu Asn Ser Met Ala Gly Ser Pro
195 200 205

Val Ser Ser Tyr Ser Ser Asp Glu Gly Ser Tyr Asp Pro Leu Ser Pro
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Glu Glu Gln Glu Leu Leu Asp Phe Thr Asn Trp Phe
225 230 235

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<212> PRT
<213> Homo sapiens

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

Thr Glu Ile Thr Ala Thr Thr Ser Leu Pro Ser Phe Ser Thr Phe Met
50 55 60

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Asp 65 Asn Tyr Ser Thr Gly 70 Tyr Asp Val Lys 75 Pro Pro Cys Leu Tyr Gln 80
 Met Pro Leu Ser Gly 85 Gln Gln Ser Ser Ile 90 Lys Val Glu Asp Ile 95 Gln
 Met His Asn Tyr 100 Gln Gln His Ser His 105 Leu Pro Pro Gln Ser 110 Glu Glu
 Met Met Pro 115 His Ser Gly Ser Val 120 Tyr Tyr Lys Pro Ser 125 Ser Pro Pro
 Thr Pro 130 Thr Thr Pro Gly Phe 135 Gln Val Gln His Ser 140 Pro Met Trp Asp
 Asp 145 Pro Gly Ser Leu His 150 Asn Phe His Gln Asn 155 Tyr Val Ala Thr Thr 160
 His Met Ile Glu Gln 165 Arg Lys Thr Pro Val 170 Ser Arg Leu Ser Leu Phe 175
 Ser Phe Lys Gln 180 Ser Pro Pro Gly Thr 185 Pro Val Ser Ser Cys 190 Gln Met
 Arg Phe Asp 195 Gly Pro Leu His Val 200 Pro Met Asn Pro Glu 205 Pro Ala Gly
 Ser His 210 His Val Val Asp Gly 215 Gln Thr Phe Ala Val 220 Pro Asn Pro Ile
 Arg 225 Lys Pro Ala Ser Met 230 Gly Phe Pro Gly Leu 235 Gln Ile Gly His Ala 240
 Ser Gln Leu Leu Asp 245 Thr Gln Val Pro Ser 250 Pro Pro Ser Arg Gly 255 Ser
 Pro Ser Asn Glu 260 Gly Leu Cys Ala Val 265 Cys Gly Asp Asn Ala 270 Ala Cys
 Gln His Tyr 275 Gly Val Arg Thr Cys 280 Glu Gly Cys Lys Gly 285 Phe Phe Lys
 Arg Thr 290 Val Gln Lys Asn Ala 295 Lys Tyr Val Cys Leu 300 Ala Asn Lys Asn
 Cys 305 Pro Val Asp Lys Arg 310 Arg Arg Asn Arg Cys 315 Gln Tyr Cys Arg Phe 320
 Gln Lys Cys Leu Ala 325 Val Gly Met Val Lys 330 Glu Val Val Arg Thr 335 Asp

1914427_1

Ser Leu Lys Gly Arg Arg Gly Arg Leu Pro Ser Lys Pro Lys Ser Pro
340 345 350

Gln Glu Pro Ser Pro Pro Ser Pro Pro Val Ser Leu Ile Ser Ala Leu
355 360 365

Val Arg Ala His Val Asp Ser Asn Pro Ala Met Thr Ser Leu Asp Tyr
370 375 380

Ser Arg Phe Gln Ala Asn Pro Asp Tyr Gln Met Ser Gly Asp Asp Thr
385 390 395 400

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

Ile Arg Gly Trp Ala Glu Lys Ile Pro Gly Phe Ala Asp Leu Pro Lys
420 425 430

Ala Asp Gln Asp Leu Leu Phe Glu Ser Ala Phe Leu Glu Leu Phe Val
435 440 445

Leu Arg Leu Ala Tyr Arg Ser Asn Pro Val Glu Gly Lys Leu Ile Phe
450 455 460

Cys Asn Gly Val Val Leu His Arg Leu Gln Cys Val Arg Gly Phe Gly
465 470 475 480

Glu Trp Ile Asp Ser Ile Val Glu Phe Ser Ser Asn Leu Gln Asn Met
485 490 495

Asn Ile Asp Ile Ser Ala Phe Ser Cys Ile Ala Ala Leu Ala Met Val
500 505 510

Thr Glu Arg His Gly Leu Lys Glu Pro Lys Arg Val Glu Glu Leu Gln
515 520 525

Asn Lys Ile Val Asn Cys Leu Lys Asp His Val Thr Phe Asn Asn Gly
530 535 540

Gly Leu Asn Arg Pro Asn Tyr Leu Ser Lys Leu Leu Gly Lys Leu Pro
545 550 555 560

Glu Leu Arg Thr Leu Cys Thr Gln Gly Leu Gln Arg Ile Phe Tyr Leu
565 570 575

Lys Leu Glu Asp Leu Val Pro Pro Pro Ala Ile Ile Asp Lys Leu Phe
580 585 590

Leu Asp Thr Leu Pro Phe
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 <212> PRT
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<400> 32

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

Gly Gly Ala Arg Arg Gln Arg Gly Ala Glu Ala Gly Gln Gly Ala Arg
 50          55          60

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

Gly Leu Val His Asp Cys Lys Arg Arg Pro Ser Arg Ala Arg Ala Val
          85          90          95

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

Arg Arg Leu Lys Ala Asn Asn Arg Glu Arg Asn Arg Met His Asn Leu
          115          120          125

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

Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala His Asn Tyr
145          150          155          160

Ile Trp Ala Leu Thr Glu Thr Leu Arg Leu Ala Asp His Cys Gly Gly
          165          170          175

Gly Gly Gly Gly Leu Pro Gly Ala Leu Phe Ser Glu Ala Val Leu Leu
          180          185          190

Ser Pro Gly Gly Ala Ser Ala Ala Leu Ser Ser Ser Gly Asp Ser Pro
          195          200          205

Ser Pro Ala Ser Thr Trp Ser Cys Thr Asn Ser Pro Ala Pro Ser Ser
          210          215          220

Ser Val Ser Ser Asn Ser Thr Ser Pro Tyr Ser Cys Thr Leu Ser Pro
225          230          235          240

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Ala Ser Pro Ala Gly Ser Asp Met Asp Tyr Trp Gln Pro Pro Pro Pro
 245 250 255

Asp Lys His Arg Tyr Ala Pro His Leu Pro Ile Ala Arg Asp Cys Ile
 260 265 270

<210> 33

<211> 382

<212> PRT

<213> Homo sapiens

<400> 33

Met Leu Asp Gly Leu Lys Met Glu Glu Asn Phe Gln Ser Ala Ile Asp
 1 5 10 15

Thr Ser Ala Ser Phe Ser Ser Leu Leu Gly Arg Ala Val Ser Pro Lys
 20 25 30

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

Arg Leu Asn Asp Ser Phe Trp His Glu Gln Cys Val Gln Cys Ala Ser
 50 55 60

Cys Lys Glu Pro Leu Glu Thr Thr Cys Phe Tyr Arg Asp Lys Lys Leu
 65 70 75 80

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

Cys Phe Glu Ala Ile Ala Pro Asn Glu Phe Val Met Arg Ala Gln Lys
 100 105 110

Ser Val Tyr His Leu Ser Cys Phe Cys Cys Cys Val Cys Glu Arg Gln
 115 120 125

Leu Gln Lys Gly Asp Glu Phe Val Leu Lys Glu Gly Gln Leu Leu Cys
 130 135 140

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

Ala Ala Ser Asp Ser Gly Lys Ser Asp Asp Glu Glu Ser Leu Cys Lys
 165 170 175

Ser Ala His Gly Ala Gly Lys Gly Thr Ala Glu Glu Gly Lys Asp His
 180 185 190

Lys Arg Pro Lys Arg Pro Arg Thr Ile Leu Thr Thr Gln Gln Arg Arg
 195 200 205

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Ala Phe Lys Ala Ser Phe Glu Val Ser Ser Lys Pro Cys Arg Lys Val
210 215 220

Arg Glu Thr Leu Ala Ala Glu Thr Gly Leu Ser Val Arg Val Val Gln
225 230 235 240

Val Trp Phe Gln Asn Gln Arg Ala Lys Met Lys Lys Leu Ala Arg Arg
245 250 255

Gln Gln Gln Gln Gln Gln Asp Gln Gln Asn Thr Gln Arg Leu Ser Ser
260 265 270

Ala Gln Thr Asn Gly Gly Gly Ser Ala Gly Met Glu Gly Ile Met Asn
275 280 285

Pro Tyr Thr Ala Leu Pro Thr Pro Gln Gln Leu Leu Ala Ile Glu Gln
290 295 300

Ser Val Tyr Ser Ser Asp Pro Phe Arg Gln Gly Leu Thr Pro Pro Gln
305 310 315 320

Met Pro Gly Asp His Met His Pro Tyr Gly Ala Glu Pro Leu Phe His
325 330 335

Asp Leu Asp Ser Asp Asp Thr Ser Leu Ser Asn Leu Gly Asp Cys Phe
340 345 350

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

Ile Asp His Leu Tyr Ser Met Gln Asn Ser Tyr Phe Thr Ser
370 375 380

<210> 34
<211> 400
<212> PRT
<213> Homo sapiens

<400> 34

Met Glu Lys Ser Lys Asn Phe Arg Ile Glu Pro Cys Trp Arg Trp Thr
1 5 10 15

Pro His Glu Pro Pro Leu Ala Glu Arg Ala Leu Ala Lys Val Thr Ser
20 25 30

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

Ala Ser Gly Gly Thr Ser Gly Ser Cys Ser Pro Ala Ser Ser Glu Pro
50 55 60

Pro Ala Ala Pro Ala Asp Arg Leu Arg Ala Glu Ser Pro Ser Pro Pro
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65			70						1914427_1 75					80		
Arg	Leu	Leu	Ala	Ala 85	His	Cys	Ala	Leu	Leu 90	Pro	Lys	Pro	Gly	Phe 95	Leu	
Gly	Ala	Gly	Gly 100	Gly	Gly	Gly	Gly	Thr 105	Gly	Gly	Gly	His	Gly 110	Gly	Pro	
His	His	His 115	Ala	His	Pro	Gly	Ala 120	Ala	Ala	Ala	Ala	Ala 125	Ala	Ala	Ala	
Ala	Ala 130	Ala	Ala	Ala	Ala	Ala 135	Gly	Gly	Leu	Ala	Leu 140	Gly	Leu	His	Pro	
Gly 145	Gly	Ala	Gln	Gly	Gly 150	Ala	Gly	Leu	Pro	Ala 155	Gln	Ala	Ala	Leu	Tyr 160	
Gly	His	Pro	Val	Tyr 165	Gly	Tyr	Ser	Ala	Ala 170	Ala	Ala	Ala	Ala	Ala 175	Leu	
Ala	Gly	Gln	His 180	Pro	Ala	Leu	Ser	Tyr 185	Ser	Tyr	Pro	Gln	Val 190	Gln	Gly	
Ala	His	Pro 195	Ala	His	Pro	Ala	Asp 200	Pro	Ile	Lys	Leu	Gly 205	Ala	Gly	Thr	
Phe	Gln 210	Leu	Asp	Gln	Trp	Leu 215	Arg	Ala	Thr	Ala	Gly 220	Met	Ile	Leu	Pro	
Lys 225	Met	Pro	Asp	Phe	Asn 230	Ser	Gln	Ala	Gln	Ser 235	Asn	Leu	Leu	Gly	Lys 240	
Cys	Arg	Arg	Pro	Arg 245	Thr	Ala	Phe	Thr	Ser 250	Gln	Gln	Leu	Leu	Glu 255	Leu	
Glu	His	Gln	Phe 260	Lys	Phe	Asn	Lys	Tyr 265	Leu	Ser	Arg	Pro	Lys 270	Arg	Phe	
Glu	Val	Ala 275	Thr	Ser	Leu	Met	Leu 280	Thr	Glu	Thr	Gln	Val 285	Lys	Ile	Trp	
Phe	Gln 290	Asn	Arg	Arg	Met	Lys 295	Trp	Lys	Arg	Ser	Lys 300	Lys	Ala	Lys	Glu	
Gln 305	Ala	Ala	Gln	Glu	Ala 310	Glu	Lys	Gln	Lys	Gly 315	Gly	Gly	Gly	Gly	Ala 320	
Gly	Lys	Gly	Gly	Ala 325	Glu	Glu	Pro	Gly	Ala 330	Glu	Glu	Leu	Leu	Gly 335	Pro	
Pro	Ala	Pro	Arg	Asp	Lys	Gly	Ser	Gly	Pro	Pro	Ala	Asp	Leu	Arg	Asp	

340

345

350

Ser Asp Pro Glu Glu Asp Glu Asp Glu Asp Asp Glu Asp His Phe Pro
 355 360 365

Tyr Ser Asn Gly Ala Ser Val His Ala Ala Ser Ser Asp Cys Ser Ser
 370 375 380

Glu Asp Asp Ser Pro Pro Pro Arg Pro Ser His Gln Pro Ala Pro Gln
 385 390 395 400

<210> 35

<211> 397

<212> PRT

<213> Homo sapiens

<400> 35

Met Leu Leu Glu Thr Gly Leu Glu Arg Asp Arg Ala Arg Pro Gly Ala
 1 5 10 15

Ala Ala Val Cys Thr Leu Gly Gly Thr Arg Glu Ile Pro Leu Cys Ala
 20 25 30

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

Arg His Trp His Ser Lys Cys Leu Lys Cys Ser Asp Cys His Thr Pro
 50 55 60

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

Asp Phe Phe Lys Arg Phe Gly Thr Lys Cys Ala Ala Cys Gln Leu Gly
 85 90 95

Ile Pro Pro Thr Gln Val Val Arg Arg Ala Gln Asp Phe Val Tyr His
 100 105 110

Leu His Cys Phe Ala Cys Val Val Cys Lys Arg Gln Leu Ala Thr Gly
 115 120 125

Asp Glu Phe Tyr Leu Met Glu Asp Ser Arg Leu Val Cys Lys Ala Asp
 130 135 140

Tyr Glu Thr Ala Lys Gln Arg Glu Ala Glu Ala Thr Ala Lys Arg Pro
 145 150 155 160

Arg Thr Thr Ile Thr Ala Lys Gln Leu Glu Thr Leu Lys Ser Ala Tyr
 165 170 175

Asn Thr Ser Pro Lys Pro Ala Arg His Val Arg Glu Gln Leu Ser Ser
 180 185 190

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Glu Thr Gly Leu Asp Met Arg Val Val Gln Val Trp Phe Gln Asn Arg
195 200 205

Arg Ala Lys Glu Lys Arg Leu Lys Lys Asp Ala Gly Arg Gln Arg Trp
210 215 220

Gly Gln Tyr Phe Arg Asn Met Lys Arg Ser Arg Gly Gly Ser Lys Ser
225 230 235 240

Asp Lys Asp Ser Val Gln Glu Gly Gln Asp Ser Asp Ala Glu Val Ser
245 250 255

Phe Pro Asp Glu Pro Ser Leu Ala Glu Met Gly Pro Ala Asn Gly Leu
260 265 270

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

Ala Leu Gly Asn Phe Ser Leu Glu His Gly Gly Leu Ala Gly Pro Glu
290 295 300

Gln Tyr Arg Glu Leu Arg Pro Gly Ser Pro Tyr Gly Val Pro Pro Ser
305 310 315 320

Pro Ala Ala Pro Gln Ser Leu Pro Gly Pro Gln Pro Leu Leu Ser Ser
325 330 335

Leu Val Tyr Pro Asp Thr Ser Leu Gly Leu Val Pro Ser Gly Ala Pro
340 345 350

Gly Gly Pro Pro Pro Met Arg Val Leu Ala Gly Asn Gly Pro Ser Ser
355 360 365

Asp Leu Ser Thr Gly Ser Ser Gly Gly Tyr Pro Asp Phe Pro Ala Ser
370 375 380

Pro Ala Ser Trp Leu Asp Glu Val Asp His Ala Gln Phe
385 390 395

<210> 36
<211> 328
<212> PRT
<213> Homo sapiens

<400> 36

Met Thr Gly Val Phe Asp Ser Leu Val Ala Asp Met His Ser Thr Gln
1 5 10 15

Ile Ala Ala Ser Ser Thr Tyr His Gln His Gln Gln Pro Pro Ser Gly
20 25 30

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Gly Gly Ala Gly Pro Gly Gly Asn Ser Ser Ser Ser Ser Ser Leu His
 35 40 45
 Lys Pro Gln Glu Ser Pro Thr Leu Pro Val Ser Thr Ala Thr Asp Ser
 50 55 60
 Ser Tyr Tyr Thr Asn Gln Gln His Pro Ala Gly Gly Gly Gly Gly Gly
 65 70 75 80
 Gly Ser Pro Tyr Ala His Met Gly Ser Tyr Gln Tyr Gln Ala Ser Gly
 85 90 95
 Leu Asn Asn Val Pro Tyr Ser Ala Lys Ser Ser Tyr Asp Leu Gly Tyr
 100 105 110
 Thr Ala Ala Tyr Thr Ser Tyr Ala Pro Tyr Gly Thr Ser Ser Ser Pro
 115 120 125
 Ala Asn Asn Glu Pro Glu Lys Glu Asp Leu Glu Pro Glu Ile Arg Ile
 130 135 140
 Val Asn Gly Lys Pro Lys Lys Val Arg Lys Pro Arg Thr Ile Tyr Ser
 145 150 155 160
 Ser Phe Gln Leu Ala Ala Leu Gln Arg Arg Phe Gln Lys Thr Gln Tyr
 165 170 175
 Leu Ala Leu Pro Glu Arg Ala Glu Leu Ala Ala Ser Leu Gly Leu Thr
 180 185 190
 Gln Thr Gln Val Lys Ile Trp Phe Gln Asn Arg Arg Ser Lys Phe Lys
 195 200 205
 Lys Met Trp Lys Ser Gly Glu Ile Pro Ser Glu Gln His Pro Gly Ala
 210 215 220
 Ser Ala Ser Pro Pro Cys Ala Ser Pro Pro Val Ser Ala Pro Ala Ser
 225 230 235 240
 Trp Asp Phe Gly Val Pro Gln Arg Met Ala Gly Gly Gly Gly Pro Gly
 245 250 255
 Ser Gly Gly Ser Gly Ala Gly Ser Ser Gly Ser Ser Pro Ser Ser Ala
 260 265 270
 Ala Ser Ala Phe Leu Gly Asn Tyr Pro Trp Tyr His Gln Thr Ser Gly
 275 280 285
 Ser Ala Ser His Leu Gln Ala Thr Ala Pro Leu Leu His Pro Thr Gln
 290 295 300

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Thr Pro Gln Pro His His His His His His His Gly Gly Gly Gly Ala
 305 310 315 320

Pro Val Ser Ala Gly Thr Ile Phe
 325

<210> 37
 <211> 521
 <212> PRT
 <213> Homo sapiens
 <400> 37

Met Ala Ser Asn Ser Leu Phe Ser Thr Val Thr Pro Cys Gln Gln Asn
 1 5 10 15

Phe Phe Trp Asp Pro Ser Thr Ser Arg Arg Phe Ser Pro Pro Ser Ser
 20 25 30

Ser Leu Gln Pro Gly Lys Met Ser Asp Val Ser Pro Val Val Ala Ala
 35 40 45

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
 50 55 60

Gln Gln Gln Gln Gln Gln Gln Glu Ala Ala Ala Ala Ala Ala Ala Ala
 65 70 75 80

Ala Ala Ala Ala Ala Ala Ala Ala Ala Val Pro Arg Leu Arg Pro Pro
 85 90 95

His Asp Asn Arg Thr Met Val Glu Ile Ile Ala Asp His Pro Ala Glu
 100 105 110

Leu Val Arg Thr Asp Ser Pro Asn Phe Leu Cys Ser Val Leu Pro Ser
 115 120 125

His Trp Arg Cys Asn Lys Thr Leu Pro Val Ala Phe Lys Val Val Ala
 130 135 140

Leu Gly Glu Val Pro Asp Gly Thr Val Val Thr Val Met Ala Gly Asn
 145 150 155 160

Asp Glu Asn Tyr Ser Ala Glu Leu Arg Asn Ala Ser Ala Val Met Lys
 165 170 175

Asn Gln Val Ala Arg Phe Asn Asp Leu Arg Phe Val Gly Arg Ser Gly
 180 185 190

Arg Gly Lys Ser Phe Thr Leu Thr Ile Thr Val Phe Thr Asn Pro Pro
 195 200 205

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Gln Val Ala Thr Tyr His Arg Ala Ile Lys Val Thr Val Asp Gly Pro
210 215 220

Arg Glu Pro Arg Arg His Arg Gln Lys Leu Asp Asp Ser Lys Pro Ser
225 230 235 240

Leu Phe Ser Asp Arg Leu Ser Asp Leu Gly Arg Ile Pro His Pro Ser
245 250 255

Met Arg Val Gly Val Pro Pro Gln Asn Pro Arg Pro Ser Leu Asn Ser
260 265 270

Ala Pro Ser Pro Phe Asn Pro Gln Gly Gln Ser Gln Ile Thr Asp Pro
275 280 285

Arg Gln Ala Gln Ser Ser Pro Pro Trp Ser Tyr Asp Gln Ser Tyr Pro
290 295 300

Ser Tyr Leu Ser Gln Met Thr Ser Pro Ser Ile His Ser Thr Thr Pro
305 310 315 320

Leu Ser Ser Thr Arg Gly Thr Gly Leu Pro Ala Ile Thr Asp Val Pro
325 330 335

Arg Arg Ile Ser Asp Asp Asp Thr Ala Thr Ser Asp Phe Cys Leu Trp
340 345 350

Pro Ser Thr Leu Ser Lys Lys Ser Gln Ala Gly Ala Ser Glu Leu Gly
355 360 365

Pro Phe Ser Asp Pro Arg Gln Phe Pro Ser Ile Ser Ser Leu Thr Glu
370 375 380

Ser Arg Phe Ser Asn Pro Arg Met His Tyr Pro Ala Thr Phe Thr Tyr
385 390 395 400

Thr Pro Pro Val Thr Ser Gly Met Ser Leu Gly Met Ser Ala Thr Thr
405 410 415

His Tyr His Thr Tyr Leu Pro Pro Tyr Pro Gly Ser Ser Gln Ser
420 425 430

Gln Ser Gly Pro Phe Gln Thr Ser Ser Thr Pro Tyr Leu Tyr Tyr Gly
435 440 445

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

Ser Pro Ser Arg Met Leu Pro Pro Cys Thr Thr Thr Ser Asn Gly Ser
465 470 475 480

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Thr Leu Leu Asn Pro Asn Leu Pro Asn Gln Asn Asp Gly Val Asp Ala
 485 490 495

Asp Gly Ser His Ser Ser Ser Pro Thr Val Leu Asn Ser Ser Gly Arg
 500 505 510

Met Asp Glu Ser Val Trp Arg Pro Tyr
 515 520

<210> 38
 <211> 763
 <212> PRT
 <213> Homo sapiens

<400> 38

Met Leu Thr Asp Pro Asp Leu Pro Gln Glu Phe Glu Arg Met Ser Ser
 1 5 10 15

Lys Arg Pro Ala Ser Pro Tyr Gly Glu Ala Asp Gly Glu Val Ala Met
 20 25 30

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

Ala Phe His Leu Pro Leu His Val Ser Phe Pro Asn Lys Pro His Ser
 50 55 60

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

Arg Thr Pro Thr Ser Gln His Asn Thr Met Glu Val Asp Gly Asn Lys
 85 90 95

Val Met Ser Ser Phe Ala Pro His Asn Ser Ser Thr Ser Pro Gln Lys
 100 105 110

Ala Glu Glu Gly Gly Arg Gln Ser Gly Glu Ser Leu Ser Ser Thr Ala
 115 120 125

Leu Gly Thr Pro Glu Arg Arg Lys Gly Ser Leu Ala Asp Val Val Asp
 130 135 140

Thr Leu Lys Gln Arg Lys Met Glu Glu Leu Ile Lys Asn Glu Pro Glu
 145 150 155 160

Glu Thr Pro Ser Ile Glu Lys Leu Leu Ser Lys Asp Trp Lys Asp Lys
 165 170 175

Leu Leu Ala Met Gly Ser Gly Asn Phe Gly Glu Ile Lys Gly Thr Pro
 180 185 190

Glu Ser Leu Ala Glu Lys Glu Arg Gln Leu Met Gly Met Ile Asn Gln
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195

200

205

Leu Thr Ser Leu Arg Glu Gln Leu Leu Ala Ala His Asp Glu Gln Lys
 210 215 220

Lys Leu Ala Ala Ser Gln Ile Glu Lys Gln Arg Gln Gln Met Glu Leu
 225 230 235 240

Ala Lys Gln Gln Gln Glu Gln Ile Ala Arg Gln Gln Gln Gln Leu Leu
 245 250 255

Gln Gln Gln His Lys Ile Asn Leu Leu Gln Gln Gln Ile Gln Val Gln
 260 265 270

Gly Gln Leu Pro Pro Leu Met Ile Pro Val Phe Pro Pro Asp Gln Arg
 275 280 285

Thr Leu Ala Ala Ala Ala Gln Gln Gly Phe Leu Leu Pro Pro Gly Phe
 290 295 300

Ser Tyr Lys Ala Gly Cys Ser Asp Pro Tyr Pro Val Gln Leu Ile Pro
 305 310 315 320

Thr Thr Met Ala Ala Ala Ala Ala Thr Pro Gly Leu Gly Pro Leu
 325 330 335

Gln Leu Gln Gln Leu Tyr Ala Ala Gln Leu Ala Ala Met Gln Val Ser
 340 345 350

Pro Gly Gly Lys Leu Pro Gly Ile Pro Gln Gly Asn Leu Gly Ala Ala
 355 360 365

Val Ser Pro Thr Ser Ile His Thr Asp Lys Ser Thr Asn Ser Pro Pro
 370 375 380

Pro Lys Ser Lys Asp Glu Val Ala Gln Pro Leu Asn Leu Ser Ala Lys
 385 390 395 400

Pro Lys Thr Ser Asp Gly Lys Ser Pro Thr Ser Pro Thr Ser Pro His
 405 410 415

Met Pro Ala Leu Arg Ile Asn Ser Gly Ala Gly Pro Leu Lys Ala Ser
 420 425 430

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

Tyr Leu Asn Asp His Asp Ala Val Thr Lys Ala Ile Gln Glu Ala Arg
 450 455 460

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

465 470 475 480
 Val Ala Val Val Asn Ser Leu Gly Leu Asn Asn Cys Arg Thr Glu Lys
 485 490 495
 Glu Lys Thr Thr Leu Glu Ser Leu Thr Gln Gln Leu Ala Val Lys Gln
 500 505 510
 Asn Glu Glu Gly Lys Phe Ser His Ala Met Met Asp Phe Asn Leu Ser
 515 520 525
 Gly Asp Ser Asp Gly Ser Ala Gly Val Ser Glu Ser Arg Ile Tyr Arg
 530 535 540
 Glu Ser Arg Gly Arg Gly Ser Asn Glu Pro His Ile Lys Arg Pro Met
 545 550 555 560
 Asn Ala Phe Met Val Trp Ala Lys Asp Glu Arg Arg Lys Ile Leu Gln
 565 570 575
 Ala Phe Pro Asp Met His Asn Ser Asn Ile Ser Lys Ile Leu Gly Ser
 580 585 590
 Arg Trp Lys Ala Met Thr Asn Leu Glu Lys Gln Pro Tyr Tyr Glu Glu
 595 600 605
 Gln Ala Arg Leu Ser Lys Gln His Leu Glu Lys Tyr Pro Asp Tyr Lys
 610 615 620
 Tyr Lys Pro Arg Pro Lys Arg Thr Cys Leu Val Asp Gly Lys Lys Leu
 625 630 635 640
 Arg Ile Gly Glu Tyr Lys Ala Ile Met Arg Asn Arg Arg Gln Glu Met
 645 650 655
 Arg Gln Tyr Phe Asn Val Gly Gln Gln Ala Gln Ile Pro Ile Ala Thr
 660 665 670
 Ala Gly Val Val Tyr Pro Gly Ala Ile Ala Met Ala Gly Met Pro Ser
 675 680 685
 Pro His Leu Pro Ser Glu His Ser Ser Val Ser Ser Ser Pro Glu Pro
 690 695 700
 Gly Met Pro Val Ile Gln Ser Thr Tyr Gly Val Lys Gly Glu Glu Pro
 705 710 715 720
 His Ile Lys Glu Glu Ile Gln Ala Glu Asp Ile Asn Gly Glu Ile Tyr
 725 730 735
 Asp Glu Tyr Asp Glu Glu Glu Asp Asp Pro Asp Val Asp Tyr Gly Ser

740 745 1914427_1 750

Asp Ser Glu Asn His Ile Ala Gly Gln Ala Asn
755 760

<210> 39
<211> 808
<212> PRT
<213> Homo sapiens

<400> 39

Met Ser Ser Lys Gln Ala Thr Ser Pro Phe Ala Cys Ala Ala Asp Gly
1 5 10 15

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

Ser Asp Gln His Val Ala Ser His Leu Pro Leu His Pro Ile Met His
35 40 45

Asn Lys Pro His Ser Glu Glu Leu Pro Thr Leu Val Ser Thr Ile Gln
50 55 60

Gln Asp Ala Asp Trp Asp Ser Val Leu Ser Ser Gln Gln Arg Met Glu
65 70 75 80

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

Thr Ser Pro His Lys Pro Asp Glu Gly Ser Arg Asp Arg Glu Ile Met
100 105 110

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

Asp Val Val Asp Thr Leu Lys Gln Lys Lys Leu Glu Glu Met Thr Arg
130 135 140

Thr Glu Gln Glu Asp Ser Ser Cys Met Glu Lys Leu Leu Ser Lys Asp
145 150 155 160

Trp Lys Glu Lys Met Glu Arg Leu Asn Thr Ser Glu Leu Leu Gly Glu
165 170 175

Ile Lys Gly Thr Pro Glu Ser Leu Ala Glu Lys Glu Arg Gln Leu Ser
180 185 190

Thr Met Ile Thr Gln Leu Ile Ser Leu Arg Glu Gln Leu Leu Ala Ala
195 200 205

His Asp Glu Gln Lys Lys Leu Ala Ala Ser Gln Ile Glu Lys Gln Arg
210 215 220

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Gln Gln Met Asp Leu Ala Arg Gln Gln Gln Glu Gln Ile Ala Arg Gln
 225 230 235 240
 Gln Gln Gln Leu Leu Gln Gln Gln His Lys Ile Asn Leu Leu Gln Gln
 245 250 255
 Gln Ile Gln Val Gln Gly His Met Pro Pro Leu Met Ile Pro Ile Phe
 260 265 270
 Pro His Asp Gln Arg Thr Leu Ala Ala Ala Ala Ala Ala Gln Gln Gly
 275 280 285
 Phe Leu Phe Pro Pro Gly Ile Thr Tyr Lys Pro Gly Asp Asn Tyr Pro
 290 295 300
 Val Gln Phe Ile Pro Ser Thr Met Ala Ala Ala Ala Ala Ser Gly Leu
 305 310 315
 Ser Pro Leu Gln Leu Gln Lys Gly His Ala Ser His Pro Gln Ile Asn
 325 330 335
 Gln Arg Leu Lys Gly Leu Ser Asp Arg Phe Gly Arg Asn Leu Asp Thr
 340 345 350
 Phe Glu His Gly Gly Gly His Ser Tyr Asn His Lys Gln Ile Glu Gln
 355 360 365
 Leu Tyr Ala Ala Gln Leu Ala Ser Met Gln Val Ser Pro Gly Ala Lys
 370 375 380
 Met Pro Ser Thr Pro Gln Pro Pro Asn Thr Ala Gly Thr Val Ser Pro
 385 390 395 400
 Thr Gly Ile Lys Asn Glu Lys Arg Gly Thr Ser Pro Val Thr Gln Val
 405 410 415
 Lys Asp Glu Ala Ala Ala Gln Pro Leu Asn Leu Ser Ser Arg Pro Lys
 420 425 430
 Thr Ala Glu Pro Val Lys Ser Pro Thr Ser Pro Thr Gln Asn Leu Phe
 435 440 445
 Pro Ala Ser Lys Thr Ser Pro Val Asn Leu Pro Asn Lys Ser Ser Ile
 450 455 460
 Pro Ser Pro Ile Gly Gly Ser Leu Gly Arg Gly Ser Ser Leu Asp Ile
 465 470 475 480
 Leu Ser Ser Leu Asn Ser Pro Ala Leu Phe Gly Asp Gln Asp Thr Val
 485 490 495

Met Lys Ala Ile Gln Glu Ala Arg Lys Met Arg Glu Gln Ile Gln Arg
 500 505 510
 Glu Gln Gln Gln Gln Gln Pro His Gly Val Asp Gly Lys Leu Ser Ser
 515 520 525
 Ile Asn Asn Met Gly Leu Asn Ser Cys Arg Asn Glu Lys Glu Arg Thr
 530 535 540
 Arg Phe Glu Asn Leu Gly Pro Gln Leu Thr Gly Lys Ser Asn Glu Asp
 545 550 555 560
 Gly Lys Leu Gly Pro Gly Val Ile Asp Leu Thr Arg Pro Glu Asp Ala
 565 570 575
 Glu Gly Gly Ala Thr Val Ala Glu Ala Arg Val Tyr Arg Asp Ala Arg
 580 585 590
 Gly Arg Ala Ser Ser Glu Pro His Ile Lys Arg Pro Met Asn Ala Phe
 595 600 605
 Met Val Trp Ala Lys Asp Glu Arg Arg Lys Ile Leu Gln Ala Phe Pro
 610 615 620
 Asp Met His Asn Ser Asn Ile Ser Lys Ile Leu Gly Ser Arg Trp Lys
 625 630 635 640
 Ser Met Ser Asn Gln Glu Lys Gln Pro Tyr Tyr Glu Glu Gln Ala Arg
 645 650 655
 Leu Ser Lys Ile His Leu Glu Lys Tyr Pro Asn Tyr Lys Tyr Lys Pro
 660 665 670
 Arg Pro Lys Arg Thr Cys Ile Val Asp Gly Lys Lys Leu Arg Ile Gly
 675 680 685
 Glu Tyr Lys Gln Leu Met Arg Ser Arg Arg Gln Glu Met Arg Gln Phe
 690 695 700
 Phe Thr Val Gly Gln Gln Pro Gln Ile Pro Ile Thr Thr Gly Thr Gly
 705 710 715 720
 Val Val Tyr Pro Gly Ala Ile Thr Met Ala Thr Thr Thr Pro Ser Pro
 725 730 735
 Gln Met Thr Ser Asp Cys Ser Ser Thr Ser Ala Ser Pro Glu Pro Ser
 740 745 750
 Leu Pro Val Ile Gln Ser Thr Tyr Gly Met Lys Thr Asp Gly Gly Ser
 755 760 765

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Leu Ala Gly Asn Glu Met Ile Asn Gly Glu Asp Glu Met Glu Met Tyr
770 775 780

Asp Asp Tyr Glu Asp Asp Pro Lys Ser Asp Tyr Ser Ser Glu Asn Glu
785 790 795 800

Ala Pro Glu Ala Val Ser Ala Asn
805

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

<400> 40

Met Ala Leu Thr Asp Gly Gly Trp Cys Leu Pro Lys Arg Phe Gly Ala
1 5 10 15

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

Ser Thr Pro Pro Ser Pro Ile Ser Ser Ser Ser Ser Cys Ser Arg
35 40 45

Gly Gly Glu Arg Gly Pro Gly Gly Ala Ser Asn Cys Gly Thr Pro Gln
50 55 60

Leu Asp Thr Glu Ala Ala Ala Gly Pro Pro Ala Arg Ser Leu Leu Leu
65 70 75 80

Ser Ser Tyr Ala Ser His Pro Phe Gly Ala Pro His Gly Pro Ser Ala
85 90 95

Pro Gly Val Ala Gly Pro Gly Gly Asn Leu Ser Ser Trp Glu Asp Leu
100 105 110

Leu Leu Phe Thr Asp Leu Asp Gln Ala Ala Thr Ala Ser Lys Leu Leu
115 120 125

Trp Ser Ser Arg Gly Ala Lys Leu Ser Pro Phe Ala Pro Glu Gln Pro
130 135 140

Glu Glu Met Tyr Gln Thr Leu Ala Ala Leu Ser Ser Gln Gly Pro Ala
145 150 155 160

Ala Tyr Asp Gly Ala Pro Gly Gly Phe Val His Ser Ala Ala Ala Ala
165 170 175

Ala Ala Ala Ala Ala Ala Ala Ser Ser Pro Val Tyr Val Pro Thr Thr
180 185 190

1914427_1

Arg Val Gly Ser Met Leu Pro Gly Leu Pro Tyr His Leu Gln Gly Ser
 195 200 205
 Gly Ser Gly Pro Ala Asn His Ala Gly Gly Ala Gly Ala His Pro Gly
 210 215 220
 Trp Pro Gln Ala Ser Ala Asp Ser Pro Pro Tyr Gly Ser Gly Gly Gly
 225 230 235 240
 Ala Ala Gly Gly Gly Ala Ala Gly Pro Gly Gly Ala Gly Ser Ala Ala
 245 250 255
 Ala His Val Ser Ala Arg Phe Pro Tyr Ser Pro Ser Pro Pro Met Ala
 260 265 270
 Asn Gly Ala Ala Arg Glu Pro Gly Gly Tyr Ala Ala Ala Gly Ser Gly
 275 280 285
 Gly Ala Gly Gly Val Ser Gly Gly Gly Ser Ser Leu Ala Ala Met Gly
 290 295 300
 Gly Arg Glu Pro Gln Tyr Ser Ser Leu Ser Ala Ala Arg Pro Leu Asn
 305 310 315 320
 Gly Thr Tyr His His His His His His His His His His Pro Ser Pro
 325 330 335
 Tyr Ser Pro Tyr Val Gly Ala Pro Leu Thr Pro Ala Trp Pro Ala Gly
 340 345 350
 Pro Phe Glu Thr Pro Val Leu His Ser Leu Gln Ser Arg Ala Gly Ala
 355 360 365
 Pro Leu Pro Val Pro Arg Gly Pro Ser Ala Asp Leu Leu Glu Asp Leu
 370 375 380
 Ser Glu Ser Arg Glu Cys Val Asn Cys Gly Ser Ile Gln Thr Pro Leu
 385 390 395 400
 Trp Arg Arg Asp Gly Thr Gly His Tyr Leu Cys Asn Ala Cys Gly Leu
 405 410 415
 Tyr Ser Lys Met Asn Gly Leu Ser Arg Pro Leu Ile Lys Pro Gln Lys
 420 425 430
 Arg Val Pro Ser Ser Arg Arg Leu Gly Leu Ser Cys Ala Asn Cys His
 435 440 445
 Thr Thr Thr Thr Thr Leu Trp Arg Arg Asn Ala Glu Gly Glu Pro Val
 450 455 460

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Cys Asn Ala Cys Gly Leu Tyr Met Lys Leu His Gly Val Pro Arg Pro
465 470 475 480

Leu Ala Met Lys Lys Glu Gly Ile Gln Thr Arg Lys Arg Lys Pro Lys
485 490 495

Asn Ile Asn Lys Ser Lys Thr Cys Ser Gly Asn Ser Asn Asn Ser Ile
500 505 510

Pro Met Thr Pro Thr Ser Thr Ser Ser Asn Ser Asp Asp Cys Ser Lys
515 520 525

Asn Thr Ser Pro Thr Thr Gln Pro Thr Ala Ser Gly Ala Gly Ala Pro
530 535 540

Val Met Thr Gly Ala Gly Glu Ser Thr Asn Pro Glu Asn Ser Glu Leu
545 550 555 560

Lys Tyr Ser Gly Gln Asp Gly Leu Tyr Ile Gly Val Ser Leu Ala Ser
565 570 575

Pro Ala Glu Val Thr Ser Ser Val Arg Pro Asp Ser Trp Cys Ala Leu
580 585 590

Ala Leu Ala
595

<210> 41
<211> 413
<212> PRT
<213> Homo sapiens

<400> 41

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

Gln Phe Val Asp Pro Ala Leu Val Ser Ser Thr Pro Glu Ser Gly Val
20 25 30

Phe Phe Pro Ser Gly Pro Glu Gly Leu Asp Ala Ala Ala Ser Ser Thr
35 40 45

Ala Pro Ser Thr Ala Thr Ala Ala Ala Ala Ala Leu Ala Tyr Tyr Arg
50 55 60

Asp Ala Glu Ala Tyr Arg His Ser Pro Val Phe Gln Val Tyr Pro Leu
65 70 75 80

Leu Asn Cys Met Glu Gly Ile Pro Gly Gly Ser Pro Tyr Ala Gly Trp
85 90 95

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Ala Tyr Gly Lys₁₀₀ Thr Gly Leu Tyr Pro₁₀₅ Ala Ser Thr Val Cys₁₁₀ Pro Thr

Arg Glu Asp₁₁₅ Ser Pro Pro Gln Ala₁₂₀ Val Glu Asp Leu Asp₁₂₅ Gly Lys Gly

Ser Thr₁₃₀ Ser Phe Leu Glu Thr₁₃₅ Leu Lys Thr Glu Arg₁₄₀ Leu Ser Pro Asp

Leu₁₄₅ Leu Thr Leu Gly Pro₁₅₀ Ala Leu Pro Ser Ser₁₅₅ Leu Pro Val Pro Asn₁₆₀

Ser Ala Tyr Gly Gly₁₆₅ Pro Asp Phe Ser Ser₁₇₀ Thr Phe Phe Ser Pro₁₇₅ Thr

Gly Ser Pro Leu₁₈₀ Asn Ser Ala Ala Tyr₁₈₅ Ser Ser Pro Lys Leu₁₉₀ Arg Gly

Thr Leu Pro₁₉₅ Leu Pro Pro Cys Glu₂₀₀ Ala Arg Glu Cys Val₂₀₅ Asn Cys Gly

Ala Thr₂₁₀ Ala Thr Pro Leu Trp₂₁₅ Arg Arg Asp Arg Thr₂₂₀ Gly His Tyr Leu

Cys₂₂₅ Asn Ala Cys Gly Leu₂₃₀ Tyr His Lys Met Asn₂₃₅ Gly Gln Asn Arg Pro₂₄₀

Leu Ile Arg Pro Lys₂₄₅ Lys Arg Leu Ile Val₂₅₀ Ser Lys Arg Ala Gly₂₅₅ Thr

Gln Cys Thr Asn₂₆₀ Cys Gln Thr Thr Thr₂₆₅ Thr Thr Leu Trp Arg₂₇₀ Arg Asn

Ala Ser Gly₂₇₅ Asp Pro Val Cys Asn₂₈₀ Ala Cys Gly Leu Tyr₂₈₅ Tyr Lys Leu

His Gln Val Asn Arg Pro Leu₂₉₅ Thr Met Arg Lys Asp₃₀₀ Gly Ile Gln Thr

Arg₃₀₅ Asn Arg Lys Ala Ser₃₁₀ Gly Lys Gly Lys Lys₃₁₅ Lys Arg Gly Ser Ser₃₂₀

Leu Gly Gly Thr Gly₃₂₅ Ala Ala Glu Gly Pro₃₃₀ Ala Gly Gly Phe Met₃₃₅ Val

Val Ala Gly Gly₃₄₀ Ser Gly Ser Gly Asn₃₄₅ Cys Gly Glu Val Ala₃₅₀ Ser Gly

Leu Thr Leu₃₅₅ Gly Pro Pro Gly Thr₃₆₀ Ala His Leu Tyr Gln₃₆₅ Gly Leu Gly

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Pro Val Val Leu Ser Gly Pro Val Ser His Leu Met Pro Phe Pro Gly
 370 375 380

Pro Leu Leu Gly Ser Pro Thr Gly Ser Phe Pro Thr Gly Pro Met Pro
 385 390 395 400

Pro Thr Thr Ser Thr Thr Val Val Ala Pro Leu Ser Ser
 405 410

<210> 42
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<400> 42

Met Asp Gly Thr Ile Lys Glu Ala Leu Ser Val Val Ser Asp Asp Gln
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Ser Leu Phe Asp Ser Ala Tyr Gly Ala Ala Ala His Leu Pro Lys Ala
 20 25 30

Asp Met Thr Ala Ser Gly Ser Pro Asp Tyr Gly Gln Pro His Lys Ile
 35 40 45

Asn Pro Leu Pro Pro Gln Gln Glu Trp Ile Asn Gln Pro Val Arg Val
 50 55 60

Asn Val Lys Arg Glu Tyr Asp His Met Asn Gly Ser Arg Glu Ser Pro
 65 70 75 80

Val Asp Cys Ser Val Ser Lys Cys Ser Lys Leu Val Gly Gly Gly Glu
 85 90 95

Ser Asn Pro Met Asn Tyr Asn Ser Tyr Met Asp Glu Lys Asn Gly Pro
 100 105 110

Pro Pro Pro Asn Met Thr Thr Asn Glu Arg Arg Val Ile Val Pro Ala
 115 120 125

Asp Pro Thr Leu Trp Thr Gln Glu His Val Arg Gln Trp Leu Glu Trp
 130 135 140

Ala Ile Lys Glu Tyr Ser Leu Met Glu Ile Asp Thr Ser Phe Phe Gln
 145 150 155 160

Asn Met Asp Gly Lys Glu Leu Cys Lys Met Asn Lys Glu Asp Phe Leu
 165 170 175

Arg Ala Thr Thr Leu Tyr Asn Thr Glu Val Leu Leu Ser His Leu Ser
 180 185 190

Tyr Leu Arg Glu Ser Ser Leu Leu Ala Tyr Asn Thr Thr Ser His Thr
 Page 71

195

200

205

Asp Gln Ser Ser Arg Leu Ser Val Lys Glu Asp Pro Ser Tyr Asp Ser
 210 215 220

Val Arg Arg Gly Ala Trp Gly Asn Asn Met Asn Ser Gly Leu Asn Lys
 225 230 235 240

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

Arg Pro Gln Pro Asp Pro Tyr Gln Ile Leu Gly Pro Thr Ser Ser Arg
 260 265 270

Leu Ala Asn Pro Gly Ser Gly Gln Ile Gln Leu Trp Gln Phe Leu Leu
 275 280 285

Glu Leu Leu Ser Asp Ser Ala Asn Ala Ser Cys Ile Thr Trp Glu Gly
 290 295 300

Thr Asn Gly Glu Phe Lys Met Thr Asp Pro Asp Glu Val Ala Arg Arg
 305 310 315 320

Trp Gly Glu Arg Lys Ser Lys Pro Asn Met Asn Tyr Asp Lys Leu Ser
 325 330 335

Arg Ala Leu Arg Tyr Tyr Tyr Asp Lys Asn Ile Met Thr Lys Val His
 340 345 350

Gly Lys Arg Tyr Ala Tyr Lys Phe Asp Phe His Gly Ile Ala Gln Ala
 355 360 365

Leu Gln Pro His Pro Thr Glu Ser Ser Met Tyr Lys Tyr Pro Ser Asp
 370 375 380

Ile Ser Tyr Met Pro Ser Tyr His Ala His Gln Gln Lys Val Asn Phe
 385 390 395 400

Val Pro Pro His Pro Ser Ser Met Pro Val Thr Ser Ser Ser Phe Phe
 405 410 415

Gly Ala Ala Ser Gln Tyr Trp Thr Ser Pro Thr Gly Gly Ile Tyr Pro
 420 425 430

Asn Pro Asn Val Pro Arg His Pro Asn Thr His Val Pro Ser His Leu
 435 440 445

Gly Ser Tyr Tyr
 450

<210> 43

<211> 362
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<400> 43

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Met Ala Thr Ala Glu Thr Ala Leu Pro Ser Ile Ser Thr Leu Thr Ala
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Leu Gly Pro Phe Pro Asp Thr Gln Asp Asp Phe Leu Lys Trp Trp Arg
          20          25          30

Ser Glu Glu Ala Gln Asp Met Gly Pro Gly Pro Pro Asp Pro Thr Glu
          35          40          45

Pro Pro Leu His Val Lys Ser Glu Asp Gln Pro Gly Glu Glu Glu Asp
          50          55          60

Asp Glu Arg Gly Ala Asp Ala Thr Trp Asp Leu Asp Leu Leu Leu Thr
65          70          75          80

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

Ala Pro Ser Glu Ala Ser Gly Ala Gln Tyr Pro Pro Pro Pro Glu Thr
          100          105          110

Leu Gly Ala Tyr Ala Gly Gly Pro Gly Leu Val Ala Gly Leu Leu Gly
          115          120          125

Ser Glu Asp His Ser Gly Trp Val Arg Pro Ala Leu Arg Ala Arg Ala
          130          135          140

Pro Asp Ala Phe Val Gly Pro Ala Leu Ala Pro Ala Pro Ala Pro Glu
          145          150          155          160

Pro Lys Ala Leu Ala Leu Gln Pro Val Tyr Pro Gly Pro Gly Ala Gly
          165          170          175

Ser Ser Gly Gly Tyr Phe Pro Arg Thr Gly Leu Ser Val Pro Ala Ala
          180          185          190

Ser Gly Ala Pro Tyr Gly Leu Leu Ser Gly Tyr Pro Ala Met Tyr Pro
          195          200          205

Ala Pro Gln Tyr Gln Gly His Phe Gln Leu Phe Arg Gly Leu Gln Gly
          210          215          220

Pro Ala Pro Gly Pro Ala Thr Ser Pro Ser Phe Leu Ser Cys Leu Gly
          225          230          235          240

Pro Gly Thr Val Gly Thr Gly Leu Gly Gly Thr Ala Glu Asp Pro Gly
          245          250          255

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Val Ile Ala Glu Thr Ala Pro Ser Lys Arg Gly Arg Arg Ser Trp Ala
260 265 270

Arg Lys Arg Gln Ala Ala His Thr Cys Ala His Pro Gly Cys Gly Lys
275 280 285

Ser Tyr Thr Lys Ser Ser His Leu Lys Ala His Leu Arg Thr His Thr
290 295 300

Gly Glu Lys Pro Tyr Ala Cys Thr Trp Glu Gly Cys Gly Trp Arg Phe
305 310 315 320

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

Arg Pro Phe Arg Cys Gln Leu Cys Pro Arg Ala Phe Ser Arg Ser Asp
340 345 350

His Leu Ala Leu His Met Lys Arg His Leu
355 360

<210> 44
<211> 319
<212> PRT
<213> Homo sapiens

<400> 44

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

Asp Gly Ser Leu Cys Ser Phe Ala Thr Thr Asp Asp Phe Tyr Asp Asp
20 25 30

Pro Cys Phe Asp Ser Pro Asp Leu Arg Phe Phe Glu Asp Leu Asp Pro
35 40 45

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

Phe Pro Ala Ala Val His Pro Ala Pro Gly Ala Arg Glu Asp Glu His
65 70 75 80

Val Arg Ala Pro Ser Gly His His Gln Ala Gly Arg Cys Leu Leu Trp
85 90 95

Ala Cys Lys Ala Cys Lys Arg Lys Thr Thr Asn Ala Asp Arg Arg Lys
100 105 110

Ala Ala Thr Met Arg Glu Arg Arg Arg Leu Ser Lys Val Asn Glu Ala
115 120 125

1914427_1

Phe Glu Thr Leu Lys Arg Cys Thr Ser Ser Asn Pro Asn Gln Arg Leu
130 135 140

Pro Lys Val Glu Ile Leu Arg Asn Ala Ile Arg Tyr Ile Glu Gly Leu
145 150 155 160

Gln Ala Leu Leu Arg Asp Gln Asp Ala Ala Pro Pro Gly Ala Ala Ala
165 170 175

Phe Tyr Ala Pro Gly Pro Leu Pro Pro Gly Arg Gly Gly Glu His Tyr
180 185 190

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

Met Met Asp Tyr Ser Gly Pro Pro Ser Gly Ala Arg Arg Arg Asn Cys
210 215 220

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

Lys Ser Ala Ala Val Ser Ser Leu Asp Tyr Leu Ser Ser Ile Val Glu
245 250 255

Arg Ile Ser Thr Glu Ser Pro Ala Ala Pro Ala Leu Leu Leu Ala Asp
260 265 270

Val Pro Ser Glu Ser Pro Pro Arg Arg Gln Glu Ala Ala Ala Pro Ser
275 280 285

Glu Gly Glu Ser Ser Gly Asp Pro Thr Gln Ser Pro Asp Ala Ala Pro
290 295 300

Gln Cys Pro Ala Gly Ala Asn Pro Asn Pro Ile Tyr Gln Val Leu
305 310 315

<210> 45
<211> 525
<212> PRT
<213> Homo sapiens

<400> 45

Met His Arg Ala Pro Ser Pro Thr Ala Glu Gln Pro Pro Gly Gly Gly
1 5 10 15

Asp Ser Ala Arg Arg Thr Leu Gln Pro Arg Leu Lys Pro Ser Ala Arg
20 25 30

Ala Met Ala Leu Pro Arg Thr Leu Gly Glu Leu Gln Leu Tyr Arg Val
35 40 45

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Leu Gln Arg Ala Asn Leu Leu Ser Tyr Tyr Glu Thr Phe Ile Gln Gln
 50 55 60

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

Leu Glu Ile Met Ala Leu Val Gly Met Ala Thr Lys Pro Leu His Val
 85 90 95

Arg Arg Leu Gln Lys Ala Leu Arg Glu Trp Ala Thr Asn Pro Gly Leu
 100 105 110

Phe Ser Gln Pro Val Pro Ala Val Pro Val Ser Ser Ile Pro Leu Phe
 115 120 125

Lys Ile Ser Glu Thr Ala Gly Thr Arg Lys Gly Ser Met Ser Asn Gly
 130 135 140

His Gly Ser Pro Gly Glu Lys Ala Gly Ser Ala Arg Ser Phe Ser Pro
 145 150 155 160

Lys Ser Pro Leu Glu Leu Gly Glu Lys Leu Ser Pro Leu Pro Gly Gly
 165 170 175

Pro Gly Ala Gly Asp Pro Arg Ile Trp Pro Gly Arg Ser Thr Pro Glu
 180 185 190

Ser Asp Val Gly Ala Gly Gly Glu Glu Glu Ala Gly Ser Pro Pro Phe
 195 200 205

Ser Pro Pro Ala Gly Gly Gly Val Pro Glu Gly Thr Gly Ala Gly Gly
 210 215 220

Leu Ala Ala Gly Gly Thr Gly Gly Gly Pro Asp Arg Leu Glu Pro Glu
 225 230 235 240

Met Val Arg Met Val Val Glu Ser Val Glu Arg Ile Phe Arg Ser Phe
 245 250 255

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

Lys Leu Ala Arg Ser Val Gly His Ile Phe Glu Met Asp Asp Asn Asp
 275 280 285

Ser Gln Lys Glu Glu Glu Ile Arg Lys Tyr Ser Ile Ile Tyr Gly Arg
 290 295 300

Phe Asp Ser Lys Arg Arg Glu Gly Lys Gln Leu Ser Leu His Glu Leu
 305 310 315 320

1914427_1

Thr Ile Asn Glu Ala Ala Ala Gln Phe Cys Met Arg Asp Asn Thr Leu
 325 330 335

Leu Leu Arg Arg Val Glu Leu Phe Ser Leu Ser Arg Gln Val Ala Arg
 340 345 350

Glu Ser Thr Tyr Leu Ser Ser Leu Lys Gly Ser Arg Leu His Pro Glu
 355 360 365

Glu Leu Gly Gly Pro Pro Leu Lys Lys Leu Lys Gln Glu Val Gly Glu
 370 375 380

Gln Ser His Pro Glu Ile Gln Gln Pro Pro Pro Gly Pro Glu Ser Tyr
 385 390 395 400

Val Pro Pro Tyr Arg Pro Ser Leu Glu Glu Asp Ser Ala Ser Leu Ser
 405 410 415

Gly Glu Ser Leu Asp Gly His Leu Gln Ala Val Gly Ser Cys Pro Arg
 420 425 430

Leu Thr Pro Pro Pro Ala Asp Leu Pro Leu Ala Leu Pro Ala His Gly
 435 440 445

Leu Trp Ser Arg His Ile Leu Gln Gln Thr Leu Met Asp Glu Gly Leu
 450 455 460

Arg Leu Ala Arg Leu Val Ser His Asp Arg Val Gly Arg Leu Ser Pro
 465 470 475 480

Cys Val Pro Ala Lys Pro Pro Leu Ala Glu Phe Glu Glu Gly Leu Leu
 485 490 495

Asp Arg Cys Pro Ala Pro Gly Pro His Pro Ala Leu Val Glu Gly Arg
 500 505 510

Arg Ser Ser Val Lys Val Glu Ala Glu Ala Ser Arg Gln
 515 520 525

<210> 46
 <211> 543
 <212> PRT
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<400> 46

Met Ala Ala Ala Lys Ala Glu Met Gln Leu Met Ser Pro Leu Gln Ile
 1 5 10 15

Ser Asp Pro Phe Gly Ser Phe Pro His Ser Pro Thr Met Asp Asn Tyr
 20 25 30

Pro Lys Leu Glu Glu Met Met Leu Leu Ser Asn Gly Ala Pro Gln Phe
 Page 77

35

40

45

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

Ser Ser Ser Gly Gly Gly Gly Gly Gly Gly Gly Ser Asn Ser Ser
 65 70 75 80

Ser Ser Ser Ser Thr Phe Asn Pro Gln Ala Asp Thr Gly Glu Gln Pro
 85 90 95

Tyr Glu His Leu Thr Ala Glu Ser Phe Pro Asp Ile Ser Leu Asn Asn
 100 105 110

Glu Lys Val Leu Val Glu Thr Ser Tyr Pro Ser Gln Thr Thr Arg Leu
 115 120 125

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

Ser Gly Asn Thr Leu Trp Pro Glu Pro Leu Phe Ser Leu Val Ser Gly
 145 150 155 160

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

Pro Ala Ala Ser Ser Ala Ser Ala Ser Gln Ser Pro Pro Leu Ser Cys
 180 185 190

Ala Val Pro Ser Asn Asp Ser Ser Pro Ile Tyr Ser Ala Ala Pro Thr
 195 200 205

Phe Pro Thr Pro Asn Thr Asp Ile Phe Pro Glu Pro Gln Ser Gln Ala
 210 215 220

Phe Pro Gly Ser Ala Gly Thr Ala Leu Gln Tyr Pro Pro Pro Ala Tyr
 225 230 235 240

Pro Ala Ala Lys Gly Gly Phe Gln Val Pro Met Ile Pro Asp Tyr Leu
 245 250 255

Phe Pro Gln Gln Gln Gly Asp Leu Gly Leu Gly Thr Pro Asp Gln Lys
 260 265 270

Pro Phe Gln Gly Leu Glu Ser Arg Thr Gln Gln Pro Ser Leu Thr Pro
 275 280 285

Leu Ser Thr Ile Lys Ala Phe Ala Thr Gln Ser Gly Ser Gln Asp Leu
 290 295 300

Lys Ala Leu Asn Thr Ser Tyr Gln Ser Gln Leu Ile Lys Pro Ser Arg
 Page 78

				305				310				1914427_1 315				320			
Met	Arg	Lys	Tyr	Pro 325	Asn	Arg	Pro	Ser	Lys 330	Thr	Pro	Pro	His	Glu 335	Arg				
Pro	Tyr	Ala	Cys 340	Pro	Val	Glu	Ser	Cys 345	Asp	Arg	Arg	Phe	Ser 350	Arg	Ser				
Asp	Glu	Leu 355	Thr	Arg	His	Ile	Arg 360	Ile	His	Thr	Gly	Gln 365	Lys	Pro	Phe				
Gln	Cys 370	Arg	Ile	Cys	Met	Arg 375	Asn	Phe	Ser	Arg	Ser 380	Asp	His	Leu	Thr				
Thr 385	His	Ile	Arg	Thr	His 390	Thr	Gly	Glu	Lys	Pro 395	Phe	Ala	Cys	Asp	Ile 400				
Cys	Gly	Arg	Lys	Phe 405	Ala	Arg	Ser	Asp	Glu 410	Arg	Lys	Arg	His	Thr 415	Lys				
Ile	His	Leu	Arg 420	Gln	Lys	Asp	Lys	Lys 425	Ala	Asp	Lys	Ser	Val 430	Val	Ala				
Ser	Ser	Ala 435	Thr	Ser	Ser	Leu	Ser 440	Ser	Tyr	Pro	Ser	Pro 445	Val	Ala	Thr				
Ser	Tyr 450	Pro	Ser	Pro	Val	Thr 455	Thr	Ser	Tyr	Pro	Ser 460	Pro	Ala	Thr	Thr				
Ser 465	Tyr	Pro	Ser	Pro	Val 470	Pro	Thr	Ser	Phe	Ser 475	Ser	Pro	Gly	Ser	Ser 480				
Thr	Tyr	Pro	Ser	Pro 485	Val	His	Ser	Gly	Phe 490	Pro	Ser	Pro	Ser	Val 495	Ala				
Thr	Thr	Tyr	Ser 500	Ser	Val	Pro	Pro	Ala 505	Phe	Pro	Ala	Gln	Val 510	Ser	Ser				
Phe	Pro	Ser 515	Ser	Ala	Val	Thr	Asn 520	Ser	Phe	Ser	Ala	Ser 525	Thr	Gly	Leu				
Ser	Asp 530	Met	Thr	Ala	Thr	Phe 535	Ser	Pro	Arg	Thr	Ile 540	Glu	Ile	Cys					

<210>	47
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<212>	PRT
<213>	Homo sapiens

<400> 47

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1914427_1

Gln Pro Arg Ser₂₀ Pro Gly Pro Asp Tyr₂₅ Ser Leu Arg Leu Glu₃₀ Asn Val
Pro Ala Pro₃₅ Ser Arg Ala Asp Ser₄₀ Thr Ser Asn Ala Gly₄₅ Gly Ala Lys
Ala Glu₅₀ Pro Arg Asp Arg Leu₅₅ Ser Pro Glu Ser Gln₆₀ Leu Thr Glu Ala
Pro Asp Arg Ala Ser Ala₇₀ Ser Pro Asp Ser Cys₇₅ Glu Gly Ser Val Cys₈₀
Glu Arg Ser Ser₈₅ Glu Phe Glu Asp Phe Trp₉₀ Arg Pro Pro Ser Pro₉₅ Ser
Ala Ser Pro Ala₁₀₀ Ser Glu Lys Ser Met₁₀₅ Cys Pro Ser Leu Asp₁₁₀ Glu Ala
Gln Pro Phe₁₁₅ Pro Leu Pro Phe Lys₁₂₀ Pro Tyr Ser Trp Ser₁₂₅ Gly Leu Ala
Gly Ser₁₃₀ Asp Leu Arg His Leu₁₃₅ Val Gln Ser Tyr Arg₁₄₀ Pro Cys Gly Ala
Leu₁₄₅ Glu Arg Gly Ala Gly₁₅₀ Leu Gly Leu Phe Cys₁₅₅ Glu Pro Ala Pro Glu₁₆₀
Pro Gly His Pro Ala₁₆₅ Ala Leu Tyr Gly Pro₁₇₀ Lys Arg Ala Ala Gly₁₇₅ Gly
Ala Gly Ala Gly₁₈₀ Ala Pro Gly Ser Cys₁₈₅ Ser Ala Gly Ala Gly₁₉₀ Ala Thr
Ala Gly Pro₁₉₅ Gly Leu Gly Leu Tyr₂₀₀ Gly Asp Phe Gly Ser₂₀₅ Ala Ala Ala
Gly Leu₂₁₀ Tyr Glu Arg Pro Thr₂₁₅ Ala Ala Ala Gly Leu₂₂₀ Leu Tyr Pro Glu
Arg Gly His Gly Leu His₂₃₀ Ala Asp Lys Gly Ala₂₃₅ Gly Val Lys Val Glu₂₄₀
Ser Glu Leu Leu Cys₂₄₅ Thr Arg Leu Leu Leu₂₅₀ Gly Gly Gly Ser Tyr₂₅₅ Lys
Cys Ile Lys Cys₂₆₀ Ser Lys Val Phe Ser₂₆₅ Thr Pro His Gly Leu₂₇₀ Glu Val
His Val Arg Arg Ser His Ser Gly₂₈₀ Thr Arg Pro Phe Ala₂₈₅ Cys Glu Met

1914427_1

Cys Gly Lys Thr Phe Gly His Ala Val Ser Leu Glu Gln His Lys Ala
290 295 300

Val His Ser Gln Glu Arg Ser Phe Asp Cys Lys Ile Cys Gly Lys Ser
305 310 315 320

Phe Lys Arg Ser Ser Thr Leu Ser Thr His Leu Leu Ile His Ser Asp
325 330 335

Thr Arg Pro Tyr Pro Cys Gln Tyr Cys Gly Lys Arg Phe His Gln Lys
340 345 350

Ser Asp Met Lys Lys His Thr Phe Ile His Thr Gly Glu Lys Pro His
355 360 365

Lys Cys Gln Val Cys Gly Lys Ala Phe Ser Gln Ser Ser Asn Leu Ile
370 375 380

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

Cys Gly Lys Gly Phe Gln Arg Lys Val Asp Leu Arg Arg His Arg Glu
405 410 415

Thr Gln His Gly Leu Lys
420

<210> 48
<211> 391
<212> PRT
<213> Homo sapiens

<400> 48

Met Asp Leu Glu Lys Asn Tyr Pro Thr Pro Arg Thr Ser Arg Thr Gly
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His Gly Gly Val Asn Gln Leu Gly Gly Val Phe Val Asn Gly Arg Pro
20 25 30

Leu Pro Asp Val Val Arg Gln Arg Ile Val Glu Leu Ala His Gln Gly
35 40 45

Val Arg Pro Cys Asp Ile Ser Arg Gln Leu Arg Val Ser His Gly Cys
50 55 60

Val Ser Lys Ile Leu Gly Arg Tyr Tyr Glu Thr Gly Ser Ile Lys Pro
65 70 75 80

Gly Val Ile Gly Gly Ser Lys Pro Lys Val Ala Thr Pro Lys Val Val
85 90 95

1914427_1

Glu Lys Ile Ala Glu Tyr Lys Arg Gln Asn Pro Thr Met Phe Ala Trp
 100 105 110
 Glu Ile Arg Asp Arg Leu Leu Ala Glu Arg Val Cys Asp Asn Asp Thr
 115 120 125
 Val Pro Ser Val Ser Ser Ile Asn Arg Ile Ile Arg Thr Lys Val Gln
 130 135 140
 Gln Pro Pro Asn Gln Pro Val Pro Ala Ser Ser His Ser Ile Val Ser
 145 150 155 160
 Thr Gly Ser Val Thr Gln Val Ser Ser Val Ser Thr Asp Ser Ala Gly
 165 170 175
 Ser Ser Tyr Ser Ile Ser Gly Ile Leu Gly Ile Thr Ser Pro Ser Ala
 180 185 190
 Asp Thr Asn Lys Arg Lys Arg Asp Glu Gly Ile Gln Glu Ser Pro Val
 195 200 205
 Pro Asn Gly His Ser Leu Pro Gly Arg Asp Phe Leu Arg Lys Gln Met
 210 215 220
 Arg Gly Asp Leu Phe Thr Gln Gln Gln Leu Glu Val Leu Asp Arg Val
 225 230 235 240
 Phe Glu Arg Gln His Tyr Ser Asp Ile Phe Thr Thr Thr Glu Pro Ile
 245 250 255
 Lys Pro Glu Gln Thr Thr Glu Tyr Ser Ala Met Ala Ser Leu Ala Gly
 260 265 270
 Gly Leu Asp Asp Met Lys Ala Asn Leu Ala Ser Pro Thr Pro Ala Asp
 275 280 285
 Ile Gly Ser Ser Val Pro Gly Pro Gln Ser Tyr Pro Ile Val Thr Gly
 290 295 300
 Arg Asp Leu Ala Ser Thr Thr Leu Pro Gly Tyr Pro Pro His Val Pro
 305 310 315 320
 Pro Ala Gly Gln Gly Ser Tyr Ser Ala Pro Thr Leu Thr Gly Met Val
 325 330 335
 Pro Gly Ser Glu Phe Ser Gly Ser Pro Tyr Ser His Pro Gln Tyr Ser
 340 345 350
 Ser Tyr Asn Asp Ser Trp Arg Phe Pro Asn Pro Gly Leu Leu Gly Ser
 355 360 365

1914427_1

Pro Tyr Tyr Tyr Ser Ala Ala Ala Arg Gly Ala Ala Pro Pro Ala Ala
 370 375 380

Ala Thr Ala Tyr Asp Arg His
 385 390

<210> 49
 <211> 535
 <212> PRT
 <213> Homo sapiens
 <400> 49

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

His Arg Tyr Phe Tyr Pro Glu Pro Gly Ala Gln Asp Ala Asp Glu Arg
 35 40 45

Arg Gly Gly Gly Ser Leu Gly Ser Pro Tyr Pro Gly Gly Ala Leu Val
 50 55 60

Pro Ala Pro Pro Ser Arg Phe Leu Gly Ala Tyr Ala Tyr Pro Pro Arg
 65 70 75 80

Pro Gln Ala Ala Gly Phe Pro Gly Ala Gly Glu Ser Phe Pro Pro Pro
 85 90 95

Ala Asp Ala Glu Gly Tyr Gln Pro Gly Glu Gly Tyr Ala Ala Pro Asp
 100 105 110

Pro Arg Ala Gly Leu Tyr Pro Gly Pro Arg Glu Asp Tyr Ala Leu Pro
 115 120 125

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

Leu Leu Trp Ser Lys Phe Asn Gln His Gln Thr Glu Met Ile Ile Thr
 145 150 155 160

Lys Gln Gly Arg Arg Met Phe Pro Phe Leu Ser Phe Thr Val Ala Gly
 165 170 175

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

Asp Gln His His Trp Arg Tyr Gln Ser Gly Lys Trp Val Gln Cys Gly
 195 200 205

1914427_1

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

Ser Pro Asn Thr Gly Ala His Trp Met Arg Gln Glu Val Ser Phe Gly
 225 230 235 240

Lys Leu Lys Leu Thr Asn Asn Lys Gly Ala Ser Asn Asn Val Thr Gln
 245 250 255

Met Ile Val Leu Gln Ser Leu His Lys Tyr Gln Pro Arg Leu His Ile
 260 265 270

Val Glu Val Asn Asp Gly Glu Pro Glu Ala Ala Cys Asn Ala Ser Asn
 275 280 285

Thr His Ile Phe Thr Phe Gln Glu Thr Gln Phe Ile Ala Val Thr Ala
 290 295 300

Tyr Gln Asn Ala Glu Ile Thr Gln Leu Lys Ile Asp Asn Asn Pro Phe
 305 310 315 320

Ala Lys Gly Phe Arg Glu Asn Phe Glu Ser Met Tyr Thr Ser Val Asp
 325 330 335

Thr Ser Ile Pro Ser Pro Pro Gly Pro Asn Cys Gln Phe Leu Gly Gly
 340 345 350

Asp His Tyr Ser Pro Leu Leu Pro Asn Gln Tyr Pro Val Pro Ser Arg
 355 360 365

Phe Tyr Pro Asp Leu Pro Gly Gln Ala Lys Asp Val Val Pro Gln Ala
 370 375 380

Tyr Trp Leu Gly Ala Pro Arg Asp His Ser Tyr Glu Ala Glu Phe Arg
 385 390 395 400

Ala Val Ser Met Lys Pro Ala Phe Leu Pro Ser Ala Pro Gly Pro Thr
 405 410 415

Met Ser Tyr Tyr Arg Gly Gln Glu Val Leu Ala Pro Gly Ala Gly Trp
 420 425 430

Pro Val Ala Pro Gln Tyr Pro Pro Lys Met Gly Pro Ala Ser Trp Phe
 435 440 445

Arg Pro Met Arg Thr Leu Pro Met Glu Pro Gly Pro Gly Gly Ser Glu
 450 455 460

Gly Arg Gly Pro Glu Asp Gln Gly Pro Pro Leu Val Trp Thr Glu Ile
 465 470 475 480

Ala Pro Ile Arg Pro Glu Ser Ser Asp Ser Gly Leu Gly Glu Gly Asp
 485 490 495

Ser Lys Arg Arg Arg Val Ser Pro Tyr Pro Ser Ser Gly Asp Ser Ser
 500 505 510

Ser Pro Ala Gly Ala Pro Ser Pro Phe Asp Lys Glu Ala Glu Gly Gln
 515 520 525

Phe Tyr Asn Tyr Phe Pro Asn
 530 535

<210> 50
 <211> 444
 <212> PRT
 <213> Homo sapiens
 <400> 50

Met Glu Val Thr Ala Asp Gln Pro Arg Trp Val Ser His His His Pro
 1 5 10 15

Ala Val Leu Asn Gly Gln His Pro Asp Thr His His Pro Gly Leu Ser
 20 25 30

His Ser Tyr Met Asp Ala Ala Gln Tyr Pro Leu Pro Glu Glu Val Asp
 35 40 45

Val Leu Phe Asn Ile Asp Gly Gln Gly Asn His Val Pro Pro Tyr Tyr
 50 55 60

Gly Asn Ser Val Arg Ala Thr Val Gln Arg Tyr Pro Pro Thr His His
 65 70 75 80

Gly Ser Gln Val Cys Arg Pro Pro Leu Leu His Gly Ser Leu Pro Trp
 85 90 95

Leu Asp Gly Gly Lys Ala Leu Gly Ser His His Thr Ala Ser Pro Trp
 100 105 110

Asn Leu Ser Pro Phe Ser Lys Thr Ser Ile His His Gly Ser Pro Gly
 115 120 125

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

His Ala Ser Pro His Leu Phe Thr Phe Pro Pro Thr Pro Pro Lys Asp
 145 150 155 160

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

Arg Gln Asp Glu Lys Glu Cys Leu Lys Tyr Gln Val Pro Leu Pro Asp

Ser Met Lys₁₉₅ Leu Glu Ser Ser His₂₀₀ Ser Arg Gly Ser Met₂₀₅ Thr Ala Leu
 Gly Gly₂₁₀ Ala Ser Ser Ser Thr₂₁₅ His His Pro Ile Thr₂₂₀ Thr Tyr Pro Pro
 Tyr Val Pro Glu Tyr Ser₂₃₀ Ser Gly Leu Phe Pro₂₃₅ Pro Ser Ser Leu Leu₂₄₀
 Gly Gly Ser Pro Thr₂₄₅ Gly Phe Gly Cys Lys₂₅₀ Ser Arg Pro Lys Ala₂₅₅ Arg
 Ser Ser Thr Glu₂₆₀ Gly Arg Glu Cys Val₂₆₅ Asn Cys Gly Ala Thr₂₇₀ Ser Thr
 Pro Leu Trp₂₇₅ Arg Arg Asp Gly Thr₂₈₀ Gly His Tyr Leu Cys₂₈₅ Asn Ala Cys
 Gly Leu₂₉₀ Tyr His Lys Met Asn₂₉₅ Gly Gln Asn Arg Pro₃₀₀ Leu Ile Lys Pro
 Lys₃₀₅ Arg Arg Leu Ser Ala₃₁₀ Ala Arg Arg Ala Gly₃₁₅ Thr Ser Cys Ala Asn₃₂₀
 Cys Gln Thr Thr Thr₃₂₅ Thr Thr Leu Trp Arg₃₃₀ Arg Asn Ala Asn Gly₃₃₅ Asp
 Pro Val Cys Asn₃₄₀ Ala Cys Gly Leu Tyr₃₄₅ Tyr Lys Leu His Asn₃₅₀ Ile Asn
 Arg Pro Leu₃₅₅ Thr Met Lys Lys Glu₃₆₀ Gly Ile Gln Thr Arg₃₆₅ Asn Arg Lys
 Met Ser₃₇₀ Ser Lys Ser Lys Lys₃₇₅ Cys Lys Lys Val His₃₈₀ Asp Ser Leu Glu
 Asp₃₈₅ Phe Pro Lys Asn Ser₃₉₀ Ser Phe Asn Pro Ala₃₉₅ Ala Leu Ser Arg His₄₀₀
 Met Ser Ser Leu Ser₄₀₅ His Ile Ser Pro Phe₄₁₀ Ser His Ser Ser His₄₁₅ Met
 Leu Thr Thr Pro₄₂₀ Thr Pro Met His Pro₄₂₅ Pro Ser Ser Leu Ser₄₃₀ Phe Gly
 Pro His His₄₃₅ Pro Ser Ser Met Val₄₄₀ Thr Ala Met Gly

<210> 51

<211> 431
 <212> PRT
 <213> Homo sapiens

<400> 51

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

Gly Pro Ser Pro Gly Ala Ser Pro Ser Trp Arg Ala Ala Pro Lys Ala
 20          25          30

Ser Asp Leu Leu Gly Ala Arg Gly Pro Gly Gly Thr Phe Gln Gly Arg
 35          40          45

Asp Leu Arg Gly Gly Ala His Ala Ser Ser Ser Ser Leu Asn Pro Met
 50          55          60

Pro Pro Ser Gln Leu Gln Leu Pro Thr Leu Pro Leu Val Met Val Ala
 65          70          75          80

Pro Ser Gly Ala Arg Leu Gly Pro Leu Pro His Leu Gln Ala Leu Leu
 85          90          95

Gln Asp Arg Pro His Phe Met His Gln Leu Ser Thr Val Asp Ala His
100          105          110

Ala Arg Thr Pro Val Leu Gln Val His Pro Leu Glu Ser Pro Ala Met
115          120          125

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

Ala Arg Pro Gly Leu Pro Pro Gly Ile Asn Val Ala Ser Leu Glu Trp
145          150          155          160

Val Ser Arg Glu Pro Ala Leu Leu Cys Thr Phe Pro Asn Pro Ser Ala
165          170          175

Pro Arg Lys Asp Ser Thr Leu Ser Ala Val Pro Gln Ser Ser Tyr Pro
180          185          190

Leu Leu Ala Asn Gly Val Cys Lys Trp Pro Gly Cys Glu Lys Val Phe
195          200          205

Glu Glu Pro Glu Asp Phe Leu Lys His Cys Gln Ala Asp His Leu Leu
210          215          220

Asp Glu Lys Gly Arg Ala Gln Cys Leu Leu Gln Arg Glu Met Val Gln
225          230          235          240

Ser Leu Glu Gln Gln Leu Val Leu Glu Lys Glu Lys Leu Ser Ala Met
245          250          255

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1914427_1

Gln Ala His Leu₂₆₀ Ala Gly Lys Met Ala₂₆₅ Leu Thr Lys Ala Ser₂₇₀ Ser Val

Ala Ser Ser₂₇₅ Asp Lys Gly Ser Cys₂₈₀ Cys Ile Val Ala₂₈₅ Gly Ser Gln

Gly Pro Val Val Pro Ala Trp₂₉₅ Ser Gly Pro Arg Glu₃₀₀ Ala Pro Asp Ser

Leu Phe Ala Val Arg Arg₃₁₀ His Leu Trp Gly Ser₃₁₅ His Gly Asn Ser Thr₃₂₀

Phe Pro Glu Phe Leu₃₂₅ His Asn Met Asp Tyr₃₃₀ Phe Lys Phe His Asn₃₃₅ Met

Arg Pro Pro Phe₃₄₀ Thr Tyr Ala Thr Leu₃₄₅ Ile Arg Trp Ala Ile₃₅₀ Leu Glu

Ala Pro Glu₃₅₅ Lys Gln Arg Thr Leu₃₆₀ Asn Glu Ile Tyr His₃₆₅ Trp Phe Thr

Arg Met₃₇₀ Phe Ala Phe Phe Arg₃₇₅ Asn His Pro Ala Thr₃₈₀ Trp Lys Asn Ala

Ile₃₈₅ Arg His Asn Leu Ser₃₉₀ Leu His Lys Cys Phe₃₉₅ Val Arg Val Glu Ser₄₀₀

Glu Lys Gly Ala Val₄₀₅ Trp Thr Val Asp Glu₄₁₀ Leu Glu Phe Arg Lys₄₁₅ Lys

Arg Ser Gln Arg₄₂₀ Pro Ser Arg Cys Ser₄₂₅ Asn Pro Thr Pro Gly₄₃₀ Pro

<210> 52
<211> 560
<212> PRT
<213> Homo sapiens

<400> 52

Met Asp Arg Ala Pro₅ Gln Arg Gln His Arg₁₀ Ala Ser Arg Glu₁₅ Leu Leu

Ala Ala Lys Lys₂₀ Thr His Thr Ser Gln₂₅ Ile Glu Val Ile Pro₃₀ Cys Lys

Ile Cys Gly₃₅ Asp Lys Ser Ser Gly₄₀ Ile His Tyr Gly₄₅ Val Ile Thr Cys

Glu Gly₅₀ Cys Lys Gly Phe Phe₅₅ Arg Arg Ser Gln Arg₆₀ Cys Asn Ala Ala

1914427_1

Tyr Ser Cys Thr Arg Gln Gln Asn Cys Pro Ile Asp Arg Thr Ser Arg
 65 70 75 80
 Asn Arg Cys Gln His Cys Arg Leu Gln Lys Cys Leu Ala Leu Gly Met
 85 90 95
 Ser Arg Asp Ala Val Lys Phe Gly Arg Met Ser Lys Lys Gln Arg Asp
 100 105 110
 Ser Leu His Ala Glu Val Gln Lys Gln Leu Gln Gln Arg Gln Gln Gln
 115 120 125
 Gln Gln Glu Pro Val Val Lys Thr Pro Pro Ala Gly Ala Gln Gly Ala
 130 135 140
 Asp Thr Leu Thr Tyr Thr Leu Gly Leu Pro Asp Gly Gln Leu Pro Leu
 145 150 155 160
 Gly Ser Ser Pro Asp Leu Pro Glu Ala Ser Ala Cys Pro Pro Gly Leu
 165 170 175
 Leu Lys Ala Ser Gly Ser Gly Pro Ser Tyr Ser Asn Asn Leu Ala Lys
 180 185 190
 Ala Gly Leu Asn Gly Ala Ser Cys His Leu Glu Tyr Ser Pro Glu Arg
 195 200 205
 Gly Lys Ala Glu Gly Arg Glu Ser Phe Tyr Ser Thr Gly Ser Gln Leu
 210 215 220
 Thr Pro Asp Arg Cys Gly Leu Arg Phe Glu Glu His Arg His Pro Gly
 225 230 235 240
 Leu Gly Glu Leu Gly Gln Gly Pro Asp Ser Tyr Gly Ser Pro Ser Phe
 245 250 255
 Arg Ser Thr Pro Glu Ala Pro Tyr Ala Ser Leu Thr Glu Ile Glu His
 260 265 270
 Leu Val Gln Ser Val Cys Lys Ser Tyr Arg Glu Thr Cys Gln Leu Arg
 275 280 285
 Leu Glu Asp Leu Leu Arg Gln Arg Ser Asn Ile Phe Ser Arg Glu Glu
 290 295 300
 Val Thr Gly Tyr Gln Arg Lys Ser Met Trp Glu Met Trp Glu Arg Cys
 305 310 315 320
 Ala His His Leu Thr Glu Ala Ile Gln Tyr Val Val Glu Phe Ala Lys
 325 330 335

1914427_1

Arg Leu Ser Gly Phe Met Glu Leu Cys Gln Asn Asp Gln Ile Val Leu
340 345 350

Leu Lys Ala Gly Ala Met Glu Val Val Leu Val Arg Met Cys Arg Ala
355 360 365

Tyr Asn Ala Asp Asn Arg Thr Val Phe Phe Glu Gly Lys Tyr Gly Gly
370 375 380

Met Glu Leu Phe Arg Ala Leu Gly Cys Ser Glu Leu Ile Ser Ser Ile
385 390 395 400

Phe Asp Phe Ser His Ser Leu Ser Ala Leu His Phe Ser Glu Asp Glu
405 410 415

Ile Ala Leu Tyr Thr Ala Leu Val Leu Ile Asn Ala His Arg Pro Gly
420 425 430

Leu Gln Glu Lys Arg Lys Val Glu Gln Leu Gln Tyr Asn Leu Glu Leu
435 440 445

Ala Phe His His His Leu Cys Lys Thr His Arg Gln Ser Ile Leu Ala
450 455 460

Lys Leu Pro Pro Lys Gly Lys Leu Arg Ser Leu Cys Ser Gln His Val
465 470 475 480

Glu Arg Leu Gln Ile Phe Gln His Leu His Pro Ile Val Val Gln Ala
485 490 495

Ala Phe Pro Pro Leu Tyr Lys Glu Leu Phe Ser Thr Glu Thr Glu Ser
500 505 510

Pro Val Gly Cys Pro Ser Asp Leu Glu Glu Gly Leu Leu Ala Ser Pro
515 520 525

Tyr Gly Leu Leu Ala Thr Ser Leu Asp Pro Val Pro Pro Ser Pro Phe
530 535 540

Ser Phe Pro Met Asn Pro Gly Gly Trp Ser Pro Pro Ala Leu Trp Lys
545 550 555 560

<210> 53
<211> 464
<212> PRT
<213> Homo sapiens

<400> 53

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

1914427_1

Ala Ala Leu Asp₂₀ Pro Ala Tyr Thr Thr₂₅ Leu Glu Phe Glu Asn₃₀ Val Gln
 Val Leu Thr₃₅ Met Gly Asn Asp Thr₄₀ Ser Pro Ser Glu Gly₄₅ Thr Asn Leu
 Asn Ala₅₀ Pro Asn Ser Leu Gly₅₅ Val Ser Ala Leu Cys₆₀ Ala Ile Cys Gly
 Asp₆₅ Arg Ala Thr Gly Lys₇₀ His Tyr Gly Ala Ser₇₅ Ser Cys Asp Gly Cys₈₀
 Lys Gly Phe Phe Arg₈₅ Arg Ser Val Arg Lys₉₀ Asn His Met Tyr Ser₉₅ Cys
 Arg Phe Ser Arg₁₀₀ Gln Cys Val Val Asp₁₀₅ Lys Asp Lys Arg Asn₁₁₀ Gln Cys
 Arg Tyr Cys₁₁₅ Arg Leu Lys Lys Cys₁₂₀ Phe Arg Ala Gly Met₁₂₅ Lys Lys Glu
 Ala Val₁₃₀ Gln Asn Glu Arg Asp₁₃₅ Arg Ile Ser Thr Arg₁₄₀ Arg Ser Ser Tyr
 Glu₁₄₅ Asp Ser Ser Leu Pro₁₅₀ Ser Ile Asn Ala Leu₁₅₅ Leu Gln Ala Glu Val₁₆₀
 Leu Ser Arg Gln Ile₁₆₅ Thr Ser Pro Val Ser₁₇₀ Gly Ile Asn Gly Asp₁₇₅ Ile
 Arg Ala Lys Lys₁₈₀ Ile Ala Ser Ile Ala₁₈₅ Asp Val Cys Glu Ser₁₉₀ Met Lys
 Glu Gln Leu₁₉₅ Leu Val Leu Val Glu₂₀₀ Trp Ala Lys Tyr Ile₂₀₅ Pro Ala Phe
 Cys Glu₂₁₀ Leu Pro Leu Asp Asp₂₁₅ Gln Val Ala Leu Leu₂₂₀ Arg Ala His Ala
 Gly₂₂₅ Glu His Leu Leu Leu₂₃₀ Gly Ala Thr Lys Arg₂₃₅ Ser Met Val Phe Lys₂₄₀
 Asp Val Leu Leu Leu₂₄₅ Gly Asn Asp Tyr Ile₂₅₀ Val Pro Arg His Cys₂₅₅ Pro
 Glu Leu Ala Glu₂₆₀ Met Ser Arg Val Ser₂₆₅ Ile Arg Ile Leu Asp₂₇₀ Glu Leu
 Val Leu Pro₂₇₅ Phe Gln Glu Leu Gln₂₈₀ Ile Asp Asp Asn Glu₂₈₅ Tyr Ala Tyr

1914427_1

Leu Lys Ala Ile Ile Phe Phe Asp Pro Asp Ala Lys Gly Leu Ser Asp
 290 295 300

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

Asp Tyr Ile Asn Asp Arg Gln Tyr Asp Ser Arg Gly Arg Phe Gly Glu
 325 330 335

Leu Leu Leu Leu Leu Pro Thr Leu Gln Ser Ile Thr Trp Gln Met Ile
 340 345 350

Glu Gln Ile Gln Phe Ile Lys Leu Phe Gly Met Ala Lys Ile Asp Asn
 355 360 365

Leu Leu Gln Glu Met Leu Leu Gly Gly Ser Pro Ser Asp Ala Pro His
 370 375 380

Ala His His Pro Leu His Pro His Leu Met Gln Glu His Met Gly Thr
 385 390 395 400

Asn Val Ile Val Ala Asn Thr Met Pro Thr His Leu Ser Asn Gly Gln
 405 410 415

Met Ser Thr Pro Glu Thr Pro Gln Pro Ser Pro Pro Gly Gly Ser Gly
 420 425 430

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

Pro Leu Ser Ala Ile Pro Gln Pro Thr Ile Thr Lys Gln Glu Val Ile
 450 455 460

<210> 54
 <211> 794
 <212> PRT
 <213> Homo sapiens

<400> 54

Met Ala Gly Trp Ile Gln Ala Gln Gln Leu Gln Gly Asp Ala Leu Arg
 1 5 10 15

Gln Met Gln Val Leu Tyr Gly Gln His Phe Pro Ile Glu Val Arg His
 20 25 30

Tyr Leu Ala Gln Trp Ile Glu Ser Gln Pro Trp Asp Ala Ile Asp Leu
 35 40 45

Asp Asn Pro Gln Asp Arg Ala Gln Ala Thr Gln Leu Leu Glu Gly Leu
 50 55 60

Val Gln Glu Leu Gln Lys Lys Ala Glu His Gln Val Gly Glu Asp Gly
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65					70					1914427_1 75					80				
Phe	Leu	Leu	Lys	Ile 85	Lys	Leu	Arg	His	Tyr 90	Ala	Thr	Gln	Leu	Gln 95	Lys				
Thr	Tyr	Asp	Arg 100	Cys	Pro	Leu	Glu	Leu 105	Val	Arg	Cys	Ile	Arg 110	His	Ile				
Leu	Tyr	Asn 115	Glu	Gln	Arg	Leu	Val 120	Arg	Glu	Ala	Asn	Asn 125	Cys	Ser	Ser				
Pro	Ala 130	Gly	Ile	Leu	Val	Asp 135	Ala	Met	Ser	Gln	Lys 140	His	Leu	Gln	Ile				
Asn 145	Gln	Thr	Phe	Glu	Glu 150	Leu	Arg	Leu	Val	Thr 155	Gln	Asp	Thr	Glu	Asn 160				
Glu	Leu	Lys	Lys	Leu 165	Gln	Gln	Thr	Gln	Glu 170	Tyr	Phe	Ile	Ile	Gln 175	Tyr				
Gln	Glu	Ser	Leu 180	Arg	Ile	Gln	Ala	Gln 185	Phe	Ala	Gln	Leu	Ala 190	Gln	Leu				
Ser	Pro	Gln 195	Glu	Arg	Leu	Ser	Arg 200	Glu	Thr	Ala	Leu	Gln 205	Gln	Lys	Gln				
Val	Ser 210	Leu	Glu	Ala	Trp	Leu 215	Gln	Arg	Glu	Ala	Gln 220	Thr	Leu	Gln	Gln				
Tyr 225	Arg	Val	Glu	Leu	Ala 230	Glu	Lys	His	Gln	Lys 235	Thr	Leu	Gln	Leu	Leu 240				
Arg	Lys	Gln	Gln	Thr 245	Ile	Ile	Leu	Asp	Asp 250	Glu	Leu	Ile	Gln	Trp 255	Lys				
Arg	Arg	Gln	Gln 260	Leu	Ala	Gly	Asn	Gly 265	Gly	Pro	Pro	Glu	Gly 270	Ser	Leu				
Asp	Val	Leu 275	Gln	Ser	Trp	Cys	Glu 280	Lys	Leu	Ala	Glu	Ile 285	Ile	Trp	Gln				
Asn	Arg 290	Gln	Gln	Ile	Arg	Arg 295	Ala	Glu	His	Leu	Cys 300	Gln	Gln	Leu	Pro				
Ile 305	Pro	Gly	Pro	Val	Glu 310	Glu	Met	Leu	Ala	Glu 315	Val	Asn	Ala	Thr	Ile 320				
Thr	Asp	Ile	Ile	Ser 325	Ala	Leu	Val	Thr	Ser 330	Thr	Phe	Ile	Ile	Glu 335	Lys				
Gln	Pro	Pro	Gln	Val	Leu	Lys	Thr	Gln	Thr	Lys	Phe	Ala	Ala	Thr	Val				

340

345

350

Arg Leu Leu Val Gly Gly Lys Leu Asn Val His Met Asn Pro Pro Gln
 355 360 365

Val Lys Ala Thr Ile Ile Ser Glu Gln Gln Ala Lys Ser Leu Leu Lys
 370 375 380

Asn Glu Asn Thr Arg Asn Glu Cys Ser Gly Glu Ile Leu Asn Asn Cys
 385 390 395 400

Cys Val Met Glu Tyr His Gln Ala Thr Gly Thr Leu Ser Ala His Phe
 405 410 415

Arg Asn Met Ser Leu Lys Arg Ile Lys Arg Ala Asp Arg Arg Gly Ala
 420 425 430

Glu Ser Val Thr Glu Glu Lys Phe Thr Val Leu Phe Glu Ser Gln Phe
 435 440 445

Ser Val Gly Ser Asn Glu Leu Val Phe Gln Val Lys Thr Leu Ser Leu
 450 455 460

Pro Val Val Val Ile Val His Gly Ser Gln Asp His Asn Ala Thr Ala
 465 470 475 480

Thr Val Leu Trp Asp Asn Ala Phe Ala Glu Pro Gly Arg Val Pro Phe
 485 490 495

Ala Val Pro Asp Lys Val Leu Trp Pro Gln Leu Cys Glu Ala Leu Asn
 500 505 510

Met Lys Phe Lys Ala Glu Val Gln Ser Asn Arg Gly Leu Thr Lys Glu
 515 520 525

Asn Leu Val Phe Leu Ala Gln Lys Leu Phe Asn Asn Ser Ser Ser His
 530 535 540

Leu Glu Asp Tyr Ser Gly Leu Ser Val Ser Trp Ser Gln Phe Asn Arg
 545 550 555 560

Glu Asn Leu Pro Gly Trp Asn Tyr Thr Phe Trp Gln Trp Phe Asp Gly
 565 570 575

Val Met Glu Val Leu Lys Lys His His Lys Pro His Trp Asn Asp Gly
 580 585 590

Ala Ile Leu Gly Phe Val Asn Lys Gln Gln Ala His Asp Leu Leu Ile
 595 600 605

Asn Lys Pro Asp Gly Thr Phe Leu Leu Arg Phe Ser Asp Ser Glu Ile

610

615

Gly Gly Ile Thr Ile Ala Trp Lys Phe Asp Ser Pro Glu Arg Asn Leu
625 630 635 640

Trp Asn Leu Lys Pro Phe Thr Thr Arg Asp Phe Ser Ile Arg Ser Leu
645 650 655

Ala Asp Arg Leu Gly Asp Leu Ser Tyr Leu Ile Tyr Val Phe Pro Asp
660 665 670

Arg Pro Lys Asp Glu Val Phe Ser Lys Tyr Tyr Thr Pro Val Leu Ala
675 680 685

Lys Ala Val Asp Gly Tyr Val Lys Pro Gln Ile Lys Gln Val Val Pro
690 695 700

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

Met Asp Gln Ala Pro Ser Pro Ala Val Cys Pro Gln Ala Pro Tyr Asn
725 730 735

Met Tyr Pro Gln Asn Pro Asp His Val Leu Asp Gln Asp Gly Glu Phe
740 745 750

Asp Leu Asp Glu Thr Met Asp Val Ala Arg His Val Glu Glu Leu Leu
755 760 765

Arg Arg Pro Met Asp Ser Leu Asp Ser Arg Leu Ser Pro Pro Ala Gly
770 775 780

Leu Phe Thr Ser Ala Arg Gly Ser Leu Ser
785 790

<210> 55
<211> 574
<212> PRT
<213> Homo sapiens

<400> 55

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

Phe Gly Asp Phe Ile Thr Leu Ala Asn Arg Glu Val Leu Leu Cys Val
20 25 30

Leu Val Phe Leu Ser Leu Gly Leu Val Leu Ser Tyr Arg Cys Arg His
35 40 45

Arg Asn Gly Gly Leu Leu Gly Arg Gln Gln Ser Gly Ser Gln Phe Ala
50 55 60

1914427_1

Leu Phe Ser Asp Ile Leu Ser Gly Leu Pro Phe Ile Gly Phe Phe Trp
 65 70 75 80
 Ala Lys Ser Pro Pro Glu Ser Glu Asn Lys Glu Gln Leu Glu Ala Arg
 85 90 95
 Arg Arg Arg Lys Gly Thr Asn Ile Ser Glu Thr Ser Leu Ile Gly Thr
 100 105 110
 Ala Ala Cys Thr Ser Thr Ser Ser Gln Asn Asp Pro Glu Val Ile Ile
 115 120 125
 Val Gly Ala Gly Val Leu Gly Ser Ala Leu Ala Ala Val Leu Ser Arg
 130 135 140
 Asp Gly Arg Lys Val Thr Val Ile Glu Arg Asp Leu Lys Glu Pro Asp
 145 150 155 160
 Arg Ile Val Gly Glu Phe Leu Gln Pro Gly Gly Tyr His Val Leu Lys
 165 170 175
 Asp Leu Gly Leu Gly Asp Thr Val Glu Gly Leu Asp Ala Gln Val Val
 180 185 190
 Asn Gly Tyr Met Ile His Asp Gln Glu Ser Lys Ser Glu Val Gln Ile
 195 200 205
 Pro Tyr Pro Leu Ser Glu Asn Asn Gln Val Gln Ser Gly Arg Ala Phe
 210 215 220
 His His Gly Arg Phe Ile Met Ser Leu Arg Lys Ala Ala Met Ala Glu
 225 230 235 240
 Pro Asn Ala Lys Phe Ile Glu Gly Val Val Leu Gln Leu Leu Glu Glu
 245 250 255
 Asp Asp Val Val Met Gly Val Gln Tyr Lys Asp Lys Glu Thr Gly Asp
 260 265 270
 Ile Lys Glu Leu His Ala Pro Leu Thr Val Val Ala Asp Gly Leu Phe
 275 280 285
 Ser Lys Phe Arg Lys Ser Leu Val Ser Asn Lys Val Ser Val Ser Ser
 290 295 300
 His Phe Val Gly Phe Leu Met Lys Asn Ala Pro Gln Phe Lys Ala Asn
 305 310 315 320
 His Ala Glu Leu Ile Leu Ala Asn Pro Ser Pro Val Leu Ile Tyr Gln
 325 330 335

1914427_1

Ile Ser Ser Ser Glu Thr Arg Val Leu Val Asp Ile Arg Gly Glu Met
340 345 350

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

Pro Asp His Leu Lys Glu Pro Phe Leu Glu Ala Thr Asp Asn Ser His
370 375 380

Leu Arg Ser Met Pro Ala Ser Phe Leu Pro Pro Ser Ser Val Lys Lys
385 390 395 400

Arg Gly Val Leu Leu Leu Gly Asp Ala Tyr Asn Met Arg His Pro Leu
405 410 415

Thr Gly Gly Gly Met Thr Val Ala Phe Lys Asp Ile Lys Leu Trp Arg
420 425 430

Lys Leu Leu Lys Gly Ile Pro Asp Leu Tyr Asp Asp Ala Ala Ile Phe
435 440 445

Glu Ala Lys Lys Ser Phe Tyr Trp Ala Arg Lys Thr Ser His Ser Phe
450 455 460

Val Val Asn Ile Leu Ala Gln Ala Leu Tyr Glu Leu Phe Ser Ala Thr
465 470 475 480

Asp Asp Ser Leu His Gln Leu Arg Lys Ala Cys Phe Leu Tyr Phe Lys
485 490 495

Leu Gly Gly Glu Cys Val Ala Gly Pro Val Gly Leu Leu Ser Val Leu
500 505 510

Ser Pro Asn Pro Leu Val Leu Ile Gly His Phe Phe Ala Val Ala Ile
515 520 525

Tyr Ala Val Tyr Phe Cys Phe Lys Ser Glu Pro Trp Ile Thr Lys Pro
530 535 540

Arg Ala Leu Leu Ser Ser Gly Ala Val Leu Tyr Lys Ala Cys Ser Val
545 550 555 560

Ile Phe Pro Leu Ile Tyr Ser Glu Met Lys Tyr Met Val His
565 570

<210> 56
<211> 342
<212> PRT
<213> Homo sapiens

<400> 56

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Met Asp Leu Trp Asn Trp Asp Glu Ala Ser Pro Gln Glu Val Pro Pro
 1 5 10 15
 Gly Asn Lys Leu Ala Gly Leu Glu Gly Ala Lys Leu Gly Phe Cys Phe
 20 25 30
 Pro Asp Leu Ala Leu Gln Gly Asp Thr Pro Thr Ala Thr Ala Glu Thr
 35 40 45
 Cys Trp Lys Gly Thr Ser Ser Ser Leu Ala Ser Phe Pro Gln Leu Asp
 50 55 60
 Trp Gly Ser Ala Leu Leu His Pro Glu Val Pro Trp Gly Ala Glu Pro
 65 70 75 80
 Asp Ser Gln Ala Leu Pro Trp Ser Gly Asp Trp Thr Asp Met Ala Cys
 85 90 95
 Thr Ala Trp Asp Ser Trp Ser Gly Ala Ser Gln Thr Leu Gly Pro Ala
 100 105 110
 Pro Leu Gly Pro Gly Pro Ile Pro Ala Ala Gly Ser Glu Gly Ala Ala
 115 120 125
 Gly Gln Asn Cys Val Pro Val Ala Gly Glu Ala Thr Ser Trp Ser Arg
 130 135 140
 Ala Gln Ala Ala Gly Ser Asn Thr Ser Trp Asp Cys Ser Val Gly Pro
 145 150 155 160
 Asp Gly Asp Thr Tyr Trp Gly Ser Gly Leu Gly Gly Glu Pro Arg Thr
 165 170 175
 Asp Cys Thr Ile Ser Trp Gly Gly Pro Ala Gly Pro Asp Cys Thr Thr
 180 185 190
 Ser Trp Asn Pro Gly Leu His Ala Gly Gly Thr Thr Ser Leu Lys Arg
 195 200 205
 Tyr Gln Ser Ser Ala Leu Thr Val Cys Ser Glu Pro Ser Pro Gln Ser
 210 215 220
 Asp Arg Ala Ser Leu Ala Arg Cys Pro Lys Thr Asn His Arg Gly Pro
 225 230 235 240
 Ile Gln Leu Trp Gln Phe Leu Leu Glu Leu Leu His Asp Gly Ala Arg
 245 250 255
 Ser Ser Cys Ile Arg Trp Thr Gly Asn Ser Arg Glu Phe Gln Leu Cys
 260 265 270

1914427_1

Asp Pro Lys Glu Val Ala Arg Leu Trp Gly Glu Arg Lys Arg Lys Pro
275 280 285

Gly Met Asn Tyr Glu Lys Leu Ser Arg Gly Leu Arg Tyr Tyr Tyr Arg
290 295 300

Arg Asp Ile Val Arg Lys Ser Gly Gly Arg Lys Tyr Thr Tyr Arg Phe
305 310 315 320

Gly Gly Arg Val Pro Ser Leu Ala Tyr Pro Asp Cys Ala Gly Gly Gly
325 330 335

Arg Gly Ala Glu Thr Gln
340

<210> 57
<211> 480
<212> PRT
<213> Homo sapiens

<400> 57

Met Glu Val Ala Pro Glu Gln Pro Arg Trp Met Ala His Pro Ala Val
1 5 10 15

Leu Asn Ala Gln His Pro Asp Ser His His Pro Gly Leu Ala His Asn
20 25 30

Tyr Met Glu Pro Ala Gln Leu Leu Pro Pro Asp Glu Val Asp Val Phe
35 40 45

Phe Asn His Leu Asp Ser Gln Gly Asn Pro Tyr Tyr Ala Asn Pro Ala
50 55 60

His Ala Arg Ala Arg Val Ser Tyr Ser Pro Ala His Ala Arg Leu Thr
65 70 75 80

Gly Gly Gln Met Cys Arg Pro His Leu Leu His Ser Pro Gly Leu Pro
85 90 95

Trp Leu Asp Gly Gly Lys Ala Ala Leu Ser Ala Ala Ala Ala His His
100 105 110

His Asn Pro Trp Thr Val Ser Pro Phe Ser Lys Thr Pro Leu His Pro
115 120 125

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

Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Ser Val Ala Ser Leu Thr
145 150 155 160

1914427_1

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

1914427_1

Leu Ala Gly His Met Ala Pro Val Gly His Leu Pro Phe Ser His
435 440 445

Ser Gly His Ile Leu Pro Thr Pro Thr Pro Ile His Pro Ser Ser Ser
450 455 460

Leu Ser Phe Gly His Pro His Pro Ser Ser Met Val Thr Ala Met Gly
465 470 475 480

<210> 58
<211> 304
<212> PRT
<213> Homo sapiens

<400> 58

Met Lys Arg Ala His Pro Glu Tyr Ser Ser Ser Asp Ser Glu Leu Asp
1 5 10 15

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

Ser Ser Ala Leu Gly Ser Met Ser Pro Thr Thr Ser Ser Gln Ile Leu
35 40 45

Ala Arg Lys Arg Arg Arg Gly Ile Ile Glu Lys Arg Arg Arg Asp Arg
50 55 60

Ile Asn Asn Ser Leu Ser Glu Leu Arg Arg Leu Val Pro Ser Ala Phe
65 70 75 80

Glu Lys Gln Gly Ser Ala Lys Leu Glu Lys Ala Glu Ile Leu Gln Met
85 90 95

Thr Val Asp His Leu Lys Met Leu His Thr Ala Gly Gly Lys Gly Tyr
100 105 110

Phe Asp Ala His Ala Leu Ala Met Asp Tyr Arg Ser Leu Gly Phe Arg
115 120 125

Glu Cys Leu Ala Glu Val Ala Arg Tyr Leu Ser Ile Ile Glu Gly Leu
130 135 140

Asp Ala Ser Asp Pro Leu Arg Val Arg Leu Val Ser His Leu Asn Asn
145 150 155 160

Tyr Ala Ser Gln Arg Glu Ala Ala Ser Gly Ala His Ala Gly Leu Gly
165 170 175

His Ile Pro Trp Gly Thr Val Phe Gly His His Pro His Ile Ala His
180 185 190

Pro Leu Leu Leu Pro Gln Asn Gly His Gly Asn Ala Gly Thr Thr Ala
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200

205

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

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

Leu Pro Val Val Thr Ser Ala Ser Lys Leu Ser Pro Pro Leu Leu Ser
 245 250 255

Ser Val Ala Ser Leu Ser Ala Phe Pro Phe Ser Phe Gly Ser Phe His
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Leu Leu Ser Pro Asn Ala Leu Ser Pro Ser Ala Pro Thr Gln Ala Ala
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Asn Leu Gly Lys Pro Tyr Arg Pro Trp Gly Thr Glu Ile Gly Ala Phe
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<400> 59

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Ser Val Ile Arg Leu Asn Ser Pro Thr Thr Thr Ser Gln Ile Met Ala
 35 40 45

Arg Lys Lys Arg Arg Gly Ile Ile Glu Lys Arg Arg Arg Asp Arg Ile
 50 55 60

Asn Asn Ser Leu Ser Glu Leu Arg Arg Leu Val Pro Thr Ala Phe Glu
 65 70 75 80

Lys Gln Gly Ser Ala Lys Leu Glu Lys Ala Glu Ile Leu Gln Met Thr
 85 90 95

Val Asp His Leu Lys Met Leu Gln Ala Thr Gly Gly Lys Gly Tyr Phe
 100 105 110

Asp Ala His Ala Leu Ala Met Asp Phe Met Ser Ile Gly Phe Arg Glu
 115 120 125

Cys Leu Thr Glu Val Ala Arg Tyr Leu Ser Ser Val Glu Gly Leu Asp
 130 135 140

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Ser Ser Asp Pro Leu Arg Val Arg Leu Val Ser His Leu Ser Thr Cys
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Ala Thr Gln Arg Glu Ala Ala Ala Met Thr Ser Ser Met Ala His His
 165 170 175

His His Pro Leu His Pro His His Trp Ala Ala Ala Phe His His Leu
 180 185 190

Pro Ala Ala Leu Leu Gln Pro Asn Gly Leu His Ala Ser Glu Ser Thr
 195 200 205

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

Ala Leu Leu Thr Ala Thr Phe Ala His Ala Asp Ser Ala Leu Arg Met
 225 230 235 240

Pro Ser Thr Gly Ser Val Ala Pro Cys Val Pro Pro Leu Ser Thr Ser
 245 250 255

Leu Leu Ser Leu Ser Ala Thr Val His Ala Ala Ala Ala Ala Ala Thr
 260 265 270

Ala Ala Ala His Ser Phe Pro Leu Ser Phe Ala Gly Ala Phe Pro Met
 275 280 285

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

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 <213> Homo sapiens

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Ala Gly Gly Gly Tyr Thr Ala Met Pro Ala Pro Met Ser Val Tyr Ser
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 His Pro Ala His Ala Glu Gln Tyr Pro Gly Gly Met Ala Arg Ala Tyr
 50 55 60
 Gly Pro Tyr Thr Pro Gln Pro Gln Pro Lys Asp Met Val Lys Pro Pro
 65 70 75 80
 Tyr Ser Tyr Ile Ala Leu Ile Thr Met Ala Ile Gln Asn Ala Pro Asp
 85 90 95
 Lys Lys Ile Thr Leu Asn Gly Ile Tyr Gln Phe Ile Met Asp Arg Phe
 100 105 110
 Pro Phe Tyr Arg Asp Asn Lys Gln Gly Trp Gln Asn Ser Ile Arg His
 115 120 125
 Asn Leu Ser Leu Asn Glu Cys Phe Val Lys Val Pro Arg Asp Asp Lys
 130 135 140
 Lys Pro Gly Lys Gly Ser Tyr Trp Thr Leu Asp Pro Asp Ser Tyr Asn
 145 150 155 160
 Met Phe Glu Asn Gly Ser Phe Leu Arg Arg Arg Arg Arg Phe Lys Lys
 165 170 175
 Lys Asp Ala Val Lys Asp Lys Glu Glu Lys Asp Arg Leu His Leu Lys
 180 185 190
 Glu Pro Pro Pro Pro Gly Arg Gln Pro Pro Pro Ala Pro Pro Glu Gln
 195 200 205
 Ala Asp Gly Asn Ala Pro Gly Pro Gln Pro Pro Pro Val Arg Ile Gln
 210 215 220
 Asp Ile Lys Thr Glu Asn Gly Thr Cys Pro Ser Pro Pro Gln Pro Leu
 225 230 235 240
 Ser Pro Ala Ala Ala Leu Gly Ser Gly Ser Ala Ala Ala Val Pro Lys
 245 250 255
 Ile Glu Ser Pro Asp Ser Ser Ser Ser Ser Leu Ser Ser Gly Ser Ser
 260 265 270
 Pro Pro Gly Ser Leu Pro Ser Ala Arg Pro Leu Ser Leu Asp Gly Ala
 275 280 285
 Asp Ser Ala Pro Pro Pro Pro Ala Pro Ser Ala Pro Pro Pro His His
 290 295 300

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Ser Gln Gly Phe Ser Val Asp Asn Ile Met Thr Ser Leu Arg Gly Ser
305 310 315 320

Pro Gln Ser Ala Ala Glu Leu Ser Ser Gly Leu Leu Ala Ser Ala
325 330 335

Ala Ala Ser Ser Arg Ala Gly Ile Ala Pro Pro Leu Ala Leu Gly Ala
340 345 350

Tyr Ser Pro Gly Gln Ser Ser Leu Tyr Ser Ser Pro Cys Ser Gln Thr
355 360 365

Ser Ser Ala Gly Ser Ser Gly Gly Gly Gly Gly Gly Ala Gly Ala Ala
370 375 380

Gly Gly Ala Gly Gly Ala Gly Thr Tyr His Cys Asn Leu Gln Ala Met
385 390 395 400

Ser Leu Tyr Ala Ala Gly Glu Arg Gly Gly His Leu Gln Gly Ala Pro
405 410 415

Gly Gly Ala Gly Gly Ser Ala Val Asp Asp Pro Leu Pro Asp Tyr Ser
420 425 430

Leu Pro Pro Val Thr Ser Ser Ser Ser Ser Ser Leu Ser His Gly Gly
435 440 445

Gly Gly Gly Gly Gly Gly Gly Gln Glu Ala Gly His His Pro Ala
450 455 460

Ala His Gln Gly Arg Leu Thr Ser Trp Tyr Leu Asn Gln Ala Gly Gly
465 470 475 480

Asp Leu Gly His Leu Ala Ser Ala Ala Ala Ala Ala Ala Ala Gly
485 490 495

Tyr Pro Gly Gln Gln Gln Asn Phe His Ser Val Arg Glu Met Phe Glu
500 505 510

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

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Gly Met Ala Ser Pro Met Gly Val Tyr Ser Gly His Pro Glu Gln Tyr
 35 40 45

Ser Ala Gly Met Gly Arg Ser Tyr Ala Pro Tyr His His His Gln Pro
 50 55 60

Ala Ala Pro Lys Asp Leu Val Lys Pro Pro Tyr Ser Tyr Ile Ala Leu
 65 70 75 80

Ile Thr Met Ala Ile Gln Asn Ala Pro Glu Lys Lys Ile Thr Leu Asn
 85 90 95

Gly Ile Tyr Gln Phe Ile Met Asp Arg Phe Pro Phe Tyr Arg Glu Asn
 100 105 110

Lys Gln Gly Trp Gln Asn Ser Ile Arg His Asn Leu Ser Leu Asn Glu
 115 120 125

Cys Phe Val Lys Val Pro Arg Asp Asp Lys Lys Pro Gly Lys Gly Ser
 130 135 140

Tyr Trp Thr Leu Asp Pro Asp Ser Tyr Asn Met Phe Glu Asn Gly Ser
 145 150 155 160

Phe Leu Arg Arg Arg Arg Arg Phe Lys Lys Lys Asp Val Ser Lys Glu
 165 170 175

Lys Glu Glu Arg Ala His Leu Lys Glu Pro Pro Pro Ala Ala Ser Lys
 180 185 190

Gly Ala Pro Ala Thr Pro His Leu Ala Asp Ala Pro Lys Glu Ala Glu
 195 200 205

Lys Lys Val Val Ile Lys Ser Glu Ala Ala Ser Pro Ala Leu Pro Val
 210 215 220

Ile Thr Lys Val Glu Thr Leu Ser Pro Glu Ser Ala Leu Gln Gly Ser
 225 230 235 240

Pro Arg Ser Ala Ala Ser Thr Pro Ala Gly Ser Pro Asp Gly Ser Leu
 245 250 255

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Pro Glu His His₂₆₀ Ala Ala Ala Pro Asn₂₆₅ Gly Leu Pro Gly Phe₂₇₀ Ser Val

Glu Asn Ile₂₇₅ Met Thr Leu Arg Thr₂₈₀ Ser Pro Pro Gly Gly₂₈₅ Glu Leu Ser

Pro Gly₂₉₀ Ala Gly Arg Ala Gly₂₉₅ Leu Val Val Pro Pro₃₀₀ Leu Ala Leu Pro

Tyr₃₀₅ Ala Ala Ala Pro₃₁₀ Ala Ala Tyr Gly Gln₃₁₅ Pro Cys Ala Gln Gly₃₂₀

Leu Glu Ala Gly Ala₃₂₅ Ala Gly Gly Tyr Gln₃₃₀ Cys Ser Met Arg Ala₃₃₅ Met

Ser Leu Tyr Thr₃₄₀ Gly Ala Glu Arg Pro₃₄₅ Ala His Met Cys Val₃₅₀ Pro Pro

Ala Leu Asp₃₅₅ Glu Ala Leu Ser Asp₃₆₀ His Pro Ser Gly Pro₃₆₅ Thr Ser Pro

Leu Ser₃₇₀ Ala Leu Asn Leu Ala₃₇₅ Ala Gly Gln Glu Gly₃₈₀ Ala Leu Ala Ala

Thr₃₈₅ Gly His His His Gln₃₉₀ His His Gly His His₃₉₅ His Pro Gln Ala Pro₄₀₀

Pro Pro Pro Pro Ala₄₀₅ Pro Gln Pro Gln Pro₄₁₀ Thr Pro Gln Pro Gly₄₁₅ Ala

Ala Ala Ala Gln₄₂₀ Ala Ala Ser Trp Tyr₄₂₅ Leu Asn His Ser Gly₄₃₀ Asp Leu

Asn His Leu₄₃₅ Pro Gly His Thr Phe₄₄₀ Ala Ala Gln Gln Gln₄₄₅ Thr Phe Pro

Asn Val₄₅₀ Arg Glu Met Phe Asn₄₅₅ Ser His Arg Leu Gly₄₆₀ Ile Glu Asn Ser

Thr₄₆₅ Leu Gly Glu Ser Gln₄₇₀ Val Ser Gly Asn Ala₄₇₅ Ser Cys Gln Leu Pro₄₈₀

Tyr Arg Ser Thr Pro₄₈₅ Pro Leu Tyr Arg His₄₉₀ Ala Ala Pro Tyr Ser₄₉₅ Tyr

Asp Cys Thr Lys₅₀₀ Tyr

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<400> 62

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 35 40 45
 Met Asn Ala Phe Met Val Trp Ala Lys Asp Glu Arg Lys Arg Leu Ala
 50 55 60
 Val Gln Asn Pro Asp Leu His Asn Ala Glu Leu Ser Lys Met Leu Gly
 65 70 75 80
 Lys Ser Trp Lys Ala Leu Thr Leu Ser Gln Lys Arg Pro Tyr Val Asp
 85 90 95
 Glu Ala Glu Arg Leu Arg Leu Gln His Met Gln Asp Tyr Pro Asn Tyr
 100 105 110
 Lys Tyr Arg Pro Arg Arg Lys Lys Gln Ala Lys Arg Leu Cys Lys Arg
 115 120 125
 Val Asp Pro Gly Phe Leu Leu Ser Ser Leu Ser Arg Asp Gln Asn Ala
 130 135 140
 Leu Pro Glu Lys Arg Ser Gly Ser Arg Gly Ala Leu Gly Glu Lys Glu
 145 150 155 160
 Asp Arg Gly Glu Tyr Ser Pro Gly Thr Ala Leu Pro Ser Leu Arg Gly
 165 170 175
 Cys Tyr His Glu Gly Pro Ala Gly Gly Gly Gly Gly Thr Pro Ser
 180 185 190
 Ser Val Asp Thr Tyr Pro Tyr Gly Leu Pro Thr Pro Pro Glu Met Ser
 195 200 205
 Pro Leu Asp Val Leu Glu Pro Glu Gln Thr Phe Phe Ser Ser Pro Cys
 210 215 220
 Gln Glu Glu His Gly His Pro Arg Arg Ile Pro His Leu Pro Gly His
 225 230 235 240
 Pro Tyr Ser Pro Glu Tyr Ala Pro Ser Pro Leu His Cys Ser His Pro
 245 250 255
 Leu Gly Ser Leu Ala Leu Gly Gln Ser Pro Gly Val Ser Met Met Ser
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265

270

Pro Val Pro Gly Cys Pro Pro Ser Pro Ala Tyr Tyr Ser Pro Ala Thr
275 280 285

Tyr His Pro Leu His Ser Asn Leu Gln Ala His Leu Gly Gln Leu Ser
290 295 300

Pro Pro Pro Glu His Pro Gly Phe Asp Ala Leu Asp Gln Leu Ser Gln
305 310 315 320

Val Glu Leu Leu Gly Asp Met Asp Arg Asn Glu Phe Asp Gln Tyr Leu
325 330 335

Asn Thr Pro Gly His Pro Asp Ser Ala Thr Gly Ala Met Ala Leu Ser
340 345 350

Gly His Val Pro Val Ser Gln Val Thr Pro Thr Gly Pro Thr Glu Thr
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370 375 380

Tyr Ser Val Ser
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<210> 63
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<400> 63

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Arg Gly Leu Ala Ala Gly Pro Ala Ala Leu Ala Ala Pro Ala Ala Pro
35 40 45

Ala Ser Pro Pro Ser Pro Gln Arg Ser Pro Pro Arg Ser Pro Glu Pro
50 55 60

Gly Arg Tyr Gly Leu Ser Pro Ala Gly Arg Gly Glu Arg Gln Ala Ala
65 70 75 80

Asp Glu Ser Arg Ile Arg Arg Pro Met Asn Ala Phe Met Val Trp Ala
85 90 95

Lys Asp Glu Arg Lys Arg Leu Ala Gln Gln Asn Pro Asp Leu His Asn
100 105 110

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Ala Val Leu Ser Lys Met Leu Gly Lys Ala Trp Lys Glu Leu Asn Ala
115 120 125

Ala Glu Lys Arg Pro Phe Val Glu Glu Ala Glu Arg Leu Arg Val Gln
130 135 140

His Leu Arg Asp His Pro Asn Tyr Lys Tyr Arg Pro Arg Arg Lys Lys
145 150 155 160

Gln Ala Arg Lys Ala Arg Arg Leu Glu Pro Gly Leu Leu Leu Pro Gly
165 170 175

Leu Ala Pro Pro Gln Pro Pro Pro Glu Pro Phe Pro Ala Ala Ser Gly
180 185 190

Ser Ala Arg Ala Phe Arg Glu Leu Pro Pro Leu Gly Ala Glu Phe Asp
195 200 205

Gly Leu Gly Leu Pro Thr Pro Glu Arg Ser Pro Leu Asp Gly Leu Glu
210 215 220

Pro Gly Glu Ala Ala Phe Phe Pro Pro Pro Ala Ala Pro Glu Asp Cys
225 230 235 240

Ala Leu Arg Pro Phe Arg Ala Pro Tyr Ala Pro Thr Glu Leu Ser Arg
245 250 255

Asp Pro Gly Gly Cys Tyr Gly Ala Pro Leu Ala Glu Ala Leu Arg Thr
260 265 270

Ala Pro Pro Ala Ala Pro Leu Ala Gly Leu Tyr Tyr Gly Thr Leu Gly
275 280 285

Thr Pro Gly Pro Tyr Pro Gly Pro Leu Ser Pro Pro Pro Glu Ala Pro
290 295 300

Pro Leu Glu Ser Ala Glu Pro Leu Gly Pro Ala Ala Asp Leu Trp Ala
305 310 315 320

Asp Val Asp Leu Thr Glu Phe Asp Gln Tyr Leu Asn Cys Ser Arg Thr
325 330 335

Arg Pro Asp Ala Pro Gly Leu Pro Tyr His Val Ala Leu Ala Lys Leu
340 345 350

Gly Pro Arg Ala Met Ser Cys Pro Glu Glu Ser Ser Leu Ile Ser Ala
355 360 365

Leu Ser Asp Ala Ser Ser Ala Val Tyr Tyr Ser Ala Cys Ile Ser Gly
370 375 380

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 <213> Artificial Sequence

<220>
 <223> his tag

<400> 64

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 <212> DNA
 <213> Homo sapiens

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 <212> DNA
 <213> Homo sapiens

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 cctcctggag ggccaggaat cgggccgggg gttgggccag gctctgaggt gtgggggatt 180
 ccccatgcc ccccgccgta tgagttctgt ggggggatgg cgtactgtgg gccccaggtt 240

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918

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 <212> DNA
 <213> Homo sapiens

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 <212> DNA
 <213> Homo sapiens

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ccagagtttc	atctgcgacc
cggacgacga	gaccttcatc
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<212> DNA

<213> Homo sapiens

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<211> 1725

<212> DNA

<213> Homo sapiens

<400> 119

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