

SEQUENCE LISTING

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<150> EP2013164728

<151> 2013-04-22

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<170> PatentIn version 3.5

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<212> PRT
<213> Homo sapiens

<400> 6

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			20					25					30		

Arg	Val	Pro	Lys	Ser	Phe	Pro	Phe	Asn	Thr	Ser	Val	Val	Tyr	Lys	Lys
		35					40					45			

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

Arg	Pro	Pro	Trp	Met	Gly	Leu	Leu	Gly	Pro	Thr	Ile	Gln	Ala	Glu	Val
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Tyr	Asp	Thr	Val	Val	Ile	Thr	Leu	Lys	Asn	Met	Ala	Ser	His	Pro	Val
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Ser	Leu	His	Ala	Val	Gly	Val	Ser	Tyr	Trp	Lys	Ala	Ser	Glu	Gly	Ala
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Glu	Tyr	Asp	Asp	Gln	Thr	Ser	Gln	Arg	Glu	Lys	Glu	Asp	Asp	Lys	Val
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115																
Phe	Pro	Gly	Gly	Ser	His	Thr	Tyr	Val	Trp	Gln	Val	Leu	Lys	Glu	Asn	
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His	Val	Asp	Leu	Val	Lys	Asp	Leu	Asn	Ser	Gly	Leu	Ile	Gly	Ala	Leu	
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Leu	Val	Cys	Arg	Glu	Gly	Ser	Leu	Ala	Lys	Glu	Lys	Thr	Gln	Thr	Leu	
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His	Lys	Phe	Ile	Leu	Leu	Phe	Ala	Val	Phe	Asp	Glu	Gly	Lys	Ser	Trp	
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Val	Ile	Gly	Met	Gly	Thr	Thr	Pro	Glu	Val	His	Ser	Ile	Phe	Leu	Glu	
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Gly	His	Thr	Phe	Leu	Val	Arg	Asn	His	Arg	Gln	Ala	Ser	Leu	Glu	Ile	
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Ser	Pro	Ile	Thr	Phe	Leu	Thr	Ala	Gln	Thr	Leu	Leu	Met	Asp	Leu	Gly	
	290					295					300					
Gln	Phe	Leu	Leu	Phe	Cys	His	Ile	Ser	Ser	His	Gln	His	Asp	Gly	Met	
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Glu	Ala	Tyr	Val	Lys	Val	Asp	Ser	Cys	Pro	Glu	Glu	Pro	Gln	Leu	Arg	
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Met	Lys	Asn	Asn	Glu	Glu	Ala	Glu	Asp	Tyr	Asp	Asp	Asp	Leu	Thr	Asp	
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Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser Pro Ser Phe
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Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr Trp Val His
370 375 380

Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro Leu Val Leu
385 390 395 400

Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn Asn Gly Pro
405 410 415

Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met Ala Tyr Thr
420 425 430

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

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Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp Pro Glu Phe	595	600	605	
Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val Phe Asp Ser	610	615	620	
Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp Tyr Ile Leu	625	630	635	640
Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe Ser Gly Tyr	645	650	655	
Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr Leu Phe Pro	660	665	670	
Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro Gly Leu Trp	675	680	685	
Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly Met Thr Ala	690	695	700	
Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp Tyr Tyr Glu	705	710	715	720
Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys Asn Asn Ala	725	730	735	
Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Arg Ser Thr Arg	740	745	750	
Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Asp Ile Glu Lys	755	760	765	
Thr Asp Pro Trp Phe Ala His Arg Thr Pro Met Pro Lys Ile Gln Asn	770	775	780	
Val Ser Ser Ser Asp Leu Leu Met Leu Leu Arg Gln Ser Pro Thr Pro	785	790	795	800
His Gly Leu Ser Leu Ser Asp Leu Gln Glu Ala Lys Tyr Glu Thr Phe	805	810	815	

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

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Gly Thr Asp Asn Thr Ser Ser Leu Gly Pro Pro Ser Met Pro Val His
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Tyr Asp Ser Gln Leu Asp Thr Thr Leu Phe Gly Lys Lys Ser Ser Pro
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930 935 940

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

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Thr Ser Ser Lys Asn Met Glu Met Val Gln Gln Lys Lys Glu Gly				
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Pro Ile Pro Pro Asp Ala Gln Asn Pro Asp Met Ser Phe Phe Lys				
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Met Leu Phe Leu Pro Glu Ser Ala Arg Trp Ile Gln Arg Thr His				
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Leu Ser Glu Lys Asn Lys Val Val Val Gly Lys Gly Glu Phe Thr				
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Lys Asp Val Gly Leu Lys Glu Met Val Phe Pro Ser Ser Arg Asn				
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Leu Phe Leu Thr Asn Leu Asp Asn Leu His Glu Asn Asn Thr His				
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Asn Gln Glu Lys Lys Ile Gln Glu Glu Ile Glu Lys Lys Glu Thr				
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Leu Ile Gln Glu Asn Val Val Leu Pro Gln Ile His Thr Val Thr				
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Gly Thr Lys Asn Phe Met Lys Asn Leu Phe Leu Leu Ser Thr Arg				
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1865						1870					1875			
Phe	Phe	Thr	Ile	Phe	Asp	Glu	Thr	Lys	Ser	Trp	Tyr	Phe	Thr	Glu
1880						1885					1890			
Asn	Met	Glu	Arg	Asn	Cys	Arg	Ala	Pro	Cys	Asn	Ile	Gln	Met	Glu
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Asp	Pro	Thr	Phe	Lys	Glu	Asn	Tyr	Arg	Phe	His	Ala	Ile	Asn	Gly

1910	1915	1920
Tyr Ile Met Asp Thr Leu 1925	Pro Gly Leu Val Met 1930	Ala Gln Asp Gln 1935
Arg Ile Arg Trp Tyr Leu 1940	Leu Ser Met Gly Ser 1945	Asn Glu Asn Ile 1950
His Ser Ile His Phe Ser 1955	Gly His Val Phe Thr 1960	Val Arg Lys Lys 1965
Glu Glu Tyr Lys Met Ala 1970	Leu Tyr Asn Leu Tyr 1975	Pro Gly Val Phe 1980
Glu Thr Val Glu Met Leu 1985	Pro Ser Lys Ala Gly 1990	Ile Trp Arg Val 1995
Glu Cys Leu Ile Gly Glu 2000	His Leu His Ala Gly 2005	Met Ser Thr Leu 2010
Phe Leu Val Tyr Ser Asn 2015	Lys Cys Gln Thr Pro 2020	Leu Gly Met Ala 2025
Ser Gly His Ile Arg Asp 2030	Phe Gln Ile Thr Ala 2035	Ser Gly Gln Tyr 2040
Gly Gln Trp Ala Pro Lys 2045	Leu Ala Arg Leu His 2050	Tyr Ser Gly Ser 2055
Ile Asn Ala Trp Ser Thr 2060	Lys Glu Pro Phe Ser 2065	Trp Ile Lys Val 2070
Asp Leu Leu Ala Pro Met 2075	Ile Ile His Gly Ile 2080	Lys Thr Gln Gly 2085
Ala Arg Gln Lys Phe Ser 2090	Ser Leu Tyr Ile Ser 2095	Gln Phe Ile Ile 2100
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Ser Thr Gly Thr Leu Met 2120	Val Phe Phe Gly Asn 2125	Val Asp Ser Ser 2130

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Gly	Met	Glu	Ser	Lys	Ala	Ile	Ser	Asp	Ala	Gln	Ile	Thr	Ala	Ser
2180						2185					2190			
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2195						2200					2205			
Arg	Leu	His	Leu	Gln	Gly	Arg	Ser	Asn	Ala	Trp	Arg	Pro	Gln	Val
2210						2215					2220			
Asn	Asn	Pro	Lys	Glu	Trp	Leu	Gln	Val	Asp	Phe	Gln	Lys	Thr	Met
2225						2230					2235			
Lys	Val	Thr	Gly	Val	Thr	Thr	Gln	Gly	Val	Lys	Ser	Leu	Leu	Thr
2240						2245					2250			
Ser	Met	Tyr	Val	Lys	Glu	Phe	Leu	Ile	Ser	Ser	Ser	Gln	Asp	Gly
2255						2260					2265			
His	Gln	Trp	Thr	Leu	Phe	Phe	Gln	Asn	Gly	Lys	Val	Lys	Val	Phe
2270						2275					2280			
Gln	Gly	Asn	Gln	Asp	Ser	Phe	Thr	Pro	Val	Val	Asn	Ser	Leu	Asp
2285						2290					2295			
Pro	Pro	Leu	Leu	Thr	Arg	Tyr	Leu	Arg	Ile	His	Pro	Gln	Ser	Trp
2300						2305					2310			
Val	His	Gln	Ile	Ala	Leu	Arg	Met	Glu	Val	Leu	Gly	Cys	Glu	Ala
2315						2320					2325			
Gln	Asp	Leu	Tyr											
2330														

<210> 7

<211> 585
 <212> PRT
 <213> Homo sapiens

<400> 7

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu
 1 5 10 15

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

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
 65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
 85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu
 195 200 205

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

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His
 450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser
 465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr
 485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp
 500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala
 515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu
 530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys
 545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val
 565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu
 580 585

<210> 8
 <211> 35
 <212> DNA
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<220>
 <223> Primer for Mutagenesis

<400> 8
 cccgctgaca acctgtgcgc tgaagggtc gagtg
 35

<210> 9
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer for Mutagenesis

<400> 9
cactcgagcc cttcagcgca caggttgta gcggg
35

<210> 10
<211> 37
<212> DNA
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<220>
<223> Primer for Mutagenesis

<400> 10
caacctgcgg gctgaatgcc tcgagtgtac caaaacg
37

<210> 11
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer for Mutagenesis

<400> 11
cgtttttgta cactcgaggc attcagcccg caggttg
37

<210> 12
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 12
gggctgaagg gctctgctgt accaaaacgt gccag
35

<210> 13
<211> 35
<212> DNA
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<220>
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<400> 13
ctggcacgtt ttggtacagc agagcccttc agccc
35

<210> 14
 <211> 36
 <212> DNA
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 <220>
 <223> Oligonucleotide for Mutagenesis

 <400> 14
 gggctcgagt gttgcaaaac gtgccagaac tatgac
 36

 <210> 15
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide for Mutagenesis

 <400> 15
 gtcatagttc tggcacgttt tgcaacactc gagccc
 36

 <210> 16
 <211> 39
 <212> DNA
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 <400> 16
 gggctcgagt gtaccaaattg ctgccagaac tatgacctg
 39

 <210> 17
 <211> 39
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 <213> Artificial Sequence

 <220>
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 <400> 17
 caggctcatag ttctggcagc atttgggtaca ctcgagccc
 39

 <210> 18
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 <220>

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<400> 18
gagtgtacca aaacgtgctg caactatgac ctggagtgc
39

<210> 19
<211> 39
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<220>
<223> Oligonucleotide for Mutagenesis

<400> 19
gcactccagg tcatagttgc agcacgtttt ggtacactc
39

<210> 20
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 20
gtacccaaaac gtgccagtgc tatgacctgg agtgcattgag c
41

<210> 21
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 21
gctcatgcac tccaggatcat agcactggca cgtttttgta c
41

<210> 22
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 22
gtacccaaaac gtgccagaac tgtgacctgg agtgcattgag c
41

<210> 23
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
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<400> 23
gctcatgcac tccaggtcac agttctggca cgttttggta c
41

<210> 24
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
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<400> 24
ctatgacctg gagtgctgca gcatgggctg tgtctc
36

<210> 25
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
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<400> 25
gagacacagc ccatgctgca gcactccagg tcatag
36

<210> 26
<211> 35
<212> DNA
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<220>
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<400> 26
ccccgggcat ggtctgccat gagaacagat gtgtg
35

<210> 27
<211> 35
<212> DNA
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<400> 27
cacacatctg ttctcatggc agaccatgcc cgggg
35

<210> 28
<211> 34
<212> DNA
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<220>
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<400> 28
gggcatggtc cgggtgtgaga acagatgtgt ggcc
34

<210> 29
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 29
ggccacacat ctgttctcac accggaccat gccc
34

<210> 30
<211> 35
<212> DNA
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<220>
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<400> 30
tggccctgga aaggtgttgc tgcttccatc agggc
35

<210> 31
<211> 35
<212> DNA
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<220>
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<400> 31
gccctgatgg aagcagcaac acctttccag ggcca
35

<210> 32
<211> 33
<212> DNA
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<220>
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<400> 32
gaaaggtgtc cctgctgcca tcagggcaag gag
33

<210> 33
<211> 33
<212> DNA
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<400> 33
ctccttgccc tgatggcagc agggacacct ttc
33

<210> 34
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<212> DNA
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<220>
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<400> 34
cttccatcag ggcaagtgtc atgcccctgg agaaac
36

<210> 35
<211> 36
<212> DNA
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<220>
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<400> 35
gtttctccag gggcatagca cttgccctga tggaag
36

<210> 36
<211> 37
<212> DNA
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<220>
<223> Oligonucleotide for Mutagenesis

<400> 36
gggcaaggag tatgcctgtg gagaaacagt gaagatt
37

<210> 37
<211> 37
<212> DNA
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<400> 37
aatcttcact gtttctccac aggcatactc cttgccc
37

<210> 38
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 38
cacttggtgtc tgtcggtgcc ggaagtggaa ctgcac
36

<210> 39
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 39
gtgcagttcc acttccggca ccgacagaca caagtg
36

<210> 40
<211> 36
<212> DNA
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<220>
<223> Oligonucleotide for Mutaagenesis

<400> 40

cttgtgtctg tcgggactgc aagtggaact gcacag
36

<210> 41
<211> 36
<212> DNA
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<220>
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<400> 41
ctgtgcagtt ccacttgcag tcccgcacaga cacaag
36

<210> 42
<211> 35
<212> DNA
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<400> 42
ctgtcgggac cgggtgctgga actgcacaga ccatg
35

<210> 43
<211> 35
<212> DNA
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<220>
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<400> 43
catggtctgt gcagttccag caccggtccc gacag
35

<210> 44
<211> 35
<212> DNA
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<220>
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<400> 44
ctgtcgggac cggaagtgca actgcacaga ccatg
35

<210> 45
<211> 35

<212> DNA
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 <400> 45
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 35

 <210> 46
 <211> 38
 <212> DNA
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 <400> 46
 ccactacctc accttctgcg ggctcaaata cctgttcc
 38

 <210> 47
 <211> 38
 <212> DNA
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 <400> 47
 ggaacaggta tttagagcccg cagaagggtga ggtagtgg
 38

 <210> 48
 <211> 39
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 <400> 48
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 39

 <210> 49
 <211> 39
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 <220>
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<400> 49
 ccaccaggat ggtgacgcat ttcttgcatt tcaactgagg
 39

<210> 50
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide for Mutagenesis

<400> 50
 ctgccataac aacatcatga agtgcacgat ggtggattcc tcctg
 45

<210> 51
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide for Mutagenesis

<400> 51
 caggaggaat ccaccatcgt gcacttcatg atgttggttat ggcag
 45

<210> 52
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Oligonucleotide for Mutagenesis

<400> 52
 caacaagctg gtggacccct gcccatatct ggatgtctgc
 40

<210> 53
 <211> 40
 <212> DNA
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<220>
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<400> 53
 gcagacatcc agatatgggc aggggtccac cagcttggtg
 40

<210> 54

<211> 35
<212> DNA
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<220>
<223> PCR primer

<400> 54
gccagggacc ctttgtagcc ttcctgtcg gcccc
35

<210> 55
<211> 35
<212> DNA
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<220>
<223> PCR primer

<400> 55
ggggccgaca ggataggcta caaagggtcc ctggc
35

<210> 56
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 56
gtggctagca tggaaataga gctctccac
29

<210> 57
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
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<400> 57
cacgcggccg ctcagtagag gtcctgtgcc
30

<210> 58
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 58
ctactcttca gtcatgtcaa gaggaattg actatgatga tacc
44

<210> 59
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 59
ggtatcatca tagtcaattt cctcttgaca tgactgaaga gtag
44

<210> 60
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 60
cagtcagatc aagaggaaat ttgctatgat gataccatat cagttg
46

<210> 61
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 61
caactgatat ggtatcatca tagcaaattt cctcttgatc tgactg
46

<210> 62
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 62
gatcaagagg aaattgactg tgatgatacc atatcagttg aaatg
45

<210> 63
<211> 45
<212> DNA
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<220>
<223> Oligonucleotide for Mutagenesis

<400> 63
catttcaact gatatggtat catcacagtc aatttcctct tgatc
45

<210> 64
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 64
gatcaagagg aaattgacta ttgtgatacc atatcagttg aaatgaagaa gg
52

<210> 65
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 65
ccttcttcat ttcaactgat atggtatcac aatagtcaat ttctctttga tc
52

<210> 66
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 66
gatcaagagg aaattgacta tgattgtacc atatcagttg aaatgaagaa gg
52

<210> 67
<211> 52
<212> DNA
<213> Artificial Sequence

<220>

<223> Oligonucleotide for Mutagenesis

<400> 67

ccttcttcat ttcaactgat atggtacaat catagtcaat ttcctcttga tc
52

<210> 68

<211> 56

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide for Mutagenesis

<400> 68

tgactatgat gataccatat cagtttgcac gaagaaggaa gattttgaca tttatg
56

<210> 69

<211> 56

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide for Mutagenesis

<400> 69

cataaatgtc aaaatcttcc ttcttcatgc aaactgatat ggtatcatca tagtca
56

<210> 70

<211> 55

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide for Mutagenesis

<400> 70

gatgatacca taccagttga aatgaagaag tgcgattttg acatttatga tgagg
55

<210> 71

<211> 55

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide for Mutagenesis

<400> 71

cctcatcata aatgtcaaaa tcgcatttct tcatttcaac tgatatggta tcatc
55

<210> 72
 <211> 55
 <212> DNA
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 <220>
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 <400> 72
 gataccatat cagttgaaat gaagaaggaa tgttttgaca tttatgatga ggatg
 55

 <210> 73
 <211> 55
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 73
 catcctcatc ataaatgtca aaacattcct tcttcatttc aactgatatg gtatc
 55

 <210> 74
 <211> 53
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 74
 gaaatgaaga aggaagattt ttgcatttat gatgaggatg aaaatcagag ccc
 53

 <210> 75
 <211> 53
 <212> DNA
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 <400> 75
 gggctctgat tttcatcctc atcataaatg caaaaatctt ccttcttcat ttc
 53

 <210> 76
 <211> 53
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 76
gaaatgaaga aggaagattt tgactgttat gatgaggatg aaaatcagag ccc
53

<210> 77
<211> 53
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 77
gggctctgat tttcatcctc atcataacag tcaaaatctt ctttcttcat ttc
53

<210> 78
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 78
gaagaaggaa gatttttgaca tttgcgatga ggatgaaaat cagagcc
47

<210> 79
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 79
ggctctgatt ttcacacctca tcgcaaattgt caaaatcttc cttcttc
47

<210> 80
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 80
ggaagatttt gacatttatg attgcgatga aaatcagagc ccccgag
48

<210> 81
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 81
ctgcgggggc tctgattttc atcgcaatca taaatgtcaa aatcttcc
48

<210> 82
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 82
gtggctagcg catggaaata gagctctcca c
31

<210> 83
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 83
cacgcggccg cgttaccggt gtagaggtcc tgtgcctcgc
40

<210> 84
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 84
gtgaccggtg actccacagt gagctgtccc
30

<210> 85
<211> 33
<212> DNA
<213> Artificial Sequence

<220>

<223> PCR primer

<400> 85

acagcggccg ctatcacttg ctgcacttcc tgg
33

<210> 86

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 86

gtgaccggtt gcaacgacat cactgccag
29

<210> 87

<211> 75

<212> DNA

<213> Artificial Sequence

<220>

<223> cDNA Sequence (Thrombin cleavage site)

<400> 87

accggtgatg acaactctcc ttcctttatc caaattcgct cagttgccaa gaagcatcct
60

aaaacttgga ccggt
75

<210> 88

<211> 93

<212> DNA

<213> Artificial Sequence

<220>

<223> cDNA Sequence (Thrombin cleavage site)

<400> 88

accggtgatg aggatgaaaa tcagagcccc cgcagctttc aaaagaaaac acgacactat
60

tttattgctg cagtggagag gctctggacc ggt
93

<210> 89

<211> 38

<212> DNA

<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 89
gtgttcctg agctgctgcc ctcctatggt caaactgg
38

<210> 90
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide for Mutagenesis

<400> 90
ccagtttgac cataggaggg cagcagctca gggaacac
38

<210> 91
<211> 33
<212> DNA
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<210> 115
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<210> 118
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	Tyr	Lys	Lys	Thr	Leu	Phe	Val	Glu	Phe	Thr	Asp	His	Leu	Phe	Asn	Ile
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288	gct	aag	cca	agg	cca	ccc	tgg	atg	ggg	ctg	cta	ggg	cct	acc	atc	cag
	Ala	Lys	Pro	Arg	Pro	Pro	Trp	Met	Gly	Leu	Leu	Gly	Pro	Thr	Ile	Gln
					85					90					95	
336	gct	gag	gtt	tat	gat	aca	gtg	gtc	att	aca	ctt	aag	aac	atg	gct	tcc
	Ala	Glu	Val	Tyr	Asp	Thr	Val	Val	Ile	Thr	Leu	Lys	Asn	Met	Ala	Ser
				100					105					110		
384	cat	cct	gtc	agt	ctt	cat	gct	gtt	ggg	gta	tcc	tac	tgg	aaa	gct	tct
	His	Pro	Val	Ser	Leu	His	Ala	Val	Gly	Val	Ser	Tyr	Trp	Lys	Ala	Ser
			115					120					125			
432	gag	gga	gct	gaa	tat	gat	gat	cag	acc	agt	caa	agg	gag	aaa	gaa	gat
	Glu	Gly	Ala	Glu	Tyr	Asp	Asp	Gln	Thr	Ser	Gln	Arg	Glu	Lys	Glu	Asp
		130					135					140				
480	gat	aaa	gtc	ttc	cct	ggg	gga	agc	cat	aca	tat	gtc	tgg	cag	gtc	ctg
	Asp	Lys	Val	Phe	Pro	Gly	Gly	Ser	His	Thr	Tyr	Val	Trp	Gln	Val	Leu
	145					150					155					160
528	aaa	gag	aat	ggg	cca	atg	gcc	tct	gac	cca	ctg	tgc	ctt	acc	tac	tca
	Lys	Glu	Asn	Gly	Pro	Met	Ala	Ser	Asp	Pro	Leu	Cys	Leu	Thr	Tyr	Ser
					165					170					175	
576	tat	ctt	tct	cat	gtg	gac	ctg	gta	aaa	gac	ttg	aat	tca	ggc	ctc	att
	Tyr	Leu	Ser	His	Val	Asp	Leu	Val	Lys	Asp	Leu	Asn	Ser	Gly	Leu	Ile
				180					185					190		
624	gga	gcc	cta	cta	gta	tgt	aga	gaa	ggg	agt	ctg	gcc	aag	gaa	aag	aca
	Gly	Ala	Leu	Leu	Val	Cys	Arg	Glu	Gly	Ser	Leu	Ala	Lys	Glu	Lys	Thr
			195					200					205			
672	cag	acc	ttg	cac	aaa	ttt	ata	cta	ctt	ttt	gct	gta	ttt	gat	gaa	ggg
	Gln	Thr	Leu	His	Lys	Phe	Ile	Leu	Leu	Phe	Ala	Val	Phe	Asp	Glu	Gly
		210					215					220				

aaa agt tgg cac tca gaa aca aag aac tcc ttg atg cag gat agg gat
 720
 Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp
 225 230 235 240

gct gca tct gct cgg gcc tgg cct aaa atg cac aca gtc aat ggt tat
 768
 Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr
 245 250 255

gta aac agg tct ctg cca ggt ctg att gga tgc cac agg aaa tca gtc
 816
 Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val
 260 265 270

tat tgg cat gtg att gga atg ggc acc act cct gaa gtg cac tca ata
 864
 Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile
 275 280 285

ttc ctc gaa ggt cac aca ttt ctt gtg agg aac cat cgc cag gcg tcc
 912
 Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser
 290 295 300

ttg gaa atc tcg cca ata act ttc ctt act gct caa aca ctc ttg atg
 960
 Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met
 305 310 315 320

gac ctt gga cag ttt cta ctg ttt tgt cat atc tct tcc cac caa cat
 1008
 Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His
 325 330 335

gat ggc atg gaa gct tat gtc aaa gta gac agc tgt cca gag gaa ccc
 1056
 Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro
 340 345 350

caa cta cga atg aaa aat aat gaa gaa gcg gaa gac tat gat gat gat
 1104
 Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp
 355 360 365

ctt act gat tct gaa atg gat gtg gtc agg ttt gat gat gac aac tct
 1152
 Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser
 370 375 380

cct tcc ttt atc caa att cgc tca gtt gcc aag aag cat cct aaa act
 1200
 Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr
 385 390 395 400

tgg gta cat tac att gct gct gaa gag gag gac tgg gac tat gct ccc
 1248
 Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro

405								410				415				
tta gtc ctc gcc ccc gat gac aga agt tat aaa agt caa tat ttg aac																
1296																
Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn																
	420					425					430					
aat ggc cct cag cgg att ggt agg aag tac aaa aaa gtc cga ttt atg																
1344																
Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met																
	435					440					445					
gca tac aca gat gaa acc ttt aag act cgt gaa gct att cag cat gaa																
1392																
Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu																
	450					455					460					
tca gga atc ttg gga cct tta ctt tat ggg gaa gtt gga gac aca ctg																
1440																
Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu																
465					470					475					480	
ttg att ata ttt aag aat caa gca agc aga cca tat aac atc tac cct																
1488																
Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro																
	485					490					495					
cac gga atc act gat gtc cgt cct ttg tat tca agg aga tta cca aaa																
1536																
His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys																
	500					505					510					
ggg gta aaa cat ttg aag gat ttt cca att ctg cca gga gaa ata ttc																
1584																
Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe																
	515					520					525					
aaa tat aaa tgg aca gtg act gta gaa gat ggg cca act aaa tca gat																
1632																
Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp																
	530					535					540					
cct cgg tgc ctg acc cgc tat tac tct agt ttc gtt aat atg gag aga																
1680																
Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg																
545					550					555					560	
gat cta gct tca gga ctc att ggc cct ctc ctc atc tgc tac aaa gaa																
1728																
Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu																
	565					570					575					
tct gta gat caa aga gga aac cag ata atg tca gac aag agg aat gtc																
1776																
Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val																
	580					585					590					

atc ctg ttt tct gta ttt gat gag aac cga agc tgg tac ctc aca gag
 1824
 Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
 595 600 605

aat ata caa cgc ttt ctc ccc aat cca gct gga gtg cag ctt gag gat
 1872
 Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
 610 615 620

cca gag ttc caa gcc tcc aac atc atg cac agc atc aat ggc tat gtt
 1920
 Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
 625 630 635 640

ttt gat agt ttg cag ttg tca gtt tgt ttg cat gag gtg gca tac tgg
 1968
 Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
 645 650 655

tac att cta agc att gga gca cag act gac ttc ctt tct gtc ttc ttc
 2016
 Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
 660 665 670

tct gga tat acc ttc aaa cac aaa atg gtc tat gaa gac aca ctc acc
 2064
 Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
 675 680 685

cta ttc cca ttc tca gga gaa act gtc ttc atg tcg atg gaa aac cca
 2112
 Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
 690 695 700

ggt cta tgg att ctg ggg tgc cac aac tca gac ttt cgg aac aga ggc
 2160
 Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
 705 710 715 720

atg acc gcc tta ctg aag gtt tct agt tgt gac aag aac act ggt gat
 2208
 Met Thr Ala Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp
 725 730 735

tat tac gag gac agt tat gaa gat att tca gca tac ttg ctg agt aaa
 2256
 Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
 740 745 750

aac aat gcc att gaa cca aga agc ttc tcc cag aat tca aga cac cct
 2304
 Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
 755 760 765

agc act agg caa aag caa ttt aat gcc acc aca att cca gaa aat act
 2352
 Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr

770	775	780
act ctt cag tca gat caa gag gaa att gac tat gat gat acc ata tca 2400		
Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser 785 790 795 800		
ggt gaa atg aag aag gaa gat ttt gac att tat gat gag gat gaa aat 2448		
Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn 805 810 815		
cag agc ccc cgc agc ttt caa aag aaa aca cga cac tat ttt att gct 2496		
Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala 820 825 830		
gca gtg gag agg ctc tgg gat tat ggg atg agt agc tcc cca cat gtt 2544		
Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val 835 840 845		
cta aga aac agg gct cag agt ggc agt gtc cct cag ttc aag aaa gtt 2592		
Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val 850 855 860		
gtt ttc cag gaa ttt act gat ggc tcc ttt act cag ccc tta tac cgt 2640		
Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg 865 870 875 880		
gga gaa cta aat gaa cat ttg gga ctc ctg ggg cca tat ata aga gca 2688		
Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala 885 890 895		
gaa gtt gaa gat aat atc atg gta act ttc aga aat cag gcc tct cgt 2736		
Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg 900 905 910		
ccc tat tcc ttc tat tct agc ctt att tct tat gag gaa gat cag agg 2784		
Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg 915 920 925		
caa gga gca gaa cct aga aaa aac ttt gtc aag cct aat gaa acc aaa 2832		
Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys 930 935 940		
act tac ttt tgg aaa gtg caa cat cat atg gca ccc act aaa gat gag 2880		
Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu 945 950 955 960		

ttt gac tgc aaa gcc tgg gct tat ttc tct gat gtt gac ctg gaa aaa
 2928
 Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
 965 970 975

gat gtg cac tca ggc ctg att gga ccc ctt ctg gtc tgc cac act aac
 2976
 Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
 980 985 990

aca ctg aac cct gct cat ggg aga caa gtg aca gta cag gaa ttt gct
 3024
 Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala
 995 1000 1005

ctg ttt ttc acc atc ttt gat gag acc aaa agc tgg tac ttc act
 3069
 Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr
 1010 1015 1020

gaa aat atg gaa aga aac tgc agg gct ccc tgc aat atc cag atg
 3114
 Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met
 1025 1030 1035

gaa gat ccc act ttt aaa gag aat tat cgc ttc cat gca atc aat
 3159
 Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn
 1040 1045 1050

ggc tac ata atg gat aca cta cct ggc tta gta atg gct cag gat
 3204
 Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp
 1055 1060 1065

caa agg att cga tgg tat ctg ctc agc atg ggc agc aat gaa aac
 3249
 Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn
 1070 1075 1080

atc cat tct att cat ttc agt gga cat gtg ttc act gta cga aaa
 3294
 Ile His Ser Ile His Phe Ser Gly His Val Phe Thr Val Arg Lys
 1085 1090 1095

aaa gag gag tat aaa atg gca ctg tac aat ctc tat cca ggt gtt
 3339
 Lys Glu Glu Tyr Lys Met Ala Leu Tyr Asn Leu Tyr Pro Gly Val
 1100 1105 1110

ttt gag aca gtg gaa atg tta cca tcc aaa gct gga att tgg cgg
 3384
 Phe Glu Thr Val Glu Met Leu Pro Ser Lys Ala Gly Ile Trp Arg
 1115 1120 1125

gtg gaa tgc ctt att ggc gag cat cta cat gct ggg atg agc aca
 3429
 Val Glu Cys Leu Ile Gly Glu His Leu His Ala Gly Met Ser Thr

1130	1135	1140
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Leu Phe Leu Val Tyr Ser Asn 1145	Lys Cys Gln Thr 1150	Pro Leu Gly Met 1155
gct tct gga cac att aga gat 3519	ttt cag att aca gct	tca gga caa
Ala Ser Gly His Ile Arg Asp 1160	Phe Gln Ile Thr 1165	Ala Ser Gly Gln 1170
tat gga cag tgg gcc cca aag 3564	ctg gcc aga ctt cat	tat tcc gga
Tyr Gly Gln Trp Ala Pro Lys 1175	Leu Ala Arg Leu 1180	His Tyr Ser Gly 1185
tca atc aat gcc tgg agc acc 3609	aag gag ccc ttt tct	tgg atc aag
Ser Ile Asn Ala Trp Ser Thr 1190	Lys Glu Pro Phe 1195	Ser Trp Ile Lys 1200
gtg gat ctg ttg gca cca atg 3654	att att cac ggc atc	aag acc cag
Val Asp Leu Leu Ala Pro Met 1205	Ile Ile His Gly 1210	Ile Lys Thr Gln 1215
ggg gcc cgt cag aag ttc tcc 3699	agc ctc tac atc tct	cag ttt atc
Gly Ala Arg Gln Lys Phe Ser 1220	Ser Leu Tyr Ile 1225	Ser Gln Phe Ile 1230
atc atg tat agt ctt gat ggg 3744	aag aag tgg cag act	tat cga gga
Ile Met Tyr Ser Leu Asp Gly 1235	Lys Lys Trp Gln 1240	Thr Tyr Arg Gly 1245
aat tcc act gga acc tta atg 3789	gtc ttc ttt ggc aat	gtg gat tca
Asn Ser Thr Gly Thr Leu Met 1250	Val Phe Phe Gly 1255	Asn Val Asp Ser 1260
tct ggg ata aaa cac aat att 3834	ttt aac cct cca att	att gct cga
Ser Gly Ile Lys His Asn Ile 1265	Phe Asn Pro Pro 1270	Ile Ile Ala Arg 1275
tac atc cgt ttg cac cca act 3879	cat tat agc att cgc	agc act ctt
Tyr Ile Arg Leu His Pro Thr 1280	His Tyr Ser Ile 1285	Arg Ser Thr Leu 1290
cgc atg gag ttg atg ggc tgt 3924	gat tta aat agt tgc	agc atg cca
Arg Met Glu Leu Met Gly Cys 1295	Asp Leu Asn Ser 1300	Cys Ser Met Pro 1305

1475	1480	1485
acc tca gcg tgc tgc cca agc	tgt cgc tgt gag cgc	atg gag gcc
4509		
Thr Ser Ala Cys Cys Pro Ser	Cys Arg Cys Glu Arg	Met Glu Ala
1490	1495	1500
tgc atg ctc aat ggc act gtc	att ggg ccc ggg aag	act gtg atg
4554		
Cys Met Leu Asn Gly Thr Val	Ile Gly Pro Gly Lys	Thr Val Met
1505	1510	1515
atc gat gtg tgc acg acc tgc	cgc tgc atg gtg cag	gtg ggg gtc
4599		
Ile Asp Val Cys Thr Thr Cys	Arg Cys Met Val Gln	Val Gly Val
1520	1525	1530
atc tct gga ttc aag ctg gag	tgc agg aag acc acc	tgc aac ccc
4644		
Ile Ser Gly Phe Lys Leu Glu	Cys Arg Lys Thr Thr	Cys Asn Pro
1535	1540	1545
tgc ccc ctg ggt tac aag gaa	gaa aat aac aca ggt	gaa tgt tgt
4689		
Cys Pro Leu Gly Tyr Lys Glu	Glu Asn Asn Thr Gly	Glu Cys Cys
1550	1555	1560
ggg aga tgt ttg cct acg gct	tgc acc att cag cta	aga gga gga
4734		
Gly Arg Cys Leu Pro Thr Ala	Cys Thr Ile Gln Leu	Arg Gly Gly
1565	1570	1575
cag atc atg aca ctg aag cgt	gat gag acg ctc cag	gat ggc tgt
4779		
Gln Ile Met Thr Leu Lys Arg	Asp Glu Thr Leu Gln	Asp Gly Cys
1580	1585	1590
gat act cac ttc tgc aag gtc	aat gag aga gga gag	tac ttc tgg
4824		
Asp Thr His Phe Cys Lys Val	Asn Glu Arg Gly Glu	Tyr Phe Trp
1595	1600	1605
gag aag agg gtc aca ggc tgc	cca ccc ttt gat gaa	cac aag tgt
4869		
Glu Lys Arg Val Thr Gly Cys	Pro Pro Phe Asp Glu	His Lys Cys
1610	1615	1620
ctg gct gag gga ggt aaa att	atg aaa att cca ggc	acc tgc tgt
4914		
Leu Ala Glu Gly Gly Lys Ile	Met Lys Ile Pro Gly	Thr Cys Cys
1625	1630	1635
gac aca tgt gag gag cct gag	tgc aac gac atc act	gcc agg ctg
4959		
Asp Thr Cys Glu Glu Pro Glu	Cys Asn Asp Ile Thr	Ala Arg Leu
1640	1645	1650

cag tat gtc aag gtg gga agc tgt aag tct gaa gta gag gtg gat
5004

Gln Tyr Val Lys Val Gly Ser Cys Lys Ser Glu Val Glu Val Asp
1655 1660 1665

atc cac tac tgc cag ggc aaa tgt gcc agc aaa gcc atg tac tcc
5049

Ile His Tyr Cys Gln Gly Lys Cys Ala Ser Lys Ala Met Tyr Ser
1670 1675 1680

att gac atc aac gat gtg cag gac cag tgc tcc tgc tgc tct ccg
5094

Ile Asp Ile Asn Asp Val Gln Asp Gln Cys Ser Cys Cys Ser Pro
1685 1690 1695

aca cgg acg gag ccc atg cag gtg gcc ctg cac tgc acc aat ggc
5139

Thr Arg Thr Glu Pro Met Gln Val Ala Leu His Cys Thr Asn Gly
1700 1705 1710

tct gtt gtg tac cat gag gtt ctc aat gcc atg gag tgc aaa tgc
5184

Ser Val Val Tyr His Glu Val Leu Asn Ala Met Glu Cys Lys Cys
1715 1720 1725

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5213

Ser Pro Arg Lys Cys Ser Lys
1730 1735

<210> 146

<211> 1735

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 146

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Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
20 25 30

Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
35 40 45

Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
50 55 60

Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile

Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met
 305 310 315 320

Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His
 325 330 335

Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro
 340 345 350

Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp
 355 360 365

Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser
 370 375 380

Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr
 385 390 395 400

Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro
 405 410 415

Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn
 420 425 430

Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
 435 440 445

Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
 450 455 460

Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
 465 470 475 480

Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
 485 490 495

His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
 500 505 510

Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
 515 520 525

Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp

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

Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
770 775 780

Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
785 790 795 800

Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
805 810 815

Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
820 825 830

Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
835 840 845

Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
850 855 860

Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
865 870 875 880

Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
885 890 895

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 Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
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 Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
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 His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
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Leu	Phe	Leu	Val	Tyr	Ser	Asn	Lys	Cys	Gln	Thr	Pro	Leu	Gly	Met	
	1145					1150					1155				

gct tct gga cac att aga gat ttt cag att aca gct tca gga caa
3519
Ala Ser Gly His Ile Arg Asp Phe Gln Ile Thr Ala Ser Gly Gln
1160 1165 1170

tat gga cag tgg gcc cca aag ctg gcc aga ctt cat tat tcc gga
3564
Tyr Gly Gln Trp Ala Pro Lys Leu Ala Arg Leu His Tyr Ser Gly
1175 1180 1185

tca atc aat gcc tgg agc acc aag gag ccc ttt tct tgg atc aag
3609
Ser Ile Asn Ala Trp Ser Thr Lys Glu Pro Phe Ser Trp Ile Lys
1190 1195 1200

gtg gat ctg ttg gca cca atg att att cac ggc atc aag acc cag
3654
Val Asp Leu Leu Ala Pro Met Ile Ile His Gly Ile Lys Thr Gln
1205 1210 1215

ggg gcc cgt cag aag ttc tcc agc ctc tac atc tct cag ttt atc
3699
Gly Ala Arg Gln Lys Phe Ser Ser Leu Tyr Ile Ser Gln Phe Ile
1220 1225 1230

atc atg tat agt ctt gat ggg aag aag tgg cag act tat cga gga
3744
Ile Met Tyr Ser Leu Asp Gly Lys Lys Trp Gln Thr Tyr Arg Gly
1235 1240 1245

aat tcc act gga acc tta atg gtc ttc ttt ggc aat gtg gat tca
3789
Asn Ser Thr Gly Thr Leu Met Val Phe Phe Gly Asn Val Asp Ser
1250 1255 1260

tct ggg ata aaa cac aat att ttt aac cct cca att att gct cga
3834
Ser Gly Ile Lys His Asn Ile Phe Asn Pro Pro Ile Ile Ala Arg
1265 1270 1275

tac atc cgt ttg cac cca act cat tat agc att cgc agc act ctt
3879
Tyr Ile Arg Leu His Pro Thr His Tyr Ser Ile Arg Ser Thr Leu
1280 1285 1290

cgc atg gag ttg atg ggc tgt gat tta aat agt tgc agc atg cca
3924
Arg Met Glu Leu Met Gly Cys Asp Leu Asn Ser Cys Ser Met Pro
1295 1300 1305

ttg gga atg gag agt aaa gca ata tca gat gca cag att act gct
3969
Leu Gly Met Glu Ser Lys Ala Ile Ser Asp Ala Gln Ile Thr Ala
1310 1315 1320

tca tcc tac ttt acc aat atg ttt gcc acc tgg tct cct tca aaa
4014
Ser Ser Tyr Phe Thr Asn Met Phe Ala Thr Trp Ser Pro Ser Lys

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gct cga ctt cac ctc caa ggg 4059	agg agt aat gcc tgg	aga cct cag
Ala Arg Leu His Leu Gln Gly 1340	Arg Ser Asn Ala Trp 1345	Arg Pro Gln 1350
gtg aat aat cca aaa gag tgg 4104	ctg caa gtg gac ttc	cag aag aca
Val Asn Asn Pro Lys Glu Trp 1355	Leu Gln Val Asp Phe 1360	Gln Lys Thr 1365
atg aaa gtc aca gga gta act 4149	act cag gga gta aaa	tct ctg ctt
Met Lys Val Thr Gly Val Thr 1370	Thr Gln Gly Val Lys 1375	Ser Leu Leu 1380
acc agc atg tat gtg aag gag 4194	ttc ctc atc tcc agc	agt caa gat
Thr Ser Met Tyr Val Lys Glu 1385	Phe Leu Ile Ser Ser 1390	Ser Gln Asp 1395
ggc cat cag tgg act ctc ttt 4239	ttt cag aat ggc aaa	gta aag gtt
Gly His Gln Trp Thr Leu Phe 1400	Phe Gln Asn Gly Lys 1405	Val Lys Val 1410
ttt cag gga aat caa gac tcc 4284	ttc aca cct gtg gtg	aac tct cta
Phe Gln Gly Asn Gln Asp Ser 1415	Phe Thr Pro Val Val 1420	Asn Ser Leu 1425
gac cca ccg tta ctg act cgc 4329	tac ctt cga att cac	ccc cag agt
Asp Pro Pro Leu Leu Thr Arg 1430	Tyr Leu Arg Ile His 1435	Pro Gln Ser 1440
tgg gtg cac cag att gcc ctg 4374	agg atg gag gtt ctg	ggc tgc gag
Trp Val His Gln Ile Ala Leu 1445	Arg Met Glu Val Leu 1450	Gly Cys Glu 1455
gca cag gac ctc tac acc ggt 4419	tgc aac gac atc act	gcc agg ctg
Ala Gln Asp Leu Tyr Thr Gly 1460	Cys Asn Asp Ile Thr 1465	Ala Arg Leu 1470
cag tat gtc aag gtg gga agc 4464	tgt aag tct gaa gta	gag gtg gat
Gln Tyr Val Lys Val Gly Ser 1475	Cys Lys Ser Glu Val 1480	Glu Val Asp 1485
atc cac tac tgc cag ggc aaa 4509	tgt gcc agc aaa gcc	atg tac tcc
Ile His Tyr Cys Gln Gly Lys 1490	Cys Ala Ser Lys Ala 1495	Met Tyr Ser 1500

att gac atc aac gat gtg cag gac cag tgc tcc tgc tgc tct ccg
4554

Ile Asp Ile Asn Asp Val Gln Asp Gln Cys Ser Cys Cys Ser Pro
1505 1510 1515

aca cgg acg gag ccc atg cag gtg gcc ctg cac tgc acc aat ggc
4599

Thr Arg Thr Glu Pro Met Gln Val Ala Leu His Cys Thr Asn Gly
1520 1525 1530

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4644

Ser Val Val Tyr His Glu Val Leu Asn Ala Met Glu Cys Lys Cys
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4672

Ser Pro Arg Lys Cys Ser Lys
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Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
35 40 45

Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
50 55 60

Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
65 70 75 80

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

Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
100 105 110

His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
115 120 125

Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
130 135 140

Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
145 150 155 160

Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
165 170 175

Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile
180 185 190

Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr
195 200 205

Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly
210 215 220

Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp
225 230 235 240

Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr
245 250 255

Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val
260 265 270

Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile
275 280 285

Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser
290 295 300

Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met
305 310 315 320

Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His
325 330 335

Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro

				340						345						350
Gln	Leu	Arg	Met	Lys	Asn	Asn	Glu	Glu	Ala	Glu	Asp	Tyr	Asp	Asp	Asp	
		355					360					365				
Leu	Thr	Asp	Ser	Glu	Met	Asp	Val	Val	Arg	Phe	Asp	Asp	Asp	Asn	Ser	
	370					375					380					
Pro	Ser	Phe	Ile	Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr	
385					390					395					400	
Trp	Val	His	Tyr	Ile	Ala	Ala	Glu	Glu	Glu	Asp	Trp	Asp	Tyr	Ala	Pro	
				405					410					415		
Leu	Val	Leu	Ala	Pro	Asp	Asp	Arg	Ser	Tyr	Lys	Ser	Gln	Tyr	Leu	Asn	
			420					425					430			
Asn	Gly	Pro	Gln	Arg	Ile	Gly	Arg	Lys	Tyr	Lys	Lys	Val	Arg	Phe	Met	
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Ala	Tyr	Thr	Asp	Glu	Thr	Phe	Lys	Thr	Arg	Glu	Ala	Ile	Gln	His	Glu	
	450					455					460					
Ser	Gly	Ile	Leu	Gly	Pro	Leu	Leu	Tyr	Gly	Glu	Val	Gly	Asp	Thr	Leu	
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Leu	Ile	Ile	Phe	Lys	Asn	Gln	Ala	Ser	Arg	Pro	Tyr	Asn	Ile	Tyr	Pro	
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His	Gly	Ile	Thr	Asp	Val	Arg	Pro	Leu	Tyr	Ser	Arg	Arg	Leu	Pro	Lys	
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Gly	Val	Lys	His	Leu	Lys	Asp	Phe	Pro	Ile	Leu	Pro	Gly	Glu	Ile	Phe	
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Lys	Tyr	Lys	Trp	Thr	Val	Thr	Val	Glu	Asp	Gly	Pro	Thr	Lys	Ser	Asp	
	530					535					540					
Pro	Arg	Cys	Leu	Thr	Arg	Tyr	Tyr	Ser	Ser	Phe	Val	Asn	Met	Glu	Arg	
545					550					555					560	
Asp	Leu	Ala	Ser	Gly	Leu	Ile	Gly	Pro	Leu	Leu	Ile	Cys	Tyr	Lys	Glu	
				565					570					575		

Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
580 585 590

Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
595 600 605

Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
610 615 620

Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
625 630 635 640

Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
645 650 655

Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
660 665 670

Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
675 680 685

Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
690 695 700

Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
705 710 715 720

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

Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
740 745 750

Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
755 760 765

Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
770 775 780

Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
785 790 795 800

Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn

805					810					815					
Gln	Ser	Pro	Arg	Ser	Phe	Gln	Lys	Lys	Thr	Arg	His	Tyr	Phe	Ile	Ala
			820					825					830		
Ala	Val	Glu	Arg	Leu	Trp	Asp	Tyr	Gly	Met	Ser	Ser	Ser	Pro	His	Val
		835					840					845			
Leu	Arg	Asn	Arg	Ala	Gln	Ser	Gly	Ser	Val	Pro	Gln	Phe	Lys	Lys	Val
	850					855					860				
Val	Phe	Gln	Glu	Phe	Thr	Asp	Gly	Ser	Phe	Thr	Gln	Pro	Leu	Tyr	Arg
865					870					875					880
Gly	Glu	Leu	Asn	Glu	His	Leu	Gly	Leu	Leu	Gly	Pro	Tyr	Ile	Arg	Ala
				885					890					895	
Glu	Val	Glu	Asp	Asn	Ile	Met	Val	Thr	Phe	Arg	Asn	Gln	Ala	Ser	Arg
			900					905					910		
Pro	Tyr	Ser	Phe	Tyr	Ser	Ser	Leu	Ile	Ser	Tyr	Glu	Glu	Asp	Gln	Arg
		915					920					925			
Gln	Gly	Ala	Glu	Pro	Arg	Lys	Asn	Phe	Val	Lys	Pro	Asn	Glu	Thr	Lys
	930					935					940				
Thr	Tyr	Phe	Trp	Lys	Val	Gln	His	His	Met	Ala	Pro	Thr	Lys	Asp	Glu
945					950					955					960
Phe	Asp	Cys	Lys	Ala	Trp	Ala	Tyr	Phe	Ser	Asp	Val	Asp	Leu	Glu	Lys
				965					970					975	
Asp	Val	His	Ser	Gly	Leu	Ile	Gly	Pro	Leu	Leu	Val	Cys	His	Thr	Asn
			980					985					990		
Thr	Leu	Asn	Pro	Ala	His	Gly	Arg	Gln	Val	Thr	Val	Gln	Glu	Phe	Ala
		995					1000					1005			
Leu	Phe	Phe	Thr	Ile	Phe	Asp	Glu	Thr	Lys	Ser	Trp	Tyr	Phe	Thr	
	1010					1015					1020				
Glu	Asn	Met	Glu	Arg	Asn	Cys	Arg	Ala	Pro	Cys	Asn	Ile	Gln	Met	
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Glu	Asp	Pro	Thr	Phe	Lys	Glu	Asn	Tyr	Arg	Phe	His	Ala	Ile	Asn
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Gly	Tyr	Ile	Met	Asp	Thr	Leu	Pro	Gly	Leu	Val	Met	Ala	Gln	Asp
1055						1060					1065			
Gln	Arg	Ile	Arg	Trp	Tyr	Leu	Leu	Ser	Met	Gly	Ser	Asn	Glu	Asn
1070						1075					1080			
Ile	His	Ser	Ile	His	Phe	Ser	Gly	His	Val	Phe	Thr	Val	Arg	Lys
1085						1090					1095			
Lys	Glu	Glu	Tyr	Lys	Met	Ala	Leu	Tyr	Asn	Leu	Tyr	Pro	Gly	Val
1100						1105					1110			
Phe	Glu	Thr	Val	Glu	Met	Leu	Pro	Ser	Lys	Ala	Gly	Ile	Trp	Arg
1115						1120					1125			
Val	Glu	Cys	Leu	Ile	Gly	Glu	His	Leu	His	Ala	Gly	Met	Ser	Thr
1130						1135					1140			
Leu	Phe	Leu	Val	Tyr	Ser	Asn	Lys	Cys	Gln	Thr	Pro	Leu	Gly	Met
1145						1150					1155			
Ala	Ser	Gly	His	Ile	Arg	Asp	Phe	Gln	Ile	Thr	Ala	Ser	Gly	Gln
1160						1165					1170			
Tyr	Gly	Gln	Trp	Ala	Pro	Lys	Leu	Ala	Arg	Leu	His	Tyr	Ser	Gly
1175						1180					1185			
Ser	Ile	Asn	Ala	Trp	Ser	Thr	Lys	Glu	Pro	Phe	Ser	Trp	Ile	Lys
1190						1195					1200			
Val	Asp	Leu	Leu	Ala	Pro	Met	Ile	Ile	His	Gly	Ile	Lys	Thr	Gln
1205						1210					1215			
Gly	Ala	Arg	Gln	Lys	Phe	Ser	Ser	Leu	Tyr	Ile	Ser	Gln	Phe	Ile
1220						1225					1230			
Ile	Met	Tyr	Ser	Leu	Asp	Gly	Lys	Lys	Trp	Gln	Thr	Tyr	Arg	Gly
1235						1240					1245			
Asn	Ser	Thr	Gly	Thr	Leu	Met	Val	Phe	Phe	Gly	Asn	Val	Asp	Ser

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Ser	Gly	Ile	Lys	His	Asn	Ile	Phe	Asn	Pro	Pro	Ile	Ile	Ala	Arg	
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Tyr	Ile	Arg	Leu	His	Pro	Thr	His	Tyr	Ser	Ile	Arg	Ser	Thr	Leu	
	1280						1285				1290				
Arg	Met	Glu	Leu	Met	Gly	Cys	Asp	Leu	Asn	Ser	Cys	Ser	Met	Pro	
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Leu	Gly	Met	Glu	Ser	Lys	Ala	Ile	Ser	Asp	Ala	Gln	Ile	Thr	Ala	
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Ser	Ser	Tyr	Phe	Thr	Asn	Met	Phe	Ala	Thr	Trp	Ser	Pro	Ser	Lys	
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Ala	Arg	Leu	His	Leu	Gln	Gly	Arg	Ser	Asn	Ala	Trp	Arg	Pro	Gln	
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Val	Asn	Asn	Pro	Lys	Glu	Trp	Leu	Gln	Val	Asp	Phe	Gln	Lys	Thr	
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Met	Lys	Val	Thr	Gly	Val	Thr	Thr	Gln	Gly	Val	Lys	Ser	Leu	Leu	
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Thr	Ser	Met	Tyr	Val	Lys	Glu	Phe	Leu	Ile	Ser	Ser	Ser	Gln	Asp	
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Gly	His	Gln	Trp	Thr	Leu	Phe	Phe	Gln	Asn	Gly	Lys	Val	Lys	Val	
	1400						1405				1410				
Phe	Gln	Gly	Asn	Gln	Asp	Ser	Phe	Thr	Pro	Val	Val	Asn	Ser	Leu	
	1415						1420				1425				
Asp	Pro	Pro	Leu	Leu	Thr	Arg	Tyr	Leu	Arg	Ile	His	Pro	Gln	Ser	
	1430						1435				1440				
Trp	Val	His	Gln	Ile	Ala	Leu	Arg	Met	Glu	Val	Leu	Gly	Cys	Glu	
	1445						1450				1455				
Ala	Gln	Asp	Leu	Tyr	Thr	Gly	Cys	Asn	Asp	Ile	Thr	Ala	Arg	Leu	
	1460						1465				1470				

Gln Tyr Val Lys Val Gly Ser Cys Lys Ser Glu Val Glu Val Asp
 1475 1480 1485

Ile His Tyr Cys Gln Gly Lys Cys Ala Ser Lys Ala Met Tyr Ser
 1490 1495 1500

Ile Asp Ile Asn Asp Val Gln Asp Gln Cys Ser Cys Cys Ser Pro
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Thr Arg Thr Glu Pro Met Gln Val Ala Leu His Cys Thr Asn Gly
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Ser Pro Arg Lys Cys Ser Lys
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 96
 Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
 20 25 30
 tgg gac tat atg caa agt gat ctc ggt gag ctg cct gtg gac gca aga
 144
 Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
 35 40 45
 ttt cct cct aga gtg cca aaa tct ttt cca ttc aac acc tca gtc gtg
 192
 Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
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Ala	Lys	Pro	Arg	Pro	Pro	Trp	Met	Gly	Leu	Leu	Gly	Pro	Thr	Ile	Gln
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336															
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cat	cct	gtc	agt	ctt	cat	gct	gtt	ggg	gta	tcc	tac	tgg	aaa	gct	tct
384															
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gag	gga	gct	gaa	tat	gat	gat	cag	acc	agt	caa	agg	gag	aaa	gaa	gat
432															
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gat	aaa	gtc	ttc	cct	ggg	gga	agc	cat	aca	tat	gtc	tgg	cag	gtc	ctg
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528															
Lys	Glu	Asn	Gly	Pro	Met	Ala	Ser	Asp	Pro	Leu	Cys	Leu	Thr	Tyr	Ser
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576															
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gga	gcc	cta	cta	gta	tgt	aga	gaa	ggg	agt	ctg	gcc	aag	gaa	aag	aca
624															
Gly	Ala	Leu	Leu	Val	Cys	Arg	Glu	Gly	Ser	Leu	Ala	Lys	Glu	Lys	Thr
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672															
Gln	Thr	Leu	His	Lys	Phe	Ile	Leu	Leu	Phe	Ala	Val	Phe	Asp	Glu	Gly
	210					215					220				
aaa	agt	tgg	cac	tca	gaa	aca	aag	aac	tcc	ttg	atg	cag	gat	agg	gat
720															
Lys	Ser	Trp	His	Ser	Glu	Thr	Lys	Asn	Ser	Leu	Met	Gln	Asp	Arg	Asp
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gct	gca	tct	gct	cgg	gcc	tgg	cct	aaa	atg	cac	aca	gtc	aat	ggg	tat
768															

Ala	Ala	Ser	Ala	Arg	Ala	Trp	Pro	Lys	Met	His	Thr	Val	Asn	Gly	Tyr	
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816																
Val	Asn	Arg	Ser	Leu	Pro	Gly	Leu	Ile	Gly	Cys	His	Arg	Lys	Ser	Val	
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864																
Tyr	Trp	His	Val	Ile	Gly	Met	Gly	Thr	Thr	Pro	Glu	Val	His	Ser	Ile	
		275					280					285				
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912																
Phe	Leu	Glu	Gly	His	Thr	Phe	Leu	Val	Arg	Asn	His	Arg	Gln	Ala	Ser	
	290						295				300					
ttg	gaa	atc	tcg	cca	ata	act	ttc	ctt	act	gct	caa	aca	ctc	ttg	atg	
960																
Leu	Glu	Ile	Ser	Pro	Ile	Thr	Phe	Leu	Thr	Ala	Gln	Thr	Leu	Leu	Met	
305					310					315					320	
gac	ctt	gga	cag	ttt	cta	ctg	ttt	tgt	cat	atc	tct	tcc	cac	caa	cat	
1008																
Asp	Leu	Gly	Gln	Phe	Leu	Leu	Phe	Cys	His	Ile	Ser	Ser	His	Gln	His	
				325					330					335		
gat	ggc	atg	gaa	gct	tat	gtc	aaa	gta	gac	agc	tgt	cca	gag	gaa	ccc	
1056																
Asp	Gly	Met	Glu	Ala	Tyr	Val	Lys	Val	Asp	Ser	Cys	Pro	Glu	Glu	Pro	
			340					345					350			
caa	cta	cga	atg	aaa	aat	aat	gaa	gaa	gcg	gaa	gac	tat	gat	gat	gat	
1104																
Gln	Leu	Arg	Met	Lys	Asn	Asn	Glu	Glu	Ala	Glu	Asp	Tyr	Asp	Asp	Asp	
		355					360					365				
ctt	act	gat	tct	gaa	atg	gat	gtg	gtc	agg	ttt	gat	gat	gac	aac	tct	
1152																
Leu	Thr	Asp	Ser	Glu	Met	Asp	Val	Val	Arg	Phe	Asp	Asp	Asp	Asn	Ser	
	370					375					380					
cct	tcc	ttt	atc	caa	att	cgc	tca	gtt	gcc	aag	aag	cat	cct	aaa	act	
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Pro	Ser	Phe	Ile	Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr	
385					390					395					400	
tgg	gta	cat	tac	att	gct	gct	gaa	gag	gag	gac	tgg	gac	tat	gct	ccc	
1248																
Trp	Val	His	Tyr	Ile	Ala	Ala	Glu	Glu	Glu	Asp	Trp	Asp	Tyr	Ala	Pro	
				405					410					415		
tta	gtc	ctc	gcc	ccc	gat	gac	aga	agt	tat	aaa	agt	caa	tat	ttg	aac	
1296																
Leu	Val	Leu	Ala	Pro	Asp	Asp	Arg	Ser	Tyr	Lys	Ser	Gln	Tyr	Leu	Asn	
			420					425					430			

aat ggc cct cag cgg att ggt agg aag tac aaa aaa gtc cga ttt atg
1344
Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
435 440 445

gca tac aca gat gaa acc ttt aag act cgt gaa gct att cag cat gaa
1392
Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
450 455 460

tca gga atc ttg gga cct tta ctt tat ggg gaa gtt gga gac aca ctg
1440
Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
465 470 475 480

ttg att ata ttt aag aat caa gca agc aga cca tat aac atc tac cct
1488
Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
485 490 495

cac gga atc act gat gtc cgt cct ttg tat tca agg aga tta cca aaa
1536
His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
500 505 510

ggg gta aaa cat ttg aag gat ttt cca att ctg cca gga gaa ata ttc
1584
Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
515 520 525

aaa tat aaa tgg aca gtg act gta gaa gat ggg cca act aaa tca gat
1632
Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
530 535 540

cct cgg tgc ctg acc cgc tat tac tct agt ttc gtt aat atg gag aga
1680
Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
545 550 555 560

gat cta gct tca gga ctc att ggc cct ctc ctc atc tgc tac aaa gaa
1728
Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
565 570 575

tct gta gat caa aga gga aac cag ata atg tca gac aag agg aat gtc
1776
Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
580 585 590

atc ctg ttt tct gta ttt gat gag aac cga agc tgg tac ctc aca gag
1824
Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
595 600 605

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1872
Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp

610	615	620
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Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val 625 630 635 640		
ttt gat agt ttg cag ttg tca gtt tgt ttg cat gag gtg gca tac tgg 1968		
Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp 645 650 655		
tac att cta agc att gga gca cag act gac ttc ctt tct gtc ttc ttc 2016		
Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe 660 665 670		
tct gga tat acc ttc aaa cac aaa atg gtc tat gaa gac aca ctc acc 2064		
Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr 675 680 685		
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Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro 690 695 700		
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Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly 705 710 715 720		
atg acc gcc tta ctg aag gtt tct agt tgt gac aag aac act ggt gat 2208		
Met Thr Ala Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp 725 730 735		
tat tac gag gac agt tat gaa gat att tca gca tac ttg ctg agt aaa 2256		
Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys 740 745 750		
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Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro 755 760 765		
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Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr 770 775 780		
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Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser 785 790 795 800		

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 Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
 805 810 815

cag agc ccc cgc agc ttt caa aag aaa aca cga cac tat ttt att gct
 2496
 Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
 820 825 830

gca gtg gag agg ctc tgg gat tat ggg atg agt agc tcc cca cat gtt
 2544
 Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
 835 840 845

cta aga aac agg gct cag agt ggc agt gtc cct cag ttc aag aaa gtt
 2592
 Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
 850 855 860

gtt ttc cag gaa ttt act gat ggc tcc ttt act cag ccc tta tac cgt
 2640
 Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
 865 870 875 880

gga gaa cta aat gaa cat ttg gga ctc ctg ggg cca tat ata aga gca
 2688
 Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
 885 890 895

gaa gtt gaa gat aat atc atg gta act ttc aga aat cag gcc tct cgt
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 Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
 900 905 910

ccc tat tcc ttc tat tct agc ctt att tct tat gag gaa gat cag agg
 2784
 Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
 915 920 925

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 Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
 930 935 940

act tac ttt tgg aaa gtg caa cat cat atg gca ccc act aaa gat gag
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 Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu
 945 950 955 960

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 Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
 965 970 975

gat gtg cac tca ggc ctg att gga ccc ctt ctg gtc tgc cac act aac
 2976
 Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn

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3024	Thr	Leu	Asn	Pro	Ala	His	Gly	Arg	Gln	Val	Thr	Val	Gln	Glu	
			995					1000					1005	Phe	
														Ala	
ctg	ttt	ttc	acc	atc	ttt	gat	gag	acc	aaa	agc	tg	tac	ttc	act	
3069	Leu	Phe	Phe	Thr	Ile	Phe	Asp	Glu	Thr	Lys	Ser	Trp	Tyr	Phe	
		1010					1015					1020		Thr	
gaa	aat	atg	gaa	aga	aac	tgc	agg	gct	ccc	tgc	aat	atc	cag	atg	
3114	Glu	Asn	Met	Glu	Arg	Asn	Cys	Arg	Ala	Pro	Cys	Asn	Ile	Gln	
		1025					1030					1035		Met	
gaa	gat	ccc	act	ttt	aaa	gag	aat	tat	cgc	ttc	cat	gca	atc	aat	
3159	Glu	Asp	Pro	Thr	Phe	Lys	Glu	Asn	Tyr	Arg	Phe	His	Ala	Ile	
		1040					1045					1050		Asn	
ggc	tac	ata	atg	gat	aca	cta	cct	ggc	tta	gta	atg	gct	cag	gat	
3204	Gly	Tyr	Ile	Met	Asp	Thr	Leu	Pro	Gly	Leu	Val	Met	Ala	Gln	
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3249	Gln	Arg	Ile	Arg	Trp	Tyr	Leu	Leu	Ser	Met	Gly	Ser	Asn	Glu	
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		1085					1090					1095		Lys	
aaa	gag	gag	tat	aaa	atg	gca	ctg	tac	aat	ctc	tat	cca	ggt	gtt	
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		1100					1105					1110		Val	
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3384	Phe	Glu	Thr	Val	Glu	Met	Leu	Pro	Ser	Lys	Ala	Gly	Ile	Trp	
		1115					1120					1125		Arg	
gtg	gaa	tgc	ctt	att	ggc	gag	cat	cta	cat	gct	ggg	atg	agc	aca	
3429	Val	Glu	Cys	Leu	Ile	Gly	Glu	His	Leu	His	Ala	Gly	Met	Ser	
		1130					1135					1140		Thr	
ctt	ttt	ctg	gtg	tac	agc	aat	aag	tgt	cag	act	ccc	ctg	gga	atg	
3474	Leu	Phe	Leu	Val	Tyr	Ser	Asn	Lys	Cys	Gln	Thr	Pro	Leu	Gly	
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3519
Ala Ser Gly His Ile Arg Asp Phe Gln Ile Thr Ala Ser Gly Gln
1160 1165 1170

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3564
Tyr Gly Gln Trp Ala Pro Lys Leu Ala Arg Leu His Tyr Ser Gly
1175 1180 1185

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3609
Ser Ile Asn Ala Trp Ser Thr Lys Glu Pro Phe Ser Trp Ile Lys
1190 1195 1200

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3654
Val Asp Leu Leu Ala Pro Met Ile Ile His Gly Ile Lys Thr Gln
1205 1210 1215

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3699
Gly Ala Arg Gln Lys Phe Ser Ser Leu Tyr Ile Ser Gln Phe Ile
1220 1225 1230

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3744
Ile Met Tyr Ser Leu Asp Gly Lys Lys Trp Gln Thr Tyr Arg Gly
1235 1240 1245

aat tcc act gga acc tta atg gtc ttc ttt ggc aat gtg gat tca
3789
Asn Ser Thr Gly Thr Leu Met Val Phe Phe Gly Asn Val Asp Ser
1250 1255 1260

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3834
Ser Gly Ile Lys His Asn Ile Phe Asn Pro Pro Ile Ile Ala Arg
1265 1270 1275

tac atc cgt ttg cac cca act cat tat agc att cgc agc act ctt
3879
Tyr Ile Arg Leu His Pro Thr His Tyr Ser Ile Arg Ser Thr Leu
1280 1285 1290

cgc atg gag ttg atg ggc tgt gat tta aat agt tgc agc atg cca
3924
Arg Met Glu Leu Met Gly Cys Asp Leu Asn Ser Cys Ser Met Pro
1295 1300 1305

ttg gga atg gag agt aaa gca ata tca gat gca cag att act gct
3969
Leu Gly Met Glu Ser Lys Ala Ile Ser Asp Ala Gln Ile Thr Ala
1310 1315 1320

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4014
Ser Ser Tyr Phe Thr Asn Met Phe Ala Thr Trp Ser Pro Ser Lys

1325		1330		1335
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4059				
Ala Arg Leu His Leu Gln Gly	Arg Ser Asn Ala Trp	Arg Pro Gln		
1340	1345	1350		
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4104				
Val Asn Asn Pro Lys Glu Trp	Leu Gln Val Asp Phe	Gln Lys Thr		
1355	1360	1365		
atg aaa gtc aca gga gta act	act cag gga gta aaa	tct ctg ctt		
4149				
Met Lys Val Thr Gly Val Thr	Thr Gln Gly Val Lys	Ser Leu Leu		
1370	1375	1380		
acc agc atg tat gtg aag gag	ttc ctc atc tcc agc	agt caa gat		
4194				
Thr Ser Met Tyr Val Lys Glu	Phe Leu Ile Ser Ser	Ser Gln Asp		
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ggc cat cag tgg act ctc ttt	ttt cag aat ggc aaa	gta aag gtt		
4239				
Gly His Gln Trp Thr Leu Phe	Phe Gln Asn Gly Lys	Val Lys Val		
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4284				
Phe Gln Gly Asn Gln Asp Ser	Phe Thr Pro Val Val	Asn Ser Leu		
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gac cca ccg tta ctg act cgc	tac ctt cga att cac	ccc cag agt		
4329				
Asp Pro Pro Leu Leu Thr Arg	Tyr Leu Arg Ile His	Pro Gln Ser		
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4374				
Trp Val His Gln Ile Ala Leu	Arg Met Glu Val Leu	Gly Cys Glu		
1445	1450	1455		
gca cag gac ctc tac acc ggt	gat gac aac tct cct	tcc ttt atc		
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1475	1480	1485		
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1490	1495	1500		

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Thr Asn 1505	Asp Cys 1505	Gly Cys 1505	Thr 1510	Thr Thr 1510	Thr Cys 1515	Leu 1515	Pro Asp 1515	Lys 1515
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Val Cys 1520	Val His 1520	Arg Ser 1525	Thr 1525	Ile Tyr 1525	Pro Val 1530	Gly 1530	Gln Phe 1530	Trp 1530
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Val Met 1550	Gly Leu 1550	Arg Val 1555	Ala 1555	Gln Cys 1555	Ser Gln 1560	Lys 1560	Pro Cys 1560	Glu 1560
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Asp Ser 1565	Cys Arg 1565	Ser Gly 1570	Phe 1570	Thr Tyr 1570	Val Leu 1575	His 1575	Glu Gly 1575	Glu 1575
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Ser Pro 1595	Arg Gly 1595	Asp Ser 1600	Gln 1600	Ser Ser 1600	Trp Lys 1605	Ser 1605	Val Gly 1605	Ser 1605
cag tgg 4869	gcc tcc 4869	ccg gag 4869	aac 4869	ccc tgc 4869	ctc atc 4869	aat 4869	gag tgt 4869	gtc 4869
Gln Trp 1610	Ala Ser 1610	Pro Glu 1615	Asn 1615	Pro Cys 1615	Leu Ile 1620	Asn 1620	Glu Cys 1620	Val 1620
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Arg Val 1625	Lys Glu 1625	Glu Val 1630	Phe 1630	Ile Gln 1630	Gln Arg 1635	Asn 1635	Val Ser 1635	Cys 1635
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Pro Gln 1640	Leu Glu 1640	Val Pro 1645	Val 1645	Cys Pro 1645	Ser Gly 1650	Phe 1650	Gln Leu 1650	Ser 1650
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Gly Gly Gln Ile Met Thr Leu Lys Arg Asp Glu Thr Leu Gln Asp				
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Gly Cys Asp Thr His Phe Cys Lys Val Asn Glu Arg Gly Glu Tyr				
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5544				
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1835		1840		1845

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5589

Tyr Ser Ile Asp Ile Asn Asp Val Gln Asp Gln Cys Ser Cys Cys
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5634

Ser Pro Thr Arg Thr Glu Pro Met Gln Val Ala Leu His Cys Thr
1865 1870 1875

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5679

Asn Gly Ser Val Val Tyr His Glu Val Leu Asn Ala Met Glu Cys
1880 1885 1890

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1895 1900

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<211> 1902

<212> PRT

<213> Artificial Sequence

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<223> Synthetic Construct

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Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
35 40 45

Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
50 55 60

Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
65 70 75 80

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

Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
100 105 110

His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
115 120 125

Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
130 135 140

Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
145 150 155 160

Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
165 170 175

Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile
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Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr
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Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly
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Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp
225 230 235 240

Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr
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Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val
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Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile
275 280 285

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

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Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
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Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
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Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
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Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
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Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
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Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
755 760 765

Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
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Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
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Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn

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 Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
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 His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
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Phe	Asp	Ser	Leu	Gln	Leu	Ser	Val	Cys	Leu	His	Glu	Val	Ala	Tyr	Trp
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tac att cta agc att gga gca cag act gac ttc ctt tct gtc ttc ttc															
2016															
Tyr	Ile	Leu	Ser	Ile	Gly	Ala	Gln	Thr	Asp	Phe	Leu	Ser	Val	Phe	Phe
			660					665					670		
tct gga tat acc ttc aaa cac aaa atg gtc tat gaa gac aca ctc acc															
2064															
Ser	Gly	Tyr	Thr	Phe	Lys	His	Lys	Met	Val	Tyr	Glu	Asp	Thr	Leu	Thr
		675					680					685			

cta ttc cca ttc tca gga gaa act gtc ttc atg tcg atg gaa aac cca
 2112
 Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
 690 695 700

ggt cta tgg att ctg ggg tgc cac aac tca gac ttt cgg aac aga ggc
 2160
 Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
 705 710 715 720

atg acc gcc tta ctg aag gtt tct agt tgt gac aag aac act ggt gat
 2208
 Met Thr Ala Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp
 725 730 735

tat tac gag gac agt tat gaa gat att tca gca tac ttg ctg agt aaa
 2256
 Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
 740 745 750

aac aat gcc att gaa cca aga agc ttc tcc cag aat tca aga cac cct
 2304
 Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
 755 760 765

agc act agg caa aag caa ttt aat gcc acc aca att cca gaa aat act
 2352
 Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
 770 775 780

act ctt cag tca gat caa gag gaa att gac tat gat gat acc ata tca
 2400
 Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
 785 790 795 800

gtt gaa atg aag aag gaa gat ttt gac att tat gat gag gat gaa aat
 2448
 Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
 805 810 815

cag agc ccc cgc agc ttt caa aag aaa aca cga cac tat ttt att gct
 2496
 Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
 820 825 830

gca gtg gag agg ctc tgg gat tat ggg atg agt agc tcc cca cat gtt
 2544
 Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
 835 840 845

cta aga aac agg gct cag agt ggc agt gtc cct cag ttc aag aaa gtt
 2592
 Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
 850 855 860

gtt ttc cag gaa ttt act gat ggc tcc ttt act cag ccc tta tac cgt
 2640
 Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg

865		870		875		880									
gga gaa cta aat gaa cat ttg gga ctc ctg ggg cca tat ata aga gca															
2688															
Gly	Glu	Leu	Asn	Glu	His	Leu	Gly	Leu	Leu	Gly	Pro	Tyr	Ile	Arg	Ala
				885					890					895	
gaa gtt gaa gat aat atc atg gta act ttc aga aat cag gcc tct cgt															
2736															
Glu	Val	Glu	Asp	Asn	Ile	Met	Val	Thr	Phe	Arg	Asn	Gln	Ala	Ser	Arg
			900					905					910		
ccc tat tcc ttc tat tct agc ctt att tct tat gag gaa gat cag agg															
2784															
Pro	Tyr	Ser	Phe	Tyr	Ser	Ser	Leu	Ile	Ser	Tyr	Glu	Glu	Asp	Gln	Arg
		915					920					925			
caa gga gca gaa cct aga aaa aac ttt gtc aag cct aat gaa acc aaa															
2832															
Gln	Gly	Ala	Glu	Pro	Arg	Lys	Asn	Phe	Val	Lys	Pro	Asn	Glu	Thr	Lys
	930					935					940				
act tac ttt tgg aaa gtg caa cat cat atg gca ccc act aaa gat gag															
2880															
Thr	Tyr	Phe	Trp	Lys	Val	Gln	His	His	Met	Ala	Pro	Thr	Lys	Asp	Glu
945					950					955					960
ttt gac tgc aaa gcc tgg gct tat ttc tct gat gtt gac ctg gaa aaa															
2928															
Phe	Asp	Cys	Lys	Ala	Trp	Ala	Tyr	Phe	Ser	Asp	Val	Asp	Leu	Glu	Lys
				965					970					975	
gat gtg cac tca ggc ctg att gga ccc ctt ctg gtc tgc cac act aac															
2976															
Asp	Val	His	Ser	Gly	Leu	Ile	Gly	Pro	Leu	Leu	Val	Cys	His	Thr	Asn
			980					985					990		
aca ctg aac cct gct cat ggg aga caa gtg aca gta cag gaa ttt gct															
3024															
Thr	Leu	Asn	Pro	Ala	His	Gly	Arg	Gln	Val	Thr	Val	Gln	Glu	Phe	Ala
		995					1000					1005			
ctg ttt ttc acc atc ttt gat gag acc aaa agc tgg tac ttc act															
3069															
Leu	Phe	Phe	Thr	Ile	Phe	Asp	Glu	Thr	Lys	Ser	Trp	Tyr	Phe	Thr	
	1010					1015					1020				
gaa aat atg gaa aga aac tgc agg gct ccc tgc aat atc cag atg															
3114															
Glu	Asn	Met	Glu	Arg	Asn	Cys	Arg	Ala	Pro	Cys	Asn	Ile	Gln	Met	
	1025					1030					1035				
gaa gat ccc act ttt aaa gag aat tat cgc ttc cat gca atc aat															
3159															
Glu	Asp	Pro	Thr	Phe	Lys	Glu	Asn	Tyr	Arg	Phe	His	Ala	Ile	Asn	
	1040					1045					1050				

ggc tac ata atg gat aca cta cct ggc tta gta atg gct cag gat
3204
Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp
1055 1060 1065

caa agg att cga tgg tat ctg ctc agc atg ggc agc aat gaa aac
3249
Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn
1070 1075 1080

atc cat tct att cat ttc agt gga cat gtg ttc act gta cga aaa
3294
Ile His Ser Ile His Phe Ser Gly His Val Phe Thr Val Arg Lys
1085 1090 1095

aaa gag gag tat aaa atg gca ctg tac aat ctc tat cca ggt gtt
3339
Lys Glu Glu Tyr Lys Met Ala Leu Tyr Asn Leu Tyr Pro Gly Val
1100 1105 1110

ttt gag aca gtg gaa atg tta cca tcc aaa gct gga att tgg cgg
3384
Phe Glu Thr Val Glu Met Leu Pro Ser Lys Ala Gly Ile Trp Arg
1115 1120 1125

gtg gaa tgc ctt att ggc gag cat cta cat gct ggg atg agc aca
3429
Val Glu Cys Leu Ile Gly Glu His Leu His Ala Gly Met Ser Thr
1130 1135 1140

ctt ttt ctg gtg tac agc aat aag tgt cag act ccc ctg gga atg
3474
Leu Phe Leu Val Tyr Ser Asn Lys Cys Gln Thr Pro Leu Gly Met
1145 1150 1155

gct tct gga cac att aga gat ttt cag att aca gct tca gga caa
3519
Ala Ser Gly His Ile Arg Asp Phe Gln Ile Thr Ala Ser Gly Gln
1160 1165 1170

tat gga cag tgg gcc cca aag ctg gcc aga ctt cat tat tcc gga
3564
Tyr Gly Gln Trp Ala Pro Lys Leu Ala Arg Leu His Tyr Ser Gly
1175 1180 1185

tca atc aat gcc tgg agc acc aag gag ccc ttt tct tgg atc aag
3609
Ser Ile Asn Ala Trp Ser Thr Lys Glu Pro Phe Ser Trp Ile Lys
1190 1195 1200

gtg gat ctg ttg gca cca atg att att cac ggc atc aag acc cag
3654
Val Asp Leu Leu Ala Pro Met Ile Ile His Gly Ile Lys Thr Gln
1205 1210 1215

ggg gcc cgt cag aag ttc tcc agc ctc tac atc tct cag ttt atc
3699
Gly Ala Arg Gln Lys Phe Ser Ser Leu Tyr Ile Ser Gln Phe Ile

1220		1225		1230
atc atg tat agt ctt gat ggg	aag aag tgg cag act	tat cga gga		
3744				
Ile Met Tyr Ser Leu Asp Gly	Lys Lys Trp Gln Thr	Tyr Arg Gly		
1235	1240	1245		
aat tcc act gga acc tta atg	gtc ttc ttt ggc aat	gtg gat tca		
3789				
Asn Ser Thr Gly Thr Leu Met	Val Phe Phe Gly Asn	Val Asp Ser		
1250	1255	1260		
tct ggg ata aaa cac aat att	ttt aac cct cca att	att gct cga		
3834				
Ser Gly Ile Lys His Asn Ile	Phe Asn Pro Pro Ile	Ile Ala Arg		
1265	1270	1275		
tac atc cgt ttg cac cca act	cat tat agc att cgc	agc act ctt		
3879				
Tyr Ile Arg Leu His Pro Thr	His Tyr Ser Ile Arg	Ser Thr Leu		
1280	1285	1290		
cgc atg gag ttg atg ggc tgt	gat tta aat agt tgc	agc atg cca		
3924				
Arg Met Glu Leu Met Gly Cys	Asp Leu Asn Ser Cys	Ser Met Pro		
1295	1300	1305		
ttg gga atg gag agt aaa gca	ata tca gat gca cag	att act gct		
3969				
Leu Gly Met Glu Ser Lys Ala	Ile Ser Asp Ala Gln	Ile Thr Ala		
1310	1315	1320		
tca tcc tac ttt acc aat atg	ttt gcc acc tgg tct	cct tca aaa		
4014				
Ser Ser Tyr Phe Thr Asn Met	Phe Ala Thr Trp Ser	Pro Ser Lys		
1325	1330	1335		
gct cga ctt cac ctc caa ggg	agg agt aat gcc tgg	aga cct cag		
4059				
Ala Arg Leu His Leu Gln Gly	Arg Ser Asn Ala Trp	Arg Pro Gln		
1340	1345	1350		
gtg aat aat cca aaa gag tgg	ctg caa gtg gac ttc	cag aag aca		
4104				
Val Asn Asn Pro Lys Glu Trp	Leu Gln Val Asp Phe	Gln Lys Thr		
1355	1360	1365		
atg aaa gtc aca gga gta act	act cag gga gta aaa	tct ctg ctt		
4149				
Met Lys Val Thr Gly Val Thr	Thr Gln Gly Val Lys	Ser Leu Leu		
1370	1375	1380		
acc agc atg tat gtg aag gag	ttc ctc atc tcc agc	agt caa gat		
4194				
Thr Ser Met Tyr Val Lys Glu	Phe Leu Ile Ser Ser	Ser Gln Asp		
1385	1390	1395		

ggc cat cag tgg act ctc ttt ttt cag aat ggc aaa gta aag gtt
 4239
 Gly His Gln Trp Thr Leu Phe Phe Gln Asn Gly Lys Val Lys Val
 1400 1405 1410

ttt cag gga aat caa gac tcc ttc aca cct gtg gtg aac tct cta
 4284
 Phe Gln Gly Asn Gln Asp Ser Phe Thr Pro Val Val Asn Ser Leu
 1415 1420 1425

gac cca ccg tta ctg act cgc tac ctt cga att cac ccc cag agt
 4329
 Asp Pro Pro Leu Leu Thr Arg Tyr Leu Arg Ile His Pro Gln Ser
 1430 1435 1440

tgg gtg cac cag att gcc ctg agg atg gag gtt ctg ggc tgc gag
 4374
 Trp Val His Gln Ile Ala Leu Arg Met Glu Val Leu Gly Cys Glu
 1445 1450 1455

gca cag gac ctc tac acc ggt gat gac aac tct cct tcc ttt atc
 4419
 Ala Gln Asp Leu Tyr Thr Gly Asp Asp Asn Ser Pro Ser Phe Ile
 1460 1465 1470

caa att cgc tca gtt gcc aag aag cat cct aaa act tgg acc ggt
 4464
 Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr Trp Thr Gly
 1475 1480 1485

caa agg aac gtc tcc tgc ccc cag ctg gag gtc cct gtc tgc ccc
 4509
 Gln Arg Asn Val Ser Cys Pro Gln Leu Glu Val Pro Val Cys Pro
 1490 1495 1500

tcg ggc ttt cag ctg agc tgt aag acc tca gcg tgc tgc cca agc
 4554
 Ser Gly Phe Gln Leu Ser Cys Lys Thr Ser Ala Cys Cys Pro Ser
 1505 1510 1515

tgt cgc tgt gag cgc atg gag gcc tgc atg ctc aat ggc act gtc
 4599
 Cys Arg Cys Glu Arg Met Glu Ala Cys Met Leu Asn Gly Thr Val
 1520 1525 1530

att ggg ccc ggg aag act gtg atg atc gat gtg tgc acg acc tgc
 4644
 Ile Gly Pro Gly Lys Thr Val Met Ile Asp Val Cys Thr Thr Cys
 1535 1540 1545

cgc tgc atg gtg cag gtg ggg gtc atc tct gga ttc aag ctg gag
 4689
 Arg Cys Met Val Gln Val Gly Val Ile Ser Gly Phe Lys Leu Glu
 1550 1555 1560

tgc agg aag acc acc tgc aac ccc tgc ccc ctg ggt tac aag gaa
 4734
 Cys Arg Lys Thr Thr Cys Asn Pro Cys Pro Leu Gly Tyr Lys Glu

1565	1570	1575
gaa aat aac aca ggt gaa tgt	tgt ggg aga tgt ttg	cct acg gct
4779		
Glu Asn Asn Thr Gly Glu Cys	Cys Gly Arg Cys Leu	Pro Thr Ala
1580	1585	1590
tgc acc att cag cta aga gga	gga cag atc atg aca	ctg aag cgt
4824		
Cys Thr Ile Gln Leu Arg Gly	Gly Gln Ile Met Thr	Leu Lys Arg
1595	1600	1605
gat gag acg ctc cag gat ggc	tgt gat act cac ttc	tgc aag gtc
4869		
Asp Glu Thr Leu Gln Asp Gly	Cys Asp Thr His Phe	Cys Lys Val
1610	1615	1620
aat gag aga gga gag tac ttc	tgg gag aag agg gtc	aca ggc tgc
4914		
Asn Glu Arg Gly Glu Tyr Phe	Trp Glu Lys Arg Val	Thr Gly Cys
1625	1630	1635
cca ccc ttt gat gaa cac aag	tgt ctg gct gag gga	ggg aaa att
4959		
Pro Pro Phe Asp Glu His Lys	Cys Leu Ala Glu Gly	Gly Lys Ile
1640	1645	1650
atg aaa att cca ggc acc tgc	tgt gac aca tgt gag	gag cct gag
5004		
Met Lys Ile Pro Gly Thr Cys	Cys Asp Thr Cys Glu	Glu Pro Glu
1655	1660	1665
tgc aac gac atc act gcc agg	ctg cag tat gtc aag	gtg gga agc
5049		
Cys Asn Asp Ile Thr Ala Arg	Leu Gln Tyr Val Lys	Val Gly Ser
1670	1675	1680
tgt aag tct gaa gta gag gtg	gat atc cac tac tgc	cag ggc aaa
5094		
Cys Lys Ser Glu Val Glu Val	Asp Ile His Tyr Cys	Gln Gly Lys
1685	1690	1695
tgt gcc agc aaa gcc atg tac	tcc att gac atc aac	gat gtg cag
5139		
Cys Ala Ser Lys Ala Met Tyr	Ser Ile Asp Ile Asn	Asp Val Gln
1700	1705	1710
gac cag tgc tcc tgc tgc tct	ccg aca cgg acg gag	ccc atg cag
5184		
Asp Gln Cys Ser Cys Cys Ser	Pro Thr Arg Thr Glu	Pro Met Gln
1715	1720	1725
gtg gcc ctg cac tgc acc aat	ggc tct gtt gtg tac	cat gag gtt
5229		
Val Ala Leu His Cys Thr Asn	Gly Ser Val Val Tyr	His Glu Val
1730	1735	1740

ctc aat gcc atg gag tgc aaa tgc tcc ccc agg aag tgc agc aag
5274

Leu Asn Ala Met Glu Cys Lys Cys Ser Pro Arg Lys Cys Ser Lys
1745 1750 1755

tga tga
5280

<210> 152

<211> 1758

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 152

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Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
20 25 30

Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
35 40 45

Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
50 55 60

Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
65 70 75 80

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

Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
100 105 110

His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
115 120 125

Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
130 135 140

Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
145 150 155 160

Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
165 170 175

Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile
180 185 190

Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr
195 200 205

Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly
210 215 220

Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp
225 230 235 240

Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr
245 250 255

Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val
260 265 270

Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile
275 280 285

Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser
290 295 300

Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met
305 310 315 320

Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His
325 330 335

Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro
340 345 350

Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp
355 360 365

Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser
370 375 380

Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr

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

Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
625 630 635 640

Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
645 650 655

Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
660 665 670

Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
675 680 685

Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
690 695 700

Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
705 710 715 720

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

Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
740 745 750

Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
755 760 765

Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
770 775 780

Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
785 790 795 800

Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
805 810 815

Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
820 825 830

Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
835 840 845

Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val

850		855		860
Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg				
865		870		880
Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala				
		885		895
Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg				
		900		910
Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg				
		915		925
Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys				
		930		940
Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu				
945		950		960
Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys				
		965		975
Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn				
		980		990
Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala				
		995		1005
Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr				
		1010		1020
Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met				
		1025		1035
Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn				
		1040		1050
Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp				
		1055		1065
Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn				
		1070		1080

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

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 Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
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 Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
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 Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
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 Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
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 Ala Lys Pro Arg Pro Pro Trp Met Gly Leu Leu Gly Pro Thr Ile Gln
 85 90 95
 gct gag gtt tat gat aca gtg gtc att aca ctt aag aac atg gct tcc
 336
 Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
 100 105 110
 cat cct gtc agt ctt cat gct gtt ggt gta tcc tac tgg aaa gct tct
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His	Pro	Val	Ser	Leu	His	Ala	Val	Gly	Val	Ser	Tyr	Trp	Lys	Ala	Ser	
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Glu	Gly	Ala	Glu	Tyr	Asp	Asp	Gln	Thr	Ser	Gln	Arg	Glu	Lys	Glu	Asp	
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gat	aaa	gtc	ttc	cct	ggt	gga	agc	cat	aca	tat	gtc	tgg	cag	gtc	ctg	
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 Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His
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 Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro
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 Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp
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 370 375 380

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 Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr
 385 390 395 400

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 1248
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 405 410 415

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 420 425 430

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 Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
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1536																	
His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys																	
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Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe																	
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1872																	
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610						615						620					
cca gag ttc caa gcc tcc aac atc atg cac agc atc aat ggc tat gtt																	
1920																	
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625						630						635					
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645						650						655					
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2016																	
Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe																	
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675 680 685

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690 695 700

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2160
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705 710 715 720

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2208
Met Thr Ala Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp
725 730 735

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2256
Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
740 745 750

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755 760 765

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2352
Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
770 775 780

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2400
Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
785 790 795 800

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2448
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805 810 815

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Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
820 825 830

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2544
Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
835 840 845

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2592
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Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys 930 935 940		
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3249			
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3339			
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3384			
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3429			
Val Glu	Cys Leu Ile Gly Glu	His Leu His Ala Gly	Met Ser Thr
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3474			
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3519			
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3564			
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1175	1180	1185	
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3609			
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1190	1195	1200	
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3654			
Val Asp	Leu Leu Ala Pro Met	Ile Ile His Gly Ile	Lys Thr Gln

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1220	1225	1230
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3744		
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1235	1240	1245
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3789		
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3834		
Ser Gly Ile Lys His Asn Ile	Phe Asn Pro Pro Ile	Ile Ala Arg
1265	1270	1275
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3879		
Tyr Ile Arg Leu His Pro Thr	His Tyr Ser Ile Arg	Ser Thr Leu
1280	1285	1290
cgc atg gag ttg atg ggc tgt	gat tta aat agt tgc	agc atg cca
3924		
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1295	1300	1305
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3969		
Leu Gly Met Glu Ser Lys Ala	Ile Ser Asp Ala Gln	Ile Thr Ala
1310	1315	1320
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4014		
Ser Ser Tyr Phe Thr Asn Met	Phe Ala Thr Trp Ser	Pro Ser Lys
1325	1330	1335
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4059		
Ala Arg Leu His Leu Gln Gly	Arg Ser Asn Ala Trp	Arg Pro Gln
1340	1345	1350
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4104		
Val Asn Asn Pro Lys Glu Trp	Leu Gln Val Asp Phe	Gln Lys Thr
1355	1360	1365
atg aaa gtc aca gga gta act	act cag gga gta aaa	tct ctg ctt
4149		
Met Lys Val Thr Gly Val Thr	Thr Gln Gly Val Lys	Ser Leu Leu
1370	1375	1380

acc agc 4194	atg tat gtg aag gag	ttc ctc atc tcc agc	agt caa gat
Thr Ser 1385	Met Tyr Val Lys 1390	Phe Leu Ile Ser 1395	Ser Gln Asp
ggc cat 4239	cag tgg act ctc ttt	ttt cag aat ggc aaa	gta aag gtt
Gly His 1400	Gln Trp Thr Leu 1405	Phe Gln Asn Gly 1410	Val Lys Val
ttt cag 4284	gga aat caa gac tcc	ttc aca cct gtg gtg	aac tct cta
Phe Gln 1415	Gly Asn Gln Asp 1420	Phe Thr Pro Val 1425	Asn Ser Leu
gac cca 4329	ccg tta ctg act cgc	tac ctt cga att cac	ccc cag agt
Asp Pro 1430	Pro Leu Leu Thr 1435	Tyr Leu Arg Ile 1440	Pro Gln Ser
tgg gtg 4374	cac cag att gcc ctg	agg atg gag gtt ctg	ggc tgc gag
Trp Val 1445	His Gln Ile Ala 1450	Arg Met Glu Val 1455	Gly Cys Glu
gca cag 4419	gac ctc tac acc ggt	gat gac aac tct cct	tcc ttt atc
Ala Gln 1460	Asp Leu Tyr Thr 1465	Asp Asp Asn Ser 1470	Ser Phe Ile
caa att 4464	cgc tca gtt gcc aag	aag cat cct aaa act	tgg acc ggt
Gln Ile 1475	Arg Ser Val Ala 1480	Lys His Pro Lys 1485	Trp Thr Gly
tgc aac 4509	gac atc act gcc agg	ctg cag tat gtc aag	gtg gga agc
Cys Asn 1490	Asp Ile Thr Ala 1495	Leu Gln Tyr Val 1500	Val Gly Ser
tgt aag 4554	tct gaa gta gag gtg	gat atc cac tac tgc	cag ggc aaa
Cys Lys 1505	Ser Glu Val Glu 1510	Asp Ile His Tyr 1515	Gln Gly Lys
tgt gcc 4599	agc aaa gcc atg tac	tcc att gac atc aac	gat gtg cag
Cys Ala 1520	Ser Lys Ala Met 1525	Ser Ile Asp Ile 1530	Asp Val Gln
gac cag 4644	tgc tcc tgc tgc tct	ccg aca cgg acg gag	ccc atg cag
Asp Gln 1535	Cys Ser Cys Cys 1540	Pro Thr Arg Thr 1545	Pro Met Gln
gtg gcc 4689	ctg cac tgc acc aat	ggc tct gtt gtg tac	cat gag gtt
Val Ala	Leu His Cys Thr Asn	Gly Ser Val Val Tyr	His Glu Val

1550 1555 1560
 ctc aat gcc atg gag tgc aaa tgc tcc ccc agg aag tgc agc aag
 4734
 Leu Asn Ala Met Glu Cys Lys Cys Ser Pro Arg Lys Cys Ser Lys
 1565 1570 1575

 tga tag
 4740

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 Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
 35 40 45

 Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
 50 55 60

 Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
 65 70 75 80

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

 Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
 100 105 110

 His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
 115 120 125

 Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
 130 135 140

 Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu

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

Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr
385 390 395 400

Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro
405 410 415

Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn
420 425 430

Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
435 440 445

Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
450 455 460

Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
465 470 475 480

Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
485 490 495

His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
500 505 510

Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
515 520 525

Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
530 535 540

Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
545 550 555 560

Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
565 570 575

Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
580 585 590

Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
595 600 605

Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp

610	615	620
Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val 625 630 635 640		
Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp 645 650 655		
Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe 660 665 670		
Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr 675 680 685		
Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro 690 695 700		
Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly 705 710 715 720		
Met Thr Ala Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp 725 730 735		
Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys 740 745 750		
Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro 755 760 765		
Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr 770 775 780		
Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser 785 790 795 800		
Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn 805 810 815		
Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala 820 825 830		
Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val 835 840 845		

Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
850 855 860

Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
865 870 875 880

Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
885 890 895

Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
900 905 910

Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
915 920 925

Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
930 935 940

Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu
945 950 955 960

Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
965 970 975

Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
980 985 990

Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala
995 1000 1005

Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr
1010 1015 1020

Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met
1025 1030 1035

Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn
1040 1045 1050

Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp
1055 1060 1065

Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn

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

Arg	Met	Glu	Leu	Met	Gly	Cys	Asp	Leu	Asn	Ser	Cys	Ser	Met	Pro
	1295					1300					1305			
Leu	Gly	Met	Glu	Ser	Lys	Ala	Ile	Ser	Asp	Ala	Gln	Ile	Thr	Ala
	1310					1315					1320			
Ser	Ser	Tyr	Phe	Thr	Asn	Met	Phe	Ala	Thr	Trp	Ser	Pro	Ser	Lys
	1325					1330					1335			
Ala	Arg	Leu	His	Leu	Gln	Gly	Arg	Ser	Asn	Ala	Trp	Arg	Pro	Gln
	1340					1345					1350			
Val	Asn	Asn	Pro	Lys	Glu	Trp	Leu	Gln	Val	Asp	Phe	Gln	Lys	Thr
	1355					1360					1365			
Met	Lys	Val	Thr	Gly	Val	Thr	Thr	Gln	Gly	Val	Lys	Ser	Leu	Leu
	1370					1375					1380			
Thr	Ser	Met	Tyr	Val	Lys	Glu	Phe	Leu	Ile	Ser	Ser	Ser	Gln	Asp
	1385					1390					1395			
Gly	His	Gln	Trp	Thr	Leu	Phe	Phe	Gln	Asn	Gly	Lys	Val	Lys	Val
	1400					1405					1410			
Phe	Gln	Gly	Asn	Gln	Asp	Ser	Phe	Thr	Pro	Val	Val	Asn	Ser	Leu
	1415					1420					1425			
Asp	Pro	Pro	Leu	Leu	Thr	Arg	Tyr	Leu	Arg	Ile	His	Pro	Gln	Ser
	1430					1435					1440			
Trp	Val	His	Gln	Ile	Ala	Leu	Arg	Met	Glu	Val	Leu	Gly	Cys	Glu
	1445					1450					1455			
Ala	Gln	Asp	Leu	Tyr	Thr	Gly	Asp	Asp	Asn	Ser	Pro	Ser	Phe	Ile
	1460					1465					1470			
Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr	Trp	Thr	Gly
	1475					1480					1485			
Cys	Asn	Asp	Ile	Thr	Ala	Arg	Leu	Gln	Tyr	Val	Lys	Val	Gly	Ser
	1490					1495					1500			
Cys	Lys	Ser	Glu	Val	Glu	Val	Asp	Ile	His	Tyr	Cys	Gln	Gly	Lys

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Cys Ala Ser Lys Ala Met Tyr Ser Ile Asp Ile Asn Asp Val Gln				
1520		1525		1530
Asp Gln Cys Ser Cys Cys Ser Pro Thr Arg Thr Glu Pro Met Gln				
1535		1540		1545
Val Ala Leu His Cys Thr Asn Gly Ser Val Val Tyr His Glu Val				
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Leu Asn Ala Met Glu Cys Lys Cys Ser Pro Arg Lys Cys Ser Lys				
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 1 5 10 15
 tgc ttt agt gcc acc aga aga tac tac ctg ggt gca gtg gaa ctg tca
 96
 Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
 20 25 30
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 144
 Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
 35 40 45
 ttt cct cct aga gtg cca aaa tct ttt cca ttc aac acc tca gtc gtg
 192
 Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
 50 55 60
 tac aaa aag act ctg ttt gta gaa ttc acg gat cac ctt ttc aac atc
 240
 Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
 65 70 75 80

gct aag cca agg cca ccc tgg atg ggt ctg cta ggt cct acc atc cag
288
Ala Lys Pro Arg Pro Pro Trp Met Gly Leu Leu Gly Pro Thr Ile Gln
85 90 95

gct gag gtt tat gat aca gtg gtc att aca ctt aag aac atg gct tcc
336
Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
100 105 110

cat cct gtc agt ctt cat gct gtt ggt gta tcc tac tgg aaa gct tct
384
His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
115 120 125

gag gga gct gaa tat gat gat cag acc agt caa agg gag aaa gaa gat
432
Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
130 135 140

gat aaa gtc ttc cct ggt gga agc cat aca tat gtc tgg cag gtc ctg
480
Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
145 150 155 160

aaa gag aat ggt cca atg gcc tct gac cca ctg tgc ctt acc tac tca
528
Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
165 170 175

tat ctt tct cat gtg gac ctg gta aaa gac ttg aat tca ggc ctc att
576
Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile
180 185 190

gga gcc cta cta gta tgt aga gaa ggg agt ctg gcc aag gaa aag aca
624
Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr
195 200 205

cag acc ttg cac aaa ttt ata cta ctt ttt gct gta ttt gat gaa ggg
672
Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly
210 215 220

aaa agt tgg cac tca gaa aca aag aac tcc ttg atg cag gat agg gat
720
Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp
225 230 235 240

gct gca tct gct cgg gcc tgg cct aaa atg cac aca gtc aat ggt tat
768
Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr
245 250 255

gta aac agg tct ctg cca ggt ctg att gga tgc cac agg aaa tca gtc
816
Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val

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864															
Tyr	Trp	His	Val	Ile	Gly	Met	Gly	Thr	Thr	Pro	Glu	Val	His	Ser	Ile
		275					280					285			
ttc	ctc	gaa	ggt	cac	aca	ttt	ctt	gtg	agg	aac	cat	cgc	cag	gcg	tcc
912															
Phe	Leu	Glu	Gly	His	Thr	Phe	Leu	Val	Arg	Asn	His	Arg	Gln	Ala	Ser
	290					295					300				
ttg	gaa	atc	tcg	cca	ata	act	ttc	ctt	act	gct	caa	aca	ctc	ttg	atg
960															
Leu	Glu	Ile	Ser	Pro	Ile	Thr	Phe	Leu	Thr	Ala	Gln	Thr	Leu	Leu	Met
305					310					315					320
gac	ctt	gga	cag	ttt	cta	ctg	ttt	tgt	cat	atc	tct	tcc	cac	caa	cat
1008															
Asp	Leu	Gly	Gln	Phe	Leu	Leu	Phe	Cys	His	Ile	Ser	Ser	His	Gln	His
			325						330					335	
gat	ggc	atg	gaa	gct	tat	gtc	aaa	gta	gac	agc	tgt	cca	gag	gaa	ccc
1056															
Asp	Gly	Met	Glu	Ala	Tyr	Val	Lys	Val	Asp	Ser	Cys	Pro	Glu	Glu	Pro
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caa	cta	cga	atg	aaa	aat	aat	gaa	gaa	gcg	gaa	gac	tat	gat	gat	gat
1104															
Gln	Leu	Arg	Met	Lys	Asn	Asn	Glu	Glu	Ala	Glu	Asp	Tyr	Asp	Asp	Asp
		355					360					365			
ctt	act	gat	tct	gaa	atg	gat	gtg	gtc	agg	ttt	gat	gat	gac	aac	tct
1152															
Leu	Thr	Asp	Ser	Glu	Met	Asp	Val	Val	Arg	Phe	Asp	Asp	Asp	Asn	Ser
	370					375					380				
cct	tcc	ttt	atc	caa	att	cgc	tca	gtt	gcc	aag	aag	cat	cct	aaa	act
1200															
Pro	Ser	Phe	Ile	Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr
385					390					395					400
tgg	gta	cat	tac	att	gct	gct	gaa	gag	gag	gac	tgg	gac	tat	gct	ccc
1248															
Trp	Val	His	Tyr	Ile	Ala	Ala	Glu	Glu	Glu	Asp	Trp	Asp	Tyr	Ala	Pro
				405					410					415	
tta	gtc	ctc	gcc	ccc	gat	gac	aga	agt	tat	aaa	agt	caa	tat	ttg	aac
1296															
Leu	Val	Leu	Ala	Pro	Asp	Asp	Arg	Ser	Tyr	Lys	Ser	Gln	Tyr	Leu	Asn
			420						425				430		
aat	ggc	cct	cag	cgg	att	ggt	agg	aag	tac	aaa	aaa	gtc	cga	ttt	atg
1344															
Asn	Gly	Pro	Gln	Arg	Ile	Gly	Arg	Lys	Tyr	Lys	Lys	Val	Arg	Phe	Met
		435					440					445			

gca tac aca gat gaa acc ttt aag act cgt gaa gct att cag cat gaa
1392
Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
450 455 460

tca gga atc ttg gga cct tta ctt tat ggg gaa gtt gga gac aca ctg
1440
Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
465 470 475 480

ttg att ata ttt aag aat caa gca agc aga cca tat aac atc tac cct
1488
Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
485 490 495

cac gga atc act gat gtc cgt cct ttg tat tca agg aga tta cca aaa
1536
His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
500 505 510

ggg gta aaa cat ttg aag gat ttt cca att ctg cca gga gaa ata ttc
1584
Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
515 520 525

aaa tat aaa tgg aca gtg act gta gaa gat ggg cca act aaa tca gat
1632
Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
530 535 540

cct cgg tgc ctg acc cgc tat tac tct agt ttc gtt aat atg gag aga
1680
Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
545 550 555 560

gat cta gct tca gga ctc att ggc cct ctc ctc atc tgc tac aaa gaa
1728
Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
565 570 575

tct gta gat caa aga gga aac cag ata atg tca gac aag agg aat gtc
1776
Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
580 585 590

atc ctg ttt tct gta ttt gat gag aac cga agc tgg tac ctc aca gag
1824
Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
595 600 605

aat ata caa cgc ttt ctc ccc aat cca gct gga gtg cag ctt gag gat
1872
Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
610 615 620

cca gag ttc caa gcc tcc aac atc atg cac agc atc aat ggc tat gtt
1920
Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val

625		630		635		640
ttt gat agt ttg cag ttg tca gtt tgt ttg cat gag gtg gca tac tgg						
1968						
Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp						
		645		650		655
tac att cta agc att gga gca cag act gac ttc ctt tct gtc ttc ttc						
2016						
Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe						
		660		665		670
tct gga tat acc ttc aaa cac aaa atg gtc tat gaa gac aca ctc acc						
2064						
Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr						
		675		680		685
cta ttc cca ttc tca gga gaa act gtc ttc atg tcg atg gaa aac cca						
2112						
Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro						
		690		695		700
ggt cta tgg att ctg ggg tgc cac aac tca gac ttt cgg aac aga ggc						
2160						
Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly						
		705		710		715
atg acc gcc tta ctg aag gtt tct agt tgt gac aag aac act ggt gat						
2208						
Met Thr Ala Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp						
		725		730		735
tat tac gag gac agt tat gaa gat att tca gca tac ttg ctg agt aaa						
2256						
Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys						
		740		745		750
aac aat gcc att gaa cca aga agc ttc tcc cag aat tca aga cac cct						
2304						
Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro						
		755		760		765
agc act agg caa aag caa ttt aat gcc acc aca att cca gaa aat act						
2352						
Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr						
		770		775		780
act ctt cag tca gat caa gag gaa att gac tat gat gat acc ata tca						
2400						
Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser						
		785		790		795
ggt gaa atg aag aag gaa gat ttt gac att tat gat gag gat gaa aat						
2448						
Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn						
		805		810		815

cag agc ccc cgc agc ttt caa aag aaa aca cga cac tat ttt att gct
2496
Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
820 825 830

gca gtg gag agg ctc tgg gat tat ggg atg agt agc tcc cca cat gtt
2544
Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
835 840 845

cta aga aac agg gct cag agt ggc agt gtc cct cag ttc aag aaa gtt
2592
Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
850 855 860

gtt ttc cag gaa ttt act gat ggc tcc ttt act cag ccc tta tac cgt
2640
Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
865 870 875 880

gga gaa cta aat gaa cat ttg gga ctc ctg ggg cca tat ata aga gca
2688
Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
885 890 895

gaa gtt gaa gat aat atc atg gta act ttc aga aat cag gcc tct cgt
2736
Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
900 905 910

ccc tat tcc ttc tat tct agc ctt att tct tat gag gaa gat cag agg
2784
Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
915 920 925

caa gga gca gaa cct aga aaa aac ttt gtc aag cct aat gaa acc aaa
2832
Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
930 935 940

act tac ttt tgg aaa gtg caa cat cat atg gca ccc act aaa gat gag
2880
Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu
945 950 955 960

ttt gac tgc aaa gcc tgg gct tat ttc tct gat gtt gac ctg gaa aaa
2928
Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
965 970 975

gat gtg cac tca ggc ctg att gga ccc ctt ctg gtc tgc cac act aac
2976
Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
980 985 990

aca ctg aac cct gct cat ggg aga caa gtg aca gta cag gaa ttt gct
3024
Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala

995						1000					1005			
ctg ttt	ttc acc	atc ttt	gat	gag acc	aaa agc	tgg	tac ttc	act						
3069														
Leu Phe	Phe Thr	Ile Phe	Asp	Glu Thr	Lys Ser	Trp	Tyr Phe	Thr						
1010			1015			1020								
gaa aat	atg gaa	aga aac	tgc	agg gct	ccc tgc	aat	atc cag	atg						
3114														
Glu Asn	Met Glu	Arg Asn	Cys	Arg Ala	Pro Cys	Asn	Ile Gln	Met						
1025			1030			1035								
gaa gat	ccc act	ttt aaa	gag	aat tat	cgc ttc	cat	gca atc	aat						
3159														
Glu Asp	Pro Thr	Phe Lys	Glu	Asn Tyr	Arg Phe	His	Ala Ile	Asn						
1040			1045			1050								
ggc tac	ata atg	gat aca	cta	cct ggc	tta gta	atg	gct cag	gat						
3204														
Gly Tyr	Ile Met	Asp Thr	Leu	Pro Gly	Leu Val	Met	Ala Gln	Asp						
1055			1060			1065								
caa agg	att cga	tgg tat	ctg	ctc agc	atg ggc	agc	aat gaa	aac						
3249														
Gln Arg	Ile Arg	Trp Tyr	Leu	Leu Ser	Met Gly	Ser	Asn Glu	Asn						
1070			1075			1080								
atc cat	tct att	cat ttc	agt	gga cat	gtg ttc	act	gta cga	aaa						
3294														
Ile His	Ser Ile	His Phe	Ser	Gly His	Val Phe	Thr	Val Arg	Lys						
1085			1090			1095								
aaa gag	gag tat	aaa atg	gca	ctg tac	aat ctc	tat	cca ggt	gtt						
3339														
Lys Glu	Glu Tyr	Lys Met	Ala	Leu Tyr	Asn Leu	Tyr	Pro Gly	Val						
1100			1105			1110								
ttt gag	aca gtg	gaa atg	tta	cca tcc	aaa gct	gga	att tgg	cgg						
3384														
Phe Glu	Thr Val	Glu Met	Leu	Pro Ser	Lys Ala	Gly	Ile Trp	Arg						
1115			1120			1125								
gtg gaa	tgc ctt	att ggc	gag	cat cta	cat gct	ggg	atg agc	aca						
3429														
Val Glu	Cys Leu	Ile Gly	Glu	His Leu	His Ala	Gly	Met Ser	Thr						
1130			1135			1140								
ctt ttt	ctg gtg	tac agc	aat	aag tgt	cag act	ccc	ctg gga	atg						
3474														
Leu Phe	Leu Val	Tyr Ser	Asn	Lys Cys	Gln Thr	Pro	Leu Gly	Met						
1145			1150			1155								
gct tct	gga cac	att aga	gat	ttt cag	att aca	gct	tca gga	caa						
3519														
Ala Ser	Gly His	Ile Arg	Asp	Phe Gln	Ile Thr	Ala	Ser Gly	Gln						
1160			1165			1170								

tat gga	cag tgg gcc cca aag	ctg gcc aga ctt cat	tat tcc gga
3564			
Tyr Gly	Gln Trp Ala Pro Lys	Leu Ala Arg Leu His	Tyr Ser Gly
1175	1180	1185	
tca atc	aat gcc tgg agc acc	aag gag ccc ttt tct	tgg atc aag
3609			
Ser Ile	Asn Ala Trp Ser Thr	Lys Glu Pro Phe Ser	Trp Ile Lys
1190	1195	1200	
gtg gat	ctg ttg gca cca atg	att att cac ggc atc	aag acc cag
3654			
Val Asp	Leu Leu Ala Pro Met	Ile Ile His Gly Ile	Lys Thr Gln
1205	1210	1215	
ggg gcc	cgt cag aag ttc tcc	agc ctc tac atc tct	cag ttt atc
3699			
Gly Ala	Arg Gln Lys Phe Ser	Ser Leu Tyr Ile Ser	Gln Phe Ile
1220	1225	1230	
atc atg	tat agt ctt gat ggg	aag aag tgg cag act	tat cga gga
3744			
Ile Met	Tyr Ser Leu Asp Gly	Lys Lys Trp Gln Thr	Tyr Arg Gly
1235	1240	1245	
aat tcc	act gga acc tta atg	gtc ttc ttt ggc aat	gtg gat tca
3789			
Asn Ser	Thr Gly Thr Leu Met	Val Phe Phe Gly Asn	Val Asp Ser
1250	1255	1260	
tct ggg	ata aaa cac aat att	ttt aac cct cca att	att gct cga
3834			
Ser Gly	Ile Lys His Asn Ile	Phe Asn Pro Pro Ile	Ile Ala Arg
1265	1270	1275	
tac atc	cgt ttg cac cca act	cat tat agc att cgc	agc act ctt
3879			
Tyr Ile	Arg Leu His Pro Thr	His Tyr Ser Ile Arg	Ser Thr Leu
1280	1285	1290	
cgc atg	gag ttg atg ggc tgt	gat tta aat agt tgc	agc atg cca
3924			
Arg Met	Glu Leu Met Gly Cys	Asp Leu Asn Ser Cys	Ser Met Pro
1295	1300	1305	
ttg gga	atg gag agt aaa gca	ata tca gat gca cag	att act gct
3969			
Leu Gly	Met Glu Ser Lys Ala	Ile Ser Asp Ala Gln	Ile Thr Ala
1310	1315	1320	
tca tcc	tac ttt acc aat atg	ttt gcc acc tgg tct	cct tca aaa
4014			
Ser Ser	Tyr Phe Thr Asn Met	Phe Ala Thr Trp Ser	Pro Ser Lys
1325	1330	1335	
gct cga	ctt cac ctc caa ggg	agg agt aat gcc tgg	aga cct cag
4059			
Ala Arg	Leu His Leu Gln Gly	Arg Ser Asn Ala Trp	Arg Pro Gln

1340		1345		1350
gtg aat aat cca aaa gag tgg	ctg caa gtg gac ttc	cag aag aca		
4104				
Val Asn Asn Pro Lys Glu Trp	Leu Gln Val Asp Phe	Gln Lys Thr		
1355	1360	1365		
atg aaa gtc aca gga gta act	act cag gga gta aaa	tct ctg ctt		
4149				
Met Lys Val Thr Gly Val Thr	Thr Gln Gly Val Lys	Ser Leu Leu		
1370	1375	1380		
acc agc atg tat gtg aag gag	ttc ctc atc tcc agc	agt caa gat		
4194				
Thr Ser Met Tyr Val Lys Glu	Phe Leu Ile Ser Ser	Ser Gln Asp		
1385	1390	1395		
ggc cat cag tgg act ctc ttt	ttt cag aat ggc aaa	gta aag gtt		
4239				
Gly His Gln Trp Thr Leu Phe	Phe Gln Asn Gly Lys	Val Lys Val		
1400	1405	1410		
ttt cag gga aat caa gac tcc	ttc aca cct gtg gtg	aac tct cta		
4284				
Phe Gln Gly Asn Gln Asp Ser	Phe Thr Pro Val Val	Asn Ser Leu		
1415	1420	1425		
gac cca ccg tta ctg act cgc	tac ctt cga att cac	ccc cag agt		
4329				
Asp Pro Pro Leu Leu Thr Arg	Tyr Leu Arg Ile His	Pro Gln Ser		
1430	1435	1440		
tgg gtg cac cag att gcc ctg	agg atg gag gtt ctg	ggc tgc gag		
4374				
Trp Val His Gln Ile Ala Leu	Arg Met Glu Val Leu	Gly Cys Glu		
1445	1450	1455		
gca cag gac ctc tac acc ggt	gat gag gat gaa aat	cag agc ccc		
4419				
Ala Gln Asp Leu Tyr Thr Gly	Asp Glu Asp Glu Asn	Gln Ser Pro		
1460	1465	1470		
cgc agc ttt caa aag aaa aca	cga cac tat ttt att	gct gca gtg		
4464				
Arg Ser Phe Gln Lys Lys Thr	Arg His Tyr Phe Ile	Ala Ala Val		
1475	1480	1485		
gag agg ctc tgg acc ggt ggc	tct tct gcc tct cca	gct gca cct		
4509				
Glu Arg Leu Trp Thr Gly Gly	Ser Ser Ala Ser Pro	Ala Ala Pro		
1490	1495	1500		
gct cca gca agc cct gct gca	cca gct ccg tcc gct	cct gct gcc		
4554				
Ala Pro Ala Ser Pro Ala Ala	Pro Ala Pro Ser Ala	Pro Ala Ala		
1505	1510	1515		

tct cca	gct gca	cct gct	cca gca	agc cct	gct gca	cca gct	ccg							
4599	Ser Pro	Ala Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala
	1520				1525					1530				
tcc gct	cct gct	gcc tct	ccc gct	gca cct	gct cca	gca agc	cct							
4644	Ser Ala	Pro Ala	Ala Ser	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala
	1535				1540					1545				
gct gca	cca gct	ccg tcc	gct cct	gct gcc	tct cca	gct gca	cct							
4689	Ala Ala	Pro Ala	Pro Ser	Ala Pro	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala
	1550				1555					1560				
gct cca	gca agc	cct gct	gca cca	gct ccg	tcc gct	cct gct	gcc							
4734	Ala Pro	Ala Ser	Pro Ala	Ala Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala
	1565				1570					1575				
tct cca	gct gca	cct gct	cca gca	agc cct	gct gca	cca gct	ccg tcc							
4779	Ser Pro	Ala Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala
	1580				1585					1590				
tcc gct	cct gct	gcc tct	cca gct	gca cct	gct cca	gca agc	cct							
4824	Ser Ala	Pro Ala	Ala Ser	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala
	1595				1600					1605				
gct gca	cca gct	ccg tcc	gct cct	gct gcc	tct cca	gct gca	cct							
4869	Ala Ala	Pro Ala	Pro Ser	Ala Pro	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala
	1610				1615					1620				
gct cca	gca agc	cct gct	gca cca	gct ccg	tcc gct	cct gct	gcc							
4914	Ala Pro	Ala Ser	Pro Ala	Ala Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala
	1625				1630					1635				
tct ccc	gct gca	cct gct	cca gca	agc cct	gct gca	cca gct	ccg tcc							
4959	Ser Pro	Ala Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala
	1640				1645					1650				
tcc gct	cct gct	gcc tct	cca gct	gca cct	gct cca	gca agc	cct							
5004	Ser Ala	Pro Ala	Ala Ser	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala
	1655				1660					1665				
gct gca	cca gct	ccg tcc	gct cct	gct gcc	tct cca	gct gca	cct							
5049	Ala Ala	Pro Ala	Pro Ser	Ala Pro	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala
	1670				1675					1680				
gct cca	gca agc	cct gct	gca cca	gct ccg	gct cct	gct gcc	tct							
5094	Ala Pro	Ala Ser	Pro Ala	Ala Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala	Pro Ala

1685	1690	1695
cca gct gca cct gct cca gca	agc cct gct gca cca	gct ccg tcc
5139		
Pro Ala Ala Pro Ala Pro Ala	Ser Pro Ala Ala Pro	Ala Pro Ser
1700	1705	1710
gct cct gct gcc tct cca gct	gca cct gct cca gca	agc cct gct
5184		
Ala Pro Ala Ala Ser Pro Ala	Ala Pro Ala Pro Ala	Ser Pro Ala
1715	1720	1725
gca cca gct ccg tcc gct cct	gct gcc tct ccc gct	gca cct gct
5229		
Ala Pro Ala Pro Ser Ala Pro	Ala Ala Ser Pro Ala	Ala Pro Ala
1730	1735	1740
cca gca agc cct gct gca cca	gct ccg tcc gct cct	gct gcc tct
5274		
Pro Ala Ser Pro Ala Ala Pro	Ala Pro Ser Ala Pro	Ala Ala Ser
1745	1750	1755
cca gct gca cct gct cca gca	agc cct gct gca cca	gct ccg tcc
5319		
Pro Ala Ala Pro Ala Pro Ala	Ser Pro Ala Ala Pro	Ala Pro Ser
1760	1765	1770
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5364		
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1775	1780	1785
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5409		
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1790	1795	1800
cca gca agc cct gct gca cca	gct ccg tcc gct cct	gct gcc tct
5454		
Pro Ala Ser Pro Ala Ala Pro	Ala Pro Ser Ala Pro	Ala Ala Ser
1805	1810	1815
cca gct gca cct gct cca gca	agc cct gct gca cca	gct ccg tcc
5499		
Pro Ala Ala Pro Ala Pro Ala	Ser Pro Ala Ala Pro	Ala Pro Ser
1820	1825	1830
gct cct gct gcc tct ccc gct	gca cct gct cca gca	agc cct gct
5544		
Ala Pro Ala Ala Ser Pro Ala	Ala Pro Ala Pro Ala	Ser Pro Ala
1835	1840	1845
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5589		
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1850	1855	1860

cca gca	agc cct gct gca cca	gct ccg tcc gct cct	gct gcc tct
5634			
Pro Ala	Ser Pro Ala Ala	Pro Ala Pro Ser Ala	Pro Ala Ala Ser
1865		1870	1875
cca gct	gca cct gct cca gca	agc cct gct gca cca	gct cgc gct
5679			
Pro Ala	Ala Pro Ala Pro	Ala Ser Pro Ala Ala	Pro Ala Arg Ala
1880		1885	1890
cct gct	gcc acc ggt aac tcc	aca gtg agc tgt ccc	ctt ggg tac
5724			
Pro Ala	Ala Thr Gly Asn Ser	Thr Val Ser Cys Pro	Leu Gly Tyr
1895		1900	1905
ttg gcc	tca acc gcc acc aat	gac tgt ggc tgt acc	aca acc acc
5769			
Leu Ala	Ser Thr Ala Thr Asn	Asp Cys Gly Cys Thr	Thr Thr Thr
1910		1915	1920
tgc ctt	ccc gac aag gtg tgt	gtc cac cga agc acc	atc tac cct
5814			
Cys Leu	Pro Asp Lys Val Cys	Val His Arg Ser Thr	Ile Tyr Pro
1925		1930	1935
gtg ggc	cag ttc tgg gag gag	ggc tgc gat gtg tgc	acc tgc acc
5859			
Val Gly	Gln Phe Trp Glu Glu	Gly Cys Asp Val Cys	Thr Cys Thr
1940		1945	1950
gac atg	gag gat gcc gtg atg	ggc ctc cgc gtg gcc	cag tgc tcc
5904			
Asp Met	Glu Asp Ala Val Met	Gly Leu Arg Val Ala	Gln Cys Ser
1955		1960	1965
cag aag	ccc tgt gag gac agc	tgt cgg tcg ggc ttc	act tac gtt
5949			
Gln Lys	Pro Cys Glu Asp Ser	Cys Arg Ser Gly Phe	Thr Tyr Val
1970		1975	1980
ctg cat	gaa ggc gag tgc tgt	gga agg tgc ctg cca	tct gcc tgt
5994			
Leu His	Glu Gly Glu Cys Cys	Gly Arg Cys Leu Pro	Ser Ala Cys
1985		1990	1995
gag gtg	gtg act ggc tca ccg	cgg ggg gac tcc cag	tct tcc tgg
6039			
Glu Val	Val Thr Gly Ser Pro	Arg Gly Asp Ser Gln	Ser Ser Trp
2000		2005	2010
aag agt	gtc ggc tcc cag tgg	gcc tcc ccg gag aac	ccc tgc ctc
6084			
Lys Ser	Val Gly Ser Gln Trp	Ala Ser Pro Glu Asn	Pro Cys Leu
2015		2020	2025
atc aat	gag tgt gtc cga gtg	aag gag gag gtc ttt	ata caa caa
6129			
Ile Asn	Glu Cys Val Arg Val	Lys Glu Glu Val Phe	Ile Gln Gln

2030	2035	2040
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Arg Asn Val Ser Cys Pro 2045	Gln Leu Glu Val Pro 2050	Val Cys Pro Ser 2055
ggc ttt cag ctg agc tgt aag 6219	acc tca gcg tgc tgc	cca agc tgt
Gly Phe Gln Leu Ser Cys 2060	Lys Thr Ser Ala Cys 2065	Cys Pro Ser Cys 2070
cgc tgt gag cgc atg gag gcc 6264	tgc atg ctc aat ggc	act gtc att
Arg Cys Glu Arg Met Glu 2075	Ala Cys Met Leu Asn 2080	Gly Thr Val Ile 2085
ggg ccc ggg aag act gtg atg 6309	atc gat gtg tgc acg	acc tgc cgc
Gly Pro Gly Lys Thr Val 2090	Met Ile Asp Val Cys 2095	Thr Thr Cys Arg 2100
tgc atg gtg cag gtg ggg gtc 6354	atc tct gga ttc aag	ctg gag tgc
Cys Met Val Gln Val Gly 2105	Val Ile Ser Gly Phe 2110	Lys Leu Glu Cys 2115
agg aag acc acc tgc aac ccc 6399	tgc ccc ctg ggt tac	aag gaa gaa
Arg Lys Thr Thr Cys Asn 2120	Pro Cys Pro Leu Gly 2125	Tyr Lys Glu Glu 2130
aat aac aca ggt gaa tgt tgt 6444	ggg aga tgt ttg cct	acg gct tgc
Asn Asn Thr Gly Glu Cys 2135	Cys Gly Arg Cys Leu 2140	Pro Thr Ala Cys 2145
acc att cag cta aga gga gga 6489	cag atc atg aca ctg	aag cgt gat
Thr Ile Gln Leu Arg Gly 2150	Gly Gln Ile Met Thr 2155	Leu Lys Arg Asp 2160
gag acg ctc cag gat ggc tgt 6534	gat act cac ttc tgc	aag gtc aat
Glu Thr Leu Gln Asp Gly 2165	Cys Asp Thr His Phe 2170	Cys Lys Val Asn 2175
gag aga gga gag tac ttc tgg 6579	gag aag agg gtc aca	ggc tgc cca
Glu Arg Gly Glu Tyr Phe 2180	Trp Glu Lys Arg Val 2185	Thr Gly Cys Pro 2190
ccc ttt gat gaa cac aag tgt 6624	ctg gct gag gga ggt	aaa att atg
Pro Phe Asp Glu His Lys 2195	Cys Leu Ala Glu Gly 2200	Gly Lys Ile Met 2205

aaa att cca ggc acc tgc tgt gac aca tgt gag gag cct gag tgc
6669

Lys Ile Pro Gly Thr Cys Cys Asp Thr Cys Glu Glu Pro Glu Cys
2210 2215 2220

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6714

Asn Asp Ile Thr Ala Arg Leu Gln Tyr Val Lys Val Gly Ser Cys
2225 2230 2235

aag tct gaa gta gag gtg gat atc cac tac tgc cag ggc aaa tgt
6759

Lys Ser Glu Val Glu Val Asp Ile His Tyr Cys Gln Gly Lys Cys
2240 2245 2250

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6804

Ala Ser Lys Ala Met Tyr Ser Ile Asp Ile Asn Asp Val Gln Asp
2255 2260 2265

cag tgc tcc tgc tgc tct ccg aca cgg acg gag ccc atg cag gtg
6849

Gln Cys Ser Cys Cys Ser Pro Thr Arg Thr Glu Pro Met Gln Val
2270 2275 2280

gcc ctg cac tgc acc aat ggc tct gtt gtg tac cat gag gtt ctc
6894

Ala Leu His Cys Thr Asn Gly Ser Val Val Tyr His Glu Val Leu
2285 2290 2295

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6939

Asn Ala Met Glu Cys Lys Cys Ser Pro Arg Lys Cys Ser Lys
2300 2305 2310

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<211> 2312

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 156

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Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
20 25 30

Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
35 40 45

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

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

Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
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Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
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Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
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Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
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Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
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Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
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Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
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Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
625 630 635 640

Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
645 650 655

Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
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Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
675 680 685

Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
690 695 700

Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
705 710 715 720

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

Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
740 745 750

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

Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
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Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala
995 1000 1005

Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr
1010 1015 1020

Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met
1025 1030 1035

Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn
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Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp
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Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn
1070 1075 1080

Ile His Ser Ile His Phe Ser Gly His Val Phe Thr Val Arg Lys
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Lys Glu Glu Tyr Lys Met Ala Leu Tyr Asn Leu Tyr Pro Gly Val
1100 1105 1110

Phe Glu Thr Val Glu Met Leu Pro Ser Lys Ala Gly Ile Trp Arg
1115 1120 1125

Val Glu Cys Leu Ile Gly Glu His Leu His Ala Gly Met Ser Thr
1130 1135 1140

Leu Phe Leu Val Tyr Ser Asn Lys Cys Gln Thr Pro Leu Gly Met
 1145 1150 1155

Ala Ser Gly His Ile Arg Asp Phe Gln Ile Thr Ala Ser Gly Gln
1160 1165 1170

Tyr Gly Gln Trp Ala Pro Lys Leu Ala Arg Leu His Tyr Ser Gly
1175 1180 1185

Ser Ile Asn Ala Trp Ser Thr Lys Glu Pro Phe Ser Trp Ile Lys
1190 1195 1200

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

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Ala	Pro	Ala	Ser	Pro	Ala	Ala	Pro	Ala	Pro	Ser	Ala	Pro	Ala	Ala
1625						1630					1635			

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Ala Pro Ala Ser Pro Ala Ala Pro Ala Arg Ala Pro Ala Ala Ser
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 1805 1810 1815

Pro Ala Ala Pro Ala Pro Ala Ser Pro Ala Ala Pro Ala Pro Ser
 1820 1825 1830

Ala Pro Ala Ala Ser Pro Ala Ala Pro Ala Pro Ala Ser Pro Ala
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1865						1870					1875			
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1895						1900					1905			
Leu	Ala	Ser	Thr	Ala	Thr	Asn	Asp	Cys	Gly	Cys	Thr	Thr	Thr	Thr
1910						1915					1920			
Cys	Leu	Pro	Asp	Lys	Val	Cys	Val	His	Arg	Ser	Thr	Ile	Tyr	Pro
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Val	Gly	Gln	Phe	Trp	Glu	Glu	Gly	Cys	Asp	Val	Cys	Thr	Cys	Thr
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Asp	Met	Glu	Asp	Ala	Val	Met	Gly	Leu	Arg	Val	Ala	Gln	Cys	Ser
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Gln	Lys	Pro	Cys	Glu	Asp	Ser	Cys	Arg	Ser	Gly	Phe	Thr	Tyr	Val
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Leu	His	Glu	Gly	Glu	Cys	Cys	Gly	Arg	Cys	Leu	Pro	Ser	Ala	Cys
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2000						2005					2010			
Lys	Ser	Val	Gly	Ser	Gln	Trp	Ala	Ser	Pro	Glu	Asn	Pro	Cys	Leu
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Ile	Asn	Glu	Cys	Val	Arg	Val	Lys	Glu	Glu	Val	Phe	Ile	Gln	Gln
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Thr	Ile	Gln	Leu	Arg	Gly	Gly	Gln	Ile	Met	Thr	Leu	Lys	Arg	Asp
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Glu	Thr	Leu	Gln	Asp	Gly	Cys	Asp	Thr	His	Phe	Cys	Lys	Val	Asn
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Glu	Arg	Gly	Glu	Tyr	Phe	Trp	Glu	Lys	Arg	Val	Thr	Gly	Cys	Pro
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Pro	Phe	Asp	Glu	His	Lys	Cys	Leu	Ala	Glu	Gly	Gly	Lys	Ile	Met
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Lys	Ile	Pro	Gly	Thr	Cys	Cys	Asp	Thr	Cys	Glu	Glu	Pro	Glu	Cys
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Asn	Asp	Ile	Thr	Ala	Arg	Leu	Gln	Tyr	Val	Lys	Val	Gly	Ser	Cys
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Lys	Ser	Glu	Val	Glu	Val	Asp	Ile	His	Tyr	Cys	Gln	Gly	Lys	Cys
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Val Cys Asp Ala Thr Cys 1565	Ser Thr Ile Gly Met 1570	Ala His Tyr Leu 1575
acc ttc gac ggg ctc aaa tac 4779	ctg ttc ccc ggg gag	tgc cag tac
Thr Phe Asp Gly Leu Lys 1580	Tyr Leu Phe Pro Gly 1585	Glu Cys Gln Tyr 1590
gtt ctg gtg cag gat tac tgc 4824	ggc agt aac cct ggg	acc ttt cgg
Val Leu Val Gln Asp Tyr 1595	Cys Gly Ser Asn Pro 1600	Gly Thr Phe Arg 1605
atc cta gtg ggg aat aag gga 4869	tgc agc cac ccc tca	gtg aaa tgc
Ile Leu Val Gly Asn Lys 1610	Gly Cys Ser His Pro 1615	Ser Val Lys Cys 1620
aag aaa cgg gtc acc atc ctg 4914	gtg gag gga gga gag	att gag ctg
Lys Lys Arg Val Thr Ile 1625	Leu Val Glu Gly Gly 1630	Glu Ile Glu Leu 1635
ttt gac ggg gag gtg aat gtg 4959	aag agg ccc atg aag	gat gag act
Phe Asp Gly Glu Val Asn 1640	Val Lys Arg Pro Met 1645	Lys Asp Glu Thr 1650

cac ttt	gag gtg	gtg gag	tct ggc	cgg tac	atc att	ctg ctg	ctg								
5004	His Phe	Glu Val	Val Glu	Ser	Gly Arg	Tyr Ile	Ile Leu	Leu Leu	Leu						
	1655			1660			1665								
ggc aaa	gcc ctc	tcc gtg	gtc tgg	gac cgc	cac ctg	agc atc	tcc								
5049	Gly Lys	Ala Leu	Ser Val	Val Trp	Asp Arg	His Leu	Ser Ile	Ser							
	1670			1675			1680								
gtg gtc	ctg aag	cag aca	tac cag	gag aaa	gtg tgt	ggc ctg	tgt								
5094	Val Val	Leu Lys	Gln Thr	Tyr Gln	Glu Lys	Val Cys	Gly Leu	Cys							
	1685			1690			1695								
ggg aat	ttt gat	ggc atc	cag aac	aat gac	ctc acc	agc agc	aac								
5139	Gly Asn	Phe Asp	Gly Ile	Gln Asn	Asn Asp	Leu Thr	Ser Ser	Asn							
	1700			1705			1710								
ctc caa	gtg gag	gaa gac	cct gtg	gac ttt	ggg aac	tcc tgg	aaa								
5184	Leu Gln	Val Glu	Glu Asp	Pro Val	Asp Phe	Gly Asn	Ser Trp	Lys							
	1715			1720			1725								
gtg agc	tcg cag	tgt gct	gac acc	aga aaa	gtg cct	ctg gac	tca								
5229	Val Ser	Ser Gln	Cys Ala	Asp Thr	Arg Lys	Val Pro	Leu Asp	Ser							
	1730			1735			1740								
tcc cct	gcc acc	tgc cat	aac aac	atc atg	aag cag	acg atg	gtg								
5274	Ser Pro	Ala Thr	Cys His	Asn Asn	Ile Met	Lys Gln	Thr Met	Val							
	1745			1750			1755								
gat tcc	tcc tgt	aga atc	ctt acc	agt gac	gtc ttc	cag gac	tgc								
5319	Asp Ser	Ser Cys	Arg Ile	Leu Thr	Ser Asp	Val Phe	Gln Asp	Cys							
	1760			1765			1770								
aac aag	ctg gtg	gac ccc	gag cca	tat ctg	gat gtc	tgc att	tac								
5364	Asn Lys	Leu Val	Asp Pro	Glu Pro	Tyr Leu	Asp Val	Cys Ile	Tyr							
	1775			1780			1785								
gac acc	tgc tcc	tgt gag	tcc att	ggg gac	tgc gcc	tgc ttc	tgc								
5409	Asp Thr	Cys Ser	Cys Glu	Ser Ile	Gly Asp	Cys Ala	Cys Phe	Cys							
	1790			1795			1800								
gac acc	att gct	gcc tat	gcc cac	gtg tgt	gcc cag	cat ggc	aag								
5454	Asp Thr	Ile Ala	Ala Tyr	Ala His	Val Cys	Ala Gln	His Gly	Lys							
	1805			1810			1815								
gtg gtg	acc tgg	agg acg	gcc aca	ttg tgc	ccc cag	agc tgc	gag								
5499	Val Val	Thr Trp	Arg Thr	Ala Thr	Leu Cys	Pro Gln	Ser Cys	Glu							

1820	1825	1830
gag agg aat ctc cgg gag aac	ggg tat gag tgt gag	tgg cgc tat
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Glu Arg Asn Leu Arg Glu Asn	Gly Tyr Glu Cys Glu	Trp Arg Tyr
1835	1840	1845
aac agc tgt gca cct gcc tgt	caa gtc acg tgt cag	cac cct gag
5589		
Asn Ser Cys Ala Pro Ala Cys	Gln Val Thr Cys Gln	His Pro Glu
1850	1855	1860
cca ctg gcc tgc cct gtg cag	tgt gtg gag ggc tgc	cat gcc cac
5634		
Pro Leu Ala Cys Pro Val Gln	Cys Val Glu Gly Cys	His Ala His
1865	1870	1875
tgc cct cca ggg aaa atc ctg	gat gag ctt ttg cag	acc tgc gtt
5679		
Cys Pro Pro Gly Lys Ile Leu	Asp Glu Leu Leu Gln	Thr Cys Val
1880	1885	1890
gac cct gaa gac tgt cca gtg	tgt gag gtg gct ggc	cgg cgt ttt
5724		
Asp Pro Glu Asp Cys Pro Val	Cys Glu Val Ala Gly	Arg Arg Phe
1895	1900	1905
gcc tca gga aag aaa gtc acc	ttg aat ccc agt gac	cct gag cac
5769		
Ala Ser Gly Lys Lys Val Thr	Leu Asn Pro Ser Asp	Pro Glu His
1910	1915	1920
tgc cag att tgc cac tgt gat	gtt gtc aac ctc acc	tgt gaa gcc
5814		
Cys Gln Ile Cys His Cys Asp	Val Val Asn Leu Thr	Cys Glu Ala
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5835		
Cys Gln Glu Pro Gly Gly		
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Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val
260 265 270

Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile
275 280 285

Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser
290 295 300

Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met
305 310 315 320

Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His
325 330 335

Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro
340 345 350

Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp
355 360 365

Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser
370 375 380

Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr
385 390 395 400

Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro
405 410 415

Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn
420 425 430

Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
435 440 445

Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
450 455 460

Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
465 470 475 480

Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro

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

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

Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
 740 745 750

Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
 755 760 765

Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
 770 775 780

Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
 785 790 795 800

Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
 805 810 815

Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
 820 825 830

Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
 835 840 845

Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
 850 855 860

Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
 865 870 875 880

Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
 885 890 895

Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
 900 905 910

Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
 915 920 925

Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
 930 935 940

Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu

945						950						955						960
Phe	Asp	Cys	Lys	Ala	Trp	Ala	Tyr	Phe	Ser	Asp	Val	Asp	Leu	Glu	Lys			
				965					970					975				
Asp	Val	His	Ser	Gly	Leu	Ile	Gly	Pro	Leu	Leu	Val	Cys	His	Thr	Asn			
				980					985					990				
Thr	Leu	Asn	Pro	Ala	His	Gly	Arg	Gln	Val	Thr	Val	Gln	Glu	Phe	Ala			
				995					1000					1005				
Leu	Phe	Phe	Thr	Ile	Phe	Asp	Glu	Thr	Lys	Ser	Trp	Tyr	Phe	Thr				
		1010					1015					1020						
Glu	Asn	Met	Glu	Arg	Asn	Cys	Arg	Ala	Pro	Cys	Asn	Ile	Gln	Met				
		1025					1030					1035						
Glu	Asp	Pro	Thr	Phe	Lys	Glu	Asn	Tyr	Arg	Phe	His	Ala	Ile	Asn				
		1040					1045					1050						
Gly	Tyr	Ile	Met	Asp	Thr	Leu	Pro	Gly	Leu	Val	Met	Ala	Gln	Asp				
		1055					1060					1065						
Gln	Arg	Ile	Arg	Trp	Tyr	Leu	Leu	Ser	Met	Gly	Ser	Asn	Glu	Asn				
		1070					1075					1080						
Ile	His	Ser	Ile	His	Phe	Ser	Gly	His	Val	Phe	Thr	Val	Arg	Lys				
		1085					1090					1095						
Lys	Glu	Glu	Tyr	Lys	Met	Ala	Leu	Tyr	Asn	Leu	Tyr	Pro	Gly	Val				
		1100					1105					1110						
Phe	Glu	Thr	Val	Glu	Met	Leu	Pro	Ser	Lys	Ala	Gly	Ile	Trp	Arg				
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Val	Glu	Cys	Leu	Ile	Gly	Glu	His	Leu	His	Ala	Gly	Met	Ser	Thr				
		1130					1135					1140						
Leu	Phe	Leu	Val	Tyr	Ser	Asn	Lys	Cys	Gln	Thr	Pro	Leu	Gly	Met				
		1145					1150					1155						
Ala	Ser	Gly	His	Ile	Arg	Asp	Phe	Gln	Ile	Thr	Ala	Ser	Gly	Gln				
		1160					1165					1170						

Tyr	Gly	Gln	Trp	Ala	Pro	Lys	Leu	Ala	Arg	Leu	His	Tyr	Ser	Gly
	1175					1180					1185			
Ser	Ile	Asn	Ala	Trp	Ser	Thr	Lys	Glu	Pro	Phe	Ser	Trp	Ile	Lys
	1190					1195					1200			
Val	Asp	Leu	Leu	Ala	Pro	Met	Ile	Ile	His	Gly	Ile	Lys	Thr	Gln
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Gly	Ala	Arg	Gln	Lys	Phe	Ser	Ser	Leu	Tyr	Ile	Ser	Gln	Phe	Ile
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Ile	Met	Tyr	Ser	Leu	Asp	Gly	Lys	Lys	Trp	Gln	Thr	Tyr	Arg	Gly
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Asn	Ser	Thr	Gly	Thr	Leu	Met	Val	Phe	Phe	Gly	Asn	Val	Asp	Ser
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Ser	Gly	Ile	Lys	His	Asn	Ile	Phe	Asn	Pro	Pro	Ile	Ile	Ala	Arg
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Tyr	Ile	Arg	Leu	His	Pro	Thr	His	Tyr	Ser	Ile	Arg	Ser	Thr	Leu
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Arg	Met	Glu	Leu	Met	Gly	Cys	Asp	Leu	Asn	Ser	Cys	Ser	Met	Pro
	1295					1300					1305			
Leu	Gly	Met	Glu	Ser	Lys	Ala	Ile	Ser	Asp	Ala	Gln	Ile	Thr	Ala
	1310					1315					1320			
Ser	Ser	Tyr	Phe	Thr	Asn	Met	Phe	Ala	Thr	Trp	Ser	Pro	Ser	Lys
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Ala	Arg	Leu	His	Leu	Gln	Gly	Arg	Ser	Asn	Ala	Trp	Arg	Pro	Gln
	1340					1345					1350			
Val	Asn	Asn	Pro	Lys	Glu	Trp	Leu	Gln	Val	Asp	Phe	Gln	Lys	Thr
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Met	Lys	Val	Thr	Gly	Val	Thr	Thr	Gln	Gly	Val	Lys	Ser	Leu	Leu
	1370					1375					1380			
Thr	Ser	Met	Tyr	Val	Lys	Glu	Phe	Leu	Ile	Ser	Ser	Ser	Gln	Asp

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Gly	His	Gln	Trp	Thr	Leu	Phe	Phe	Gln	Asn	Gly	Lys	Val	Lys	Val	
1400						1405					1410				
Phe	Gln	Gly	Asn	Gln	Asp	Ser	Phe	Thr	Pro	Val	Val	Asn	Ser	Leu	
1415						1420					1425				
Asp	Pro	Pro	Leu	Leu	Thr	Arg	Tyr	Leu	Arg	Ile	His	Pro	Gln	Ser	
1430						1435					1440				
Trp	Val	His	Gln	Ile	Ala	Leu	Arg	Met	Glu	Val	Leu	Gly	Cys	Glu	
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Ala	Gln	Asp	Leu	Tyr	Thr	Gly	Ser	Leu	Ser	Cys	Arg	Pro	Pro	Met	
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Val	Lys	Leu	Val	Cys	Pro	Ala	Asp	Asn	Leu	Arg	Ala	Glu	Gly	Leu	
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Glu	Cys	Thr	Lys	Thr	Cys	Gln	Asn	Tyr	Asp	Leu	Glu	Cys	Met	Ser	
1490						1495					1500				
Met	Gly	Cys	Val	Ser	Gly	Cys	Leu	Cys	Pro	Pro	Gly	Met	Val	Arg	
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His	Glu	Asn	Arg	Cys	Val	Ala	Leu	Glu	Arg	Cys	Pro	Cys	Phe	His	
1520						1525					1530				
Gln	Gly	Lys	Glu	Tyr	Ala	Pro	Gly	Glu	Thr	Val	Lys	Ile	Gly	Cys	
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Asn	Thr	Cys	Val	Cys	Arg	Asp	Arg	Lys	Trp	Asn	Cys	Thr	Asp	His	
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Val	Cys	Asp	Ala	Thr	Cys	Ser	Thr	Ile	Gly	Met	Ala	His	Tyr	Leu	
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Thr	Phe	Asp	Gly	Leu	Lys	Tyr	Leu	Phe	Pro	Gly	Glu	Cys	Gln	Tyr	
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Val	Leu	Val	Gln	Asp	Tyr	Cys	Gly	Ser	Asn	Pro	Gly	Thr	Phe	Arg	
1595						1600					1605				

Ile	Leu	Val	Gly	Asn	Lys	Gly	Cys	Ser	His	Pro	Ser	Val	Lys	Cys
1610						1615					1620			
Lys	Lys	Arg	Val	Thr	Ile	Leu	Val	Glu	Gly	Gly	Glu	Ile	Glu	Leu
1625						1630					1635			
Phe	Asp	Gly	Glu	Val	Asn	Val	Lys	Arg	Pro	Met	Lys	Asp	Glu	Thr
1640						1645					1650			
His	Phe	Glu	Val	Val	Glu	Ser	Gly	Arg	Tyr	Ile	Ile	Leu	Leu	Leu
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Gly	Lys	Ala	Leu	Ser	Val	Val	Trp	Asp	Arg	His	Leu	Ser	Ile	Ser
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Val	Val	Leu	Lys	Gln	Thr	Tyr	Gln	Glu	Lys	Val	Cys	Gly	Leu	Cys
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Gly	Asn	Phe	Asp	Gly	Ile	Gln	Asn	Asn	Asp	Leu	Thr	Ser	Ser	Asn
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Leu	Gln	Val	Glu	Glu	Asp	Pro	Val	Asp	Phe	Gly	Asn	Ser	Trp	Lys
1715						1720					1725			
Val	Ser	Ser	Gln	Cys	Ala	Asp	Thr	Arg	Lys	Val	Pro	Leu	Asp	Ser
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Ser	Pro	Ala	Thr	Cys	His	Asn	Asn	Ile	Met	Lys	Gln	Thr	Met	Val
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Asp	Ser	Ser	Cys	Arg	Ile	Leu	Thr	Ser	Asp	Val	Phe	Gln	Asp	Cys
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Asn	Lys	Leu	Val	Asp	Pro	Glu	Pro	Tyr	Leu	Asp	Val	Cys	Ile	Tyr
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Asp	Thr	Cys	Ser	Cys	Glu	Ser	Ile	Gly	Asp	Cys	Ala	Cys	Phe	Cys
1790						1795					1800			
Asp	Thr	Ile	Ala	Ala	Tyr	Ala	His	Val	Cys	Ala	Gln	His	Gly	Lys
1805						1810					1815			
Val	Val	Thr	Trp	Arg	Thr	Ala	Thr	Leu	Cys	Pro	Gln	Ser	Cys	Glu

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Glu Arg Asn Leu Arg Glu Asn Gly Tyr Glu Cys Glu Trp Arg Tyr				
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Asn Ser Cys Ala Pro Ala Cys Gln Val Thr Cys Gln His Pro Glu				
1850		1855		1860
Pro Leu Ala Cys Pro Val Gln Cys Val Glu Gly Cys His Ala His				
1865		1870		1875
Cys Pro Pro Gly Lys Ile Leu Asp Glu Leu Leu Gln Thr Cys Val				
1880		1885		1890
Asp Pro Glu Asp Cys Pro Val Cys Glu Val Ala Gly Arg Arg Phe				
1895		1900		1905
Ala Ser Gly Lys Lys Val Thr Leu Asn Pro Ser Asp Pro Glu His				
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 tgc ttt agt gcc acc aga aga tac tac ctg ggt gca gtg gaa ctg tca
 96
 Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
 20 25 30

tgg gac tat atg caa agt gat ctc ggt gag ctg cct gtg gac gca aga
 144
 Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
 35 40 45

ttt cct cct aga gtg cca aaa tct ttt cca ttc aac acc tca gtc gtg
 192
 Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
 50 55 60

tac aaa aag act ctg ttt gta gaa ttc acg gat cac ctt ttc aac atc
 240
 Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
 65 70 75 80

gct aag cca agg cca ccc tgg atg ggt ctg cta ggt cct acc atc cag
 288
 Ala Lys Pro Arg Pro Pro Trp Met Gly Leu Leu Gly Pro Thr Ile Gln
 85 90 95

gct gag gtt tat gat aca gtg gtc att aca ctt aag aac atg gct tcc
 336
 Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
 100 105 110

cat cct gtc agt ctt cat gct gtt ggt gta tcc tac tgg aaa gct tct
 384
 His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
 115 120 125

gag gga gct gaa tat gat gat cag acc agt caa agg gag aaa gaa gat
 432
 Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
 130 135 140

gat aaa gtc ttc cct ggt gga agc cat aca tat gtc tgg cag gtc ctg
 480
 Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
 145 150 155 160

aaa gag aat ggt cca atg gcc tct gac cca ctg tgc ctt acc tac tca
 528
 Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
 165 170 175

tat ctt tct cat gtg gac ctg gta aaa gac ttg aat tca ggc ctc att
 576
 Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile
 180 185 190

gga gcc cta cta gta tgt aga gaa ggg agt ctg gcc aag gaa aag aca
 624
 Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr
 195 200 205

cag acc ttg cac aaa ttt ata cta ctt ttt gct gta ttt gat gaa ggg
 672

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

tgg gta cat tac att gct gct gaa gag gag gac tgg gac tat gct ccc
 1248
 Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro
 405 410 415

tta gtc ctc gcc ccc gat gac aga agt tat aaa agt caa tat ttg aac
 1296
 Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn
 420 425 430

aat ggc cct cag cgg att ggt agg aag tac aaa aaa gtc cga ttt atg
 1344
 Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
 435 440 445

gca tac aca gat gaa acc ttt aag act cgt gaa gct att cag cat gaa
 1392
 Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
 450 455 460

tca gga atc ttg gga cct tta ctt tat ggg gaa gtt gga gac aca ctg
 1440
 Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
 465 470 475 480

ttg att ata ttt aag aat caa gca agc aga cca tat aac atc tac cct
 1488
 Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
 485 490 495

cac gga atc act gat gtc cgt cct ttg tat tca agg aga tta cca aaa
 1536
 His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
 500 505 510

ggt gta aaa cat ttg aag gat ttt cca att ctg cca gga gaa ata ttc
 1584
 Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
 515 520 525

aaa tat aaa tgg aca gtg act gta gaa gat ggg cca act aaa tca gat
 1632
 Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
 530 535 540

cct cgg tgc ctg acc cgc tat tac tct agt ttc gtt aat atg gag aga
 1680
 Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
 545 550 555 560

gat cta gct tca gga ctc att ggc cct ctc ctc atc tgc tac aaa gaa
 1728
 Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
 565 570 575

tct gta gat caa aga gga aac cag ata atg tca gac aag agg aat gtc
 1776
 Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val

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

agc act agg caa aag caa ttt aat gcc acc aca att cca gaa aat act
 2352
 Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
 770 775 780

act ctt cag tca gat caa gag gaa att gac tat gat gat acc ata tca
 2400
 Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
 785 790 795 800

gtt gaa atg aag aag gaa gat ttt gac att tat gat gag gat gaa aat
 2448
 Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
 805 810 815

cag agc ccc cgc agc ttt caa aag aaa aca cga cac tat ttt att gct
 2496
 Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
 820 825 830

gca gtg gag agg ctc tgg gat tat ggg atg agt agc tcc cca cat gtt
 2544
 Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
 835 840 845

cta aga aac agg gct cag agt ggc agt gtc cct cag ttc aag aaa gtt
 2592
 Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
 850 855 860

gtt ttc cag gaa ttt act gat ggc tcc ttt act cag ccc tta tac cgt
 2640
 Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
 865 870 875 880

gga gaa cta aat gaa cat ttg gga ctc ctg ggg cca tat ata aga gca
 2688
 Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
 885 890 895

gaa gtt gaa gat aat atc atg gta act ttc aga aat cag gcc tct cgt
 2736
 Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
 900 905 910

ccc tat tcc ttc tat tct agc ctt att tct tat gag gaa gat cag agg
 2784
 Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
 915 920 925

caa gga gca gaa cct aga aaa aac ttt gtc aag cct aat gaa acc aaa
 2832
 Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
 930 935 940

act tac ttt tgg aaa gtg caa cat cat atg gca ccc act aaa gat gag
 2880
 Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu

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

gtg gaa tgc ctt att ggc gag cat cta cat gct ggg atg agc aca
 3429
 Val Glu Cys Leu Ile Gly Glu His Leu His Ala Gly Met Ser Thr
 1130 1135 1140

ctt ttt ctg gtg tac agc aat aag tgt cag act ccc ctg gga atg
 3474
 Leu Phe Leu Val Tyr Ser Asn Lys Cys Gln Thr Pro Leu Gly Met
 1145 1150 1155

gct tct gga cac att aga gat ttt cag att aca gct tca gga caa
 3519
 Ala Ser Gly His Ile Arg Asp Phe Gln Ile Thr Ala Ser Gly Gln
 1160 1165 1170

tat gga cag tgg gcc cca aag ctg gcc aga ctt cat tat tcc gga
 3564
 Tyr Gly Gln Trp Ala Pro Lys Leu Ala Arg Leu His Tyr Ser Gly
 1175 1180 1185

tca atc aat gcc tgg agc acc aag gag ccc ttt tct tgg atc aag
 3609
 Ser Ile Asn Ala Trp Ser Thr Lys Glu Pro Phe Ser Trp Ile Lys
 1190 1195 1200

gtg gat ctg ttg gca cca atg att att cac ggc atc aag acc cag
 3654
 Val Asp Leu Leu Ala Pro Met Ile Ile His Gly Ile Lys Thr Gln
 1205 1210 1215

ggt gcc cgt cag aag ttc tcc agc ctc tac atc tct cag ttt atc
 3699
 Gly Ala Arg Gln Lys Phe Ser Ser Leu Tyr Ile Ser Gln Phe Ile
 1220 1225 1230

atc atg tat agt ctt gat ggg aag aag tgg cag act tat cga gga
 3744
 Ile Met Tyr Ser Leu Asp Gly Lys Lys Trp Gln Thr Tyr Arg Gly
 1235 1240 1245

aat tcc act gga acc tta atg gtc ttc ttt ggc aat gtg gat tca
 3789
 Asn Ser Thr Gly Thr Leu Met Val Phe Phe Gly Asn Val Asp Ser
 1250 1255 1260

tct ggg ata aaa cac aat att ttt aac cct cca att att gct cga
 3834
 Ser Gly Ile Lys His Asn Ile Phe Asn Pro Pro Ile Ile Ala Arg
 1265 1270 1275

tac atc cgt ttg cac cca act cat tat agc att cgc agc act ctt
 3879
 Tyr Ile Arg Leu His Pro Thr His Tyr Ser Ile Arg Ser Thr Leu
 1280 1285 1290

cgc atg gag ttg atg ggc tgt gat tta aat agt tgc agc atg cca
 3924
 Arg Met Glu Leu Met Gly Cys Asp Leu Asn Ser Cys Ser Met Pro

1295	1300	1305
ttg gga atg gag agt aaa gca	ata tca gat gca cag	att act gct
3969		
Leu Gly Met Glu Ser Lys Ala	Ile Ser Asp Ala Gln	Ile Thr Ala
1310	1315	1320
tca tcc tac ttt acc aat atg	ttt gcc acc tgg tct	cct tca aaa
4014		
Ser Ser Tyr Phe Thr Asn Met	Phe Ala Thr Trp Ser	Pro Ser Lys
1325	1330	1335
gct cga ctt cac ctc caa ggg	agg agt aat gcc tgg	aga cct cag
4059		
Ala Arg Leu His Leu Gln Gly	Arg Ser Asn Ala Trp	Arg Pro Gln
1340	1345	1350
gtg aat aat cca aaa gag tgg	ctg caa gtg gac ttc	cag aag aca
4104		
Val Asn Asn Pro Lys Glu Trp	Leu Gln Val Asp Phe	Gln Lys Thr
1355	1360	1365
atg aaa gtc aca gga gta act	act cag gga gta aaa	tct ctg ctt
4149		
Met Lys Val Thr Gly Val Thr	Thr Gln Gly Val Lys	Ser Leu Leu
1370	1375	1380
acc agc atg tat gtg aag gag	ttc ctc atc tcc agc	agt caa gat
4194		
Thr Ser Met Tyr Val Lys Glu	Phe Leu Ile Ser Ser	Ser Gln Asp
1385	1390	1395
ggc cat cag tgg act ctc ttt	ttt cag aat ggc aaa	gta aag gtt
4239		
Gly His Gln Trp Thr Leu Phe	Phe Gln Asn Gly Lys	Val Lys Val
1400	1405	1410
ttt cag gga aat caa gac tcc	ttc aca cct gtg gtg	aac tct cta
4284		
Phe Gln Gly Asn Gln Asp Ser	Phe Thr Pro Val Val	Asn Ser Leu
1415	1420	1425
gac cca ccg tta ctg act cgc	tac ctt cga att cac	ccc cag agt
4329		
Asp Pro Pro Leu Leu Thr Arg	Tyr Leu Arg Ile His	Pro Gln Ser
1430	1435	1440
tgg gtg cac cag att gcc ctg	agg atg gag gtt ctg	ggc tgc gag
4374		
Trp Val His Gln Ile Ala Leu	Arg Met Glu Val Leu	Gly Cys Glu
1445	1450	1455
gca cag gac ctc tac acc ggc	gat gag gac gag aat	cag tcc cct
4419		
Ala Gln Asp Leu Tyr Thr Gly	Asp Glu Asp Glu Asn	Gln Ser Pro
1460	1465	1470

agg agc	ttc cag aag aaa acc	cgg cac tac ttc att	gcc gcc gtc
4464			
Arg Ser	Phe Gln Lys Lys Thr	Arg His Tyr Phe Ile	Ala Ala Val
1475	1480	1485	
gaa cgt	ctg tgg acc ggt agc	agt ggt gga agc gga	ggg tct ggt
4509			
Glu Arg	Leu Trp Thr Gly Ser	Ser Gly Gly Ser Gly	Gly Ser Gly
1490	1495	1500	
ggt tca	ggc gga tca gga gga	agc ggt ggc tca ggc	ggg agc ggc
4554			
Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly Ser Gly	Gly Ser Gly
1505	1510	1515	
ggg tca	gga ggt tca ggc tcc	gga ggc tct ggt gga	tca ggc ggt
4599			
Gly Ser	Gly Gly Ser Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1520	1525	1530	
agt ggt	ggg tca ggc gga agc	ggg agt gga ggg agt	gga ggt agt
4644			
Ser Gly	Gly Ser Gly Gly Ser	Gly Ser Gly Gly Ser	Gly Gly Ser
1535	1540	1545	
gga ggc	tct gga ggc agt ggc	gga tct gga ggc agc	gga ggt tct
4689			
Gly Gly	Ser Gly Gly Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser
1550	1555	1560	
ggc gga	agc gga gga tcc gcc	ggt agc cta tcc tgt	cgg ccc ccc
4734			
Gly Gly	Ser Gly Gly Ser Ala	Gly Ser Leu Ser Cys	Arg Pro Pro
1565	1570	1575	
atg gtc	aag ctg gtg tgt ccc	gct gac aac ctg cgg	gct gaa ggg
4779			
Met Val	Lys Leu Val Cys Pro	Ala Asp Asn Leu Arg	Ala Glu Gly
1580	1585	1590	
ctc gag	tgt acc aaa acg tgc	cag aac tat gac ctg	gag tgc atg
4824			
Leu Glu	Cys Thr Lys Thr Cys	Gln Asn Tyr Asp Leu	Glu Cys Met
1595	1600	1605	
agc atg	ggc tgt gtc tct ggc	tgc ctc tgc ccc ccg	ggc atg gtc
4869			
Ser Met	Gly Cys Val Ser Gly	Cys Leu Cys Pro Pro	Gly Met Val
1610	1615	1620	
cgg cat	gag aac aga tgt gtg	gcc ctg gaa agg tgt	ccc tgc ttc
4914			
Arg His	Glu Asn Arg Cys Val	Ala Leu Glu Arg Cys	Pro Cys Phe
1625	1630	1635	
cat cag	ggc aag gag tat gcc	cct gga gaa aca gtg	aag att ggc
4959			
His Gln	Gly Lys Glu Tyr Ala	Pro Gly Glu Thr Val	Lys Ile Gly

1640		1645		1650
tgc aac act tgt gtc tgt cgg gac cgg aag tgg aac tgc aca gac				
5004				
Cys Asn Thr Cys Val Cys Arg Asp Arg Lys Trp Asn Cys Thr Asp				
1655		1660		1665
cat gtg tgt gat gcc acg tgc tcc acg atc ggc atg gcc cac tac				
5049				
His Val Cys Asp Ala Thr Cys Ser Thr Ile Gly Met Ala His Tyr				
1670		1675		1680
ctc acc ttc gac ggg ctc aaa tac ctg ttc ccc ggg gag tgc cag				
5094				
Leu Thr Phe Asp Gly Leu Lys Tyr Leu Phe Pro Gly Glu Cys Gln				
1685		1690		1695
tac gtt ctg gtg cag gat tac tgc ggc agt aac cct ggg acc ttt				
5139				
Tyr Val Leu Val Gln Asp Tyr Cys Gly Ser Asn Pro Gly Thr Phe				
1700		1705		1710
cgg atc cta gtg ggg aat aag gga tgc agc cac ccc tca gtg aaa				
5184				
Arg Ile Leu Val Gly Asn Lys Gly Cys Ser His Pro Ser Val Lys				
1715		1720		1725
tgc aag aaa cgg gtc acc atc ctg gtg gag gga gga gag att gag				
5229				
Cys Lys Lys Arg Val Thr Ile Leu Val Glu Gly Gly Glu Ile Glu				
1730		1735		1740
ctg ttt gac ggg gag gtg aat gtg aag agg ccc atg aag gat gag				
5274				
Leu Phe Asp Gly Glu Val Asn Val Lys Arg Pro Met Lys Asp Glu				
1745		1750		1755
act cac ttt gag gtg gtg gag tct ggc cgg tac atc att ctg ctg				
5319				
Thr His Phe Glu Val Val Glu Ser Gly Arg Tyr Ile Ile Leu Leu				
1760		1765		1770
ctg ggc aaa gcc ctc tcc gtg gtc tgg gac cgc cac ctg agc atc				
5364				
Leu Gly Lys Ala Leu Ser Val Val Trp Asp Arg His Leu Ser Ile				
1775		1780		1785
tcc gtg gtc ctg aag cag aca tac cag gag aaa gtg tgt ggc ctg				
5409				
Ser Val Val Leu Lys Gln Thr Tyr Gln Glu Lys Val Cys Gly Leu				
1790		1795		1800
tgt ggg aat ttt gat ggc atc cag aac aat gac ctc acc agc agc				
5454				
Cys Gly Asn Phe Asp Gly Ile Gln Asn Asn Asp Leu Thr Ser Ser				
1805		1810		1815

aac ctc	caa gtg	gag gaa	gac cct	gtg gac	ttt ggg	aac tcc	tg	5499
Asn Leu	Gln Val	Glu Glu	Asp Pro	Val Asp	Phe Gly	Asn Ser	Trp	
1820			1825		1830			
aaa gtg	agc tcg	cag tgt	gct gac	acc aga	aaa gtg	cct ctg	gac	5544
Lys Val	Ser Ser	Gln Cys	Ala Asp	Thr Arg	Lys Val	Pro Leu	Asp	
1835			1840		1845			
tca tcc	cct gcc	acc tgc	cat aac	aac atc	atg aag	cag acg	atg	5589
Ser Ser	Pro Ala	Thr Cys	His Asn	Asn Ile	Met Lys	Gln Thr	Met	
1850			1855		1860			
gtg gat	tcc tcc	tgt aga	atc ctt	acc agt	gac gtc	ttc cag	gac	5634
Val Asp	Ser Ser	Cys Arg	Ile Leu	Thr Ser	Asp Val	Phe Gln	Asp	
1865			1870		1875			
tgc aac	aag ctg	gtg gac	ccc gag	cca tat	ctg gat	gtc tgc	att	5679
Cys Asn	Lys Leu	Val Asp	Pro Glu	Pro Tyr	Leu Asp	Val Cys	Ile	
1880			1885		1890			
tac gac	acc tgc	tcc tgt	gag tcc	att ggg	gac tgc	gcc tgc	ttc	5724
Tyr Asp	Thr Cys	Ser Cys	Glu Ser	Ile Gly	Asp Cys	Ala Cys	Phe	
1895			1900		1905			
tgc gac	acc att	gct gcc	tat gcc	cac gtg	tgt gcc	cag cat	ggc	5769
Cys Asp	Thr Ile	Ala Ala	Tyr Ala	His Val	Cys Ala	Gln His	Gly	
1910			1915		1920			
aag gtg	gtg acc	tgg agg	acg gcc	aca ttg	tgc ccc	cag agc	tgc	5814
Lys Val	Val Thr	Trp Arg	Thr Ala	Thr Leu	Cys Pro	Gln Ser	Cys	
1925			1930		1935			
gag gag	agg aat	ctc cgg	gag aac	ggg tat	gag tgt	gag tgg	cgc	5859
Glu Glu	Arg Asn	Leu Arg	Glu Asn	Gly Tyr	Glu Cys	Glu Trp	Arg	
1940			1945		1950			
tat aac	agc tgt	gca cct	gcc tgt	caa gtc	acg tgt	cag cac	cct	5904
Tyr Asn	Ser Cys	Ala Pro	Ala Cys	Gln Val	Thr Cys	Gln His	Pro	
1955			1960		1965			
gag cca	ctg gcc	tgc cct	gtg cag	tgt gtg	gag ggc	tgc cat	gcc	5949
Glu Pro	Leu Ala	Cys Pro	Val Gln	Cys Val	Glu Gly	Cys His	Ala	
1970			1975		1980			
cac tgc	cct cca	ggg aaa	atc ctg	gat gag	ctt ttg	cag acc	tgc	5994
His Cys	Pro Pro	Gly Lys	Ile Leu	Asp Glu	Leu Leu	Gln Thr	Cys	

1985	1990	1995
gtt gac cct gaa gac tgt cca	gtg tgt gag gtg gct	ggc cgg cgt
6039		
Val Asp Pro Glu Asp Cys	Pro Val Cys Glu Val Ala	Gly Arg Arg
2000	2005	2010
ttt gcc tca gga aag aaa gtc	acc ttg aat ccc agt	gac cct gag
6084		
Phe Ala Ser Gly Lys Lys	Val Thr Leu Asn Pro Ser	Asp Pro Glu
2015	2020	2025
cac tgc cag att tgc cac tgt	gat gtt gtc aac ctc	acc tgt gaa
6129		
His Cys Gln Ile Cys His	Cys Asp Val Val Asn Leu	Thr Cys Glu
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6153		
Ala Cys Gln Glu Pro Gly	Gly	
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Cys Phe Ser Ala Thr Arg Arg Tyr	Tyr Leu Gly Ala Val Glu Leu Ser	
	20	25
Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg		
	35	40
Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val		
	50	55
Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile		
	65	70
Ala Lys Pro Arg Pro Pro Trp Met Gly Leu Leu Gly Pro Thr Ile Gln		
	85	90
Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser		

227

Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro
340 345 350

Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp
355 360 365

Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser
370 375 380

Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr
385 390 395 400

Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro
405 410 415

Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn
420 425 430

Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
435 440 445

Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
450 455 460

Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
465 470 475 480

Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
485 490 495

His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
500 505 510

Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
515 520 525

Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
530 535 540

Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
545 550 555 560

Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu

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Ser	Val	Asp	Gln	Arg	Gly	Asn	Gln	Ile	Met	Ser	Asp	Lys	Arg	Asn	Val	
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Ile	Leu	Phe	Ser	Val	Phe	Asp	Glu	Asn	Arg	Ser	Trp	Tyr	Leu	Thr	Glu	
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Pro	Glu	Phe	Gln	Ala	Ser	Asn	Ile	Met	His	Ser	Ile	Asn	Gly	Tyr	Val	
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Phe	Asp	Ser	Leu	Gln	Leu	Ser	Val	Cys	Leu	His	Glu	Val	Ala	Tyr	Trp	
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Ser	Gly	Tyr	Thr	Phe	Lys	His	Lys	Met	Val	Tyr	Glu	Asp	Thr	Leu	Thr	
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Gly	Leu	Trp	Ile	Leu	Gly	Cys	His	Asn	Ser	Asp	Phe	Arg	Asn	Arg	Gly	
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Met	Thr	Ala	Leu	Leu	Lys	Val	Ser	Ser	Cys	Asp	Lys	Asn	Thr	Gly	Asp	
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Tyr	Tyr	Glu	Asp	Ser	Tyr	Glu	Asp	Ile	Ser	Ala	Tyr	Leu	Leu	Ser	Lys	
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Asn	Asn	Ala	Ile	Glu	Pro	Arg	Ser	Phe	Ser	Gln	Asn	Ser	Arg	His	Pro	
		755					760					765				
Ser	Thr	Arg	Gln	Lys	Gln	Phe	Asn	Ala	Thr	Thr	Ile	Pro	Glu	Asn	Thr	
	770					775					780					
Thr	Leu	Gln	Ser	Asp	Gln	Glu	Glu	Ile	Asp	Tyr	Asp	Asp	Thr	Ile	Ser	
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Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
805 810 815

Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
820 825 830

Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
835 840 845

Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
850 855 860

Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
865 870 875 880

Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
885 890 895

Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
900 905 910

Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
915 920 925

Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
930 935 940

Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu
945 950 955 960

Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
965 970 975

Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
980 985 990

Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala
995 1000 1005

Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr
1010 1015 1020

Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met

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Glu Asp Pro Thr Phe Lys	Glu Asn Tyr Arg Phe His	Ala Ile Asn													
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Gly Tyr Ile Met Asp Thr	Leu Pro Gly Leu Val Met	Ala Gln Asp													
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Gln Arg Ile Arg Trp Tyr	Leu Leu Ser Met Gly Ser	Asn Glu Asn													
1070	1075	1080													
Ile His Ser Ile His Phe	Ser Gly His Val Phe Thr	Val Arg Lys													
1085	1090	1095													
Lys Glu Glu Tyr Lys Met	Ala Leu Tyr Asn Leu Tyr	Pro Gly Val													
1100	1105	1110													
Phe Glu Thr Val Glu Met	Leu Pro Ser Lys Ala Gly	Ile Trp Arg													
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Val Glu Cys Leu Ile Gly	Glu His Leu His Ala Gly	Met Ser Thr													
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Leu Phe Leu Val Tyr Ser	Asn Lys Cys Gln Thr Pro	Leu Gly Met													
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Ala Ser Gly His Ile Arg	Asp Phe Gln Ile Thr Ala	Ser Gly Gln													
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Tyr Gly Gln Trp Ala Pro	Lys Leu Ala Arg Leu His	Tyr Ser Gly													
1175	1180	1185													
Ser Ile Asn Ala Trp Ser	Thr Lys Glu Pro Phe Ser	Trp Ile Lys													
1190	1195	1200													
Val Asp Leu Leu Ala Pro	Met Ile Ile His Gly Ile	Lys Thr Gln													
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Gly Ala Arg Gln Lys Phe	Ser Ser Leu Tyr Ile Ser	Gln Phe Ile													
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Ile Met Tyr Ser Leu Asp	Gly Lys Lys Trp Gln Thr	Tyr Arg Gly													
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Leu	Gly	Met	Glu	Ser	Lys	Ala	Ile	Ser	Asp	Ala	Gln	Ile	Thr	Ala
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Ser	Ser	Tyr	Phe	Thr	Asn	Met	Phe	Ala	Thr	Trp	Ser	Pro	Ser	Lys
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Ala	Arg	Leu	His	Leu	Gln	Gly	Arg	Ser	Asn	Ala	Trp	Arg	Pro	Gln
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Val	Asn	Asn	Pro	Lys	Glu	Trp	Leu	Gln	Val	Asp	Phe	Gln	Lys	Thr
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Met	Lys	Val	Thr	Gly	Val	Thr	Thr	Gln	Gly	Val	Lys	Ser	Leu	Leu
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Thr	Ser	Met	Tyr	Val	Lys	Glu	Phe	Leu	Ile	Ser	Ser	Ser	Gln	Asp
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Gly	His	Gln	Trp	Thr	Leu	Phe	Phe	Gln	Asn	Gly	Lys	Val	Lys	Val
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Trp	Val	His	Gln	Ile	Ala	Leu	Arg	Met	Glu	Val	Leu	Gly	Cys	Glu
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Glu	Arg	Leu	Trp	Thr	Gly	Ser	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly		
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Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser		
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Ser	Met	Gly	Cys	Val	Ser	Gly	Cys	Leu	Cys	Pro	Pro	Gly	Met	Val		
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Cys	Lys	Lys	Arg	Val	Thr	Ile	Leu	Val	Glu	Gly	Gly	Glu	Ile	Glu
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Leu	Phe	Asp	Gly	Glu	Val	Asn	Val	Lys	Arg	Pro	Met	Lys	Asp	Glu
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Lys	Val	Ser	Ser	Gln	Cys	Ala	Asp	Thr	Arg	Lys	Val	Pro	Leu	Asp
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1985		1990		1995
Val Asp Pro Glu Asp Cys Pro Val Cys Glu Val Ala Gly Arg Arg				
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Phe Ala Ser Gly Lys Lys Val Thr Leu Asn Pro Ser Asp Pro Glu				
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Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
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144
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Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
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Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
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384
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115 120 125

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432
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130 135 140

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145 150 155 160

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528
Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
165 170 175

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576
Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile

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Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr															
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Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp															
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 Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr
 385 390 395 400

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 1296
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 Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
 450 455 460

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 Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
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 1488
 Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
 485 490 495

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 His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
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 Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
 515 520 525

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 Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
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 Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg

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atc ctg ttt tct gta ttt gat gag aac cga agc tgg tac ctc aca gag							
1824							
Ile	Leu	Phe	Ser	Val	Phe	Asp	
					595		
aat ata caa cgc ttt ctc ccc aat cca gct gga gtg cag ctt gag gat							
1872							
Asn	Ile	Gln	Arg	Phe	Leu	Pro	
					610		
cca gag ttc caa gcc tcc aac atc atg cac agc atc aat ggc tat gtt							
1920							
Pro	Glu	Phe	Gln	Ala	Ser	Asn	
					630		
ttt gat agt ttg cag ttg tca gtt tgt ttg cat gag gtg gca tac tgg							
1968							
Phe	Asp	Ser	Leu	Gln	Leu	Ser	
					645		
tac att cta agc att gga gca cag act gac ttc ctt tct gtc ttc ttc							
2016							
Tyr	Ile	Leu	Ser	Ile	Gly	Ala	
					660		
tct gga tat acc ttc aaa cac aaa atg gtc tat gaa gac aca ctc acc							
2064							
Ser	Gly	Tyr	Thr	Phe	Lys	His	
					675		
cta ttc cca ttc tca gga gaa act gtc ttc atg tcg atg gaa aac cca							
2112							
Leu	Phe	Pro	Phe	Ser	Gly	Glu	
					690		
ggc cta tgg att ctg ggg tgc cac aac tca gac ttt cgg aac aga ggc							
2160							
Gly	Leu	Trp	Ile	Leu	Gly	Cys	
					710		
atg acc gcc tta ctg aag gtt tct agt tgt gac aag aac act ggt gat							
2208							
Met	Thr	Ala	Leu	Leu	Lys	Val	
					725		

tat tac gag gac agt tat gaa gat att tca gca tac ttg ctg agt aaa
 2256
 Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
 740 745 750

aac aat gcc att gaa cca aga agc ttc tcc cag aat tca aga cac cct
 2304
 Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
 755 760 765

agc act agg caa aag caa ttt aat gcc acc aca att cca gaa aat act
 2352
 Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
 770 775 780

act ctt cag tca gat caa gag gaa att gac tat gat gat acc ata tca
 2400
 Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
 785 790 795 800

gtt gaa atg aag aag gaa gat ttt gac att tat gat gag gat gaa aat
 2448
 Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
 805 810 815

cag agc ccc cgc agc ttt caa aag aaa aca cga cac tat ttt att gct
 2496
 Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
 820 825 830

gca gtg gag agg ctc tgg gat tat ggg atg agt agc tcc cca cat gtt
 2544
 Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
 835 840 845

cta aga aac agg gct cag agt ggc agt gtc cct cag ttc aag aaa gtt
 2592
 Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
 850 855 860

gtt ttc cag gaa ttt act gat ggc tcc ttt act cag ccc tta tac cgt
 2640
 Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
 865 870 875 880

gga gaa cta aat gaa cat ttg gga ctc ctg ggg cca tat ata aga gca
 2688
 Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
 885 890 895

gaa gtt gaa gat aat atc atg gta act ttc aga aat cag gcc tct cgt
 2736
 Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
 900 905 910

ccc tat tcc ttc tat tct agc ctt att tct tat gag gaa gat cag agg
 2784
 Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg

915	920	925
caa gga gca gaa cct aga aaa aac ttt gtc aag cct aat gaa acc aaa 2832		
Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys 930 935 940		
act tac ttt tgg aaa gtg caa cat cat atg gca ccc act aaa gat gag 2880		
Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu 945 950 955 960		
ttt gac tgc aaa gcc tgg gct tat ttc tct gat gtt gac ctg gaa aaa 2928		
Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys 965 970 975		
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Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn 980 985 990		
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Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala 995 1000 1005		
ctg ttt ttc acc atc ttt gat gag acc aaa agc tgg tac ttc act 3069		
Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr 1010 1015 1020		
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Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met 1025 1030 1035		
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Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn 1040 1045 1050		
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Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp 1055 1060 1065		
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Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn 1070 1075 1080		
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Ile His Ser Ile His Phe Ser Gly His Val Phe Thr Val Arg Lys 1085 1090 1095		

aaa	gag	gag	tat	aaa	atg	gca	ctg	tac	aat	ctc	tat	cca	ggt	gtt
3339														
Lys	Glu	Glu	Tyr	Lys	Met	Ala	Leu	Tyr	Asn	Leu	Tyr	Pro	Gly	Val
1100						1105					1110			
ttt	gag	aca	gtg	gaa	atg	tta	cca	tcc	aaa	gct	gga	att	tgg	cgg
3384														
Phe	Glu	Thr	Val	Glu	Met	Leu	Pro	Ser	Lys	Ala	Gly	Ile	Trp	Arg
1115						1120					1125			
gtg	gaa	tgc	ctt	att	ggc	gag	cat	cta	cat	gct	ggg	atg	agc	aca
3429														
Val	Glu	Cys	Leu	Ile	Gly	Glu	His	Leu	His	Ala	Gly	Met	Ser	Thr
1130						1135					1140			
ctt	ttt	ctg	gtg	tac	agc	aat	aag	tgt	cag	act	ccc	ctg	gga	atg
3474														
Leu	Phe	Leu	Val	Tyr	Ser	Asn	Lys	Cys	Gln	Thr	Pro	Leu	Gly	Met
1145						1150					1155			
gct	tct	gga	cac	att	aga	gat	ttt	cag	att	aca	gct	tca	gga	caa
3519														
Ala	Ser	Gly	His	Ile	Arg	Asp	Phe	Gln	Ile	Thr	Ala	Ser	Gly	Gln
1160						1165					1170			
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3564														
Tyr	Gly	Gln	Trp	Ala	Pro	Lys	Leu	Ala	Arg	Leu	His	Tyr	Ser	Gly
1175						1180					1185			
tca	atc	aat	gcc	tgg	agc	acc	aag	gag	ccc	ttt	tct	tgg	atc	aag
3609														
Ser	Ile	Asn	Ala	Trp	Ser	Thr	Lys	Glu	Pro	Phe	Ser	Trp	Ile	Lys
1190						1195					1200			
gtg	gat	ctg	ttg	gca	cca	atg	att	att	cac	ggc	atc	aag	acc	cag
3654														
Val	Asp	Leu	Leu	Ala	Pro	Met	Ile	Ile	His	Gly	Ile	Lys	Thr	Gln
1205						1210					1215			
ggt	gcc	cgt	cag	aag	ttc	tcc	agc	ctc	tac	atc	tct	cag	ttt	atc
3699														
Gly	Ala	Arg	Gln	Lys	Phe	Ser	Ser	Leu	Tyr	Ile	Ser	Gln	Phe	Ile
1220						1225					1230			
atc	atg	tat	agt	ctt	gat	ggg	aag	aag	tgg	cag	act	tat	cga	gga
3744														
Ile	Met	Tyr	Ser	Leu	Asp	Gly	Lys	Lys	Trp	Gln	Thr	Tyr	Arg	Gly
1235						1240					1245			
aat	tcc	act	gga	acc	tta	atg	gtc	ttc	ttt	ggc	aat	gtg	gat	tca
3789														
Asn	Ser	Thr	Gly	Thr	Leu	Met	Val	Phe	Phe	Gly	Asn	Val	Asp	Ser
1250						1255					1260			
tct	ggg	ata	aaa	cac	aat	att	ttt	aac	cct	cca	att	att	gct	cga
3834														
Ser	Gly	Ile	Lys	His	Asn	Ile	Phe	Asn	Pro	Pro	Ile	Ile	Ala	Arg

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

tgg gtg	cac cag att gcc ctg	agg atg gag gtt ctg	ggc tgc gag
4374			
Trp Val	His Gln Ile Ala Leu	Arg Met Glu Val Leu	Gly Cys Glu
1445	1450	1455	
gca cag	gac ctc tac acc ggt	gat gac aac tct cct	tcc ttt atc
4419			
Ala Gln	Asp Leu Tyr Thr Gly	Asp Asp Asn Ser Pro	Ser Phe Ile
1460	1465	1470	
caa att	cgc tca gtt gcc aag	aag cat cct aaa act	tgg cct cga
4464			
Gln Ile	Arg Ser Val Ala Lys	Lys His Pro Lys Thr	Trp Pro Arg
1475	1480	1485	
ggg ggt	ggg agt gga ggg tct	gga ggg tca ggc ggg	tct ggc ggg
4509			
Gly Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1490	1495	1500	
tct ggt	ggt tcc ggc ggt tca	gga ggg agc gga ggg	agt ggc ggc
4554			
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1505	1510	1515	
agt gga	ggt agc ggt ggc agc	ggt ggc tcc gga gga	tct ggc ggc
4599			
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1520	1525	1530	
tcc gga	ggc agc gga ggc tcc	ggg tcc caa tgc aac	gac atc act
4644			
Ser Gly	Gly Ser Gly Gly Ser	Gly Ser Gln Cys Asn	Asp Ile Thr
1535	1540	1545	
gcc agg	ctg cag tat gtc aag	gtg gga agc tgt aag	tct gaa gta
4689			
Ala Arg	Leu Gln Tyr Val Lys	Val Gly Ser Cys Lys	Ser Glu Val
1550	1555	1560	
gag gtg	gat atc cac tac tgc	cag ggc aaa tgt gcc	agc aaa gcc
4734			
Glu Val	Asp Ile His Tyr Cys	Gln Gly Lys Cys Ala	Ser Lys Ala
1565	1570	1575	
atg tac	tcc att gac atc aac	gat gtg cag gac cag	tgc tcc tgc
4779			
Met Tyr	Ser Ile Asp Ile Asn	Asp Val Gln Asp Gln	Cys Ser Cys
1580	1585	1590	
tgc tct	ccg aca cgg acg gag	ccc atg cag gtg gcc	ctg cac tgc
4824			
Cys Ser	Pro Thr Arg Thr Glu	Pro Met Gln Val Ala	Leu His Cys
1595	1600	1605	
acc aat	ggc tct gtt gtg tac	cat gag gtt ctc aat	gcc atg gag
4869			
Thr Asn	Gly Ser Val Val Tyr	His Glu Val Leu Asn	Ala Met Glu

1610 1615 1620
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 Cys Lys Cys Ser Pro Arg Lys Cys Ser Lys
 1625 1630

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 <211> 1633
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 163

Met Glu Ile Glu Leu Ser Thr Cys Phe Phe Leu Cys Leu Leu Arg Phe
 1 5 10 15

Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
 20 25 30

Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
 35 40 45

Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
 50 55 60

Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
 65 70 75 80

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

Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
 100 105 110

His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
 115 120 125

Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
 130 135 140

Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
 145 150 155 160

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

Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro
405 410 415

Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn
420 425 430

Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
435 440 445

Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
450 455 460

Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
465 470 475 480

Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
485 490 495

His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
500 505 510

Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
515 520 525

Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
530 535 540

Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
545 550 555 560

Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
565 570 575

Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
580 585 590

Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
595 600 605

Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
610 615 620

Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
625 630 635 640

Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
645 650 655

Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
660 665 670

Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
675 680 685

Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
690 695 700

Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
705 710 715 720

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

Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
740 745 750

Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
755 760 765

Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
770 775 780

Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
785 790 795 800

Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
805 810 815

Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
820 825 830

Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
835 840 845

Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
850 855 860

Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
865 870 875 880

Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
885 890 895

Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
900 905 910

Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
915 920 925

Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
930 935 940

Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu
945 950 955 960

Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
965 970 975

Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
980 985 990

Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala
995 1000 1005

Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr
1010 1015 1020

Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met
1025 1030 1035

Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn
1040 1045 1050

Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp
1055 1060 1065

Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn
1070 1075 1080

Ile	His	Ser	Ile	His	Phe	Ser	Gly	His	Val	Phe	Thr	Val	Arg	Lys
1085						1090					1095			
Lys	Glu	Glu	Tyr	Lys	Met	Ala	Leu	Tyr	Asn	Leu	Tyr	Pro	Gly	Val
1100						1105					1110			
Phe	Glu	Thr	Val	Glu	Met	Leu	Pro	Ser	Lys	Ala	Gly	Ile	Trp	Arg
1115						1120					1125			
Val	Glu	Cys	Leu	Ile	Gly	Glu	His	Leu	His	Ala	Gly	Met	Ser	Thr
1130						1135					1140			
Leu	Phe	Leu	Val	Tyr	Ser	Asn	Lys	Cys	Gln	Thr	Pro	Leu	Gly	Met
1145						1150					1155			
Ala	Ser	Gly	His	Ile	Arg	Asp	Phe	Gln	Ile	Thr	Ala	Ser	Gly	Gln
1160						1165					1170			
Tyr	Gly	Gln	Trp	Ala	Pro	Lys	Leu	Ala	Arg	Leu	His	Tyr	Ser	Gly
1175						1180					1185			
Ser	Ile	Asn	Ala	Trp	Ser	Thr	Lys	Glu	Pro	Phe	Ser	Trp	Ile	Lys
1190						1195					1200			
Val	Asp	Leu	Leu	Ala	Pro	Met	Ile	Ile	His	Gly	Ile	Lys	Thr	Gln
1205						1210					1215			
Gly	Ala	Arg	Gln	Lys	Phe	Ser	Ser	Leu	Tyr	Ile	Ser	Gln	Phe	Ile
1220						1225					1230			
Ile	Met	Tyr	Ser	Leu	Asp	Gly	Lys	Lys	Trp	Gln	Thr	Tyr	Arg	Gly
1235						1240					1245			
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Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr	Trp	Pro	Arg
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 Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
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cag	acc	ttg	cac	aaa	ttt	ata	cta	ctt	ttt	gct	gta	ttt	gat	gaa	ggg
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 Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile
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 Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His
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 Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr
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1776																
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 595 600 605

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 610 615 620

cca gag ttc caa gcc tcc aac atc atg cac agc atc aat ggc tat gtt
 1920
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 625 630 635 640

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 Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
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 2016
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 675 680 685

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 705 710 715 720

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 755 760 765

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 Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr

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Ala Ser Gly His Ile Arg Asp 1160	Phe Gln Ile Thr	Ala Ser Gly Gln 1170
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Tyr Gly Gln Trp Ala Pro Lys 1175	Leu Ala Arg Leu	His Tyr Ser Gly 1185
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Ser Ile Asn Ala Trp Ser Thr 1190	Lys Glu Pro Phe	Ser Trp Ile Lys 1200
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Val Asp Leu Leu Ala Pro Met 1205	Ile Ile His Gly	Ile Lys Thr Gln 1215
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Tyr Ile Arg Leu His Pro Thr 1280	His Tyr Ser Ile	Arg Ser Thr Leu 1290
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4329															
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4374															
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1445						1450					1455				
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4419															
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1460						1465					1470				
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agg gga 4554	ggc tct ggc ggt tca 1505	ggt ggt tcc gga ggt 1510
Ser Gly 1505	Gly Ser Gly Gly Ser 1510	Gly Gly Ser Gly Gly Ser 1515
tca ggc 4599	ggg agt ggt ggc agc 1520	gga gga agc ggc ggc 1525
Ser Gly 1520	Gly Ser Gly Gly Ser 1525	Gly Gly Ser Gly Gly Ser 1530
tct ggt 4644	ggt tca ggc ggc agt 1535	gga ggg tcc gga ggc 1540
Ser Gly 1535	Gly Ser Gly Gly Ser 1540	Gly Gly Ser Gly Gly Ser 1545
tca ggc 4689	ggg tca ggc ggt agc 1550	ggc ggc tca gga ggt 1555
Ser Gly 1550	Gly Ser Gly Gly Ser 1555	Gly Gly Ser Gly Gly Ser 1560
agc ggt 4734	gga agc gga ggt tct 1565	ggc gga agt ggc ggc 1570
Ser Gly 1565	Gly Ser Gly Gly Ser 1570	Gly Gly Ser Gly Gly Ser 1575
tcc ggt 4779	ggt agc ggt gga tca 1580	gga ggt tct ggt ggg 1585
Ser Gly 1580	Gly Ser Gly Gly Ser 1585	Gly Gly Ser Gly Gly Ser 1590
ggg tcc 4824	caa tgc aac gac atc 1595	act gcc agg ctg cag 1600
Gly Ser 1595	Gln Cys Asn Asp Ile 1600	Thr Ala Arg Leu Gln 1605
gtg gga 4869	agc tgt aag tct gaa 1610	gta gag gtg gat atc 1615
Val Gly 1610	Ser Cys Lys Ser Glu 1615	Val Glu Val Asp Ile 1620
cag ggc 4914	aaa tgt gcc agc aaa 1625	gcc atg tac tcc att 1630
Gln Gly 1625	Lys Cys Ala Ser Lys 1630	Ala Met Tyr Ser Ile 1635
gat gtg 4959	cag gac cag tgc tcc 1640	tgc tgc tct ccg aca 1645
Asp Val 1640	Gln Asp Gln Cys Ser 1645	Cys Cys Ser Pro Thr 1650

ccc atg cag gtg gcc ctg cac tgc acc aat ggc tct gtt gtg tac
5004

Pro Met Gln Val Ala Leu His Cys Thr Asn Gly Ser Val Val Tyr
1655 1660 1665

cat gag gtt ctc aat gcc atg gag tgc aaa tgc tcc ccc agg aag
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His Glu Val Leu Asn Ala Met Glu Cys Lys Cys Ser Pro Arg Lys
1670 1675 1680

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Cys Ser Lys
1685

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<211> 1686

<212> PRT

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Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
35 40 45

Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
50 55 60

Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
65 70 75 80

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

Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
100 105 110

His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
115 120 125

Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
 130 135 140

Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
 145 150 155 160

Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
 165 170 175

Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile
 180 185 190

Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr
 195 200 205

Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly
 210 215 220

Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp
 225 230 235 240

Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr
 245 250 255

Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val
 260 265 270

Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile
 275 280 285

Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser
 290 295 300

Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met
 305 310 315 320

Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His
 325 330 335

Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro
 340 345 350

Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp
 355 360 365

Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser
 370 375 380

Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr
 385 390 395 400

Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro
 405 410 415

Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn
 420 425 430

Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
 435 440 445

Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
 450 455 460

Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
 465 470 475 480

Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
 485 490 495

His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
 500 505 510

Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
 515 520 525

Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
 530 535 540

Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
 545 550 555 560

Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
 565 570 575

Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
 580 585 590

Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
595 600 605

Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
610 615 620

Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
625 630 635 640

Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
645 650 655

Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
660 665 670

Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
675 680 685

Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
690 695 700

Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
705 710 715 720

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

Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
740 745 750

Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
755 760 765

Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
770 775 780

Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
785 790 795 800

Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
805 810 815

Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
820 825 830

Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
835 840 845

Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
850 855 860

Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
865 870 875 880

Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
885 890 895

Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
900 905 910

Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
915 920 925

Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
930 935 940

Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu
945 950 955 960

Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
965 970 975

Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
980 985 990

Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala
995 1000 1005

Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr
1010 1015 1020

Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met
1025 1030 1035

Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn
1040 1045 1050

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

Tyr	Ile	Arg	Leu	His	Pro	Thr	His	Tyr	Ser	Ile	Arg	Ser	Thr	Leu
	1280					1285					1290			
Arg	Met	Glu	Leu	Met	Gly	Cys	Asp	Leu	Asn	Ser	Cys	Ser	Met	Pro
	1295					1300					1305			
Leu	Gly	Met	Glu	Ser	Lys	Ala	Ile	Ser	Asp	Ala	Gln	Ile	Thr	Ala
	1310					1315					1320			
Ser	Ser	Tyr	Phe	Thr	Asn	Met	Phe	Ala	Thr	Trp	Ser	Pro	Ser	Lys
	1325					1330					1335			
Ala	Arg	Leu	His	Leu	Gln	Gly	Arg	Ser	Asn	Ala	Trp	Arg	Pro	Gln
	1340					1345					1350			
Val	Asn	Asn	Pro	Lys	Glu	Trp	Leu	Gln	Val	Asp	Phe	Gln	Lys	Thr
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Met	Lys	Val	Thr	Gly	Val	Thr	Thr	Gln	Gly	Val	Lys	Ser	Leu	Leu
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Thr	Ser	Met	Tyr	Val	Lys	Glu	Phe	Leu	Ile	Ser	Ser	Ser	Gln	Asp
	1385					1390					1395			
Gly	His	Gln	Trp	Thr	Leu	Phe	Phe	Gln	Asn	Gly	Lys	Val	Lys	Val
	1400					1405					1410			
Phe	Gln	Gly	Asn	Gln	Asp	Ser	Phe	Thr	Pro	Val	Val	Asn	Ser	Leu
	1415					1420					1425			
Asp	Pro	Pro	Leu	Leu	Thr	Arg	Tyr	Leu	Arg	Ile	His	Pro	Gln	Ser
	1430					1435					1440			
Trp	Val	His	Gln	Ile	Ala	Leu	Arg	Met	Glu	Val	Leu	Gly	Cys	Glu
	1445					1450					1455			
Ala	Gln	Asp	Leu	Tyr	Thr	Gly	Asp	Asp	Asn	Ser	Pro	Ser	Phe	Ile
	1460					1465					1470			
Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr	Trp	Pro	Arg
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 1490 1495 1500

Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
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Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
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Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
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Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Ser
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Gly Ser Gln Cys Asn Asp Ile Thr Ala Arg Leu Gln Tyr Val Lys
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Val Gly Ser Cys Lys Ser Glu Val Glu Val Asp Ile His Tyr Cys
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Gln Gly Lys Cys Ala Ser Lys Ala Met Tyr Ser Ile Asp Ile Asn
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Asp Val Gln Asp Gln Cys Ser Cys Cys Ser Pro Thr Arg Thr Glu
 1640 1645 1650

Pro Met Gln Val Ala Leu His Cys Thr Asn Gly Ser Val Val Tyr
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His Glu Val Leu Asn Ala Met Glu Cys Lys Cys Ser Pro Arg Lys
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Cys Ser Lys
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 96
 Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
 20 25 30
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 144
 Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
 35 40 45
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 192
 Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
 50 55 60
 tac aaa aag act ctg ttt gta gaa ttc acg gat cac ctt ttc aac atc
 240
 Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
 65 70 75 80
 gct aag cca agg cca ccc tgg atg ggt ctg cta ggt cct acc atc cag
 288
 Ala Lys Pro Arg Pro Pro Trp Met Gly Leu Leu Gly Pro Thr Ile Gln
 85 90 95
 gct gag gtt tat gat aca gtg gtc att aca ctt aag aac atg gct tcc
 336
 Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
 100 105 110
 cat cct gtc agt ctt cat gct gtt ggt gta tcc tac tgg aaa gct tct
 384
 His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
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 gag gga gct gaa tat gat gat cag acc agt caa agg gag aaa gaa gat
 432
 Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
 130 135 140

gat aaa gtc ttc cct ggt gga agc cat aca tat gtc tgg cag gtc ctg
480
Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
145 150 155 160

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528
Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
165 170 175

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576
Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile
180 185 190

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624
Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr
195 200 205

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672
Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly
210 215 220

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720
Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp
225 230 235 240

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768
Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr
245 250 255

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816
Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val
260 265 270

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864
Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile
275 280 285

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912
Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser
290 295 300

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960
Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met
305 310 315 320

gac ctt gga cag ttt cta ctg ttt tgt cat atc tct tcc cac caa cat
1008
Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His

325								330					335				
gat ggc atg gaa gct tat gtc aaa gta gac agc tgt cca gag gaa ccc																	
1056																	
Asp	Gly	Met	Glu	Ala	Tyr	Val	Lys	Val	Asp	Ser	Cys	Pro	Glu	Glu	Pro		
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caa cta cga atg aaa aat aat gaa gaa gcg gaa gac tat gat gat gat																	
1104																	
Gln	Leu	Arg	Met	Lys	Asn	Asn	Glu	Glu	Ala	Glu	Asp	Tyr	Asp	Asp	Asp		
			355				360					365					
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1152																	
Leu	Thr	Asp	Ser	Glu	Met	Asp	Val	Val	Arg	Phe	Asp	Asp	Asp	Asn	Ser		
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cct tcc ttt atc caa att cgc tca gtt gcc aag aag cat cct aaa act																	
1200																	
Pro	Ser	Phe	Ile	Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr		
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1248																	
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1296																	
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			420				425						430				
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1344																	
Asn	Gly	Pro	Gln	Arg	Ile	Gly	Arg	Lys	Tyr	Lys	Lys	Val	Arg	Phe	Met		
			435			440						445					
gca tac aca gat gaa acc ttt aag act cgt gaa gct att cag cat gaa																	
1392																	
Ala	Tyr	Thr	Asp	Glu	Thr	Phe	Lys	Thr	Arg	Glu	Ala	Ile	Gln	His	Glu		
			450			455					460						
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1440																	
Ser	Gly	Ile	Leu	Gly	Pro	Leu	Leu	Tyr	Gly	Glu	Val	Gly	Asp	Thr	Leu		
465					470					475					480		
ttg att ata ttt aag aat caa gca agc aga cca tat aac atc tac cct																	
1488																	
Leu	Ile	Ile	Phe	Lys	Asn	Gln	Ala	Ser	Arg	Pro	Tyr	Asn	Ile	Tyr	Pro		
				485					490					495			
cac gga atc act gat gtc cgt cct ttg tat tca agg aga tta cca aaa																	
1536																	
His	Gly	Ile	Thr	Asp	Val	Arg	Pro	Leu	Tyr	Ser	Arg	Arg	Leu	Pro	Lys		
			500					505					510				

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 1584
 Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
 515 520 525

aaa tat aaa tgg aca gtg act gta gaa gat ggg cca act aaa tca gat
 1632
 Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
 530 535 540

cct cgg tgc ctg acc cgc tat tac tct agt ttc gtt aat atg gag aga
 1680
 Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
 545 550 555 560

gat cta gct tca gga ctc att ggc cct ctc ctc atc tgc tac aaa gaa
 1728
 Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
 565 570 575

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 1776
 Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
 580 585 590

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 1824
 Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
 595 600 605

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 1872
 Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
 610 615 620

cca gag ttc caa gcc tcc aac atc atg cac agc atc aat ggc tat gtt
 1920
 Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
 625 630 635 640

ttt gat agt ttg cag ttg tca gtt tgt ttg cat gag gtg gca tac tgg
 1968
 Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
 645 650 655

tac att cta agc att gga gca cag act gac ttc ctt tct gtc ttc ttc
 2016
 Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
 660 665 670

tct gga tat acc ttc aaa cac aaa atg gtc tat gaa gac aca ctc acc
 2064
 Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
 675 680 685

cta ttc cca ttc tca gga gaa act gtc ttc atg tcg atg gaa aac cca
 2112
 Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro

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

gga gaa cta aat gaa cat ttg gga ctc ctg ggg cca tat ata aga gca
2688

Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
885 890 895

gaa gtt gaa gat aat atc atg gta act ttc aga aat cag gcc tct cgt
2736

Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
900 905 910

ccc tat tcc ttc tat tct agc ctt att tct tat gag gaa gat cag agg
2784

Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
915 920 925

caa gga gca gaa cct aga aaa aac ttt gtc aag cct aat gaa acc aaa
2832

Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
930 935 940

act tac ttt tgg aaa gtg caa cat cat atg gca ccc act aaa gat gag
2880

Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu
945 950 955 960

ttt gac tgc aaa gcc tgg gct tat ttc tct gat gtt gac ctg gaa aaa
2928

Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
965 970 975

gat gtg cac tca ggc ctg att gga ccc ctt ctg gtc tgc cac act aac
2976

Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
980 985 990

aca ctg aac cct gct cat ggg aga caa gtg aca gta cag gaa ttt gct
3024

Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala
995 1000 1005

ctg ttt ttc acc atc ttt gat gag acc aaa agc tgg tac ttc act
3069

Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr
1010 1015 1020

gaa aat atg gaa aga aac tgc agg gct ccc tgc aat atc cag atg
3114

Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met
1025 1030 1035

gaa gat ccc act ttt aaa gag aat tat cgc ttc cat gca atc aat
3159

Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn
1040 1045 1050

ggc tac ata atg gat aca cta cct ggc tta gta atg gct cag gat
3204

Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp

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

atc atg tat agt ctt gat ggg aag aag tgg cag act tat cga gga
 3744
 Ile Met Tyr Ser Leu Asp Gly Lys Lys Trp Gln Thr Tyr Arg Gly
 1235 1240 1245

aat tcc act gga acc tta atg gtc ttc ttt ggc aat gtg gat tca
 3789
 Asn Ser Thr Gly Thr Leu Met Val Phe Phe Gly Asn Val Asp Ser
 1250 1255 1260

tct ggg ata aaa cac aat att ttt aac cct cca att att gct cga
 3834
 Ser Gly Ile Lys His Asn Ile Phe Asn Pro Pro Ile Ile Ala Arg
 1265 1270 1275

tac atc cgt ttg cac cca act cat tat agc att cgc agc act ctt
 3879
 Tyr Ile Arg Leu His Pro Thr His Tyr Ser Ile Arg Ser Thr Leu
 1280 1285 1290

cgc atg gag ttg atg ggc tgt gat tta aat agt tgc agc atg cca
 3924
 Arg Met Glu Leu Met Gly Cys Asp Leu Asn Ser Cys Ser Met Pro
 1295 1300 1305

ttg gga atg gag agt aaa gca ata tca gat gca cag att act gct
 3969
 Leu Gly Met Glu Ser Lys Ala Ile Ser Asp Ala Gln Ile Thr Ala
 1310 1315 1320

tca tcc tac ttt acc aat atg ttt gcc acc tgg tct cct tca aaa
 4014
 Ser Ser Tyr Phe Thr Asn Met Phe Ala Thr Trp Ser Pro Ser Lys
 1325 1330 1335

gct cga ctt cac ctc caa ggg agg agt aat gcc tgg aga cct cag
 4059
 Ala Arg Leu His Leu Gln Gly Arg Ser Asn Ala Trp Arg Pro Gln
 1340 1345 1350

gtg aat aat cca aaa gag tgg ctg caa gtg gac ttc cag aag aca
 4104
 Val Asn Asn Pro Lys Glu Trp Leu Gln Val Asp Phe Gln Lys Thr
 1355 1360 1365

atg aaa gtc aca gga gta act act cag gga gta aaa tct ctg ctt
 4149
 Met Lys Val Thr Gly Val Thr Thr Gln Gly Val Lys Ser Leu Leu
 1370 1375 1380

acc agc atg tat gtg aag gag ttc ctc atc tcc agc agt caa gat
 4194
 Thr Ser Met Tyr Val Lys Glu Phe Leu Ile Ser Ser Ser Gln Asp
 1385 1390 1395

ggc cat cag tgg act ctc ttt ttt cag aat ggc aaa gta aag gtt
 4239
 Gly His Gln Trp Thr Leu Phe Phe Gln Asn Gly Lys Val Lys Val

1400		1405		1410
ttt cag gga aat caa gac tcc	4284	ttc aca cct gtg gtg aac tct cta		
Phe Gln Gly Asn Gln Asp Ser	1415	Phe Thr Pro Val Val Asn Ser Leu	1420	1425
gac cca ccg tta ctg act cgc	4329	tac ctt cga att cac ccc cag agt		
Asp Pro Pro Leu Leu Thr Arg	1430	Tyr Leu Arg Ile His Pro Gln Ser	1435	1440
tgg gtg cac cag att gcc ctg	4374	agg atg gag gtt ctg ggc tgc gag		
Trp Val His Gln Ile Ala Leu	1445	Arg Met Glu Val Leu Gly Cys Glu	1450	1455
gca cag gac ctc tac acc ggt	4419	gat gac aac tct cct tcc ttt atc		
Ala Gln Asp Leu Tyr Thr Gly	1460	Asp Asp Asn Ser Pro Ser Phe Ile	1465	1470
caa att cgc tca gtt gcc aag	4464	aag cat cct aaa act tgg cct cga		
Gln Ile Arg Ser Val Ala Lys	1475	Lys His Pro Lys Thr Trp Pro Arg	1480	1485
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Gly Gly Gly Ser Gly Gly Ser	1490	Gly Gly Ser Gly Gly Ser Gly Gly	1495	1500
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Ser Gly Gly Ser Gly Gly Ser	1505	Gly Gly Ser Gly Gly Ser Gly Gly	1510	1515
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Ser Gly Gly Ser Gly Gly Ser	1520	Gly Gly Ser Gly Gly Ser Gly Gly	1525	1530
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Ser Gly Gly Ser Gly Gly Ser	1535	Gly Gly Ser Gly Gly Ser Gly Gly	1540	1545
agc gga ggt tct ggt ggc tca	4689	ggt ggc tct gga ggt agt ggt ggc		
Ser Gly Gly Ser Gly Gly Ser	1550	Gly Gly Ser Gly Gly Ser Gly Gly	1555	1560
tca ggt ggt tca ggt gga agt	4734	ggc ggg agt ggt ggg tca gga ggt		
Ser Gly Gly Ser Gly Gly Ser	1565	Gly Gly Ser Gly Gly Ser Gly Gly	1570	1575

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4779
Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
1580 1585 1590

tct ggt ggt tct gga ggc agc ggc ggc tca ggc gga tct ggt gga
4824
Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
1595 1600 1605

agc ggc ggc tcc ggc ggg agc gga ggc tca ggt ggt tct gga ggt
4869
Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
1610 1615 1620

tca ggt gga agt gga gga agc gga ggc agc ggt gga agc gga ggc
4914
Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
1625 1630 1635

tcc ggc ggc tct ggc tcc ggg tcc caa tgc aac gac atc act gcc
4959
Ser Gly Gly Ser Gly Ser Gly Ser Gln Cys Asn Asp Ile Thr Ala
1640 1645 1650

agg ctg cag tat gtc aag gtg gga agc tgt aag tct gaa gta gag
5004
Arg Leu Gln Tyr Val Lys Val Gly Ser Cys Lys Ser Glu Val Glu
1655 1660 1665

gtg gat atc cac tac tgc cag ggc aaa tgt gcc agc aaa gcc atg
5049
Val Asp Ile His Tyr Cys Gln Gly Lys Cys Ala Ser Lys Ala Met
1670 1675 1680

tac tcc att gac atc aac gat gtg cag gac cag tgc tcc tgc tgc
5094
Tyr Ser Ile Asp Ile Asn Asp Val Gln Asp Gln Cys Ser Cys Cys
1685 1690 1695

tct ccg aca cgg acg gag ccc atg cag gtg gcc ctg cac tgc acc
5139
Ser Pro Thr Arg Thr Glu Pro Met Gln Val Ala Leu His Cys Thr
1700 1705 1710

aat ggc tct gtt gtg tac cat gag gtt ctc aat gcc atg gag tgc
5184
Asn Gly Ser Val Val Tyr His Glu Val Leu Asn Ala Met Glu Cys
1715 1720 1725

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5214
Lys Cys Ser Pro Arg Lys Cys Ser Lys
1730 1735

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Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
35 40 45

Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
50 55 60

Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
65 70 75 80

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

Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
100 105 110

His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
115 120 125

Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
130 135 140

Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
145 150 155 160

Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
165 170 175

Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile
180 185 190

Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr
195 200 205

Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly
 210 215 220

Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp
 225 230 235 240

Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr
 245 250 255

Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val
 260 265 270

Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile
 275 280 285

Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser
 290 295 300

Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met
 305 310 315 320

Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His
 325 330 335

Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro
 340 345 350

Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp
 355 360 365

Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser
 370 375 380

Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr
 385 390 395 400

Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro
 405 410 415

Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn
 420 425 430

Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
435 440 445

Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
450 455 460

Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
465 470 475 480

Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
485 490 495

His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
500 505 510

Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
515 520 525

Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
530 535 540

Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
545 550 555 560

Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
565 570 575

Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
580 585 590

Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
595 600 605

Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
610 615 620

Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
625 630 635 640

Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
645 650 655

Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
660 665 670

Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
 675 680 685

Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
 690 695 700

Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
 705 710 715 720

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

Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
 740 745 750

Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
 755 760 765

Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
 770 775 780

Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
 785 790 795 800

Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
 805 810 815

Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
 820 825 830

Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
 835 840 845

Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
 850 855 860

Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
 865 870 875 880

Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
 885 890 895

Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
900 905 910

Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
915 920 925

Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
930 935 940

Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu
945 950 955 960

Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
965 970 975

Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
980 985 990

Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala
995 1000 1005

Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr
1010 1015 1020

Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met
1025 1030 1035

Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn
1040 1045 1050

Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp
1055 1060 1065

Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn
1070 1075 1080

Ile His Ser Ile His Phe Ser Gly His Val Phe Thr Val Arg Lys
1085 1090 1095

Lys Glu Glu Tyr Lys Met Ala Leu Tyr Asn Leu Tyr Pro Gly Val
1100 1105 1110

Phe Glu Thr Val Glu Met Leu Pro Ser Lys Ala Gly Ile Trp Arg
1115 1120 1125

Val	Glu	Cys	Leu	Ile	Gly	Glu	His	Leu	His	Ala	Gly	Met	Ser	Thr
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Leu	Phe	Leu	Val	Tyr	Ser	Asn	Lys	Cys	Gln	Thr	Pro	Leu	Gly	Met
	1145					1150					1155			
Ala	Ser	Gly	His	Ile	Arg	Asp	Phe	Gln	Ile	Thr	Ala	Ser	Gly	Gln
	1160					1165					1170			
Tyr	Gly	Gln	Trp	Ala	Pro	Lys	Leu	Ala	Arg	Leu	His	Tyr	Ser	Gly
	1175					1180					1185			
Ser	Ile	Asn	Ala	Trp	Ser	Thr	Lys	Glu	Pro	Phe	Ser	Trp	Ile	Lys
	1190					1195					1200			
Val	Asp	Leu	Leu	Ala	Pro	Met	Ile	Ile	His	Gly	Ile	Lys	Thr	Gln
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Gly	Ala	Arg	Gln	Lys	Phe	Ser	Ser	Leu	Tyr	Ile	Ser	Gln	Phe	Ile
	1220					1225					1230			
Ile	Met	Tyr	Ser	Leu	Asp	Gly	Lys	Lys	Trp	Gln	Thr	Tyr	Arg	Gly
	1235					1240					1245			
Asn	Ser	Thr	Gly	Thr	Leu	Met	Val	Phe	Phe	Gly	Asn	Val	Asp	Ser
	1250					1255					1260			
Ser	Gly	Ile	Lys	His	Asn	Ile	Phe	Asn	Pro	Pro	Ile	Ile	Ala	Arg
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Tyr	Ile	Arg	Leu	His	Pro	Thr	His	Tyr	Ser	Ile	Arg	Ser	Thr	Leu
	1280					1285					1290			
Arg	Met	Glu	Leu	Met	Gly	Cys	Asp	Leu	Asn	Ser	Cys	Ser	Met	Pro
	1295					1300					1305			
Leu	Gly	Met	Glu	Ser	Lys	Ala	Ile	Ser	Asp	Ala	Gln	Ile	Thr	Ala
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Ser	Ser	Tyr	Phe	Thr	Asn	Met	Phe	Ala	Thr	Trp	Ser	Pro	Ser	Lys
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Val	Asn	Asn	Pro	Lys	Glu	Trp	Leu	Gln	Val	Asp	Phe	Gln	Lys	Thr
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Met	Lys	Val	Thr	Gly	Val	Thr	Thr	Gln	Gly	Val	Lys	Ser	Leu	Leu
1370						1375					1380			
Thr	Ser	Met	Tyr	Val	Lys	Glu	Phe	Leu	Ile	Ser	Ser	Ser	Gln	Asp
1385						1390					1395			
Gly	His	Gln	Trp	Thr	Leu	Phe	Phe	Gln	Asn	Gly	Lys	Val	Lys	Val
1400						1405					1410			
Phe	Gln	Gly	Asn	Gln	Asp	Ser	Phe	Thr	Pro	Val	Val	Asn	Ser	Leu
1415						1420					1425			
Asp	Pro	Pro	Leu	Leu	Thr	Arg	Tyr	Leu	Arg	Ile	His	Pro	Gln	Ser
1430						1435					1440			
Trp	Val	His	Gln	Ile	Ala	Leu	Arg	Met	Glu	Val	Leu	Gly	Cys	Glu
1445						1450					1455			
Ala	Gln	Asp	Leu	Tyr	Thr	Gly	Asp	Asp	Asn	Ser	Pro	Ser	Phe	Ile
1460						1465					1470			
Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr	Trp	Pro	Arg
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1520						1525					1530			
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1535						1540					1545			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
1550						1555					1560			

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1565 1570 1575

Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
1580 1585 1590

Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
1595 1600 1605

Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
1610 1615 1620

Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
1625 1630 1635

Ser Gly Gly Ser Gly Ser Gly Ser Gln Cys Asn Asp Ile Thr Ala
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Arg Leu Gln Tyr Val Lys Val Gly Ser Cys Lys Ser Glu Val Glu
1655 1660 1665

Val Asp Ile His Tyr Cys Gln Gly Lys Cys Ala Ser Lys Ala Met
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Tyr Ser Ile Asp Ile Asn Asp Val Gln Asp Gln Cys Ser Cys Cys
1685 1690 1695

Ser Pro Thr Arg Thr Glu Pro Met Gln Val Ala Leu His Cys Thr
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96

Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
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144

Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
35 40 45

ttt cct cct aga gtg cca aaa tct ttt cca ttc aac acc tca gtc gtg
192

Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
50 55 60

tac aaa aag act ctg ttt gta gaa ttc acg gat cac ctt ttc aac atc
240

Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
65 70 75 80

gct aag cca agg cca ccc tgg atg ggt ctg cta ggt cct acc atc cag
288

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

gct gag gtt tat gat aca gtg gtc att aca ctt aag aac atg gct tcc
336

Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
100 105 110

cat cct gtc agt ctt cat gct gtt ggt gta tcc tac tgg aaa gct tct
384

His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
115 120 125

gag gga gct gaa tat gat gat cag acc agt caa agg gag aaa gaa gat
432

Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
130 135 140

gat aaa gtc ttc cct ggt gga agc cat aca tat gtc tgg cag gtc ctg
480

Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
145 150 155 160

aaa gag aat ggt cca atg gcc tct gac cca ctg tgc ctt acc tac tca
528

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

caa cta cga atg aaa aat aat gaa gaa gcg gaa gac tat gat gat gat
 1104
 Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp
 355 360 365

ctt act gat tct gaa atg gat gtg gtc agg ttt gat gat gac aac tct
 1152
 Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser
 370 375 380

cct tcc ttt atc caa att cgc tca gtt gcc aag aag cat cct aaa act
 1200
 Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr
 385 390 395 400

tgg gta cat tac att gct gct gaa gag gag gac tgg gac tat gct ccc
 1248
 Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro
 405 410 415

tta gtc ctc gcc ccc gat gac aga agt tat aaa agt caa tat ttg aac
 1296
 Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn
 420 425 430

aat ggc cct cag cgg att ggt agg aag tac aaa aaa gtc cga ttt atg
 1344
 Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
 435 440 445

gca tac aca gat gaa acc ttt aag act cgt gaa gct att cag cat gaa
 1392
 Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
 450 455 460

tca gga atc ttg gga cct tta ctt tat ggg gaa gtt gga gac aca ctg
 1440
 Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
 465 470 475 480

ttg att ata ttt aag aat caa gca agc aga cca tat aac atc tac cct
 1488
 Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
 485 490 495

cac gga atc act gat gtc cgt cct ttg tat tca agg aga tta cca aaa
 1536
 His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
 500 505 510

ggt gta aaa cat ttg aag gat ttt cca att ctg cca gga gaa ata ttc
 1584
 Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
 515 520 525

aaa tat aaa tgg aca gtg act gta gaa gat ggg cca act aaa tca gat
 1632
 Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp

530	535	540
cct cgg tgc ctg acc cgc tat tac tct agt ttc gtt aat atg gag aga 1680		
Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg 545 550 555 560		
gat cta gct tca gga ctc att ggc cct ctc ctc atc tgc tac aaa gaa 1728		
Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu 565 570 575		
tct gta gat caa aga gga aac cag ata atg tca gac aag agg aat gtc 1776		
Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val 580 585 590		
atc ctg ttt tct gta ttt gat gag aac cga agc tgg tac ctc aca gag 1824		
Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu 595 600 605		
aat ata caa cgc ttt ctc ccc aat cca gct gga gtg cag ctt gag gat 1872		
Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp 610 615 620		
cca gag ttc caa gcc tcc aac atc atg cac agc atc aat ggc tat gtt 1920		
Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val 625 630 635 640		
ttt gat agt ttg cag ttg tca gtt tgt ttg cat gag gtg gca tac tgg 1968		
Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp 645 650 655		
tac att cta agc att gga gca cag act gac ttc ctt tct gtc ttc ttc 2016		
Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe 660 665 670		
tct gga tat acc ttc aaa cac aaa atg gtc tat gaa gac aca ctc acc 2064		
Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr 675 680 685		
cta ttc cca ttc tca gga gaa act gtc ttc atg tcg atg gaa aac cca 2112		
Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro 690 695 700		
ggt cta tgg att ctg ggg tgc cac aac tca gac ttt cgg aac aga ggc 2160		
Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly 705 710 715 720		

atg acc gcc tta ctg aag gtt tct agt tgt gac aag aac act ggt gat
 2208
 Met Thr Ala Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp
 725 730 735

tat tac gag gac agt tat gaa gat att tca gca tac ttg ctg agt aaa
 2256
 Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
 740 745 750

aac aat gcc att gaa cca aga agc ttc tcc cag aat tca aga cac cct
 2304
 Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
 755 760 765

agc act agg caa aag caa ttt aat gcc acc aca att cca gaa aat act
 2352
 Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
 770 775 780

act ctt cag tca gat caa gag gaa att gac tat gat gat acc ata tca
 2400
 Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
 785 790 795 800

gtt gaa atg aag aag gaa gat ttt gac att tat gat gag gat gaa aat
 2448
 Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
 805 810 815

cag agc ccc cgc agc ttt caa aag aaa aca cga cac tat ttt att gct
 2496
 Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
 820 825 830

gca gtg gag agg ctc tgg gat tat ggg atg agt agc tcc cca cat gtt
 2544
 Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
 835 840 845

cta aga aac agg gct cag agt ggc agt gtc cct cag ttc aag aaa gtt
 2592
 Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
 850 855 860

gtt ttc cag gaa ttt act gat ggc tcc ttt act cag ccc tta tac cgt
 2640
 Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
 865 870 875 880

gga gaa cta aat gaa cat ttg gga ctc ctg ggg cca tat ata aga gca
 2688
 Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
 885 890 895

gaa gtt gaa gat aat atc atg gta act ttc aga aat cag gcc tct cgt
 2736
 Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg

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

atc	cat	tct	att	cat	ttc	agt	gga	cat	gtg	ttc	act	gta	cga	aaa	
3294	Ile	His	Ser	Ile	His	Phe	Ser	Gly	His	Val	Phe	Thr	Val	Arg	Lys
1085							1090					1095			
aaa	gag	gag	tat	aaa	atg	gca	ctg	tac	aat	ctc	tat	cca	ggg	gtt	
3339	Lys	Glu	Glu	Tyr	Lys	Met	Ala	Leu	Tyr	Asn	Leu	Tyr	Pro	Gly	Val
1100							1105					1110			
ttt	gag	aca	gtg	gaa	atg	tta	cca	tcc	aaa	gct	gga	att	tgg	cgg	
3384	Phe	Glu	Thr	Val	Glu	Met	Leu	Pro	Ser	Lys	Ala	Gly	Ile	Trp	Arg
1115							1120					1125			
gtg	gaa	tgc	ctt	att	ggc	gag	cat	cta	cat	gct	ggg	atg	agc	aca	
3429	Val	Glu	Cys	Leu	Ile	Gly	Glu	His	Leu	His	Ala	Gly	Met	Ser	Thr
1130							1135					1140			
ctt	ttt	ctg	gtg	tac	agc	aat	aag	tgt	cag	act	ccc	ctg	gga	atg	
3474	Leu	Phe	Leu	Val	Tyr	Ser	Asn	Lys	Cys	Gln	Thr	Pro	Leu	Gly	Met
1145							1150					1155			
gct	tct	gga	cac	att	aga	gat	ttt	cag	att	aca	gct	tca	gga	caa	
3519	Ala	Ser	Gly	His	Ile	Arg	Asp	Phe	Gln	Ile	Thr	Ala	Ser	Gly	Gln
1160							1165					1170			
tat	gga	cag	tgg	gcc	cca	aag	ctg	gcc	aga	ctt	cat	tat	tcc	gga	
3564	Tyr	Gly	Gln	Trp	Ala	Pro	Lys	Leu	Ala	Arg	Leu	His	Tyr	Ser	Gly
1175							1180					1185			
tca	atc	aat	gcc	tgg	agc	acc	aag	gag	ccc	ttt	tct	tgg	atc	aag	
3609	Ser	Ile	Asn	Ala	Trp	Ser	Thr	Lys	Glu	Pro	Phe	Ser	Trp	Ile	Lys
1190							1195					1200			
gtg	gat	ctg	ttg	gca	cca	atg	att	att	cac	ggc	atc	aag	acc	cag	
3654	Val	Asp	Leu	Leu	Ala	Pro	Met	Ile	Ile	His	Gly	Ile	Lys	Thr	Gln
1205							1210					1215			
ggg	gcc	cgt	cag	aag	ttc	tcc	agc	ctc	tac	atc	tct	cag	ttt	atc	
3699	Gly	Ala	Arg	Gln	Lys	Phe	Ser	Ser	Leu	Tyr	Ile	Ser	Gln	Phe	Ile
1220							1225					1230			
atc	atg	tat	agt	ctt	gat	ggg	aag	aag	tgg	cag	act	tat	cga	gga	
3744	Ile	Met	Tyr	Ser	Leu	Asp	Gly	Lys	Lys	Trp	Gln	Thr	Tyr	Arg	Gly
1235							1240					1245			
aat	tcc	act	gga	acc	tta	atg	gtc	ttc	ttt	ggc	aat	gtg	gat	tca	
3789	Asn	Ser	Thr	Gly	Thr	Leu	Met	Val	Phe	Phe	Gly	Asn	Val	Asp	Ser

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

gac cca 4329	ccg tta ctg act cgc	tac ctt cga att cac	ccc cag agt
Asp Pro 1430	Pro Leu Leu Thr 1435	Tyr Leu Arg Ile 1440	Pro Gln Ser
tgg gtg 4374	cac cag att gcc ctg	agg atg gag gtt ctg	ggc tgc gag
Trp Val 1445	His Gln Ile Ala 1450	Arg Met Glu Val 1455	Gly Cys Glu
gca cag 4419	gac ctc tac acc ggt	gat gac aac tct cct	tcc ttt atc
Ala Gln 1460	Asp Leu Tyr Thr 1465	Asp Asp Asn Ser 1470	Ser Phe Ile
caa att 4464	cgc tca gtt gcc aag	aag cat cct aaa act	tgg cct cga
Gln Ile 1475	Arg Ser Val Ala 1480	Lys His Pro Lys 1485	Trp Pro Arg
ggg ggt 4509	ggg agt gga gga tca	ggt ggc agt ggg ggg	tca ggc ggc
Gly Gly 1490	Gly Ser Gly Gly 1495	Gly Gly Ser Gly 1500	Ser Gly Gly
tct ggt 4554	ggc tct ggc ggc agt	ggt ggc tca ggc gga	tca gga ggt
Ser Gly 1505	Gly Ser Gly Gly 1510	Gly Gly Ser Gly 1515	Ser Gly Gly
tct ggc 4599	gga tca ggt gga tca	gga ggg tcc gga ggt	agc gga gga
Ser Gly 1520	Gly Ser Gly Gly 1525	Gly Gly Ser Gly 1530	Ser Gly Gly
tcc ggc 4644	ggg agc ggc ggt tca	ggc gga agc ggt gga	tct gga ggt
Ser Gly 1535	Gly Ser Gly Gly 1540	Gly Gly Ser Gly 1545	Ser Gly Gly
tca ggt 4689	ggc tct gga gga tca	ggc ggt tcc gga ggc	tca ggc ggt
Ser Gly 1550	Gly Ser Gly Gly 1555	Gly Gly Ser Gly 1560	Ser Gly Gly
agt ggt 4734	ggc agt gga gga agt	ggc ggg tct ggc ggc	tct gga ggc
Ser Gly 1565	Gly Ser Gly Gly 1570	Gly Gly Ser Gly 1575	Ser Gly Gly
agc ggt 4779	gga agc ggt ggg tct	ggt ggc agc gga ggg	agt ggc ggc
Ser Gly 1580	Gly Ser Gly Gly 1585	Gly Gly Ser Gly 1590	Ser Gly Gly
agc ggc 4824	gga agt ggc ggt tcc	ggc ggg agt ggc ggt	agt ggt ggg
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly

1595	1600	1605
agc ggt ggt tca gga ggc tca ggt ggt agt ggt ggt tcc ggt ggg 4869		
Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly 1610 1615 1620		
tcc ggg ggg agc gga gga agt gga ggc tcc ggc ggt tcc gga ggt 4914		
Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly 1625 1630 1635		
agt ggc gga tct ggc gga agt ggt gga agt gga ggg agc gga gga 4959		
Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly 1640 1645 1650		
agt gga ggc tcc ggc ggc tca gga ggc tca ggc ggc tcc gga ggt 5004		
Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly 1655 1660 1665		
tct ggc ggg agc ggt gga agc gga ggt tcc gga ggc tct gga ggc 5049		
Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly 1670 1675 1680		
tca gga ggc agt ggc ggc tct ggc ggc agc ggc tcc ggg tcc caa 5094		
Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly 1685 1690 1695		
tgc aac gac atc act gcc agg ctg cag tat gtc aag gtg gga agc 5139		
Cys Asn Asp Ile Thr Ala Arg Leu Gln Tyr Val Lys Val Gly Ser 1700 1705 1710		
tgt aag tct gaa gta gag gtg gat atc cac tac tgc cag ggc aaa 5184		
Cys Lys Ser Glu Val Glu Val Asp Ile His Tyr Cys Gln Gly Lys 1715 1720 1725		
tgt gcc agc aaa gcc atg tac tcc att gac atc aac gat gtg cag 5229		
Cys Ala Ser Lys Ala Met Tyr Ser Ile Asp Ile Asn Asp Val Gln 1730 1735 1740		
gac cag tgc tcc tgc tgc tct ccg aca cgg acg gag ccc atg cag 5274		
Asp Gln Cys Ser Cys Cys Ser Pro Thr Arg Thr Glu Pro Met Gln 1745 1750 1755		
gtg gcc ctg cac tgc acc aat ggc tct gtt gtg tac cat gag gtt 5319		
Val Ala Leu His Cys Thr Asn Gly Ser Val Val Tyr His Glu Val 1760 1765 1770		

ctc aat gcc atg gag tgc aaa tgc tcc ccc agg aag tgc agc aag
5364

Leu Asn Ala Met Glu Cys Lys Cys Ser Pro Arg Lys Cys Ser Lys
1775 1780 1785

tga
5367

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<211> 1788

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

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Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
20 25 30

Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
35 40 45

Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
50 55 60

Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
65 70 75 80

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

Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
100 105 110

His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
115 120 125

Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
130 135 140

Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
145 150 155 160

Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
165 170 175

Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile
180 185 190

Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr
195 200 205

Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly
210 215 220

Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp
225 230 235 240

Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr
245 250 255

Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val
260 265 270

Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile
275 280 285

Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser
290 295 300

Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met
305 310 315 320

Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His
325 330 335

Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro
340 345 350

Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp
355 360 365

Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser
370 375 380

Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr

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

Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
625 630 635 640

Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
645 650 655

Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
660 665 670

Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
675 680 685

Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
690 695 700

Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
705 710 715 720

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

Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
740 745 750

Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
755 760 765

Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
770 775 780

Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
785 790 795 800

Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
805 810 815

Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
820 825 830

Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
835 840 845

Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val

850		855		860
Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg				
865		870		880
Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala				
		885		895
Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg				
		900		910
Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg				
		915		925
Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys				
		930		940
Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu				
		945		955
Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys				
		965		975
Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn				
		980		990
Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala				
		995		1005
Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr				
		1010		1020
Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met				
		1025		1035
Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn				
		1040		1050
Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp				
		1055		1065
Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn				
		1070		1080

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

1295						1300						1305			
Leu	Gly	Met	Glu	Ser	Lys	Ala	Ile	Ser	Asp	Ala	Gln	Ile	Thr	Ala	
1310						1315					1320				
Ser	Ser	Tyr	Phe	Thr	Asn	Met	Phe	Ala	Thr	Trp	Ser	Pro	Ser	Lys	
1325						1330					1335				
Ala	Arg	Leu	His	Leu	Gln	Gly	Arg	Ser	Asn	Ala	Trp	Arg	Pro	Gln	
1340						1345					1350				
Val	Asn	Asn	Pro	Lys	Glu	Trp	Leu	Gln	Val	Asp	Phe	Gln	Lys	Thr	
1355						1360					1365				
Met	Lys	Val	Thr	Gly	Val	Thr	Thr	Gln	Gly	Val	Lys	Ser	Leu	Leu	
1370						1375					1380				
Thr	Ser	Met	Tyr	Val	Lys	Glu	Phe	Leu	Ile	Ser	Ser	Ser	Gln	Asp	
1385						1390					1395				
Gly	His	Gln	Trp	Thr	Leu	Phe	Phe	Gln	Asn	Gly	Lys	Val	Lys	Val	
1400						1405					1410				
Phe	Gln	Gly	Asn	Gln	Asp	Ser	Phe	Thr	Pro	Val	Val	Asn	Ser	Leu	
1415						1420					1425				
Asp	Pro	Pro	Leu	Leu	Thr	Arg	Tyr	Leu	Arg	Ile	His	Pro	Gln	Ser	
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Trp	Val	His	Gln	Ile	Ala	Leu	Arg	Met	Glu	Val	Leu	Gly	Cys	Glu	
1445						1450					1455				
Ala	Gln	Asp	Leu	Tyr	Thr	Gly	Asp	Asp	Asn	Ser	Pro	Ser	Phe	Ile	
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Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr	Trp	Pro	Arg	
1475						1480					1485				
Gly	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	
1490						1495					1500				
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	
1505						1510					1515				

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Ser Gly 1535	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1540	Ser Gly Gly 1545
Ser Gly 1550	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1555	Ser Gly Gly 1560
Ser Gly 1565	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1570	Ser Gly Gly 1575
Ser Gly 1580	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1585	Ser Gly Gly 1590
Ser Gly 1595	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1600	Ser Gly Gly 1605
Ser Gly 1610	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1615	Ser Gly Gly 1620
Ser Gly 1625	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1630	Ser Gly Gly 1635
Ser Gly 1640	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1645	Ser Gly Gly 1650
Ser Gly 1655	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1660	Ser Gly Gly 1665
Ser Gly 1670	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1675	Ser Gly Gly 1680
Ser Gly 1685	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Ser Gln 1690	Ser Gly Ser Gln 1695
Cys Asn 1700	Asp Ile Thr Ala	Arg Leu Gln Tyr Val 1705	Lys Val Gly Ser 1710
Cys Lys 1715	Ser Glu Val Glu	Val Asp Ile His Tyr 1720	Cys Gln Gly Lys 1725
Cys Ala	Ser Lys Ala Met Tyr	Ser Ile Asp Ile Asn	Asp Val Gln

1730		1735		1740
Asp Gln Cys Ser Cys Cys Ser Pro Thr Arg Thr Glu Pro Met Gln				
1745		1750		1755
Val Ala Leu His Cys Thr Asn Gly Ser Val Val Tyr His Glu Val				
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Leu Asn Ala Met Glu Cys Lys Cys Ser Pro Arg Lys Cys Ser Lys				
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 tgc ttt agt gcc acc aga aga tac tac ctg ggt gca gtg gaa ctg tca
 96
 Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
 20 25 30

 tgg gac tat atg caa agt gat ctc ggt gag ctg cct gtg gac gca aga
 144
 Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
 35 40 45

 ttt cct cct aga gtg cca aaa tct ttt cca ttc aac acc tca gtc gtg
 192
 Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
 50 55 60

 tac aaa aag act ctg ttt gta gaa ttc acg gat cac ctt ttc aac atc
 240
 Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
 65 70 75 80

 gct aag cca agg cca ccc tgg atg ggt ctg cta ggt cct acc atc cag
 288
 Ala Lys Pro Arg Pro Pro Trp Met Gly Leu Leu Gly Pro Thr Ile Gln
 85 90 95

gct gag gtt tat gat aca gtg gtc att aca ctt aag aac atg gct tcc
336
Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
100 105 110

cat cct gtc agt ctt cat gct gtt ggt gta tcc tac tgg aaa gct tct
384
His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
115 120 125

gag gga gct gaa tat gat gat cag acc agt caa agg gag aaa gaa gat
432
Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
130 135 140

gat aaa gtc ttc cct ggt gga agc cat aca tat gtc tgg cag gtc ctg
480
Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
145 150 155 160

aaa gag aat ggt cca atg gcc tct gac cca ctg tgc ctt acc tac tca
528
Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
165 170 175

tat ctt tct cat gtg gac ctg gta aaa gac ttg aat tca ggc ctc att
576
Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile
180 185 190

gga gcc cta cta gta tgt aga gaa ggg agt ctg gcc aag gaa aag aca
624
Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr
195 200 205

cag acc ttg cac aaa ttt ata cta ctt ttt gct gta ttt gat gaa ggg
672
Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly
210 215 220

aaa agt tgg cac tca gaa aca aag aac tcc ttg atg cag gat agg gat
720
Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp
225 230 235 240

gct gca tct gct cgg gcc tgg cct aaa atg cac aca gtc aat ggt tat
768
Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr
245 250 255

gta aac agg tct ctg cca ggt ctg att gga tgc cac agg aaa tca gtc
816
Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val
260 265 270

tat tgg cat gtg att gga atg ggc acc act cct gaa gtg cac tca ata
864

Tyr	Trp	His	Val	Ile	Gly	Met	Gly	Thr	Thr	Pro	Glu	Val	His	Ser	Ile	
		275					280					285				
ttc	ctc	gaa	ggt	cac	aca	ttt	ctt	gtg	agg	aac	cat	cgc	cag	gcg	tcc	
912																
Phe	Leu	Glu	Gly	His	Thr	Phe	Leu	Val	Arg	Asn	His	Arg	Gln	Ala	Ser	
	290					295					300					
ttg	gaa	atc	tcg	cca	ata	act	ttc	ctt	act	gct	caa	aca	ctc	ttg	atg	
960																
Leu	Glu	Ile	Ser	Pro	Ile	Thr	Phe	Leu	Thr	Ala	Gln	Thr	Leu	Leu	Met	
305					310					315					320	
gac	ctt	gga	cag	ttt	cta	ctg	ttt	tgt	cat	atc	tct	tcc	cac	caa	cat	
1008																
Asp	Leu	Gly	Gln	Phe	Leu	Leu	Phe	Cys	His	Ile	Ser	Ser	His	Gln	His	
				325					330					335		
gat	ggc	atg	gaa	gct	tat	gtc	aaa	gta	gac	agc	tgt	cca	gag	gaa	ccc	
1056																
Asp	Gly	Met	Glu	Ala	Tyr	Val	Lys	Val	Asp	Ser	Cys	Pro	Glu	Glu	Pro	
			340					345					350			
caa	cta	cga	atg	aaa	aat	aat	gaa	gaa	gcg	gaa	gac	tat	gat	gat	gat	
1104																
Gln	Leu	Arg	Met	Lys	Asn	Asn	Glu	Glu	Ala	Glu	Asp	Tyr	Asp	Asp	Asp	
		355					360					365				
ctt	act	gat	tct	gaa	atg	gat	gtg	gtc	agg	ttt	gat	gat	gac	aac	tct	
1152																
Leu	Thr	Asp	Ser	Glu	Met	Asp	Val	Val	Arg	Phe	Asp	Asp	Asp	Asn	Ser	
	370					375					380					
cct	tcc	ttt	atc	caa	att	cgc	tca	gtt	gcc	aag	aag	cat	cct	aaa	act	
1200																
Pro	Ser	Phe	Ile	Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr	
385					390					395					400	
tgg	gta	cat	tac	att	gct	gct	gaa	gag	gag	gac	tgg	gac	tat	gct	ccc	
1248																
Trp	Val	His	Tyr	Ile	Ala	Ala	Glu	Glu	Glu	Asp	Trp	Asp	Tyr	Ala	Pro	
				405					410					415		
tta	gtc	ctc	gcc	ccc	gat	gac	aga	agt	tat	aaa	agt	caa	tat	ttg	aac	
1296																
Leu	Val	Leu	Ala	Pro	Asp	Asp	Arg	Ser	Tyr	Lys	Ser	Gln	Tyr	Leu	Asn	
			420					425					430			
aat	ggc	cct	cag	cgg	att	ggt	agg	aag	tac	aaa	aaa	gtc	cga	ttt	atg	
1344																
Asn	Gly	Pro	Gln	Arg	Ile	Gly	Arg	Lys	Tyr	Lys	Lys	Val	Arg	Phe	Met	
		435					440					445				
gca	tac	aca	gat	gaa	acc	ttt	aag	act	cgt	gaa	gct	att	cag	cat	gaa	
1392																
Ala	Tyr	Thr	Asp	Glu	Thr	Phe	Lys	Thr	Arg	Glu	Ala	Ile	Gln	His	Glu	
	450					455					460					

tca gga atc ttg gga cct tta ctt tat ggg gaa gtt gga gac aca ctg
1440
Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
465 470 475 480

ttg att ata ttt aag aat caa gca agc aga cca tat aac atc tac cct
1488
Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
485 490 495

cac gga atc act gat gtc cgt cct ttg tat tca agg aga tta cca aaa
1536
His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
500 505 510

ggg gta aaa cat ttg aag gat ttt cca att ctg cca gga gaa ata ttc
1584
Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
515 520 525

aaa tat aaa tgg aca gtg act gta gaa gat ggg cca act aaa tca gat
1632
Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
530 535 540

cct cgg tgc ctg acc cgc tat tac tct agt ttc gtt aat atg gag aga
1680
Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
545 550 555 560

gat cta gct tca gga ctc att ggc cct ctc ctc atc tgc tac aaa gaa
1728
Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
565 570 575

tct gta gat caa aga gga aac cag ata atg tca gac aag agg aat gtc
1776
Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
580 585 590

atc ctg ttt tct gta ttt gat gag aac cga agc tgg tac ctc aca gag
1824
Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
595 600 605

aat ata caa cgc ttt ctc ccc aat cca gct gga gtg cag ctt gag gat
1872
Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
610 615 620

cca gag ttc caa gcc tcc aac atc atg cac agc atc aat ggc tat gtt
1920
Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
625 630 635 640

ttt gat agt ttg cag ttg tca gtt tgt ttg cat gag gtg gca tac tgg
1968
Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp

645								650				655					
tac att cta agc att gga gca cag act gac ttc ctt tct gtc ttc ttc																	
2016																	
Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe																	
660									665					670			
tct gga tat acc ttc aaa cac aaa atg gtc tat gaa gac aca ctc acc																	
2064																	
Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr																	
675									680					685			
cta ttc cca ttc tca gga gaa act gtc ttc atg tcg atg gaa aac cca																	
2112																	
Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro																	
690									695					700			
ggc cta tgg att ctg ggg tgc cac aac tca gac ttt cgg aac aga ggc																	
2160																	
Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly																	
705									710					715			
atg acc gcc tta ctg aag gtt tct agt tgt gac aag aac act ggt gat																	
2208																	
Met Thr Ala Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp																	
725									730					735			
tat tac gag gac agt tat gaa gat att tca gca tac ttg ctg agt aaa																	
2256																	
Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys																	
740									745					750			
aac aat gcc att gaa cca aga agc ttc tcc cag aat tca aga cac cct																	
2304																	
Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro																	
755									760					765			
agc act agg caa aag caa ttt aat gcc acc aca att cca gaa aat act																	
2352																	
Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr																	
770									775					780			
act ctt cag tca gat caa gag gaa att gac tat gat gat acc ata tca																	
2400																	
Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser																	
785									790					795			
ggt gaa atg aag aag gaa gat ttt gac att tat gat gag gat gaa aat																	
2448																	
Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn																	
805									810					815			
cag agc ccc cgc agc ttt caa aag aaa aca cga cac tat ttt att gct																	
2496																	
Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala																	
820									825					830			

gca gtg gag agg ctc tgg gat tat ggg atg agt agc tcc cca cat gtt
 2544
 Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
 835 840 845

cta aga aac agg gct cag agt ggc agt gtc cct cag ttc aag aaa gtt
 2592
 Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
 850 855 860

gtt ttc cag gaa ttt act gat ggc tcc ttt act cag ccc tta tac cgt
 2640
 Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
 865 870 875 880

gga gaa cta aat gaa cat ttg gga ctc ctg ggg cca tat ata aga gca
 2688
 Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
 885 890 895

gaa gtt gaa gat aat atc atg gta act ttc aga aat cag gcc tct cgt
 2736
 Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
 900 905 910

ccc tat tcc ttc tat tct agc ctt att tct tat gag gaa gat cag agg
 2784
 Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
 915 920 925

caa gga gca gaa cct aga aaa aac ttt gtc aag cct aat gaa acc aaa
 2832
 Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
 930 935 940

act tac ttt tgg aaa gtg caa cat cat atg gca ccc act aaa gat gag
 2880
 Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu
 945 950 955 960

ttt gac tgc aaa gcc tgg gct tat ttc tct gat gtt gac ctg gaa aaa
 2928
 Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
 965 970 975

gat gtg cac tca ggc ctg att gga ccc ctt ctg gtc tgc cac act aac
 2976
 Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
 980 985 990

aca ctg aac cct gct cat ggg aga caa gtg aca gta cag gaa ttt gct
 3024
 Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala
 995 1000 1005

ctg ttt ttc acc atc ttt gat gag acc aaa agc tgg tac ttc act
 3069
 Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr

1010	1015	1020
gaa aat atg gaa aga aac tgc 3114	agg gct ccc tgc	aat atc cag atg
Glu Asn Met Glu Arg Asn Cys 1025	Arg Ala Pro Cys	Asn Ile Gln Met 1035
gaa gat ccc act ttt aaa gag 3159	aat tat cgc ttc cat	gca atc aat
Glu Asp Pro Thr Phe Lys Glu 1040	Asn Tyr Arg Phe	His Ala Ile Asn 1050
ggc tac ata atg gat aca cta 3204	cct ggc tta gta atg	gct cag gat
Gly Tyr Ile Met Asp Thr Leu 1055	Pro Gly Leu Val	Met Ala Gln Asp 1065
caa agg att cga tgg tat ctg 3249	ctc agc atg ggc agc	aat gaa aac
Gln Arg Ile Arg Trp Tyr Leu 1070	Leu Ser Met Gly	Ser Asn Glu Asn 1080
atc cat tct att cat ttc agt 3294	gga cat gtg ttc act	gta cga aaa
Ile His Ser Ile His Phe Ser 1085	Gly His Val Phe	Thr Val Arg Lys 1095
aaa gag gag tat aaa atg gca 3339	ctg tac aat ctc tat	cca ggt gtt
Lys Glu Glu Tyr Lys Met Ala 1100	Leu Tyr Asn Leu	Tyr Pro Gly Val 1110
ttt gag aca gtg gaa atg tta 3384	cca tcc aaa gct gga	att tgg cgg
Phe Glu Thr Val Glu Met Leu 1115	Pro Ser Lys Ala	Gly Ile Trp Arg 1125
gtg gaa tgc ctt att ggc gag 3429	cat cta cat gct ggg	atg agc aca
Val Glu Cys Leu Ile Gly Glu 1130	His Leu His Ala	Gly Met Ser Thr 1140
ctt ttt ctg gtg tac agc aat 3474	aag tgt cag act ccc	ctg gga atg
Leu Phe Leu Val Tyr Ser Asn 1145	Lys Cys Gln Thr	Pro Leu Gly Met 1155
gct tct gga cac att aga gat 3519	ttt cag att aca gct	tca gga caa
Ala Ser Gly His Ile Arg Asp 1160	Phe Gln Ile Thr	Ala Ser Gly Gln 1170
tat gga cag tgg gcc cca aag 3564	ctg gcc aga ctt cat	tat tcc gga
Tyr Gly Gln Trp Ala Pro Lys 1175	Leu Ala Arg Leu	His Tyr Ser Gly 1185

tca atc	aat gcc tgg agc acc	aag gag ccc ttt tct	tgg atc aag
3609			
Ser Ile	Asn Ala Trp Ser Thr	Lys Glu Pro Phe Ser	Trp Ile Lys
1190	1195	1200	
gtg gat	ctg ttg gca cca atg	att att cac ggc atc	aag acc cag
3654			
Val Asp	Leu Leu Ala Pro Met	Ile Ile His Gly Ile	Lys Thr Gln
1205	1210	1215	
ggg gcc	cgt cag aag ttc tcc	agc ctc tac atc tct	cag ttt atc
3699			
Gly Ala	Arg Gln Lys Phe Ser	Ser Leu Tyr Ile Ser	Gln Phe Ile
1220	1225	1230	
atc atg	tat agt ctt gat ggg	aag aag tgg cag act	tat cga gga
3744			
Ile Met	Tyr Ser Leu Asp Gly	Lys Lys Trp Gln Thr	Tyr Arg Gly
1235	1240	1245	
aat tcc	act gga acc tta atg	gtc ttc ttt ggc aat	gtg gat tca
3789			
Asn Ser	Thr Gly Thr Leu Met	Val Phe Phe Gly Asn	Val Asp Ser
1250	1255	1260	
tct ggg	ata aaa cac aat att	ttt aac cct cca att	att gct cga
3834			
Ser Gly	Ile Lys His Asn Ile	Phe Asn Pro Pro Ile	Ile Ala Arg
1265	1270	1275	
tac atc	cgt ttg cac cca act	cat tat agc att cgc	agc act ctt
3879			
Tyr Ile	Arg Leu His Pro Thr	His Tyr Ser Ile Arg	Ser Thr Leu
1280	1285	1290	
cgc atg	gag ttg atg ggc tgt	gat tta aat agt tgc	agc atg cca
3924			
Arg Met	Glu Leu Met Gly Cys	Asp Leu Asn Ser Cys	Ser Met Pro
1295	1300	1305	
ttg gga	atg gag agt aaa gca	ata tca gat gca cag	att act gct
3969			
Leu Gly	Met Glu Ser Lys Ala	Ile Ser Asp Ala Gln	Ile Thr Ala
1310	1315	1320	
tca tcc	tac ttt acc aat atg	ttt gcc acc tgg tct	cct tca aaa
4014			
Ser Ser	Tyr Phe Thr Asn Met	Phe Ala Thr Trp Ser	Pro Ser Lys
1325	1330	1335	
gct cga	ctt cac ctc caa ggg	agg agt aat gcc tgg	aga cct cag
4059			
Ala Arg	Leu His Leu Gln Gly	Arg Ser Asn Ala Trp	Arg Pro Gln
1340	1345	1350	
gtg aat	aat cca aaa gag tgg	ctg caa gtg gac ttc	cag aag aca
4104			
Val Asn	Asn Pro Lys Glu Trp	Leu Gln Val Asp Phe	Gln Lys Thr

1355		1360		1365
atg aaa gtc aca gga gta act	act cag gga gta aaa tct ctg ctt			
4149				
Met Lys Val Thr Gly Val Thr	Thr Gln Gly Val Lys Ser Leu Leu			
1370	1375	1380		
acc agc atg tat gtg aag gag	ttc ctc atc tcc agc agt caa gat			
4194				
Thr Ser Met Tyr Val Lys Glu	Phe Leu Ile Ser Ser Ser Gln Asp			
1385	1390	1395		
ggc cat cag tgg act ctc ttt	ttt cag aat ggc aaa gta aag gtt			
4239				
Gly His Gln Trp Thr Leu Phe	Phe Gln Asn Gly Lys Val Lys Val			
1400	1405	1410		
ttt cag gga aat caa gac tcc	ttc aca cct gtg gtg aac tct cta			
4284				
Phe Gln Gly Asn Gln Asp Ser	Phe Thr Pro Val Val Asn Ser Leu			
1415	1420	1425		
gac cca ccg tta ctg act cgc	tac ctt cga att cac ccc cag agt			
4329				
Asp Pro Pro Leu Leu Thr Arg	Tyr Leu Arg Ile His Pro Gln Ser			
1430	1435	1440		
tgg gtg cac cag att gcc ctg	agg atg gag gtt ctg ggc tgc gag			
4374				
Trp Val His Gln Ile Ala Leu	Arg Met Glu Val Leu Gly Cys Glu			
1445	1450	1455		
gca cag gac ctc tac acc ggt	gat gac aac tct cct tcc ttt atc			
4419				
Ala Gln Asp Leu Tyr Thr Gly	Asp Asp Asn Ser Pro Ser Phe Ile			
1460	1465	1470		
caa att cgc tca gtt gcc aag	aag cat cct aaa act tgg cct cga			
4464				
Gln Ile Arg Ser Val Ala Lys	Lys His Pro Lys Thr Trp Pro Arg			
1475	1480	1485		
ggg ggt ggg agt gga gga tca	ggg ggc agt ggg ggg tca ggc ggc			
4509				
Gly Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly			
1490	1495	1500		
tct ggt ggc tct ggc ggc agt	ggg ggc tca ggc gga tca gga ggt			
4554				
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly			
1505	1510	1515		
tct ggc gga tca ggt gga tca	gga ggg tcc gga ggt agc gga gga			
4599				
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly			
1520	1525	1530		

tcc ggc ggg agc ggc ggt tca ggc gga agc ggt gga tct gga ggt
 4644
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1535 1540 1545

tca ggt ggc tct gga gga tca ggc ggt tcc gga ggc tca ggc ggt
 4689
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1550 1555 1560

agt ggt ggc agt gga gga agt ggc ggg tct ggc ggc tct gga ggc
 4734
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1565 1570 1575

agc ggt gga agc ggt ggg tct ggt ggc agc gga ggg agt ggc ggc
 4779
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1580 1585 1590

agc ggc gga agt ggc ggt tcc ggc ggg agt ggc ggt agt ggt ggg
 4824
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1595 1600 1605

agc ggt ggt tca gga ggc tca ggt ggt agt ggt ggt tcc ggt ggg
 4869
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1610 1615 1620

tcc ggg ggg agc gga gga agt gga ggc tcc ggc ggt tcc gga ggt
 4914
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1625 1630 1635

agt ggc gga tct ggc gga agt ggt gga agt gga ggg agc gga gga
 4959
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1640 1645 1650

agt gga ggc tcc ggc ggc tca gga ggc tca ggc ggc tcc gga ggt
 5004
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1655 1660 1665

tct ggc ggg agc ggt gga agc gga ggt tcc gga ggc tct gga ggc
 5049
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1670 1675 1680

tca gga ggc agt ggc ggg tct ggc ggc agc ggt ggt tcc ggt ggg
 5094
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1685 1690 1695

agc ggc ggc tct ggt ggc agt gga gga agt gga ggc tct ggc gga
 5139
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly

1700	1705	1710
agc gga ggt tcc ggc ggg tcc	gga ggc tcc ggt ggg	tct ggc gga
5184		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1715	1720	1725
tca ggt ggc tca ggt ggg tca	gga ggc tcc ggc gga	agc ggc ggc
5229		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1730	1735	1740
tcc ggg tcc caa tgc aac gac	atc act gcc agg ctg	cag tat gtc
5274		
Ser Gly Ser Gln Cys Asn Asp	Ile Thr Ala Arg Leu	Gln Tyr Val
1745	1750	1755
aag gtg gga agc tgt aag tct	gaa gta gag gtg gat	atc cac tac
5319		
Lys Val Gly Ser Cys Lys Ser	Glu Val Glu Val Asp	Ile His Tyr
1760	1765	1770
tgc cag ggc aaa tgt gcc agc	aaa gcc atg tac tcc	att gac atc
5364		
Cys Gln Gly Lys Cys Ala Ser	Lys Ala Met Tyr Ser	Ile Asp Ile
1775	1780	1785
aac gat gtg cag gac cag tgc	tcc tgc tgc tct ccg	aca cgg acg
5409		
Asn Asp Val Gln Asp Gln Cys	Ser Cys Cys Ser Pro	Thr Arg Thr
1790	1795	1800
gag ccc atg cag gtg gcc ctg	cac tgc acc aat ggc	tct gtt gtg
5454		
Glu Pro Met Gln Val Ala Leu	His Cys Thr Asn Gly	Ser Val Val
1805	1810	1815
tac cat gag gtt ctc aat gcc	atg gag tgc aaa tgc	tcc ccc agg
5499		
Tyr His Glu Val Leu Asn Ala	Met Glu Cys Lys Cys	Ser Pro Arg
1820	1825	1830
aag tgc agc aag tga		
5514		
Lys Cys Ser Lys		
1835		

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 <211> 1837
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 171

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

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

Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
 465 470 475 480

Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
 485 490 495

His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
 500 505 510

Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
 515 520 525

Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
 530 535 540

Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
 545 550 555 560

Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
 565 570 575

Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
 580 585 590

Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
 595 600 605

Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
 610 615 620

Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
 625 630 635 640

Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
 645 650 655

Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
 660 665 670

Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
 675 680 685

Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
 690 695 700

Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
705 710 715 720

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

Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
740 745 750

Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
755 760 765

Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
770 775 780

Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
785 790 795 800

Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
805 810 815

Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
820 825 830

Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
835 840 845

Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
850 855 860

Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
865 870 875 880

Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
885 890 895

Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
900 905 910

Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
915 920 925

Gln	Gly	Ala	Glu	Pro	Arg	Lys	Asn	Phe	Val	Lys	Pro	Asn	Glu	Thr	Lys			
930						935					940							
Thr	Tyr	Phe	Trp	Lys	Val	Gln	His	His	Met	Ala	Pro	Thr	Lys	Asp	Glu			
945					950					955					960			
Phe	Asp	Cys	Lys	Ala	Trp	Ala	Tyr	Phe	Ser	Asp	Val	Asp	Leu	Glu	Lys			
				965					970					975				
Asp	Val	His	Ser	Gly	Leu	Ile	Gly	Pro	Leu	Leu	Val	Cys	His	Thr	Asn			
			980					985					990					
Thr	Leu	Asn	Pro	Ala	His	Gly	Arg	Gln	Val	Thr	Val	Gln	Glu	Phe	Ala			
		995					1000					1005						
Leu	Phe	Phe	Thr	Ile	Phe	Asp	Glu	Thr	Lys	Ser	Trp	Tyr	Phe	Thr				
	1010					1015					1020							
Glu	Asn	Met	Glu	Arg	Asn	Cys	Arg	Ala	Pro	Cys	Asn	Ile	Gln	Met				
	1025					1030					1035							
Glu	Asp	Pro	Thr	Phe	Lys	Glu	Asn	Tyr	Arg	Phe	His	Ala	Ile	Asn				
	1040					1045					1050							
Gly	Tyr	Ile	Met	Asp	Thr	Leu	Pro	Gly	Leu	Val	Met	Ala	Gln	Asp				
	1055					1060					1065							
Gln	Arg	Ile	Arg	Trp	Tyr	Leu	Leu	Ser	Met	Gly	Ser	Asn	Glu	Asn				
	1070					1075					1080							
Ile	His	Ser	Ile	His	Phe	Ser	Gly	His	Val	Phe	Thr	Val	Arg	Lys				
	1085					1090					1095							
Lys	Glu	Glu	Tyr	Lys	Met	Ala	Leu	Tyr	Asn	Leu	Tyr	Pro	Gly	Val				
	1100					1105					1110							
Phe	Glu	Thr	Val	Glu	Met	Leu	Pro	Ser	Lys	Ala	Gly	Ile	Trp	Arg				
	1115					1120					1125							
Val	Glu	Cys	Leu	Ile	Gly	Glu	His	Leu	His	Ala	Gly	Met	Ser	Thr				
	1130					1135					1140							
Leu	Phe	Leu	Val	Tyr	Ser	Asn	Lys	Cys	Gln	Thr	Pro	Leu	Gly	Met				
	1145					1150					1155							

Ala	Ser	Gly	His	Ile	Arg	Asp	Phe	Gln	Ile	Thr	Ala	Ser	Gly	Gln
1160						1165					1170			
Tyr	Gly	Gln	Trp	Ala	Pro	Lys	Leu	Ala	Arg	Leu	His	Tyr	Ser	Gly
1175						1180					1185			
Ser	Ile	Asn	Ala	Trp	Ser	Thr	Lys	Glu	Pro	Phe	Ser	Trp	Ile	Lys
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Val	Asp	Leu	Leu	Ala	Pro	Met	Ile	Ile	His	Gly	Ile	Lys	Thr	Gln
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1295						1300					1305			
Leu	Gly	Met	Glu	Ser	Lys	Ala	Ile	Ser	Asp	Ala	Gln	Ile	Thr	Ala
1310						1315					1320			
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Val	Asn	Asn	Pro	Lys	Glu	Trp	Leu	Gln	Val	Asp	Phe	Gln	Lys	Thr
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Met	Lys	Val	Thr	Gly	Val	Thr	Thr	Gln	Gly	Val	Lys	Ser	Leu	Leu
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Thr	Ser	Met	Tyr	Val	Lys	Glu	Phe	Leu	Ile	Ser	Ser	Ser	Gln	Asp
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Asp	Pro	Pro	Leu	Leu	Thr	Arg	Tyr	Leu	Arg	Ile	His	Pro	Gln	Ser
1430						1435					1440			
Trp	Val	His	Gln	Ile	Ala	Leu	Arg	Met	Glu	Val	Leu	Gly	Cys	Glu
1445						1450					1455			
Ala	Gln	Asp	Leu	Tyr	Thr	Gly	Asp	Asp	Asn	Ser	Pro	Ser	Phe	Ile
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Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr	Trp	Pro	Arg
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Ser Gly 1595	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1600	Ser Gly Gly 1605
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Ser Gly 1640	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1645	Ser Gly Gly 1650
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Ser Gly 1670	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1675	Ser Gly Gly 1680
Ser Gly 1685	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1690	Ser Gly Gly 1695
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Ser Gly 1745	Ser Gln Cys Asn Asp	Ile Thr Ala Arg Leu 1750	Gln Tyr Val 1755
Lys Val 1760	Gly Ser Cys Lys	Ser Glu Val Glu Val Asp 1765	Ile His Tyr 1770
Cys Gln 1775	Gly Lys Cys Ala	Ser Lys Ala Met Tyr Ser 1780	Ile Asp Ile 1785
Asn Asp 1790	Val Gln Asp Gln Cys	Ser Cys Cys Ser Pro 1795	Thr Arg Thr 1800

Glu Pro Met Gln Val Ala Leu His Cys Thr Asn Gly Ser Val Val
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Tyr His Glu Val Leu Asn Ala Met Glu Cys Lys Cys Ser Pro Arg
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Lys Cys Ser Lys
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 tgc ttt agt gcc acc aga aga tac tac ctg ggt gca gtg gaa ctg tca
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 Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
 20 25 30
 tgg gac tat atg caa agt gat ctc ggt gag ctg cct gtg gac gca aga
 144
 Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
 35 40 45
 ttt cct cct aga gtg cca aaa tct ttt cca ttc aac acc tca gtc gtg
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 Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
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 tac aaa aag act ctg ttt gta gaa ttc acg gat cac ctt ttc aac atc
 240
 Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
 65 70 75 80
 gct aag cca agg cca ccc tgg atg ggt ctg cta ggt cct acc atc cag
 288
 Ala Lys Pro Arg Pro Pro Trp Met Gly Leu Leu Gly Pro Thr Ile Gln
 85 90 95
 gct gag gtt tat gat aca gtg gtc att aca ctt aag aac atg gct tcc
 336

Ala	Glu	Val	Tyr	Asp	Thr	Val	Val	Ile	Thr	Leu	Lys	Asn	Met	Ala	Ser	
			100					105					110			
cat	cct	gtc	agt	ctt	cat	gct	gtt	ggg	gta	tcc	tac	tg	aaa	gct	tct	
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His	Pro	Val	Ser	Leu	His	Ala	Val	Gly	Val	Ser	Tyr	Trp	Lys	Ala	Ser	
		115					120					125				
gag	gga	gct	gaa	tat	gat	gat	cag	acc	agt	caa	agg	gag	aaa	gaa	gat	
432																
Glu	Gly	Ala	Glu	Tyr	Asp	Asp	Gln	Thr	Ser	Gln	Arg	Glu	Lys	Glu	Asp	
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gat	aaa	gtc	ttc	cct	ggg	gga	agc	cat	aca	tat	gtc	tg	cag	gtc	ctg	
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Asp	Lys	Val	Phe	Pro	Gly	Gly	Ser	His	Thr	Tyr	Val	Trp	Gln	Val	Leu	
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aaa	gag	aat	ggg	cca	atg	gcc	tct	gac	cca	ctg	tgc	ctt	acc	tac	tca	
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Lys	Glu	Asn	Gly	Pro	Met	Ala	Ser	Asp	Pro	Leu	Cys	Leu	Thr	Tyr	Ser	
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tat	ctt	tct	cat	gtg	gac	ctg	gta	aaa	gac	ttg	aat	tca	ggc	ctc	att	
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Tyr	Leu	Ser	His	Val	Asp	Leu	Val	Lys	Asp	Leu	Asn	Ser	Gly	Leu	Ile	
			180					185					190			
gga	gcc	cta	cta	gta	tgt	aga	gaa	ggg	agt	ctg	gcc	aag	gaa	aag	aca	
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cag	acc	ttg	cac	aaa	ttt	ata	cta	ctt	ttt	gct	gta	ttt	gat	gaa	ggg	
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Gln	Thr	Leu	His	Lys	Phe	Ile	Leu	Leu	Phe	Ala	Val	Phe	Asp	Glu	Gly	
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aaa	agt	tg	cac	tca	gaa	aca	aag	aac	tcc	ttg	atg	cag	gat	agg	gat	
720																
Lys	Ser	Trp	His	Ser	Glu	Thr	Lys	Asn	Ser	Leu	Met	Gln	Asp	Arg	Asp	
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gct	gca	tct	gct	cgg	gcc	tg	cct	aaa	atg	cac	aca	gtc	aat	ggg	tat	
768																
Ala	Ala	Ser	Ala	Arg	Ala	Trp	Pro	Lys	Met	His	Thr	Val	Asn	Gly	Tyr	
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gta	aac	agg	tct	ctg	cca	ggg	ctg	att	gga	tgc	cac	agg	aaa	tca	gtc	
816																
Val	Asn	Arg	Ser	Leu	Pro	Gly	Leu	Ile	Gly	Cys	His	Arg	Lys	Ser	Val	
			260					265					270			
tat	tg	cat	gtg	att	gga	atg	ggc	acc	act	cct	gaa	gtg	cac	tca	ata	
864																
Tyr	Trp	His	Val	Ile	Gly	Met	Gly	Thr	Thr	Pro	Glu	Val	His	Ser	Ile	
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 Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser
 290 295 300

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 Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met
 305 310 315 320

gac ctt gga cag ttt cta ctg ttt tgt cat atc tct tcc cac caa cat
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 Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His
 325 330 335

gat ggc atg gaa gct tat gtc aaa gta gac agc tgt cca gag gaa ccc
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 Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro
 340 345 350

caa cta cga atg aaa aat aat gaa gaa gcg gaa gac tat gat gat gat
 1104
 Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp
 355 360 365

ctt act gat tct gaa atg gat gtg gtc agg ttt gat gat gac aac tct
 1152
 Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser
 370 375 380

cct tcc ttt atc caa att cgc tca gtt gcc aag aag cat cct aaa act
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 Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr
 385 390 395 400

tgg gta cat tac att gct gct gaa gag gag gac tgg gac tat gct ccc
 1248
 Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro
 405 410 415

tta gtc ctc gcc ccc gat gac aga agt tat aaa agt caa tat ttg aac
 1296
 Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn
 420 425 430

aat ggc cct cag cgg att ggt agg aag tac aaa aaa gtc cga ttt atg
 1344
 Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
 435 440 445

gca tac aca gat gaa acc ttt aag act cgt gaa gct att cag cat gaa
 1392
 Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
 450 455 460

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 Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu

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Leu Ile Ile Phe	Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro					
	485			490		495
cac gga atc act gat gtc cgt cct ttg tat tca agg aga tta cca aaa						
1536						
His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys						
	500			505		510
ggg gta aaa cat ttg aag gat ttt cca att ctg cca gga gaa ata ttc						
1584						
Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe						
	515			520		525
aaa tat aaa tgg aca gtg act gta gaa gat ggg cca act aaa tca gat						
1632						
Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp						
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cct cgg tgc ctg acc cgc tat tac tct agt ttc gtt aat atg gag aga						
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Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg						
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gat cta gct tca gga ctc att ggc cct ctc ctc atc tgc tac aaa gaa						
1728						
Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu						
	565			570		575
tct gta gat caa aga gga aac cag ata atg tca gac aag agg aat gtc						
1776						
Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val						
	580			585		590
atc ctg ttt tct gta ttt gat gag aac cga agc tgg tac ctc aca gag						
1824						
Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu						
	595			600		605
aat ata caa cgc ttt ctc ccc aat cca gct gga gtg cag ctt gag gat						
1872						
Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp						
	610			615		620
cca gag ttc caa gcc tcc aac atc atg cac agc atc aat ggc tat gtt						
1920						
Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val						
	625			630		635
ttt gat agt ttg cag ttg tca gtt tgt ttg cat gag gtg gca tac tgg						
1968						
Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp						
	645			650		655

tac att cta agc att gga gca cag act gac ttc ctt tct gtc ttc ttc
 2016
 Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
 660 665 670

tct gga tat acc ttc aaa cac aaa atg gtc tat gaa gac aca ctc acc
 2064
 Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
 675 680 685

cta ttc cca ttc tca gga gaa act gtc ttc atg tcg atg gaa aac cca
 2112
 Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
 690 695 700

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 2160
 Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
 705 710 715 720

atg acc gcc tta ctg aag gtt tct agt tgt gac aag aac act ggt gat
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 Met Thr Ala Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp
 725 730 735

tat tac gag gac agt tat gaa gat att tca gca tac ttg ctg agt aaa
 2256
 Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
 740 745 750

aac aat gcc att gaa cca aga agc ttc tcc cag aat tca aga cac cct
 2304
 Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro
 755 760 765

agc act agg caa aag caa ttt aat gcc acc aca att cca gaa aat act
 2352
 Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Thr
 770 775 780

act ctt cag tca gat caa gag gaa att gac tat gat gat acc ata tca
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 Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile Ser
 785 790 795 800

gtt gaa atg aag aag gaa gat ttt gac att tat gat gag gat gaa aat
 2448
 Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp Glu Asn
 805 810 815

cag agc ccc cgc agc ttt caa aag aaa aca cga cac tat ttt att gct
 2496
 Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
 820 825 830

gca gtg gag agg ctc tgg gat tat ggg atg agt agc tcc cca cat gtt
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 Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val

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Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg 865 870 875 880		
gga gaa cta aat gaa cat ttg gga ctc ctg ggg cca tat ata aga gca 2688		
Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala 885 890 895		
gaa gtt gaa gat aat atc atg gta act ttc aga aat cag gcc tct cgt 2736		
Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg 900 905 910		
ccc tat tcc ttc tat tct agc ctt att tct tat gag gaa gat cag agg 2784		
Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg 915 920 925		
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Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys 930 935 940		
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Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu 945 950 955 960		
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Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys 965 970 975		
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Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn 980 985 990		
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Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala 995 1000 1005		
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	1220			1225			1230								
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3834	Ser Gly	Ile Lys	His Asn	Ile Phe	Asn Pro	Pro Ile	Ile Ala	Arg							
	1265			1270			1275								
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3879	Tyr Ile	Arg Leu	His Pro	Thr His	Tyr Ser	Ile Arg	Ser Thr	Leu							
	1280			1285			1290								
cgc atg	gag ttg	atg ggc	tgt gat	tta aat	agt tgc	agc atg	cca								
3924	Arg Met	Glu Leu	Met Gly	Cys Asp	Leu Asn	Ser Cys	Ser Met	Pro							
	1295			1300			1305								
ttg gga	atg gag	agt aaa	gca ata	tca gat	gca cag	att act	gct								
3969	Leu Gly	Met Glu	Ser Lys	Ala Ile	Ser Asp	Ala Gln	Ile Thr	Ala							
	1310			1315			1320								
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4014	Ser Ser	Tyr Phe	Thr Asn	Met Phe	Ala Thr	Trp Ser	Pro Ser	Lys							
	1325			1330			1335								
gct cga	ctt cac	ctc caa	ggg agg	agt aat	gcc tgg	aga cct	cag								
4059	Ala Arg	Leu His	Leu Gln	Gly Arg	Ser Asn	Ala Trp	Arg Pro	Gln							
	1340			1345			1350								
gtg aat	aat cca	aaa gag	tgg ctg	caa gtg	gac ttc	cag aag	aca								
4104	Val Asn	Asn Pro	Lys Glu	Trp Leu	Gln Val	Asp Phe	Gln Lys	Thr							
	1355			1360			1365								

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4689	Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	1550	Ser Gly	Gly Gly	Ser Gly	Gly Gly	1555	Ser Gly	Gly Gly	Ser Gly	Gly Gly
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4734	Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	1565	Ser Gly	Gly Gly	Ser Gly	Gly Gly	1570	Ser Gly	Gly Gly	Ser Gly	Gly Gly
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4779	Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	1580	Ser Gly	Gly Gly	Ser Gly	Gly Gly	1585	Ser Gly	Gly Gly	Ser Gly	Gly Gly
agc ggc	gga agt	ggc ggt	tcc ggc	ggg agt	ggc ggt	tcc ggc	ggg agt	ggc ggt	tcc ggc	ggg agt	ggc ggt	tcc ggc	ggg agt	ggc ggt	tcc ggc
4824	Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	1595	Ser Gly	Gly Gly	Ser Gly	Gly Gly	1600	Ser Gly	Gly Gly	Ser Gly	Gly Gly
agc ggt	ggt tca	gga ggc	tca ggt	ggc agt	ggt ggt	tcc ggt	ggc agt	ggt ggt	tcc ggt	ggc agt	ggt ggt	tcc ggt	ggc agt	ggt ggt	tcc ggt
4869	Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	1610	Ser Gly	Gly Gly	Ser Gly	Gly Gly	1615	Ser Gly	Gly Gly	Ser Gly	Gly Gly
tcc ggc	ggg agc	gga gga	agt gga	ggc tcc	ggc ggt	tcc gga	ggc tcc	ggc ggt	tcc gga	ggc tcc	ggc ggt	tcc gga	ggc tcc	ggc ggt	tcc gga
4914	Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	1625	Ser Gly	Gly Gly	Ser Gly	Gly Gly	1630	Ser Gly	Gly Gly	Ser Gly	Gly Gly
agt ggc	gga tct	ggc gga	agt ggt	gga agt	gga ggg	agc gga	gga agt	gga ggg	agc gga	gga agt	gga ggg	agc gga	gga agt	gga ggg	agc gga
4959	Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	1640	Ser Gly	Gly Gly	Ser Gly	Gly Gly	1645	Ser Gly	Gly Gly	Ser Gly	Gly Gly
agt gga	ggc tcc	ggc ggc	tca gga	ggc tca	ggc ggc	tcc gga	ggc tca	ggc ggc	tcc gga	ggc tca	ggc ggc	tcc gga	ggc tca	ggc ggc	tcc gga
5004	Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	1655	Ser Gly	Gly Gly	Ser Gly	Gly Gly	1660	Ser Gly	Gly Gly	Ser Gly	Gly Gly
tct ggc	ggg agc	ggt gga	agc gga	ggc tcc	ggc ggc	tct gga	ggc tcc	ggc ggc	tct gga	ggc tcc	ggc ggc	tct gga	ggc tcc	ggc ggc	tct gga
5049	Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	1670	Ser Gly	Gly Gly	Ser Gly	Gly Gly	1675	Ser Gly	Gly Gly	Ser Gly	Gly Gly
tca gga	ggc agt	ggc ggg	tct ggc	ggc agc	ggt ggt	tcc ggt	ggc agc	ggt ggt	tcc ggt	ggc agc	ggt ggt	tcc ggt	ggc agc	ggt ggt	tcc ggt
5094	Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	1685	Ser Gly	Gly Gly	Ser Gly	Gly Gly	1690	Ser Gly	Gly Gly	Ser Gly	Gly Gly
agc ggc	ggc tct	ggt ggc	agt gga	gga agt	gga ggc	tct ggc	gga agt	gga ggc	tct ggc	gga agt	gga ggc	tct ggc	gga agt	gga ggc	tct ggc
5139	Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	1700	Ser Gly	Gly Gly	Ser Gly	Gly Gly	1705	Ser Gly	Gly Gly	Ser Gly	Gly Gly

agc gga ggt tcc ggc ggg tcc gga ggc tcc ggt ggg tct ggc gga
 5184
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1715 1720 1725

tca ggt ggc tca ggt ggg tca gga ggg tcc ggc gga agc ggc ggt
 5229
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1730 1735 1740

tca ggc ggt tct ggt ggc agc gga ggt tct ggt ggc tca ggt ggc
 5274
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1745 1750 1755

tct gga ggt agt ggt ggc tca ggt ggt tca ggt gga agt ggc ggg
 5319
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1760 1765 1770

agt ggt ggg tca gga ggt agc gga gga tca gga ggc agc ggc ggt
 5364
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1775 1780 1785

tca ggt ggg tct ggc tcc ggg tcc caa tgc aac gac atc act gcc
 5409
 Ser Gly Gly Ser Gly Ser Gly Ser Gln Cys Asn Asp Ile Thr Ala
 1790 1795 1800

agg ctg cag tat gtc aag gtg gga agc tgt aag tct gaa gta gag
 5454
 Arg Leu Gln Tyr Val Lys Val Gly Ser Cys Lys Ser Glu Val Glu
 1805 1810 1815

gtg gat atc cac tac tgc cag ggc aaa tgt gcc agc aaa gcc atg
 5499
 Val Asp Ile His Tyr Cys Gln Gly Lys Cys Ala Ser Lys Ala Met
 1820 1825 1830

tac tcc att gac atc aac gat gtg cag gac cag tgc tcc tgc tgc
 5544
 Tyr Ser Ile Asp Ile Asn Asp Val Gln Asp Gln Cys Ser Cys Cys
 1835 1840 1845

tct ccg aca cgg acg gag ccc atg cag gtg gcc ctg cac tgc acc
 5589
 Ser Pro Thr Arg Thr Glu Pro Met Gln Val Ala Leu His Cys Thr
 1850 1855 1860

aat ggc tct gtt gtg tac cat gag gtt ctc aat gcc atg gag tgc
 5634
 Asn Gly Ser Val Val Tyr His Glu Val Leu Asn Ala Met Glu Cys
 1865 1870 1875

aaa tgc tcc ccc agg aag tgc agc aag tga
 5664
 Lys Cys Ser Pro Arg Lys Cys Ser Lys

1880

1885

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 <211> 1887
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 173

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Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
 20 25 30

Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
 35 40 45

Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
 50 55 60

Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
 65 70 75 80

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

Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
 100 105 110

His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
 115 120 125

Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
 130 135 140

Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
 145 150 155 160

Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
 165 170 175

Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile

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

Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn
420 425 430

Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
435 440 445

Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
450 455 460

Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
465 470 475 480

Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
485 490 495

His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
500 505 510

Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
515 520 525

Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
530 535 540

Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
545 550 555 560

Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
565 570 575

Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
580 585 590

Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
595 600 605

Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
610 615 620

Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
625 630 635 640

Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp

				645						650						655
Tyr	Ile	Leu	Ser	Ile	Gly	Ala	Gln	Thr	Asp	Phe	Leu	Ser	Val	Phe	Phe	
			660					665					670			
Ser	Gly	Tyr	Thr	Phe	Lys	His	Lys	Met	Val	Tyr	Glu	Asp	Thr	Leu	Thr	
		675					680					685				
Leu	Phe	Pro	Phe	Ser	Gly	Glu	Thr	Val	Phe	Met	Ser	Met	Glu	Asn	Pro	
	690					695					700					
Gly	Leu	Trp	Ile	Leu	Gly	Cys	His	Asn	Ser	Asp	Phe	Arg	Asn	Arg	Gly	
705					710					715					720	
Met	Thr	Ala	Leu	Leu	Lys	Val	Ser	Ser	Cys	Asp	Lys	Asn	Thr	Gly	Asp	
				725					730					735		
Tyr	Tyr	Glu	Asp	Ser	Tyr	Glu	Asp	Ile	Ser	Ala	Tyr	Leu	Leu	Ser	Lys	
			740					745					750			
Asn	Asn	Ala	Ile	Glu	Pro	Arg	Ser	Phe	Ser	Gln	Asn	Ser	Arg	His	Pro	
		755					760					765				
Ser	Thr	Arg	Gln	Lys	Gln	Phe	Asn	Ala	Thr	Thr	Ile	Pro	Glu	Asn	Thr	
	770					775					780					
Thr	Leu	Gln	Ser	Asp	Gln	Glu	Glu	Ile	Asp	Tyr	Asp	Asp	Thr	Ile	Ser	
785					790					795					800	
Val	Glu	Met	Lys	Lys	Glu	Asp	Phe	Asp	Ile	Tyr	Asp	Glu	Asp	Glu	Asn	
				805					810					815		
Gln	Ser	Pro	Arg	Ser	Phe	Gln	Lys	Lys	Thr	Arg	His	Tyr	Phe	Ile	Ala	
			820					825					830			
Ala	Val	Glu	Arg	Leu	Trp	Asp	Tyr	Gly	Met	Ser	Ser	Ser	Pro	His	Val	
		835					840					845				
Leu	Arg	Asn	Arg	Ala	Gln	Ser	Gly	Ser	Val	Pro	Gln	Phe	Lys	Lys	Val	
	850					855					860					
Val	Phe	Gln	Glu	Phe	Thr	Asp	Gly	Ser	Phe	Thr	Gln	Pro	Leu	Tyr	Arg	
865					870					875					880	

Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
885 890 895

Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
900 905 910

Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
915 920 925

Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
930 935 940

Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu
945 950 955 960

Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
965 970 975

Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
980 985 990

Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala
995 1000 1005

Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr
1010 1015 1020

Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met
1025 1030 1035

Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn
1040 1045 1050

Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp
1055 1060 1065

Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn
1070 1075 1080

Ile His Ser Ile His Phe Ser Gly His Val Phe Thr Val Arg Lys
1085 1090 1095

Lys Glu Glu Tyr Lys Met Ala Leu Tyr Asn Leu Tyr Pro Gly Val

1100		1105		1110
Phe Glu Thr Val Glu Met	Leu Pro Ser Lys Ala Gly	Ile Trp Arg		
1115	1120	1125		
Val Glu Cys Leu Ile Gly	Glu His Leu His Ala Gly	Met Ser Thr		
1130	1135	1140		
Leu Phe Leu Val Tyr Ser	Asn Lys Cys Gln Thr Pro	Leu Gly Met		
1145	1150	1155		
Ala Ser Gly His Ile Arg	Asp Phe Gln Ile Thr Ala	Ser Gly Gln		
1160	1165	1170		
Tyr Gly Gln Trp Ala Pro	Lys Leu Ala Arg Leu His	Tyr Ser Gly		
1175	1180	1185		
Ser Ile Asn Ala Trp Ser	Thr Lys Glu Pro Phe Ser	Trp Ile Lys		
1190	1195	1200		
Val Asp Leu Leu Ala Pro	Met Ile Ile His Gly Ile	Lys Thr Gln		
1205	1210	1215		
Gly Ala Arg Gln Lys Phe	Ser Ser Leu Tyr Ile Ser	Gln Phe Ile		
1220	1225	1230		
Ile Met Tyr Ser Leu Asp	Gly Lys Lys Trp Gln Thr	Tyr Arg Gly		
1235	1240	1245		
Asn Ser Thr Gly Thr Leu	Met Val Phe Phe Gly Asn	Val Asp Ser		
1250	1255	1260		
Ser Gly Ile Lys His Asn	Ile Phe Asn Pro Pro Ile	Ile Ala Arg		
1265	1270	1275		
Tyr Ile Arg Leu His Pro	Thr His Tyr Ser Ile Arg	Ser Thr Leu		
1280	1285	1290		
Arg Met Glu Leu Met Gly	Cys Asp Leu Asn Ser Cys	Ser Met Pro		
1295	1300	1305		
Leu Gly Met Glu Ser Lys	Ala Ile Ser Asp Ala Gln	Ile Thr Ala		
1310	1315	1320		

Ser	Ser	Tyr	Phe	Thr	Asn	Met	Phe	Ala	Thr	Trp	Ser	Pro	Ser	Lys
	1325					1330					1335			
Ala	Arg	Leu	His	Leu	Gln	Gly	Arg	Ser	Asn	Ala	Trp	Arg	Pro	Gln
	1340					1345					1350			
Val	Asn	Asn	Pro	Lys	Glu	Trp	Leu	Gln	Val	Asp	Phe	Gln	Lys	Thr
	1355					1360					1365			
Met	Lys	Val	Thr	Gly	Val	Thr	Thr	Gln	Gly	Val	Lys	Ser	Leu	Leu
	1370					1375					1380			
Thr	Ser	Met	Tyr	Val	Lys	Glu	Phe	Leu	Ile	Ser	Ser	Ser	Gln	Asp
	1385					1390					1395			
Gly	His	Gln	Trp	Thr	Leu	Phe	Phe	Gln	Asn	Gly	Lys	Val	Lys	Val
	1400					1405					1410			
Phe	Gln	Gly	Asn	Gln	Asp	Ser	Phe	Thr	Pro	Val	Val	Asn	Ser	Leu
	1415					1420					1425			
Asp	Pro	Pro	Leu	Leu	Thr	Arg	Tyr	Leu	Arg	Ile	His	Pro	Gln	Ser
	1430					1435					1440			
Trp	Val	His	Gln	Ile	Ala	Leu	Arg	Met	Glu	Val	Leu	Gly	Cys	Glu
	1445					1450					1455			
Ala	Gln	Asp	Leu	Tyr	Thr	Gly	Asp	Asp	Asn	Ser	Pro	Ser	Phe	Ile
	1460					1465					1470			
Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr	Trp	Pro	Arg
	1475					1480					1485			
Gly	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
	1490					1495					1500			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
	1505					1510					1515			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
	1520					1525					1530			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly

1535	1540	1545
Ser Gly Gly Ser Gly Gly 1550	Ser Gly Gly Ser Gly Gly 1555	Ser Gly Gly 1560
Ser Gly Gly Ser Gly Gly 1565	Ser Gly Gly Ser Gly Gly 1570	Ser Gly Gly 1575
Ser Gly Gly Ser Gly Gly 1580	Ser Gly Gly Ser Gly Gly 1585	Ser Gly Gly 1590
Ser Gly Gly Ser Gly Gly 1595	Ser Gly Gly Ser Gly Gly 1600	Ser Gly Gly 1605
Ser Gly Gly Ser Gly Gly 1610	Ser Gly Gly Ser Gly Gly 1615	Ser Gly Gly 1620
Ser Gly Gly Ser Gly Gly 1625	Ser Gly Gly Ser Gly Gly 1630	Ser Gly Gly 1635
Ser Gly Gly Ser Gly Gly 1640	Ser Gly Gly Ser Gly Gly 1645	Ser Gly Gly 1650
Ser Gly Gly Ser Gly Gly 1655	Ser Gly Gly Ser Gly Gly 1660	Ser Gly Gly 1665
Ser Gly Gly Ser Gly Gly 1670	Ser Gly Gly Ser Gly Gly 1675	Ser Gly Gly 1680
Ser Gly Gly Ser Gly Gly 1685	Ser Gly Gly Ser Gly Gly 1690	Ser Gly Gly 1695
Ser Gly Gly Ser Gly Gly 1700	Ser Gly Gly Ser Gly Gly 1705	Ser Gly Gly 1710
Ser Gly Gly Ser Gly Gly 1715	Ser Gly Gly Ser Gly Gly 1720	Ser Gly Gly 1725
Ser Gly Gly Ser Gly Gly 1730	Ser Gly Gly Ser Gly Gly 1735	Ser Gly Gly 1740
Ser Gly Gly Ser Gly Gly 1745	Ser Gly Gly Ser Gly Gly 1750	Ser Gly Gly 1755

Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1760 1765 1770

Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1775 1780 1785

Ser Gly Gly Ser Gly Ser Gly Ser Gln Cys Asn Asp Ile Thr Ala
 1790 1795 1800

Arg Leu Gln Tyr Val Lys Val Gly Ser Cys Lys Ser Glu Val Glu
 1805 1810 1815

Val Asp Ile His Tyr Cys Gln Gly Lys Cys Ala Ser Lys Ala Met
 1820 1825 1830

Tyr Ser Ile Asp Ile Asn Asp Val Gln Asp Gln Cys Ser Cys Cys
 1835 1840 1845

Ser Pro Thr Arg Thr Glu Pro Met Gln Val Ala Leu His Cys Thr
 1850 1855 1860

Asn Gly Ser Val Val Tyr His Glu Val Leu Asn Ala Met Glu Cys
 1865 1870 1875

Lys Cys Ser Pro Arg Lys Cys Ser Lys
 1880 1885

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 <213> Artificial Sequence

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 1 5 10 15
 tgc ttt agt gcc acc aga aga tac tac ctg ggt gca gtg gaa ctg tca
 96

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

cag acc ttg cac aaa ttt ata cta ctt ttt gct gta ttt gat gaa ggg
 672
 Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly
 210 215 220

aaa agt tgg cac tca gaa aca aag aac tcc ttg atg cag gat agg gat
 720
 Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp
 225 230 235 240

gct gca tct gct cgg gcc tgg cct aaa atg cac aca gtc aat ggt tat
 768
 Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr
 245 250 255

gta aac agg tct ctg cca ggt ctg att gga tgc cac agg aaa tca gtc
 816
 Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val
 260 265 270

tat tgg cat gtg att gga atg ggc acc act cct gaa gtg cac tca ata
 864
 Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile
 275 280 285

ttc ctc gaa ggt cac aca ttt ctt gtg agg aac cat cgc cag gcg tcc
 912
 Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser
 290 295 300

ttg gaa atc tcg cca ata act ttc ctt act gct caa aca ctc ttg atg
 960
 Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met
 305 310 315 320

gac ctt gga cag ttt cta ctg ttt tgt cat atc tct tcc cac caa cat
 1008
 Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His
 325 330 335

gat ggc atg gaa gct tat gtc aaa gta gac agc tgt cca gag gaa ccc
 1056
 Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro
 340 345 350

caa cta cga atg aaa aat aat gaa gaa gcg gaa gac tat gat gat gat
 1104
 Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp
 355 360 365

ctt act gat tct gaa atg gat gtg gtc agg ttt gat gat gac aac tct
 1152
 Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser
 370 375 380

cct tcc ttt atc caa att cgc tca gtt gcc aag aag cat cct aaa act
 1200
 Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr

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

tct gta gat caa aga gga aac cag ata atg tca gac aag agg aat gtc
1776
Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
580 585 590

atc ctg ttt tct gta ttt gat gag aac cga agc tgg tac ctc aca gag
1824
Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
595 600 605

aat ata caa cgc ttt ctc ccc aat cca gct gga gtg cag ctt gag gat
1872
Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
610 615 620

cca gag ttc caa gcc tcc aac atc atg cac agc atc aat ggc tat gtt
1920
Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
625 630 635 640

ttt gat agt ttg cag ttg tca gtt tgt ttg cat gag gtg gca tac tgg
1968
Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
645 650 655

tac att cta agc att gga gca cag act gac ttc ctt tct gtc ttc ttc
2016
Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
660 665 670

tct gga tat acc ttc aaa cac aaa atg gtc tat gaa gac aca ctc acc
2064
Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
675 680 685

cta ttc cca ttc tca gga gaa act gtc ttc atg tcg atg gaa aac cca
2112
Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
690 695 700

ggc cta tgg att ctg ggg tgc cac aac tca gac ttt cgg aac aga ggc
2160
Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
705 710 715 720

atg acc gcc tta ctg aag gtt tct agt tgt gac aag aac act ggt gat
2208
Met Thr Ala Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp
725 730 735

tat tac gag gac agt tat gaa gat att tca gca tac ttg ctg agt aaa
2256
Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
740 745 750

aac aat gcc att gaa cca aga agc ttc tcc cag aat tca aga cac cct
2304
Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Pro

755					760					765					
agc	act	agg	caa	aag	caa	ttt	aat	gcc	acc	aca	att	cca	gaa	aat	act
2352															
Ser	Thr	Arg	Gln	Lys	Gln	Phe	Asn	Ala	Thr	Thr	Ile	Pro	Glu	Asn	Thr
	770					775					780				
act	ctt	cag	tca	gat	caa	gag	gaa	att	gac	tat	gat	gat	acc	ata	tca
2400															
Thr	Leu	Gln	Ser	Asp	Gln	Glu	Glu	Ile	Asp	Tyr	Asp	Asp	Thr	Ile	Ser
785					790					795					800
gtt	gaa	atg	aag	aag	gaa	gat	ttt	gac	att	tat	gat	gag	gat	gaa	aat
2448															
Val	Glu	Met	Lys	Lys	Glu	Asp	Phe	Asp	Ile	Tyr	Asp	Glu	Asp	Glu	Asn
				805					810					815	
cag	agc	ccc	cgc	agc	ttt	caa	aag	aaa	aca	cga	cac	tat	ttt	att	gct
2496															
Gln	Ser	Pro	Arg	Ser	Phe	Gln	Lys	Lys	Thr	Arg	His	Tyr	Phe	Ile	Ala
			820					825					830		
gca	gtg	gag	agg	ctc	tgg	gat	tat	ggg	atg	agt	agc	tcc	cca	cat	gtt
2544															
Ala	Val	Glu	Arg	Leu	Trp	Asp	Tyr	Gly	Met	Ser	Ser	Ser	Pro	His	Val
		835					840					845			
cta	aga	aac	agg	gct	cag	agt	ggc	agt	gtc	cct	cag	ttc	aag	aaa	gtt
2592															
Leu	Arg	Asn	Arg	Ala	Gln	Ser	Gly	Ser	Val	Pro	Gln	Phe	Lys	Lys	Val
	850					855					860				
gtt	ttc	cag	gaa	ttt	act	gat	ggc	tcc	ttt	act	cag	ccc	tta	tac	cgt
2640															
Val	Phe	Gln	Glu	Phe	Thr	Asp	Gly	Ser	Phe	Thr	Gln	Pro	Leu	Tyr	Arg
865					870					875					880
gga	gaa	cta	aat	gaa	cat	ttg	gga	ctc	ctg	ggg	cca	tat	ata	aga	gca
2688															
Gly	Glu	Leu	Asn	Glu	His	Leu	Gly	Leu	Leu	Gly	Pro	Tyr	Ile	Arg	Ala
				885					890					895	
gaa	gtt	gaa	gat	aat	atc	atg	gta	act	ttc	aga	aat	cag	gcc	tct	cgt
2736															
Glu	Val	Glu	Asp	Asn	Ile	Met	Val	Thr	Phe	Arg	Asn	Gln	Ala	Ser	Arg
			900					905					910		
ccc	tat	tcc	ttc	tat	tct	agc	ctt	att	tct	tat	gag	gaa	gat	cag	agg
2784															
Pro	Tyr	Ser	Phe	Tyr	Ser	Ser	Leu	Ile	Ser	Tyr	Glu	Glu	Asp	Gln	Arg
			915				920					925			
caa	gga	gca	gaa	cct	aga	aaa	aac	ttt	gtc	aag	cct	aat	gaa	acc	aaa
2832															
Gln	Gly	Ala	Glu	Pro	Arg	Lys	Asn	Phe	Val	Lys	Pro	Asn	Glu	Thr	Lys
	930					935					940				

act tac ttt tgg aaa gtg caa cat cat atg gca ccc act aaa gat gag
 2880
 Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu
 945 950 955 960

ttt gac tgc aaa gcc tgg gct tat ttc tct gat gtt gac ctg gaa aaa
 2928
 Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
 965 970 975

gat gtg cac tca ggc ctg att gga ccc ctt ctg gtc tgc cac act aac
 2976
 Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
 980 985 990

aca ctg aac cct gct cat ggg aga caa gtg aca gta cag gaa ttt gct
 3024
 Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala
 995 1000 1005

ctg ttt ttc acc atc ttt gat gag acc aaa agc tgg tac ttc act
 3069
 Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr
 1010 1015 1020

gaa aat atg gaa aga aac tgc agg gct ccc tgc aat atc cag atg
 3114
 Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met
 1025 1030 1035

gaa gat ccc act ttt aaa gag aat tat cgc ttc cat gca atc aat
 3159
 Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn
 1040 1045 1050

ggc tac ata atg gat aca cta cct ggc tta gta atg gct cag gat
 3204
 Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp
 1055 1060 1065

caa agg att cga tgg tat ctg ctc agc atg ggc agc aat gaa aac
 3249
 Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn
 1070 1075 1080

atc cat tct att cat ttc agt gga cat gtg ttc act gta cga aaa
 3294
 Ile His Ser Ile His Phe Ser Gly His Val Phe Thr Val Arg Lys
 1085 1090 1095

aaa gag gag tat aaa atg gca ctg tac aat ctc tat cca ggt gtt
 3339
 Lys Glu Glu Tyr Lys Met Ala Leu Tyr Asn Leu Tyr Pro Gly Val
 1100 1105 1110

ttt gag aca gtg gaa atg tta cca tcc aaa gct gga att tgg cgg
 3384
 Phe Glu Thr Val Glu Met Leu Pro Ser Lys Ala Gly Ile Trp Arg

1115	1120	1125
gtg gaa tgc ctt att ggc gag	cat cta cat gct ggg	atg agc aca
3429		
Val Glu Cys Leu Ile Gly Glu	His Leu His Ala Gly	Met Ser Thr
1130	1135	1140
ctt ttt ctg gtg tac agc aat	aag tgt cag act ccc	ctg gga atg
3474		
Leu Phe Leu Val Tyr Ser Asn	Lys Cys Gln Thr Pro	Leu Gly Met
1145	1150	1155
gct tct gga cac att aga gat	ttt cag att aca gct	tca gga caa
3519		
Ala Ser Gly His Ile Arg Asp	Phe Gln Ile Thr Ala	Ser Gly Gln
1160	1165	1170
tat gga cag tgg gcc cca aag	ctg gcc aga ctt cat	tat tcc gga
3564		
Tyr Gly Gln Trp Ala Pro Lys	Leu Ala Arg Leu His	Tyr Ser Gly
1175	1180	1185
tca atc aat gcc tgg agc acc	aag gag ccc ttt tct	tgg atc aag
3609		
Ser Ile Asn Ala Trp Ser Thr	Lys Glu Pro Phe Ser	Trp Ile Lys
1190	1195	1200
gtg gat ctg ttg gca cca atg	att att cac ggc atc	aag acc cag
3654		
Val Asp Leu Leu Ala Pro Met	Ile Ile His Gly Ile	Lys Thr Gln
1205	1210	1215
ggg gcc cgt cag aag ttc tcc	agc ctc tac atc tct	cag ttt atc
3699		
Gly Ala Arg Gln Lys Phe Ser	Ser Leu Tyr Ile Ser	Gln Phe Ile
1220	1225	1230
atc atg tat agt ctt gat ggg	aag aag tgg cag act	tat cga gga
3744		
Ile Met Tyr Ser Leu Asp Gly	Lys Lys Trp Gln Thr	Tyr Arg Gly
1235	1240	1245
aat tcc act gga acc tta atg	gtc ttc ttt ggc aat	gtg gat tca
3789		
Asn Ser Thr Gly Thr Leu Met	Val Phe Phe Gly Asn	Val Asp Ser
1250	1255	1260
tct ggg ata aaa cac aat att	ttt aac cct cca att	att gct cga
3834		
Ser Gly Ile Lys His Asn Ile	Phe Asn Pro Pro Ile	Ile Ala Arg
1265	1270	1275
tac atc cgt ttg cac cca act	cat tat agc att cgc	agc act ctt
3879		
Tyr Ile Arg Leu His Pro Thr	His Tyr Ser Ile Arg	Ser Thr Leu
1280	1285	1290

cgc atg gag ttg atg ggc tgt gat tta aat agt tgc agc atg cca
 3924
 Arg Met Glu Leu Met Gly Cys Asp Leu Asn Ser Cys Ser Met Pro
 1295 1300 1305

ttg gga atg gag agt aaa gca ata tca gat gca cag att act gct
 3969
 Leu Gly Met Glu Ser Lys Ala Ile Ser Asp Ala Gln Ile Thr Ala
 1310 1315 1320

tca tcc tac ttt acc aat atg ttt gcc acc tgg tct cct tca aaa
 4014
 Ser Ser Tyr Phe Thr Asn Met Phe Ala Thr Trp Ser Pro Ser Lys
 1325 1330 1335

gct cga ctt cac ctc caa ggg agg agt aat gcc tgg aga cct cag
 4059
 Ala Arg Leu His Leu Gln Gly Arg Ser Asn Ala Trp Arg Pro Gln
 1340 1345 1350

gtg aat aat cca aaa gag tgg ctg caa gtg gac ttc cag aag aca
 4104
 Val Asn Asn Pro Lys Glu Trp Leu Gln Val Asp Phe Gln Lys Thr
 1355 1360 1365

atg aaa gtc aca gga gta act act cag gga gta aaa tct ctg ctt
 4149
 Met Lys Val Thr Gly Val Thr Thr Gln Gly Val Lys Ser Leu Leu
 1370 1375 1380

acc agc atg tat gtg aag gag ttc ctc atc tcc agc agt caa gat
 4194
 Thr Ser Met Tyr Val Lys Glu Phe Leu Ile Ser Ser Ser Gln Asp
 1385 1390 1395

ggc cat cag tgg act ctc ttt ttt cag aat ggc aaa gta aag gtt
 4239
 Gly His Gln Trp Thr Leu Phe Phe Gln Asn Gly Lys Val Lys Val
 1400 1405 1410

ttt cag gga aat caa gac tcc ttc aca cct gtg gtg aac tct cta
 4284
 Phe Gln Gly Asn Gln Asp Ser Phe Thr Pro Val Val Asn Ser Leu
 1415 1420 1425

gac cca ccg tta ctg act cgc tac ctt cga att cac ccc cag agt
 4329
 Asp Pro Pro Leu Leu Thr Arg Tyr Leu Arg Ile His Pro Gln Ser
 1430 1435 1440

tgg gtg cac cag att gcc ctg agg atg gag gtt ctg ggc tgc gag
 4374
 Trp Val His Gln Ile Ala Leu Arg Met Glu Val Leu Gly Cys Glu
 1445 1450 1455

gca cag gac ctc tac acc ggt gat gac aac tct cct tcc ttt atc
 4419
 Ala Gln Asp Leu Tyr Thr Gly Asp Asp Asn Ser Pro Ser Phe Ile

1460	1465	1470
caa att cgc tca gtt gcc aag	aag cat cct aaa act	tgg cct cga
4464		
Gln Ile Arg Ser Val Ala Lys	Lys His Pro Lys Thr	Trp Pro Arg
1475	1480	1485
ggg ggt ggg agt gga gga tca	ggg ggc agt ggg ggc	tca ggc ggc
4509		
Gly Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1490	1495	1500
tct ggt ggc tct ggc ggc agt	ggg ggc tca ggc gga	tca gga ggt
4554		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1505	1510	1515
tct ggc gga tca ggt gga tca	gga ggc tcc gga ggt	agc gga gga
4599		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1520	1525	1530
tcc ggc ggg agc ggc ggt tca	ggc gga agc ggt gga	tct gga ggt
4644		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1535	1540	1545
tca ggt ggc tct gga gga tca	ggc ggt tcc gga ggc	tca ggc ggt
4689		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1550	1555	1560
agt ggt ggc agt gga gga agt	ggc ggc tct ggc ggc	tct gga ggc
4734		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1565	1570	1575
agc ggt gga agc ggt ggc tct	ggg ggc agc gga ggc	agt ggc ggc
4779		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1580	1585	1590
agc ggc gga agt ggc ggt tcc	ggc ggc agt ggc ggt	agt ggt ggc
4824		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1595	1600	1605
agc ggt ggt tca gga ggc tca	ggg ggt agt ggt ggt	tcc ggt ggc
4869		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1610	1615	1620
tcc ggc ggg agc gga gga agt	gga ggc tcc ggc ggt	tcc gga ggt
4914		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1625	1630	1635

agt ggc gga tct ggc gga agt ggt gga agt gga ggg agc gga gga
 4959
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1640 1645 1650

agt gga ggc tcc ggc ggc tca gga ggc tca ggc ggc tcc gga ggt
 5004
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1655 1660 1665

tct ggc ggg agc ggt gga agc gga ggt tcc gga ggc tct gga ggc
 5049
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1670 1675 1680

tca gga ggc agt ggc ggc tct ggc ggc agc ggt ggt tcc ggt ggc
 5094
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1685 1690 1695

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 1700 1705 1710

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 5184
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 1730 1735 1740

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 1745 1750 1755

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 1760 1765 1770

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 5364
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1775 1780 1785

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 5409
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1790 1795 1800

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 5454
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly

1805						1810						1815			
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5499															
Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	Ser Gly	Gly Gly	Ser Gly	Gly Gly	Ser Gly	Gly Gly	Ser Gly	Gly Gly			
1820						1825						1830			
agc ggt	gga agc	gga ggg	tcc ggc	ggc tct	ggc tcc	ggg tcc	caa								
5544															
Ser Gly	Gly Ser	Gly Gly	Ser Gly	Gly Gly	Ser Gly	Gly Gly	Ser Gly	Ser Gly	Gly Ser	Gln					
1835						1840						1845			
tgc aac	gac atc	act gcc	agg ctg	cag tat	gtc aag	gtg gga	agc								
5589															
Cys Asn	Asp Ile	Thr Ala	Arg Leu	Gln Tyr	Val Lys	Val Gly	Ser								
1850						1855						1860			
tgt aag	tct gaa	gta gag	gtg gat	atc cac	tac tgc	cag ggc	aaa								
5634															
Cys Lys	Ser Glu	Val Glu	Val Asp	Ile His	Tyr Cys	Gln Gly	Lys								
1865						1870						1875			
tgt gcc	agc aaa	gcc atg	tac tcc	att gac	atc aac	gat gtg	cag								
5679															
Cys Ala	Ser Lys	Ala Met	Tyr Ser	Ile Asp	Ile Asn	Asp Val	Gln								
1880						1885						1890			
gac cag	tgc tcc	tgc tgc	tct ccg	aca cgg	acg gag	ccc atg	cag								
5724															
Asp Gln	Cys Ser	Cys Cys	Ser Pro	Thr Arg	Thr Glu	Pro Met	Gln								
1895						1900						1905			
gtg gcc	ctg cac	tgc acc	aat ggc	tct gtt	gtg tac	cat gag	gtt								
5769															
Val Ala	Leu His	Cys Thr	Asn Gly	Ser Val	Val Tyr	His Glu	Val								
1910						1915						1920			
ctc aat	gcc atg	gag tgc	aaa tgc	tcc ccc	agg aag	tgc agc	aag								
5814															
Leu Asn	Ala Met	Glu Cys	Lys Cys	Ser Pro	Arg Lys	Cys Ser	Lys								
1925						1930						1935			

tga
5817

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 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 175

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

Ala	Ala	Ser	Ala	Arg	Ala	Trp	Pro	Lys	Met	His	Thr	Val	Asn	Gly	Tyr	
				245					250					255		
Val	Asn	Arg	Ser	Leu	Pro	Gly	Leu	Ile	Gly	Cys	His	Arg	Lys	Ser	Val	
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Leu	Glu	Ile	Ser	Pro	Ile	Thr	Phe	Leu	Thr	Ala	Gln	Thr	Leu	Leu	Met	
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Pro	Ser	Phe	Ile	Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr	
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Asn	Gly	Pro	Gln	Arg	Ile	Gly	Arg	Lys	Tyr	Lys	Lys	Val	Arg	Phe	Met	
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Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
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His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
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Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
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Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
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Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
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Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
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Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
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Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
595 600 605

Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
610 615 620

Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
625 630 635 640

Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
645 650 655

Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
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Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
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Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
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Gly 705	Leu	Trp	Ile	Leu	Gly 710	Cys	His	Asn	Ser	Asp 715	Phe	Arg	Asn	Arg	Gly 720
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Tyr	Tyr	Glu	Asp 740	Ser	Tyr	Glu	Asp	Ile 745	Ser	Ala	Tyr	Leu	Leu 750	Ser	Lys
Asn	Asn	Ala 755	Ile	Glu	Pro	Arg	Ser	Phe	Ser	Gln	Asn	Ser	Arg	His	Pro
Ser	Thr 770	Arg	Gln	Lys	Gln	Phe	Asn	Ala	Thr	Thr	Ile 780	Pro	Glu	Asn	Thr
Thr 785	Leu	Gln	Ser	Asp	Gln 790	Glu	Glu	Ile	Asp	Tyr 795	Asp	Asp	Thr	Ile	Ser 800
Val	Glu	Met	Lys	Lys 805	Glu	Asp	Phe	Asp	Ile 810	Tyr	Asp	Glu	Asp	Glu	Asn 815
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Leu	Arg 850	Asn	Arg	Ala	Gln	Ser 855	Gly	Ser	Val	Pro	Gln 860	Phe	Lys	Lys	Val
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Glu	Val	Glu	Asp 900	Asn	Ile	Met	Val	Thr 905	Phe	Arg	Asn	Gln	Ala	Ser	Arg
Pro	Tyr	Ser	Phe	Tyr	Ser	Ser	Leu 920	Ile	Ser	Tyr	Glu	Glu 925	Asp	Gln	Arg
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Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
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Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr
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Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn
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Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp
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Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn
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Ile His Ser Ile His Phe Ser Gly His Val Phe Thr Val Arg Lys
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Lys Glu Glu Tyr Lys Met Ala Leu Tyr Asn Leu Tyr Pro Gly Val
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Phe Glu Thr Val Glu Met Leu Pro Ser Lys Ala Gly Ile Trp Arg
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Val Glu Cys Leu Ile Gly Glu His Leu His Ala Gly Met Ser Thr
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Leu Phe Leu Val Tyr Ser Asn Lys Cys Gln Thr Pro Leu Gly Met
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Gly	Ala	Arg	Gln	Lys	Phe	Ser	Ser	Leu	Tyr	Ile	Ser	Gln	Phe	Ile
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Ile	Met	Tyr	Ser	Leu	Asp	Gly	Lys	Lys	Trp	Gln	Thr	Tyr	Arg	Gly
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Tyr	Ile	Arg	Leu	His	Pro	Thr	His	Tyr	Ser	Ile	Arg	Ser	Thr	Leu
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Arg	Met	Glu	Leu	Met	Gly	Cys	Asp	Leu	Asn	Ser	Cys	Ser	Met	Pro
1295						1300					1305			
Leu	Gly	Met	Glu	Ser	Lys	Ala	Ile	Ser	Asp	Ala	Gln	Ile	Thr	Ala
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Ser	Ser	Tyr	Phe	Thr	Asn	Met	Phe	Ala	Thr	Trp	Ser	Pro	Ser	Lys
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Ala	Arg	Leu	His	Leu	Gln	Gly	Arg	Ser	Asn	Ala	Trp	Arg	Pro	Gln
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Thr	Ser	Met	Tyr	Val	Lys	Glu	Phe	Leu	Ile	Ser	Ser	Ser	Gln	Asp
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Ser Gly 1640	Gly Ser Gly Gly	Ser Gly Gly Ser Gly Gly 1645	Ser Gly Gly 1650
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Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
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Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Ser Gly Ser Gln
 1835 1840 1845

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 1850 1855 1860

Cys Lys Ser Glu Val Glu Val Asp Ile His Tyr Cys Gln Gly Lys
 1865 1870 1875

Cys Ala Ser Lys Ala Met Tyr Ser Ile Asp Ile Asn Asp Val Gln
 1880 1885 1890

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

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 336
 Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
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 His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
 115 120 125

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 432
 Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
 130 135 140

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 Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
 145 150 155 160

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 Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
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 Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile
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 624
 Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr
 195 200 205

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 672
 Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly

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720		
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768		
Ala Ala Ser Ala Arg	Ala Trp Pro Lys Met	His Thr Val Asn Gly Tyr
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	260	265 270
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864		
Tyr Trp His Val Ile	Gly Met Gly Thr Thr	Pro Glu Val His Ser Ile
	275	280 285
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912		
Phe Leu Glu Gly His	Thr Phe Leu Val Arg	Asn His Arg Gln Ala Ser
	290	295 300
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1008		
Asp Leu Gly Gln Phe	Leu Leu Phe Cys His	Ile Ser Ser His Gln His
	325	330 335
gat ggc atg gaa gct	tat gtc aaa gta gac	agc tgt cca gag gaa ccc
1056		
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1104		
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385	390	395 400

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 1344
 Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
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 1392
 Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
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 1440
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 485 490 495

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 His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
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 Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
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 1632
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2016															
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2112															
Leu	Phe	Pro	Phe	Ser	Gly	Glu	Thr	Val	Phe	Met	Ser	Met	Glu	Asn	Pro
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2256															
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 805 810 815

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 Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr Phe Ile Ala
 820 825 830

gca gtg gag agg ctc tgg gat tat ggg atg agt agc tcc cca cat gtt
 2544
 Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser Ser Pro His Val
 835 840 845

cta aga aac agg gct cag agt ggc agt gtc cct cag ttc aag aaa gtt
 2592
 Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro Gln Phe Lys Lys Val
 850 855 860

gtt ttc cag gaa ttt act gat ggc tcc ttt act cag ccc tta tac cgt
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 Val Phe Gln Glu Phe Thr Asp Gly Ser Phe Thr Gln Pro Leu Tyr Arg
 865 870 875 880

gga gaa cta aat gaa cat ttg gga ctc ctg ggg cca tat ata aga gca
 2688
 Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
 885 890 895

gaa gtt gaa gat aat atc atg gta act ttc aga aat cag gcc tct cgt
 2736
 Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
 900 905 910

ccc tat tcc ttc tat tct agc ctt att tct tat gag gaa gat cag agg
 2784
 Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
 915 920 925

caa gga gca gaa cct aga aaa aac ttt gtc aag cct aat gaa acc aaa
 2832
 Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
 930 935 940

act tac ttt tgg aaa gtg caa cat cat atg gca ccc act aaa gat gag
 2880
 Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu

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

gtg gaa tgc ctt att ggc gag cat cta cat gct ggg atg agc aca
 3429
 Val Glu Cys Leu Ile Gly Glu His Leu His Ala Gly Met Ser Thr
 1130 1135 1140

ctt ttt ctg gtg tac agc aat aag tgt cag act ccc ctg gga atg
 3474
 Leu Phe Leu Val Tyr Ser Asn Lys Cys Gln Thr Pro Leu Gly Met
 1145 1150 1155

gct tct gga cac att aga gat ttt cag att aca gct tca gga caa
 3519
 Ala Ser Gly His Ile Arg Asp Phe Gln Ile Thr Ala Ser Gly Gln
 1160 1165 1170

tat gga cag tgg gcc cca aag ctg gcc aga ctt cat tat tcc gga
 3564
 Tyr Gly Gln Trp Ala Pro Lys Leu Ala Arg Leu His Tyr Ser Gly
 1175 1180 1185

tca atc aat gcc tgg agc acc aag gag ccc ttt tct tgg atc aag
 3609
 Ser Ile Asn Ala Trp Ser Thr Lys Glu Pro Phe Ser Trp Ile Lys
 1190 1195 1200

gtg gat ctg ttg gca cca atg att att cac ggc atc aag acc cag
 3654
 Val Asp Leu Leu Ala Pro Met Ile Ile His Gly Ile Lys Thr Gln
 1205 1210 1215

ggt gcc cgt cag aag ttc tcc agc ctc tac atc tct cag ttt atc
 3699
 Gly Ala Arg Gln Lys Phe Ser Ser Leu Tyr Ile Ser Gln Phe Ile
 1220 1225 1230

atc atg tat agt ctt gat ggg aag aag tgg cag act tat cga gga
 3744
 Ile Met Tyr Ser Leu Asp Gly Lys Lys Trp Gln Thr Tyr Arg Gly
 1235 1240 1245

aat tcc act gga acc tta atg gtc ttc ttt ggc aat gtg gat tca
 3789
 Asn Ser Thr Gly Thr Leu Met Val Phe Phe Gly Asn Val Asp Ser
 1250 1255 1260

tct ggg ata aaa cac aat att ttt aac cct cca att att gct cga
 3834
 Ser Gly Ile Lys His Asn Ile Phe Asn Pro Pro Ile Ile Ala Arg
 1265 1270 1275

tac atc cgt ttg cac cca act cat tat agc att cgc agc act ctt
 3879
 Tyr Ile Arg Leu His Pro Thr His Tyr Ser Ile Arg Ser Thr Leu
 1280 1285 1290

cgc atg gag ttg atg ggc tgt gat tta aat agt tgc agc atg cca
 3924
 Arg Met Glu Leu Met Gly Cys Asp Leu Asn Ser Cys Ser Met Pro

1295	1300	1305
ttg gga atg gag agt aaa gca	ata tca gat gca cag	att act gct
3969		
Leu Gly Met Glu Ser Lys Ala	Ile Ser Asp Ala Gln	Ile Thr Ala
1310	1315	1320
tca tcc tac ttt acc aat atg	ttt gcc acc tgg tct	cct tca aaa
4014		
Ser Ser Tyr Phe Thr Asn Met	Phe Ala Thr Trp Ser	Pro Ser Lys
1325	1330	1335
gct cga ctt cac ctc caa ggg	agg agt aat gcc tgg	aga cct cag
4059		
Ala Arg Leu His Leu Gln Gly	Arg Ser Asn Ala Trp	Arg Pro Gln
1340	1345	1350
gtg aat aat cca aaa gag tgg	ctg caa gtg gac ttc	cag aag aca
4104		
Val Asn Asn Pro Lys Glu Trp	Leu Gln Val Asp Phe	Gln Lys Thr
1355	1360	1365
atg aaa gtc aca gga gta act	act cag gga gta aaa	tct ctg ctt
4149		
Met Lys Val Thr Gly Val Thr	Thr Gln Gly Val Lys	Ser Leu Leu
1370	1375	1380
acc agc atg tat gtg aag gag	ttc ctc atc tcc agc	agt caa gat
4194		
Thr Ser Met Tyr Val Lys Glu	Phe Leu Ile Ser Ser	Ser Gln Asp
1385	1390	1395
ggc cat cag tgg act ctc ttt	ttt cag aat ggc aaa	gta aag gtt
4239		
Gly His Gln Trp Thr Leu Phe	Phe Gln Asn Gly Lys	Val Lys Val
1400	1405	1410
ttt cag gga aat caa gac tcc	ttc aca cct gtg gtg	aac tct cta
4284		
Phe Gln Gly Asn Gln Asp Ser	Phe Thr Pro Val Val	Asn Ser Leu
1415	1420	1425
gac cca ccg tta ctg act cgc	tac ctt cga att cac	ccc cag agt
4329		
Asp Pro Pro Leu Leu Thr Arg	Tyr Leu Arg Ile His	Pro Gln Ser
1430	1435	1440
tgg gtg cac cag att gcc ctg	agg atg gag gtt ctg	ggc tgc gag
4374		
Trp Val His Gln Ile Ala Leu	Arg Met Glu Val Leu	Gly Cys Glu
1445	1450	1455
gca cag gac ctc tac acc ggt	gat gac aac tct cct	tcc ttt atc
4419		
Ala Gln Asp Leu Tyr Thr Gly	Asp Asp Asn Ser Pro	Ser Phe Ile
1460	1465	1470

caa att	cgc tca gtt gcc aag	aag cat cct aaa act	tgg cct cga
4464			
Gln Ile	Arg Ser Val Ala Lys	Lys His Pro Lys Thr	Trp Pro Arg
1475	1480	1485	
ggg ggt	ggg agt gga gga tca	ggt ggc agt ggg ggg	tca ggc ggc
4509			
Gly Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1490	1495	1500	
tct ggt	ggc tct ggc ggc agt	ggt ggc tca ggc gga	tca gga ggt
4554			
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1505	1510	1515	
tct ggc	gga tca ggt gga tca	gga ggg tcc gga ggt	agc gga gga
4599			
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1520	1525	1530	
tcc ggc	ggg agc ggc ggt tca	ggc gga agc ggt gga	tct gga ggt
4644			
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1535	1540	1545	
tca ggt	ggc tct gga gga tca	ggc ggt tcc gga ggc	tca ggc ggt
4689			
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1550	1555	1560	
agt ggt	ggc agt gga gga agt	ggc ggg tct ggc ggc	tct gga ggc
4734			
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1565	1570	1575	
agc ggt	gga agc ggt ggg tct	ggt ggc agc gga ggg	agt ggc ggc
4779			
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1580	1585	1590	
agc ggc	gga agt ggc ggt tcc	ggc ggg agt ggc ggt	agt ggt ggg
4824			
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1595	1600	1605	
agc ggt	ggt tca gga ggc tca	ggt ggt agt ggt ggt	tcc ggt ggg
4869			
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1610	1615	1620	
tcc ggg	ggg agc gga gga agt	gga ggc tcc ggc ggt	tcc gga ggt
4914			
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly
1625	1630	1635	
agt ggc	gga tct ggc gga agt	ggt gga agt gga ggg	agc gga gga
4959			
Ser Gly	Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly	Ser Gly Gly

1640	1645	1650
agt gga ggc tcc ggc ggc tca	gga ggc tca ggc ggc tcc gga ggt	
5004		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly	
1655	1660	1665
tct ggc ggg agc ggt gga agc	gga ggt tcc gga ggc tct gga ggc	
5049		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly	
1670	1675	1680
tca gga ggc agt ggc ggc tct	ggc ggc agc gga gga tca ggt ggc	
5094		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly	
1685	1690	1695
agt ggg ggg tca ggc ggc tct	ggt ggc tct ggc ggc agt ggt ggc	
5139		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly	
1700	1705	1710
tca ggc gga tca gga ggt tct	ggc gga tca ggt gga tca gga ggc	
5184		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly	
1715	1720	1725
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5229		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly	
1730	1735	1740
agc ggt gga tct gga ggt tca	ggt ggc tct gga gga tca ggc ggt	
5274		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly	
1745	1750	1755
tcc gga ggc tca ggc ggt agt	ggt ggc agt gga gga agt ggc ggc	
5319		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly	
1760	1765	1770
tct ggc ggc tct gga ggc agc	ggt gga agc ggt ggc tct ggt ggc	
5364		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly	
1775	1780	1785
agc gga ggc agt ggc ggc agc	ggc gga agt ggc ggt tcc ggc ggc	
5409		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly	
1790	1795	1800
agt ggc ggt agt ggt ggc agc	ggt ggt tca gga ggc tca ggt ggt	
5454		
Ser Gly Gly Ser Gly Gly Ser	Gly Gly Ser Gly Gly Ser Gly Gly	
1805	1810	1815

agt ggt ggt tcc ggt ggg tcc ggg ggg agc gga gga agt gga ggc
 5499
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1820 1825 1830

tcc ggc ggt tcc gga ggt agt ggc gga tct ggc gga agt ggt gga
 5544
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1835 1840 1845

agt gga ggg agc gga gga agt gga ggc tcc ggc ggc tca gga ggc
 5589
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1850 1855 1860

tca ggc ggc tcc gga ggt tct ggc ggg agc ggt gga agc gga ggt
 5634
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1865 1870 1875

tcc gga ggc tct gga ggc tca gga ggc agt ggc ggg tct ggc ggc
 5679
 Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly
 1880 1885 1890

agc ggc tcc ggg tcc caa tgc aac gac atc act gcc agg ctg cag
 5724
 Ser Gly Ser Gly Ser Gln Cys Asn Asp Ile Thr Ala Arg Leu Gln
 1895 1900 1905

tat gtc aag gtg gga agc tgt aag tct gaa gta gag gtg gat atc
 5769
 Tyr Val Lys Val Gly Ser Cys Lys Ser Glu Val Glu Val Asp Ile
 1910 1915 1920

cac tac tgc cag ggc aaa tgt gcc agc aaa gcc atg tac tcc att
 5814
 His Tyr Cys Gln Gly Lys Cys Ala Ser Lys Ala Met Tyr Ser Ile
 1925 1930 1935

gac atc aac gat gtg cag gac cag tgc tcc tgc tgc tct ccg aca
 5859
 Asp Ile Asn Asp Val Gln Asp Gln Cys Ser Cys Cys Ser Pro Thr
 1940 1945 1950

cgg acg gag ccc atg cag gtg gcc ctg cac tgc acc aat ggc tct
 5904
 Arg Thr Glu Pro Met Gln Val Ala Leu His Cys Thr Asn Gly Ser
 1955 1960 1965

gtt gtg tac cat gag gtt ctc aat gcc atg gag tgc aaa tgc tcc
 5949
 Val Val Tyr His Glu Val Leu Asn Ala Met Glu Cys Lys Cys Ser
 1970 1975 1980

ccc agg aag tgc agc aag tga
 5970
 Pro Arg Lys Cys Ser Lys

1985

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<213> Artificial Sequence

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<223> Synthetic Construct

<400> 177

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Cys Phe Ser Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser
20 25 30

Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg
35 40 45

Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val
50 55 60

Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile
65 70 75 80

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

Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser
100 105 110

His Pro Val Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser
115 120 125

Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp
130 135 140

Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu
145 150 155 160

Lys Glu Asn Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser
165 170 175

Tyr Leu Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile

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

Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn
420 425 430

Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met
435 440 445

Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu
450 455 460

Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu
465 470 475 480

Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro
485 490 495

His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys
500 505 510

Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe
515 520 525

Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
530 535 540

Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
545 550 555 560

Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
565 570 575

Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
580 585 590

Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
595 600 605

Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
610 615 620

Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
625 630 635 640

Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp

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Tyr	Ile	Leu	Ser	Ile	Gly	Ala	Gln	Thr	Asp	Phe	Leu	Ser	Val	Phe	Phe		
			660					665					670				
Ser	Gly	Tyr	Thr	Phe	Lys	His	Lys	Met	Val	Tyr	Glu	Asp	Thr	Leu	Thr		
		675					680					685					
Leu	Phe	Pro	Phe	Ser	Gly	Glu	Thr	Val	Phe	Met	Ser	Met	Glu	Asn	Pro		
	690					695					700						
Gly	Leu	Trp	Ile	Leu	Gly	Cys	His	Asn	Ser	Asp	Phe	Arg	Asn	Arg	Gly		
705					710					715					720		
Met	Thr	Ala	Leu	Leu	Lys	Val	Ser	Ser	Cys	Asp	Lys	Asn	Thr	Gly	Asp		
				725					730					735			
Tyr	Tyr	Glu	Asp	Ser	Tyr	Glu	Asp	Ile	Ser	Ala	Tyr	Leu	Leu	Ser	Lys		
			740					745					750				
Asn	Asn	Ala	Ile	Glu	Pro	Arg	Ser	Phe	Ser	Gln	Asn	Ser	Arg	His	Pro		
		755					760					765					
Ser	Thr	Arg	Gln	Lys	Gln	Phe	Asn	Ala	Thr	Thr	Ile	Pro	Glu	Asn	Thr		
	770					775					780						
Thr	Leu	Gln	Ser	Asp	Gln	Glu	Glu	Ile	Asp	Tyr	Asp	Asp	Thr	Ile	Ser		
785					790					795					800		
Val	Glu	Met	Lys	Lys	Glu	Asp	Phe	Asp	Ile	Tyr	Asp	Glu	Asp	Glu	Asn		
				805					810					815			
Gln	Ser	Pro	Arg	Ser	Phe	Gln	Lys	Lys	Thr	Arg	His	Tyr	Phe	Ile	Ala		
			820					825					830				
Ala	Val	Glu	Arg	Leu	Trp	Asp	Tyr	Gly	Met	Ser	Ser	Ser	Pro	His	Val		
		835					840					845					
Leu	Arg	Asn	Arg	Ala	Gln	Ser	Gly	Ser	Val	Pro	Gln	Phe	Lys	Lys	Val		
	850					855					860						
Val	Phe	Gln	Glu	Phe	Thr	Asp	Gly	Ser	Phe	Thr	Gln	Pro	Leu	Tyr	Arg		
865					870					875					880		

Gly Glu Leu Asn Glu His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala
885 890 895

Glu Val Glu Asp Asn Ile Met Val Thr Phe Arg Asn Gln Ala Ser Arg
900 905 910

Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Glu Glu Asp Gln Arg
915 920 925

Gln Gly Ala Glu Pro Arg Lys Asn Phe Val Lys Pro Asn Glu Thr Lys
930 935 940

Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr Lys Asp Glu
945 950 955 960

Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys
965 970 975

Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn
980 985 990

Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala
995 1000 1005

Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr
1010 1015 1020

Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met
1025 1030 1035

Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn
1040 1045 1050

Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp
1055 1060 1065

Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn
1070 1075 1080

Ile His Ser Ile His Phe Ser Gly His Val Phe Thr Val Arg Lys
1085 1090 1095

Lys Glu Glu Tyr Lys Met Ala Leu Tyr Asn Leu Tyr Pro Gly Val

1100		1105		1110
Phe Glu Thr Val Glu Met	Leu Pro Ser Lys Ala Gly	Ile Trp Arg		
1115	1120	1125		
Val Glu Cys Leu Ile Gly	Glu His Leu His Ala Gly	Met Ser Thr		
1130	1135	1140		
Leu Phe Leu Val Tyr Ser	Asn Lys Cys Gln Thr Pro	Leu Gly Met		
1145	1150	1155		
Ala Ser Gly His Ile Arg	Asp Phe Gln Ile Thr Ala	Ser Gly Gln		
1160	1165	1170		
Tyr Gly Gln Trp Ala Pro	Lys Leu Ala Arg Leu His	Tyr Ser Gly		
1175	1180	1185		
Ser Ile Asn Ala Trp Ser	Thr Lys Glu Pro Phe Ser	Trp Ile Lys		
1190	1195	1200		
Val Asp Leu Leu Ala Pro	Met Ile Ile His Gly Ile	Lys Thr Gln		
1205	1210	1215		
Gly Ala Arg Gln Lys Phe	Ser Ser Leu Tyr Ile Ser	Gln Phe Ile		
1220	1225	1230		
Ile Met Tyr Ser Leu Asp	Gly Lys Lys Trp Gln Thr	Tyr Arg Gly		
1235	1240	1245		
Asn Ser Thr Gly Thr Leu	Met Val Phe Phe Gly Asn	Val Asp Ser		
1250	1255	1260		
Ser Gly Ile Lys His Asn	Ile Phe Asn Pro Pro Ile	Ile Ala Arg		
1265	1270	1275		
Tyr Ile Arg Leu His Pro	Thr His Tyr Ser Ile Arg	Ser Thr Leu		
1280	1285	1290		
Arg Met Glu Leu Met Gly	Cys Asp Leu Asn Ser Cys	Ser Met Pro		
1295	1300	1305		
Leu Gly Met Glu Ser Lys	Ala Ile Ser Asp Ala Gln	Ile Thr Ala		
1310	1315	1320		

Ser	Ser	Tyr	Phe	Thr	Asn	Met	Phe	Ala	Thr	Trp	Ser	Pro	Ser	Lys
	1325					1330					1335			
Ala	Arg	Leu	His	Leu	Gln	Gly	Arg	Ser	Asn	Ala	Trp	Arg	Pro	Gln
	1340					1345					1350			
Val	Asn	Asn	Pro	Lys	Glu	Trp	Leu	Gln	Val	Asp	Phe	Gln	Lys	Thr
	1355					1360					1365			
Met	Lys	Val	Thr	Gly	Val	Thr	Thr	Gln	Gly	Val	Lys	Ser	Leu	Leu
	1370					1375					1380			
Thr	Ser	Met	Tyr	Val	Lys	Glu	Phe	Leu	Ile	Ser	Ser	Ser	Gln	Asp
	1385					1390					1395			
Gly	His	Gln	Trp	Thr	Leu	Phe	Phe	Gln	Asn	Gly	Lys	Val	Lys	Val
	1400					1405					1410			
Phe	Gln	Gly	Asn	Gln	Asp	Ser	Phe	Thr	Pro	Val	Val	Asn	Ser	Leu
	1415					1420					1425			
Asp	Pro	Pro	Leu	Leu	Thr	Arg	Tyr	Leu	Arg	Ile	His	Pro	Gln	Ser
	1430					1435					1440			
Trp	Val	His	Gln	Ile	Ala	Leu	Arg	Met	Glu	Val	Leu	Gly	Cys	Glu
	1445					1450					1455			
Ala	Gln	Asp	Leu	Tyr	Thr	Gly	Asp	Asp	Asn	Ser	Pro	Ser	Phe	Ile
	1460					1465					1470			
Gln	Ile	Arg	Ser	Val	Ala	Lys	Lys	His	Pro	Lys	Thr	Trp	Pro	Arg
	1475					1480					1485			
Gly	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
	1490					1495					1500			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
	1505					1510					1515			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
	1520					1525					1530			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly

1535	1540	1545
Ser Gly Gly Ser Gly Gly 1550	Ser Gly Gly Ser Gly Gly 1555	Ser Gly Gly 1560
Ser Gly Gly Ser Gly Gly 1565	Ser Gly Gly Ser Gly Gly 1570	Ser Gly Gly 1575
Ser Gly Gly Ser Gly Gly 1580	Ser Gly Gly Ser Gly Gly 1585	Ser Gly Gly 1590
Ser Gly Gly Ser Gly Gly 1595	Ser Gly Gly Ser Gly Gly 1600	Ser Gly Gly 1605
Ser Gly Gly Ser Gly Gly 1610	Ser Gly Gly Ser Gly Gly 1615	Ser Gly Gly 1620
Ser Gly Gly Ser Gly Gly 1625	Ser Gly Gly Ser Gly Gly 1630	Ser Gly Gly 1635
Ser Gly Gly Ser Gly Gly 1640	Ser Gly Gly Ser Gly Gly 1645	Ser Gly Gly 1650
Ser Gly Gly Ser Gly Gly 1655	Ser Gly Gly Ser Gly Gly 1660	Ser Gly Gly 1665
Ser Gly Gly Ser Gly Gly 1670	Ser Gly Gly Ser Gly Gly 1675	Ser Gly Gly 1680
Ser Gly Gly Ser Gly Gly 1685	Ser Gly Gly Ser Gly Gly 1690	Ser Gly Gly 1695
Ser Gly Gly Ser Gly Gly 1700	Ser Gly Gly Ser Gly Gly 1705	Ser Gly Gly 1710
Ser Gly Gly Ser Gly Gly 1715	Ser Gly Gly Ser Gly Gly 1720	Ser Gly Gly 1725
Ser Gly Gly Ser Gly Gly 1730	Ser Gly Gly Ser Gly Gly 1735	Ser Gly Gly 1740
Ser Gly Gly Ser Gly Gly 1745	Ser Gly Gly Ser Gly Gly 1750	Ser Gly Gly 1755

Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
1760						1765					1770			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
1775						1780					1785			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
1790						1795					1800			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
1805						1810					1815			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
1820						1825					1830			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
1835						1840					1845			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
1850						1855					1860			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
1865						1870					1875			
Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly	Ser	Gly	Gly
1880						1885					1890			
Ser	Gly	Ser	Gly	Ser	Gln	Cys	Asn	Asp	Ile	Thr	Ala	Arg	Leu	Gln
1895						1900					1905			
Tyr	Val	Lys	Val	Gly	Ser	Cys	Lys	Ser	Glu	Val	Glu	Val	Asp	Ile
1910						1915					1920			
His	Tyr	Cys	Gln	Gly	Lys	Cys	Ala	Ser	Lys	Ala	Met	Tyr	Ser	Ile
1925						1930					1935			
Asp	Ile	Asn	Asp	Val	Gln	Asp	Gln	Cys	Ser	Cys	Cys	Ser	Pro	Thr
1940						1945					1950			
Arg	Thr	Glu	Pro	Met	Gln	Val	Ala	Leu	His	Cys	Thr	Asn	Gly	Ser
1955						1960					1965			
Val	Val	Tyr	His	Glu	Val	Leu	Asn	Ala	Met	Glu	Cys	Lys	Cys	Ser

1970						1975						1980
Pro	Arg		Lys	Cys	Ser	Lys						
1985												