

SEQUENCE LISTING

<110> CHUGAI SEIYAKU KABUSHIKI KAISHA
 <120> FGFR3-Fused Genes and Medicament Targeting Them
 <130> C1-A1210Y1P
 <150> JP 2012-214739
 <151> 2012-09-27
 <150> JP 2013-149217
 <151> 2013-07-18
 <160> 39
 <170> PatentIn version 3.5
 <210> 1
 <211> 24
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> An artificially synthesized primer sequence
 <400> 1
 gtgcacaacc tcgactacta caag 24
 <210> 2
 <211> 22
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> An artificially synthesized primer sequence
 <400> 2
 gtaatcctcc acgcacttct tc 22
 <210> 3
 <211> 24
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> An artificially synthesized primer sequence
 <400> 3
 tgtttgaccg agtctacact cacc 24
 <210> 4
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
<223> An artificially synthesized primer sequence

<400> 4
gacatgtccc agttcagttg ac 22

<210> 5
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> An artificially synthesized primer sequence

<400> 5
gggtgtcact cttctgtcta agga 24

<210> 6
<211> 808
<212> PRT
<213> Homo sapiens

<400> 6

Met Gly Ala Pro Ala Cys Ala Leu Ala Leu Cys Val Ala Val Ala Ile
1 5 10 15

Val Ala Gly Ala Ser Ser Glu Ser Leu Gly Thr Glu Gln Arg Val Val
20 25 30

Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
35 40 45

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

Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
65 70 75 80

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

Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg
100 105 110

Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala
115 120 125

Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr
 130 135 140

Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp
 145 150 155 160

Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys
 165 170 175

Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly
 180 185 190

Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His
 195 200 205

Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly
 210 215 220

Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr
 225 230 235 240

Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln
 245 250 255

Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu
 260 265 270

Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu
 275 280 285

Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro
 290 295 300

Tyr Val Thr Val Leu Lys Ser Trp Ile Ser Glu Ser Val Glu Ala Asp
 305 310 315 320

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

Leu Cys Arg Ala Thr Asn Phe Ile Gly Val Ala Glu Lys Ala Phe Trp
 340 345 350

Leu Ser Val His Gly Pro Arg Ala Ala Glu Glu Glu Leu Val Glu Ala

355																			
Asp	Glu	Ala	Gly	Ser	Val	Tyr	Ala	Gly	Ile	Leu	Ser	Tyr	Gly	Val	Gly				
370						375					380								
Phe	Phe	Leu	Phe	Ile	Leu	Val	Val	Ala	Ala	Val	Thr	Leu	Cys	Arg	Leu				
385					390					395					400				
Arg	Ser	Pro	Pro	Lys	Lys	Gly	Leu	Gly	Ser	Pro	Thr	Val	His	Lys	Ile				
				405					410					415					
Ser	Arg	Phe	Pro	Leu	Lys	Arg	Gln	Val	Ser	Leu	Glu	Ser	Asn	Ala	Ser				
			420					425					430						
Met	Ser	Ser	Asn	Thr	Pro	Leu	Val	Arg	Ile	Ala	Arg	Leu	Ser	Ser	Gly				
			435				440					445							
Glu	Gly	Pro	Thr	Leu	Ala	Asn	Val	Ser	Glu	Leu	Glu	Leu	Pro	Ala	Asp				
	450					455					460								
Pro	Lys	Trp	Glu	Leu	Ser	Arg	Ala	Arg	Leu	Thr	Leu	Gly	Lys	Pro	Leu				
465					470					475					480				
Gly	Glu	Gly	Cys	Phe	Gly	Gln	Val	Val	Met	Ala	Glu	Ala	Ile	Gly	Ile				
				485					490					495					
Asp	Lys	Asp	Arg	Ala	Ala	Lys	Pro	Val	Thr	Val	Ala	Val	Lys	Met	Leu				
			500					505					510						
Lys	Asp	Asp	Ala	Thr	Asp	Lys	Asp	Leu	Ser	Asp	Leu	Val	Ser	Glu	Met				
		515					520					525							
Glu	Met	Met	Lys	Met	Ile	Gly	Lys	His	Lys	Asn	Ile	Ile	Asn	Leu	Leu				
	530					535					540								
Gly	Ala	Cys	Thr	Gln	Gly	Gly	Pro	Leu	Tyr	Val	Leu	Val	Glu	Tyr	Ala				
545					550					555					560				
Ala	Lys	Gly	Asn	Leu	Arg	Glu	Phe	Leu	Arg	Ala	Arg	Arg	Pro	Pro	Gly				
				565					570						575				
Leu	Asp	Tyr	Ser	Phe	Asp	Thr	Cys	Lys	Pro	Pro	Glu	Glu	Gln	Leu	Thr				
			580					585					590						

Phe Lys Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu
595 600 605

Tyr Leu Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn
610 615 620

Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu
625 630 635 640

Ala Arg Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly
645 650 655

Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val
660 665 670

Tyr Thr His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu
675 680 685

Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu
690 695 700

Leu Phe Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn
705 710 715 720

Cys Thr His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala
725 730 735

Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg
740 745 750

Val Leu Thr Val Thr Ser Thr Asp Glu Tyr Leu Asp Leu Ser Ala Pro
755 760 765

Phe Glu Gln Tyr Ser Pro Gly Gly Gln Asp Thr Pro Ser Ser Ser Ser
770 775 780

Ser Gly Asp Asp Ser Val Phe Ala His Asp Leu Leu Pro Pro Ala Pro
785 790 795 800

Pro Ser Ser Gly Gly Ser Arg Thr
805

<211> 806
<212> PRT
<213> Homo sapiens

<400> 7

Met Gly Ala Pro Ala Cys Ala Leu Ala Leu Cys Val Ala Val Ala Ile
1 5 10 15

Val Ala Gly Ala Ser Ser Glu Ser Leu Gly Thr Glu Gln Arg Val Val
20 25 30

Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
35 40 45

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

Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
65 70 75 80

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

Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg
100 105 110

Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala
115 120 125

Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr
130 135 140

Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp
145 150 155 160

Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys
165 170 175

Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly
180 185 190

Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His
195 200 205

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

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

His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe
675 680 685

Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe
690 695 700

Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr
705 710 715 720

His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala Pro Ser
725 730 735

Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Val Leu
740 745 750

Thr Val Thr Ser Thr Asp Glu Tyr Leu Asp Leu Ser Ala Pro Phe Glu
755 760 765

Gln Tyr Ser Pro Gly Gly Gln Asp Thr Pro Ser Ser Ser Ser Ser Gly
770 775 780

Asp Asp Ser Val Phe Ala His Asp Leu Leu Pro Pro Ala Pro Pro Ser
785 790 795 800

Ser Gly Gly Ser Arg Thr
805

<210> 8
<211> 511
<212> PRT
<213> Homo sapiens

<400> 8

Met Ser Arg Gly Pro Glu Glu Val Asn Arg Leu Thr Glu Ser Thr Tyr
1 5 10 15

Arg Asn Val Met Glu Gln Phe Asn Pro Gly Leu Arg Asn Leu Ile Asn
20 25 30

Leu Gly Lys Asn Tyr Glu Lys Ala Val Asn Ala Met Ile Leu Ala Gly
35 40 45

Lys Ala Tyr Tyr Asp Gly Val Ala Lys Ile Gly Glu Ile Ala Thr Gly
50 55 60

Ser Pro Val Ser Thr Glu Leu Gly His Val Leu Ile Glu Ile Ser Ser
65 70 75 80

Thr His Lys Lys Leu Asn Glu Ser Leu Asp Glu Asn Phe Lys Lys Phe
85 90 95

His Lys Glu Ile Ile His Glu Leu Glu Lys Lys Ile Glu Leu Asp Val
100 105 110

Lys Tyr Met Asn Ala Thr Leu Lys Arg Tyr Gln Thr Glu His Lys Asn
115 120 125

Lys Leu Glu Ser Leu Glu Lys Ser Gln Ala Glu Leu Lys Lys Ile Arg
130 135 140

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

Ile Glu Tyr Val Glu Thr Val Thr Ser Arg Gln Ser Glu Ile Gln Lys
165 170 175

Phe Ile Ala Asp Gly Cys Lys Glu Ala Leu Leu Glu Glu Lys Arg Arg
180 185 190

Phe Cys Phe Leu Val Asp Lys His Cys Gly Phe Ala Asn His Ile His
195 200 205

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

Trp Gln Glu Thr Cys Val Asp Ala Ile Lys Val Pro Glu Lys Ile Met
225 230 235 240

Asn Met Ile Glu Glu Ile Lys Thr Pro Ala Ser Thr Pro Val Ser Gly
245 250 255

Thr Pro Gln Ala Ser Pro Met Ile Glu Arg Ser Asn Val Val Arg Lys
260 265 270

Asp Tyr Asp Thr Leu Ser Lys Cys Ser Pro Lys Met Pro Pro Ala Pro
275 280 285

Ser Gly Arg Ala Tyr Thr Ser Pro Leu Ile Asp Met Phe Asn Asn Pro

290		295		300
Ala Thr Ala Ala Pro Asn Ser Gln Arg Val Asn Asn Ser Thr Gly Thr				
305		310		315 320
Ser Glu Asp Pro Ser Leu Gln Arg Ser Val Ser Val Ala Thr Gly Leu				
	325		330	335
Asn Met Met Lys Lys Gln Lys Val Lys Thr Ile Phe Pro His Thr Ala				
	340		345	350
Gly Ser Asn Lys Thr Leu Leu Ser Phe Ala Gln Gly Asp Val Ile Thr				
	355		360	365
Leu Leu Ile Pro Glu Glu Lys Asp Gly Trp Leu Tyr Gly Glu His Asp				
	370		375	380
Val Ser Lys Ala Arg Gly Trp Phe Pro Ser Ser Tyr Thr Lys Leu Leu				
	385		390	395 400
Glu Glu Asn Glu Thr Glu Ala Val Thr Val Pro Thr Pro Ser Pro Thr				
	405		410	415
Pro Val Arg Ser Ile Ser Thr Val Asn Leu Ser Glu Asn Ser Ser Val				
	420		425	430
Val Ile Pro Pro Pro Asp Tyr Leu Glu Cys Leu Ser Met Gly Ala Ala				
	435		440	445
Ala Asp Arg Arg Ala Asp Ser Ala Arg Thr Thr Ser Thr Phe Lys Ala				
	450		455	460
Pro Ala Ser Lys Pro Glu Thr Ala Ala Pro Asn Asp Ala Asn Gly Thr				
	465		470	475 480
Ala Lys Pro Pro Phe Leu Ser Gly Glu Asn Pro Phe Ala Thr Val Lys				
	485		490	495
Leu Arg Pro Thr Val Thr Asn Asp Arg Ser Ala Pro Ile Ile Arg				
	500		505	510

<210> 9
 <211> 838
 <212> PRT

<213> Homo sapiens

<400> 9

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

Thr Glu Asn Cys Asp Phe Leu Phe Ser Pro Pro Glu Val Thr Gly Arg
20 25 30

Ser Ser Val Leu Arg Val Ser Gln Lys Glu Asn Val Pro Pro Lys Asn
35 40 45

Leu Ala Lys Ala Met Lys Val Thr Phe Gln Thr Pro Leu Arg Asp Pro
50 55 60

Gln Thr His Arg Ile Leu Ser Pro Ser Met Ala Ser Lys Leu Glu Ala
65 70 75 80

Pro Phe Thr Gln Asp Asp Thr Leu Gly Leu Glu Asn Ser His Pro Val
85 90 95

Trp Thr Gln Lys Glu Asn Gln Gln Leu Ile Lys Glu Val Asp Ala Lys
100 105 110

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

Leu Gly Asp Ala Ser Pro Ala Phe Gly Ser Gly Ser Ser Ser Glu Ser
130 135 140

Gly Pro Gly Ala Leu Ala Asp Leu Asp Cys Ser Ser Ser Ser Gln Ser
145 150 155 160

Pro Gly Ser Ser Glu Asn Gln Met Val Ser Pro Gly Lys Val Ser Gly
165 170 175

Ser Pro Glu Gln Ala Val Glu Glu Asn Leu Ser Ser Tyr Ser Leu Asp
180 185 190

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

Glu Ser Gln His Lys Ala Glu Thr Pro His Gly Ala Glu Glu Glu Cys
210 215 220

Lys Ala Glu Thr Pro His Gly Ala Glu Glu Glu Cys Arg His Gly Gly
 225 230 235 240

Val Cys Ala Pro Ala Ala Val Ala Thr Ser Pro Pro Gly Ala Ile Pro
 245 250 255

Lys Glu Ala Cys Gly Gly Ala Pro Leu Gln Gly Leu Pro Gly Glu Ala
 260 265 270

Leu Gly Cys Pro Ala Gly Val Gly Thr Pro Val Pro Ala Asp Gly Thr
 275 280 285

Gln Thr Leu Thr Cys Ala His Thr Ser Ala Pro Glu Ser Thr Ala Pro
 290 295 300

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

Glu Val Ala Ala Gly Gln Met Ala Ser Ser Ser Arg Ser Gly Pro Val
 325 330 335

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

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

Lys Ala Ala Val Arg Gln Gln Lys Ala Pro Gln Glu Val Glu Glu Asp
 370 375 380

Asp Gly Arg Ser Gly Ala Gly Glu Asp Pro Pro Met Pro Ala Ser Arg
 385 390 395 400

Gly Ser Tyr His Leu Asp Trp Asp Lys Met Asp Asp Pro Asn Phe Ile
 405 410 415

Pro Phe Gly Gly Asp Thr Lys Ser Gly Cys Ser Glu Ala Gln Pro Pro
 420 425 430

Glu Ser Pro Glu Thr Arg Leu Gly Gln Pro Ala Ala Glu Gln Leu His
 435 440 445

Ala Gly Pro Ala Thr Glu Glu Pro Gly Pro Cys Leu Ser Gln Gln Leu
 450 455 460

His Ser Ala Ser Ala Glu Asp Thr Pro Val Val Gln Leu Ala Ala Glu
 465 470 475 480

Thr Pro Thr Ala Glu Ser Lys Glu Arg Ala Leu Asn Ser Ala Ser Thr
 485 490 495

Ser Leu Pro Thr Ser Cys Pro Gly Ser Glu Pro Val Pro Thr His Gln
 500 505 510

Gln Gly Gln Pro Ala Leu Glu Leu Lys Glu Glu Ser Phe Arg Asp Pro
 515 520 525

Ala Glu Val Leu Gly Thr Gly Ala Glu Val Asp Tyr Leu Glu Gln Phe
 530 535 540

Gly Thr Ser Ser Phe Lys Glu Ser Ala Leu Arg Lys Gln Ser Leu Tyr
 545 550 555 560

Leu Lys Phe Asp Pro Leu Leu Arg Asp Ser Pro Gly Arg Pro Val Pro
 565 570 575

Val Ala Thr Glu Thr Ser Ser Met His Gly Ala Asn Glu Thr Pro Ser
 580 585 590

Gly Arg Pro Arg Glu Ala Lys Leu Val Glu Phe Asp Phe Leu Gly Ala
 595 600 605

Leu Asp Ile Pro Val Pro Gly Pro Pro Pro Gly Val Pro Ala Pro Gly
 610 615 620

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

Gln Lys Asp Leu Asp Ala Val Val Lys Ala Thr Gln Glu Glu Asn Arg
 645 650 655

Glu Leu Arg Ser Arg Cys Glu Glu Leu His Gly Lys Asn Leu Glu Leu
 660 665 670

Gly Lys Ile Met Asp Arg Phe Glu Glu Val Val Tyr Gln Ala Met Glu
 675 680 685

Glu Val Gln Lys Gln Lys Glu Leu Ser Lys Ala Glu Ile Gln Lys Val
690 695 700

Leu Lys Glu Lys Asp Gln Leu Thr Thr Asp Leu Asn Ser Met Glu Lys
705 710 715 720

Ser Phe Ser Asp Leu Phe Lys Arg Phe Glu Lys Gln Lys Glu Val Ile
725 730 735

Glu Gly Tyr Arg Lys Asn Glu Glu Ser Leu Lys Lys Cys Val Glu Asp
740 745 750

Tyr Leu Ala Arg Ile Thr Gln Glu Gly Gln Arg Tyr Gln Ala Leu Lys
755 760 765

Ala His Ala Glu Glu Lys Leu Gln Leu Ala Asn Glu Glu Ile Ala Gln
770 775 780

Val Arg Ser Lys Ala Gln Ala Glu Ala Leu Ala Leu Gln Ala Ser Leu
785 790 795 800

Arg Lys Glu Gln Met Arg Ile Gln Ser Leu Glu Lys Thr Val Glu Gln
805 810 815

Lys Thr Lys Glu Asn Glu Glu Leu Thr Arg Ile Cys Asp Asp Leu Ile
820 825 830

Ser Lys Met Glu Lys Ile
835

<210> 10

<211> 2427

<212> DNA

<213> Homo sapiens

<400> 10

atgggcgccc ctgcctgcgc cctcgcgctc tgcgtggccg tggccatcgt ggccggcgcc 60

tcctcggagt ccttggggac ggagcagcgc gtcgtggggc gagcggcaga agtcccgggc 120

ccagagcccc gccagcagga gcagttggtc ttccgcagcg gggatgctgt ggagctgagc 180

tgtccccgc ccgggggtgg tcccatgggg cccactgtct gggtaagga tggcacaggg 240

ctggtgcctt cggagcgtgt cctggtgggg cccagcggc tgcaggtgct gaatgcctcc 300

cacgaggact	ccggggccta	cagctgccgg	cagcggctca	cgcagcgcgt	actgtgccac	360
ttcagtgtgc	gggtgacaga	cgctccatcc	tcgggagatg	acgaagacgg	ggaggacgag	420
gctgaggaca	caggtgtgga	cacagggggc	ccttactgga	cacggcccga	gcggatggac	480
aagaagctgc	tggccgtgcc	ggccgccaac	accgtccgct	tccgctgccc	agccgctggc	540
aacccccactc	cctccatctc	ctggctgaag	aacggcaggg	agttccgcgg	cgagcaccgc	600
attggaggca	tcaagctgcg	gcatcagcag	tggagcctgg	tcatggaaag	cgtggtgccc	660
tcggaccgcg	gcaactacac	ctgcgtcgtg	gagaacaagt	ttggcagcat	ccggcagacg	720
tacacgctgg	acgtgctgga	gcgctccccg	caccggccca	tcctgcaggc	ggggctgccg	780
gccaaccaga	cggcgggtgct	gggcagcgac	gtggagtacc	actgcaaggt	gtacagtgac	840
gcacagcccc	acatccagtg	gctcaagcac	gtggaggtga	atggcagcaa	ggtgggcccg	900
gacggcacac	cctacgttac	cgtgctcaag	tcctggatca	gtgagagtgt	ggaggccgac	960
gtgcgcctcc	gcctggccaa	tgtgtcggag	cgggacgggg	gcgagtacct	ctgtcgagcc	1020
accaatttca	taggcgtggc	cgagaaggcc	ttttggctga	gcgttcacgg	gccccgagca	1080
gccgaggagg	agctggtgga	ggctgacgag	gcgggcagtg	tgtatgcagg	catcctcagc	1140
tacgggggtg	gcttcttcct	gttcatcctg	gtggtggcgg	ctgtgacgct	ctgccgcctg	1200
cgcagcccc	ccaagaaagg	cctgggctcc	cccaccgtgc	acaagatctc	ccgcttcccg	1260
ctcaagcgac	aggtgtccct	ggagtccaac	gcgtccatga	gctccaacac	accactggtg	1320
cgcatacgaa	ggctgtcctc	aggggagggc	cccacgctgg	ccaatgtctc	cgagctcgag	1380
ctgcctgccg	accccaaattg	ggagctgtct	cgggcccggc	tgacctggg	caagcccctt	1440
ggggagggct	gcttcggcca	ggtggtcatg	gcggaggcca	tcggcattga	caaggaccgg	1500
gccgccaagc	ctgtcacctg	agccgtgaag	atgctgaaag	acgatgccac	tgacaaggac	1560
ctgtcggacc	tgggtgtctga	gatggagatg	atgaagatga	tcgggaaaca	caaaaacatc	1620
atcaacctgc	tgggcgcctg	cacgcagggc	gggcccctgt	acgtgctggg	ggagtacgcg	1680
gccaagggta	acctgcggga	gtttctgcgg	gcgcggcggc	ccccgggcct	ggactactcc	1740
ttcgacacct	gcaagccgcc	cgaggagcag	ctcaccttca	aggacctggg	gtcctgtgcc	1800
taccagggtg	cccggggcat	ggagtacttg	gcctcccaga	agtgcattca	cagggacctg	1860
gctgcccga	atgtgctggg	gaccgaggac	aacgtgatga	agatcgaga	cttcgggctg	1920
gcccgggacg	tgacaaacct	cgactactac	aagaagacaa	ccaacggccg	gctgcccgtg	1980
aagtggatgg	cgctgaggc	cttgtttgac	cgagtctaca	ctcaccagag	tgacgtctgg	2040

tcctttgggg	tctgtctctg	ggagatcttc	acgctggggg	gctccccgta	ccccggcatc	2100
cctgtggagg	agctcttcaa	gctgctgaag	gagggccacc	gcatggacaa	gcccggccaac	2160
tgcacacacg	acctgtacat	gatcatgcgg	gagtgtctggc	atgccgcgcc	ctcccagagg	2220
cccaccttca	agcagctggg	ggaggacctg	gaccgtgtcc	ttaccgtgac	gtccaccgac	2280
gagtacctgg	acctgtcggc	gcctttcgag	cagtactccc	cgggtggcca	ggacaccccc	2340
agctccagct	cctcagggga	cgactccgtg	tttggccacg	acctgtgtcc	cccggcccca	2400
cccagcagtg	ggggctcgcg	gacgtga				2427

<210> 11
 <211> 2421
 <212> DNA
 <213> Homo sapiens

<400> 11	
atgggcgccc	ctgcctgcgc cctcgcgctc tgcgtggccg tggccatcgt ggccggcgcc 60
tctcggaggt	ccttgggggac ggagcagcgc gtcgtggggc gagcggcaga agtcccgggc 120
ccagagcccc	gccagcagga gcagttggtc ttccgcagcg gggatgtctgt ggagctgagc 180
tgtcccccg	cggggggtgg tcccatgggg cccactgtct gggtaagga tggcacaggg 240
ctggtgccct	cggagcgtgt cctggtgggg ccccagcggc tgcaggtgct gaatgcctcc 300
cacgaggact	ccggggccta cagctgccgg cagcggctca cgcagcgcgt actgtgccac 360
ttcagtgatg	gggtgacaga cgctccatcc tcgggagatg acgaagacgg ggaggacgag 420
gctgaggaca	caggtgtgga cacagggggc ccttactgga cacggcccga gcggatggac 480
aagaagctgc	tggccgtgcc ggccggccaac accgtccgct tccgctgcc agccgctggc 540
aaccccactc	cctccatctc ctggctgaag aacggcaggg agttccgcgg cgagcaccgc 600
attggaggca	tcaagctgcg gcacagcag tggagcctgg tcatggaaag cgtggtgccc 660
tcggaccgcg	gcaactacac ctgcgtcgtg gagaacaagt ttggcagcat ccggcagacg 720
tacacgtggt	acgtgctgga gcgtccccg caccggccca tctgcaggc ggggctgccg 780
gccaaaccaga	cggcgggtgct gggcagcgac gtggagttcc actgcaaggt gtacagtgac 840
gcacagcccc	acatccagtg gctcaagcac gtggaggtga atggcagcaa ggtgggcccg 900
gacggcacac	cctacgttac cgtgctcaag acggcggggc ctaacaccac cgacaaggag 960
ctagaggttc	tctccttgca caacgtcacc tttgaggacg cgggggagta cacctgcctg 1020
gcgggcaatt	ctattgggtt ttctcatcac tctgcgtggc tgggtggtgct gccagccgag 1080
gaggagctgg	tggaggctga cgaggcgggc agtgtgtatg caggcatcct cagctacggg 1140

gtgggcttct	tcctgttcat	cctggtggtg	gcggtctgtga	cgctctgccg	cctgcgcagc	1200
cccccaaga	aaggcctggg	ctccccacc	gtgcacaaga	tctcccgtt	cccgtcaag	1260
cgacaggtgt	ccttgagtc	caacgcgtcc	atgagctcca	acacaccact	ggtgcgcac	1320
gcaaggctgt	cctcagggga	gggccccacg	ctggccaatg	tctccgagct	cgagctgcct	1380
gccgacccca	aatgggagct	gtctcgggcc	cggtgaccc	tgggcaagcc	ccttggggag	1440
ggctgcttcg	gccaggtggt	catggcggag	gccatcggca	ttgacaagga	ccgggccgcc	1500
aagcctgtca	ccgtagccgt	gaagatgctg	aaagacgatg	ccactgacaa	ggacctgtcg	1560
gacctggtgt	ctgagatgga	gatgatgaag	atgatcggga	aacacaaaaa	catcatcaac	1620
ctgctgggcg	cctgcacgca	gggcggggcc	ctgtacgtgc	tgggtggagta	cgcggccaa	1680
ggtaacctgc	gggagtttct	gcgggcgcgg	cgccccccgg	gcctggacta	ctccttcgac	1740
acctgcaagc	cgcccgagga	gcagctcacc	ttcaaggacc	tgggtgtcctg	tgcctaccag	1800
gtggccccgg	gcatggagta	cttggcctcc	cagaagtga	tccacaggga	cctggctgcc	1860
cgcaatgtgc	tggtgaccga	ggacaacgtg	atgaagatcg	cagacttcgg	gctggcccg	1920
gacgtgcaca	acctcgacta	ctacaagaag	acaaccaacg	gccggctgcc	cgtgaagtgg	1980
atggcgcttg	aggccttggt	tgaccgagtc	tacactcacc	agagtgaagt	ctggctcttt	2040
ggggtcctgc	tctgggagat	cttcacgctg	gggggctccc	cgtaccccg	catcctgtg	2100
gaggagctct	tcaagctgct	gaaggagggc	caccgcatgg	acaagcccgc	caactgcaca	2160
cacgacctgt	acatgatcat	gcgggagtg	tggcatgccg	cgccctccca	gaggcccacc	2220
ttcaagcagc	tgggtggagga	cctggaccgt	gtccttaccg	tgacgtccac	cgacgagtac	2280
ctggacctgt	cggcgccttt	cgagcagtac	tccccgggtg	gccaggacac	ccccagctcc	2340
agctcctcag	gggacgactc	cgtgtttgcc	cacgacctgc	tgcccccggc	cccaccagc	2400
agtgggggct	cgcggacgtg	a				2421

<210> 12
 <211> 1536
 <212> DNA
 <213> Homo sapiens

<400> 12	
atgtccccgg	ggccccgagga ggtgaaccgg ctcacggaga gcacctaccg gaatgttatg 60
gaacagttca	atcctgggct gcgaaattta ataaacctgg ggaaaaatta tgagaaagct 120
gtaaacgcta	tgatcctggc aggaaaagcc tactacgatg gagtggccaa gatcgggtgag 180

attgccactg ggtccccgt gtcaactgaa ctgggacatg tcctcataga gatttcaagt	240
accacaaga aactcaacga gagtcttgat gaaaatttta aaaaattcca caaagagatt	300
atccatgagc tggagaagaa gatagaactt gacgtgaaat atatgaacgc aactctaaaa	360
agataccaaa cagaacacaa gaataaatta gagtcttttg agaaatccca agctgagttg	420
aagaagatca gaaggaaaag ccaaggaagc cgaaacgcac tcaaatatga acacaaagaa	480
attgagtatg tggagaccgt tacttctcgt cagagtgaaa tccagaaatt cattgcagat	540
ggttgcaaag aggctctgct tgaagagaag aggcgcttct gctttctggt tgataagcac	600
tgtggctttg caaaccacat acattattat cacttacagt ctgcagaact actgaattcc	660
aagctgcctc ggtggcagga gacctgtgtt gatgccatca aagtgccaga gaaaatcatg	720
aatatgatcg aagaaataaa gaccccagcc tctacccccg tgtctggaac tcctcaggct	780
tcacccatga tcgagagaag caatgtgggtt aggaaagatt acgacaccct ttctaaatgc	840
tcaccaaaga tgcccccg ccttcaggc agagcatata ccagtccctt gatcgatatg	900
tttaataacc cagccacggc tgccccgaat tcacaaaggg taaataattc aacagggtact	960
tccgaagatc ccagtttaca gcgatcagtt tcggttgcaa cgggactgaa catgatgaag	1020
aagcagaaag tgaagaccat cttcccgcac actgcgggct ccaacaagac cttactcagc	1080
tttgcacagg gagatgtcat cacgctgctc atccccgagg agaaggatgg ctggctctat	1140
ggagaacacg acgtgtccaa ggcgaggggt tggttcccgt cgtcgtacac gaagttgctg	1200
gaagaaaatg agacagaagc agtgaccgtg cccacgcaa gccccacacc agtgagaagc	1260
atcagcaccg tgaacttgtc tgagaatagc agtgttgtca tccccccacc cgactacttg	1320
gaatgcttgt ccatgggggc agctgccgac aggagagcag attcggccag gacgacatcc	1380
acctttaagg cccagcgtc caagcccgag accgcggctc ctaacgatgc caacgggact	1440
gcaaagccgc cttttctcag cggagaaaac ccctttgcc ctgtgaaact ccgcccgact	1500
gtgacgaatg atcgctcggc acccatcatt cgatga	1536

<210> 13
 <211> 2517
 <212> DNA
 <213> Homo sapiens

<400> 13	
atgagtctgc aggtcttaaa cgacaaaaat gtcagcaatg aaaaaaatac agaaaattgc	60
gacttcctgt tttcgccacc agaagttacc ggaagatcgt ctgttcttcg tgtgtcacag	120
aaagaaaatg tgccacccaa gaacctggcc aaagctatga aggtgacttt tcagacacct	180

ctgcgggatc	cacagacgca	caggattcta	agtcctagca	tggccagcaa	acttgaggct	240
cctttcactc	aggatgacac	ccttggactg	gaaaactcac	acccggtctg	gacacagaaa	300
gagaaccaac	agctcatcaa	ggaagtggat	gccaaaacta	ctcatggaat	tctacagaaa	360
ccagtggagg	ctgacaccga	cctcctgggg	gatgcaagcc	cagcctttgg	gagtggcagc	420
tccagcgagt	ctggcccagg	tgccctggct	gacctggact	gctcaagctc	ttcccagagc	480
ccaggaagtt	ctgagaacca	aatggtgtct	ccaggaaaag	tgtctggcag	ccctgagcaa	540
gccgtggagg	aaaaccttag	ttcctattcc	ttagacagaa	gagtgcaccc	cgcctctgag	600
accctagaag	acccttgcat	gacagagtcc	cagcaciaag	cggagactcc	gcacggagcc	660
gaggaagaat	gcaaagcggg	gactccgcac	ggagccgagg	aggaatgccg	gcacgggtggg	720
gtctgtgctc	ccgcagcagt	ggccacttcg	cctcctgggt	caatccctaa	ggaagcctgc	780
ggaggagcac	ccctgcaggg	tctgcctggc	gaagccctgg	gctgccctgc	gggtgtgggc	840
acccccgtgc	cagcagatgg	cactcagacc	cttacctgtg	cacacacctc	tgctcctgag	900
agcacagccc	caaccaacca	cctggtggct	ggcagggcca	tgacctgag	tcctcaggaa	960
gaagtggctg	caggccaaat	ggccagctcc	tcgaggagcg	gacctgtaa	actagaat	1020
gatgtatctg	atggcgccac	cagcaaaaag	gcacccccac	caaggagact	gggagagagg	1080
tccggcctca	agcctccctt	gaggaaaagc	gcagtgaggc	agcaaaaagg	cccgagagg	1140
gtggaggagg	acgacggtag	gagcggagca	ggagaggacc	cccccatgcc	agcttctcgg	1200
ggctcttacc	acctcgactg	ggacaaaatg	gatgacccaa	acttcatccc	gttcggagggt	1260
gacaccaagt	ctggttgcat	tgaggcccag	ccccagaaa	gccctgagac	caggctgggc	1320
cagccagcgg	ctgaacagtt	gcatgctggg	cctgccacgg	aggagccagg	tcctgtctg	1380
agccagcagc	tgcattcagc	ctcagcggag	gacacgcctg	tggtgcagtt	ggcagccgag	1440
acccaacag	cagagagcaa	ggagagagcc	ttgaactctg	ccagcacctc	gcttcccaca	1500
agctgtccag	gcagtgagcc	agtgccacc	catcagcagg	ggcagcctgc	cttgagagctg	1560
aaagaggaga	gcttcagaga	ccccgctgag	gttctaggca	cgggcgcgga	ggtggattac	1620
ctggagcagt	ttggaacttc	ctcgtttaag	gagtcggcct	tgaggaagca	gtccttatac	1680
ctcaagttcg	acccctcct	gagggacagt	cctggtagac	cagtgcccg	ggccaccgag	1740
accagcagca	tgcacggtgc	aaatgagact	ccctcaggac	gtccgcggga	agccaagctt	1800
gtggagttcg	atttcttggg	agcactggac	attcctgtgc	caggcccacc	cccaggtgtt	1860
ccgcgcctg	ggggcccacc	cctgtccacc	ggacctatag	tggacctgct	ccagtacagc	1920

cagaaggacc	tggatgcagt	ggtaaaggcg	acacaggagg	agaaccggga	gctgaggagc	1980
aggtgtgagg	agctccacgg	gaagaacctg	gaactgggga	agatcatgga	cagggttcgaa	2040
gagggttgtgt	accaggccat	ggaggaagtt	cagaagcaga	aggaactttc	caaagctgaa	2100
atccagaaag	ttctaaaaga	aaaagaccaa	cttaccacag	atctgaactc	catggagaag	2160
tcctttctccg	acctcttcaa	gcgttttgag	aaacagaaag	aggtgatcga	gggctaccgc	2220
aagaacgaag	agtcactgaa	gaagtgcgtg	gaggattacc	tggcaaggat	caccagagg	2280
ggccagaggt	accaagccct	gaaggcccac	gcggaggaga	agctgcagct	ggcaaacgag	2340
gagatcgccc	aggtccggag	caaggcccag	gcggaagcgt	tggccctcca	ggccagcctg	2400
aggaaggagc	agatgcgcat	ccagtcgctg	gagaagacag	tggagcagaa	gactaaagag	2460
aacgaggagc	tgaccaggat	ctgcgacgac	ctcatctcca	agatggagaa	gatctga	2517

<210> 14
 <211> 383
 <212> DNA
 <213> Homo sapiens

<400> 14	
aactgcacac	acgacctgta catgatcatg cgggagtgct ggcatgccgc gccctcccag 60
aggcccacct	tcaagcagct ggtggaggac ctggaccgtg tccttaccgt gacgtccacc 120
gacgtaaagg	cgacacagga ggagaaccgg gagctgagga gcagggtgtga ggagctccac 180
gggaagaacc	tggaaactggg gaagatcatg gacagggttcg aagaggttgt gtaccaggcc 240
atggaggaag	ttcagaagca gaaggaaactt tccaaagctg aaatccagaa agttctaaaa 300
gaaaaagacc	aacttaccac agatctgaac tccatggaga agtccttctc cgacctcttc 360
aagcgttttg	agaaacagaa aga 383

<210> 15
 <211> 448
 <212> DNA
 <213> Homo sapiens

<400> 15	
gctccccgta	ccccggcatc cctgtggagg agctcttcaa gctgctgaag gagggccacc 60
gcatggacaa	gcccgccaac tgcacacacg acctgtacat gatcatgcgg gagtgtgtgg 120
atgccgcgcc	ctcccagagg cccaccttca agcagctggt ggaggacctg gaccgtgtcc 180
ttaccgtgac	gtccaccgac gtgagtgtctg gctctggcct ggtgccaccc gcctatgccc 240
ctccccctgc	cgtccccggc catcctgccc cccagagtgc tgagggtgtgg ggcgggcctt 300

ctggcccagg tgccttggt gacctggact gctcaagctc ttcccagagc ccaggaagtt	360
ctgagaacca aatggtgtct ccaggaaaag tgtctggcag ccctgagcaa gccgtggagg	420
aaaaccttag ttcctattcc ttagacag	448

<210> 16
 <211> 427
 <212> DNA
 <213> Homo sapiens

<400> 16	
tctacactca ccagagtgac gtctggtcct ttggggtcct gctctgggag atcttcacgc	60
tggggggctc cccgtacccc ggcatccctg tggaggagct cttcaagctg ctgaaggagg	120
gccaccgcat ggacaagccc gccaaactgca cacacgacct gtacatgac atgcgggagt	180
gctggcatgc cgcgccctcc cagaggccca ccttcaagca gctgggtggag gacctggacc	240
gtgtccttac cgtgacgtcc accgacaatg ttatggaaca gttcaatcct gggctgcgaa	300
atttaataaaa cctgggggaaa aattatgaga aagctgtaaa cgctatgac ctggcaggaa	360
aagcctacta cgatggagtg gccaaagatcg gtgagattgc cactgggtcc cccgtgtcaa	420
ctgaact	427

<210> 17
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> An artificially synthesized primer sequence

<400> 17	
caactgcaca cagacctgt a	21

<210> 18
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> An artificially synthesized primer sequence

<400> 18	
ccatcgtagt aggcctttcc tg	22

<210> 19
 <211> 4
 <212> PRT

<213> Artificial Sequence
<220>
<223> Peptide linker sequence
<400> 19

Gly Gly Gly Ser
1

<210> 20
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide linker sequence
<400> 20

Ser Gly Gly Gly
1

<210> 21
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide linker sequence
<400> 21

Gly Gly Gly Gly Ser
1 5

<210> 22
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide linker sequence
<400> 22

Ser Gly Gly Gly Gly
1 5

<210> 23
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide linker sequence

<400> 23

Gly Gly Gly Gly Gly Ser
1 5

<210> 24
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide linker sequence

<400> 24

Ser Gly Gly Gly Gly Gly
1 5

<210> 25
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide linker sequence

<400> 25

Gly Gly Gly Gly Gly Gly Ser
1 5

<210> 26
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Peptide linker sequence

<400> 26

Ser Gly Gly Gly Gly Gly Gly
1 5

<210> 27
<211> 2856
<212> DNA
<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(2856)

<400> 27

atg ggc gcc cct gcc tgc gcc ctc gcg ctc tgc gtg gcc gtg gcc atc	48
Met Gly Ala Pro Ala Cys Ala Leu Ala Leu Cys Val Ala Val Ala Ile	
1 5 10 15	
gtg gcc ggc gcc tcc tcg gag tcc ttg ggg acg gag cag cgc gtc gtg	96
Val Ala Gly Ala Ser Ser Glu Ser Leu Gly Thr Glu Gln Arg Val Val	
20 25 30	
ggg cga gcg gca gaa gtc ccg ggc cca gag ccc ggc cag cag gag cag	144
Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln	
35 40 45	
ttg gtc ttc ggc agc ggg gat gct gtg gag ctg agc tgt ccc ccg ccc	192
Leu Val Phe Gly Ser Gly Asp Ala Val Glu Leu Ser Cys Pro Pro Pro	
50 55 60	
ggg ggt ggt ccc atg ggg ccc act gtc tgg gtc aag gat ggc aca ggg	240
Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly	
65 70 75 80	
ctg gtg ccc tcg gag cgt gtc ctg gtg ggg ccc cag cgg ctg cag gtg	288
Leu Val Pro Ser Glu Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val	
85 90 95	
ctg aat gcc tcc cac gag gac tcc ggg gcc tac agc tgc cgg cag cgg	336
Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg	
100 105 110	
ctc acg cag cgc gta ctg tgc cac ttc agt gtg cgg gtg aca gac gct	384
Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala	
115 120 125	
cca tcc tcg gga gat gac gaa gac ggg gag gac gag gct gag gac aca	432
Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr	
130 135 140	
ggt gtg gac aca ggg gcc cct tac tgg aca cgg ccc gag cgg atg gac	480
Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp	
145 150 155 160	
aag aag ctg ctg gcc gtg ccg gcc gcc aac acc gtc cgc ttc cgc tgc	528
Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys	
165 170 175	
cca gcc gct ggc aac ccc act ccc tcc atc tcc tgg ctg aag aac ggc	576
Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly	
180 185 190	
agg gag ttc cgc ggc gag cac cgc att gga ggc atc aag ctg cgg cat	624
Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His	
195 200 205	
cag cag tgg agc ctg gtc atg gaa agc gtg gtg ccc tcg gac cgc ggc	672
Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly	

210	215	220	
aac tac acc tgc gtc gtg gag aac aag ttt ggc agc atc cgg cag acg Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr 225 230 235 240			720
tac acg ctg gac gtg ctg gag cgc tcc ccg cac cgg ccc atc ctg cag Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln 245 250 255			768
gcg ggg ctg ccg gcc aac cag acg gcg gtg ctg ggc agc gac gtg gag Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu 260 265 270			816
ttc cac tgc aag gtg tac agt gac gca cag ccc cac atc cag tgg ctc Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu 275 280 285			864
aag cac gtg gag gtg aat ggc agc aag gtg ggc ccg gac ggc aca ccc Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro 290 295 300			912
tac gtt acc gtg ctc aag tcc tgg atc agt gag agt gtg gag gcc gac Tyr Val Thr Val Leu Lys Ser Trp Ile Ser Glu Ser Val Glu Ala Asp 305 310 315 320			960
gtg cgc ctc cgc ctg gcc aat gtg tcg gag cgg gac ggg ggc gag tac Val Arg Leu Arg Leu Ala Asn Val Ser Glu Arg Asp Gly Gly Glu Tyr 325 330 335			1008
ctc tgt cga gcc acc aat ttc ata ggc gtg gcc gag aag gcc ttt tgg Leu Cys Arg Ala Thr Asn Phe Ile Gly Val Ala Glu Lys Ala Phe Trp 340 345 350			1056
ctg agc gtt cac ggg ccc cga gca gcc gag gag gag ctg gtg gag gct Leu Ser Val His Gly Pro Arg Ala Ala Glu Glu Glu Leu Val Glu Ala 355 360 365			1104
gac gag gcg ggc agt gtg tat gca ggc atc ctc agc tac ggg gtg ggc Asp Glu Ala Gly Ser Val Tyr Ala Gly Ile Leu Ser Tyr Gly Val Gly 370 375 380			1152
ttc ttc ctg ttc atc ctg gtg gtg gcg gct gtg acg ctc tgc cgc ctg Phe Phe Leu Phe Ile Leu Val Val Ala Ala Val Thr Leu Cys Arg Leu 385 390 395 400			1200
cgc agc ccc ccc aag aaa ggc ctg ggc tcc ccc acc gtg cac aag atc Arg Ser Pro Pro Lys Lys Gly Leu Gly Ser Pro Thr Val His Lys Ile 405 410 415			1248
tcc cgc ttc ccg ctc aag cga cag gtg tcc ctg gag tcc aac gcg tcc Ser Arg Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ala Ser 420 425 430			1296
atg agc tcc aac aca cca ctg gtg cgc atc gca agg ctg tcc tca ggg Met Ser Ser Asn Thr Pro Leu Val Arg Ile Ala Arg Leu Ser Ser Gly 435 440 445			1344

gag ggc ccc acg ctg gcc aat gtc tcc gag ctc gag ctg cct gcc gac Glu Gly Pro Thr Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp 450 455 460	1392
ccc aaa tgg gag ctg tct cgg gcc cgg ctg acc ctg ggc aag ccc ctt Pro Lys Trp Glu Leu Ser Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu 465 470 475 480	1440
ggg gag ggc tgc ttc ggc cag gtg gtc atg gcg gag gcc atc ggc att Gly Glu Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile 485 490 495	1488
gac aag gac cgg gcc gcc aag cct gtc acc gta gcc gtg aag atg ctg Asp Lys Asp Arg Ala Ala Lys Pro Val Thr Val Ala Val Lys Met Leu 500 505 510	1536
aaa gac gat gcc act gac aag gac ctg tcg gac ctg gtg tct gag atg Lys Asp Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met 515 520 525	1584
gag atg atg aag atg atc ggg aaa cac aaa aac atc atc aac ctg ctg Glu Met Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu 530 535 540	1632
ggc gcc tgc acg cag ggc ggg ccc ctg tac gtg ctg gtg gag tac gcg Gly Ala Cys Thr Gln Gly Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala 545 550 555 560	1680
gcc aag ggt aac ctg cgg gag ttt ctg cgg gcg cgg cgg ccc ccg ggc Ala Lys Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly 565 570 575	1728
ctg gac tac tcc ttc gac acc tgc aag ccg ccc gag gag cag ctc acc Leu Asp Tyr Ser Phe Asp Thr Cys Lys Pro Pro Glu Glu Gln Leu Thr 580 585 590	1776
ttc aag gac ctg gtg tcc tgt gcc tac cag gtg gcc cgg ggc atg gag Phe Lys Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu 595 600 605	1824
tac ttg gcc tcc cag aag tgc atc cac agg gac ctg gct gcc cgc aat Tyr Leu Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn 610 615 620	1872
gtg ctg gtg acc gag gac aac gtg atg aag atc gca gac ttc ggg ctg Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu 625 630 635 640	1920
gcc cgg gac gtg cac aac ctc gac tac tac aag aag aca acc aac ggc Ala Arg Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly 645 650 655	1968
cgg ctg ccc gtg aag tgg atg gcg cct gag gcc ttg ttt gac cga gtc Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val 660 665 670	2016
tac act cac cag agt gac gtc tgg tcc ttt ggg gtc ctg ctc tgg gag Tyr Thr His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu	2064

675					680					685						
atc	ttc	acg	ctg	ggg	ggc	tcc	ccg	tac	ccc	ggc	atc	cct	gtg	gag	gag	2112
Ile	Phe	Thr	Leu	Gly	Gly	Ser	Pro	Tyr	Pro	Gly	Ile	Pro	Val	Glu	Glu	
	690					695					700					
ctc	ttc	aag	ctg	ctg	aag	gag	ggc	cac	cgc	atg	gac	aag	ccc	gcc	aac	2160
Leu	Phe	Lys	Leu	Leu	Lys	Glu	Gly	His	Arg	Met	Asp	Lys	Pro	Ala	Asn	
	705				710					715					720	
tgc	aca	cac	gac	ctg	tac	atg	atc	atg	cgg	gag	tgc	tgg	cat	gcc	gcg	2208
Cys	Thr	His	Asp	Leu	Tyr	Met	Ile	Met	Arg	Glu	Cys	Trp	His	Ala	Ala	
				725					730					735		
ccc	tcc	cag	agg	ccc	acc	ttc	aag	cag	ctg	gtg	gag	gac	ctg	gac	cgt	2256
Pro	Ser	Gln	Arg	Pro	Thr	Phe	Lys	Gln	Leu	Val	Glu	Asp	Leu	Asp	Arg	
			740					745					750			
gtc	ctt	acc	gtg	acg	tcc	acc	gac	gta	aag	gcg	aca	cag	gag	gag	aac	2304
Val	Leu	Thr	Val	Thr	Ser	Thr	Asp	Val	Lys	Ala	Thr	Gln	Glu	Glu	Asn	
		755					760					765				
cgg	gag	ctg	agg	agc	agg	tgt	gag	gag	ctc	cac	ggg	aag	aac	ctg	gaa	2352
Arg	Glu	Leu	Arg	Ser	Arg	Cys	Glu	Glu	Leu	His	Gly	Lys	Asn	Leu	Glu	
	770					775					780					
ctg	ggg	aag	atc	atg	gac	agg	ttc	gaa	gag	gtt	gtg	tac	cag	gcc	atg	2400
Leu	Gly	Lys	Ile	Met	Asp	Arg	Phe	Glu	Glu	Val	Val	Tyr	Gln	Ala	Met	
	785				790					795					800	
gag	gaa	gtt	cag	aag	cag	aag	gaa	ctt	tcc	aaa	gct	gaa	atc	cag	aaa	2448
Glu	Glu	Val	Gln	Lys	Gln	Lys	Glu	Leu	Ser	Lys	Ala	Glu	Ile	Gln	Lys	
				805					810					815		
gtt	cta	aaa	gaa	aaa	gac	caa	ctt	acc	aca	gat	ctg	aac	tcc	atg	gag	2496
Val	Leu	Lys	Glu	Lys	Asp	Gln	Leu	Thr	Thr	Asp	Leu	Asn	Ser	Met	Glu	
			820					825					830			
aag	tcc	ttc	tcc	gac	ctc	ttc	aag	cgt	ttt	gag	aaa	cag	aaa	gag	gtg	2544
Lys	Ser	Phe	Ser	Asp	Leu	Phe	Lys	Arg	Phe	Glu	Lys	Gln	Lys	Glu	Val	
		835					840					845				
atc	gag	ggc	tac	cgc	aag	aac	gaa	gag	tca	ctg	aag	aag	tgc	gtg	gag	2592
Ile	Glu	Gly	Tyr	Arg	Lys	Asn	Glu	Glu	Ser	Leu	Lys	Lys	Cys	Val	Glu	
	850					855					860					
gat	tac	ctg	gca	agg	atc	acc	cag	gag	ggc	cag	agg	tac	caa	gcc	ctg	2640
Asp	Tyr	Leu	Ala	Arg	Ile	Thr	Gln	Glu	Gly	Gln	Arg	Tyr	Gln	Ala	Leu	
	865				870					875					880	
aag	gcc	cac	gcg	gag	gag	aag	ctg	cag	ctg	gca	aac	gag	gag	atc	gcc	2688
Lys	Ala	His	Ala	Glu	Glu	Lys	Leu	Gln	Leu	Ala	Asn	Glu	Glu	Ile	Ala	
				885					890					895		
cag	gtc	cgg	agc	aag	gcc	cag	gcg	gaa	gcg	ttg	gcc	ctc	cag	gcc	agc	2736
Gln	Val	Arg	Ser	Lys	Ala	Gln	Ala	Glu	Ala	Leu	Ala	Leu	Gln	Ala	Ser	
			900					905					910			

ctg agg aag gag cag atg cgc atc cag tcg ctg gag aag aca gtg gag	2784
Leu Arg Lys Glu Gln Met Arg Ile Gln Ser Leu Glu Lys Thr Val Glu	
915 920 925	

cag aag act aaa gag aac gag gag ctg acc agg atc tgc gac gac ctc	2832
Gln Lys Thr Lys Glu Asn Glu Glu Leu Thr Arg Ile Cys Asp Asp Leu	
930 935 940	

atc tcc aag atg gag aag atc tga	2856
Ile Ser Lys Met Glu Lys Ile	
945 950	

<210> 28
 <211> 951
 <212> PRT
 <213> Homo sapiens

<400> 28

Met Gly Ala Pro Ala Cys Ala Leu Ala Leu Cys Val Ala Val Ala Ile
1 5 10 15

Val Ala Gly Ala Ser Ser Glu Ser Leu Gly Thr Glu Gln Arg Val Val
20 25 30

Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
35 40 45

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

Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
65 70 75 80

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

Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg
100 105 110

Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala
115 120 125

Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr
130 135 140

Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp
145 150 155 160

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

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

Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu
625 630 635 640

Ala Arg Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly
645 650 655

Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val
660 665 670

Tyr Thr His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu
675 680 685

Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu
690 695 700

Leu Phe Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn
705 710 715 720

Cys Thr His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala
725 730 735

Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg
740 745 750

Val Leu Thr Val Thr Ser Thr Asp Val Lys Ala Thr Gln Glu Glu Asn
755 760 765

Arg Glu Leu Arg Ser Arg Cys Glu Glu Leu His Gly Lys Asn Leu Glu
770 775 780

Leu Gly Lys Ile Met Asp Arg Phe Glu Glu Val Val Tyr Gln Ala Met
785 790 795 800

Glu Glu Val Gln Lys Gln Lys Glu Leu Ser Lys Ala Glu Ile Gln Lys
805 810 815

Val Leu Lys Glu Lys Asp Gln Leu Thr Thr Asp Leu Asn Ser Met Glu
820 825 830

Lys Ser Phe Ser Asp Leu Phe Lys Arg Phe Glu Lys Gln Lys Glu Val
835 840 845

Ile Glu Gly Tyr Arg Lys Asn Glu Glu Ser Leu Lys Lys Cys Val Glu
850 855 860

Asp Tyr Leu Ala Arg Ile Thr Gln Glu Gly Gln Arg Tyr Gln Ala Leu
865 870 875 880

Lys Ala His Ala Glu Glu Lys Leu Gln Leu Ala Asn Glu Glu Ile Ala
885 890 895

Gln Val Arg Ser Lys Ala Gln Ala Glu Ala Leu Ala Leu Gln Ala Ser
900 905 910

Leu Arg Lys Glu Gln Met Arg Ile Gln Ser Leu Glu Lys Thr Val Glu
915 920 925

Gln Lys Thr Lys Glu Asn Glu Glu Leu Thr Arg Ile Cys Asp Asp Leu
930 935 940

Ile Ser Lys Met Glu Lys Ile
945 950

<210> 29
<211> 4467
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(4467)

<400> 29
atg ggc gcc cct gcc tgc gcc ctc gcg ctc tgc gtg gcc gtg gcc atc 48
Met Gly Ala Pro Ala Cys Ala Leu Ala Leu Cys Val Ala Val Ala Ile
1 5 10 15

gtg gcc ggc gcc tcc tcg gag tcc ttg ggg acg gag cag cgc gtc gtg 96
Val Ala Gly Ala Ser Ser Glu Ser Leu Gly Thr Glu Gln Arg Val Val
20 25 30

ggg cga gcg gca gaa gtc ccg ggc cca gag ccc ggc cag cag gag cag 144
Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
35 40 45

ttg gtc ttc ggc agc ggg gat gct gtg gag ctg agc tgt ccc ccg ccc 192
Leu Val Phe Gly Ser Gly Asp Ala Val Glu Leu Ser Cys Pro Pro Pro
50 55 60

ggg ggt ggt ccc atg ggg ccc act gtc tgg gtc aag gat ggc aca ggg 240
Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
65 70 75 80

ctg gtg ccc tcg gag cgt gtc ctg gtg ggg ccc cag cgg ctg cag gtg Leu Val Pro Ser Glu Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val 85 90 95	288
ctg aat gcc tcc cac gag gac tcc ggg gcc tac agc tgc cgg cag cgg Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg 100 105 110	336
ctc acg cag cgc gta ctg tgc cac ttc agt gtg cgg gtg aca gac gct Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala 115 120 125	384
cca tcc tcg gga gat gac gaa gac ggg gag gac gag gct gag gac aca Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr 130 135 140	432
ggg gtg gac aca ggg gcc cct tac tgg aca cgg ccc gag cgg atg gac Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp 145 150 155 160	480
aag aag ctg ctg gcc gtg ccg gcc gcc aac acc gtc cgc ttc cgc tgc Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys 165 170 175	528
cca gcc gct ggc aac ccc act ccc tcc atc tcc tgg ctg aag aac ggc Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly 180 185 190	576
agg gag ttc cgc ggc gag cac cgc att gga ggc atc aag ctg cgg cat Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His 195 200 205	624
cag cag tgg agc ctg gtc atg gaa agc gtg gtg ccc tcg gac cgc ggc Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly 210 215 220	672
aac tac acc tgc gtc gtg gag aac aag ttt ggc agc atc cgg cag acg Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr 225 230 235 240	720
tac acg ctg gac gtg ctg gag cgc tcc ccg cac cgg ccc atc ctg cag Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln 245 250 255	768
gcg ggg ctg ccg gcc aac cag acg gcg gtg ctg ggc agc gac gtg gag Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu 260 265 270	816
ttc cac tgc aag gtg tac agt gac gca cag ccc cac atc cag tgg ctc Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu 275 280 285	864
aag cac gtg gag gtg aat ggc agc aag gtg ggc ccg gac ggc aca ccc Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro 290 295 300	912
tac gtt acc gtg ctc aag tcc tgg atc agt gag agt gtg gag gcc gac	960

Tyr 305	Val	Thr	Val	Leu	Lys 310	Ser	Trp	Ile	Ser	Glu 315	Ser	Val	Glu	Ala	Asp 320	
gtg	cgc	ctc	cgc	ctg	gcc	aat	gtg	tcg	gag	cgg	gac	ggg	ggc	gag	tac	1008
Val	Arg	Leu	Arg	Leu	Ala	Asn	Val	Ser	Glu	Arg	Asp	Gly	Gly	Glu	Tyr	
				325					330					335		
ctc	tgt	cga	gcc	acc	aat	ttc	ata	ggc	gtg	gcc	gag	aag	gcc	ttt	tgg	1056
Leu	Cys	Arg	Ala	Thr	Asn	Phe	Ile	Gly	Val	Ala	Glu	Lys	Ala	Phe	Trp	
			340					345					350			
ctg	agc	gtt	cac	ggg	ccc	cga	gca	gcc	gag	gag	gag	ctg	gtg	gag	gct	1104
Leu	Ser	Val	His	Gly	Pro	Arg	Ala	Ala	Glu	Glu	Glu	Leu	Val	Glu	Ala	
		355					360					365				
gac	gag	gcg	ggc	agt	gtg	tat	gca	ggc	atc	ctc	agc	tac	ggg	gtg	ggc	1152
Asp	Glu	Ala	Gly	Ser	Val	Tyr	Ala	Gly	Ile	Leu	Ser	Tyr	Gly	Val	Gly	
	370					375					380					
ttc	ttc	ctg	ttc	atc	ctg	gtg	gtg	gcg	gct	gtg	acg	ctc	tgc	cgc	ctg	1200
Phe	Phe	Leu	Phe	Ile	Leu	Val	Val	Ala	Ala	Val	Thr	Leu	Cys	Arg	Leu	
385					390					395					400	
cgc	agc	ccc	ccc	aag	aaa	ggc	ctg	ggc	tcc	ccc	acc	gtg	cac	aag	atc	1248
Arg	Ser	Pro	Pro	Lys	Lys	Gly	Leu	Gly	Ser	Pro	Thr	Val	His	Lys	Ile	
				405					410					415		
tcc	cgc	ttc	ccg	ctc	aag	cga	cag	gtg	tcc	ctg	gag	tcc	aac	gcg	tcc	1296
Ser	Arg	Phe	Pro	Leu	Lys	Arg	Gln	Val	Ser	Leu	Glu	Ser	Asn	Ala	Ser	
			420					425					430			
atg	agc	tcc	aac	aca	cca	ctg	gtg	cgc	atc	gca	agg	ctg	tcc	tca	ggg	1344
Met	Ser	Ser	Asn	Thr	Pro	Leu	Val	Arg	Ile	Ala	Arg	Leu	Ser	Ser	Gly	
		435				440						445				
gag	ggc	ccc	acg	ctg	gcc	aat	gtc	tcc	gag	ctc	gag	ctg	cct	gcc	gac	1392
Glu	Gly	Pro	Thr	Leu	Ala	Asn	Val	Ser	Glu	Leu	Glu	Leu	Pro	Ala	Asp	
	450					455					460					
ccc	aaa	tgg	gag	ctg	tct	cgg	gcc	cgg	ctg	acc	ctg	ggc	aag	ccc	ctt	1440
Pro	Lys	Trp	Glu	Leu	Ser	Arg	Ala	Arg	Leu	Thr	Leu	Gly	Lys	Pro	Leu	
465					470					475					480	
ggg	gag	ggc	tgc	ttc	ggc	cag	gtg	gtc	atg	gcg	gag	gcc	atc	ggc	att	1488
Gly	Glu	Gly	Cys	Phe	Gly	Gln	Val	Val	Met	Ala	Glu	Ala	Ile	Gly	Ile	
				485					490					495		
gac	aag	gac	cgg	gcc	gcc	aag	cct	gtc	acc	gta	gcc	gtg	aag	atg	ctg	1536
Asp	Lys	Asp	Arg	Ala	Ala	Lys	Pro	Val	Thr	Val	Ala	Val	Lys	Met	Leu	
			500					505					510			
aaa	gac	gat	gcc	act	gac	aag	gac	ctg	tcg	gac	ctg	gtg	tct	gag	atg	1584
Lys	Asp	Asp	Ala	Thr	Asp	Lys	Asp	Leu	Ser	Asp	Leu	Val	Ser	Glu	Met	
		515					520					525				
gag	atg	atg	aag	atg	atc	ggg	aaa	cac	aaa	aac	atc	atc	aac	ctg	ctg	1632
Glu	Met	Met	Lys	Met	Ile	Gly	Lys	His	Lys	Asn	Ile	Ile	Asn	Leu	Leu	
	530					535					540					

ggc gcc tgc acg cag ggc ggg ccc ctg tac gtg ctg gtg gag tac gcg Gly Ala Cys Thr Gln Gly Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala 545 550 555 560	1680
gcc aag ggt aac ctg cgg gag ttt ctg cgg gcg cgg cgg ccc ccg ggc Ala Lys Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly 565 570 575	1728
ctg gac tac tcc ttc gac acc tgc aag ccg ccc gag gag cag ctc acc Leu Asp Tyr Ser Phe Asp Thr Cys Lys Pro Pro Glu Glu Gln Leu Thr 580 585 590	1776
ttc aag gac ctg gtg tcc tgt gcc tac cag gtg gcc cgg ggc atg gag Phe Lys Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu 595 600 605	1824
tac ttg gcc tcc cag aag tgc atc cac agg gac ctg gct gcc cgc aat Tyr Leu Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn 610 615 620	1872
gtg ctg gtg acc gag gac aac gtg atg aag atc gca gac ttc ggg ctg Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu 625 630 635 640	1920
gcc cgg gac gtg cac aac ctc gac tac tac aag aag aca acc aac ggc Ala Arg Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly 645 650 655	1968
cgg ctg ccc gtg aag tgg atg gcg cct gag gcc ttg ttt gac cga gtc Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val 660 665 670	2016
tac act cac cag agt gac gtc tgg tcc ttt ggg gtc ctg ctc tgg gag Tyr Thr His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu 675 680 685	2064
atc ttc acg ctg ggg ggc tcc ccg tac ccc ggc atc cct gtg gag gag Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu 690 695 700	2112
ctc ttc aag ctg ctg aag gag ggc cac cgc atg gac aag ccc gcc aac Leu Phe Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn 705 710 715 720	2160
tgc aca cac gac ctg tac atg atc atg cgg gag tgc tgg cat gcc gcg Cys Thr His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala 725 730 735	2208
ccc tcc cag agg ccc acc ttc aag cag ctg gtg gag gac ctg gac cgt Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg 740 745 750	2256
gtc ctt acc gtg acg tcc acc gac gtg agt gct ggc tct ggc ctg gtg Val Leu Thr Val Thr Ser Thr Asp Val Ser Ala Gly Ser Gly Leu Val 755 760 765	2304
cca ccc gcc tat gcc cct ccc cct gcc gtc ccc ggc cat cct gcc ccc	2352

Pro	Pro	Ala	Tyr	Ala	Pro	Pro	Pro	Ala	Val	Pro	Gly	His	Pro	Ala	Pro		
	770					775					780						
cag	agt	gct	gag	gtg	tgg	ggc	ggg	cct	tct	ggc	cca	ggt	gcc	ctg	gct	2400	
Gln	Ser	Ala	Glu	Val	Trp	Gly	Gly	Pro	Ser	Gly	Pro	Gly	Ala	Leu	Ala	800	
785					790					795							
gac	ctg	gac	tgc	tca	agc	tct	tcc	cag	agc	cca	gga	agt	tct	gag	aac	2448	
Asp	Leu	Asp	Cys	Ser	Ser	Ser	Ser	Gln	Ser	Pro	Gly	Ser	Ser	Glu	Asn	815	
				805					810					815			
caa	atg	gtg	tct	cca	gga	aaa	gtg	tct	ggc	agc	cct	gag	caa	gcc	gtg	2496	
Gln	Met	Val	Ser	Pro	Gly	Lys	Val	Ser	Gly	Ser	Pro	Glu	Gln	Ala	Val	830	
			820					825									
gag	gaa	aac	ctt	agt	tcc	tat	tcc	tta	gac	aga	aga	gtg	aca	ccc	gcc	2544	
Glu	Glu	Asn	Leu	Ser	Ser	Tyr	Ser	Leu	Asp	Arg	Arg	Val	Thr	Pro	Ala	845	
		835					840					845					
tct	gag	acc	cta	gaa	gac	cct	tgc	agg	aca	gag	tcc	cag	cac	aaa	gcg	2592	
Ser	Glu	Thr	Leu	Glu	Asp	Pro	Cys	Arg	Thr	Glu	Ser	Gln	His	Lys	Ala	860	
	850					855						860					
gag	act	ccg	cac	gga	gcc	gag	gaa	gaa	tgc	aaa	gcg	gag	act	ccg	cac	2640	
Glu	Thr	Pro	His	Gly	Ala	Glu	Glu	Glu	Cys	Lys	Ala	Glu	Thr	Pro	His	880	
865					870					875							
gga	gcc	gag	gag	gaa	tgc	cgg	cac	ggt	ggg	gtc	tgt	gct	ccc	gca	gca	2688	
Gly	Ala	Glu	Glu	Glu	Cys	Arg	His	Gly	Gly	Val	Cys	Ala	Pro	Ala	Ala	895	
				885					890								
gtg	gcc	act	tcg	cct	cct	ggt	gca	atc	cct	aag	gaa	gcc	tgc	gga	gga	2736	
Val	Ala	Thr	Ser	Pro	Pro	Gly	Ala	Ile	Pro	Lys	Glu	Ala	Cys	Gly	Gly	910	
			900					905					910				
gca	ccc	ctg	cag	ggt	ctg	cct	ggc	gaa	gcc	ctg	ggc	tgc	cct	gcg	ggt	2784	
Ala	Pro	Leu	Gln	Gly	Leu	Pro	Gly	Glu	Ala	Leu	Gly	Cys	Pro	Ala	Gly	925	
		915					920					925					
gtg	ggc	acc	ccc	gtg	cca	gca	gat	ggc	act	cag	acc	ctt	acc	tgt	gca	2832	
Val	Gly	Thr	Pro	Val	Pro	Ala	Asp	Gly	Thr	Gln	Thr	Leu	Thr	Cys	Ala	940	
	930					935						940					
cac	acc	tct	gct	cct	gag	agc	aca	gcc	cca	acc	aac	cac	ctg	gtg	gct	2880	
His	Thr	Ser	Ala	Pro	Glu	Ser	Thr	Ala	Pro	Thr	Asn	His	Leu	Val	Ala	960	
945					950					955							
ggc	agg	gcc	atg	acc	ctg	agt	cct	cag	gaa	gaa	gtg	gct	gca	ggc	caa	2928	
Gly	Arg	Ala	Met	Thr	Leu	Ser	Pro	Gln	Glu	Glu	Val	Ala	Ala	Gly	Gln	975	
				965					970								
atg	gcc	agc	tcc	tcg	agg	agc	gga	cct	gta	aaa	cta	gaa	ttt	gat	gta	2976	
Met	Ala	Ser	Ser	Ser	Arg	Ser	Gly	Pro	Val	Lys	Leu	Glu	Phe	Asp	Val	990	
			980					985					990				
tct	gat	ggc	gcc	acc	agc	aaa	agg	gca	ccc	cca	cca	agg	aga	ctg	gga	3024	
Ser	Asp	Gly	Ala	Thr	Ser	Lys	Arg	Ala	Pro	Pro	Pro	Arg	Arg	Leu	Gly	1005	
		995					1000						1005				

gag Glu 1010	agg Arg 1010	tcc Ser 1010	ggc Gly 1010	ctc Leu 1010	aag Lys 1015	cct Pro 1015	ccc Pro 1020	ttg Leu 1020	agg Arg 1020	aaa Lys 1020	gca Ala 1020	gca Ala 1020	gtg Val 1020	agg Arg 1020	3069
cag Gln 1025	caa Gln 1025	aag Lys 1025	gcc Ala 1025	ccg Pro 1025	cag Gln 1030	gag Glu 1030	gtg Val 1030	gag Glu 1030	gag Glu 1030	gac Asp 1035	gac Asp 1035	ggt Gly 1035	agg Arg 1035	agc Ser 1035	3114
gga Gly 1040	gca Ala 1040	gga Gly 1040	gag Glu 1040	gac Asp 1040	ccc Pro 1045	ccc Pro 1045	atg Met 1045	cca Pro 1045	gct Ala 1045	tct Ser 1045	cgg Arg 1050	ggc Gly 1050	tct Ser 1050	tac Tyr 1050	3159
cac His 1055	ctc Leu 1055	gac Asp 1055	tgg Trp 1055	gac Asp 1055	aaa Lys 1060	atg Met 1060	gat Asp 1060	gac Asp 1060	cca Pro 1060	aac Asn 1060	ttc Phe 1065	atc Ile 1065	ccg Pro 1065	ttc Phe 1065	3204
gga Gly 1070	ggt Gly 1070	gac Asp 1070	acc Thr 1070	aag Lys 1070	tct Ser 1075	ggt Gly 1075	tgc Cys 1075	agt Ser 1075	gag Glu 1075	gcc Ala 1075	cag Gln 1080	ccc Pro 1080	cca Pro 1080	gaa Glu 1080	3249
agc Ser 1085	cct Pro 1085	gag Glu 1085	acc Thr 1085	agg Arg 1085	ctg Leu 1090	ggc Gly 1090	cag Gln 1090	cca Pro 1090	gcg Ala 1090	gct Ala 1090	gaa Glu 1095	cag Gln 1095	ttg Leu 1095	cat His 1095	3294
gct Ala 1100	ggg Gly 1100	cct Pro 1100	gcc Ala 1100	acg Thr 1100	gag Glu 1105	gag Glu 1105	cca Pro 1105	ggt Gly 1105	ccc Pro 1105	tgt Cys 1110	ctg Leu 1110	agc Ser 1110	cag Gln 1110	cag Gln 1110	3339
ctg Leu 1115	cat His 1115	tca Ser 1115	gcc Ala 1115	tca Ser 1115	gcg Ala 1120	gag Glu 1120	gac Asp 1120	acg Thr 1120	cct Pro 1120	gtg Val 1125	gtg Val 1125	cag Gln 1125	ttg Leu 1125	gca Ala 1125	3384
gcc Ala 1130	gag Glu 1130	acc Thr 1130	cca Pro 1130	aca Thr 1130	gca Ala 1135	gag Glu 1135	agc Ser 1135	aag Lys 1135	gag Glu 1135	aga Arg 1140	gcc Ala 1140	ttg Leu 1140	aac Asn 1140	tct Ser 1140	3429
gcc Ala 1145	agc Ser 1145	acc Thr 1145	tcg Ser 1145	ctt Leu 1145	ccc Pro 1150	aca Thr 1150	agc Ser 1150	tgt Cys 1150	cca Pro 1150	ggc Gly 1155	agt Ser 1155	gag Glu 1155	cca Pro 1155	gtg Val 1155	3474
ccc Pro 1160	acc Thr 1160	cat His 1160	cag Gln 1160	cag Gln 1160	ggg Gly 1165	cag Gln 1165	cct Pro 1165	gcc Ala 1165	ttg Leu 1165	gag Glu 1170	ctg Leu 1170	aaa Lys 1170	gag Glu 1170	gag Glu 1170	3519
agc Ser 1175	ttc Phe 1175	aga Arg 1175	gac Asp 1175	ccc Pro 1175	gct Ala 1180	gag Glu 1180	gtt Val 1180	cta Leu 1180	ggc Gly 1180	acg Thr 1185	ggc Gly 1185	gcg Ala 1185	gag Glu 1185	gtg Val 1185	3564
gat Asp 1190	tac Tyr 1190	ctg Leu 1190	gag Glu 1190	cag Gln 1190	ttt Phe 1195	gga Gly 1195	act Thr 1195	tcc Ser 1195	tcg Ser 1195	ttt Phe 1200	aag Lys 1200	gag Glu 1200	tcg Ser 1200	gcc Ala 1200	3609
ttg Leu 1205	agg Arg 1205	aag Lys 1205	cag Gln 1205	tcc Ser 1205	tta Leu 1210	tac Tyr 1210	ctc Leu 1210	aag Lys 1210	ttc Phe 1210	gac Asp 1215	ccc Pro 1215	ctc Leu 1215	ctg Leu 1215	agg Arg 1215	3654
gac 1215	agt 1215	cct 1215	ggt 1215	aga 1215	cca 1215	gtg 1215	ccc 1215	gtg 1215	gcc 1215	acc 1215	gag 1215	acc 1215	agc 1215	agc 1215	3699

Asp	Ser	Pro	Gly	Arg	Pro	Val	Pro	Val	Ala	Thr	Glu	Thr	Ser	Ser	
1220						1225					1230				
atg	cac	ggt	gca	aat	gag	act	ccc	tca	gga	cgt	ccg	cgg	gaa	gcc	3744
Met	His	Gly	Ala	Asn	Glu	Thr	Pro	Ser	Gly	Arg	Pro	Arg	Glu	Ala	
1235						1240					1245				
aag	ctt	gtg	gag	ttc	gat	ttc	ttg	gga	gca	ctg	gac	att	cct	gtg	3789
Lys	Leu	Val	Glu	Phe	Asp	Phe	Leu	Gly	Ala	Leu	Asp	Ile	Pro	Val	
1250						1255					1260				
cca	ggc	cca	ccc	cca	ggt	gtt	ccc	gcg	cct	ggg	ggc	cca	ccc	ctg	3834
Pro	Gly	Pro	Pro	Pro	Gly	Val	Pro	Ala	Pro	Gly	Gly	Pro	Pro	Leu	
1265						1270					1275				
tcc	acc	gga	cct	ata	gtg	gac	ctg	ctc	cag	tac	agc	cag	aag	gac	3879
Ser	Thr	Gly	Pro	Ile	Val	Asp	Leu	Leu	Gln	Tyr	Ser	Gln	Lys	Asp	
1280						1285					1290				
ctg	gat	gca	gtg	gta	aag	gcg	aca	cag	gag	gag	aac	cgg	gag	ctg	3924
Leu	Asp	Ala	Val	Val	Lys	Ala	Thr	Gln	Glu	Glu	Asn	Arg	Glu	Leu	
1295						1300					1305				
agg	agc	agg	tgt	gag	gag	ctc	cac	ggg	aag	aac	ctg	gaa	ctg	ggg	3969
Arg	Ser	Arg	Cys	Glu	Glu	Leu	His	Gly	Lys	Asn	Leu	Glu	Leu	Gly	
1310						1315					1320				
aag	atc	atg	gac	agg	ttc	gaa	gag	gtt	gtg	tac	cag	gcc	atg	gag	4014
Lys	Ile	Met	Asp	Arg	Phe	Glu	Glu	Val	Val	Tyr	Gln	Ala	Met	Glu	
1325						1330					1335				
gaa	gtt	cag	aag	cag	aag	gaa	ctt	tcc	aaa	gct	gaa	atc	cag	aaa	4059
Glu	Val	Gln	Lys	Gln	Lys	Glu	Leu	Ser	Lys	Ala	Glu	Ile	Gln	Lys	
1340						1345					1350				
gtt	cta	aaa	gaa	aaa	gac	caa	ctt	acc	aca	gat	ctg	aac	tcc	atg	4104
Val	Leu	Lys	Glu	Lys	Asp	Gln	Leu	Thr	Thr	Asp	Leu	Asn	Ser	Met	
1355						1360					1365				
gag	aag	tcc	ttc	tcc	gac	ctc	ttc	aag	cgt	ttt	gag	aaa	cag	aaa	4149
Glu	Lys	Ser	Phe	Ser	Asp	Leu	Phe	Lys	Arg	Phe	Glu	Lys	Gln	Lys	
1370						1375					1380				
gag	gtg	atc	gag	ggc	tac	cgc	aag	aac	gaa	gag	tca	ctg	aag	aag	4194
Glu	Val	Ile	Glu	Gly	Tyr	Arg	Lys	Asn	Glu	Glu	Ser	Leu	Lys	Lys	
1385						1390					1395				
tgc	gtg	gag	gat	tac	ctg	gca	agg	atc	acc	cag	gag	ggc	cag	agg	4239
Cys	Val	Glu	Asp	Tyr	Leu	Ala	Arg	Ile	Thr	Gln	Glu	Gly	Gln	Arg	
1400						1405					1410				
tac	caa	gcc	ctg	aag	gcc	cac	gcg	gag	gag	aag	ctg	cag	ctg	gca	4284
Tyr	Gln	Ala	Leu	Lys	Ala	His	Ala	Glu	Glu	Lys	Leu	Gln	Leu	Ala	
1415						1420					1425				
aac	gag	gag	atc	gcc	cag	gtc	cgg	agc	aag	gcc	cag	gcg	gaa	gcg	4329
Asn	Glu	Glu	Ile	Ala	Gln	Val	Arg	Ser	Lys	Ala	Gln	Ala	Glu	Ala	
1430						1435					1440				

ttg gcc	ctc cag gcc agc ctg	agg aag gag cag atg	cgc atc cag	4374
Leu Ala	Leu Gln Ala Ser Leu	Arg Lys Glu Gln Met	Arg Ile Gln	
1445	1450	1455		

tcg ctg	gag aag aca gtg gag	cag aag act aaa gag	aac gag gag	4419
Ser Leu	Glu Lys Thr Val Glu	Gln Lys Thr Lys Glu	Asn Glu Glu	
1460	1465	1470		

ctg acc	agg atc tgc gac gac	ctc atc tcc aag atg	gag aag atc	4464
Leu Thr	Arg Ile Cys Asp Asp	Leu Ile Ser Lys Met	Glu Lys Ile	
1475	1480	1485		

tga	4467
-----	------

<210> 30
 <211> 1488
 <212> PRT
 <213> Homo sapiens

<400> 30

Met Gly Ala Pro Ala Cys Ala Leu Ala Leu Cys Val Ala Val Ala Ile
1 5 10 15

Val Ala Gly Ala Ser Ser Glu Ser Leu Gly Thr Glu Gln Arg Val Val
20 25 30

Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
35 40 45

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

Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
65 70 75 80

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

Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg
100 105 110

Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala
115 120 125

Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr
130 135 140

Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp
145 150 155 160

Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys
165 170 175

Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly
180 185 190

Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His
195 200 205

Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly
210 215 220

Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr
225 230 235 240

Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln
245 250 255

Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu
260 265 270

Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu
275 280 285

Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro
290 295 300

Tyr Val Thr Val Leu Lys Ser Trp Ile Ser Glu Ser Val Glu Ala Asp
305 310 315 320

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

Leu Cys Arg Ala Thr Asn Phe Ile Gly Val Ala Glu Lys Ala Phe Trp
340 345 350

Leu Ser Val His Gly Pro Arg Ala Ala Glu Glu Glu Leu Val Glu Ala
355 360 365

Asp Glu Ala Gly Ser Val Tyr Ala Gly Ile Leu Ser Tyr Gly Val Gly

370						375										380
Phe	Phe	Leu	Phe	Ile	Leu	Val	Val	Ala	Ala	Val	Thr	Leu	Cys	Arg	Leu	
385					390					395					400	
Arg	Ser	Pro	Pro	Lys	Lys	Gly	Leu	Gly	Ser	Pro	Thr	Val	His	Lys	Ile	
				405					410					415		
Ser	Arg	Phe	Pro	Leu	Lys	Arg	Gln	Val	Ser	Leu	Glu	Ser	Asn	Ala	Ser	
			420					425					430			
Met	Ser	Ser	Asn	Thr	Pro	Leu	Val	Arg	Ile	Ala	Arg	Leu	Ser	Ser	Gly	
		435					440					445				
Glu	Gly	Pro	Thr	Leu	Ala	Asn	Val	Ser	Glu	Leu	Glu	Leu	Pro	Ala	Asp	
	450					455					460					
Pro	Lys	Trp	Glu	Leu	Ser	Arg	Ala	Arg	Leu	Thr	Leu	Gly	Lys	Pro	Leu	
465					470					475					480	
Gly	Glu	Gly	Cys	Phe	Gly	Gln	Val	Val	Met	Ala	Glu	Ala	Ile	Gly	Ile	
				485					490					495		
Asp	Lys	Asp	Arg	Ala	Ala	Lys	Pro	Val	Thr	Val	Ala	Val	Lys	Met	Leu	
			500					505					510			
Lys	Asp	Asp	Ala	Thr	Asp	Lys	Asp	Leu	Ser	Asp	Leu	Val	Ser	Glu	Met	
		515					520					525				
Glu	Met	Met	Lys	Met	Ile	Gly	Lys	His	Lys	Asn	Ile	Ile	Asn	Leu	Leu	
	530					535					540					
Gly	Ala	Cys	Thr	Gln	Gly	Gly	Pro	Leu	Tyr	Val	Leu	Val	Glu	Tyr	Ala	
545					550					555					560	
Ala	Lys	Gly	Asn	Leu	Arg	Glu	Phe	Leu	Arg	Ala	Arg	Arg	Pro	Pro	Gly	
			565						570					575		
Leu	Asp	Tyr	Ser	Phe	Asp	Thr	Cys	Lys	Pro	Pro	Glu	Glu	Gln	Leu	Thr	
			580					585					590			
Phe	Lys	Asp	Leu	Val	Ser	Cys	Ala	Tyr	Gln	Val	Ala	Arg	Gly	Met	Glu	
		595					600					605				

Tyr Leu Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn
610 615 620

Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu
625 630 635 640

Ala Arg Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly
645 650 655

Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val
660 665 670

Tyr Thr His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu
675 680 685

Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu
690 695 700

Leu Phe Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn
705 710 715 720

Cys Thr His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala
725 730 735

Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg
740 745 750

Val Leu Thr Val Thr Ser Thr Asp Val Ser Ala Gly Ser Gly Leu Val
755 760 765

Pro Pro Ala Tyr Ala Pro Pro Pro Ala Val Pro Gly His Pro Ala Pro
770 775 780

Gln Ser Ala Glu Val Trp Gly Gly Pro Ser Gly Pro Gly Ala Leu Ala
785 790 795 800

Asp Leu Asp Cys Ser Ser Ser Ser Gln Ser Pro Gly Ser Ser Glu Asn
805 810 815

Gln Met Val Ser Pro Gly Lys Val Ser Gly Ser Pro Glu Gln Ala Val
820 825 830

Glu Glu Asn Leu Ser Ser Tyr Ser Leu Asp Arg Arg Val Thr Pro Ala

835					840					845					
Ser	Glu	Thr	Leu	Glu	Asp	Pro	Cys	Arg	Thr	Glu	Ser	Gln	His	Lys	Ala
	850					855					860				
Glu	Thr	Pro	His	Gly	Ala	Glu	Glu	Glu	Cys	Lys	Ala	Glu	Thr	Pro	His
865					870					875					880
Gly	Ala	Glu	Glu	Glu	Cys	Arg	His	Gly	Gly	Val	Cys	Ala	Pro	Ala	Ala
				885					890					895	
Val	Ala	Thr	Ser	Pro	Pro	Gly	Ala	Ile	Pro	Lys	Glu	Ala	Cys	Gly	Gly
			900					905					910		
Ala	Pro	Leu	Gln	Gly	Leu	Pro	Gly	Glu	Ala	Leu	Gly	Cys	Pro	Ala	Gly
		915					920					925			
Val	Gly	Thr	Pro	Val	Pro	Ala	Asp	Gly	Thr	Gln	Thr	Leu	Thr	Cys	Ala
	930					935					940				
His	Thr	Ser	Ala	Pro	Glu	Ser	Thr	Ala	Pro	Thr	Asn	His	Leu	Val	Ala
945					950					955					960
Gly	Arg	Ala	Met	Thr	Leu	Ser	Pro	Gln	Glu	Glu	Val	Ala	Ala	Gly	Gln
				965					970					975	
Met	Ala	Ser	Ser	Ser	Arg	Ser	Gly	Pro	Val	Lys	Leu	Glu	Phe	Asp	Val
			980					985					990		
Ser	Asp	Gly	Ala	Thr	Ser	Lys	Arg	Ala	Pro	Pro	Pro	Arg	Arg	Leu	Gly
		995					1000					1005			
Glu	Arg	Ser	Gly	Leu	Lys	Pro	Pro	Leu	Arg	Lys	Ala	Ala	Val	Arg	
	1010					1015					1020				
Gln	Gln	Lys	Ala	Pro	Gln	Glu	Val	Glu	Glu	Asp	Asp	Gly	Arg	Ser	
	1025					1030					1035				
Gly	Ala	Gly	Glu	Asp	Pro	Pro	Met	Pro	Ala	Ser	Arg	Gly	Ser	Tyr	
	1040					1045					1050				
His	Leu	Asp	Trp	Asp	Lys	Met	Asp	Asp	Pro	Asn	Phe	Ile	Pro	Phe	
	1055					1060					1065				

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

1280														
Leu	Asp	Ala	Val	Val	Lys	Ala	Thr	Gln	Glu	Glu	Asn	Arg	Glu	Leu
1295						1300					1305			
Arg	Ser	Arg	Cys	Glu	Glu	Leu	His	Gly	Lys	Asn	Leu	Glu	Leu	Gly
1310						1315					1320			
Lys	Ile	Met	Asp	Arg	Phe	Glu	Glu	Val	Val	Tyr	Gln	Ala	Met	Glu
1325						1330					1335			
Glu	Val	Gln	Lys	Gln	Lys	Glu	Leu	Ser	Lys	Ala	Glu	Ile	Gln	Lys
1340						1345					1350			
Val	Leu	Lys	Glu	Lys	Asp	Gln	Leu	Thr	Thr	Asp	Leu	Asn	Ser	Met
1355						1360					1365			
Glu	Lys	Ser	Phe	Ser	Asp	Leu	Phe	Lys	Arg	Phe	Glu	Lys	Gln	Lys
1370						1375					1380			
Glu	Val	Ile	Glu	Gly	Tyr	Arg	Lys	Asn	Glu	Glu	Ser	Leu	Lys	Lys
1385						1390					1395			
Cys	Val	Glu	Asp	Tyr	Leu	Ala	Arg	Ile	Thr	Gln	Glu	Gly	Gln	Arg
1400						1405					1410			
Tyr	Gln	Ala	Leu	Lys	Ala	His	Ala	Glu	Glu	Lys	Leu	Gln	Leu	Ala
1415						1420					1425			
Asn	Glu	Glu	Ile	Ala	Gln	Val	Arg	Ser	Lys	Ala	Gln	Ala	Glu	Ala
1430						1435					1440			
Leu	Ala	Leu	Gln	Ala	Ser	Leu	Arg	Lys	Glu	Gln	Met	Arg	Ile	Gln
1445						1450					1455			
Ser	Leu	Glu	Lys	Thr	Val	Glu	Gln	Lys	Thr	Lys	Glu	Asn	Glu	Glu
1460						1465					1470			
Leu	Thr	Arg	Ile	Cys	Asp	Asp	Leu	Ile	Ser	Lys	Met	Glu	Lys	Ile
1475						1480					1485			

<210> 31
 <211> 3765
 <212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(3765)

<400> 31

atg ggc gcc cct gcc tgc gcc ctc gcg ctc tgc gtg gcc gtg gcc atc	48
Met Gly Ala Pro Ala Cys Ala Leu Ala Leu Cys Val Ala Val Ala Ile	
1 5 10 15	
gtg gcc ggc gcc tcc tcg gag tcc ttg ggg acg gag cag cgc gtc gtg	96
Val Ala Gly Ala Ser Ser Glu Ser Leu Gly Thr Glu Gln Arg Val Val	
20 25 30	
ggg cga gcg gca gaa gtc ccg ggc cca gag ccc ggc cag cag gag cag	144
Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln	
35 40 45	
ttg gtc ttc ggc agc ggg gat gct gtg gag ctg agc tgt ccc ccg ccc	192
Leu Val Phe Gly Ser Gly Asp Ala Val Glu Leu Ser Cys Pro Pro Pro	
50 55 60	
ggg ggt ggt ccc atg ggg ccc act gtc tgg gtc aag gat ggc aca ggg	240
Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly	
65 70 75 80	
ctg gtg ccc tcg gag cgt gtc ctg gtg ggg ccc cag cgg ctg cag gtg	288
Leu Val Pro Ser Glu Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val	
85 90 95	
ctg aat gcc tcc cac gag gac tcc ggg gcc tac agc tgc cgg cag cgg	336
Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg	
100 105 110	
ctc acg cag cgc gta ctg tgc cac ttc agt gtg cgg gtg aca gac gct	384
Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala	
115 120 125	
cca tcc tcg gga gat gac gaa gac ggg gag gac gag gct gag gac aca	432
Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr	
130 135 140	
ggt gtg gac aca ggg gcc cct tac tgg aca cgg ccc gag cgg atg gac	480
Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp	
145 150 155 160	
aag aag ctg ctg gcc gtg ccg gcc gcc aac acc gtc cgc ttc cgc tgc	528
Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys	
165 170 175	
cca gcc gct ggc aac ccc act ccc tcc atc tcc tgg ctg aag aac ggc	576
Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly	
180 185 190	
agg gag ttc cgc ggc gag cac cgc att gga ggc atc aag ctg cgg cat	624
Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His	

195	200	205	
cag cag tgg agc ctg gtc atg gaa agc gtg gtg ccc tcg gac cgc ggc Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly 210 215 220			672
aac tac acc tgc gtc gtg gag aac aag ttt ggc agc atc cgg cag acg Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr 225 230 235 240			720
tac acg ctg gac gtg ctg gag cgc tcc ccg cac cgg ccc atc ctg cag Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln 245 250 255			768
gcg ggg ctg ccg gcc aac cag acg gcg gtg ctg ggc agc gac gtg gag Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu 260 265 270			816
ttc cac tgc aag gtg tac agt gac gca cag ccc cac atc cag tgg ctc Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu 275 280 285			864
aag cac gtg gag gtg aat ggc agc aag gtg ggc ccg gac ggc aca ccc Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro 290 295 300			912
tac gtt acc gtg ctc aag tcc tgg atc agt gag agt gtg gag gcc gac Tyr Val Thr Val Leu Lys Ser Trp Ile Ser Glu Ser Val Glu Ala Asp 305 310 315 320			960
gtg cgc ctc cgc ctg gcc aat gtg tcg gag cgg gac ggg ggc gag tac Val Arg Leu Arg Leu Ala Asn Val Ser Glu Arg Asp Gly Gly Glu Tyr 325 330 335			1008
ctc tgt cga gcc acc aat ttc ata ggc gtg gcc gag aag gcc ttt tgg Leu Cys Arg Ala Thr Asn Phe Ile Gly Val Ala Glu Lys Ala Phe Trp 340 345 350			1056
ctg agc gtt cac ggg ccc cga gca gcc gag gag gag ctg gtg gag gct Leu Ser Val His Gly Pro Arg Ala Ala Glu Glu Glu Leu Val Glu Ala 355 360 365			1104
gac gag gcg ggc agt gtg tat gca ggc atc ctc agc tac ggg gtg ggc Asp Glu Ala Gly Ser Val Tyr Ala Gly Ile Leu Ser Tyr Gly Val Gly 370 375 380			1152
ttc ttc ctg ttc atc ctg gtg gtg gcg gct gtg acg ctc tgc cgc ctg Phe Phe Leu Phe Ile Leu Val Val Ala Ala Val Thr Leu Cys Arg Leu 385 390 395 400			1200
cgc agc ccc ccc aag aaa ggc ctg ggc tcc ccc acc gtg cac aag atc Arg Ser Pro Pro Lys Lys Gly Leu Gly Ser Pro Thr Val His Lys Ile 405 410 415			1248
tcc cgc ttc ccg ctc aag cga cag gtg tcc ctg gag tcc aac gcg tcc Ser Arg Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ala Ser 420 425 430			1296

atg agc tcc aac aca cca ctg gtg cgc atc gca agg ctg tcc tca ggg Met Ser Ser Asn Thr Pro Leu Val Arg Ile Ala Arg Leu Ser Ser Gly 435 440 445	1344
gag ggc ccc acg ctg gcc aat gtc tcc gag ctc gag ctg cct gcc gac Glu Gly Pro Thr Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp 450 455 460	1392
ccc aaa tgg gag ctg tct cgg gcc cgg ctg acc ctg ggc aag ccc ctt Pro Lys Trp Glu Leu Ser Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu 465 470 475 480	1440
ggg gag ggc tgc ttc ggc cag gtg gtc atg gcg gag gcc atc ggc att Gly Glu Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile 485 490 495	1488
gac aag gac cgg gcc gcc aag cct gtc acc gta gcc gtg aag atg ctg Asp Lys Asp Arg Ala Ala Lys Pro Val Thr Val Ala Val Lys Met Leu 500 505 510	1536
aaa gac gat gcc act gac aag gac ctg tcg gac ctg gtg tct gag atg Lys Asp Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met 515 520 525	1584
gag atg atg aag atg atc ggg aaa cac aaa aac atc atc aac ctg ctg Glu Met Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu 530 535 540	1632
ggc gcc tgc acg cag ggc ggg ccc ctg tac gtg ctg gtg gag tac gcg Gly Ala Cys Thr Gln Gly Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala 545 550 555 560	1680
gcc aag ggt aac ctg cgg gag ttt ctg cgg gcg cgg cgg ccc ccg ggc Ala Lys Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly 565 570 575	1728
ctg gac tac tcc ttc gac acc tgc aag ccg ccc gag gag cag ctc acc Leu Asp Tyr Ser Phe Asp Thr Cys Lys Pro Pro Glu Glu Gln Leu Thr 580 585 590	1776
ttc aag gac ctg gtg tcc tgt gcc tac cag gtg gcc cgg ggc atg gag Phe Lys Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu 595 600 605	1824
tac ttg gcc tcc cag aag tgc atc cac agg gac ctg gct gcc cgc aat Tyr Leu Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn 610 615 620	1872
gtg ctg gtg acc gag gac aac gtg atg aag atc gca gac ttc ggg ctg Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu 625 630 635 640	1920
gcc cgg gac gtg cac aac ctc gac tac tac aag aag aca acc aac ggc Ala Arg Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly 645 650 655	1968
cgg ctg ccc gtg aag tgg atg gcg cct gag gcc ttg ttt gac cga gtc Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val	2016

660										665										670										
tac	act	cac	cag	agt	gac	gtc	tgg	tcc	ttt	ggg	gtc	ctg	ctc	tgg	gag		2064													
Tyr	Thr	His	Gln	Ser	Asp	Val	Trp	Ser	Phe	Gly	Val	Leu	Leu	Trp	Glu															
		675					680					685																		
atc	ttc	acg	ctg	ggg	ggc	tcc	ccg	tac	ccc	ggc	atc	cct	gtg	gag	gag		2112													
Ile	Phe	Thr	Leu	Gly	Gly	Ser	Pro	Tyr	Pro	Gly	Ile	Pro	Val	Glu	Glu															
	690					695					700																			
ctc	ttc	aag	ctg	ctg	aag	gag	ggc	cac	cgc	atg	gac	aag	ccc	gcc	aac		2160													
Leu	Phe	Lys	Leu	Leu	Lys	Glu	Gly	His	Arg	Met	Asp	Lys	Pro	Ala	Asn															
705					710					715					720															
tgc	aca	cac	gac	ctg	tac	atg	atc	atg	cgg	gag	tgc	tgg	cat	gcc	gcg		2208													
Cys	Thr	His	Asp	Leu	Tyr	Met	Ile	Met	Arg	Glu	Cys	Trp	His	Ala	Ala															
				725					730					735																
ccc	tcc	cag	agg	ccc	acc	ttc	aag	cag	ctg	gtg	gag	gac	ctg	gac	cgt		2256													
Pro	Ser	Gln	Arg	Pro	Thr	Phe	Lys	Gln	Leu	Val	Glu	Asp	Leu	Asp	Arg															
			740					745					750																	
gtc	ctt	acc	gtg	acg	tcc	acc	gac	aat	gtt	atg	gaa	cag	ttc	aat	cct		2304													
Val	Leu	Thr	Val	Thr	Ser	Thr	Asp	Asn	Val	Met	Glu	Gln	Phe	Asn	Pro															
		755					760					765																		
ggg	ctg	cga	aat	tta	ata	aac	ctg	ggg	aaa	aat	tat	gag	aaa	gct	gta		2352													
Gly	Leu	Arg	Asn	Leu	Ile	Asn	Leu	Gly	Lys	Asn	Tyr	Glu	Lys	Ala	Val															
	770					775					780																			
aac	gct	atg	atc	ctg	gca	gga	aaa	gcc	tac	tac	gat	gga	gtg	gcc	aag		2400													
Asn	Ala	Met	Ile	Leu	Ala	Gly	Lys	Ala	Tyr	Tyr	Asp	Gly	Val	Ala	Lys															
785					790					795					800															
atc	ggc	gag	att	gcc	act	ggg	tcc	ccc	gtg	tca	act	gaa	ctg	gga	cat		2448													
Ile	Gly	Glu	Ile	Ala	Thr	Gly	Ser	Pro	Val	Ser	Thr	Glu	Leu	Gly	His															
				805					810					815																
gtc	ctc	ata	gag	att	tca	agt	acc	cac	aag	aaa	ctc	aac	gag	agt	ctt		2496													
Val	Leu	Ile	Glu	Ile	Ser	Ser	Thr	His	Lys	Lys	Leu	Asn	Glu	Ser	Leu															
			820					825					830																	
gat	gaa	aat	ttt	aaa	aaa	ttc	cac	aaa	gag	att	atc	cat	gag	ctg	gag		2544													
Asp	Glu	Asn	Phe	Lys	Lys	Phe	His	Lys	Glu	Ile	Ile	His	Glu	Leu	Glu															
		835					840					845																		
aag	aag	ata	gaa	ctt	gac	gtg	aaa	tat	atg	aac	gca	act	cta	aaa	aga		2592													
Lys	Lys	Ile	Glu	Leu	Asp	Val	Lys	Tyr	Met	Asn	Ala	Thr	Leu	Lys	Arg															
	850					855					860																			
tac	caa	aca	gaa	cac	aag	aat	aaa	tta	gag	tct	ttg	gag	aaa	tcc	caa		2640													
Tyr	Gln	Thr	Glu	His	Lys	Asn	Lys	Leu	Glu	Ser	Leu	Glu	Lys	Ser	Gln															
865					870				875						880															
gct	gag	ttg	aag	aag	atc	aga	agg	aaa	agc	caa	gga	agc	cga	aac	gca		2688													
Ala	Glu	Leu	Lys	Lys	Ile	Arg	Arg	Lys	Ser	Gln	Gly	Ser	Arg	Asn	Ala															
				885					890					895																

ctc aaa tat gaa cac aaa gaa att gag tat gtg gag acc gtt act tct Leu Lys Tyr Glu His Lys Glu Ile Glu Tyr Val Glu Thr Val Thr Ser 900 905 910	2736
cgt cag agt gaa atc cag aaa ttc att gca gat ggt tgc aaa gag gct Arg Gln Ser Glu Ile Gln Lys Phe Ile Ala Asp Gly Cys Lys Glu Ala 915 920 925	2784
ctg ctt gaa gag aag agg cgc ttc tgc ttt ctg gtt gat aag cac tgt Leu Leu Glu Glu Lys Arg Arg Phe Cys Phe Leu Val Asp Lys His Cys 930 935 940	2832
ggc ttt gca aac cac ata cat tat tat cac tta cag tct gca gaa cta Gly Phe Ala Asn His Ile His Tyr Tyr His Leu Gln Ser Ala Glu Leu 945 950 955 960	2880
ctg aat tcc aag ctg cct cgg tgg cag gag acc tgt gtt gat gcc atc Leu Asn Ser Lys Leu Pro Arg Trp Gln Glu Thr Cys Val Asp Ala Ile 965 970 975	2928
aaa gtg cca gag aaa atc atg aat atg atc gaa gaa ata aag acc cca Lys Val Pro Glu Lys Ile Met Asn Met Ile Glu Glu Ile Lys Thr Pro 980 985 990	2976
gcc tct acc ccc gtg tct gga act cct cag gct tca ccc atg atc gag Ala Ser Thr Pro Val Ser Gly Thr Pro Gln Ala Ser Pro Met Ile Glu 995 1000 1005	3024
aga agc aat gtg gtt agg aaa gat tac gac acc ctt tct aaa tgc Arg Ser Asn Val Val Arg Lys Asp Tyr Asp Thr Leu Ser Lys Cys 1010 1015 1020	3069
tca cca aag atg ccc ccc gct cct tca ggc aga gca tat acc agt Ser Pro Lys Met Pro Pro Ala Pro Ser Gly Arg Ala Tyr Thr Ser 1025 1030 1035	3114
ccc ttg atc gat atg ttt aat aac cca gcc acg gct gcc ccg aat Pro Leu Ile Asp Met Phe Asn Asn Pro Ala Thr Ala Ala Pro Asn 1040 1045 1050	3159
tca caa agg gta aat aat tca aca ggt act tcc gaa gat ccc agt Ser Gln Arg Val Asn Asn Ser Thr Gly Thr Ser Glu Asp Pro Ser 1055 1060 1065	3204
tta cag cga tca gtt tcg gtt gca acg gga ctg aac atg atg aag Leu Gln Arg Ser Val Ser Val Ala Thr Gly Leu Asn Met Met Lys 1070 1075 1080	3249
aag cag aaa gtg aag acc atc ttc ccg cac act gcg ggc tcc aac Lys Gln Lys Val Lys Thr Ile Phe Pro His Thr Ala Gly Ser Asn 1085 1090 1095	3294
aag acc tta ctc agc ttt gca cag gga gat gtc atc acg ctg ctc Lys Thr Leu Leu Ser Phe Ala Gln Gly Asp Val Ile Thr Leu Leu 1100 1105 1110	3339
atc ccc gag gag aag gat ggc tgg ctc tat gga gaa cac gac gtg Ile Pro Glu Glu Lys Asp Gly Trp Leu Tyr Gly Glu His Asp Val 1115 1120 1125	3384

	1115						1120						1125						
tcc Ser	aag Lys	gcg Ala	agg Arg	ggc Gly	tgg Trp	ttc Phe	cgc Pro	tgc Ser	tgc Ser	tac Tyr	acc Thr	aag Lys	ttg Leu	ctg Leu	3429				
	1130						1135						1140						
gaa Glu	gaa Glu	aat Asn	gag Glu	aca Thr	gaa Glu	gca Ala	gtg Val	acc Thr	gtg Val	ccc Pro	acc Thr	cca Pro	agc Ser	ccc Pro	3474				
	1145						1150						1155						
aca Thr	cca Pro	gtg Val	aga Arg	agc Ser	atc Ile	agc Ser	acc Thr	gtg Val	aac Asn	ttg Leu	tct Ser	gag Glu	aat Asn	agc Ser	3519				
	1160						1165						1170						
agt Ser	gtt Val	gtc Val	atc Ile	ccc Pro	cca Pro	ccc Pro	gac Asp	tac Tyr	ttg Leu	gaa Glu	tgc Cys	ttg Leu	tcc Ser	atg Met	3564				
	1175						1180						1185						
ggg Gly	gca Ala	gct Ala	gcc Ala	gac Asp	agg Arg	aga Arg	gca Ala	gat Asp	tgc Ser	gcc Ala	agg Arg	acc Thr	aca Thr	tcc Ser	3609				
	1190						1195						1200						
acc Thr	ttt Phe	aag Lys	gcc Ala	cca Pro	gcg Ala	tcc Ser	aag Lys	ccc Pro	gag Glu	acc Thr	gcg Ala	gct Ala	cct Pro	aac Asn	3654				
	1205						1210						1215						
gat Asp	gcc Ala	aac Asn	ggg Gly	act Thr	gca Ala	aag Lys	cgc Pro	cct Pro	ttt Phe	ctc Leu	agc Ser	gga Gly	gaa Glu	aac Asn	3699				
	1220						1225						1230						
ccc Pro	ttt Phe	gcc Ala	act Thr	gtg Val	aaa Lys	ctc Leu	cgc Arg	cgc Pro	act Thr	gtg Val	acc Thr	aat Asn	gat Asp	cgc Arg	3744				
	1235						1240						1245						
tgc Ser	gca Ala	ccc Pro	atc Ile	att Ile	cga Arg	tga									3765				
	1250																		

```
<210> 32
<211> 1254
<212> PRT
<213> Homo sapiens
```

<400> 32

Met Gly Ala Pro Ala Cys Ala Leu Ala Leu Cys Val Ala Val Ala Ile
1 5 10 15

Val Ala Gly Ala Ser Ser Glu Ser Leu Gly Thr Glu Gln Arg Val Val
20 25 30

Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
35 40 45

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

Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro
 290 295 300

Tyr Val Thr Val Leu Lys Ser Trp Ile Ser Glu Ser Val Glu Ala Asp
 305 310 315 320

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

Leu Cys Arg Ala Thr Asn Phe Ile Gly Val Ala Glu Lys Ala Phe Trp
 340 345 350

Leu Ser Val His Gly Pro Arg Ala Ala Glu Glu Glu Leu Val Glu Ala
 355 360 365

Asp Glu Ala Gly Ser Val Tyr Ala Gly Ile Leu Ser Tyr Gly Val Gly
 370 375 380

Phe Phe Leu Phe Ile Leu Val Val Ala Ala Val Thr Leu Cys Arg Leu
 385 390 395 400

Arg Ser Pro Pro Lys Lys Gly Leu Gly Ser Pro Thr Val His Lys Ile
 405 410 415

Ser Arg Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ala Ser
 420 425 430

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

Glu Gly Pro Thr Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp
 450 455 460

Pro Lys Trp Glu Leu Ser Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu
 465 470 475 480

Gly Glu Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile
 485 490 495

Asp Lys Asp Arg Ala Ala Lys Pro Val Thr Val Ala Val Lys Met Leu
 500 505 510

Lys Asp Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met
 515 520 525

Glu Met Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu
 530 535 540

Gly Ala Cys Thr Gln Gly Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala
 545 550 555 560

Ala Lys Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly
 565 570 575

Leu Asp Tyr Ser Phe Asp Thr Cys Lys Pro Pro Glu Glu Gln Leu Thr
 580 585 590

Phe Lys Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu
 595 600 605

Tyr Leu Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn
 610 615 620

Val Leu Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu
 625 630 635 640

Ala Arg Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly
 645 650 655

Arg Leu Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val
 660 665 670

Tyr Thr His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu
 675 680 685

Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu
 690 695 700

Leu Phe Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn
 705 710 715 720

Cys Thr His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala
 725 730 735

Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg
 740 745 750

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

Lys Val Pro Glu Lys Ile Met Asn Met Ile Glu Glu Ile Lys Thr Pro
980 985 990

Ala Ser Thr Pro Val Ser Gly Thr Pro Gln Ala Ser Pro Met Ile Glu
995 1000 1005

Arg Ser Asn Val Val Arg Lys Asp Tyr Asp Thr Leu Ser Lys Cys
1010 1015 1020

Ser Pro Lys Met Pro Pro Ala Pro Ser Gly Arg Ala Tyr Thr Ser
1025 1030 1035

Pro Leu Ile Asp Met Phe Asn Asn Pro Ala Thr Ala Ala Pro Asn
1040 1045 1050

Ser Gln Arg Val Asn Asn Ser Thr Gly Thr Ser Glu Asp Pro Ser
1055 1060 1065

Leu Gln Arg Ser Val Ser Val Ala Thr Gly Leu Asn Met Met Lys
1070 1075 1080

Lys Gln Lys Val Lys Thr Ile Phe Pro His Thr Ala Gly Ser Asn
1085 1090 1095

Lys Thr Leu Leu Ser Phe Ala Gln Gly Asp Val Ile Thr Leu Leu
1100 1105 1110

Ile Pro Glu Glu Lys Asp Gly Trp Leu Tyr Gly Glu His Asp Val
1115 1120 1125

Ser Lys Ala Arg Gly Trp Phe Pro Ser Ser Tyr Thr Lys Leu Leu
1130 1135 1140

Glu Glu Asn Glu Thr Glu Ala Val Thr Val Pro Thr Pro Ser Pro
1145 1150 1155

Thr Pro Val Arg Ser Ile Ser Thr Val Asn Leu Ser Glu Asn Ser
1160 1165 1170

Ser Val Val Ile Pro Pro Pro Asp Tyr Leu Glu Cys Leu Ser Met
1175 1180 1185

Gly Ala Ala Ala Asp Arg Arg Ala Asp Ser Ala Arg Thr Thr Ser
1190 1195 1200

Thr Phe Lys Ala Pro Ala Ser Lys Pro Glu Thr Ala Ala Pro Asn
 1205 1210 1215

Asp Ala Asn Gly Thr Ala Lys Pro Pro Phe Leu Ser Gly Glu Asn
 1220 1225 1230

Pro Phe Ala Thr Val Lys Leu Arg Pro Thr Val Thr Asn Asp Arg
 1235 1240 1245

Ser Ala Pro Ile Ile Arg
 1250

<210> 33
 <211> 2850
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(2850)

<400> 33
 atg ggc gcc cct gcc tgc gcc ctc gcg ctc tgc gtg gcc gtg gcc atc 48
 Met Gly Ala Pro Ala Cys Ala Leu Ala Leu Cys Val Ala Val Ala Ile
 1 5 10 15

gtg gcc ggc gcc tcc tcg gag tcc ttg ggg acg gag cag cgc gtc gtg 96
 Val Ala Gly Ala Ser Ser Glu Ser Leu Gly Thr Glu Gln Arg Val Val
 20 25 30

ggg cga gcg gca gaa gtc ccg ggc cca gag ccc ggc cag cag gag cag 144
 Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
 35 40 45

ttg gtc ttc ggc agc ggg gat gct gtg gag ctg agc tgt ccc ccg ccc 192
 Leu Val Phe Gly Ser Gly Asp Ala Val Glu Leu Ser Cys Pro Pro Pro
 50 55 60

ggg ggt ggt ccc atg ggg ccc act gtc tgg gtc aag gat ggc aca ggg 240
 Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
 65 70 75 80

ctg gtg ccc tcg gag cgt gtc ctg gtg ggg ccc cag cgg ctg cag gtg 288
 Leu Val Pro Ser Glu Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val
 85 90 95

ctg aat gcc tcc cac gag gac tcc ggg gcc tac agc tgc cgg cag cgg 336
 Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg
 100 105 110

ctc acg cag cgc gta ctg tgc cac ttc agt gtg cgg gtg aca gac gct 384

Leu	Thr	Gln	Arg	Val	Leu	Cys	His	Phe	Ser	Val	Arg	Val	Thr	Asp	Ala		
		115					120					125					
cca	tcc	tcg	gga	gat	gac	gaa	gac	ggg	gag	gac	gag	gct	gag	gac	aca		432
Pro	Ser	Ser	Gly	Asp	Asp	Glu	Asp	Gly	Glu	Asp	Glu	Ala	Glu	Asp	Thr		
	130					135					140						
ggt	gtg	gac	aca	ggg	gcc	cct	tac	tgg	aca	cgg	ccc	gag	cgg	atg	gac		480
Gly	Val	Asp	Thr	Gly	Ala	Pro	Tyr	Trp	Thr	Arg	Pro	Glu	Arg	Met	Asp		
145					150					155					160		
aag	aag	ctg	ctg	gcc	gtg	ccg	gcc	gcc	aac	acc	gtc	cgc	ttc	cgc	tgc		528
Lys	Lys	Leu	Leu	Ala	Val	Pro	Ala	Ala	Asn	Thr	Val	Arg	Phe	Arg	Cys		
				165					170						175		
cca	gcc	gct	ggc	aac	ccc	act	ccc	tcc	atc	tcc	tgg	ctg	aag	aac	ggc		576
Pro	Ala	Ala	Gly	Asn	Pro	Thr	Pro	Ser	Ile	Ser	Trp	Leu	Lys	Asn	Gly		
			180					185					190				
agg	gag	ttc	cgc	ggc	gag	cac	cgc	att	gga	ggc	atc	aag	ctg	cgg	cat		624
Arg	Glu	Phe	Arg	Gly	Glu	His	Arg	Ile	Gly	Gly	Ile	Lys	Leu	Arg	His		
		195					200					205					
cag	cag	tgg	agc	ctg	gtc	atg	gaa	agc	gtg	gtg	ccc	tcg	gac	cgc	ggc		672
Gln	Gln	Trp	Ser	Leu	Val	Met	Glu	Ser	Val	Val	Pro	Ser	Asp	Arg	Gly		
	210					215					220						
aac	tac	acc	tgc	gtc	gtg	gag	aac	aag	ttt	ggc	agc	atc	cgg	cag	acg		720
Asn	Tyr	Thr	Cys	Val	Val	Glu	Asn	Lys	Phe	Gly	Ser	Ile	Arg	Gln	Thr		
225					230					235					240		
tac	acg	ctg	gac	gtg	ctg	gag	cgc	tcc	ccg	cac	cgg	ccc	atc	ctg	cag		768
Tyr	Thr	Leu	Asp	Val	Leu	Glu	Arg	Ser	Pro	His	Arg	Pro	Ile	Leu	Gln		
				245					250					255			
gcg	ggg	ctg	ccg	gcc	aac	cag	acg	gcg	gtg	ctg	ggc	agc	gac	gtg	gag		816
Ala	Gly	Leu	Pro	Ala	Asn	Gln	Thr	Ala	Val	Leu	Gly	Ser	Asp	Val	Glu		
			260					265					270				
ttc	cac	tgc	aag	gtg	tac	agt	gac	gca	cag	ccc	cac	atc	cag	tgg	ctc		864
Phe	His	Cys	Lys	Val	Tyr	Ser	Asp	Ala	Gln	Pro	His	Ile	Gln	Trp	Leu		
		275					280					285					
aag	cac	gtg	gag	gtg	aat	ggc	agc	aag	gtg	ggc	ccg	gac	ggc	aca	ccc		912
Lys	His	Val	Glu	Val	Asn	Gly	Ser	Lys	Val	Gly	Pro	Asp	Gly	Thr	Pro		
		290				295					300						
tac	gtt	acc	gtg	ctc	aag	acg	gcg	ggc	gct	aac	acc	acc	gac	aag	gag		960
Tyr	Val	Thr	Val	Leu	Lys	Thr	Ala	Gly	Ala	Asn	Thr	Thr	Asp	Lys	Glu		
305					310					315					320		
cta	gag	gtt	ctc	tcc	ttg	cac	aac	gtc	acc	ttt	gag	gac	gcc	ggg	gag		1008
Leu	Glu	Val	Leu	Ser	Leu	His	Asn	Val	Thr	Phe	Glu	Asp	Ala	Gly	Glu		
				325					330					335			
tac	acc	tgc	ctg	gcg	ggc	aat	tct	att	ggg	ttt	tct	cat	cac	tct	gcg		1056
Tyr	Thr	Cys	Leu	Ala	Gly	Asn	Ser	Ile	Gly	Phe	Ser	His	His	Ser	Ala		
			340					345					350				

tgg ctg gtg gtg ctg cca gcc gag gag gag ctg gtg gag gct gac gag	1104
Trp Leu Val Val Leu Pro Ala Glu Glu Glu Leu Val Glu Ala Asp Glu	
355 360 365	
gcg ggc agt gtg tat gca ggc atc ctc agc tac ggg gtg ggc ttc ttc	1152
Ala Gly Ser Val Tyr Ala Gly Ile Leu Ser Tyr Gly Val Gly Phe Phe	
370 375 380	
ctg ttc atc ctg gtg gtg gcg gct gtg acg ctc tgc cgc ctg cgc agc	1200
Leu Phe Ile Leu Val Val Ala Ala Val Thr Leu Cys Arg Leu Arg Ser	
385 390 395 400	
ccc ccc aag aaa ggc ctg ggc tcc ccc acc gtg cac aag atc tcc cgc	1248
Pro Pro Lys Lys Gly Leu Gly Ser Pro Thr Val His Lys Ile Ser Arg	
405 410 415	
ttc ccg ctc aag cga cag gtg tcc ctg gag tcc aac gcg tcc atg agc	1296
Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ala Ser Met Ser	
420 425 430	
tcc aac aca cca ctg gtg cgc atc gca agg ctg tcc tca ggg gag ggc	1344
Ser Asn Thr Pro Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly	
435 440 445	
ccc acg ctg gcc aat gtc tcc gag ctc gag ctg cct gcc gac ccc aaa	1392
Pro Thr Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys	
450 455 460	
tgg gag ctg tct cgg gcc cgg ctg acc ctg ggc aag ccc ctt ggg gag	1440
Trp Glu Leu Ser Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu	
465 470 475 480	
ggc tgc ttc ggc cag gtg gtc atg gcg gag gcc atc ggc att gac aag	1488
Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys	
485 490 495	
gac cgg gcc gcc aag cct gtc acc gta gcc gtg aag atg ctg aaa gac	1536
Asp Arg Ala Ala Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp	
500 505 510	
gat gcc act gac aag gac ctg tcg gac ctg gtg tct gag atg gag atg	1584
Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met	
515 520 525	
atg aag atg atc ggg aaa cac aaa aac atc atc aac ctg ctg ggc gcc	1632
Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala	
530 535 540	
tgc acg cag ggc ggg ccc ctg tac gtg ctg gtg gag tac gcg gcc aag	1680
Cys Thr Gln Gly Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys	
545 550 555 560	
ggg aac ctg cgg gag ttt ctg cgg gcg cgg cgg ccc ccg ggc ctg gac	1728
Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Leu Asp	
565 570 575	
tac tcc ttc gac acc tgc aag ccg ccc gag gag cag ctc acc ttc aag	1776

Tyr	Ser	Phe	Asp	Thr	Cys	Lys	Pro	Pro	Glu	Glu	Gln	Leu	Thr	Phe	Lys	
			580					585					590			
gac	ctg	gtg	tcc	tgt	gcc	tac	cag	gtg	gcc	cgg	ggc	atg	gag	tac	ttg	1824
Asp	Leu	Val	Ser	Cys	Ala	Tyr	Gln	Val	Ala	Arg	Gly	Met	Glu	Tyr	Leu	
		595					600					605				
gcc	tcc	cag	aag	tgc	atc	cac	agg	gac	ctg	gct	gcc	cgc	aat	gtg	ctg	1872
Ala	Ser	Gln	Lys	Cys	Ile	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Val	Leu	
	610					615					620					
gtg	acc	gag	gac	aac	gtg	atg	aag	atc	gca	gac	ttc	ggg	ctg	gcc	cgg	1920
Val	Thr	Glu	Asp	Asn	Val	Met	Lys	Ile	Ala	Asp	Phe	Gly	Leu	Ala	Arg	
625					630					635					640	
gac	gtg	cac	aac	ctc	gac	tac	tac	aag	aag	aca	acc	aac	ggc	cgg	ctg	1968
Asp	Val	His	Asn	Leu	Asp	Tyr	Tyr	Lys	Lys	Thr	Thr	Asn	Gly	Arg	Leu	
				645					650					655		
ccc	gtg	aag	tgg	atg	gcg	cct	gag	gcc	ttg	ttt	gac	cga	gtc	tac	act	2016
Pro	Val	Lys	Trp	Met	Ala	Pro	Glu	Ala	Leu	Phe	Asp	Arg	Val	Tyr	Thr	
			660					665					670			
cac	cag	agt	gac	gtc	tgg	tcc	ttt	ggg	gtc	ctg	ctc	tgg	gag	atc	ttc	2064
His	Gln	Ser	Asp	Val	Trp	Ser	Phe	Gly	Val	Leu	Leu	Trp	Glu	Ile	Phe	
		675					680					685				
acg	ctg	ggg	ggc	tcc	ccg	tac	ccc	ggc	atc	cct	gtg	gag	gag	ctc	ttc	2112
Thr	Leu	Gly	Gly	Ser	Pro	Tyr	Pro	Gly	Ile	Pro	Val	Glu	Glu	Leu	Phe	
	690					695					700					
aag	ctg	ctg	aag	gag	ggc	cac	cgc	atg	gac	aag	ccc	gcc	aac	tgc	aca	2160
Lys	Leu	Leu	Lys	Glu	Gly	His	Arg	Met	Asp	Lys	Pro	Ala	Asn	Cys	Thr	
705					710					715					720	
cac	gac	ctg	tac	atg	atc	atg	cgg	gag	tgc	tgg	cat	gcc	gcg	ccc	tcc	2208
His	Asp	Leu	Tyr	Met	Ile	Met	Arg	Glu	Cys	Trp	His	Ala	Ala	Pro	Ser	
				725					730					735		
cag	agg	ccc	acc	ttc	aag	cag	ctg	gtg	gag	gac	ctg	gac	cgt	gtc	ctt	2256
Gln	Arg	Pro	Thr	Phe	Lys	Gln	Leu	Val	Glu	Asp	Leu	Asp	Arg	Val	Leu	
			740					745					750			
acc	gtg	acg	tcc	acc	gac	gta	aag	gcg	aca	cag	gag	gag	aac	cgg	gag	2304
Thr	Val	Thr	Ser	Thr	Asp	Val	Lys	Ala	Thr	Gln	Glu	Glu	Asn	Arg	Glu	
		755					760					765				
ctg	agg	agc	agg	tgt	gag	gag	ctc	cac	ggg	aag	aac	ctg	gaa	ctg	ggg	2352
Leu	Arg	Ser	Arg	Cys	Glu	Glu	Leu	His	Gly	Lys	Asn	Leu	Glu	Leu	Gly	
	770					775					780					
aag	atc	atg	gac	agg	ttc	gaa	gag	gtt	gtg	tac	cag	gcc	atg	gag	gaa	2400
Lys	Ile	Met	Asp	Arg	Phe	Glu	Glu	Val	Val	Tyr	Gln	Ala	Met	Glu	Glu	
	785				790					795					800	
gtt	cag	aag	cag	aag	gaa	ctt	tcc	aaa	gct	gaa	atc	cag	aaa	gtt	cta	2448
Val	Gln	Lys	Gln	Lys	Glu	Leu	Ser	Lys	Ala	Glu	Ile	Gln	Lys	Val	Leu	
				805					810					815		

aaa gaa aaa gac caa ctt acc aca gat ctg aac tcc atg gag aag tcc	2496
Lys Glu Lys Asp Gln Leu Thr Thr Asp Leu Asn Ser Met Glu Lys Ser	
820 825 830	
ttc tcc gac ctc ttc aag cgt ttt gag aaa cag aaa gag gtg atc gag	2544
Phe Ser Asp Leu Phe Lys Arg Phe Glu Lys Gln Lys Glu Val Ile Glu	
835 840 845	
ggc tac cgc aag aac gaa gag tca ctg aag aag tgc gtg gag gat tac	2592
Gly Tyr Arg Lys Asn Glu Glu Ser Leu Lys Lys Cys Val Glu Asp Tyr	
850 855 860	
ctg gca agg atc acc cag gag ggc cag agg tac caa gcc ctg aag gcc	2640
Leu Ala Arg Ile Thr Gln Glu Gly Gln Arg Tyr Gln Ala Leu Lys Ala	
865 870 875 880	
cac gcg gag gag aag ctg cag ctg gca aac gag gag atc gcc cag gtc	2688
His Ala Glu Glu Lys Leu Gln Leu Ala Asn Glu Glu Ile Ala Gln Val	
885 890 895	
cgg agc aag gcc cag gcg gaa gcg ttg gcc ctc cag gcc agc ctg agg	2736
Arg Ser Lys Ala Gln Ala Glu Ala Leu Ala Leu Gln Ala Ser Leu Arg	
900 905 910	
aag gag cag atg cgc atc cag tcg ctg gag aag aca gtg gag cag aag	2784
Lys Glu Gln Met Arg Ile Gln Ser Leu Glu Lys Thr Val Glu Gln Lys	
915 920 925	
act aaa gag aac gag gag ctg acc agg atc tgc gac gac ctc atc tcc	2832
Thr Lys Glu Asn Glu Glu Leu Thr Arg Ile Cys Asp Asp Leu Ile Ser	
930 935 940	
aag atg gag aag atc tga	2850
Lys Met Glu Lys Ile	
945	

<210> 34
 <211> 949
 <212> PRT
 <213> Homo sapiens

<400> 34

Met Gly Ala Pro Ala Cys Ala Leu Ala Leu Cys Val Ala Val Ala Ile
1 5 10 15

Val Ala Gly Ala Ser Ser Glu Ser Leu Gly Thr Glu Gln Arg Val Val
20 25 30

Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
35 40 45

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

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

Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro
290 295 300

Tyr Val Thr Val Leu Lys Thr Ala Gly Ala Asn Thr Thr Asp Lys Glu
305 310 315 320

Leu Glu Val Leu Ser Leu His Asn Val Thr Phe Glu Asp Ala Gly Glu
325 330 335

Tyr Thr Cys Leu Ala Gly Asn Ser Ile Gly Phe Ser His His Ser Ala
340 345 350

Trp Leu Val Val Leu Pro Ala Glu Glu Glu Leu Val Glu Ala Asp Glu
355 360 365

Ala Gly Ser Val Tyr Ala Gly Ile Leu Ser Tyr Gly Val Gly Phe Phe
370 375 380

Leu Phe Ile Leu Val Val Ala Ala Val Thr Leu Cys Arg Leu Arg Ser
385 390 395 400

Pro Pro Lys Lys Gly Leu Gly Ser Pro Thr Val His Lys Ile Ser Arg
405 410 415

Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ala Ser Met Ser
420 425 430

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

Pro Thr Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys
450 455 460

Trp Glu Leu Ser Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu
465 470 475 480

Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys
485 490 495

Asp Arg Ala Ala Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp
500 505 510

Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met

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

Thr Val Thr Ser Thr Asp Val Lys Ala Thr Gln Glu Glu Asn Arg Glu
755 760 765

Leu Arg Ser Arg Cys Glu Glu Leu His Gly Lys Asn Leu Glu Leu Gly
770 775 780

Lys Ile Met Asp Arg Phe Glu Glu Val Val Tyr Gln Ala Met Glu Glu
785 790 795 800

Val Gln Lys Gln Lys Glu Leu Ser Lys Ala Glu Ile Gln Lys Val Leu
805 810 815

Lys Glu Lys Asp Gln Leu Thr Thr Asp Leu Asn Ser Met Glu Lys Ser
820 825 830

Phe Ser Asp Leu Phe Lys Arg Phe Glu Lys Gln Lys Glu Val Ile Glu
835 840 845

Gly Tyr Arg Lys Asn Glu Glu Ser Leu Lys Lys Cys Val Glu Asp Tyr
850 855 860

Leu Ala Arg Ile Thr Gln Glu Gly Gln Arg Tyr Gln Ala Leu Lys Ala
865 870 875 880

His Ala Glu Glu Lys Leu Gln Leu Ala Asn Glu Glu Ile Ala Gln Val
885 890 895

Arg Ser Lys Ala Gln Ala Glu Ala Leu Ala Leu Gln Ala Ser Leu Arg
900 905 910

Lys Glu Gln Met Arg Ile Gln Ser Leu Glu Lys Thr Val Glu Gln Lys
915 920 925

Thr Lys Glu Asn Glu Glu Leu Thr Arg Ile Cys Asp Asp Leu Ile Ser
930 935 940

Lys Met Glu Lys Ile
945

<210> 35
<211> 4461
<212> DNA
<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(4461)

<400> 35

atg	ggc	gcc	cct	gcc	tgc	gcc	ctc	gcg	ctc	tgc	gtg	gcc	gtg	gcc	atc	48
Met	Gly	Ala	Pro	Ala	Cys	Ala	Leu	Ala	Leu	Cys	Val	Ala	Val	Ala	Ile	
1				5				10				15				

gtg	gcc	ggc	gcc	tcc	tcg	gag	tcc	ttg	ggg	acg	gag	cag	cgc	gtc	gtg	96
Val	Ala	Gly	Ala	Ser	Ser	Glu	Ser	Leu	Gly	Thr	Glu	Gln	Arg	Val	Val	
			20					25				30				

ggg	cga	gcg	gca	gaa	gtc	ccg	ggc	cca	gag	ccc	ggc	cag	cag	gag	cag	144
Gly	Arg	Ala	Ala	Glu	Val	Pro	Gly	Pro	Glu	Pro	Gly	Gln	Gln	Glu	Gln	
		35					40					45				

ttg	gtc	ttc	ggc	agc	ggg	gat	gct	gtg	gag	ctg	agc	tgt	ccc	ccg	ccc	192
Leu	Val	Phe	Gly	Ser	Gly	Asp	Ala	Val	Glu	Leu	Ser	Cys	Pro	Pro	Pro	
	50					55					60					

ggg	ggt	ggt	ccc	atg	ggg	ccc	act	gtc	tgg	gtc	aag	gat	ggc	aca	ggg	240
Gly	Gly	Gly	Pro	Met	Gly	Pro	Thr	Val	Trp	Val	Lys	Asp	Gly	Thr	Gly	
65					70				75						80	

ctg	gtg	ccc	tcg	gag	cgt	gtc	ctg	gtg	ggg	ccc	cag	cgg	ctg	cag	gtg	288
Leu	Val	Pro	Ser	Glu	Arg	Val	Leu	Val	Gly	Pro	Gln	Arg	Leu	Gln	Val	
				85					90					95		

ctg	aat	gcc	tcc	cac	gag	gac	tcc	ggg	gcc	tac	agc	tgc	cgg	cag	cgg	336
Leu	Asn	Ala	Ser	His	Glu	Asp	Ser	Gly	Ala	Tyr	Ser	Cys	Arg	Gln	Arg	
			100					105					110			

ctc	acg	cag	cgc	gta	ctg	tgc	cac	ttc	agt	gtg	cgg	gtg	aca	gac	gct	384
Leu	Thr	Gln	Arg	Val	Leu	Cys	His	Phe	Ser	Val	Arg	Val	Thr	Asp	Ala	
		115					120					125				

cca	tcc	tcg	gga	gat	gac	gaa	gac	ggg	gag	gac	gag	gct	gag	gac	aca	432
Pro	Ser	Ser	Gly	Asp	Asp	Glu	Asp	Gly	Glu	Asp	Glu	Ala	Glu	Asp	Thr	
		130				135					140					

ggt	gtg	gac	aca	ggg	gcc	cct	tac	tgg	aca	cgg	ccc	gag	cgg	atg	gac	480
Gly	Val	Asp	Thr	Gly	Ala	Pro	Tyr	Trp	Thr	Arg	Pro	Glu	Arg	Met	Asp	
145					150					155					160	

aag	aag	ctg	ctg	gcc	gtg	ccg	gcc	gcc	aac	acc	gtc	cgc	ttc	cgc	tgc	528
Lys	Lys	Leu	Leu	Ala	Val	Pro	Ala	Ala	Asn	Thr	Val	Arg	Phe	Arg	Cys	
				165					170					175		

cca	gcc	gct	ggc	aac	ccc	act	ccc	tcc	atc	tcc	tgg	ctg	aag	aac	ggc	576
Pro	Ala	Ala	Gly	Asn	Pro	Thr	Pro	Ser	Ile	Ser	Trp	Leu	Lys	Asn	Gly	
			180					185					190			

agg	gag	ttc	cgc	ggc	gag	cac	cgc	att	gga	ggc	atc	aag	ctg	cgg	cat	624
Arg	Glu	Phe	Arg	Gly	Glu	His	Arg	Ile	Gly	Gly	Ile	Lys	Leu	Arg	His	
		195					200					205				

cag cag tgg agc ctg gtc atg gaa agc gtg gtg ccc tcg gac cgc ggc Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly 210 215 220	672
aac tac acc tgc gtc gtg gag aac aag ttt ggc agc atc cgg cag acg Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr 225 230 235 240	720
tac acg ctg gac gtg ctg gag cgc tcc ccg cac cgg ccc atc ctg cag Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln 245 250 255	768
gcg ggg ctg ccg gcc aac cag acg gcg gtg ctg ggc agc gac gtg gag Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu 260 265 270	816
ttc cac tgc aag gtg tac agt gac gca cag ccc cac atc cag tgg ctc Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu 275 280 285	864
aag cac gtg gag gtg aat ggc agc aag gtg ggc ccg gac ggc aca ccc Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro 290 295 300	912
tac gtt acc gtg ctc aag acg gcg ggc gct aac acc acc gac aag gag Tyr Val Thr Val Leu Lys Thr Ala Gly Ala Asn Thr Thr Asp Lys Glu 305 310 315 320	960
cta gag gtt ctc tcc ttg cac aac gtc acc ttt gag gac gcc ggg gag Leu Glu Val Leu Ser Leu His Asn Val Thr Phe Glu Asp Ala Gly Glu 325 330 335	1008
tac acc tgc ctg gcg ggc aat tct att ggg ttt tct cat cac tct gcg Tyr Thr Cys Leu Ala Gly Asn Ser Ile Gly Phe Ser His His Ser Ala 340 345 350	1056
tgg ctg gtg gtg ctg cca gcc gag gag gag ctg gtg gag gct gac gag Trp Leu Val Val Leu Pro Ala Glu Glu Glu Leu Val Glu Ala Asp Glu 355 360 365	1104
gcg ggc agt gtg tat gca ggc atc ctc agc tac ggg gtg ggc ttc ttc Ala Gly Ser Val Tyr Ala Gly Ile Leu Ser Tyr Gly Val Gly Phe Phe 370 375 380	1152
ctg ttc atc ctg gtg gtg gcg gct gtg acg ctc tgc cgc ctg cgc agc Leu Phe Ile Leu Val Val Ala Ala Val Thr Leu Cys Arg Leu Arg Ser 385 390 395 400	1200
ccc ccc aag aaa ggc ctg ggc tcc ccc acc gtg cac aag atc tcc cgc Pro Pro Lys Lys Gly Leu Gly Ser Pro Thr Val His Lys Ile Ser Arg 405 410 415	1248
ttc ccg ctc aag cga cag gtg tcc ctg gag tcc aac gcg tcc atg agc Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ala Ser Met Ser 420 425 430	1296
tcc aac aca cca ctg gtg cgc atc gca agg ctg tcc tca ggg gag ggc Ser Asn Thr Pro Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly 435 440 445	1344

435	440	445	
ccc acg ctg gcc aat gtc tcc gag ctc gag ctg cct gcc gac ccc aaa Pro Thr Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys 450 455 460			1392
tgg gag ctg tct cgg gcc cgg ctg acc ctg ggc aag ccc ctt ggg gag Trp Glu Leu Ser Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu 465 470 475 480			1440
ggc tgc ttc ggc cag gtg gtc atg gcg gag gcc atc ggc att gac aag Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys 485 490 495			1488
gac cgg gcc gcc aag cct gtc acc gta gcc gtg aag atg ctg aaa gac Asp Arg Ala Ala Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp 500 505 510			1536
gat gcc act gac aag gac ctg tcg gac ctg gtg tct gag atg gag atg Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met 515 520 525			1584
atg aag atg atc ggg aaa cac aaa aac atc atc aac ctg ctg ggc gcc Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala 530 535 540			1632
tgc acg cag ggc ggg ccc ctg tac gtg ctg gtg gag tac gcg gcc aag Cys Thr Gln Gly Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys 545 550 555 560			1680
ggc aac ctg cgg gag ttt ctg cgg gcg cgg cgg ccc ccg ggc ctg gac Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Leu Asp 565 570 575			1728
tac tcc ttc gac acc tgc aag ccg ccc gag gag cag ctc acc ttc aag Tyr Ser Phe Asp Thr Cys Lys Pro Pro Glu Glu Gln Leu Thr Phe Lys 580 585 590			1776
gac ctg gtg tcc tgt gcc tac cag gtg gcc cgg ggc atg gag tac ttg Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu 595 600 605			1824
gcc tcc cag aag tgc atc cac agg gac ctg gct gcc cgc aat gtg ctg Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu 610 615 620			1872
gtg acc gag gac aac gtg atg aag atc gca gac ttc ggg ctg gcc cgg Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg 625 630 635 640			1920
gac gtg cac aac ctc gac tac tac aag aag aca acc aac ggc cgg ctg Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu 645 650 655			1968
ccc gtg aag tgg atg gcg cct gag gcc ttg ttt gac cga gtc tac act Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr 660 665 670			2016

cac	cag	agt	gac	gtc	tgg	tcc	ttt	ggg	gtc	ctg	ctc	tgg	gag	atc	ttc	2064
His	Gln	Ser	Asp	Val	Trp	Ser	Phe	Gly	Val	Leu	Leu	Trp	Glu	Ile	Phe	
		675					680					685				
acg	ctg	ggg	ggc	tcc	ccg	tac	ccc	ggc	atc	cct	gtg	gag	gag	ctc	ttc	2112
Thr	Leu	Gly	Gly	Ser	Pro	Tyr	Pro	Gly	Ile	Pro	Val	Glu	Glu	Leu	Phe	
		690					695				700					
aag	ctg	ctg	aag	gag	ggc	cac	cgc	atg	gac	aag	ccc	gcc	aac	tgc	aca	2160
Lys	Leu	Leu	Lys	Glu	Gly	His	Arg	Met	Asp	Lys	Pro	Ala	Asn	Cys	Thr	
		705			710					715					720	
cac	gac	ctg	tac	atg	atc	atg	cgg	gag	tgc	tgg	cat	gcc	gcg	ccc	tcc	2208
His	Asp	Leu	Tyr	Met	Ile	Met	Arg	Glu	Cys	Trp	His	Ala	Ala	Pro	Ser	
				725					730						735	
cag	agg	ccc	acc	ttc	aag	cag	ctg	gtg	gag	gac	ctg	gac	cgt	gtc	ctt	2256
Gln	Arg	Pro	Thr	Phe	Lys	Gln	Leu	Val	Glu	Asp	Leu	Asp	Arg	Val	Leu	
			740					745					750			
acc	gtg	acg	tcc	acc	gac	gtg	agt	gct	ggc	tct	ggc	ctg	gtg	cca	ccc	2304
Thr	Val	Thr	Ser	Thr	Asp	Val	Ser	Ala	Gly	Ser	Gly	Leu	Val	Pro	Pro	
		755					760					765				
gcc	tat	gcc	cct	ccc	cct	gcc	gtc	ccc	ggc	cat	cct	gcc	ccc	cag	agt	2352
Ala	Tyr	Ala	Pro	Pro	Pro	Ala	Val	Pro	Gly	His	Pro	Ala	Pro	Gln	Ser	
		770				775					780					
gct	gag	gtg	tgg	ggc	ggg	cct	tct	ggc	cca	ggt	gcc	ctg	gct	gac	ctg	2400
Ala	Glu	Val	Trp	Gly	Gly	Pro	Ser	Gly	Pro	Gly	Ala	Leu	Ala	Asp	Leu	
		785			790					795					800	
gac	tgc	tca	agc	tct	tcc	cag	agc	cca	gga	agt	tct	gag	aac	caa	atg	2448
Asp	Cys	Ser	Ser	Ser	Ser	Gln	Ser	Pro	Gly	Ser	Ser	Glu	Asn	Gln	Met	
				805					810					815		
gtg	tct	cca	gga	aaa	gtg	tct	ggc	agc	cct	gag	caa	gcc	gtg	gag	gaa	2496
Val	Ser	Pro	Gly	Lys	Val	Ser	Gly	Ser	Pro	Glu	Gln	Ala	Val	Glu	Glu	
			820				825						830			
aac	ctt	agt	tcc	tat	tcc	tta	gac	aga	aga	gtg	aca	ccc	gcc	tct	gag	2544
Asn	Leu	Ser	Ser	Tyr	Ser	Leu	Asp	Arg	Arg	Val	Thr	Pro	Ala	Ser	Glu	
		835					840					845				
acc	cta	gaa	gac	cct	tgc	agg	aca	gag	tcc	cag	cac	aaa	gcg	gag	act	2592
Thr	Leu	Glu	Asp	Pro	Cys	Arg	Thr	Glu	Ser	Gln	His	Lys	Ala	Glu	Thr	
		850				855					860					
ccg	cac	gga	gcc	gag	gaa	gaa	tgc	aaa	gcg	gag	act	ccg	cac	gga	gcc	2640
Pro	His	Gly	Ala	Glu	Glu	Glu	Cys	Lys	Ala	Glu	Thr	Pro	His	Gly	Ala	
		865			870					875					880	
gag	gag	gaa	tgc	cgg	cac	ggt	ggg	gtc	tgt	gct	ccc	gca	gca	gtg	gcc	2688
Glu	Glu	Glu	Cys	Arg	His	Gly	Gly	Val	Cys	Ala	Pro	Ala	Ala	Val	Ala	
				885				890						895		
act	tcg	cct	cct	ggt	gca	atc	cct	aag	gaa	gcc	tgc	gga	gga	gca	ccc	2736
Thr	Ser	Pro	Pro	Gly	Ala	Ile	Pro	Lys	Glu	Ala	Cys	Gly	Gly	Ala	Pro	

			900						905						910					
ctg	cag	ggt	ctg	cct	ggc	gaa	gcc	ctg	ggc	tgc	cct	gcg	ggt	gtg	ggc	2784				
Leu	Gln	Gly	Leu	Pro	Gly	Glu	Ala	Leu	Gly	Cys	Pro	Ala	Gly	Val	Gly					
915						920			925											
acc	ccc	gtg	cca	gca	gat	ggc	act	cag	acc	ctt	acc	tgt	gca	cac	acc	2832				
Thr	Pro	Val	Pro	Ala	Asp	Gly	Thr	Gln	Thr	Leu	Thr	Cys	Ala	His	Thr					
930						935			940											
tct	gct	cct	gag	agc	aca	gcc	cca	acc	aac	cac	ctg	gtg	gct	ggc	agg	2880				
Ser	Ala	Pro	Glu	Ser	Thr	Ala	Pro	Thr	Asn	His	Leu	Val	Ala	Gly	Arg					
945			950						955			960								
gcc	atg	acc	ctg	agt	cct	cag	gaa	gaa	gtg	gct	gca	ggc	caa	atg	gcc	2928				
Ala	Met	Thr	Leu	Ser	Pro	Gln	Glu	Glu	Val	Ala	Ala	Gly	Gln	Met	Ala					
			965						970			975								
agc	tcc	tcg	agg	agc	gga	cct	gta	aaa	cta	gaa	ttt	gat	gta	tct	gat	2976				
Ser	Ser	Ser	Arg	Ser	Gly	Pro	Val	Lys	Leu	Glu	Phe	Asp	Val	Ser	Asp					
980						985						990								
ggc	gcc	acc	agc	aaa	agg	gca	ccc	cca	cca	agg	aga	ctg	gga	gag	agg	3024				
Gly	Ala	Thr	Ser	Lys	Arg	Ala	Pro	Pro	Pro	Arg	Arg	Leu	Gly	Glu	Arg					
995						1000						1005								
tcc	ggc	ctc	aag	cct	ccc	ttg	agg	aaa	gca	gca	gtg	agg	cag	caa	3069					
Ser	Gly	Leu	Lys	Pro	Pro	Leu	Arg	Lys	Ala	Ala	Val	Arg	Gln	Gln						
1010						1015						1020								
aag	gcc	ccg	cag	gag	gtg	gag	gag	gac	gac	ggt	agg	agc	gga	gca	3114					
Lys	Ala	Pro	Gln	Glu	Val	Glu	Glu	Asp	Asp	Gly	Arg	Ser	Gly	Ala						
1025						1030						1035								
gga	gag	gac	ccc	ccc	atg	cca	gct	tct	cgg	ggc	tct	tac	cac	ctc	3159					
Gly	Glu	Asp	Pro	Pro	Met	Pro	Ala	Ser	Arg	Gly	Ser	Tyr	His	Leu						
1040						1045						1050								
gac	tgg	gac	aaa	atg	gat	gac	cca	aac	ttc	atc	ccg	ttc	gga	ggt	3204					
Asp	Trp	Asp	Lys	Met	Asp	Asp	Pro	Asn	Phe	Ile	Pro	Phe	Gly	Gly						
1055						1060						1065								
gac	acc	aag	tct	ggt	tgc	agt	gag	gcc	cag	ccc	cca	gaa	agc	cct	3249					
Asp	Thr	Lys	Ser	Gly	Cys	Ser	Glu	Ala	Gln	Pro	Pro	Glu	Ser	Pro						
1070						1075						1080								
gag	acc	agg	ctg	ggc	cag	cca	gcg	gct	gaa	cag	ttg	cat	gct	ggg	3294					
Glu	Thr	Arg	Leu	Gly	Gln	Pro	Ala	Ala	Glu	Gln	Leu	His	Ala	Gly						
1085						1090						1095								
cct	gcc	acg	gag	gag	cca	ggt	ccc	tgt	ctg	agc	cag	cag	ctg	cat	3339					
Pro	Ala	Thr	Glu	Glu	Pro	Gly	Pro	Cys	Leu	Ser	Gln	Gln	Leu	His						
1100						1105						1110								
tca	gcc	tca	gcg	gag	gac	acg	cct	gtg	gtg	cag	ttg	gca</								

acc	cca	aca	gca	gag	agc	aag	gag	aga	gcc	ttg	aac	tct	gcc	agc	3429
Thr	Pro	Thr	Ala	Glu	Ser	Lys	Glu	Arg	Ala	Leu	Asn	Ser	Ala	Ser	
	1130					1135					1140				
acc	tcg	ctt	ccc	aca	agc	tgt	cca	ggc	agt	gag	cca	gtg	ccc	acc	3474
Thr	Ser	Leu	Pro	Thr	Ser	Cys	Pro	Gly	Ser	Glu	Pro	Val	Pro	Thr	
	1145					1150					1155				
cat	cag	cag	ggg	cag	cct	gcc	ttg	gag	ctg	aaa	gag	gag	agc	ttc	3519
His	Gln	Gln	Gly	Gln	Pro	Ala	Leu	Glu	Leu	Lys	Glu	Glu	Ser	Phe	
	1160					1165					1170				
aga	gac	ccc	gct	gag	gtt	cta	ggc	acg	ggc	gcg	gag	gtg	gat	tac	3564
Arg	Asp	Pro	Ala	Glu	Val	Leu	Gly	Thr	Gly	Ala	Glu	Val	Asp	Tyr	
	1175					1180					1185				
ctg	gag	cag	ttt	gga	act	tcc	tcg	ttt	aag	gag	tcg	gcc	ttg	agg	3609
Leu	Glu	Gln	Phe	Gly	Thr	Ser	Ser	Phe	Lys	Glu	Ser	Ala	Leu	Arg	
	1190					1195					1200				
aag	cag	tcc	tta	tac	ctc	aag	ttc	gac	ccc	ctc	ctg	agg	gac	agt	3654
Lys	Gln	Ser	Leu	Tyr	Leu	Lys	Phe	Asp	Pro	Leu	Leu	Arg	Asp	Ser	
	1205					1210					1215				
cct	ggt	aga	cca	gtg	ccc	gtg	gcc	acc	gag	acc	agc	agc	atg	cac	3699
Pro	Gly	Arg	Pro	Val	Pro	Val	Ala	Thr	Glu	Thr	Ser	Ser	Met	His	
	1220					1225					1230				
ggt	gca	aat	gag	act	ccc	tca	gga	cgt	ccg	cgg	gaa	gcc	aag	ctt	3744
Gly	Ala	Asn	Glu	Thr	Pro	Ser	Gly	Arg	Pro	Arg	Glu	Ala	Lys	Leu	
	1235					1240					1245				
gtg	gag	ttc	gat	ttc	ttg	gga	gca	ctg	gac	att	cct	gtg	cca	ggc	3789
Val	Glu	Phe	Asp	Phe	Leu	Gly	Ala	Leu	Asp	Ile	Pro	Val	Pro	Gly	
	1250					1255					1260				
cca	ccc	cca	ggt	gtt	ccc	gcg	cct	ggg	ggc	cca	ccc	ctg	tcc	acc	3834
Pro	Pro	Pro	Gly	Val	Pro	Ala	Pro	Gly	Gly	Pro	Pro	Leu	Ser	Thr	
	1265					1270					1275				
gga	cct	ata	gtg	gac	ctg	ctc	cag	tac	agc	cag	aag	gac	ctg	gat	3879
Gly	Pro	Ile	Val	Asp	Leu	Leu	Gln	Tyr	Ser	Gln	Lys	Asp	Leu	Asp	
	1280					1285					1290				
gca	gtg	gta	aag	gcg	aca	cag	gag	gag	aac	cgg	gag	ctg	agg	agc	3924
Ala	Val	Val	Lys	Ala	Thr	Gln	Glu	Glu	Asn	Arg	Glu	Leu	Arg	Ser	
	1295					1300					1305				
agg	tgt	gag	gag	ctc	cac	ggg	aag	aac	ctg	gaa	ctg	ggg	aag	atc	3969
Arg	Cys	Glu	Glu	Leu	His	Gly	Lys	Asn	Leu	Glu	Leu	Gly	Lys	Ile	
	1310					1315					1320				
atg	gac	agg	ttc	gaa	gag	gtt	gtg	tac	cag	gcc	atg	gag	gaa	gtt	4014
Met	Asp	Arg	Phe	Glu	Glu	Val	Val	Tyr	Gln	Ala	Met	Glu	Glu	Val	
	1325					1330					1335				
cag	aag	cag	aag	gaa	ctt	tcc	aaa	gct	gaa	atc	cag	aaa	gtt	cta	4059
Gln	Lys	Gln	Lys	Glu	Leu	Ser	Lys	Ala	Glu	Ile	Gln	Lys	Val	Leu	

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

Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro
290 295 300

Tyr Val Thr Val Leu Lys Thr Ala Gly Ala Asn Thr Thr Asp Lys Glu
305 310 315 320

Leu Glu Val Leu Ser Leu His Asn Val Thr Phe Glu Asp Ala Gly Glu
325 330 335

Tyr Thr Cys Leu Ala Gly Asn Ser Ile Gly Phe Ser His His Ser Ala
340 345 350

Trp Leu Val Val Leu Pro Ala Glu Glu Glu Leu Val Glu Ala Asp Glu
355 360 365

Ala Gly Ser Val Tyr Ala Gly Ile Leu Ser Tyr Gly Val Gly Phe Phe
370 375 380

Leu Phe Ile Leu Val Val Ala Ala Val Thr Leu Cys Arg Leu Arg Ser
385 390 395 400

Pro Pro Lys Lys Gly Leu Gly Ser Pro Thr Val His Lys Ile Ser Arg
405 410 415

Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ala Ser Met Ser
420 425 430

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

Pro Thr Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys
450 455 460

Trp Glu Leu Ser Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu
465 470 475 480

Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys
485 490 495

Asp Arg Ala Ala Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp
500 505 510

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

Thr Val Thr Ser Thr Asp Val Ser Ala Gly Ser Gly Leu Val Pro Pro
755 760 765

Ala Tyr Ala Pro Pro Pro Ala Val Pro Gly His Pro Ala Pro Gln Ser
770 775 780

Ala Glu Val Trp Gly Gly Pro Ser Gly Pro Gly Ala Leu Ala Asp Leu
785 790 795 800

Asp Cys Ser Ser Ser Ser Gln Ser Pro Gly Ser Ser Glu Asn Gln Met
805 810 815

Val Ser Pro Gly Lys Val Ser Gly Ser Pro Glu Gln Ala Val Glu Glu
820 825 830

Asn Leu Ser Ser Tyr Ser Leu Asp Arg Arg Val Thr Pro Ala Ser Glu
835 840 845

Thr Leu Glu Asp Pro Cys Arg Thr Glu Ser Gln His Lys Ala Glu Thr
850 855 860

Pro His Gly Ala Glu Glu Glu Cys Lys Ala Glu Thr Pro His Gly Ala
865 870 875 880

Glu Glu Glu Cys Arg His Gly Gly Val Cys Ala Pro Ala Ala Val Ala
885 890 895

Thr Ser Pro Pro Gly Ala Ile Pro Lys Glu Ala Cys Gly Gly Ala Pro
900 905 910

Leu Gln Gly Leu Pro Gly Glu Ala Leu Gly Cys Pro Ala Gly Val Gly
915 920 925

Thr Pro Val Pro Ala Asp Gly Thr Gln Thr Leu Thr Cys Ala His Thr
930 935 940

Ser Ala Pro Glu Ser Thr Ala Pro Thr Asn His Leu Val Ala Gly Arg
945 950 955 960

Ala Met Thr Leu Ser Pro Gln Glu Glu Val Ala Ala Gly Gln Met Ala
965 970 975

Ser	Ser	Ser	Arg	Ser	Gly	Pro	Val	Lys	Leu	Glu	Phe	Asp	Val	Ser	Asp
			980					985					990		

Gly	Ala	Thr	Ser	Lys	Arg	Ala	Pro	Pro	Pro	Arg	Arg	Leu	Gly	Glu	Arg
		995					1000					1005			

Ser	Gly	Leu	Lys	Pro	Pro	Leu	Arg	Lys	Ala	Ala	Val	Arg	Gln	Gln
	1010					1015					1020			

Lys	Ala	Pro	Gln	Glu	Val	Glu	Glu	Asp	Asp	Gly	Arg	Ser	Gly	Ala
	1025					1030					1035			

Gly	Glu	Asp	Pro	Pro	Met	Pro	Ala	Ser	Arg	Gly	Ser	Tyr	His	Leu
	1040					1045					1050			

Asp	Trp	Asp	Lys	Met	Asp	Asp	Pro	Asn	Phe	Ile	Pro	Phe	Gly	Gly
	1055					1060					1065			

Asp	Thr	Lys	Ser	Gly	Cys	Ser	Glu	Ala	Gln	Pro	Pro	Glu	Ser	Pro
	1070					1075					1080			

Glu	Thr	Arg	Leu	Gly	Gln	Pro	Ala	Ala	Glu	Gln	Leu	His	Ala	Gly
	1085					1090					1095			

Pro	Ala	Thr	Glu	Glu	Pro	Gly	Pro	Cys	Leu	Ser	Gln	Gln	Leu	His
	1100					1105					1110			

Ser	Ala	Ser	Ala	Glu	Asp	Thr	Pro	Val	Val	Gln	Leu	Ala	Ala	Glu
	1115					1120					1125			

Thr	Pro	Thr	Ala	Glu	Ser	Lys	Glu	Arg	Ala	Leu	Asn	Ser	Ala	Ser
	1130					1135					1140			

Thr	Ser	Leu	Pro	Thr	Ser	Cys	Pro	Gly	Ser	Glu	Pro	Val	Pro	Thr
	1145					1150					1155			

His	Gln	Gln	Gly	Gln	Pro	Ala	Leu	Glu	Leu	Lys	Glu	Glu	Ser	Phe
	1160					1165					1170			

Arg	Asp	Pro	Ala	Glu	Val	Leu	Gly	Thr	Gly	Ala	Glu	Val	Asp	Tyr
	1175					1180					1185			

Leu	Glu	Gln	Phe	Gly	Thr	Ser	Ser	Phe	Lys	Glu	Ser	Ala	Leu	Arg
	1190					1195					1200			

Lys	Gln	Ser	Leu	Tyr	Leu	Lys	Phe	Asp	Pro	Leu	Leu	Arg	Asp	Ser
1205						1210					1215			
Pro	Gly	Arg	Pro	Val	Pro	Val	Ala	Thr	Glu	Thr	Ser	Ser	Met	His
1220						1225					1230			
Gly	Ala	Asn	Glu	Thr	Pro	Ser	Gly	Arg	Pro	Arg	Glu	Ala	Lys	Leu
1235						1240					1245			
Val	Glu	Phe	Asp	Phe	Leu	Gly	Ala	Leu	Asp	Ile	Pro	Val	Pro	Gly
1250						1255					1260			
Pro	Pro	Pro	Gly	Val	Pro	Ala	Pro	Gly	Gly	Pro	Pro	Leu	Ser	Thr
1265						1270					1275			
Gly	Pro	Ile	Val	Asp	Leu	Leu	Gln	Tyr	Ser	Gln	Lys	Asp	Leu	Asp
1280						1285					1290			
Ala	Val	Val	Lys	Ala	Thr	Gln	Glu	Glu	Asn	Arg	Glu	Leu	Arg	Ser
1295						1300					1305			
Arg	Cys	Glu	Glu	Leu	His	Gly	Lys	Asn	Leu	Glu	Leu	Gly	Lys	Ile
1310						1315					1320			
Met	Asp	Arg	Phe	Glu	Glu	Val	Val	Tyr	Gln	Ala	Met	Glu	Glu	Val
1325						1330					1335			
Gln	Lys	Gln	Lys	Glu	Leu	Ser	Lys	Ala	Glu	Ile	Gln	Lys	Val	Leu
1340						1345					1350			
Lys	Glu	Lys	Asp	Gln	Leu	Thr	Thr	Asp	Leu	Asn	Ser	Met	Glu	Lys
1355						1360					1365			
Ser	Phe	Ser	Asp	Leu	Phe	Lys	Arg	Phe	Glu	Lys	Gln	Lys	Glu	Val
1370						1375					1380			
Ile	Glu	Gly	Tyr	Arg	Lys	Asn	Glu	Glu	Ser	Leu	Lys	Lys	Cys	Val
1385						1390					1395			
Glu	Asp	Tyr	Leu	Ala	Arg	Ile	Thr	Gln	Glu	Gly	Gln	Arg	Tyr	Gln
1400						1405					1410			

Ala Leu Lys Ala His Ala Glu Glu Lys Leu Gln Leu Ala Asn Glu
 1415 1420 1425

Glu Ile Ala Gln Val Arg Ser Lys Ala Gln Ala Glu Ala Leu Ala
 1430 1435 1440

Leu Gln Ala Ser Leu Arg Lys Glu Gln Met Arg Ile Gln Ser Leu
 1445 1450 1455

Glu Lys Thr Val Glu Gln Lys Thr Lys Glu Asn Glu Glu Leu Thr
 1460 1465 1470

Arg Ile Cys Asp Asp Leu Ile Ser Lys Met Glu Lys Ile
 1475 1480 1485

<210> 37
 <211> 3759
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(3759)

<400> 37
 atg ggc gcc cct gcc tgc gcc ctc gcg ctc tgc gtg gcc gtg gcc atc 48
 Met Gly Ala Pro Ala Cys Ala Leu Ala Leu Cys Val Ala Val Ala Ile
 1 5 10 15
 gtg gcc ggc gcc tcc tcg gag tcc ttg ggg acg gag cag cgc gtc gtg 96
 Val Ala Gly Ala Ser Ser Glu Ser Leu Gly Thr Glu Gln Arg Val Val
 20 25 30
 ggg cga gcg gca gaa gtc ccg ggc cca gag ccc ggc cag cag gag cag 144
 Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
 35 40 45
 ttg gtc ttc ggc agc ggg gat gct gtg gag ctg agc tgt ccc ccg ccc 192
 Leu Val Phe Gly Ser Gly Asp Ala Val Glu Leu Ser Cys Pro Pro Pro
 50 55 60
 ggg ggt ggt ccc atg ggg ccc act gtc tgg gtc aag gat ggc aca ggg 240
 Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
 65 70 75 80
 ctg gtg ccc tcg gag cgt gtc ctg gtg ggg ccc cag cgg ctg cag gtg 288
 Leu Val Pro Ser Glu Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val
 85 90 95
 ctg aat gcc tcc cac gag gac tcc ggg gcc tac agc tgc cgg cag cgg 336
 Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg
 100 105 110

ctc acg cag cgc gta ctg tgc cac ttc agt gtg cgg gtg aca gac gct Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala 115 120 125	384
cca tcc tcg gga gat gac gaa gac ggg gag gac gag gct gag gac aca Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr 130 135 140	432
ggg gtg gac aca ggg gcc cct tac tgg aca cgg ccc gag cgg atg gac Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp 145 150 155 160	480
aag aag ctg ctg gcc gtg ccg gcc gcc aac acc gtc cgc ttc cgc tgc Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys 165 170 175	528
cca gcc gct ggc aac ccc act ccc tcc atc tcc tgg ctg aag aac ggc Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly 180 185 190	576
agg gag ttc cgc ggc gag cac cgc att gga ggc atc aag ctg cgg cat Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His 195 200 205	624
cag cag tgg agc ctg gtc atg gaa agc gtg gtg ccc tcg gac cgc ggc Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly 210 215 220	672
aac tac acc tgc gtc gtg gag aac aag ttt ggc agc atc cgg cag acg Asn Tyr Thr Cys Val Val Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr 225 230 235 240	720
tac acg ctg gac gtg ctg gag cgc tcc ccg cac cgg ccc atc ctg cag Tyr Thr Leu Asp Val Leu Glu Arg Ser Pro His Arg Pro Ile Leu Gln 245 250 255	768
gcg ggg ctg ccg gcc aac cag acg gcg gtg ctg ggc agc gac gtg gag Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu 260 265 270	816
ttc cac tgc aag gtg tac agt gac gca cag ccc cac atc cag tgg ctc Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu 275 280 285	864
aag cac gtg gag gtg aat ggc agc aag gtg ggc ccg gac ggc aca ccc Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro 290 295 300	912
tac gtt acc gtg ctc aag acg gcg ggc gct aac acc acc gac aag gag Tyr Val Thr Val Leu Lys Thr Ala Gly Ala Asn Thr Thr Asp Lys Glu 305 310 315 320	960
cta gag gtt ctc tcc ttg cac aac gtc acc ttt gag gac gcc ggg gag Leu Glu Val Leu Ser Leu His Asn Val Thr Phe Glu Asp Ala Gly Glu 325 330 335	1008
tac acc tgc ctg gcg ggc aat tct att ggg ttt tct cat cac tct gcg	1056

Tyr	Thr	Cys	Leu	Ala	Gly	Asn	Ser	Ile	Gly	Phe	Ser	His	His	Ser	Ala		
			340					345					350				
tgg	ctg	gtg	gtg	ctg	cca	gcc	gag	gag	gag	ctg	gtg	gag	gct	gac	gag		1104
Trp	Leu	Val	Val	Leu	Pro	Ala	Glu	Glu	Glu	Leu	Val	Glu	Ala	Asp	Glu		
		355					360					365					
gcg	ggc	agt	gtg	tat	gca	ggc	atc	ctc	agc	tac	ggg	gtg	ggc	ttc	ttc		1152
Ala	Gly	Ser	Val	Tyr	Ala	Gly	Ile	Leu	Ser	Tyr	Gly	Val	Gly	Phe	Phe		
	370					375					380						
ctg	ttc	atc	ctg	gtg	gtg	gcg	gct	gtg	acg	ctc	tgc	cgc	ctg	cgc	agc		1200
Leu	Phe	Ile	Leu	Val	Val	Ala	Ala	Val	Thr	Leu	Cys	Arg	Leu	Arg	Ser		
385					390					395					400		
ccc	ccc	aag	aaa	ggc	ctg	ggc	tcc	ccc	acc	gtg	cac	aag	atc	tcc	cgc		1248
Pro	Pro	Lys	Lys	Gly	Leu	Gly	Ser	Pro	Thr	Val	His	Lys	Ile	Ser	Arg		
				405					410					415			
ttc	ccg	ctc	aag	cga	cag	gtg	tcc	ctg	gag	tcc	aac	gcg	tcc	atg	agc		1296
Phe	Pro	Leu	Lys	Arg	Gln	Val	Ser	Leu	Glu	Ser	Asn	Ala	Ser	Met	Ser		
			420					425					430				
tcc	aac	aca	cca	ctg	gtg	cgc	atc	gca	agg	ctg	tcc	tca	ggg	gag	ggc		1344
Ser	Asn	Thr	Pro	Leu	Val	Arg	Ile	Ala	Arg	Leu	Ser	Ser	Gly	Glu	Gly		
		435					440					445					
ccc	acg	ctg	gcc	aat	gtc	tcc	gag	ctc	gag	ctg	cct	gcc	gac	ccc	aaa		1392
Pro	Thr	Leu	Ala	Asn	Val	Ser	Glu	Leu	Glu	Leu	Pro	Ala	Asp	Pro	Lys		
	450					455					460						
tgg	gag	ctg	tct	cgg	gcc	cgg	ctg	acc	ctg	ggc	aag	ccc	ctt	ggg	gag		1440
Trp	Glu	Leu	Ser	Arg	Ala	Arg	Leu	Thr	Leu	Gly	Lys	Pro	Leu	Gly	Glu		
465					470				475					480			
ggc	tgc	ttc	ggc	cag	gtg	gtc	atg	gcg	gag	gcc	atc	ggc	att	gac	aag		1488
Gly	Cys	Phe	Gly	Gln	Val	Val	Met	Ala	Glu	Ala	Ile	Gly	Ile	Asp	Lys		
			485					490					495				
gac	cgg	gcc	gcc	aag	cct	gtc	acc	gta	gcc	gtg	aag	atg	ctg	aaa	gac		1536
Asp	Arg	Ala	Ala	Lys	Pro	Val	Thr	Val	Ala	Val	Lys	Met	Leu	Lys	Asp		
		500					505						510				
gat	gcc	act	gac	aag	gac	ctg	tcg	gac	ctg	gtg	tct	gag	atg	gag	atg		1584
Asp	Ala	Thr	Asp	Lys	Asp	Leu	Ser	Asp	Leu	Val	Ser	Glu	Met	Glu	Met		
		515				520						525					
atg	aag	atg	atc	ggg	aaa	cac	aaa	aac	atc	atc	aac	ctg	ctg	ggc	gcc		1632
Met	Lys	Met	Ile	Gly	Lys	His	Lys	Asn	Ile	Ile	Asn	Leu	Leu	Gly	Ala		
	530					535					540						
tgc	acg	cag	ggc	ggg	ccc	ctg	tac	gtg	ctg	gtg	gag	tac	gcg	gcc	aag		1680
Cys	Thr	Gln	Gly	Gly	Pro	Leu	Tyr	Val	Leu	Val	Glu	Tyr	Ala	Ala	Lys		
545					550				555						560		
ggg	aac	ctg	cgg	gag	ttt	ctg	cgg	gcg	cgg	cgg	ccc	ccg	ggc	ctg	gac		1728
Gly	Asn	Leu	Arg	Glu	Phe	Leu	Arg	Ala	Arg	Arg	Pro	Pro	Gly	Leu	Asp		
				565				570						575			

tac tcc ttc gac acc tgc aag ccg ccc gag gag cag ctc acc ttc aag Tyr Ser Phe Asp Thr Cys Lys Pro Pro Glu Glu Gln Leu Thr Phe Lys 580 585 590	1776
gac ctg gtg tcc tgt gcc tac cag gtg gcc cgg ggc atg gag tac ttg Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu 595 600 605	1824
gcc tcc cag aag tgc atc cac agg gac ctg gct gcc cgc aat gtg ctg Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu 610 615 620	1872
gtg acc gag gac aac gtg atg aag atc gca gac ttc ggg ctg gcc cgg Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg 625 630 635 640	1920
gac gtg cac aac ctc gac tac tac aag aag aca acc aac ggc cgg ctg Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu 645 650 655	1968
ccc gtg aag tgg atg gcg cct gag gcc ttg ttt gac cga gtc tac act Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr 660 665 670	2016
cac cag agt gac gtc tgg tcc ttt ggg gtc ctg ctc tgg gag atc ttc His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe 675 680 685	2064
acg ctg ggg ggc tcc ccg tac ccc ggc atc cct gtg gag gag ctc ttc Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe 690 695 700	2112
aag ctg ctg aag gag ggc cac cgc atg gac aag ccc gcc aac tgc aca Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr 705 710 715 720	2160
cac gac ctg tac atg atc atg cgg gag tgc tgg cat gcc gcg ccc tcc His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala Pro Ser 725 730 735	2208
cag agg ccc acc ttc aag cag ctg gtg gag gac ctg gac cgt gtc ctt Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Val Leu 740 745 750	2256
acc gtg acg tcc acc gac aat gtt atg gaa cag ttc aat cct ggg ctg Thr Val Thr Ser Thr Asp Asn Val Met Glu Gln Phe Asn Pro Gly Leu 755 760 765	2304
cga aat tta ata aac ctg ggg aaa aat tat gag aaa gct gta aac gct Arg Asn Leu Ile Asn Leu Gly Lys Asn Tyr Glu Lys Ala Val Asn Ala 770 775 780	2352
atg atc ctg gca gga aaa gcc tac tac gat gga gtg gcc aag atc ggt Met Ile Leu Ala Gly Lys Ala Tyr Tyr Asp Gly Val Ala Lys Ile Gly 785 790 795 800	2400
gag att gcc act ggg tcc ccc gtg tca act gaa ctg gga cat gtc ctc	2448

Glu Ile Ala Thr Gly Ser Pro Val Ser Thr Glu Leu Gly His Val Leu	
805 810 815	
ata gag att tca agt acc cac aag aaa ctc aac gag agt ctt gat gaa	2496
Ile Glu Ile Ser Ser Thr His Lys Lys Leu Asn Glu Ser Leu Asp Glu	
820 825 830	
aat ttt aaa aaa ttc cac aaa gag att atc cat gag ctg gag aag aag	2544
Asn Phe Lys Lys Phe His Lys Glu Ile Ile His Glu Leu Glu Lys Lys	
835 840 845	
ata gaa ctt gac gtg aaa tat atg aac gca act cta aaa aga tac caa	2592
Ile Glu Leu Asp Val Lys Tyr Met Asn Ala Thr Leu Lys Arg Tyr Gln	
850 855 860	
aca gaa cac aag aat aaa tta gag tct ttg gag aaa tcc caa gct gag	2640
Thr Glu His Lys Asn Lys Leu Glu Ser Leu Glu Lys Ser Gln Ala Glu	
865 870 875 880	
ttg aag aag atc aga agg aaa agc caa gga agc cga aac gca ctc aaa	2688
Leu Lys Lys Ile Arg Arg Lys Ser Gln Gly Ser Arg Asn Ala Leu Lys	
885 890 895	
tat gaa cac aaa gaa att gag tat gtg gag acc gtt act tct cgt cag	2736
Tyr Glu His Lys Glu Ile Glu Tyr Val Glu Thr Val Thr Ser Arg Gln	
900 905 910	
agt gaa atc cag aaa ttc att gca gat ggt tgc aaa gag gct ctg ctt	2784
Ser Glu Ile Gln Lys Phe Ile Ala Asp Gly Cys Lys Glu Ala Leu Leu	
915 920 925	
gaa gag aag agg cgc ttc tgc ttt ctg gtt gat aag cac tgt ggc ttt	2832
Glu Glu Lys Arg Arg Phe Cys Phe Leu Val Asp Lys His Cys Gly Phe	
930 935 940	
gca aac cac ata cat tat tat cac tta cag tct gca gaa cta ctg aat	2880
Ala Asn His Ile His Tyr Tyr His Leu Gln Ser Ala Glu Leu Leu Asn	
945 950 955 960	
tcc aag ctg cct cgg tgg cag gag acc tgt gtt gat gcc atc aaa gtg	2928
Ser Lys Leu Pro Arg Trp Gln Glu Thr Cys Val Asp Ala Ile Lys Val	
965 970 975	
cca gag aaa atc atg aat atg atc gaa gaa ata aag acc cca gcc tct	2976
Pro Glu Lys Ile Met Asn Met Ile Glu Glu Ile Lys Thr Pro Ala Ser	
980 985 990	
acc ccc gtg tct gga act cct cag gct tca ccc atg atc gag aga agc	3024
Thr Pro Val Ser Gly Thr Pro Gln Ala Ser Pro Met Ile Glu Arg Ser	
995 1000 1005	
aat gtg gtt agg aaa gat tac gac acc ctt tct aaa tgc tca cca	3069
Asn Val Val Arg Lys Asp Tyr Asp Thr Leu Ser Lys Cys Ser Pro	
1010 1015 1020	
aag atg ccc ccc gct cct tca ggc aga gca tat acc agt ccc ttg	3114
Lys Met Pro Pro Ala Pro Ser Gly Arg Ala Tyr Thr Ser Pro Leu	
1025 1030 1035	

atc gat atg ttt aat aac cca gcc acg gct gcc ccg aat tca caa	3159
Ile Asp Met Phe Asn Asn Pro Ala Thr Ala Ala Pro Asn Ser Gln	
1040 1045 1050	
agg gta aat aat tca aca ggt act tcc gaa gat ccc agt tta cag	3204
Arg Val Asn Asn Ser Thr Gly Thr Ser Glu Asp Pro Ser Leu Gln	
1055 1060 1065	
cga tca gtt tcg gtt gca acg gga ctg aac atg atg aag aag cag	3249
Arg Ser Val Ser Val Ala Thr Gly Leu Asn Met Met Lys Lys Gln	
1070 1075 1080	
aaa gtg aag acc atc ttc ccg cac act gcg ggc tcc aac aag acc	3294
Lys Val Lys Thr Ile Phe Pro His Thr Ala Gly Ser Asn Lys Thr	
1085 1090 1095	
tta ctc agc ttt gca cag gga gat gtc atc acg ctg ctc atc ccc	3339
Leu Leu Ser Phe Ala Gln Gly Asp Val Ile Thr Leu Leu Ile Pro	
1100 1105 1110	
gag gag aag gat ggc tgg ctc tat gga gaa cac gac gtg tcc aag	3384
Glu Glu Lys Asp Gly Trp Leu Tyr Gly Glu His Asp Val Ser Lys	
1115 1120 1125	
gcg agg ggt tgg ttc ccg tcg tcg tac acg aag ttg ctg gaa gaa	3429
Ala Arg Gly Trp Phe Pro Ser Ser Tyr Thr Lys Leu Leu Glu Glu	
1130 1135 1140	
aat gag aca gaa gca gtg acc gtg ccc acg cca agc ccc aca cca	3474
Asn Glu Thr Glu Ala Val Thr Val Pro Thr Pro Ser Pro Thr Pro	
1145 1150 1155	
gtg aga agc atc agc acc gtg aac ttg tct gag aat agc agt gtt	3519
Val Arg Ser Ile Ser Thr Val Asn Leu Ser Glu Asn Ser Ser Val	
1160 1165 1170	
gtc atc ccc cca ccc gac tac ttg gaa tgc ttg tcc atg ggg gca	3564
Val Ile Pro Pro Pro Asp Tyr Leu Glu Cys Leu Ser Met Gly Ala	
1175 1180 1185	
gct gcc gac agg aga gca gat tcg gcc agg acg aca tcc acc ttt	3609
Ala Ala Asp Arg Arg Ala Asp Ser Ala Arg Thr Thr Ser Thr Phe	
1190 1195 1200	
aag gcc cca gcg tcc aag ccc gag acc gcg gct cct aac gat gcc	3654
Lys Ala Pro Ala Ser Lys Pro Glu Thr Ala Ala Pro Asn Asp Ala	
1205 1210 1215	
aac ggg act gca aag ccg cct ttt ctc agc gga gaa aac ccc ttt	3699
Asn Gly Thr Ala Lys Pro Pro Phe Leu Ser Gly Glu Asn Pro Phe	
1220 1225 1230	
gcc act gtg aaa ctc cgc ccg act gtg acg aat gat cgc tcg gca	3744
Ala Thr Val Lys Leu Arg Pro Thr Val Thr Asn Asp Arg Ser Ala	
1235 1240 1245	
ccc atc att cga tga	3759

Pro Ile Ile Arg
1250

<210> 38
<211> 1252
<212> PRT
<213> Homo sapiens

<400> 38

Met Gly Ala Pro Ala Cys Ala Leu Ala Leu Cys Val Ala Val Ala Ile
1 5 10 15

Val Ala Gly Ala Ser Ser Glu Ser Leu Gly Thr Glu Gln Arg Val Val
20 25 30

Gly Arg Ala Ala Glu Val Pro Gly Pro Glu Pro Gly Gln Gln Glu Gln
35 40 45

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

Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
65 70 75 80

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

Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg
100 105 110

Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala
115 120 125

Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr
130 135 140

Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp
145 150 155 160

Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys
165 170 175

Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly
180 185 190

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

420	425	430
Ser Asn Thr Pro Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly		
435	440	445
Pro Thr Leu Ala Asn Val Ser Glu Leu Glu Leu Pro Ala Asp Pro Lys		
450	455	460
Trp Glu Leu Ser Arg Ala Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu		
465	470	475 480
Gly Cys Phe Gly Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys		
	485	490 495
Asp Arg Ala Ala Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp		
	500	505 510
Asp Ala Thr Asp Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met		
	515	520 525
Met Lys Met Ile Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala		
	530	535 540
Cys Thr Gln Gly Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys		
	545	550 555 560
Gly Asn Leu Arg Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Leu Asp		
	565	570 575
Tyr Ser Phe Asp Thr Cys Lys Pro Pro Glu Glu Gln Leu Thr Phe Lys		
	580	585 590
Asp Leu Val Ser Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu		
	595	600 605
Ala Ser Gln Lys Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu		
	610	615 620
Val Thr Glu Asp Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg		
	625	630 635 640
Asp Val His Asn Leu Asp Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu		
	645	650 655

Pro Val Lys Trp Met Ala Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr
660 665 670

His Gln Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu Ile Phe
675 680 685

Thr Leu Gly Gly Ser Pro Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe
690 695 700

Lys Leu Leu Lys Glu Gly His Arg Met Asp Lys Pro Ala Asn Cys Thr
705 710 715 720

His Asp Leu Tyr Met Ile Met Arg Glu Cys Trp His Ala Ala Pro Ser
725 730 735

Gln Arg Pro Thr Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Val Leu
740 745 750

Thr Val Thr Ser Thr Asp Asn Val Met Glu Gln Phe Asn Pro Gly Leu
755 760 765

Arg Asn Leu Ile Asn Leu Gly Lys Asn Tyr Glu Lys Ala Val Asn Ala
770 775 780

Met Ile Leu Ala Gly Lys Ala Tyr Tyr Asp Gly Val Ala Lys Ile Gly
785 790 795 800

Glu Ile Ala Thr Gly Ser Pro Val Ser Thr Glu Leu Gly His Val Leu
805 810 815

Ile Glu Ile Ser Ser Thr His Lys Lys Leu Asn Glu Ser Leu Asp Glu
820 825 830

Asn Phe Lys Lys Phe His Lys Glu Ile Ile His Glu Leu Glu Lys Lys
835 840 845

Ile Glu Leu Asp Val Lys Tyr Met Asn Ala Thr Leu Lys Arg Tyr Gln
850 855 860

Thr Glu His Lys Asn Lys Leu Glu Ser Leu Glu Lys Ser Gln Ala Glu
865 870 875 880

Leu Lys Lys Ile Arg Arg Lys Ser Gln Gly Ser Arg Asn Ala Leu Lys

885										890										895									
Tyr	Glu	His	Lys	Glu	Ile	Glu	Tyr	Val	Glu	Thr	Val	Thr	Ser	Arg	Gln														
			900					905					910																
Ser	Glu	Ile	Gln	Lys	Phe	Ile	Ala	Asp	Gly	Cys	Lys	Glu	Ala	Leu	Leu														
			915					920					925																
Glu	Glu	Lys	Arg	Arg	Phe	Cys	Phe	Leu	Val	Asp	Lys	His	Cys	Gly	Phe														
930					935						940																		
Ala	Asn	His	Ile	His	Tyr	Tyr	His	Leu	Gln	Ser	Ala	Glu	Leu	Leu	Asn														
945					950						955		960																
Ser	Lys	Leu	Pro	Arg	Trp	Gln	Glu	Thr	Cys	Val	Asp	Ala	Ile	Lys	Val														
			965					970					975																
Pro	Glu	Lys	Ile	Met	Asn	Met	Ile	Glu	Glu	Ile	Lys	Thr	Pro	Ala	Ser														
			980					985					990																
Thr	Pro	Val	Ser	Gly	Thr	Pro	Gln	Ala	Ser	Pro	Met	Ile	Glu	Arg	Ser														
			995		1000						1005																		
Asn	Val	Val	Arg	Lys	Asp	Tyr	Asp	Thr	Leu	Ser	Lys	Cys	Ser	Pro															
1010					1015						1020																		
Lys	Met	Pro	Pro	Ala	Pro	Ser	Gly	Arg	Ala	Tyr	Thr	Ser	Pro	Leu															
1025					1030						1035																		
Ile	Asp	Met	Phe	Asn	Asn	Pro	Ala	Thr	Ala	Ala	Pro	Asn	Ser	Gln															
1040					1045						1050																		
Arg	Val	Asn	Asn	Ser	Thr	Gly	Thr	Ser	Glu	Asp	Pro	Ser	Leu	Gln															
1055					1060						1065																		
Arg	Ser	Val	Ser	Val	Ala	Thr	Gly	Leu	Asn	Met	Met	Lys	Lys	Gln															
1070					1075						1080																		
Lys	Val	Lys	Thr	Ile	Phe	Pro	His	Thr	Ala	Gly	Ser	Asn	Lys	Thr															
1085					1090						1095																		
Leu	Leu	Ser	Phe	Ala	Gln	Gly	Asp	Val	Ile	Thr	Leu	Leu	Ile	Pro															
1100					1105						1110																		

Glu Glu Lys Asp Gly Trp Leu Tyr Gly Glu His Asp Val Ser Lys
1115 1120 1125

Ala Arg Gly Trp Phe Pro Ser Ser Tyr Thr Lys Leu Leu Glu Glu
1130 1135 1140

Asn Glu Thr Glu Ala Val Thr Val Pro Thr Pro Ser Pro Thr Pro
1145 1150 1155

Val Arg Ser Ile Ser Thr Val Asn Leu Ser Glu Asn Ser Ser Val
1160 1165 1170

Val Ile Pro Pro Pro Asp Tyr Leu Glu Cys Leu Ser Met Gly Ala
1175 1180 1185

Ala Ala Asp Arg Arg Ala Asp Ser Ala Arg Thr Thr Ser Thr Phe
1190 1195 1200

Lys Ala Pro Ala Ser Lys Pro Glu Thr Ala Ala Pro Asn Asp Ala
1205 1210 1215

Asn Gly Thr Ala Lys Pro Pro Phe Leu Ser Gly Glu Asn Pro Phe
1220 1225 1230

Ala Thr Val Lys Leu Arg Pro Thr Val Thr Asn Asp Arg Ser Ala
1235 1240 1245

Pro Ile Ile Arg
1250

<210> 39

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Biotinylated peptide sequence

<400> 39

Glu Gly Pro Trp Leu Glu Glu Glu Glu Glu Ala Tyr Gly Trp Met Asp
1 5 10 15

Phe