

SEQUENCE LISTING

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Cornell University

<120> TARGETING CHROMOSOMAL INSTABILITY AND DOWNSTREAM
CYTOSOLIC DNA SIGNALING FOR CANCER TREATMENT

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<151> 2017-07-10

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<212> PRT

<213> Homo sapiens

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

<400> 8

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<212> PRT

<213> Homo sapiens

<400> 9

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Ile	Gly	His	Lys	Arg	Arg	Leu	Glu	Glu	Asp	Asp	Met	Tyr	Ser	Val	Leu
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Pro	Glu	Asp	Arg	Ser	Gln	His	Leu	Gly	Glu	Glu	Leu	Gln	Gly	Phe	Trp
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Thr	Arg	Ala	Ile	Ile	Lys	Cys	Tyr	Trp	Lys	Ser	Tyr	Leu	Val	Leu	Gly
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Cys	Ala	Gly	Met	Arg	Leu	Arg	Val	Ala	Met	Cys	His	Met	Ile	Tyr	Arg
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Val	Ala	Val	Thr	Leu	Tyr	Gly	Ala	Val	Arg	Leu	Thr	Val	Thr	Leu	Phe	355	360	365
Phe	Pro	Ser	Ala	Ile	Glu	Arg	Val	Ser	Glu	Ala	Ile	Val	Ser	Ile	Arg	370	375	380
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Gln	Leu	Pro	Ser	Asp	Gly	Lys	Lys	Met	Val	His	Val	Gln	Asp	Phe	Thr	405	410	415
Ala	Phe	Trp	Asp	Lys	Ala	Ser	Glu	Thr	Pro	Thr	Leu	Gln	Gly	Leu	Ser	420	425	430
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Lys	Lys	Tyr	Glu	Lys	Glu	Arg	Tyr	Glu	Lys	Val	Ile	Lys	Ala	Cys	Ala	500	505	510
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Leu	Ala	Arg	Ala	Val	Tyr	Gln	Asp	Ala	Asp	Ile	Tyr	Leu	Leu	Asp	Asp	545	550	555
Pro	Leu	Ser	Ala	Val	Asp	Ala	Glu	Val	Ser	Arg	His	Leu	Phe	Glu	Leu	565	570	575
Cys	Ile	Cys	Gln	Ile	Leu	His	Glu	Lys	Ile	Thr	Ile	Leu	Val	Thr	His	580	585	590
Gln	Leu	Gln	Tyr	Leu	Lys	Ala	Ala	Ser	Gln	Ile	Leu	Ile	Leu	Lys	Asp	595	600	605
Gly	Lys	Met	Val	Gln	Lys	Gly	Thr	Tyr	Thr	Glu	Phe	Leu	Lys	Ser	Gly	610	615	620
Ile	Asp	Phe	Gly	Ser	Leu	Leu	Lys	Lys	Asp	Asn	Glu	Glu	Ser	Glu	Gln	625	630	635
Pro	Pro	Val	Pro	Gly	Thr	Pro	Thr	Leu	Arg	Asn	Arg	Thr	Phe	Ser	Glu	645	650	655
Ser	Ser	Val	Trp	Ser	Gln	Gln	Ser	Ser	Arg	Pro	Ser	Leu	Lys	Asp	Gly	660	665	670
Ala	Leu	Glu	Ser	Gln	Asp	Thr	Glu	Asn	Val	Pro	Val	Thr	Leu	Ser	Glu	675	680	685
Glu	Asn	Arg	Ser	Glu	Gly	Lys	Val	Gly	Phe	Gln	Ala	Tyr	Lys	Asn	Tyr	690	695	700

Phe	Arg	Ala	Gly	Ala	His	Trp	Ile	Val	Phe	Ile	Phe	Leu	Ile	Leu	Leu
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<400> 11

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Arg	Pro	Ala	Asn	Phe	Lys	Cys	Asn	Ser	Gly	Tyr	Val	Val	Gln	Asp	Asp
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Val	Val	Met	Gly	Thr	Leu	Thr	Val	Arg	Glu	Asn	Leu	Gln	Phe	Ser	Ala
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Ala	Leu	Arg	Leu	Ala	Thr	Thr	Met	Thr	Asn	His	Glu	Lys	Asn	Glu	Arg
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Ile	Asn	Arg	Val	Ile	Gln	Glu	Leu	Gly	Leu	Asp	Lys	Val	Ala	Asp	Ser
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 <212> PRT
 <213> Homo sapiens

<400> 13

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Leu	Pro	Gln	Gln	Thr	Gly	Asp	His	Ala	Gly	Ile	Lys	Asp	Arg	Val	Tyr
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Cys	Val	Leu	Glu	Tyr	Ala	Thr	Pro	Leu	Gln	Thr	Leu	Phe	Ala	Met	Ser
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Gln	Tyr	Ser	Gln	Ala	Gly	Phe	Ser	Arg	Glu	Asp	Arg	Leu	Glu	Gln	Ala
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Lys	Leu	Phe	Cys	Arg	Thr	Leu	Glu	Asp	Ile	Leu	Ala	Asp	Ala	Pro	Glu
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Ser	Ser	Phe	Ser	Leu	Ser	Gln	Glu	Val	Leu	Arg	His	Leu	Arg	Gln	Glu
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Glu	Lys	Glu	Glu	Val	Thr	Val	Gly	Ser	Leu	Lys	Thr	Ser	Ala	Val	Pro
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 <212> DNA
 <213> Homo sapiens

<400> 14

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 <212> PRT
 <213> Homo sapiens

<400> 15

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 <213> Homo sapiens

<400> 17

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<400> 18

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Val	His	Arg	Gln	Ile	Ala	Ile	Val	Phe	Lys	Thr	Pro	Pro	Tyr	Glu
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His	Leu 595	Leu	Lys	Asn	Pro	Val	Tyr 600	Thr	Pro	Lys	His	Pro 605	Lys	Glu	Val

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gcccactacg	gcacgccgca	ccggagcacg	gcaccgaggg	agccgccaca	cgttcacctg	1980
caaggacgtc	acggggccct	ctaaaggatt	cgtgggtgctc	atccccaaagc	ttcagagacc	2040
ctttgggggtt	ccacacttca	cgtggactga	ggtagaccct	gcatgaagat	gaaattatag	2100
ggaggacgtc	ccttccctcc	cctcctagag	gagaggaaag	ggagtcatta	acaactaggg	2160
ggttgggtag	gattccctag	tatggggaag	agtttttgaa	ggggaggaaa	atggcaagtg	2220
tatttatatt	gtaaccacat	gcaaataaaa	agaatgggac	ctagataaaa	aaaaaaaaaa	2280
aaa						2283

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 <212> DNA
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<220>

<223> A synthetic oligonucleotide sequence

<400> 25
ttcatattca atttgctttg tc 22

<210> 26
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<212> DNA
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<210> 27
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<212> DNA
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<400> 27
ttctaaaaac tgactcagag ga 22

<210> 28
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<400> 28
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<210> 29
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<400> 29
tcatcatatt caataatacc at 22

<210> 30
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<212> DNA
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<400> 30

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ttcctcatct gtaaaatggg ct	22
<210> 32	
<211> 22	
<212> DNA	
<213> Artificial Sequence	
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<400> 32	
taatgattgg ggaacatggt gc	22
<210> 33	
<211> 22	
<212> DNA	
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<223> A synthetic oligonucleotide sequence	
<400> 33	
tttcttgtca tagacgggct cg	22
<210> 34	
<211> 22	
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<400> 34	
tcaaaaactc atctttattg gg	22
<210> 35	
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<400> 35	
ttatgatccc atttcacagg tt	22
<210> 36	

<211> 22
 <212> DNA
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<220>
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<400> 36
 tctcaagaga aatccgtgcg ga

22

<210> 37
 <211> 420
 <212> PRT
 <213> Homo sapiens

<400> 37
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 Val Lys Tyr Gly Glu Leu Val Val Leu Gly Tyr Asn Gly Ala Leu Pro
 20 25 30
 Asn Gly Asp Arg Gly Arg Arg Lys Ser Arg Phe Ala Leu Tyr Lys Arg
 35 40 45
 Pro Lys Ala Asn Gly Val Lys Pro Ser Thr Val His Val Ile Ser Thr
 50 55 60
 Pro Gln Ala Ser Lys Ala Ile Ser Cys Lys Gly Gln His Ser Ile Ser
 65 70 75 80
 Tyr Thr Leu Ser Arg Asn Gln Thr Val Val Val Glu Tyr Thr His Asp
 85 90 95
 Lys Asp Thr Asp Met Phe Gln Val Gly Arg Ser Thr Glu Ser Pro Ile
 100 105 110
 Asp Phe Val Val Thr Asp Thr Ile Ser Gly Ser Gln Asn Thr Asp Glu
 115 120 125
 Ala Gln Ile Thr Gln Ser Thr Ile Ser Arg Phe Ala Cys Arg Ile Val
 130 135 140
 Cys Asp Arg Asn Glu Pro Tyr Thr Ala Arg Ile Phe Ala Ala Gly Phe
 145 150 155 160
 Asp Ser Ser Lys Asn Ile Phe Leu Gly Glu Lys Ala Ala Lys Trp Lys
 165 170 175
 Asn Pro Asp Gly His Met Asp Gly Leu Thr Thr Asn Gly Val Leu Val
 180 185 190
 Met His Pro Arg Gly Gly Phe Thr Glu Glu Ser Gln Pro Gly Val Trp
 195 200 205
 Arg Glu Ile Ser Val Cys Gly Asp Val Tyr Thr Leu Arg Glu Thr Arg
 210 215 220
 Ser Ala Gln Gln Arg Gly Lys Leu Val Glu Ser Glu Thr Asn Val Leu
 225 230 235 240
 Gln Asp Gly Ser Leu Ile Asp Leu Cys Gly Ala Thr Leu Leu Trp Arg
 245 250 255
 Thr Ala Asp Gly Leu Phe His Thr Pro Thr Gln Lys His Ile Glu Ala
 260 265 270
 Leu Arg Gln Glu Ile Asn Ala Ala Arg Pro Gln Cys Pro Val Gly Leu
 275 280 285
 Asn Thr Leu Ala Phe Pro Ser Ile Asn Arg Lys Glu Val Val Glu Glu
 290 295 300
 Lys Gln Pro Trp Ala Tyr Leu Ser Cys Gly His Val His Gly Tyr His
 305 310 315 320
 Asn Trp Gly His Arg Ser Asp Thr Glu Ala Asn Glu Arg Glu Cys Pro
 325 330 335

Met	Cys	Arg	Thr	Val	Gly	Pro	Tyr	Val	Pro	Leu	Trp	Leu	Gly	Cys	Glu
			340					345					350		
Ala	Gly	Phe	Tyr	Val	Asp	Ala	Gly	Pro	Pro	Thr	His	Ala	Phe	Thr	Pro
		355					360					365			
Cys	Gly	His	Val	Cys	Ser	Glu	Lys	Ser	Ala	Lys	Tyr	Trp	Ser	Gln	Ile
	370					375					380				
Pro	Leu	Pro	His	Gly	Thr	His	Ala	Phe	His	Ala	Ala	Cys	Pro	Phe	Cys
385					390					395					400
Ala	Thr	Gln	Leu	Val	Gly	Glu	Gln	Asn	Cys	Ile	Lys	Leu	Ile	Phe	Gln
			405						410					415	
Gly	Pro	Ile	Asp												
			420												

<210> 38
 <211> 396
 <212> PRT
 <213> Homo sapiens

<400> 38

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Leu	Leu	Gly	Gly	Ala	Ala	Gly	Leu	Val	Pro	Glu	Leu	Gly	Arg	Arg	Lys
			20					25					30		
Phe	Ala	Ala	Ala	Ser	Ser	Gly	Arg	Pro	Ser	Ser	Gln	Pro	Ser	Asp	Glu
		35				40						45			
Val	Leu	Ser	Glu	Phe	Glu	Leu	Arg	Leu	Leu	Ser	Met	Phe	Gly	Leu	Lys
	50				55						60				
Gln	Arg	Pro	Thr	Pro	Ser	Arg	Asp	Ala	Val	Val	Pro	Pro	Tyr	Met	Leu
65					70					75					80
Asp	Leu	Tyr	Arg	Arg	His	Ser	Gly	Gln	Pro	Gly	Ser	Pro	Ala	Pro	Asp
				85					90					95	
His	Arg	Leu	Glu	Arg	Ala	Ala	Ser	Arg	Ala	Asn	Thr	Val	Arg	Ser	Phe
		100						105					110		
His	His	Glu	Glu	Ser	Leu	Glu	Glu	Leu	Pro	Glu	Thr	Ser	Gly	Lys	Thr
	115					120						125			
Thr	Arg	Arg	Phe	Phe	Phe	Asn	Leu	Ser	Ser	Ile	Pro	Thr	Glu	Glu	Phe
	130					135					140				
Ile	Thr	Ser	Ala	Glu	Leu	Gln	Val	Phe	Arg	Glu	Gln	Met	Gln	Asp	Ala
145					150					155					160
Leu	Gly	Asn	Asn	Ser	Phe	His	His	Arg	Ile	Asn	Ile	Tyr	Glu	Ile	
			165					170					175		
Ile	Lys	Pro	Ala	Thr	Ala	Asn	Ser	Lys	Phe	Pro	Val	Thr	Arg	Leu	Leu
		180						185					190		
Asp	Thr	Arg	Leu	Val	Asn	Gln	Asn	Ala	Ser	Arg	Trp	Glu	Ser	Phe	Asp
		195					200					205			
Val	Thr	Pro	Ala	Val	Met	Arg	Trp	Thr	Ala	Gln	Gly	His	Ala	Asn	His
	210					215					220				
Gly	Phe	Val	Val	Glu	Val	Ala	His	Leu	Glu	Glu	Lys	Gln	Gly	Val	Ser
225					230					235					240
Lys	Arg	His	Val	Arg	Ile	Ser	Arg	Ser	Leu	His	Gln	Asp	Glu	His	Ser
			245						250					255	
Trp	Ser	Gln	Ile	Arg	Pro	Leu	Leu	Val	Thr	Phe	Gly	His	Asp	Gly	Lys
		260						265					270		
Gly	His	Pro	Leu	His	Lys	Arg	Glu	Lys	Arg	Gln	Ala	Lys	His	Lys	Gln
		275				280						285			
Arg	Lys	Arg	Leu	Lys	Ser	Ser	Cys	Lys	Arg	His	Pro	Leu	Tyr	Val	Asp
	290					295					300				
Phe	Ser	Asp	Val	Gly	Trp	Asn	Asp	Trp	Ile	Val	Ala	Pro	Pro	Gly	Tyr

305					310					315				320	
His	Ala	Phe	Tyr	Cys	His	Gly	Glu	Cys	Pro	Phe	Pro	Leu	Ala	Asp	His
				325					330					335	
Leu	Asn	Ser	Thr	Asn	His	Ala	Ile	Val	Gln	Thr	Leu	Val	Asn	Ser	Val
				340					345					350	
Asn	Ser	Lys	Ile	Pro	Lys	Ala	Cys	Cys	Val	Pro	Thr	Glu	Leu	Ser	Ala
		355					360						365		
Ile	Ser	Met	Leu	Tyr	Leu	Asp	Glu	Asn	Glu	Lys	Val	Val	Leu	Lys	Asn
	370					375					380				
Tyr	Gln	Asp	Met	Val	Val	Glu	Gly	Cys	Gly	Cys	Arg				
385					390					395					

<210> 39
 <211> 462
 <212> PRT
 <213> Homo sapiens

<400> 39

Met	Leu	Leu	Leu	Ala	Arg	Cys	Leu	Leu	Leu	Val	Leu	Val	Ser	Ser	Leu
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Leu	Val	Cys	Ser	Gly	Leu	Ala	Cys	Gly	Pro	Gly	Arg	Gly	Phe	Gly	Lys
			20					25					30		
Arg	Arg	His	Pro	Lys	Lys	Leu	Thr	Pro	Leu	Ala	Tyr	Lys	Gln	Phe	Ile
		35				40						45			
Pro	Asn	Val	Ala	Glu	Lys	Thr	Leu	Gly	Ala	Ser	Gly	Arg	Tyr	Glu	Gly
	50					55					60				
Lys	Ile	Ser	Arg	Asn	Ser	Glu	Arg	Phe	Lys	Glu	Leu	Thr	Pro	Asn	Tyr
65				70					75						80
Asn	Pro	Asp	Ile	Ile	Phe	Lys	Asp	Glu	Glu	Asn	Thr	Gly	Ala	Asp	Arg
			85					90						95	
Leu	Met	Thr	Gln	Arg	Cys	Lys	Asp	Lys	Leu	Asn	Ala	Leu	Ala	Ile	Ser
			100					105					110		
Val	Met	Asn	Gln	Trp	Pro	Gly	Val	Lys	Leu	Arg	Val	Thr	Glu	Gly	Trp
		115				120						125			
Asp	Glu	Asp	Gly	His	His	Ser	Glu	Glu	Ser	Leu	His	Tyr	Glu	Gly	Arg
	130					135					140				
Ala	Val	Asp	Ile	Thr	Thr	Ser	Asp	Arg	Asp	Arg	Ser	Lys	Tyr	Gly	Met
145					150					155					160
Leu	Ala	Arg	Leu	Ala	Val	Glu	Ala	Gly	Phe	Asp	Trp	Val	Tyr	Tyr	Glu
			165					170						175	
Ser	Lys	Ala	His	Ile	His	Cys	Ser	Val	Lys	Ala	Glu	Asn	Ser	Val	Ala
		180						185					190		
Ala	Lys	Ser	Gly	Gly	Cys	Phe	Pro	Gly	Ser	Ala	Thr	Val	His	Leu	Glu
		195					200					205			
Gln	Gly	Gly	Thr	Lys	Leu	Val	Lys	Asp	Leu	Ser	Pro	Gly	Asp	Arg	Val
	210					215					220				
Leu	Ala	Ala	Asp	Asp	Gln	Gly	Arg	Leu	Leu	Tyr	Ser	Asp	Phe	Leu	Thr
225					230					235					240
Phe	Leu	Asp	Arg	Asp	Asp	Gly	Ala	Lys	Lys	Val	Phe	Tyr	Val	Ile	Glu
			245					250						255	
Thr	Arg	Glu	Pro	Arg	Glu	Arg	Leu	Leu	Leu	Thr	Ala	Ala	His	Leu	Leu
			260					265					270		
Phe	Val	Ala	Pro	His	Asn	Asp	Ser	Ala	Thr	Gly	Glu	Pro	Glu	Ala	Ser
		275				280						285			
Ser	Gly	Ser	Gly	Pro	Pro	Ser	Gly	Gly	Ala	Leu	Gly	Pro	Arg	Ala	Leu
	290					295					300				
Phe	Ala	Ser	Arg	Val	Arg	Pro	Gly	Gln	Arg	Val	Tyr	Val	Val	Ala	Glu
305					310					315					320

Arg	Asp	Gly	Asp	Arg	Arg	Leu	Leu	Pro	Ala	Ala	Val	His	Ser	Val	Thr
				325					330					335	
Leu	Ser	Glu	Glu	Ala	Ala	Gly	Ala	Tyr	Ala	Pro	Leu	Thr	Ala	Gln	Gly
				340				345					350		
Thr	Ile	Leu	Ile	Asn	Arg	Val	Leu	Ala	Ser	Cys	Tyr	Ala	Val	Ile	Glu
				355			360					365			
Glu	His	Ser	Trp	Ala	His	Arg	Ala	Phe	Ala	Pro	Phe	Arg	Leu	Ala	His
	370					375					380				
Ala	Leu	Leu	Ala	Ala	Leu	Ala	Pro	Ala	Arg	Thr	Asp	Arg	Gly	Gly	Asp
385						390				395					400
Ser	Gly	Gly	Gly	Asp	Arg	Gly	Gly	Gly	Gly	Gly	Arg	Val	Ala	Leu	Thr
				405				410						415	
Ala	Pro	Gly	Ala	Ala	Asp	Ala	Pro	Gly	Ala	Gly	Ala	Thr	Ala	Gly	Ile
				420				425					430		
His	Trp	Tyr	Ser	Gln	Leu	Leu	Tyr	Gln	Ile	Gly	Thr	Trp	Leu	Leu	Asp
		435					440					445			
Ser	Glu	Ala	Leu	His	Pro	Leu	Gly	Met	Ala	Val	Lys	Ser	Ser		
	450					455					460				

<210> 40
 <211> 480
 <212> PRT
 <213> Homo sapiens

<400> 40

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

			260					265				270					
Ile	Arg	His	Phe	Leu	Ile	Glu	Ser	Ser	Ala	Lys	Gly	Val	His	Leu	Lys		
		275					280					285					
Gly	Ala	Asp	Glu	Glu	Pro	Tyr	Phe	Gly	Ser	Leu	Ser	Ala	Phe	Val	Cys		
	290					295					300						
Gln	His	Ser	Ile	Met	Ala	Leu	Ala	Leu	Pro	Cys	Lys	Leu	Thr	Ile	Pro		
305					310					315					320		
Gln	Arg	Glu	Leu	Gly	Gly	Ala	Asp	Gly	Ala	Ser	Asp	Ser	Thr	Asp	Ser		
				325				330						335			
Pro	Ala	Ser	Cys	Gln	Lys	Lys	Ser	Ala	Gly	Cys	His	Thr	Leu	Tyr	Leu		
			340				345						350				
Ser	Ser	Val	Ser	Val	Glu	Thr	Leu	Thr	Gly	Ala	Leu	Ala	Val	Gln	Lys		
		355					360					365					
Ala	Ile	Ser	Thr	Thr	Phe	Glu	Arg	Asp	Ile	Leu	Pro	Thr	Pro	Thr	Val		
	370					375					380						
Val	His	Phe	Lys	Val	Thr	Glu	Gln	Gly	Ile	Thr	Leu	Thr	Asp	Val	Gln		
385					390					395					400		
Arg	Lys	Val	Phe	Phe	Arg	Arg	His	Tyr	Pro	Leu	Thr	Thr	Leu	Arg	Phe		
				405				410						415			
Cys	Gly	Met	Asp	Pro	Glu	Gln	Arg	Lys	Trp	Gln	Lys	Tyr	Cys	Lys	Pro		
			420					425					430				
Ser	Trp	Ile	Phe	Gly	Phe	Val	Ala	Lys	Ser	Gln	Thr	Glu	Pro	Gln	Glu		
		435					440					445					
Asn	Val	Cys	His	Leu	Phe	Ala	Glu	Tyr	Asp	Met	Val	Gln	Pro	Ala	Ser		
	450					455					460						
Gln	Val	Ile	Gly	Leu	Val	Thr	Ala	Leu	Leu	Gln	Asp	Ala	Glu	Arg	Met		
465					470					475					480		

<210> 41
 <211> 219
 <212> PRT
 <213> Homo sapiens

<400> 41

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

Thr	Asp	Pro	Ser	Met	Leu	Gly	Ser	Ser	Lys	Asn	Thr	Arg	Leu	Ser	Asp
		195					200					205			
Thr	Pro	Pro	Leu	Leu	Gln	Gln	Asn	Cys	Ser	Cys					
	210					215									

<210> 42
 <211> 1607
 <212> PRT
 <213> Homo sapiens

<400> 42

Met	Ile	Ala	Glu	Pro	Ala	His	Phe	Tyr	Leu	Phe	Gly	Leu	Ile	Cys	Leu
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Cys	Ser	Gly	Ser	Arg	Leu	Arg	Gln	Glu	Asp	Phe	Pro	Pro	Arg	Ile	Val
		20					25						30		
Glu	His	Pro	Ser	Asp	Leu	Ile	Val	Ser	Lys	Gly	Glu	Pro	Ala	Thr	Leu
		35					40					45			
Asn	Cys	Lys	Ala	Glu	Gly	Arg	Pro	Thr	Pro	Thr	Ile	Glu	Trp	Tyr	Lys
	50					55					60				
Gly	Gly	Glu	Arg	Val	Glu	Thr	Asp	Lys	Asp	Asp	Pro	Arg	Ser	His	Arg
65					70					75					80
Met	Leu	Leu	Pro	Ser	Gly	Ser	Leu	Phe	Phe	Leu	Arg	Ile	Val	His	Gly
				85					90					95	
Arg	Lys	Ser	Arg	Pro	Asp	Glu	Gly	Val	Tyr	Val	Cys	Val	Ala	Arg	Asn
			100					105					110		
Tyr	Leu	Gly	Glu	Ala	Val	Ser	His	Asn	Ala	Ser	Leu	Glu	Val	Ala	Ile
		115					120					125			
Leu	Arg	Asp	Asp	Phe	Arg	Gln	Asn	Pro	Ser	Asp	Val	Met	Val	Ala	Val
	130					135					140				
Gly	Glu	Pro	Ala	Val	Met	Glu	Cys	Gln	Pro	Pro	Arg	Gly	His	Pro	Glu
145					150					155					160
Pro	Thr	Ile	Ser	Trp	Lys	Lys	Asp	Gly	Ser	Pro	Leu	Asp	Asp	Lys	Asp
				165					170					175	
Glu	Arg	Ile	Thr	Ile	Arg	Gly	Gly	Lys	Leu	Met	Ile	Thr	Tyr	Thr	Arg
			180					185					190		
Lys	Ser	Asp	Ala	Gly	Lys	Tyr	Val	Cys	Val	Gly	Thr	Asn	Met	Val	Gly
		195					200					205			
Glu	Arg	Glu	Ser	Glu	Val	Ala	Glu	Leu	Thr	Val	Leu	Glu	Arg	Pro	Ser
	210					215					220				
Phe	Val	Lys	Arg	Pro	Ser	Asn	Leu	Ala	Val	Thr	Val	Asp	Asp	Ser	Ala
225					230					235					240
Glu	Phe	Lys	Cys	Glu	Ala	Arg	Gly	Asp	Pro	Val	Pro	Thr	Val	Arg	Trp
				245					250					255	
Arg	Lys	Asp	Asp	Gly	Glu	Leu	Pro	Lys	Ser	Arg	Tyr	Glu	Ile	Arg	Asp
			260					265					270		
Asp	His	Thr	Leu	Lys	Ile	Arg	Lys	Val	Thr	Ala	Gly	Asp	Met	Gly	Ser
		275					280					285			
Tyr	Thr	Cys	Val	Ala	Glu	Asn	Met	Val	Gly	Lys	Ala	Glu	Ala	Ser	Ala
	290					295					300				
Thr	Leu	Thr	Val	Gln	Val	Gly	Ser	Glu	Pro	Pro	His	Phe	Val	Val	Lys
305					310					315					320
Pro	Arg	Asp	Gln	Val	Val	Ala	Leu	Gly	Arg	Thr	Val	Thr	Phe	Gln	Cys
				325					330					335	
Glu	Ala	Thr	Gly	Asn	Pro	Gln	Pro	Ala	Ile	Phe	Trp	Arg	Arg	Glu	Gly
			340					345					350		
Ser	Gln	Asn	Leu	Leu	Phe	Ser	Tyr	Gln	Pro	Pro	Gln	Ser	Ser	Ser	Arg
		355					360					365			
Phe	Ser	Val	Ser	Gln	Thr	Gly	Asp	Leu	Thr	Ile	Thr	Asn	Val	Gln	Arg

370		375		380
Ser Asp Val Gly Tyr Tyr Ile Cys Gln Thr Leu Asn Val Ala Gly Ser				
385		390		395
Ile Ile Thr Lys Ala Tyr Leu Glu Val Thr Asp Val Ile Ala Asp Arg				
	405		410	415
Pro Pro Pro Val Ile Arg Gln Gly Pro Val Asn Gln Thr Val Ala Val				
	420		425	430
Asp Gly Thr Phe Val Leu Ser Cys Val Ala Thr Gly Ser Pro Val Pro				
	435		440	445
Thr Ile Leu Trp Arg Lys Asp Gly Val Leu Val Ser Thr Gln Asp Ser				
	450		455	460
Arg Ile Lys Gln Leu Glu Asn Gly Val Leu Gln Ile Arg Tyr Ala Lys				
465		470		475
Leu Gly Asp Thr Gly Arg Tyr Thr Cys Ile Ala Ser Thr Pro Ser Gly				
	485		490	495
Glu Ala Thr Trp Ser Ala Tyr Ile Glu Val Gln Glu Phe Gly Val Pro				
	500		505	510
Val Gln Pro Pro Arg Pro Thr Asp Pro Asn Leu Ile Pro Ser Ala Pro				
	515		520	525
Ser Lys Pro Glu Val Thr Asp Val Ser Arg Asn Thr Val Thr Leu Ser				
530		535		540
Trp Gln Pro Asn Leu Asn Ser Gly Ala Thr Pro Thr Ser Tyr Ile Ile				
545		550		555
Glu Ala Phe Ser His Ala Ser Gly Ser Ser Trp Gln Thr Val Ala Glu				
	565		570	575
Asn Val Lys Thr Glu Thr Ser Ala Ile Lys Gly Leu Lys Pro Asn Ala				
	580		585	590
Ile Tyr Leu Phe Leu Val Arg Ala Ala Asn Ala Tyr Gly Ile Ser Asp				
	595		600	605
Pro Ser Gln Ile Ser Asp Pro Val Lys Thr Gln Asp Val Leu Pro Thr				
610		615		620
Ser Gln Gly Val Asp His Lys Gln Val Gln Arg Glu Leu Gly Asn Ala				
625		630		635
Val Leu His Leu His Asn Pro Thr Val Leu Ser Ser Ser Ser Ile Glu				
	645		650	655
Val His Trp Thr Val Asp Gln Gln Ser Gln Tyr Ile Gln Gly Tyr Lys				
	660		665	670
Ile Leu Tyr Arg Pro Ser Gly Ala Asn His Gly Glu Ser Asp Trp Leu				
	675		680	685
Val Phe Glu Val Arg Thr Pro Ala Lys Asn Ser Val Val Ile Pro Asp				
690		695		700
Leu Arg Lys Gly Val Asn Tyr Glu Ile Lys Ala Arg Pro Phe Phe Asn				
705		710		715
Glu Phe Gln Gly Ala Asp Ser Glu Ile Lys Phe Ala Lys Thr Leu Glu				
	725		730	735
Glu Ala Pro Ser Ala Pro Pro Gln Gly Val Thr Val Ser Lys Asn Asp				
	740		745	750
Gly Asn Gly Thr Ala Ile Leu Val Ser Trp Gln Pro Pro Glu Asp				
	755		760	765
Thr Gln Asn Gly Met Val Gln Glu Tyr Lys Val Trp Cys Leu Gly Asn				
770		775		780
Glu Thr Arg Tyr His Ile Asn Lys Thr Val Asp Gly Ser Thr Phe Ser				
785		790		795
Val Val Ile Pro Phe Leu Val Pro Gly Ile Arg Tyr Ser Val Glu Val				
	805		810	815
Ala Ala Ser Thr Gly Ala Gly Ser Gly Val Lys Ser Glu Pro Gln Phe				
	820		825	830
Ile Gln Leu Asp Ala His Gly Asn Pro Val Ser Pro Glu Asp Gln Val				

		835					840				845				
Ser	Leu	Ala	Gln	Gln	Ile	Ser	Asp	Val	Val	Lys	Gln	Pro	Ala	Phe	Ile
	850					855					860				
Ala	Gly	Ile	Gly	Ala	Ala	Cys	Trp	Ile	Ile	Leu	Met	Val	Phe	Ser	Ile
865					870					875					880
Trp	Leu	Tyr	Arg	His	Arg	Lys	Lys	Arg	Asn	Gly	Leu	Thr	Ser	Thr	Tyr
				885					890						895
Ala	Gly	Ile	Arg	Lys	Val	Thr	Tyr	Gln	Arg	Gly	Gly	Glu	Ala	Val	Ser
			900					905					910		
Ser	Gly	Gly	Arg	Pro	Gly	Leu	Leu	Asn	Ile	Ser	Glu	Pro	Ala	Ala	Gln
		915					920					925			
Pro	Trp	Leu	Ala	Asp	Thr	Trp	Pro	Asn	Thr	Gly	Asn	Asn	His	Asn	Asp
	930					935					940				
Cys	Ser	Ile	Ser	Cys	Cys	Thr	Ala	Gly	Asn	Gly	Asn	Ser	Asp	Ser	Asn
945				950						955					960
Leu	Thr	Thr	Tyr	Ser	Arg	Pro	Ala	Asp	Cys	Ile	Ala	Asn	Tyr	Asn	Asn
				965					970					975	
Gln	Leu	Asp	Asn	Lys	Gln	Thr	Asn	Leu	Met	Leu	Pro	Glu	Ser	Thr	Val
			980					985					990		
Tyr	Gly	Asp	Val	Asp	Leu	Ser	Asn	Lys	Ile	Asn	Glu	Met	Lys	Thr	Phe
		995					1000					1005			
Asn	Ser	Pro	Asn	Leu	Lys	Asp	Gly	Arg	Phe	Val	Asn	Pro	Ser	Gly	Gln
	1010					1015					1020				
Pro	Thr	Pro	Tyr	Ala	Thr	Thr	Gln	Leu	Ile	Gln	Ser	Asn	Leu	Ser	Asn
1025					1030					1035					1040
Asn	Met	Asn	Asn	Gly	Ser	Gly	Asp	Ser	Gly	Glu	Lys	His	Trp	Lys	Pro
				1045					1050					1055	
Leu	Gly	Gln	Gln	Lys	Gln	Glu	Val	Ala	Pro	Val	Gln	Tyr	Asn	Ile	Val
			1060					1065					1070		
Glu	Gln	Asn	Lys	Leu	Asn	Lys	Asp	Tyr	Arg	Ala	Asn	Asp	Thr	Val	Pro
		1075					1080					1085			
Pro	Thr	Ile	Pro	Tyr	Asn	Gln	Ser	Tyr	Asp	Gln	Asn	Thr	Gly	Gly	Ser
		1090				1095					1100				
Tyr	Asn	Ser	Ser	Asp	Arg	Gly	Ser	Ser	Thr	Ser	Gly	Ser	Gln	Gly	His
1105				1110						1115					1120
Lys	Lys	Gly	Gly	Ala	Arg	Thr	Pro	Lys	Val	Pro	Lys	Gln	Gly	Gly	Met
				1125					1130					1135	
Asn	Trp	Ala	Asp	Leu	Leu	Pro	Pro	Pro	Pro	Ala	His	Pro	Pro	Pro	His
			1140					1145					1150		
Ser	Asn	Ser	Glu	Glu	Tyr	Asn	Ile	Ser	Val	Asp	Glu	Ser	Tyr	Asp	Gln
		1155					1160					1165			
Glu	Met	Pro	Cys	Pro	Val	Pro	Pro	Ala	Arg	Met	Tyr	Leu	Gln	Gln	Asp
	1170					1175					1180				
Glu	Leu	Glu	Glu	Glu	Glu	Asp	Glu	Arg	Gly	Pro	Thr	Pro			

Phe	Leu	Glu	Lys	Asn	Ile	Pro	Pro	Glu	Ala	Glu	Glu	Leu	Ser	Phe	Glu
			100					105					110		
Val	Ser	Tyr	Ser	Glu	Met	Val	Thr	Glu	Ala	Leu	Lys	Arg	Asn	Lys	Leu
		115					120					125			
Lys	Lys	Ser	Glu	Ile	Lys	Lys	Glu	Asp	Tyr	Val	Leu	Thr	Lys	Phe	Asn
		130				135					140				
Val	Gln	Lys	Thr	Arg	Phe	Gly	Leu	Thr	Glu	Ala	Gly	Asp	Leu	Ser	Ala
145					150					155					160
Glu	Asp	Met	Lys	Lys	Ile	Arg	His	Leu	Ser	Leu	Ile	Glu	Leu	Thr	Ala
				165					170					175	
Phe	Phe	Asp	Ala	Phe	Gly	Ile	Gln	Leu	Lys	Arg	Asn	Lys	Thr	Glu	Lys
			180					185					190		
Val	Lys	Gly	Arg	Asp	Asn	Gly	Ile	Phe	Gly	Val	Pro	Leu	Thr	Val	Leu
		195					200					205			
Leu	Asp	Gly	Asp	Arg	Lys	Lys	Asp	Pro	Gly	Val	Lys	Val	Pro	Leu	Val
		210				215					220				
Leu	Gln	Lys	Phe	Phe	Glu	Lys	Val	Glu	Glu	Ser	Gly	Leu	Glu	Ser	Glu
225					230					235					240
Gly	Ile	Phe	Arg	Leu	Ser	Gly	Cys	Thr	Ala	Lys	Val	Lys	Gln	Tyr	Arg
				245					250					255	
Glu	Glu	Leu	Asp	Ala	Lys	Phe	Asn	Ala	Asp	Lys	Phe	Lys	Trp	Asp	Lys
			260					265					270		
Met	Cys	His	Arg	Glu	Ala	Ala	Val	Met	Leu	Lys	Ala	Phe	Phe	Arg	Glu
		275					280					285			
Leu	Pro	Thr	Ser	Leu	Phe	Pro	Val	Glu	Tyr	Ile	Pro	Ala	Phe	Ile	Ser
		290				295					300				
Leu	Met	Glu	Arg	Gly	Pro	His	Val	Lys	Val	Gln	Phe	Gln	Ala	Leu	His
305					310					315					320
Leu	Met	Val	Met	Ala	Leu	Pro	Asp	Ala	Asn	Arg	Asp	Ala	Ala	Gln	Ala
				325					330					335	
Leu	Met	Thr	Phe	Phe	Asn	Lys	Val	Ile	Ala	Asn	Glu	Ser	Lys	Asn	Arg
			340					345					350		
Met	Ser	Leu	Trp	Asn	Ile	Ser	Thr	Val	Met	Ala	Pro	Asn	Leu	Phe	Phe
		355					360					365			
Ser	Arg	Ser	Lys	His	Ser	Asp	Tyr	Glu	Glu	Leu	Leu	Leu	Ala	Asn	Thr
		370				375					380				
Ala	Ala	His	Ile	Ile	Arg	Leu	Met	Leu	Lys	Tyr	Gln	Lys	Ile	Leu	Trp
385					390					395					400
Lys	Val	Pro	Ser	Phe	Leu	Ile	Thr	Gln	Val	Arg	Arg	Met	Asn	Glu	Ala
				405					410					415	
Thr	Met	Leu	Leu	Lys	Lys	Gln	Leu	Pro	Ser	Val	Arg	Lys	Leu	Leu	Arg
			420					425					430		
Arg	Lys	Thr	Leu	Glu	Arg	Glu	Thr	Ala	Ser	Pro	Lys	Thr	Ser	Lys	Val
		435					440					445			
Leu	Gln	Lys</													

<210> 44
 <211> 468
 <212> PRT
 <213> Homo sapiens

<400> 44
 Met Ala Ala Ser Ser Asn Ser Ser Leu Ser Gly Ser Ser Val Ser Ser
 1 5 10 15
 Asp Ala Glu Glu Tyr Gln Pro Pro Ile Trp Lys Ser Tyr Leu Tyr Gln
 20 25 30
 Leu Gln Gln Glu Ala Pro Arg Pro Lys Arg Ile Ile Cys Pro Arg Glu
 35 40 45
 Val Glu Asn Arg Pro Lys Tyr Tyr Gly Arg Glu Phe His Gly Ile Ile
 50 55 60
 Ser Arg Glu Gln Ala Asp Glu Leu Leu Gly Gly Val Glu Gly Ala Tyr
 65 70 75 80
 Ile Leu Arg Glu Ser Gln Arg Gln Pro Gly Cys Tyr Thr Leu Ala Leu
 85 90 95
 Arg Phe Gly Asn Gln Thr Leu Asn Tyr Arg Leu Phe His Asp Gly Lys
 100 105 110
 His Phe Val Gly Glu Lys Arg Phe Glu Ser Ile His Asp Leu Val Thr
 115 120 125
 Asp Gly Leu Ile Thr Leu Tyr Ile Glu Thr Lys Ala Ala Glu Tyr Ile
 130 135 140
 Ser Lys Met Thr Thr Asn Pro Ile Tyr Glu His Ile Gly Tyr Ala Thr
 145 150 155 160
 Leu Leu Arg Glu Lys Val Ser Arg Arg Leu Ser Arg Ser Lys Asn Glu
 165 170 175
 Pro Arg Lys Thr Asn Val Thr His Glu Glu His Thr Ala Val Glu Lys
 180 185 190
 Ile Ser Ser Leu Val Arg Arg Ala Ala Leu Thr His Asn Asp Asn His
 195 200 205
 Phe Asn Tyr Glu Lys Thr His Asn Phe Lys Val His Thr Phe Arg Gly
 210 215 220
 Pro His Trp Cys Glu Tyr Cys Ala Asn Phe Met Trp Gly Leu Ile Ala
 225 230 235 240
 Gln Gly Val Arg Cys Ser Asp Cys Gly Leu Asn Val His Lys Gln Cys
 245 250 255
 Ser Lys His Val Pro Asn Asp Cys Gln Pro Asp Leu Lys Arg Ile Lys
 260 265 270
 Lys Val Tyr Cys Cys Asp Leu Thr Thr Leu Val Lys Ala His Asn Thr
 275 280 285
 Gln Arg Pro Met Val Val Asp Ile Cys Ile Arg Glu Ile Glu Ala Arg
 290 295 300
 Gly Leu Lys Ser Glu Gly Leu Tyr Arg Val Ser Gly Phe Thr Glu His
 305 310 315 320
 Ile Glu Asp Val Lys Met Ala Phe Asp Arg Asp Gly Glu Lys Ala Asp
 325 330 335
 Ile Ser Ala Asn Val Tyr Pro Asp Ile Asn Ile Ile Thr Gly Ala Leu
 340 345 350
 Lys Leu Tyr Phe Arg Asp Leu Pro Ile Pro Val Ile Thr Tyr Asp Thr
 355 360 365
 Tyr Ser Lys Phe Ile Asp Ala Ala Lys Ile Ser Asn Ala Asp Glu Arg
 370 375 380
 Leu Glu Ala Val His Glu Val Leu Met Leu Leu Pro Pro Ala His Tyr
 385 390 395 400
 Glu Thr Leu Arg Tyr Leu Met Ile His Leu Lys Lys Val Thr Met Asn

				405					410					415			
Glu	Lys	Asp	Asn	Phe	Met	Asn	Ala	Glu	Asn	Leu	Gly	Ile	Val	Phe	Gly		
			420						425					430			
Pro	Thr	Leu	Met	Arg	Pro	Pro	Glu	Asp	Ser	Thr	Leu	Thr	Thr	Leu	His		
		435					440					445					
Asp	Met	Arg	Tyr	Gln	Lys	Leu	Ile	Val	Gln	Ile	Leu	Ile	Glu	Asn	Glu		
	450					455					460						
Asp	Val	Leu	Phe														
465																	

<210> 45
 <211> 141
 <212> PRT
 <213> Homo sapiens

<400> 45

Met	Ala	Gln	Tyr	Leu	Ser	Thr	Leu	Leu	Leu	Leu	Leu	Ala	Thr	Leu	Ala		
1				5					10					15			
Val	Ala	Leu	Ala	Trp	Ser	Pro	Lys	Glu	Glu	Asp	Arg	Ile	Ile	Pro	Gly		
		20						25					30				
Gly	Ile	Tyr	Asn	Ala	Asp	Leu	Asn	Asp	Glu	Trp	Val	Gln	Arg	Ala	Leu		
	35					40						45					
His	Phe	Ala	Ile	Ser	Glu	Tyr	Asn	Lys	Ala	Thr	Lys	Asp	Asp	Tyr	Tyr		
	50				55						60						
Arg	Arg	Pro	Leu	Arg	Val	Leu	Arg	Ala	Arg	Gln	Gln	Thr	Val	Gly	Gly		
65				70					75					80			
Val	Asn	Tyr	Phe	Phe	Asp	Val	Glu	Val	Gly	Arg	Thr	Ile	Cys	Thr	Lys		
			85						90				95				
Ser	Gln	Pro	Asn	Leu	Asp	Thr	Cys	Ala	Phe	His	Glu	Gln	Pro	Glu	Leu		
		100						105					110				
Gln	Lys	Lys	Gln	Leu	Cys	Ser	Phe	Glu	Ile	Tyr	Glu	Val	Pro	Trp	Glu		
	115						120				125						
Asn	Arg	Arg	Ser	Leu	Val	Lys	Ser	Arg	Cys	Gln	Glu	Ser					
	130					135					140						

<210> 46
 <211> 732
 <212> PRT
 <213> Homo sapiens

<400> 46

Met	Ser	Glu	Thr	Ser	Arg	Thr	Ala	Phe	Gly	Gly	Arg	Arg	Ala	Val	Pro		
1				5					10					15			
Pro	Asn	Asn	Ser	Asn	Ala	Ala	Glu	Asp	Leu	Pro	Thr	Val	Glu	Leu			
		20						25				30					
Gln	Gly	Val	Val	Pro	Arg	Gly	Val	Asn	Leu	Gln	Glu	Phe	Leu	Asn	Val		
	35					40						45					
Thr	Ser	Val	His	Leu	Phe	Lys	Glu	Arg	Trp	Asp	Thr	Asn	Lys	Val	Asp		
	50				55					60							
His	His	Thr	Asp	Lys	Tyr	Glu	Asn	Asn	Lys	Leu	Ile	Val	Arg	Arg	Gly		
65				70					75				80				
Gln	Ser	Phe	Tyr	Val	Gln	Ile	Asp	Phe	Ser	Arg	Pro	Tyr	Asp	Pro	Arg		
			85					90				95					
Arg	Asp	Leu	Phe	Arg	Val	Glu	Tyr	Val	Ile	Gly	Arg	Tyr	Pro	Gln	Glu		
		100						105				110					
Asn	Lys	Gly	Thr	Tyr	Ile	Pro	Val	Pro	Ile	Val	Ser	Glu	Leu	Gln	Ser		
	115					120					125						
Gly	Lys	Trp	Gly	Ala	Lys	Ile	Val	Met	Arg	Glu	Asp	Arg	Ser	Val	Arg		

	130					135				140					
Leu	Ser	Ile	Gln	Ser	Ser	Pro	Lys	Cys	Ile	Val	Gly	Lys	Phe	Arg	Met
145					150					155					160
Tyr	Val	Ala	Val	Trp	Thr	Pro	Tyr	Gly	Val	Leu	Arg	Thr	Ser	Arg	Asn
				165					170						175
Pro	Glu	Thr	Asp	Thr	Tyr	Ile	Leu	Phe	Asn	Pro	Trp	Cys	Glu	Asp	Asp
			180					185					190		
Ala	Val	Tyr	Leu	Asp	Asn	Glu	Lys	Glu	Arg	Glu	Glu	Tyr	Val	Leu	Asn
		195					200					205			
Asp	Ile	Gly	Val	Ile	Phe	Tyr	Gly	Glu	Val	Asn	Asp	Ile	Lys	Thr	Arg
	210					215					220				
Ser	Trp	Ser	Tyr	Gly	Gln	Phe	Glu	Asp	Gly	Ile	Leu	Asp	Thr	Cys	Leu
225					230					235					240
Tyr	Val	Met	Asp	Arg	Ala	Gln	Met	Asp	Leu	Ser	Gly	Arg	Gly	Asn	Pro
			245					250						255	
Ile	Lys	Val	Ser	Arg	Val	Gly	Ser	Ala	Met	Val	Asn	Ala	Lys	Asp	Asp
			260					265					270		
Glu	Gly	Val	Leu	Val	Gly	Ser	Trp	Asp	Asn	Ile	Tyr	Ala	Tyr	Gly	Val
		275					280					285			
Pro	Pro	Ser	Ala	Trp	Thr	Gly	Ser	Val	Asp	Ile	Leu	Leu	Glu	Tyr	Arg
	290					295					300				
Ser	Ser	Glu	Asn	Pro	Val	Arg	Tyr	Gly	Gln	Cys	Trp	Val	Phe	Ala	Gly
305					310					315					320
Val	Phe	Asn	Thr	Phe	Leu	Arg	Cys	Leu	Gly	Ile	Pro	Ala	Arg	Ile	Val
			325						330					335	
Thr	Asn	Tyr	Phe	Ser	Ala	His	Asp	Asn	Asp	Ala	Asn	Leu	Gln	Met	Asp
			340					345					350		
Ile	Phe	Leu	Glu	Glu	Asp	Gly	Asn	Val	Asn	Ser	Lys	Leu	Thr	Lys	Asp
		355					360					365			
Ser	Val	Trp	Asn	Tyr	His	Cys	Trp	Asn	Glu	Ala	Trp	Met	Thr	Arg	Pro
	370					375					380				
Asp	Leu	Pro	Val	Gly	Phe	Gly	Gly	Trp	Gln	Ala	Val	Asp	Ser	Thr	Pro
385					390					395					400
Gln	Glu	Asn	Ser	Asp	Gly	Met	Tyr	Arg	Cys	Gly	Pro	Ala	Ser	Val	Gln
			405						410					415	
Ala	Ile	Lys	His	Gly	His	Val	Cys	Phe	Gln	Phe	Asp	Ala	Pro	Phe	Val
			420					425					430		
Phe	Ala	Glu	Val	Asn	Ser	Asp	Leu	Ile	Tyr	Ile	Thr	Ala	Lys	Lys	Asp
		435					440					445			
Gly	Thr	His	Val	Val	Glu	Asn	Val	Asp	Ala	Thr	His	Ile	Gly	Lys	Leu
	450					455					460				
Ile	Val	Thr	Lys	Gln	Ile	Gly	Gly	Asp	Gly	Met	Met	Asp	Ile	Thr	Asp
465					470					475					480
Thr	Tyr	Lys	Phe	Gln	Glu	Gly	Gln	Glu	Glu	Arg	Leu	Ala	Leu	Glu	
			485						490					495	
Thr	Ala	Leu	Met	Tyr	Gly	Ala	Lys	Lys	Pro	Leu	Asn	Thr	Glu	Gly	Val
			500					505					510		
Met	Lys	Ser	Arg	Ser	Asn	Val	Asp	Met	Asp	Phe	Glu	Val	Glu	Asn	Ala
		515					520					525			
Val	Leu	Gly	Lys	Asp	Phe	Lys	Leu	Ser	Ile	Thr	Phe	Arg	Asn	Asn	Ser
	530					535					540				
His	Asn	Arg	Tyr	Thr	Ile	Thr	Ala	Tyr	Leu	Ser	Ala	Asn	Ile	Thr	Phe
545					550					555					560
Tyr	Thr	Gly	Val	Pro	Lys	Ala	Glu	Phe	Lys	Lys	Glu	Thr	Phe	Asp	Val
			565						570					575	
Thr	Leu	Glu	Pro	Leu	Ser	Phe	Lys	Lys	Glu	Ala	Val	Leu	Ile	Gln	Ala
			580					585					590		
Gly	Glu	Tyr	Met	Gly	Gln	Leu	Leu	Glu	Gln	Ala	Ser	Leu	His	Phe	Phe

Glu	Cys	Ile	Glu	His	Ile	Arg	Lys	Gln	Asn	Trp	Phe	Glu	Ala	Phe	Glu	
		275					280					285				
Ile	Leu	Asp	Lys	Leu	Leu	Asp	Gly	Asp	Leu	Thr	Ser	Asp	Pro	Ser	Tyr	
	290					295					300					
Phe	Gln	Asn	Val	Thr	Gly	Cys	Ser	Asn	Tyr	Tyr	Asn	Phe	Leu	Arg	Cys	
305					310					315					320	
Thr	Glu	Pro	Glu	Asp	Gln	Leu	Tyr	Tyr	Val	Lys	Phe	Leu	Ser	Leu	Pro	
				325					330					335		
Glu	Val	Arg	Gln	Ala	Ile	His	Val	Gly	Asn	Gln	Thr	Phe	Asn	Asp	Gly	
			340					345					350			
Thr	Ile	Val	Glu	Lys	Tyr	Leu	Arg	Glu	Asp	Thr	Val	Gln	Ser	Val	Lys	
		355					360					365				
Pro	Trp	Leu	Thr	Glu	Ile	Met	Asn	Asn	Tyr	Lys	Val	Leu	Ile	Tyr	Asn	
	370					375					380					
Gly	Gln	Leu	Asp	Ile	Ile	Val	Ala	Ala	Ala	Leu	Thr	Glu	Arg	Ser	Leu	
385					390					395					400	
Met	Gly	Met	Asp	Trp	Lys	Gly	Ser	Gln	Glu	Tyr	Lys	Lys	Ala	Glu	Lys	
			405						410					415		
Lys	Val	Trp	Lys	Ile	Phe	Lys	Ser	Asp	Ser	Glu	Val	Ala	Gly	Tyr	Ile	
			420					425					430			
Arg	Gln	Ala	Gly	Asp	Phe	His	Gln	Val	Ile	Ile	Arg	Gly	Gly	Gly	His	
		435					440					445				
Ile	Leu	Pro	Tyr	Asp	Gln	Pro	Leu	Arg	Ala	Phe	Asp	Met	Ile	Asn	Arg	
	450					455					460					
Phe	Ile	Tyr	Gly	Lys	Gly	Trp	Asp	Pro	Tyr	Val	Gly					
465					470					475						

<210> 48
 <211> 1011
 <212> PRT
 <213> Homo sapiens

<400> 48

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

		195					200				205					
Arg	Thr	Ile	Lys	Tyr	Asp	Ser	Lys	Trp	Ile	Lys	Glu	Pro	His	Phe	Leu	
	210					215					220					
His	Ala	Ile	Glu	Tyr	Gly	Asn	Tyr	Val	Tyr	Phe	Phe	Phe	Arg	Glu	Ile	
225					230					235					240	
Ala	Val	Glu	His	Asn	Asn	Leu	Gly	Lys	Ala	Val	Tyr	Ser	Arg	Val	Ala	
				245					250						255	
Arg	Ile	Cys	Lys	Asn	Asp	Met	Gly	Gly	Ser	Gln	Arg	Val	Leu	Glu	Lys	
			260					265					270			
His	Trp	Thr	Ser	Phe	Leu	Lys	Ala	Arg	Leu	Asn	Cys	Ser	Val	Pro	Gly	
	275						280					285				
Asp	Ser	Phe	Phe	Tyr	Phe	Asp	Val	Leu	Gln	Ser	Ile	Thr	Asp	Ile	Ile	
	290					295					300					
Gln	Ile	Asn	Gly	Ile	Pro	Thr	Val	Val	Gly	Val	Phe	Thr	Thr	Gln	Leu	
305					310					315					320	
Asn	Ser	Ile	Pro	Gly	Ser	Ala	Val	Cys	Ala	Phe	Ser	Met	Asp	Asp	Ile	
				325					330						335	
Glu	Lys	Val	Phe	Lys	Gly	Arg	Phe	Lys	Glu	Gln	Lys	Thr	Pro	Asp	Ser	
			340					345					350			
Val	Trp	Thr	Ala	Val	Pro	Glu	Asp	Lys	Val	Pro	Lys	Pro	Arg	Pro	Gly	
	355						360					365				
Cys	Cys	Ala	Lys	His	Gly	Leu	Ala	Glu	Ala	Tyr	Lys	Thr	Ser	Ile	Asp	
	370					375					380					
Phe	Pro	Asp	Glu	Thr	Leu	Ser	Phe	Ile	Lys	Ser	His	Pro	Leu	Met	Asp	
385					390					395					400	
Ser	Ala	Val	Pro	Pro	Ile	Ala	Asp	Glu	Pro	Trp	Phe	Thr	Lys	Thr	Arg	
				405					410						415	
Val	Arg	Tyr	Arg	Leu	Thr	Ala	Ile	Ser	Val	Asp	His	Ser	Ala	Gly	Pro	
			420					425					430			
Tyr	Gln	Asn	Tyr	Thr	Val	Ile	Phe	Val	Gly	Ser	Glu	Ala	Gly	Met	Val	
		435					440					445				
Leu	Lys	Val	Leu	Ala	Lys	Thr	Ser	Pro	Phe	Ser	Leu	Asn	Asp	Ser	Val	
	450					455					460					
Leu	Leu	Glu	Glu	Ile	Glu	Ala	Tyr	Asn	His	Ala	Lys	Cys	Ser	Ala	Glu	
465					470					475					480	
Asn	Glu	Glu	Asp	Lys	Lys	Val	Ile	Ser	Leu	Gln	Leu	Asp	Lys	Asp	His	
				485					490					495		
His	Ala	Leu	Tyr	Val	Ala	Phe	Ser	Ser	Cys	Ile	Ile	Arg	Ile	Pro	Leu	
			500					505					510			
Ser	Arg	Cys	Glu	Arg	Tyr	Gly	Ser	Cys	Lys	Lys	Ser	Cys	Ile	Ala	Ser	
		515					520					525				
Arg	Asp	Pro	Tyr	Cys	Gly	Trp	Leu	Ser	Gln	Gly	Ser	Cys	Gly	Arg	Val	
	530					535					540					
Thr	Pro	Gly	Met	Leu	Leu	Thr	Glu	Asp	Phe	Phe	Ala	Phe	His	Asn		
545					550				555					560		
His	Ser	Ala	Glu	Gly	Tyr	Glu	Gln	Asp	Thr	Glu	Phe	Gly	Asn	Thr	Ala	
				565					570					575		
His	Leu	Gly	Asp	Cys	His	Gly	Val	Arg	Trp	Glu	Val	Gln	Ser	Gly	Glu	
			580					585					590			
Ser	Asn	Gln	Met	Val	His	Met	Asn	Val	Leu	Ile	Thr	Cys	Val	Phe	Ala	
		595					600					605				
Ala	Phe	Val	Leu	Gly	Ala	Phe	Ile	Ala	Gly	Val	Ala	Val	Tyr	Cys	Tyr	
	610					615					620					
Arg	Asp	Met	Phe	Val	Arg	Lys	Asn	Arg	Lys	Ile	His	Lys	Asp	Ala	Glu	
625					630					635					640	
Ser	Ala	Gln	Ser	Cys	Thr	Asp	Ser	Ser	Gly	Ser	Phe	Ala	Lys	Leu	Asn	
				645					650					655		
Gly	Leu	Phe	Asp	Ser	Pro	Val	Lys	Glu	Tyr	Gln	Gln	Asn	Ile	Asp	Ser	

			660					665				670				
Pro	Lys	Leu	Tyr	Ser	Asn	Leu	Leu	Thr	Ser	Arg	Lys	Glu	Leu	Pro	Pro	
		675					680					685				
Asn	Gly	Asp	Thr	Lys	Ser	Met	Val	Met	Asp	His	Arg	Gly	Gln	Pro	Pro	
	690					695					700					
Glu	Leu	Ala	Ala	Leu	Pro	Thr	Pro	Glu	Ser	Thr	Pro	Val	Leu	His	Gln	
705					710					715					720	
Lys	Thr	Leu	Gln	Ala	Met	Lys	Ser	His	Ser	Glu	Lys	Ala	His	Gly	His	
				725					730					735		
Gly	Ala	Ser	Arg	Lys	Glu	Thr	Pro	Gln	Phe	Phe	Pro	Ser	Ser	Pro	Pro	
			740					745					750			
Pro	His	Ser	Pro	Leu	Ser	His	Gly	His	Ile	Pro	Ser	Ala	Ile	Val	Leu	
		755					760					765				
Pro	Asn	Ala	Thr	His	Asp	Tyr	Asn	Thr	Ser	Phe	Ser	Asn	Ser	Asn	Ala	
	770					775					780					
His	Lys	Ala	Glu	Lys	Lys	Leu	Gln	Asn	Ile	Asp	His	Pro	Leu	Thr	Lys	
785					790					795					800	
Ser	Ser	Ser	Lys	Arg	Asp	His	Arg	Arg	Ser	Val	Asp	Ser	Arg	Asn	Thr	
			805						810					815		
Leu	Asn	Asp	Leu	Leu	Lys	His	Leu	Asn	Asp	Pro	Asn	Ser	Asn	Pro	Lys	
		820						825					830			
Ala	Ile	Met	Gly	Asp	Ile	Gln	Met	Ala	His	Gln	Asn	Leu	Met	Leu	Asp	
		835					840					845				
Pro	Met	Gly	Ser	Met	Ser	Glu	Val	Pro	Pro	Lys	Val	Pro	Asn	Arg	Glu	
	850					855					860					
Ala	Ser	Leu	Tyr	Ser	Pro	Pro	Ser	Thr	Leu	Pro	Arg	Asn	Ser	Pro	Thr	
865					870					875					880	
Lys	Arg	Val	Asp	Val	Pro	Thr	Thr	Pro	Gly	Val	Pro	Met	Thr	Ser	Leu	
			885						890					895		
Glu	Arg	Gln	Arg	Gly	Tyr	His	Lys	Asn	Ser	Ser	Gln	Arg	His	Ser	Ile	
		900						905					910			
Ser	Ala	Met	Pro	Lys	Asn	Leu	Asn	Ser	Pro	Asn	Gly	Val	Leu	Leu	Ser	
	915						920				925					
Arg	Gln	Pro	Ser	Met	Asn	Arg	Gly	Gly	Tyr	Met	Pro	Thr	Pro	Thr	Gly	
	930					935					940					
Ala	Lys	Val	Asp	Tyr	Ile	Gln	Gly	Thr	Pro	Val	Ser	Val	His	Leu	Gln	
945					950					955					960	
Pro	Ser	Leu	Ser	Arg	Gln	Ser	Ser	Tyr	Thr	Ser	Asn	Gly	Thr	Leu	Pro	
			965					970						975		
Arg	Thr	Gly	Leu	Lys	Arg	Thr	Pro	Ser	Leu	Lys	Pro	Asp	Val	Pro	Pro	
		980						985					990			
Lys	Pro	Ser	Phe	Val	Pro	Gln	Thr	Pro	Ser	Val	Arg	Pro	Leu	Asn	Lys	
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Tyr	Thr	Tyr														
	1010															

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 <213> Homo sapiens

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 Ser Ile Gln Phe Leu Arg Ala Gln Tyr Glu Gly Leu Lys Arg Gln Gln
 20 25 30
 Arg Thr Gln Ala His Leu Leu Val Leu Pro Lys Gly Gly Asn Thr Pro
 35 40 45

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

225					230					235					240
His	Gln	Gly	His	His	Ser	Ser	His	Pro	Asp	Ala	Gln	Gly	His	Pro	Ala
				245					250					255	
Ile	Pro	Asn	His	Lys	Asp	Pro	Glu	Ser	Thr	Gln	Phe	Ser	His	His	Trp
			260					265					270		
Tyr	Leu	Thr	Asp	Trp	Lys	Ser	Gly	Asp	Thr	Tyr	Gln	Ser	Leu	Ser	Ser
		275					280					285			
Ser	Ser	Thr	Ala	Thr	Gly	Thr	Thr	Val	Ile	Glu	Cys	Thr	Gln	Val	Gln
	290					295				300					
Gly	Ser	Ser	Glu	Ser	Leu	Ala	Ser	Pro	Ser	Thr	Ser	Arg	Ala	Thr	Thr
305					310					315					320
Pro	Ser	Gln	Leu	Ser	Ile	Glu	Val	Glu	Ala	Arg	Glu	Ile	Ser	Ser	Pro
				325					330					335	
Gly	Arg	Pro	Pro	Gly	Leu	Met	Ser	Pro	Ser	Ser	Gly	Tyr	Ser	Ser	Gln
			340					345					350		
Ser	Glu	Thr	Pro	Thr	Pro	Thr	Val	Ser	Met	Ser	Leu	Thr	Leu	Gly	His
		355					360					365			
Leu	Pro	Pro	Pro	Ser	Ser	Ser	Val	Arg	Val	Arg	Pro	Val	Val	Pro	Glu
	370					375					380				
Arg	Lys	Ser	Ser	Leu	Pro	Pro	Thr	Ser	Pro	Met	Glu	Lys	Phe	Pro	Lys
385					390					395					400
Ser	Arg	Leu	Ser	Phe	Asp	Leu	Pro	Leu	Thr	Ser	Ser	Pro	Asn	Leu	Asp
				405					410					415	
Leu	Ser	Gly	Met	Ser	Ile	Ser	Ile	Arg	Ser	Lys	Thr	Lys	Val	Ser	Arg
			420					425					430		
His	His	Ser	Glu	Thr	Asn	Phe	Gly	Val	Lys	Leu	Ala	Gln	Lys	Thr	Asn
		435					440					445			
Pro	Asn	Gln	Pro	Ile	Met	Pro	Met	Val	Thr	Gln	Ser	Asp	Leu	Arg	Ser
	450				455						460				
Val	Arg	Leu	Arg	Ser	Val	Ser	Lys	Ser	Glu	Pro	Glu	Asp	Asp	Ile	Glu
465					470				475						480
Ser	Pro	Glu	Tyr	Ala	Glu	Glu	Pro	Arg	Ala	Glu	Glu	Val	Phe	Thr	Leu
				485					490					495	
Pro	Glu	Arg	Lys	Thr	Lys	Pro	Pro	Val	Ala	Glu	Lys	Pro	Pro	Val	Ala
			500					505					510		
Arg	Arg	Pro	Pro	Ser	Leu	Val	His	Lys	Pro	Pro	Ser	Val	Pro	Glu	Glu
		515					520					525			
Tyr	Ala	Leu	Thr	Ser	Pro	Thr	Leu	Ala	Met	Pro	Pro	Arg	Ser	Ser	Ile
	530					535					540				
Gln	His	Ala	Arg	Pro	Leu	Pro	Gln	Asp	Ser	Tyr	Thr	Val	Val	Arg	Lys
545					550				555						560
Pro	Lys	Pro	Ser	Ser	Phe	Pro	Asp	Gly	Arg	Ser	Pro	Gly	Glu	Ser	Thr
				565					570					575	
Ala	Pro	Ser	Ser	Leu	Val	Phe	Thr	Pro	Phe	Ala	Ser	Ser	Ser	Asp	Ala
			580					585					590		
Phe	Phe	Ser	Gly	Thr	Gln	Gln	Pro	Gln	Gly	Ser	Val	Glu	Asp	Glu	
		595					600				605				
Gly	Pro	Lys	Val	Arg	Val	Leu	Pro	Glu	Arg	Ile	Ser	Leu	Gln	Ser	Gln
	610					615					620				
Glu	Glu	Ala	Glu	Lys	Lys	Lys	Gly	Lys	Ile	Pro	Pro	Pro	Val	Pro	Lys
625					630					635					640
Lys	Pro	Ser	Val	Leu	Tyr	Leu	Pro	Leu	Thr	Ser	Pro	Thr	Ala	Gln	Met
				645					650					655	
Glu	Ala	Tyr	Val	Ala	Glu	Pro	Arg	Leu	Pro	Leu	Ser	Pro	Ile	Ile	Thr
			660					665					670		
Leu	Glu	Glu	Asp	Thr	Lys	Cys	Pro	Ala	Thr	Gly	Asp	Asp	Leu	Gln	Ser
		675					680					685			
Leu	Gly	Gln	Arg	Val	Thr	Ser	Thr	Pro	Gln	Ala	Asp	Ser	Glu	Arg	Glu

690
Ala Ser Pro Leu Gly
705

695

700

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Lys Tyr Gly Gly Met Phe Cys Asn Val Glu Gly Ala Phe Glu Ser Lys
35 40 45
Thr Leu Asp Phe Asp Ala Leu Ser Val Gly Gln Arg Gly Ala Lys Thr
50 55 60
Pro Arg Ser Gly Gln Gly Ser Asp Arg Gly Ser Gly Ser Arg Pro Gly
65 70 75 80
Ile Glu Gly Asp Thr Pro Arg Arg Gly Gln Gly Arg Glu Glu Ser Arg
85 90 95
Glu Pro Ala Pro Ala Ser Pro Ala Pro Ala Gly Val Glu Ile Arg Ser
100 105 110
Ala Thr Gly Lys Glu Val Leu Gln Asn Leu Gly Pro Lys Asp Lys Ser
115 120 125
Asp Arg Leu Leu Ile Lys Gly Gly Arg Ile Val Asn Asp Asp Gln Ser
130 135 140
Phe Tyr Ala Asp Ile Tyr Met Glu Asp Gly Leu Ile Lys Gln Ile Gly
145 150 155 160
Asp Asn Leu Ile Val Pro Gly Gly Val Lys Thr Ile Glu Ala Asn Gly
165 170 175
Lys Met Val Ile Pro Gly Gly Ile Asp Val His Thr His Phe Gln Met
180 185 190
Pro Tyr Lys Gly Met Thr Thr Val Asp Asp Phe Phe Gln Gly Thr Lys
195 200 205
Ala Ala Leu Ala Gly Gly Thr Thr Met Ile Ile Asp His Val Val Pro
210 215 220
Glu Pro Glu Ser Ser Leu Thr Glu Ala Tyr Glu Lys Trp Arg Glu Trp
225 230 235 240
Ala Asp Gly Lys Ser Cys Cys Asp Tyr Ala Leu His Val Asp Ile Thr
245 250 255
His Trp Asn Asp Ser Val Lys Gln Glu Val Gln Asn Leu Ile Lys Asp
260 265 270
Lys Gly Val Asn Ser Phe Met Val Tyr Met Ala Tyr Lys Asp Leu Tyr
275 280 285
Gln Val Ser Asn Thr Glu Leu Tyr Glu Ile Phe Thr Cys Leu Gly Glu
290 295 300
Leu Gly Ala Ile Ala Gln Val His Ala Glu Asn Gly Asp Ile Ile Ala
305 310 315 320
Gln Glu Gln Thr Arg Met Leu Lys Met Gly Ile Thr Gly Pro Glu Gly
325 330 335
His Val Leu Ser Arg Pro Glu Glu Leu Glu Ala Glu Ala Val Phe Arg
340 345 350
Ala Ile Thr Ile Ala Ser Gln Thr Asn Cys Pro Leu Tyr Val Thr Lys
355 360 365
Val Met Ser Lys Ser Ala Ala Asp Leu Ile Ser Gln Ala Arg Lys Lys
370 375 380

Gly	Asn	Val	Val	Phe	Gly	Glu	Pro	Ile	Thr	Ala	Ser	Leu	Gly	Ile	Asp
385					390					395					400
Gly	Thr	His	Tyr	Trp	Ser	Lys	Asn	Trp	Ala	Lys	Ala	Ala	Ala	Phe	Val
				405					410					415	
Thr	Ser	Pro	Pro	Leu	Ser	Pro	Asp	Pro	Thr	Thr	Pro	Asp	Tyr	Ile	Asn
			420					425					430		
Ser	Leu	Leu	Ala	Ser	Gly	Asp	Leu	Gln	Leu	Ser	Gly	Ser	Ala	His	Cys
		435					440					445			
Thr	Phe	Ser	Thr	Ala	Gln	Lys	Ala	Ile	Gly	Lys	Asp	Asn	Phe	Thr	Ala
	450					455					460				
Ile	Pro	Glu	Gly	Thr	Asn	Gly	Val	Glu	Glu	Arg	Met	Ser	Val	Ile	Trp
465					470					475					480
Asp	Lys	Ala	Val	Ala	Thr	Gly	Lys	Met	Asp	Glu	Asn	Gln	Phe	Val	Ala
				485					490					495	
Val	Thr	Ser	Thr	Asn	Ala	Ala	Lys	Ile	Phe	Asn	Leu	Tyr	Pro	Arg	Lys
			500					505					510		
Gly	Arg	Ile	Ser	Val	Gly	Ser	Asp	Ser	Asp	Leu	Val	Ile	Trp	Asp	Pro
		515					520					525			
Asp	Ala	Val	Lys	Ile	Val	Ser	Ala	Lys	Asn	His	Gln	Ser	Ala	Ala	Glu
	530						535				540				
Tyr	Asn	Ile	Phe	Glu	Gly	Met	Glu	Leu	Arg	Gly	Ala	Pro	Leu	Val	Val
545					550					555					560
Ile	Cys	Gln	Gly	Lys	Ile	Met	Leu	Glu	Asp	Gly	Asn	Leu	His	Val	Thr
				565					570					575	
Gln	Gly	Ala	Gly	Arg	Phe	Ile	Pro	Cys	Ser	Pro	Phe	Ser	Asp	Tyr	Val
			580					585					590		
Tyr	Lys	Arg	Ile	Lys	Ala	Arg	Arg	Lys	Met	Ala	Asp	Leu	His	Ala	Val
		595					600					605			
Pro	Arg	Gly	Met	Tyr	Asp	Gly	Pro	Val	Phe	Asp	Leu	Thr	Thr	Thr	Pro
	610					615					620				
Lys	Gly	Gly	Thr	Pro	Ala	Gly	Ser	Ala	Arg	Gly	Ser	Pro	Thr	Arg	Pro
625					630					635					640
Asn	Pro	Pro	Val	Arg	Asn	Leu	His	Gln	Ser	Gly	Phe	Ser	Leu	Ser	Gly
				645					650					655	
Thr	Gln	Val	Asp	Glu	Gly	Val	Arg	Ser	Ala	Ser	Lys	Arg	Ile	Val	Ala
			660					665					670		
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		675					680								

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 <213> Homo sapiens

<400> 52															
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Cys	Cys	Leu	Leu	Pro	Leu	Ser	Leu	Ser	Leu	Ala	Ala	Ala	Ala	Lys	Gln
			20					25					30		
Leu	Leu	Arg	Tyr	Arg	Leu	Ala	Glu	Gly	Pro	Ala	Asp	Val	Arg	Ile	
		35					40				45				
Gly	Asn	Val	Ala	Ser	Asp	Leu	Gly	Ile	Val	Thr	Gly	Ser	Gly	Glu	Val
	50					55					60				
Thr	Phe	Ser	Leu	Glu	Ser	Gly	Ser	Glu	Tyr	Leu	Lys	Ile	Asp	Asn	Leu
65					70					75					80
Thr	Gly	Glu	Leu	Ser	Thr	Ser	Glu	Arg	Arg	Ile	Asp	Arg	Glu	Lys	Leu
				85				90						95	
Pro	Gln	Cys	Gln	Met	Ile	Phe	Asp	Glu	Asn	Glu	Cys	Phe	Leu	Asp	Phe

			100					105				110				
Glu	Val	Ser	Val	Ile	Gly	Pro	Ser	Gln	Ser	Trp	Val	Asp	Leu	Phe	Glu	
		115					120					125				
Gly	Gln	Val	Ile	Val	Leu	Asp	Ile	Asn	Asp	Asn	Thr	Pro	Thr	Phe	Pro	
	130					135					140					
Ser	Pro	Val	Leu	Thr	Leu	Thr	Val	Glu	Glu	Asn	Arg	Pro	Val	Gly	Thr	
145					150					155					160	
Leu	Tyr	Leu	Leu	Pro	Thr	Ala	Thr	Asp	Arg	Asp	Phe	Gly	Arg	Asn	Gly	
				165					170					175		
Ile	Glu	Arg	Tyr	Glu	Leu	Leu	Gln	Glu	Pro	Gly	Gly	Gly	Gly	Ser	Gly	
			180					185						190		
Gly	Glu	Ser	Arg	Arg	Ala	Gly	Ala	Ala	Asp	Ser	Ala	Pro	Tyr	Pro	Gly	
		195					200					205				
Gly	Gly	Gly	Asn	Gly	Ala	Ser	Gly	Gly	Gly	Ser	Gly	Gly	Ser	Lys	Arg	
	210					215					220					
Arg	Leu	Asp	Ala	Ser	Glu	Gly	Gly	Gly	Gly	Thr	Asn	Pro	Gly	Gly	Arg	
225					230					235					240	
Ser	Ser	Val	Phe	Glu	Leu	Gln	Val	Ala	Asp	Thr	Pro	Asp	Gly	Glu	Lys	
				245					250					255		
Gln	Pro	Gln	Leu	Ile	Val	Lys	Gly	Ala	Leu	Asp	Arg	Glu	Gln	Arg	Asp	
			260					265					270			
Ser	Tyr	Glu	Leu	Thr	Leu	Arg	Val	Arg	Asp	Gly	Gly	Asp	Pro	Pro	Arg	
		275					280					285				
Ser	Ser	Gln	Ala	Ile	Leu	Arg	Val	Leu	Ile	Thr	Asp	Val	Asn	Asp	Asn	
	290					295					300					
Ser	Pro	Arg	Phe	Glu	Lys	Ser	Val	Tyr	Glu	Ala	Asp	Leu	Ala	Glu	Asn	
305					310					315					320	
Ser	Ala	Pro	Gly	Thr	Pro	Ile	Leu	Gln	Leu	Arg	Ala	Ala	Asp	Leu	Asp	
				325					330					335		
Val	Gly	Val	Asn	Gly	Gln	Ile	Glu	Tyr	Val	Phe	Gly	Ala	Ala	Thr	Glu	
			340					345					350			
Ser	Val	Arg	Arg	Leu	Leu	Arg	Leu	Asp	Glu	Thr	Ser	Gly	Trp	Leu	Ser	
		355					360					365				
Val	Leu	His	Arg	Ile	Asp	Arg	Glu	Glu	Val	Asn	Gln	Leu	Arg	Phe	Thr	
	370				375						380					
Val	Met	Ala	Arg	Asp	Arg	Gly	Gln	Pro	Pro	Lys	Thr	Asp	Lys	Ala	Thr	
385					390					395					400	
Val	Val	Leu	Asn	Ile	Lys	Asp	Glu	Asn	Asp	Asn	Val	Pro	Ser	Ile	Glu	
			405						410					415		
Ile	Arg	Lys	Ile	Gly	Arg	Ile	Pro	Leu	Lys	Asp	Gly	Val	Ala	Asn	Val	
			420					425					430			
Ala	Glu	Asp	Val	Leu	Val	Asp	Thr	Pro	Ile	Ala	Leu	Val	Gln	Val	Ser	
		435					440					445				
Asp	Arg	Asp	Gln	Gly	Glu	Asn	Gly	Val	Val	Thr	Cys	Thr	Val	Val	Gly	
	450					455					460					
Asp	Val	Pro	Phe	Gln	Leu	Lys	Pro	Ala	Ser	Asp	Thr	Glu	Gly	Asp	Gln	
465					470					475					480	
Asn	Lys	Lys	Lys	Tyr	Phe	Leu	His	Thr	Ser	Thr	Pro	Leu	Asp	Tyr	Glu	
			485						490					495		
Ala	Thr	Arg	Glu	Phe	Asn	Val	Val	Ile	Val	Ala	Val	Asp	Ser	Gly	Ser	
			500					505					510			
Pro	Ser	Leu	Ser	Ser	Asn	Asn	Ser	Leu	Ile	Val	Lys	Val	Gly	Asp	Thr	
		515					520						525			
Asn	Asp	Asn	Pro	Pro	Met	Phe	Gly	Gln	Ser	Val	Val	Glu	Val	Tyr	Phe	
	530					535					540					
Pro	Glu	Asn	Asn	Ile	Pro	Gly	Glu	Arg	Val	Ala	Thr	Val	Leu	Ala	Thr	
545					550					555					560	
Asp	Ala	Asp	Ser	Gly	Lys	Asn	Ala	Glu	Ile	Ala	Tyr	Ser	Leu	Asp	Ser	

				565					570				575			
Ser	Val	Met	Gly	Ile	Phe	Ala	Ile	Asp	Pro	Asp	Ser	Gly	Asp	Ile	Leu	
			580					585					590			
Val	Asn	Thr	Val	Leu	Asp	Arg	Glu	Gln	Thr	Asp	Arg	Tyr	Glu	Phe	Lys	
		595					600					605				
Val	Asn	Ala	Lys	Asp	Lys	Gly	Ile	Pro	Val	Leu	Gln	Gly	Ser	Thr	Thr	
	610					615					620					
Val	Ile	Val	Gln	Val	Ala	Asp	Lys	Asn	Asp	Asn	Asp	Pro	Lys	Phe	Met	
625					630					635					640	
Gln	Asp	Val	Phe	Thr	Phe	Tyr	Val	Lys	Glu	Asn	Leu	Gln	Pro	Asn	Ser	
				645					650					655		
Pro	Val	Gly	Met	Val	Thr	Val	Met	Asp	Ala	Asp	Lys	Gly	Arg	Asn	Ala	
			660					665					670			
Glu	Met	Ser	Leu	Tyr	Ile	Glu	Glu	Asn	Asn	Asn	Ile	Phe	Ser	Ile	Glu	
		675					680					685				
Asn	Asp	Thr	Gly	Thr	Ile	Tyr	Ser	Thr	Met	Ser	Phe	Asp	Arg	Glu	His	
	690					695					700					
Gln	Thr	Thr	Tyr	Thr	Phe	Arg	Val	Lys	Ala	Val	Asp	Gly	Gly	Asp	Pro	
705					710					715					720	
Pro	Arg	Ser	Ala	Thr	Ala	Thr	Val	Ser	Leu	Phe	Val	Met	Asp	Glu	Asn	
				725					730					735		
Asp	Asn	Ala	Pro	Thr	Val	Thr	Leu	Pro	Lys	Asn	Ile	Ser	Tyr	Thr	Leu	
			740					745					750			
Leu	Pro	Pro	Ser	Ser	Asn	Val	Arg	Thr	Val	Val	Ala	Thr	Val	Leu	Ala	
		755					760					765				
Thr	Asp	Ser	Asp	Asp	Gly	Ile	Asn	Ala	Asp	Leu	Asn	Tyr	Ser	Ile	Val	
	770					775					780					
Gly	Gly	Asn	Pro	Phe	Lys	Leu	Phe	Glu	Ile	Asp	Pro	Thr	Ser	Gly	Val	
785					790					795					800	
Val	Ser	Leu	Val	Gly	Lys	Leu	Thr	Gln	Lys	His	Tyr	Gly	Leu	His	Arg	
				805					810					815		
Leu	Val	Val	Gln	Val	Asn	Asp	Ser	Gly	Gln	Pro	Ser	Gln	Ser	Thr	Thr	
			820					825					830			
Thr	Leu	Val	His	Val	Phe	Val	Asn	Glu	Ser	Val	Ser	Asn	Ala	Thr	Ala	
		835					840					845				
Ile	Asp	Ser	Gln	Ile	Ala	Arg	Ser	Leu	His	Ile	Pro	Leu	Thr	Gln	Asp	
	850					855					860					
Ile	Ala	Gly	Asp	Pro	Ser	Tyr	Glu	Ile	Ser	Lys	Gln	Arg	Leu	Ser	Ile	
865					870					875					880	
Val	Ile	Gly	Val	Val	Ala	Gly	Ile	Met	Thr	Val	Ile	Leu	Ile	Ile	Leu	
				885					890					895		
Ile	Val	Val	Met	Ala	Arg	Tyr	Cys	Arg	Ser	Lys	Asn	Lys	Asn	Gly	Tyr	
		900						905					910			
Glu	Ala	Gly	Lys	Lys	Asp	His	Glu	Asp	Phe	Phe	Thr	Pro	Gln	Gln	His	
		915					920					925				
Asp	Lys	Ser	Lys	Lys	Pro	Lys	Lys	Asp	Lys	Lys	Asn	Lys	Lys	Ser	Lys	
	930					935					940					
Gln	Pro	Leu	Tyr	Ser	Ser	Ile	Val	Thr	Val	Glu	Ala	Ser	Lys	Pro	Asn	
945					950					955					960	
Gly	Gln	Arg	Tyr	Asp	Ser	Val	Asn	Glu	Lys	Leu	Ser	Asp	Ser	Pro	Ser	
				965					970					975		
Met	Gly	Arg	Tyr	Arg	Ser	Val	Asn	Gly	Gly	Pro	Gly	Ser	Pro	Asp	Leu	
			980					985					990			
Ala	Arg	His	Tyr	Lys	Ser	Ser	Ser	Pro	Leu	Pro	Thr	Val	Gln	Leu	His	
		995					1000					1005				
Pro	Gln	Ser	Pro	Thr	Ala	Gly	Lys	Lys	His	Gln	Ala	Val	Gln	Asp	Leu	
	1010					1015					1020					
Pro	Pro	Ala	Asn	Thr	Phe	Val	Gly	Ala	Gly	Asp	Asn	Ile	Ser	Ile	Gly	

1025					1030					1035				1040	
Ser	Asp	His	Cys	Ser	Glu	Tyr	Ser	Cys	Gln	Thr	Asn	Asn	Lys	Tyr	Ser
				1045					1050					1055	
Lys	Gln	Met	Arg	Leu	His	Pro	Tyr	Ile	Thr	Val	Phe	Gly			
			1060					1065							

<210> 53
 <211> 345
 <212> PRT
 <213> Homo sapiens

<400> 53

Met	Glu	Glu	Lys	Tyr	Leu	Pro	Glu	Leu	Met	Ala	Glu	Lys	Asp	Ser	Leu
1				5					10					15	
Asp	Pro	Ser	Phe	Thr	His	Ala	Leu	Arg	Leu	Val	Asn	Gln	Glu	Ile	Glu
			20					25					30		
Lys	Phe	Gln	Lys	Gly	Glu	Gly	Lys	Glu	Glu	Lys	Tyr	Ile	Asp	Val	Val
		35					40					45			
Ile	Asn	Lys	Asn	Met	Lys	Leu	Gly	Gln	Lys	Val	Leu	Ile	Pro	Val	Lys
	50					55					60				
Gln	Phe	Pro	Lys	Phe	Asn	Phe	Val	Gly	Lys	Leu	Leu	Gly	Pro	Arg	Gly
65					70					75					80
Asn	Ser	Leu	Lys	Arg	Leu	Gln	Glu	Glu	Thr	Leu	Thr	Lys	Met	Ser	Ile
				85					90					95	
Leu	Gly	Lys	Gly	Ser	Met	Arg	Asp	Lys	Ala	Lys	Glu	Glu	Glu	Leu	Arg
			100					105					110		
Lys	Ser	Gly	Glu	Ala	Lys	Tyr	Phe	His	Leu	Asn	Asp	Asp	Leu	His	Val
		115					120					125			
Leu	Ile	Glu	Val	Phe	Ala	Pro	Pro	Ala	Glu	Ala	Tyr	Ala	Arg	Met	Gly
	130					135					140				
His	Ala	Leu	Glu	Glu	Ile	Lys	Lys	Phe	Leu	Ile	Pro	Asp	Tyr	Asn	Asp
145					150					155					160
Glu	Ile	Arg	Gln	Ala	Gln	Leu	Gln	Glu	Leu	Thr	Tyr	Leu	Asn	Gly	Gly
				165					170					175	
Ser	Glu	Asn	Ala	Asp	Val	Pro	Val	Val	Arg	Gly	Lys	Pro	Thr	Leu	Arg
		180						185					190		
Thr	Arg	Gly	Val	Pro	Ala	Pro	Ala	Ile	Thr	Arg	Gly	Arg	Gly	Gly	Val
	195					200						205			
Thr	Ala	Arg	Pro	Val	Gly	Val	Val	Val	Pro	Arg	Gly	Thr	Pro	Thr	Pro
	210					215					220				
Arg	Gly	Val	Leu	Ser	Thr	Arg	Gly	Pro	Val	Ser	Arg	Gly	Arg	Gly	Leu
225					230					235					240
Leu	Thr	Pro	Arg	Ala	Arg	Gly	Val	Pro	Pro	Thr	Gly	Tyr	Arg	Pro	Pro
				245					250					255	
Pro	Pro	Pro	Pro	Thr	Gln	Glu	Thr	Tyr	Gly	Glu	Tyr	Asp	Tyr	Asp	Asp
			260					265					270		
Gly	Tyr	Gly	Thr	Ala	Tyr	Asp	Glu	Gln	Ser	Tyr	Asp	Ser	Tyr	Asp	Asn
		275					280					285			
Ser	Tyr	Ser	Thr	Pro	Ala	Gln	Ser	Gly	Ala	Asp	Tyr	Tyr	Asp	Tyr	Gly
	290					295				300					
His	Gly	Leu	Ser	Glu	Glu	Thr	Tyr	Asp	Ser	Tyr	Gly	Gln	Glu	Glu	Trp
305					310					315					320
Thr	Asn	Ser	Arg	His	Lys	Ala	Pro	Ser	Ala	Arg	Thr	Ala	Lys	Gly	Val
				325					330					335	
Tyr	Arg	Asp	Gln	Pro	Tyr	Gly	Arg	Tyr							
			340					345							

<210> 54

<211> 142
 <212> PRT
 <213> Homo sapiens

<400> 54
 Pro Asn Ile Gln Asn Pro Asp Pro Ala Val Tyr Gln Leu Arg Asp Ser
 1 5 10 15
 Lys Ser Ser Asp Lys Ser Val Cys Leu Phe Thr Asp Phe Asp Ser Gln
 20 25 30
 Thr Asn Val Ser Gln Ser Lys Asp Ser Asp Val Tyr Ile Thr Asp Lys
 35 40 45
 Thr Val Leu Asp Met Arg Ser Met Asp Phe Lys Ser Asn Ser Ala Val
 50 55 60
 Ala Trp Ser Asn Lys Ser Asp Phe Ala Cys Ala Asn Ala Phe Asn Asn
 65 70 75 80
 Ser Ile Ile Pro Glu Asp Thr Phe Phe Pro Ser Pro Glu Ser Ser Cys
 85 90 95
 Asp Val Lys Leu Val Glu Lys Ser Phe Glu Thr Asp Thr Asn Leu Asn
 100 105 110
 Phe Gln Asn Leu Ser Val Ile Gly Phe Arg Ile Leu Leu Leu Lys Val
 115 120 125
 Ala Gly Phe Asn Leu Leu Met Thr Leu Arg Leu Trp Ser Ser
 130 135 140

<210> 55
 <211> 296
 <212> PRT
 <213> Homo sapiens

<400> 55
 Met Thr Lys Thr Ala Leu Leu Lys Leu Phe Val Ala Ile Val Ile Thr
 1 5 10 15
 Phe Ile Leu Ile Leu Pro Glu Tyr Phe Lys Thr Pro Lys Glu Arg Thr
 20 25 30
 Leu Glu Leu Ser Cys Leu Glu Val Cys Leu Gln Ser Asn Phe Thr Tyr
 35 40 45
 Ser Leu Ser Ser Leu Asn Phe Ser Phe Val Thr Phe Leu Gln Pro Val
 50 55 60
 Arg Glu Thr Gln Ile Ile Met Arg Ile Phe Leu Asn Pro Ser Asn Phe
 65 70 75 80
 Arg Asn Phe Thr Arg Thr Cys Gln Asp Ile Thr Gly Glu Phe Lys Met
 85 90 95
 Cys Ser Ser Cys Leu Val Cys Glu Pro Lys Gly Asn Met Asp Phe Ile
 100 105 110
 Ser Gln Glu Gln Thr Ser Lys Val Leu Ile Arg Arg Gly Ser Met Glu
 115 120 125
 Val Lys Ala Asn Asp Phe His Ser Pro Cys Gln His Phe Asn Phe Ser
 130 135 140
 Val Ala Pro Leu Val Asp His Leu Glu Glu Tyr Asn Thr Thr Cys His
 145 150 155 160
 Leu Lys Asn His Thr Gly Arg Ser Thr Ile Met Glu Asp Glu Pro Ser
 165 170 175
 Lys Glu Lys Ser Ile Asn Tyr Thr Cys Arg Ile Met Glu Tyr Pro Asn
 180 185 190
 Asp Cys Ile His Ile Ser Leu His Leu Glu Met Asp Ile Lys Asn Ile
 195 200 205
 Thr Cys Ser Met Lys Ile Thr Trp Tyr Ile Leu Val Leu Leu Val Phe
 210 215 220

Ile	Phe	Leu	Ile	Ile	Leu	Thr	Ile	Arg	Lys	Ile	Leu	Glu	Gly	Gln	Arg
225					230					235					240
Arg	Val	Gln	Lys	Trp	Gln	Ser	His	Arg	Asp	Lys	Pro	Thr	Ser	Val	Leu
				245					250					255	
Leu	Arg	Gly	Ser	Asp	Ser	Glu	Lys	Leu	Arg	Ala	Leu	Asn	Val	Gln	Val
			260					265					270		
Leu	Ser	Ala	Glu	Thr	Thr	Gln	Arg	Leu	Pro	Leu	Asp	Gln	Val	Gln	Glu
		275					280					285			
Val	Leu	Pro	Pro	Ile	Pro	Glu	Leu								
	290					295									

<210> 56
 <211> 141
 <212> PRT
 <213> Homo sapiens

Met	Ala	Arg	Pro	Leu	Cys	Thr	Leu	Leu	Leu	Leu	Met	Ala	Thr	Leu	Ala
1				5					10					15	
Gly	Ala	Leu	Ala	Ser	Ser	Ser	Lys	Glu	Glu	Asn	Arg	Ile	Ile	Pro	Gly
			20					25					30		
Gly	Ile	Tyr	Asp	Ala	Asp	Leu	Asn	Asp	Glu	Trp	Val	Gln	Arg	Ala	Leu
		35				40						45			
His	Phe	Ala	Ile	Ser	Glu	Tyr	Asn	Lys	Ala	Thr	Glu	Asp	Glu	Tyr	Tyr
	50					55					60				
Arg	Arg	Pro	Leu	Gln	Val	Leu	Arg	Ala	Arg	Glu	Gln	Thr	Phe	Gly	Gly
65					70					75					80
Val	Asn	Tyr	Phe	Phe	Asp	Val	Glu	Val	Gly	Arg	Thr	Ile	Cys	Thr	Lys
			85						90					95	
Ser	Gln	Pro	Asn	Leu	Asp	Thr	Cys	Ala	Phe	His	Glu	Gln	Pro	Glu	Leu
			100					105					110		
Gln	Lys	Lys	Gln	Leu	Cys	Ser	Phe	Glu	Ile	Tyr	Glu	Val	Pro	Trp	Glu
		115					120					125			
Asp	Arg	Met	Ser	Leu	Val	Asn	Ser	Arg	Cys	Gln	Glu	Ala			
	130					135					140				

<210> 57
 <211> 80
 <212> PRT
 <213> Homo sapiens

Met	Gly	Arg	Ala	Met	Val	Ala	Arg	Leu	Gly	Leu	Gly	Leu	Leu	Leu	Leu
1				5					10					15	
Ala	Leu	Leu	Leu	Pro	Thr	Gln	Ile	Tyr	Ser	Ser	Glu	Thr	Thr	Thr	Gly
			20					25					30		
Thr	Ser	Ser	Asn	Ser	Ser	Gln	Ser	Thr	Ser	Asn	Ser	Gly	Leu	Ala	Pro
		35				40						45			
Asn	Pro	Thr	Asn	Ala	Thr	Thr	Lys	Ala	Ala	Gly	Gly	Ala	Leu	Gln	Ser
	50					55					60				
Thr	Ala	Ser	Leu	Phe	Val	Val	Ser	Leu	Ser	Leu	Leu	His	Leu	Tyr	Ser
65					70					75					80

<210> 58
 <211> 268
 <212> PRT
 <213> Homo sapiens

<400> 58

Met	Ser	Leu	Ser	Phe	Leu	Leu	Leu	Leu	Phe	Phe	Ser	His	Leu	Ile	Leu
1				5					10					15	
Ser	Ala	Trp	Ala	His	Gly	Glu	Lys	Arg	Leu	Ala	Pro	Lys	Gly	Gln	Pro
			20					25					30		
Gly	Pro	Ala	Ala	Thr	Asp	Arg	Asn	Pro	Arg	Gly	Ser	Ser	Ser	Arg	Gln
		35					40					45			
Ser	Ser	Ser	Ser	Ala	Met	Ser	Ser	Ser	Ser	Ala	Ser	Ser	Ser	Pro	Ala
	50					55					60				
Ala	Ser	Leu	Gly	Ser	Gln	Gly	Ser	Gly	Leu	Glu	Gln	Ser	Ser	Phe	Gln
65					70					75					80
Trp	Ser	Pro	Ser	Gly	Arg	Arg	Thr	Gly	Ser	Leu	Tyr	Cys	Arg	Val	Gly
				85					90					95	
Ile	Gly	Phe	His	Leu	Gln	Ile	Tyr	Pro	Asp	Gly	Lys	Val	Asn	Gly	Ser
			100					105					110		
His	Glu	Ala	Asn	Met	Leu	Ser	Val	Leu	Glu	Ile	Phe	Ala	Val	Ser	Gln
		115					120					125			
Gly	Ile	Val	Gly	Ile	Arg	Gly	Val	Phe	Ser	Asn	Lys	Phe	Leu	Ala	Met
	130					135					140				
Ser	Lys	Lys	Gly	Lys	Leu	His	Ala	Ser	Ala	Lys	Phe	Thr	Asp	Asp	Cys
145					150					155					160
Lys	Phe	Arg	Glu	Arg	Phe	Gln	Glu	Asn	Ser	Tyr	Asn	Thr	Tyr	Ala	Ser
				165					170					175	
Ala	Ile	His	Arg	Thr	Glu	Lys	Thr	Gly	Arg	Glu	Trp	Tyr	Val	Ala	Leu
			180					185					190		
Asn	Lys	Arg	Gly	Lys	Ala	Lys	Arg	Gly	Cys	Ser	Pro	Arg	Val	Lys	Pro
		195					200					205			
Gln	His	Ile	Ser	Thr	His	Phe	Leu	Pro	Arg	Phe	Lys	Gln	Ser	Glu	Gln
	210					215					220				
Pro	Glu	Leu	Ser	Phe	Thr	Val	Thr	Val	Pro	Glu	Lys	Lys	Lys	Pro	Pro
225					230					235					240
Ser	Pro	Ile	Lys	Pro	Lys	Ile	Pro	Leu	Ser	Ala	Pro	Arg	Lys	Asn	Thr
				245					250					255	
Asn	Ser	Val	Lys	Tyr	Arg	Leu	Lys	Phe	Arg	Phe	Gly				
			260					265							

<210> 59

<211> 579

<212> PRT

<213> Homo sapiens

<400> 59

Met	Leu	Arg	Ser	Gly	Pro	Ala	Ser	Gly	Pro	Ser	Val	Pro	Thr	Gly	Arg
1				5					10					15	
Ala	Met	Pro	Ser	Arg	Arg	Val	Ala	Arg	Pro	Pro	Ala	Ala	Pro	Glu	Leu
			20					25					30		
Gly	Ala	Leu	Gly	Ser	Pro	Asp	Leu	Ser	Ser	Leu	Ser	Leu	Ala	Val	Ser
		35					40					45			
Arg	Ser	Thr	Asp	Glu	Leu	Glu	Ile	Ile	Asp	Glu	Tyr	Ile	Lys	Glu	Asn
	50					55					60				
Gly	Phe	Gly	Leu	Asp	Gly	Gly	Gln	Pro	Gly	Pro	Gly	Glu	Gly	Leu	Pro
65					70					75					80
Arg	Leu	Val	Ser	Arg	Gly	Ala	Ala	Ser	Leu	Ser	Thr	Val	Thr	Leu	Gly
				85					90					95	
Pro	Val	Ala	Pro	Pro	Ala	Thr	Pro	Pro	Pro	Trp	Gly	Cys	Pro	Leu	Gly
			100					105					110		
Arg	Leu	Val	Ser	Pro	Ala	Pro	Gly	Pro	Gly	Pro	Gln	Pro	His	Leu	Val
			115				120					125			

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