

SEQUENCE LISTING

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<120> Compositions and Methods for Gene Editing

<130> 048536-620001W0

<140> PCT/US2019/028377

<141> 2019-04-19

<150> US 62/660,023

<151> 2018-04-19

<160> 96

<170> PatentIn version 3.5

<210> 1

<211> 2294

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

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			20					25					30		

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

Leu	Val	Ser	Leu	Gly	Tyr	Gln	Leu	Thr	Lys	Pro	Asp	Val	Ile	Leu	Arg
	50					55					60				

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

Leu Phe Glu Glu Asn Pro Ile Asn Ala Ser Gly Val Asp Ala Lys Ala
275 280 285

Ile Leu Ser Ala Arg Leu Ser Lys Ser Arg Arg Leu Glu Asn Leu Ile
290 295 300

Ala Gln Leu Pro Gly Glu Lys Lys Asn Gly Leu Phe Gly Asn Leu Ile
305 310 315 320

Ala Leu Ser Leu Gly Leu Thr Pro Asn Phe Lys Ser Asn Phe Asp Leu
325 330 335

Ala Glu Asp Ala Lys Leu Gln Leu Ser Lys Asp Thr Tyr Asp Asp Asp
340 345 350

Leu Asp Asn Leu Leu Ala Gln Ile Gly Asp Gln Tyr Ala Asp Leu Phe
355 360 365

Leu Ala Ala Lys Asn Leu Ser Asp Ala Ile Leu Leu Ser Asp Ile Leu
370 375 380

Arg Val Asn Thr Glu Ile Thr Lys Ala Pro Leu Ser Ala Ser Met Ile
385 390 395 400

Lys Arg Tyr Asp Glu His His Gln Asp Leu Thr Leu Leu Lys Ala Leu
405 410 415

Val Arg Gln Gln Leu Pro Glu Lys Tyr Lys Glu Ile Phe Phe Asp Gln
420 425 430

Ser Lys Asn Gly Tyr Ala Gly Tyr Ile Asp Gly Gly Ala Ser Gln Glu
435 440 445

Glu Phe Tyr Lys Phe Ile Lys Pro Ile Leu Glu Lys Met Asp Gly Thr
450 455 460

Glu Glu Leu Leu Val Lys Leu Asn Arg Glu Asp Leu Leu Arg Lys Gln
 465 470 475 480

Arg Thr Phe Asp Asn Gly Ser Ile Pro His Gln Ile His Leu Gly Glu
 485 490 495

Leu His Ala Ile Leu Arg Arg Gln Glu Asp Phe Tyr Pro Phe Leu Lys
 500 505 510

Asp Asn Arg Glu Lys Ile Glu Lys Ile Leu Thr Phe Arg Ile Pro Tyr
 515 520 525

Tyr Val Gly Pro Leu Ala Arg Gly Asn Ser Arg Phe Ala Trp Met Thr
 530 535 540

Arg Lys Ser Glu Glu Thr Ile Thr Pro Trp Asn Phe Glu Glu Val Val
 545 550 555 560

Asp Lys Gly Ala Ser Ala Gln Ser Phe Ile Glu Arg Met Thr Asn Phe
 565 570 575

Asp Lys Asn Leu Pro Asn Glu Lys Val Leu Pro Lys His Ser Leu Leu
 580 585 590

Tyr Glu Tyr Phe Thr Val Tyr Asn Glu Leu Thr Lys Val Lys Tyr Val
 595 600 605

Thr Glu Gly Met Arg Lys Pro Ala Phe Leu Ser Gly Glu Gln Lys Lys
 610 615 620

Ala Ile Val Asp Leu Leu Phe Lys Thr Asn Arg Lys Val Thr Val Lys
 625 630 635 640

Gln Leu Lys Glu Asp Tyr Phe Lys Lys Ile Glu Cys Phe Asp Ser Val
 645 650 655

Glu Ile Ser Gly Val Glu Asp Arg Phe Asn Ala Ser Leu Gly Thr Tyr
660 665 670

His Asp Leu Leu Lys Ile Ile Lys Asp Lys Asp Phe Leu Asp Asn Glu
675 680 685

Glu Asn Glu Asp Ile Leu Glu Asp Ile Val Leu Thr Leu Thr Leu Phe
690 695 700

Glu Asp Arg Glu Met Ile Glu Glu Arg Leu Lys Thr Tyr Ala His Leu
705 710 715 720

Phe Asp Asp Lys Val Met Lys Gln Leu Lys Arg Arg Arg Tyr Thr Gly
725 730 735

Trp Gly Arg Leu Ser Arg Lys Leu Ile Asn Gly Ile Arg Asp Lys Gln
740 745 750

Ser Gly Lys Thr Ile Leu Asp Phe Leu Lys Ser Asp Gly Phe Ala Asn
755 760 765

Arg Asn Phe Met Gln Leu Ile His Asp Asp Ser Leu Thr Phe Lys Glu
770 775 780

Asp Ile Gln Lys Ala Gln Val Ser Gly Gln Gly Asp Ser Leu His Glu
785 790 795 800

His Ile Ala Asn Leu Ala Gly Ser Pro Ala Ile Lys Lys Gly Ile Leu
805 810 815

Gln Thr Val Lys Val Val Asp Glu Leu Val Lys Val Met Gly Arg His
820 825 830

Lys Pro Glu Asn Ile Val Ile Glu Met Ala Arg Glu Asn Gln Thr Thr
835 840 845

Gln Lys Gly Gln Lys Asn Ser Arg Glu Arg Met Lys Arg Ile Glu Glu

850

855

860

Gly Ile Lys Glu Leu Gly Ser Gln Ile Leu Lys Glu His Pro Val Glu
 865 870 875 880

Asn Thr Gln Leu Gln Asn Glu Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn
 885 890 895

Gly Arg Asp Met Tyr Val Asp Gln Glu Leu Asp Ile Asn Arg Leu Ser
 900 905 910

Asp Tyr Asp Val Asp Ala Ile Val Pro Gln Ser Phe Leu Lys Asp Asp
 915 920 925

Ser Ile Asp Asn Lys Val Leu Thr Arg Ser Asp Lys Asn Arg Gly Lys
 930 935 940

Ser Asp Asn Val Pro Ser Glu Glu Val Val Lys Lys Met Lys Asn Tyr
 945 950 955 960

Trp Arg Gln Leu Leu Asn Ala Lys Leu Ile Thr Gln Arg Lys Phe Asp
 965 970 975

Asn Leu Thr Lys Ala Glu Arg Gly Gly Leu Ser Glu Leu Asp Lys Ala
 980 985 990

Gly Phe Ile Lys Arg Gln Leu Val Glu Thr Arg Gln Ile Thr Lys His
 995 1000 1005

Val Ala Gln Ile Leu Asp Ser Arg Met Asn Thr Lys Tyr Asp Glu
 1010 1015 1020

Asn Asp Lys Leu Ile Arg Glu Val Lys Val Ile Thr Leu Lys Ser
 1025 1030 1035

Lys Leu Val Ser Asp Phe Arg Lys Asp Phe Gln Phe Tyr Lys Val
 1040 1045 1050

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

Lys	Leu	Lys	Ser	Val	Lys	Glu	Leu	Leu	Gly	Ile	Thr	Ile	Met	Glu
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Arg	Ser	Ser	Phe	Glu	Lys	Asn	Pro	Ile	Asp	Phe	Leu	Glu	Ala	Lys
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Gly	Tyr	Lys	Glu	Val	Lys	Lys	Asp	Leu	Ile	Ile	Lys	Leu	Pro	Lys
1265						1270					1275			
Tyr	Ser	Leu	Phe	Glu	Leu	Glu	Asn	Gly	Arg	Lys	Arg	Met	Leu	Ala
1280						1285					1290			
Ser	Ala	Gly	Glu	Leu	Gln	Lys	Gly	Asn	Glu	Leu	Ala	Leu	Pro	Ser
1295						1300					1305			
Lys	Tyr	Val	Asn	Phe	Leu	Tyr	Leu	Ala	Ser	His	Tyr	Glu	Lys	Leu
1310						1315					1320			
Lys	Gly	Ser	Pro	Glu	Asp	Asn	Glu	Gln	Lys	Gln	Leu	Phe	Val	Glu
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Gln	His	Lys	His	Tyr	Leu	Asp	Glu	Ile	Ile	Glu	Gln	Ile	Ser	Glu
1340						1345					1350			
Phe	Ser	Lys	Arg	Val	Ile	Leu	Ala	Asp	Ala	Asn	Leu	Asp	Lys	Val
1355						1360					1365			
Leu	Ser	Ala	Tyr	Asn	Lys	His	Arg	Asp	Lys	Pro	Ile	Arg	Glu	Gln
1370						1375					1380			
Ala	Glu	Asn	Ile	Ile	His	Leu	Phe	Thr	Leu	Thr	Asn	Leu	Gly	Ala
1385						1390					1395			
Pro	Ala	Ala	Phe	Lys	Tyr	Phe	Asp	Thr	Thr	Ile	Asp	Arg	Lys	Arg
1400						1405					1410			

Tyr	Thr	Ser	Thr	Lys	Glu	Val	Leu	Asp	Ala	Thr	Leu	Ile	His	Gln
1415						1420					1425			
Ser	Ile	Thr	Gly	Leu	Tyr	Glu	Thr	Arg	Ile	Asp	Leu	Ser	Gln	Leu
1430						1435					1440			
Gly	Gly	Asp	Ser	Arg	Ala	Asp	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr
1445						1450					1455			
Ala	Ser	Gly	Ser	Pro	Lys	Lys	Lys	Arg	Lys	Val	Glu	Ala	Ser	Gly
1460						1465					1470			
Ser	Gly	Arg	Ala	Ser	Pro	Gly	Ile	Pro	Gly	Ser	Thr	Arg	Asn	His
1475						1480					1485			
Asp	Gln	Glu	Phe	Asp	Pro	Pro	Lys	Val	Tyr	Pro	Pro	Val	Pro	Ala
1490						1495					1500			
Glu	Lys	Arg	Lys	Pro	Ile	Arg	Val	Leu	Ser	Leu	Phe	Asp	Gly	Ile
1505						1510					1515			
Ala	Thr	Gly	Leu	Leu	Val	Leu	Lys	Asp	Leu	Gly	Ile	Gln	Val	Asp
1520						1525					1530			
Arg	Tyr	Ile	Ala	Ser	Glu	Val	Cys	Glu	Asp	Ser	Ile	Thr	Val	Gly
1535						1540					1545			
Met	Val	Arg	His	Gln	Gly	Lys	Ile	Met	Tyr	Val	Gly	Asp	Val	Arg
1550						1555					1560			
Ser	Val	Thr	Gln	Lys	His	Ile	Gln	Glu	Trp	Gly	Pro	Phe	Asp	Leu
1565						1570					1575			
Val	Ile	Gly	Gly	Ser	Pro	Cys	Asn	Asp	Leu	Ser	Ile	Val	Asn	Pro
1580						1585					1590			
Ala	Arg	Lys	Gly	Leu	Tyr	Glu	Gly	Thr	Gly	Arg	Leu	Phe	Phe	Glu

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Phe Tyr Arg Leu Leu His Asp Ala Arg Pro Lys Glu Gly Asp Asp	1610	1615	1620	
Arg Pro Phe Phe Trp Leu Phe Glu Asn Val Val Ala Met Gly Val	1625	1630	1635	
Ser Asp Lys Arg Asp Ile Ser Arg Phe Leu Glu Ser Asn Pro Val	1640	1645	1650	
Met Ile Asp Ala Lys Glu Val Ser Ala Ala His Arg Ala Arg Tyr	1655	1660	1665	
Phe Trp Gly Asn Leu Pro Gly Met Asn Arg Pro Leu Ala Ser Thr	1670	1675	1680	
Val Asn Asp Lys Leu Glu Leu Gln Glu Cys Leu Glu His Gly Arg	1685	1690	1695	
Ile Ala Lys Phe Ser Lys Val Arg Thr Ile Thr Thr Arg Ser Asn	1700	1705	1710	
Ser Ile Lys Gln Gly Lys Asp Gln His Phe Pro Val Phe Met Asn	1715	1720	1725	
Glu Lys Glu Asp Ile Leu Trp Cys Thr Glu Met Glu Arg Val Phe	1730	1735	1740	
Gly Phe Pro Val His Tyr Thr Asp Val Ser Asn Met Ser Arg Leu	1745	1750	1755	
Ala Arg Gln Arg Leu Leu Gly Arg Ser Trp Ser Val Pro Val Ile	1760	1765	1770	
Arg His Leu Phe Ala Pro Leu Lys Glu Tyr Phe Ala Cys Val Ser	1775	1780	1785	

Ser	Gly	Asn	Ser	Asn	Ala	Asn	Ser	Arg	Gly	Pro	Ser	Phe	Ser	Ser
1790						1795					1800			
Gly	Leu	Val	Pro	Leu	Ser	Leu	Arg	Gly	Ser	His	Met	Gly	Pro	Met
1805						1810					1815			
Glu	Ile	Tyr	Lys	Thr	Val	Ser	Ala	Trp	Lys	Arg	Gln	Pro	Val	Arg
1820						1825					1830			
Val	Leu	Ser	Leu	Phe	Arg	Asn	Ile	Asp	Lys	Val	Leu	Lys	Ser	Leu
1835						1840					1845			
Gly	Phe	Leu	Glu	Ser	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Thr	Leu	Lys
1850						1855					1860			
Tyr	Val	Glu	Asp	Val	Thr	Asn	Val	Val	Arg	Arg	Asp	Val	Glu	Lys
1865						1870					1875			
Trp	Gly	Pro	Phe	Asp	Leu	Val	Tyr	Gly	Ser	Thr	Gln	Pro	Leu	Gly
1880						1885					1890			
Ser	Ser	Cys	Asp	Arg	Cys	Pro	Gly	Trp	Tyr	Met	Phe	Gln	Phe	His
1895						1900					1905			
Arg	Ile	Leu	Gln	Tyr	Ala	Leu	Pro	Arg	Gln	Glu	Ser	Gln	Arg	Pro
1910						1915					1920			
Phe	Phe	Trp	Ile	Phe	Met	Asp	Asn	Leu	Leu	Leu	Thr	Glu	Asp	Asp
1925						1930					1935			
Gln	Glu	Thr	Thr	Thr	Arg	Phe	Leu	Gln	Thr	Glu	Ala	Val	Thr	Leu
1940						1945					1950			
Gln	Asp	Val	Arg	Gly	Arg	Asp	Tyr	Gln	Asn	Ala	Met	Arg	Val	Trp
1955						1960					1965			

Ser 1970	Asn	Ile	Pro	Gly	Leu	Lys 1975	Ser	Lys	His	Ala	Pro 1980	Leu	Thr	Pro
Lys 1985	Glu	Glu	Glu	Tyr	Leu	Gln 1990	Ala	Gln	Val	Arg	Ser 1995	Arg	Ser	Lys
Leu 2000	Asp	Ala	Pro	Lys	Val	Asp 2005	Leu	Leu	Val	Lys	Asn 2010	Cys	Leu	Leu
Pro 2015	Leu	Arg	Glu	Tyr	Phe	Lys 2020	Tyr	Phe	Ser	Gln	Asn 2025	Ser	Leu	Pro
Leu 2030	Ser	Arg	Ala	Asp	Pro	Lys 2035	Lys	Lys	Arg	Lys	Val 2040	Gly	Ser	Gly
Ala 2045	Thr	Asn	Phe	Ser	Leu	Leu 2050	Lys	Gln	Ala	Gly	Asp 2055	Val	Glu	Glu
Asn 2060	Pro	Gly	Pro	Ser	Glu	Leu 2065	Ile	Lys	Glu	Asn	Met 2070	His	Met	Lys
Leu 2075	Tyr	Met	Glu	Gly	Thr	Val 2080	Asp	Asn	His	His	Phe 2085	Lys	Cys	Thr
Ser 2090	Glu	Gly	Glu	Gly	Lys	Pro 2095	Tyr	Glu	Gly	Thr	Gln 2100	Thr	Met	Arg
Ile 2105	Lys	Val	Val	Glu	Gly	Gly 2110	Pro	Leu	Pro	Phe	Ala 2115	Phe	Asp	Ile
Leu 2120	Ala	Thr	Ser	Phe	Leu	Tyr 2125	Gly	Ser	Lys	Thr	Phe 2130	Ile	Asn	His
Thr 2135	Gln	Gly	Ile	Pro	Asp	Phe 2140	Phe	Lys	Gln	Ser	Phe 2145	Pro	Glu	Gly

Phe Thr Trp Glu Arg Val Thr Thr Tyr Glu Asp Gly Gly Val Leu
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Thr Ala Thr Gln Asp Thr Ser Leu Gln Asp Gly Cys Leu Ile Tyr
 2165 2170 2175

Asn Val Lys Ile Arg Gly Val Asn Phe Thr Ser Asn Gly Pro Val
 2180 2185 2190

Met Gln Lys Lys Thr Leu Gly Trp Glu Ala Phe Thr Glu Thr Leu
 2195 2200 2205

Tyr Pro Ala Asp Gly Gly Leu Glu Gly Arg Asn Asp Met Ala Leu
 2210 2215 2220

Lys Leu Val Gly Gly Ser His Leu Ile Ala Asn Ile Lys Thr Thr
 2225 2230 2235

Tyr Arg Ser Lys Lys Pro Ala Lys Asn Leu Lys Met Pro Gly Val
 2240 2245 2250

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

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

Leu Glu Lys Gly Glu Glu Pro Gly Gly Ser Gly Gly Gly Ser Met Asp
65 70 75 80

Lys Lys Tyr Ser Ile Gly Leu Ala Ile Gly Thr Asn Ser Val Gly Trp
85 90 95

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

Leu Gly Asn Thr Asp Arg His Ser Ile Lys Lys Asn Leu Ile Gly Ala
115 120 125

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

Thr Ala Arg Arg Arg Tyr Thr Arg Arg Lys Asn Arg Ile Cys Tyr Leu
145 150 155 160

Gln Glu Ile Phe Ser Asn Glu Met Ala Lys Val Asp Asp Ser Phe Phe
165 170 175

His Arg Leu Glu Glu Ser Phe Leu Val Glu Glu Asp Lys Lys His Glu
180 185 190

Arg His Pro Ile Phe Gly Asn Ile Val Asp Glu Val Ala Tyr His Glu
195 200 205

Lys Tyr Pro Thr Ile Tyr His Leu Arg Lys Lys Leu Val Asp Ser Thr
210 215 220

Asp Lys Ala Asp Leu Arg Leu Ile Tyr Leu Ala Leu Ala His Met Ile
225 230 235 240

Lys Phe Arg Gly His Phe Leu Ile Glu Gly Asp Leu Asn Pro Asp Asn
245 250 255

Ser Asp Val Asp Lys Leu Phe Ile Gln Leu Val Gln Thr Tyr Asn Gln
260 265 270

Leu Phe Glu Glu Asn Pro Ile Asn Ala Ser Gly Val Asp Ala Lys Ala
275 280 285

Ile Leu Ser Ala Arg Leu Ser Lys Ser Arg Arg Leu Glu Asn Leu Ile
290 295 300

Ala Gln Leu Pro Gly Glu Lys Lys Asn Gly Leu Phe Gly Asn Leu Ile
305 310 315 320

Ala Leu Ser Leu Gly Leu Thr Pro Asn Phe Lys Ser Asn Phe Asp Leu
325 330 335

Ala Glu Asp Ala Lys Leu Gln Leu Ser Lys Asp Thr Tyr Asp Asp Asp
340 345 350

Leu Asp Asn Leu Leu Ala Gln Ile Gly Asp Gln Tyr Ala Asp Leu Phe
355 360 365

Leu Ala Ala Lys Asn Leu Ser Asp Ala Ile Leu Leu Ser Asp Ile Leu
370 375 380

Arg Val Asn Thr Glu Ile Thr Lys Ala Pro Leu Ser Ala Ser Met Ile

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

Tyr Glu Tyr Phe Thr Val Tyr Asn Glu Leu Thr Lys Val Lys Tyr Val
595 600 605

Thr Glu Gly Met Arg Lys Pro Ala Phe Leu Ser Gly Glu Gln Lys Lys
610 615 620

Ala Ile Val Asp Leu Leu Phe Lys Thr Asn Arg Lys Val Thr Val Lys
625 630 635 640

Gln Leu Lys Glu Asp Tyr Phe Lys Lys Ile Glu Cys Phe Asp Ser Val
645 650 655

Glu Ile Ser Gly Val Glu Asp Arg Phe Asn Ala Ser Leu Gly Thr Tyr
660 665 670

His Asp Leu Leu Lys Ile Ile Lys Asp Lys Asp Phe Leu Asp Asn Glu
675 680 685

Glu Asn Glu Asp Ile Leu Glu Asp Ile Val Leu Thr Leu Thr Leu Phe
690 695 700

Glu Asp Arg Glu Met Ile Glu Glu Arg Leu Lys Thr Tyr Ala His Leu
705 710 715 720

Phe Asp Asp Lys Val Met Lys Gln Leu Lys Arg Arg Arg Tyr Thr Gly
725 730 735

Trp Gly Arg Leu Ser Arg Lys Leu Ile Asn Gly Ile Arg Asp Lys Gln
740 745 750

Ser Gly Lys Thr Ile Leu Asp Phe Leu Lys Ser Asp Gly Phe Ala Asn
755 760 765

Arg Asn Phe Met Gln Leu Ile His Asp Asp Ser Leu Thr Phe Lys Glu
770 775 780

Asp Ile Gln Lys Ala Gln Val Ser Gly Gln Gly Asp Ser Leu His Glu
785 790 795 800

His Ile Ala Asn Leu Ala Gly Ser Pro Ala Ile Lys Lys Gly Ile Leu
805 810 815

Gln Thr Val Lys Val Val Asp Glu Leu Val Lys Val Met Gly Arg His
820 825 830

Lys Pro Glu Asn Ile Val Ile Glu Met Ala Arg Glu Asn Gln Thr Thr
835 840 845

Gln Lys Gly Gln Lys Asn Ser Arg Glu Arg Met Lys Arg Ile Glu Glu
850 855 860

Gly Ile Lys Glu Leu Gly Ser Gln Ile Leu Lys Glu His Pro Val Glu
865 870 875 880

Asn Thr Gln Leu Gln Asn Glu Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn
885 890 895

Gly Arg Asp Met Tyr Val Asp Gln Glu Leu Asp Ile Asn Arg Leu Ser
900 905 910

Asp Tyr Asp Val Asp Ala Ile Val Pro Gln Ser Phe Leu Lys Asp Asp
915 920 925

Ser Ile Asp Asn Lys Val Leu Thr Arg Ser Asp Lys Asn Arg Gly Lys
930 935 940

Ser Asp Asn Val Pro Ser Glu Glu Val Val Lys Lys Met Lys Asn Tyr
945 950 955 960

Trp Arg Gln Leu Leu Asn Ala Lys Leu Ile Thr Gln Arg Lys Phe Asp
965 970 975

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

Val Ala Gln Ile Leu Asp Ser Arg Met Asn Thr Lys Tyr Asp Glu
1010 1015 1020

Asn Asp Lys Leu Ile Arg Glu Val Lys Val Ile Thr Leu Lys Ser
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Lys Leu Val Ser Asp Phe Arg Lys Asp Phe Gln Phe Tyr Lys Val
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Arg Glu Ile Asn Asn Tyr His His Ala His Asp Ala Tyr Leu Asn
1055 1060 1065

Ala Val Val Gly Thr Ala Leu Ile Lys Lys Tyr Pro Lys Leu Glu
1070 1075 1080

Ser Glu Phe Val Tyr Gly Asp Tyr Lys Val Tyr Asp Val Arg Lys
1085 1090 1095

Met Ile Ala Lys Ser Glu Gln Glu Ile Gly Lys Ala Thr Ala Lys
1100 1105 1110

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

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Lys Lys Thr Glu Val Gln Thr Gly Gly Phe Ser Lys Glu Ser Ile				
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Leu Pro Lys Arg Asn Ser Asp Lys Leu Ile Ala Arg Lys Lys Asp				
1190		1195		1200
Trp Asp Pro Lys Lys Tyr Gly Gly Phe Asp Ser Pro Thr Val Ala				
1205		1210		1215
Tyr Ser Val Leu Val Val Ala Lys Val Glu Lys Gly Lys Ser Lys				
1220		1225		1230
Lys Leu Lys Ser Val Lys Glu Leu Leu Gly Ile Thr Ile Met Glu				
1235		1240		1245
Arg Ser Ser Phe Glu Lys Asn Pro Ile Asp Phe Leu Glu Ala Lys				
1250		1255		1260
Gly Tyr Lys Glu Val Lys Lys Asp Leu Ile Ile Lys Leu Pro Lys				
1265		1270		1275
Tyr Ser Leu Phe Glu Leu Glu Asn Gly Arg Lys Arg Met Leu Ala				
1280		1285		1290
Ser Ala Gly Glu Leu Gln Lys Gly Asn Glu Leu Ala Leu Pro Ser				
1295		1300		1305
Lys Tyr Val Asn Phe Leu Tyr Leu Ala Ser His Tyr Glu Lys Leu				
1310		1315		1320
Lys Gly Ser Pro Glu Asp Asn Glu Gln Lys Gln Leu Phe Val Glu				
1325		1330		1335
Gln His Lys His Tyr Leu Asp Glu Ile Ile Glu Gln Ile Ser Glu				
1340		1345		1350

Phe	Ser	Lys	Arg	Val	Ile	Leu	Ala	Asp	Ala	Asn	Leu	Asp	Lys	Val
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Leu	Ser	Ala	Tyr	Asn	Lys	His	Arg	Asp	Lys	Pro	Ile	Arg	Glu	Gln
1370						1375					1380			
Ala	Glu	Asn	Ile	Ile	His	Leu	Phe	Thr	Leu	Thr	Asn	Leu	Gly	Ala
1385						1390					1395			
Pro	Ala	Ala	Phe	Lys	Tyr	Phe	Asp	Thr	Thr	Ile	Asp	Arg	Lys	Arg
1400						1405					1410			
Tyr	Thr	Ser	Thr	Lys	Glu	Val	Leu	Asp	Ala	Thr	Leu	Ile	His	Gln
1415						1420					1425			
Ser	Ile	Thr	Gly	Leu	Tyr	Glu	Thr	Arg	Ile	Asp	Leu	Ser	Gln	Leu
1430						1435					1440			
Gly	Gly	Asp	Ser	Arg	Ala	Asp	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr
1445						1450					1455			
Ala	Ser	Gly	Ser	Pro	Lys	Lys	Lys	Arg	Lys	Val	Ser	Pro	Gly	Ser
1460						1465					1470			
Gly	Ser	Glu	Thr	Pro	Gly	Thr	Ser	Glu	Ser	Ala	Thr	Pro	Glu	Ser
1475						1480					1485			
Asn	His	Asp	Gln	Glu	Phe	Asp	Pro	Pro	Lys	Val	Tyr	Pro	Pro	Val
1490						1495					1500			
Pro	Ala	Glu	Lys	Arg	Lys	Pro	Ile	Arg	Val	Leu	Ser	Leu	Phe	Asp
1505						1510					1515			
Gly	Ile	Ala	Thr	Gly	Leu	Leu	Val	Leu	Lys	Asp	Leu	Gly	Ile	Gln
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Val	Asp	Arg	Tyr	Ile	Ala	Ser	Glu	Val	Cys	Glu	Asp	Ser	Ile	Thr
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Val	Gly	Met	Val	Arg	His	Gln	Gly	Lys	Ile	Met	Tyr	Val	Gly	Asp
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Val	Arg	Ser	Val	Thr	Gln	Lys	His	Ile	Gln	Glu	Trp	Gly	Pro	Phe
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Asp	Leu	Val	Ile	Gly	Gly	Ser	Pro	Cys	Asn	Asp	Leu	Ser	Ile	Val
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Asn	Pro	Ala	Arg	Lys	Gly	Leu	Tyr	Glu	Gly	Thr	Gly	Arg	Leu	Phe
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Phe	Glu	Phe	Tyr	Arg	Leu	Leu	His	Asp	Ala	Arg	Pro	Lys	Glu	Gly
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Asp	Asp	Arg	Pro	Phe	Phe	Trp	Leu	Phe	Glu	Asn	Val	Val	Ala	Met
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Gly	Val	Ser	Asp	Lys	Arg	Asp	Ile	Ser	Arg	Phe	Leu	Glu	Ser	Asn
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Pro	Val	Met	Ile	Asp	Ala	Lys	Glu	Val	Ser	Ala	Ala	His	Arg	Ala
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Arg	Tyr	Phe	Trp	Gly	Asn	Leu	Pro	Gly	Met	Asn	Arg	Pro	Leu	Ala
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Ser	Thr	Val	Asn	Asp	Lys	Leu	Glu	Leu	Gln	Glu	Cys	Leu	Glu	His
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Gly	Arg	Ile	Ala	Lys	Phe	Ser	Lys	Val	Arg	Thr	Ile	Thr	Thr	Arg
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Ser	Asn	Ser	Ile	Lys	Gln	Gly	Lys	Asp	Gln	His	Phe	Pro	Val	Phe
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Met	Asn	Glu	Lys	Glu	Asp	Ile	Leu	Trp	Cys	Thr	Glu	Met	Glu	Arg
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Val	Phe	Gly	Phe	Pro	Val	His	Tyr	Thr	Asp	Val	Ser	Asn	Met	Ser
	1745					1750					1755			
Arg	Leu	Ala	Arg	Gln	Arg	Leu	Leu	Gly	Arg	Ser	Trp	Ser	Val	Pro
	1760					1765					1770			
Val	Ile	Arg	His	Leu	Phe	Ala	Pro	Leu	Lys	Glu	Tyr	Phe	Ala	Cys
	1775					1780					1785			
Val	Ser	Ser	Gly	Asn	Ser	Asn	Ala	Asn	Ser	Arg	Gly	Pro	Ser	Phe
	1790					1795					1800			
Ser	Ser	Gly	Leu	Val	Pro	Leu	Ser	Leu	Arg	Gly	Ser	His	Met	Gly
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Pro	Met	Glu	Ile	Tyr	Lys	Thr	Val	Ser	Ala	Trp	Lys	Arg	Gln	Pro
	1820					1825					1830			
Val	Arg	Val	Leu	Ser	Leu	Phe	Arg	Asn	Ile	Asp	Lys	Val	Leu	Lys
	1835					1840					1845			
Ser	Leu	Gly	Phe	Leu	Glu	Ser	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Thr
	1850					1855					1860			
Leu	Lys	Tyr	Val	Glu	Asp	Val	Thr	Asn	Val	Val	Arg	Arg	Asp	Val
	1865					1870					1875			
Glu	Lys	Trp	Gly	Pro	Phe	Asp	Leu	Val	Tyr	Gly	Ser	Thr	Gln	Pro
	1880					1885					1890			
Leu	Gly	Ser	Ser	Cys	Asp	Arg	Cys	Pro	Gly	Trp	Tyr	Met	Phe	Gln

1895														
Phe	His	Arg	Ile	Leu	Gln	Tyr	Ala	Leu	Pro	Arg	Gln	Glu	Ser	Gln
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1925						1930					1935			
Asp	Asp	Gln	Glu	Thr	Thr	Thr	Arg	Phe	Leu	Gln	Thr	Glu	Ala	Val
1940						1945					1950			
Thr	Leu	Gln	Asp	Val	Arg	Gly	Arg	Asp	Tyr	Gln	Asn	Ala	Met	Arg
1955						1960					1965			
Val	Trp	Ser	Asn	Ile	Pro	Gly	Leu	Lys	Ser	Lys	His	Ala	Pro	Leu
1970						1975					1980			
Thr	Pro	Lys	Glu	Glu	Glu	Tyr	Leu	Gln	Ala	Gln	Val	Arg	Ser	Arg
1985						1990					1995			
Ser	Lys	Leu	Asp	Ala	Pro	Lys	Val	Asp	Leu	Leu	Val	Lys	Asn	Cys
2000						2005					2010			
Leu	Leu	Pro	Leu	Arg	Glu	Tyr	Phe	Lys	Tyr	Phe	Ser	Gln	Asn	Ser
2015						2020					2025			
Leu	Pro	Leu	Ser	Arg	Ala	Asp	Pro	Lys	Lys	Lys	Arg	Lys	Val	Gly
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Ser	Gly	Ala	Thr	Asn	Phe	Ser	Leu	Leu	Lys	Gln	Ala	Gly	Asp	Val
2045						2050					2055			
Glu	Glu	Asn	Pro	Gly	Pro	Ser	Glu	Leu	Ile	Lys	Glu	Asn	Met	His
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Met	Lys	Leu	Tyr	Met	Glu	Gly	Thr	Val	Asp	Asn	His	His	Phe	Lys
2075						2080					2085			

Cys	Thr	Ser	Glu	Gly	Glu	Gly	Lys	Pro	Tyr	Glu	Gly	Thr	Gln	Thr
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Met	Arg	Ile	Lys	Val	Val	Glu	Gly	Gly	Pro	Leu	Pro	Phe	Ala	Phe
2105						2110					2115			
Asp	Ile	Leu	Ala	Thr	Ser	Phe	Leu	Tyr	Gly	Ser	Lys	Thr	Phe	Ile
2120						2125					2130			
Asn	His	Thr	Gln	Gly	Ile	Pro	Asp	Phe	Phe	Lys	Gln	Ser	Phe	Pro
2135						2140					2145			
Glu	Gly	Phe	Thr	Trp	Glu	Arg	Val	Thr	Thr	Tyr	Glu	Asp	Gly	Gly
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Val	Leu	Thr	Ala	Thr	Gln	Asp	Thr	Ser	Leu	Gln	Asp	Gly	Cys	Leu
2165						2170					2175			
Ile	Tyr	Asn	Val	Lys	Ile	Arg	Gly	Val	Asn	Phe	Thr	Ser	Asn	Gly
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Pro	Val	Met	Gln	Lys	Lys	Thr	Leu	Gly	Trp	Glu	Ala	Phe	Thr	Glu
2195						2200					2205			
Thr	Leu	Tyr	Pro	Ala	Asp	Gly	Gly	Leu	Glu	Gly	Arg	Asn	Asp	Met
2210						2215					2220			
Ala	Leu	Lys	Leu	Val	Gly	Gly	Ser	His	Leu	Ile	Ala	Asn	Ile	Lys
2225						2230					2235			
Thr	Thr	Tyr	Arg	Ser	Lys	Lys	Pro	Ala	Lys	Asn	Leu	Lys	Met	Pro
2240						2245					2250			
Gly	Val	Tyr	Tyr	Val	Asp	Tyr	Arg	Leu	Glu	Arg	Ile	Lys	Glu	Ala
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Asn Asn Glu Thr Tyr Val Glu Gln His Glu Val Ala Val Ala Arg
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Tyr Cys Asp Leu Pro Ser Lys Leu Gly His Lys Leu Asn
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 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic polypeptide

<400> 3

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Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr
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Ala Gln Gln Ile Val Tyr Arg Asn Val Met Leu Glu Asn Tyr Lys Asn
 35 40 45

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
 50 55 60

Leu Glu Lys Gly Glu Glu Pro Gly Gly Ser Gly Gly Gly Ser Met Asp
 65 70 75 80

Lys Lys Tyr Ser Ile Gly Leu Ala Ile Gly Thr Asn Ser Val Gly Trp
 85 90 95

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

Leu Gly Asn Thr Asp Arg His Ser Ile Lys Lys Asn Leu Ile Gly Ala
 115 120 125

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

Thr Ala Arg Arg Arg Tyr Thr Arg Arg Lys Asn Arg Ile Cys Tyr Leu
145 150 155 160

Gln Glu Ile Phe Ser Asn Glu Met Ala Lys Val Asp Asp Ser Phe Phe
165 170 175

His Arg Leu Glu Glu Ser Phe Leu Val Glu Glu Asp Lys Lys His Glu
180 185 190

Arg His Pro Ile Phe Gly Asn Ile Val Asp Glu Val Ala Tyr His Glu
195 200 205

Lys Tyr Pro Thr Ile Tyr His Leu Arg Lys Lys Leu Val Asp Ser Thr
210 215 220

Asp Lys Ala Asp Leu Arg Leu Ile Tyr Leu Ala Leu Ala His Met Ile
225 230 235 240

Lys Phe Arg Gly His Phe Leu Ile Glu Gly Asp Leu Asn Pro Asp Asn
245 250 255

Ser Asp Val Asp Lys Leu Phe Ile Gln Leu Val Gln Thr Tyr Asn Gln
260 265 270

Leu Phe Glu Glu Asn Pro Ile Asn Ala Ser Gly Val Asp Ala Lys Ala
275 280 285

Ile Leu Ser Ala Arg Leu Ser Lys Ser Arg Arg Leu Glu Asn Leu Ile
290 295 300

Ala Gln Leu Pro Gly Glu Lys Lys Asn Gly Leu Phe Gly Asn Leu Ile
305 310 315 320

Ala Leu Ser Leu Gly Leu Thr Pro Asn Phe Lys Ser Asn Phe Asp Leu
325 330 335

Ala Glu Asp Ala Lys Leu Gln Leu Ser Lys Asp Thr Tyr Asp Asp Asp
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Leu Asp Asn Leu Leu Ala Gln Ile Gly Asp Gln Tyr Ala Asp Leu Phe
355 360 365

Leu Ala Ala Lys Asn Leu Ser Asp Ala Ile Leu Leu Ser Asp Ile Leu
370 375 380

Arg Val Asn Thr Glu Ile Thr Lys Ala Pro Leu Ser Ala Ser Met Ile
385 390 395 400

Lys Arg Tyr Asp Glu His His Gln Asp Leu Thr Leu Leu Lys Ala Leu
405 410 415

Val Arg Gln Gln Leu Pro Glu Lys Tyr Lys Glu Ile Phe Phe Asp Gln
420 425 430

Ser Lys Asn Gly Tyr Ala Gly Tyr Ile Asp Gly Gly Ala Ser Gln Glu
435 440 445

Glu Phe Tyr Lys Phe Ile Lys Pro Ile Leu Glu Lys Met Asp Gly Thr
450 455 460

Glu Glu Leu Leu Val Lys Leu Asn Arg Glu Asp Leu Leu Arg Lys Gln
465 470 475 480

Arg Thr Phe Asp Asn Gly Ser Ile Pro His Gln Ile His Leu Gly Glu
485 490 495

Leu His Ala Ile Leu Arg Arg Gln Glu Asp Phe Tyr Pro Phe Leu Lys
500 505 510

Asp Asn Arg Glu Lys Ile Glu Lys Ile Leu Thr Phe Arg Ile Pro Tyr
515 520 525

Tyr Val Gly Pro Leu Ala Arg Gly Asn Ser Arg Phe Ala Trp Met Thr
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Arg Lys Ser Glu Glu Thr Ile Thr Pro Trp Asn Phe Glu Glu Val Val
545 550 555 560

Asp Lys Gly Ala Ser Ala Gln Ser Phe Ile Glu Arg Met Thr Asn Phe
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Asp Lys Asn Leu Pro Asn Glu Lys Val Leu Pro Lys His Ser Leu Leu
580 585 590

Tyr Glu Tyr Phe Thr Val Tyr Asn Glu Leu Thr Lys Val Lys Tyr Val
595 600 605

Thr Glu Gly Met Arg Lys Pro Ala Phe Leu Ser Gly Glu Gln Lys Lys
610 615 620

Ala Ile Val Asp Leu Leu Phe Lys Thr Asn Arg Lys Val Thr Val Lys
625 630 635 640

Gln Leu Lys Glu Asp Tyr Phe Lys Lys Ile Glu Cys Phe Asp Ser Val
645 650 655

Glu Ile Ser Gly Val Glu Asp Arg Phe Asn Ala Ser Leu Gly Thr Tyr
660 665 670

His Asp Leu Leu Lys Ile Ile Lys Asp Lys Asp Phe Leu Asp Asn Glu
675 680 685

Glu Asn Glu Asp Ile Leu Glu Asp Ile Val Leu Thr Leu Thr Leu Phe
690 695 700

Glu Asp Arg Glu Met Ile Glu Glu Arg Leu Lys Thr Tyr Ala His Leu

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Phe	Asp	Asp	Lys	Val	Met	Lys	Gln	Leu	Lys	Arg	Arg	Arg	Tyr	Thr	Gly
			725						730					735	
Trp	Gly	Arg	Leu	Ser	Arg	Lys	Leu	Ile	Asn	Gly	Ile	Arg	Asp	Lys	Gln
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Ser	Gly	Lys	Thr	Ile	Leu	Asp	Phe	Leu	Lys	Ser	Asp	Gly	Phe	Ala	Asn
		755					760					765			
Arg	Asn	Phe	Met	Gln	Leu	Ile	His	Asp	Asp	Ser	Leu	Thr	Phe	Lys	Glu
	770					775					780				
Asp	Ile	Gln	Lys	Ala	Gln	Val	Ser	Gly	Gln	Gly	Asp	Ser	Leu	His	Glu
785					790					795					800
His	Ile	Ala	Asn	Leu	Ala	Gly	Ser	Pro	Ala	Ile	Lys	Lys	Gly	Ile	Leu
			805						810					815	
Gln	Thr	Val	Lys	Val	Val	Asp	Glu	Leu	Val	Lys	Val	Met	Gly	Arg	His
			820					825					830		
Lys	Pro	Glu	Asn	Ile	Val	Ile	Glu	Met	Ala	Arg	Glu	Asn	Gln	Thr	Thr
		835					840					845			
Gln	Lys	Gly	Gln	Lys	Asn	Ser	Arg	Glu	Arg	Met	Lys	Arg	Ile	Glu	Glu
	850					855					860				
Gly	Ile	Lys	Glu	Leu	Gly	Ser	Gln	Ile	Leu	Lys	Glu	His	Pro	Val	Glu
865					870					875					880
Asn	Thr	Gln	Leu	Gln	Asn	Glu	Lys	Leu	Tyr	Leu	Tyr	Tyr	Leu	Gln	Asn
			885					890						895	
Gly	Arg	Asp	Met	Tyr	Val	Asp	Gln	Glu	Leu	Asp	Ile	Asn	Arg	Leu	Ser
			900					905					910		

Asp Tyr Asp Val Asp Ala Ile Val Pro Gln Ser Phe Leu Lys Asp Asp
915 920 925

Ser Ile Asp Asn Lys Val Leu Thr Arg Ser Asp Lys Asn Arg Gly Lys
930 935 940

Ser Asp Asn Val Pro Ser Glu Glu Val Val Lys Lys Met Lys Asn Tyr
945 950 955 960

Trp Arg Gln Leu Leu Asn Ala Lys Leu Ile Thr Gln Arg Lys Phe Asp
965 970 975

Asn Leu Thr Lys Ala Glu Arg Gly Gly Leu Ser Glu Leu Asp Lys Ala
980 985 990

Gly Phe Ile Lys Arg Gln Leu Val Glu Thr Arg Gln Ile Thr Lys His
995 1000 1005

Val Ala Gln Ile Leu Asp Ser Arg Met Asn Thr Lys Tyr Asp Glu
1010 1015 1020

Asn Asp Lys Leu Ile Arg Glu Val Lys Val Ile Thr Leu Lys Ser
1025 1030 1035

Lys Leu Val Ser Asp Phe Arg Lys Asp Phe Gln Phe Tyr Lys Val
1040 1045 1050

Arg Glu Ile Asn Asn Tyr His His Ala His Asp Ala Tyr Leu Asn
1055 1060 1065

Ala Val Val Gly Thr Ala Leu Ile Lys Lys Tyr Pro Lys Leu Glu
1070 1075 1080

Ser Glu Phe Val Tyr Gly Asp Tyr Lys Val Tyr Asp Val Arg Lys
1085 1090 1095

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

Tyr Ser Leu Phe Glu Leu Glu Asn Gly Arg Lys Arg Met Leu Ala
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 Ser Ala Gly Glu Leu Gln Lys Gly Asn Glu Leu Ala Leu Pro Ser
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 Lys Tyr Val Asn Phe Leu Tyr Leu Ala Ser His Tyr Glu Lys Leu
 1310 1315 1320

 Lys Gly Ser Pro Glu Asp Asn Glu Gln Lys Gln Leu Phe Val Glu
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 Gln His Lys His Tyr Leu Asp Glu Ile Ile Glu Gln Ile Ser Glu
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 Phe Ser Lys Arg Val Ile Leu Ala Asp Ala Asn Leu Asp Lys Val
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 Leu Ser Ala Tyr Asn Lys His Arg Asp Lys Pro Ile Arg Glu Gln
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 Ala Glu Asn Ile Ile His Leu Phe Thr Leu Thr Asn Leu Gly Ala
 1385 1390 1395

 Pro Ala Ala Phe Lys Tyr Phe Asp Thr Thr Ile Asp Arg Lys Arg
 1400 1405 1410

 Tyr Thr Ser Thr Lys Glu Val Leu Asp Ala Thr Leu Ile His Gln
 1415 1420 1425

 Ser Ile Thr Gly Leu Tyr Glu Thr Arg Ile Asp Leu Ser Gln Leu
 1430 1435 1440

 Gly Gly Asp Ser Arg Ala Asp Tyr Pro Tyr Asp Val Pro Asp Tyr
 1445 1450 1455

 Ala Ser Gly Ser Pro Lys Lys Lys Arg Lys Val Glu Ala Ser Gly

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Ser	Gly	Arg	Ala	Ser	Pro	Gly	Ile	Pro	Gly	Ser	Thr	Arg	Asn	His	
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Asp	Gln	Glu	Phe	Asp	Pro	Pro	Lys	Val	Tyr	Pro	Pro	Val	Pro	Ala	
1490						1495					1500				
Glu	Lys	Arg	Lys	Pro	Ile	Arg	Val	Leu	Ser	Leu	Phe	Asp	Gly	Ile	
1505						1510					1515				
Ala	Thr	Gly	Leu	Leu	Val	Leu	Lys	Asp	Leu	Gly	Ile	Gln	Val	Asp	
1520						1525					1530				
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Met	Ile	Asp	Ala	Lys	Glu	Val	Ser	Ala	Ala	His	Arg	Ala	Arg	Tyr
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1670						1675					1680			
Val	Asn	Asp	Lys	Leu	Glu	Leu	Gln	Glu	Cys	Leu	Glu	His	Gly	Arg
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Ser	Ile	Lys	Gln	Gly	Lys	Asp	Gln	His	Phe	Pro	Val	Phe	Met	Asn
1715						1720					1725			
Glu	Lys	Glu	Asp	Ile	Leu	Trp	Cys	Thr	Glu	Met	Glu	Arg	Val	Phe
1730						1735					1740			
Gly	Phe	Pro	Val	His	Tyr	Thr	Asp	Val	Ser	Asn	Met	Ser	Arg	Leu
1745						1750					1755			
Ala	Arg	Gln	Arg	Leu	Leu	Gly	Arg	Ser	Trp	Ser	Val	Pro	Val	Ile
1760						1765					1770			
Arg	His	Leu	Phe	Ala	Pro	Leu	Lys	Glu	Tyr	Phe	Ala	Cys	Val	Ser
1775						1780					1785			
Ser	Gly	Asn	Ser	Asn	Ala	Asn	Ser	Arg	Gly	Pro	Ser	Phe	Ser	Ser
1790						1795					1800			
Gly	Leu	Val	Pro	Leu	Ser	Leu	Arg	Gly	Ser	His	Met	Gly	Pro	Met
1805						1810					1815			
Glu	Ile	Tyr	Lys	Thr	Val	Ser	Ala	Trp	Lys	Arg	Gln	Pro	Val	Arg
1820						1825					1830			

Val	Leu	Ser	Leu	Phe	Arg	Asn	Ile	Asp	Lys	Val	Leu	Lys	Ser	Leu
1835						1840					1845			
Gly	Phe	Leu	Glu	Ser	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Thr	Leu	Lys
1850						1855					1860			
Tyr	Val	Glu	Asp	Val	Thr	Asn	Val	Val	Arg	Arg	Asp	Val	Glu	Lys
1865						1870					1875			
Trp	Gly	Pro	Phe	Asp	Leu	Val	Tyr	Gly	Ser	Thr	Gln	Pro	Leu	Gly
1880						1885					1890			
Ser	Ser	Cys	Asp	Arg	Cys	Pro	Gly	Trp	Tyr	Met	Phe	Gln	Phe	His
1895						1900					1905			
Arg	Ile	Leu	Gln	Tyr	Ala	Leu	Pro	Arg	Gln	Glu	Ser	Gln	Arg	Pro
1910						1915					1920			
Phe	Phe	Trp	Ile	Phe	Met	Asp	Asn	Leu	Leu	Leu	Thr	Glu	Asp	Asp
1925						1930					1935			
Gln	Glu	Thr	Thr	Thr	Arg	Phe	Leu	Gln	Thr	Glu	Ala	Val	Thr	Leu
1940						1945					1950			
Gln	Asp	Val	Arg	Gly	Arg	Asp	Tyr	Gln	Asn	Ala	Met	Arg	Val	Trp
1955						1960					1965			
Ser	Asn	Ile	Pro	Gly	Leu	Lys	Ser	Lys	His	Ala	Pro	Leu	Thr	Pro
1970						1975					1980			
Lys	Glu	Glu	Glu	Tyr	Leu	Gln	Ala	Gln	Val	Arg	Ser	Arg	Ser	Lys
1985						1990					1995			
Leu	Asp	Ala	Pro	Lys	Val	Asp	Leu	Leu	Val	Lys	Asn	Cys	Leu	Leu
2000						2005					2010			

Pro Leu Arg Glu Tyr Phe Lys Tyr Phe Ser Gln Asn Ser Leu Pro
 2015 2020 2025

Leu Ser Arg Ala Asp Pro Lys Lys Lys Arg Lys Val Gly Ser Gly
 2030 2035 2040

Ala Thr Asn Phe Ser Leu Leu Lys Gln Ala Gly Asp Val Glu Glu
 2045 2050 2055

Asn Pro Gly Pro Gly Ser Gly Ala Thr Asn Phe Ser Leu Leu Lys
 2060 2065 2070

Gln Ala Gly Asp Val Glu Glu Asn Pro Gly Pro Ser Glu Leu Ile
 2075 2080 2085

Lys Glu Asn Met His Met Lys Leu Tyr Met Glu Gly Thr Val Asp
 2090 2095 2100

Asn His His Phe Lys Cys Thr Ser Glu Gly Glu Gly Lys Pro Tyr
 2105 2110 2115

Glu Gly Thr Gln Thr Met Arg Ile Lys Val Val Glu Gly Gly Pro
 2120 2125 2130

Leu Pro Phe Ala Phe Asp Ile Leu Ala Thr Ser Phe Leu Tyr Gly
 2135 2140 2145

Ser Lys Thr Phe Ile Asn His Thr Gln Gly Ile Pro Asp Phe Phe
 2150 2155 2160

Lys Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Val Thr Thr
 2165 2170 2175

Tyr Glu Asp Gly Gly Val Leu Thr Ala Thr Gln Asp Thr Ser Leu
 2180 2185 2190

Gln Asp Gly Cys Leu Ile Tyr Asn Val Lys Ile Arg Gly Val Asn

2195

2200

2205

Phe Thr Ser Asn Gly Pro Val Met Gln Lys Lys Thr Leu Gly Trp
 2210 2215 2220

Glu Ala Phe Thr Glu Thr Leu Tyr Pro Ala Asp Gly Gly Leu Glu
 2225 2230 2235

Gly Arg Asn Asp Met Ala Leu Lys Leu Val Gly Gly Ser His Leu
 2240 2245 2250

Ile Ala Asn Ile Lys Thr Thr Tyr Arg Ser Lys Lys Pro Ala Lys
 2255 2260 2265

Asn Leu Lys Met Pro Gly Val Tyr Tyr Val Asp Tyr Arg Leu Glu
 2270 2275 2280

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

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

Leu Glu Lys Gly Glu Glu Pro Gly Gly Ser Gly Gly Gly Ser Met Asp
65 70 75 80

Lys Lys Tyr Ser Ile Gly Leu Ala Ile Gly Thr Asn Ser Val Gly Trp
85 90 95

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

Leu Gly Asn Thr Asp Arg His Ser Ile Lys Lys Asn Leu Ile Gly Ala
115 120 125

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

Thr Ala Arg Arg Arg Tyr Thr Arg Arg Lys Asn Arg Ile Cys Tyr Leu
145 150 155 160

Gln Glu Ile Phe Ser Asn Glu Met Ala Lys Val Asp Asp Ser Phe Phe
165 170 175

His Arg Leu Glu Glu Ser Phe Leu Val Glu Glu Asp Lys Lys His Glu
180 185 190

Arg His Pro Ile Phe Gly Asn Ile Val Asp Glu Val Ala Tyr His Glu
195 200 205

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

210

215

220

Asp Lys Ala Asp Leu Arg Leu Ile Tyr Leu Ala Leu Ala His Met Ile
 225 230 235 240

Lys Phe Arg Gly His Phe Leu Ile Glu Gly Asp Leu Asn Pro Asp Asn
 245 250 255

Ser Asp Val Asp Lys Leu Phe Ile Gln Leu Val Gln Thr Tyr Asn Gln
 260 265 270

Leu Phe Glu Glu Asn Pro Ile Asn Ala Ser Gly Val Asp Ala Lys Ala
 275 280 285

Ile Leu Ser Ala Arg Leu Ser Lys Ser Arg Arg Leu Glu Asn Leu Ile
 290 295 300

Ala Gln Leu Pro Gly Glu Lys Lys Asn Gly Leu Phe Gly Asn Leu Ile
 305 310 315 320

Ala Leu Ser Leu Gly Leu Thr Pro Asn Phe Lys Ser Asn Phe Asp Leu
 325 330 335

Ala Glu Asp Ala Lys Leu Gln Leu Ser Lys Asp Thr Tyr Asp Asp Asp
 340 345 350

Leu Asp Asn Leu Leu Ala Gln Ile Gly Asp Gln Tyr Ala Asp Leu Phe
 355 360 365

Leu Ala Ala Lys Asn Leu Ser Asp Ala Ile Leu Leu Ser Asp Ile Leu
 370 375 380

Arg Val Asn Thr Glu Ile Thr Lys Ala Pro Leu Ser Ala Ser Met Ile
 385 390 395 400

Lys Arg Tyr Asp Glu His His Gln Asp Leu Thr Leu Leu Lys Ala Leu
 405 410 415

Val Arg Gln Gln Leu Pro Glu Lys Tyr Lys Glu Ile Phe Phe Asp Gln
420 425 430

Ser Lys Asn Gly Tyr Ala Gly Tyr Ile Asp Gly Gly Ala Ser Gln Glu
435 440 445

Glu Phe Tyr Lys Phe Ile Lys Pro Ile Leu Glu Lys Met Asp Gly Thr
450 455 460

Glu Glu Leu Leu Val Lys Leu Asn Arg Glu Asp Leu Leu Arg Lys Gln
465 470 475 480

Arg Thr Phe Asp Asn Gly Ser Ile Pro His Gln Ile His Leu Gly Glu
485 490 495

Leu His Ala Ile Leu Arg Arg Gln Glu Asp Phe Tyr Pro Phe Leu Lys
500 505 510

Asp Asn Arg Glu Lys Ile Glu Lys Ile Leu Thr Phe Arg Ile Pro Tyr
515 520 525

Tyr Val Gly Pro Leu Ala Arg Gly Asn Ser Arg Phe Ala Trp Met Thr
530 535 540

Arg Lys Ser Glu Glu Thr Ile Thr Pro Trp Asn Phe Glu Glu Val Val
545 550 555 560

Asp Lys Gly Ala Ser Ala Gln Ser Phe Ile Glu Arg Met Thr Asn Phe
565 570 575

Asp Lys Asn Leu Pro Asn Glu Lys Val Leu Pro Lys His Ser Leu Leu
580 585 590

Tyr Glu Tyr Phe Thr Val Tyr Asn Glu Leu Thr Lys Val Lys Tyr Val
595 600 605

Thr Glu Gly Met Arg Lys Pro Ala Phe Leu Ser Gly Glu Gln Lys Lys
610 615 620

Ala Ile Val Asp Leu Leu Phe Lys Thr Asn Arg Lys Val Thr Val Lys
625 630 635 640

Gln Leu Lys Glu Asp Tyr Phe Lys Lys Ile Glu Cys Phe Asp Ser Val
645 650 655

Glu Ile Ser Gly Val Glu Asp Arg Phe Asn Ala Ser Leu Gly Thr Tyr
660 665 670

His Asp Leu Leu Lys Ile Ile Lys Asp Lys Asp Phe Leu Asp Asn Glu
675 680 685

Glu Asn Glu Asp Ile Leu Glu Asp Ile Val Leu Thr Leu Thr Leu Phe
690 695 700

Glu Asp Arg Glu Met Ile Glu Glu Arg Leu Lys Thr Tyr Ala His Leu
705 710 715 720

Phe Asp Asp Lys Val Met Lys Gln Leu Lys Arg Arg Arg Tyr Thr Gly
725 730 735

Trp Gly Arg Leu Ser Arg Lys Leu Ile Asn Gly Ile Arg Asp Lys Gln
740 745 750

Ser Gly Lys Thr Ile Leu Asp Phe Leu Lys Ser Asp Gly Phe Ala Asn
755 760 765

Arg Asn Phe Met Gln Leu Ile His Asp Asp Ser Leu Thr Phe Lys Glu
770 775 780

Asp Ile Gln Lys Ala Gln Val Ser Gly Gln Gly Asp Ser Leu His Glu
785 790 795 800

His Ile Ala Asn Leu Ala Gly Ser Pro Ala Ile Lys Lys Gly Ile Leu
805 810 815

Gln Thr Val Lys Val Val Asp Glu Leu Val Lys Val Met Gly Arg His
820 825 830

Lys Pro Glu Asn Ile Val Ile Glu Met Ala Arg Glu Asn Gln Thr Thr
835 840 845

Gln Lys Gly Gln Lys Asn Ser Arg Glu Arg Met Lys Arg Ile Glu Glu
850 855 860

Gly Ile Lys Glu Leu Gly Ser Gln Ile Leu Lys Glu His Pro Val Glu
865 870 875 880

Asn Thr Gln Leu Gln Asn Glu Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn
885 890 895

Gly Arg Asp Met Tyr Val Asp Gln Glu Leu Asp Ile Asn Arg Leu Ser
900 905 910

Asp Tyr Asp Val Asp Ala Ile Val Pro Gln Ser Phe Leu Lys Asp Asp
915 920 925

Ser Ile Asp Asn Lys Val Leu Thr Arg Ser Asp Lys Asn Arg Gly Lys
930 935 940

Ser Asp Asn Val Pro Ser Glu Glu Val Val Lys Lys Met Lys Asn Tyr
945 950 955 960

Trp Arg Gln Leu Leu Asn Ala Lys Leu Ile Thr Gln Arg Lys Phe Asp
965 970 975

Asn Leu Thr Lys Ala Glu Arg Gly Gly Leu Ser Glu Leu Asp Lys Ala
980 985 990

Gly Phe Ile Lys Arg Gln Leu Val Glu Thr Arg Gln Ile Thr Lys His

995	1000	1005
Val Ala Gln Ile Leu Asp Ser 1010	Arg Met Asn Thr Lys 1015	Tyr Asp Glu 1020
Asn Asp Lys Leu Ile Arg Glu 1025	Val Lys Val Ile Thr 1030	Leu Lys Ser 1035
Lys Leu Val Ser Asp Phe Arg 1040	Lys Asp Phe Gln Phe 1045	Tyr Lys Val 1050
Arg Glu Ile Asn Asn Tyr His 1055	His Ala His Asp Ala 1060	Tyr Leu Asn 1065
Ala Val Val Gly Thr Ala Leu 1070	Ile Lys Lys Tyr Pro 1075	Lys Leu Glu 1080
Ser Glu Phe Val Tyr Gly Asp 1085	Tyr Lys Val Tyr Asp 1090	Val Arg Lys 1095
Met Ile Ala Lys Ser Glu Gln 1100	Glu Ile Gly Lys Ala 1105	Thr Ala Lys 1110
Tyr Phe Phe Tyr Ser Asn Ile 1115	Met Asn Phe Phe Lys 1120	Thr Glu Ile 1125
Thr Leu Ala Asn Gly Glu Ile 1130	Arg Lys Arg Pro Leu 1135	Ile Glu Thr 1140
Asn Gly Glu Thr Gly Glu Ile 1145	Val Trp Asp Lys Gly 1150	Arg Asp Phe 1155
Ala Thr Val Arg Lys Val Leu 1160	Ser Met Pro Gln Val 1165	Asn Ile Val 1170
Lys Lys Thr Glu Val Gln Thr 1175	Gly Gly Phe Ser Lys 1180	Glu Ser Ile 1185

Leu Pro Lys Arg Asn Ser Asp Lys Leu Ile Ala Arg Lys Lys Asp
1190 1195 1200

Trp Asp Pro Lys Lys Tyr Gly Gly Phe Asp Ser Pro Thr Val Ala
1205 1210 1215

Tyr Ser Val Leu Val Val Ala Lys Val Glu Lys Gly Lys Ser Lys
1220 1225 1230

Lys Leu Lys Ser Val Lys Glu Leu Leu Gly Ile Thr Ile Met Glu
1235 1240 1245

Arg Ser Ser Phe Glu Lys Asn Pro Ile Asp Phe Leu Glu Ala Lys
1250 1255 1260

Gly Tyr Lys Glu Val Lys Lys Asp Leu Ile Ile Lys Leu Pro Lys
1265 1270 1275

Tyr Ser Leu Phe Glu Leu Glu Asn Gly Arg Lys Arg Met Leu Ala
1280 1285 1290

Ser Ala Gly Glu Leu Gln Lys Gly Asn Glu Leu Ala Leu Pro Ser
1295 1300 1305

Lys Tyr Val Asn Phe Leu Tyr Leu Ala Ser His Tyr Glu Lys Leu
1310 1315 1320

Lys Gly Ser Pro Glu Asp Asn Glu Gln Lys Gln Leu Phe Val Glu
1325 1330 1335

Gln His Lys His Tyr Leu Asp Glu Ile Ile Glu Gln Ile Ser Glu
1340 1345 1350

Phe Ser Lys Arg Val Ile Leu Ala Asp Ala Asn Leu Asp Lys Val
1355 1360 1365

Leu	Ser	Ala	Tyr	Asn	Lys	His	Arg	Asp	Lys	Pro	Ile	Arg	Glu	Gln
1370						1375					1380			
Ala	Glu	Asn	Ile	Ile	His	Leu	Phe	Thr	Leu	Thr	Asn	Leu	Gly	Ala
1385						1390					1395			
Pro	Ala	Ala	Phe	Lys	Tyr	Phe	Asp	Thr	Thr	Ile	Asp	Arg	Lys	Arg
1400						1405					1410			
Tyr	Thr	Ser	Thr	Lys	Glu	Val	Leu	Asp	Ala	Thr	Leu	Ile	His	Gln
1415						1420					1425			
Ser	Ile	Thr	Gly	Leu	Tyr	Glu	Thr	Arg	Ile	Asp	Leu	Ser	Gln	Leu
1430						1435					1440			
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1445						1450					1455			
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1460						1465					1470			
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1475						1480					1485			
Asn	His	Asp	Gln	Glu	Phe	Asp	Pro	Pro	Lys	Val	Tyr	Pro	Pro	Val
1490						1495					1500			
Pro	Ala	Glu	Lys	Arg	Lys	Pro	Ile	Arg	Val	Leu	Ser	Leu	Phe	Asp
1505						1510					1515			
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Val	Asp	Arg	Tyr	Ile	Ala	Ser	Glu	Val	Cys	Glu	Asp	Ser	Ile	Thr
1535						1540					1545			

Val 1550	Gly	Met	Val	Arg	His	Gln 1555	Gly	Lys	Ile	Met	Tyr 1560	Val	Gly	Asp
Val 1565	Arg	Ser	Val	Thr	Gln	Lys 1570	His	Ile	Gln	Glu	Trp 1575	Gly	Pro	Phe
Asp 1580	Leu	Val	Ile	Gly	Gly	Ser 1585	Pro	Cys	Asn	Asp	Leu 1590	Ser	Ile	Val
Asn 1595	Pro	Ala	Arg	Lys	Gly	Leu 1600	Tyr	Glu	Gly	Thr	Gly 1605	Arg	Leu	Phe
Phe 1610	Glu	Phe	Tyr	Arg	Leu	Leu 1615	His	Asp	Ala	Arg	Pro 1620	Lys	Glu	Gly
Asp 1625	Asp	Arg	Pro	Phe	Phe	Trp 1630	Leu	Phe	Glu	Asn	Val 1635	Val	Ala	Met
Gly 1640	Val	Ser	Asp	Lys	Arg	Asp 1645	Ile	Ser	Arg	Phe	Leu 1650	Glu	Ser	Asn
Pro 1655	Val	Met	Ile	Asp	Ala	Lys 1660	Glu	Val	Ser	Ala	Ala 1665	His	Arg	Ala
Arg 1670	Tyr	Phe	Trp	Gly	Asn	Leu 1675	Pro	Gly	Met	Asn	Arg 1680	Pro	Leu	Ala
Ser 1685	Thr	Val	Asn	Asp	Lys	Leu 1690	Glu	Leu	Gln	Glu	Cys 1695	Leu	Glu	His
Gly 1700	Arg	Ile	Ala	Lys	Phe	Ser 1705	Lys	Val	Arg	Thr	Ile 1710	Thr	Thr	Arg
Ser 1715	Asn	Ser	Ile	Lys	Gln	Gly 1720	Lys	Asp	Gln	His	Phe 1725	Pro	Val	Phe
Met	Asn	Glu	Lys	Glu	Asp	Ile	Leu	Trp	Cys	Thr	Glu	Met	Glu	Arg

1730						1735						1740			
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1760						1765					1770				
Val	Ile	Arg	His	Leu	Phe	Ala	Pro	Leu	Lys	Glu	Tyr	Phe	Ala	Cys	
1775						1780					1785				
Val	Ser	Ser	Gly	Asn	Ser	Asn	Ala	Asn	Ser	Arg	Gly	Pro	Ser	Phe	
1790						1795					1800				
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1805						1810					1815				
Pro	Met	Glu	Ile	Tyr	Lys	Thr	Val	Ser	Ala	Trp	Lys	Arg	Gln	Pro	
1820						1825					1830				
Val	Arg	Val	Leu	Ser	Leu	Phe	Arg	Asn	Ile	Asp	Lys	Val	Leu	Lys	
1835						1840					1845				
Ser	Leu	Gly	Phe	Leu	Glu	Ser	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Thr	
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Leu	Lys	Tyr	Val	Glu	Asp	Val	Thr	Asn	Val	Val	Arg	Arg	Asp	Val	
1865						1870					1875				
Glu	Lys	Trp	Gly	Pro	Phe	Asp	Leu	Val	Tyr	Gly	Ser	Thr	Gln	Pro	
1880						1885					1890				
Leu	Gly	Ser	Ser	Cys	Asp	Arg	Cys	Pro	Gly	Trp	Tyr	Met	Phe	Gln	
1895						1900					1905				
Phe	His	Arg	Ile	Leu	Gln	Tyr	Ala	Leu	Pro	Arg	Gln	Glu	Ser	Gln	
1910						1915					1920				

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

Val 2105	Asp	Asn	His	His	Phe	Lys 2110	Cys	Thr	Ser	Glu	Gly 2115	Glu	Gly	Lys
Pro 2120	Tyr	Glu	Gly	Thr	Gln	Thr 2125	Met	Arg	Ile	Lys	Val 2130	Val	Glu	Gly
Gly 2135	Pro	Leu	Pro	Phe	Ala	Phe 2140	Asp	Ile	Leu	Ala	Thr 2145	Ser	Phe	Leu
Tyr 2150	Gly	Ser	Lys	Thr	Phe	Ile 2155	Asn	His	Thr	Gln	Gly 2160	Ile	Pro	Asp
Phe 2165	Phe	Lys	Gln	Ser	Phe	Pro 2170	Glu	Gly	Phe	Thr	Trp 2175	Glu	Arg	Val
Thr 2180	Thr	Tyr	Glu	Asp	Gly	Gly 2185	Val	Leu	Thr	Ala	Thr 2190	Gln	Asp	Thr
Ser 2195	Leu	Gln	Asp	Gly	Cys	Leu 2200	Ile	Tyr	Asn	Val	Lys 2205	Ile	Arg	Gly
Val 2210	Asn	Phe	Thr	Ser	Asn	Gly 2215	Pro	Val	Met	Gln	Lys 2220	Lys	Thr	Leu
Gly 2225	Trp	Glu	Ala	Phe	Thr	Glu 2230	Thr	Leu	Tyr	Pro	Ala 2235	Asp	Gly	Gly
Leu 2240	Glu	Gly	Arg	Asn	Asp	Met 2245	Ala	Leu	Lys	Leu	Val 2250	Gly	Gly	Ser
His 2255	Leu	Ile	Ala	Asn	Ile	Lys 2260	Thr	Thr	Tyr	Arg	Ser 2265	Lys	Lys	Pro
Ala 2270	Lys	Asn	Leu	Lys	Met	Pro 2275	Gly	Val	Tyr	Tyr	Val 2280	Asp	Tyr	Arg

Leu Glu Arg Ile Lys Glu Ala Asn Asn Glu Thr Tyr Val Glu Gln
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Gly His Lys Leu Asn
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 35 40 45

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
 50 55 60

Leu Glu Lys Gly Glu Glu Pro Gly Gly Ser Gly Gly Gly Ser Met Asp
 65 70 75 80

Lys Lys Tyr Ser Ile Gly Leu Ala Ile Gly Thr Asn Ser Val Gly Trp
 85 90 95

Ala Val Ile Thr Asp Glu Tyr Lys Val Pro Ser Lys Lys Phe Lys Val
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Leu Gly Asn Thr Asp Arg His Ser Ile Lys Lys Asn Leu Ile Gly Ala
115 120 125

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

Thr Ala Arg Arg Arg Tyr Thr Arg Arg Lys Asn Arg Ile Cys Tyr Leu
145 150 155 160

Gln Glu Ile Phe Ser Asn Glu Met Ala Lys Val Asp Asp Ser Phe Phe
165 170 175

His Arg Leu Glu Glu Ser Phe Leu Val Glu Glu Asp Lys Lys His Glu
180 185 190

Arg His Pro Ile Phe Gly Asn Ile Val Asp Glu Val Ala Tyr His Glu
195 200 205

Lys Tyr Pro Thr Ile Tyr His Leu Arg Lys Lys Leu Val Asp Ser Thr
210 215 220

Asp Lys Ala Asp Leu Arg Leu Ile Tyr Leu Ala Leu Ala His Met Ile
225 230 235 240

Lys Phe Arg Gly His Phe Leu Ile Glu Gly Asp Leu Asn Pro Asp Asn
245 250 255

Ser Asp Val Asp Lys Leu Phe Ile Gln Leu Val Gln Thr Tyr Asn Gln
260 265 270

Leu Phe Glu Glu Asn Pro Ile Asn Ala Ser Gly Val Asp Ala Lys Ala
275 280 285

Ile Leu Ser Ala Arg Leu Ser Lys Ser Arg Arg Leu Glu Asn Leu Ile
290 295 300

Ala Gln Leu Pro Gly Glu Lys Lys Asn Gly Leu Phe Gly Asn Leu Ile
305 310 315 320

Ala Leu Ser Leu Gly Leu Thr Pro Asn Phe Lys Ser Asn Phe Asp Leu
325 330 335

Ala Glu Asp Ala Lys Leu Gln Leu Ser Lys Asp Thr Tyr Asp Asp Asp
340 345 350

Leu Asp Asn Leu Leu Ala Gln Ile Gly Asp Gln Tyr Ala Asp Leu Phe
355 360 365

Leu Ala Ala Lys Asn Leu Ser Asp Ala Ile Leu Leu Ser Asp Ile Leu
370 375 380

Arg Val Asn Thr Glu Ile Thr Lys Ala Pro Leu Ser Ala Ser Met Ile
385 390 395 400

Lys Arg Tyr Asp Glu His His Gln Asp Leu Thr Leu Leu Lys Ala Leu
405 410 415

Val Arg Gln Gln Leu Pro Glu Lys Tyr Lys Glu Ile Phe Phe Asp Gln
420 425 430

Ser Lys Asn Gly Tyr Ala Gly Tyr Ile Asp Gly Gly Ala Ser Gln Glu
435 440 445

Glu Phe Tyr Lys Phe Ile Lys Pro Ile Leu Glu Lys Met Asp Gly Thr
450 455 460

Glu Glu Leu Leu Val Lys Leu Asn Arg Glu Asp Leu Leu Arg Lys Gln
465 470 475 480

Arg Thr Phe Asp Asn Gly Ser Ile Pro His Gln Ile His Leu Gly Glu
485 490 495

Leu His Ala Ile Leu Arg Arg Gln Glu Asp Phe Tyr Pro Phe Leu Lys

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

Glu Asp Arg Glu Met Ile Glu Glu Arg Leu Lys Thr Tyr Ala His Leu
705 710 715 720

Phe Asp Asp Lys Val Met Lys Gln Leu Lys Arg Arg Arg Tyr Thr Gly
725 730 735

Trp Gly Arg Leu Ser Arg Lys Leu Ile Asn Gly Ile Arg Asp Lys Gln
740 745 750

Ser Gly Lys Thr Ile Leu Asp Phe Leu Lys Ser Asp Gly Phe Ala Asn
755 760 765

Arg Asn Phe Met Gln Leu Ile His Asp Asp Ser Leu Thr Phe Lys Glu
770 775 780

Asp Ile Gln Lys Ala Gln Val Ser Gly Gln Gly Asp Ser Leu His Glu
785 790 795 800

His Ile Ala Asn Leu Ala Gly Ser Pro Ala Ile Lys Lys Gly Ile Leu
805 810 815

Gln Thr Val Lys Val Val Asp Glu Leu Val Lys Val Met Gly Arg His
820 825 830

Lys Pro Glu Asn Ile Val Ile Glu Met Ala Arg Glu Asn Gln Thr Thr
835 840 845

Gln Lys Gly Gln Lys Asn Ser Arg Glu Arg Met Lys Arg Ile Glu Glu
850 855 860

Gly Ile Lys Glu Leu Gly Ser Gln Ile Leu Lys Glu His Pro Val Glu
865 870 875 880

Asn Thr Gln Leu Gln Asn Glu Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn
885 890 895

Gly Arg Asp Met Tyr Val Asp Gln Glu Leu Asp Ile Asn Arg Leu Ser
900 905 910

Asp Tyr Asp Val Asp Ala Ile Val Pro Gln Ser Phe Leu Lys Asp Asp
915 920 925

Ser Ile Asp Asn Lys Val Leu Thr Arg Ser Asp Lys Asn Arg Gly Lys
930 935 940

Ser Asp Asn Val Pro Ser Glu Glu Val Val Lys Lys Met Lys Asn Tyr
945 950 955 960

Trp Arg Gln Leu Leu Asn Ala Lys Leu Ile Thr Gln Arg Lys Phe Asp
965 970 975

Asn Leu Thr Lys Ala Glu Arg Gly Gly Leu Ser Glu Leu Asp Lys Ala
980 985 990

Gly Phe Ile Lys Arg Gln Leu Val Glu Thr Arg Gln Ile Thr Lys His
995 1000 1005

Val Ala Gln Ile Leu Asp Ser Arg Met Asn Thr Lys Tyr Asp Glu
1010 1015 1020

Asn Asp Lys Leu Ile Arg Glu Val Lys Val Ile Thr Leu Lys Ser
1025 1030 1035

Lys Leu Val Ser Asp Phe Arg Lys Asp Phe Gln Phe Tyr Lys Val
1040 1045 1050

Arg Glu Ile Asn Asn Tyr His His Ala His Asp Ala Tyr Leu Asn
1055 1060 1065

Ala Val Val Gly Thr Ala Leu Ile Lys Lys Tyr Pro Lys Leu Glu
1070 1075 1080

Ser Glu Phe Val Tyr Gly Asp Tyr Lys Val Tyr Asp Val Arg Lys
 1085 1090 1095

Met Ile Ala Lys Ser Glu Gln Glu Ile Gly Lys Ala Thr Ala Lys
 1100 1105 1110

Tyr Phe Phe Tyr Ser Asn Ile Met Asn Phe Phe Lys Thr Glu Ile
 1115 1120 1125

Thr Leu Ala Asn Gly Glu Ile Arg Lys Arg Pro Leu Ile Glu Thr
 1130 1135 1140

Asn Gly Glu Thr Gly Glu Ile Val Trp Asp Lys Gly Arg Asp Phe
 1145 1150 1155

Ala Thr Val Arg Lys Val Leu Ser Met Pro Gln Val Asn Ile Val
 1160 1165 1170

Lys Lys Thr Glu Val Gln Thr Gly Gly Phe Ser Lys Glu Ser Ile
 1175 1180 1185

Leu Pro Lys Arg Asn Ser Asp Lys Leu Ile Ala Arg Lys Lys Asp
 1190 1195 1200

Trp Asp Pro Lys Lys Tyr Gly Gly Phe Asp Ser Pro Thr Val Ala
 1205 1210 1215

Tyr Ser Val Leu Val Val Ala Lys Val Glu Lys Gly Lys Ser Lys
 1220 1225 1230

Lys Leu Lys Ser Val Lys Glu Leu Leu Gly Ile Thr Ile Met Glu
 1235 1240 1245

Arg Ser Ser Phe Glu Lys Asn Pro Ile Asp Phe Leu Glu Ala Lys
 1250 1255 1260

Gly Tyr Lys Glu Val Lys Lys Asp Leu Ile Ile Lys Leu Pro Lys

1265		1270		1275
Tyr Ser Leu Phe Glu Leu Glu Asn Gly Arg Lys Arg Met Leu Ala				
1280		1285		1290
Ser Ala Gly Glu Leu Gln Lys Gly Asn Glu Leu Ala Leu Pro Ser				
1295		1300		1305
Lys Tyr Val Asn Phe Leu Tyr Leu Ala Ser His Tyr Glu Lys Leu				
1310		1315		1320
Lys Gly Ser Pro Glu Asp Asn Glu Gln Lys Gln Leu Phe Val Glu				
1325		1330		1335
Gln His Lys His Tyr Leu Asp Glu Ile Ile Glu Gln Ile Ser Glu				
1340		1345		1350
Phe Ser Lys Arg Val Ile Leu Ala Asp Ala Asn Leu Asp Lys Val				
1355		1360		1365
Leu Ser Ala Tyr Asn Lys His Arg Asp Lys Pro Ile Arg Glu Gln				
1370		1375		1380
Ala Glu Asn Ile Ile His Leu Phe Thr Leu Thr Asn Leu Gly Ala				
1385		1390		1395
Pro Ala Ala Phe Lys Tyr Phe Asp Thr Thr Ile Asp Arg Lys Arg				
1400		1405		1410
Tyr Thr Ser Thr Lys Glu Val Leu Asp Ala Thr Leu Ile His Gln				
1415		1420		1425
Ser Ile Thr Gly Leu Tyr Glu Thr Arg Ile Asp Leu Ser Gln Leu				
1430		1435		1440
Gly Gly Asp Ser Arg Ala Asp Tyr Pro Tyr Asp Val Pro Asp Tyr				
1445		1450		1455

Ala Ser Gly Ser Pro Lys Lys Lys Arg Lys Val Ser Pro Gly Gly
1460 1465 1470

Gly Pro Ser Ser Gly Ala Pro Pro Pro Ser Gly Gly Ser Pro Ala
1475 1480 1485

Gly Ser Pro Thr Ser Thr Glu Glu Gly Thr Ser Glu Ser Ala Thr
1490 1495 1500

Pro Glu Ser Gly Pro Gly Thr Ser Thr Glu Pro Ser Glu Gly Ser
1505 1510 1515

Ala Pro Gly Ser Pro Ala Gly Ser Pro Thr Ser Thr Glu Glu Gly
1520 1525 1530

Thr Ser Thr Glu Pro Ser Glu Gly Ser Ala Pro Gly Thr Ser Thr
1535 1540 1545

Glu Pro Ser Glu Asn His Asp Gln Glu Phe Asp Pro Pro Lys Val
1550 1555 1560

Tyr Pro Pro Val Pro Ala Glu Lys Arg Lys Pro Ile Arg Val Leu
1565 1570 1575

Ser Leu Phe Asp Gly Ile Ala Thr Gly Leu Leu Val Leu Lys Asp
1580 1585 1590

Leu Gly Ile Gln Val Asp Arg Tyr Ile Ala Ser Glu Val Cys Glu
1595 1600 1605

Asp Ser Ile Thr Val Gly Met Val Arg His Gln Gly Lys Ile Met
1610 1615 1620

Tyr Val Gly Asp Val Arg Ser Val Thr Gln Lys His Ile Gln Glu
1625 1630 1635

Trp	Gly	Pro	Phe	Asp	Leu	Val	Ile	Gly	Gly	Ser	Pro	Cys	Asn	Asp
1640						1645					1650			
Leu	Ser	Ile	Val	Asn	Pro	Ala	Arg	Lys	Gly	Leu	Tyr	Glu	Gly	Thr
1655						1660					1665			
Gly	Arg	Leu	Phe	Phe	Glu	Phe	Tyr	Arg	Leu	Leu	His	Asp	Ala	Arg
1670						1675					1680			
Pro	Lys	Glu	Gly	Asp	Asp	Arg	Pro	Phe	Phe	Trp	Leu	Phe	Glu	Asn
1685						1690					1695			
Val	Val	Ala	Met	Gly	Val	Ser	Asp	Lys	Arg	Asp	Ile	Ser	Arg	Phe
1700						1705					1710			
Leu	Glu	Ser	Asn	Pro	Val	Met	Ile	Asp	Ala	Lys	Glu	Val	Ser	Ala
1715						1720					1725			
Ala	His	Arg	Ala	Arg	Tyr	Phe	Trp	Gly	Asn	Leu	Pro	Gly	Met	Asn
1730						1735					1740			
Arg	Pro	Leu	Ala	Ser	Thr	Val	Asn	Asp	Lys	Leu	Glu	Leu	Gln	Glu
1745						1750					1755			
Cys	Leu	Glu	His	Gly	Arg	Ile	Ala	Lys	Phe	Ser	Lys	Val	Arg	Thr
1760						1765					1770			
Ile	Thr	Thr	Arg	Ser	Asn	Ser	Ile	Lys	Gln	Gly	Lys	Asp	Gln	His
1775						1780					1785			
Phe	Pro	Val	Phe	Met	Asn	Glu	Lys	Glu	Asp	Ile	Leu	Trp	Cys	Thr
1790						1795					1800			
Glu	Met	Glu	Arg	Val	Phe	Gly	Phe	Pro	Val	His	Tyr	Thr	Asp	Val
1805						1810					1815			

Ser Asn Met Ser Arg Leu Ala Arg Gln Arg Leu Leu Gly Arg Ser
 1820 1825 1830
 Trp Ser Val Pro Val Ile Arg His Leu Phe Ala Pro Leu Lys Glu
 1835 1840 1845
 Tyr Phe Ala Cys Val Ser Ser Gly Asn Ser Asn Ala Asn Ser Arg
 1850 1855 1860
 Gly Pro Ser Phe Ser Ser Gly Leu Val Pro Leu Ser Leu Arg Gly
 1865 1870 1875
 Ser His Met Gly Pro Met Glu Ile Tyr Lys Thr Val Ser Ala Trp
 1880 1885 1890
 Lys Arg Gln Pro Val Arg Val Leu Ser Leu Phe Arg Asn Ile Asp
 1895 1900 1905
 Lys Val Leu Lys Ser Leu Gly Phe Leu Glu Ser Gly Ser Gly Ser
 1910 1915 1920
 Gly Gly Gly Thr Leu Lys Tyr Val Glu Asp Val Thr Asn Val Val
 1925 1930 1935
 Arg Arg Asp Val Glu Lys Trp Gly Pro Phe Asp Leu Val Tyr Gly
 1940 1945 1950
 Ser Thr Gln Pro Leu Gly Ser Ser Cys Asp Arg Cys Pro Gly Trp
 1955 1960 1965
 Tyr Met Phe Gln Phe His Arg Ile Leu Gln Tyr Ala Leu Pro Arg
 1970 1975 1980
 Gln Glu Ser Gln Arg Pro Phe Phe Trp Ile Phe Met Asp Asn Leu
 1985 1990 1995
 Leu Leu Thr Glu Asp Asp Gln Glu Thr Thr Thr Arg Phe Leu Gln

2000	2005	2010
Thr Glu Ala Val Thr Leu Gln 2015 2020	Asp Val Arg Gly Arg 2025	Asp Tyr Gln
Asn Ala Met Arg Val Trp Ser 2030 2035	Asn Ile Pro Gly Leu 2040	Lys Ser Lys
His Ala Pro Leu Thr Pro Lys 2045 2050	Glu Glu Glu Tyr Leu 2055	Gln Ala Gln
Val Arg Ser Arg Ser Lys Leu 2060 2065	Asp Ala Pro Lys Val 2070	Asp Leu Leu
Val Lys Asn Cys Leu Leu Pro 2075 2080	Leu Arg Glu Tyr Phe 2085	Lys Tyr Phe
Ser Gln Asn Ser Leu Pro Leu 2090 2095	Ser Arg Ala Asp Pro 2100	Lys Lys Lys
Arg Lys Val Gly Ser Gly Ala 2105 2110	Thr Asn Phe Ser Leu 2115	Leu Lys Gln
Ala Gly Asp Val Glu Glu Asn 2120 2125	Pro Gly Pro Ser Glu 2130	Leu Ile Lys
Glu Asn Met His Met Lys Leu 2135 2140	Tyr Met Glu Gly Thr 2145	Val Asp Asn
His His Phe Lys Cys Thr Ser 2150 2155	Glu Gly Glu Gly Lys 2160	Pro Tyr Glu
Gly Thr Gln Thr Met Arg Ile 2165 2170	Lys Val Val Glu Gly 2175	Gly Pro Leu
Pro Phe Ala Phe Asp Ile Leu 2180 2185	Ala Thr Ser Phe Leu 2190	Tyr Gly Ser

Lys Thr Phe Ile Asn His Thr Gln Gly Ile Pro Asp Phe Phe Lys
2195 2200 2205

Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Val Thr Thr Tyr
2210 2215 2220

Glu Asp Gly Gly Val Leu Thr Ala Thr Gln Asp Thr Ser Leu Gln
2225 2230 2235

Asp Gly Cys Leu Ile Tyr Asn Val Lys Ile Arg Gly Val Asn Phe
2240 2245 2250

Thr Ser Asn Gly Pro Val Met Gln Lys Lys Thr Leu Gly Trp Glu
2255 2260 2265

Ala Phe Thr Glu Thr Leu Tyr Pro Ala Asp Gly Gly Leu Glu Gly
2270 2275 2280

Arg Asn Asp Met Ala Leu Lys Leu Val Gly Gly Ser His Leu Ile
2285 2290 2295

Ala Asn Ile Lys Thr Thr Tyr Arg Ser Lys Lys Pro Ala Lys Asn
2300 2305 2310

Leu Lys Met Pro Gly Val Tyr Tyr Val Asp Tyr Arg Leu Glu Arg
2315 2320 2325

Ile Lys Glu Ala Asn Asn Glu Thr Tyr Val Glu Gln His Glu Val
2330 2335 2340

Ala Val Ala Arg Tyr Cys Asp Leu Pro Ser Lys Leu Gly His Lys
2345 2350 2355

Leu Asn
2360

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<211> 2382
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 6

Asp Ala Lys Ser Leu Thr Ala Trp Ser Arg Thr Leu Val Thr Phe Lys
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Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr
20 25 30

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

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

Leu Glu Lys Gly Glu Glu Pro Gly Gly Ser Gly Gly Gly Ser Met Asp
65 70 75 80

Lys Lys Tyr Ser Ile Gly Leu Ala Ile Gly Thr Asn Ser Val Gly Trp
85 90 95

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

Leu Gly Asn Thr Asp Arg His Ser Ile Lys Lys Asn Leu Ile Gly Ala
115 120 125

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

Thr Ala Arg Arg Arg Tyr Thr Arg Arg Lys Asn Arg Ile Cys Tyr Leu
145 150 155 160

Gln Glu Ile Phe Ser Asn Glu Met Ala Lys Val Asp Asp Ser Phe Phe
165 170 175

His Arg Leu Glu Glu Ser Phe Leu Val Glu Glu Asp Lys Lys His Glu
180 185 190

Arg His Pro Ile Phe Gly Asn Ile Val Asp Glu Val Ala Tyr His Glu
195 200 205

Lys Tyr Pro Thr Ile Tyr His Leu Arg Lys Lys Leu Val Asp Ser Thr
210 215 220

Asp Lys Ala Asp Leu Arg Leu Ile Tyr Leu Ala Leu Ala His Met Ile
225 230 235 240

Lys Phe Arg Gly His Phe Leu Ile Glu Gly Asp Leu Asn Pro Asp Asn
245 250 255

Ser Asp Val Asp Lys Leu Phe Ile Gln Leu Val Gln Thr Tyr Asn Gln
260 265 270

Leu Phe Glu Glu Asn Pro Ile Asn Ala Ser Gly Val Asp Ala Lys Ala
275 280 285

Ile Leu Ser Ala Arg Leu Ser Lys Ser Arg Arg Leu Glu Asn Leu Ile
290 295 300

Ala Gln Leu Pro Gly Glu Lys Lys Asn Gly Leu Phe Gly Asn Leu Ile
305 310 315 320

Ala Leu Ser Leu Gly Leu Thr Pro Asn Phe Lys Ser Asn Phe Asp Leu
325 330 335

Ala Glu Asp Ala Lys Leu Gln Leu Ser Lys Asp Thr Tyr Asp Asp Asp
340 345 350

Leu Asp Asn Leu Leu Ala Gln Ile Gly Asp Gln Tyr Ala Asp Leu Phe
355 360 365

Leu Ala Ala Lys Asn Leu Ser Asp Ala Ile Leu Leu Ser Asp Ile Leu
370 375 380

Arg Val Asn Thr Glu Ile Thr Lys Ala Pro Leu Ser Ala Ser Met Ile
385 390 395 400

Lys Arg Tyr Asp Glu His His Gln Asp Leu Thr Leu Leu Lys Ala Leu
405 410 415

Val Arg Gln Gln Leu Pro Glu Lys Tyr Lys Glu Ile Phe Phe Asp Gln
420 425 430

Ser Lys Asn Gly Tyr Ala Gly Tyr Ile Asp Gly Gly Ala Ser Gln Glu
435 440 445

Glu Phe Tyr Lys Phe Ile Lys Pro Ile Leu Glu Lys Met Asp Gly Thr
450 455 460

Glu Glu Leu Leu Val Lys Leu Asn Arg Glu Asp Leu Leu Arg Lys Gln
465 470 475 480

Arg Thr Phe Asp Asn Gly Ser Ile Pro His Gln Ile His Leu Gly Glu
485 490 495

Leu His Ala Ile Leu Arg Arg Gln Glu Asp Phe Tyr Pro Phe Leu Lys
500 505 510

Asp Asn Arg Glu Lys Ile Glu Lys Ile Leu Thr Phe Arg Ile Pro Tyr
515 520 525

Tyr Val Gly Pro Leu Ala Arg Gly Asn Ser Arg Phe Ala Trp Met Thr
530 535 540

Arg Lys Ser Glu Glu Thr Ile Thr Pro Trp Asn Phe Glu Glu Val Val
 545 550 555 560

Asp Lys Gly Ala Ser Ala Gln Ser Phe Ile Glu Arg Met Thr Asn Phe
 565 570 575

Asp Lys Asn Leu Pro Asn Glu Lys Val Leu Pro Lys His Ser Leu Leu
 580 585 590

Tyr Glu Tyr Phe Thr Val Tyr Asn Glu Leu Thr Lys Val Lys Tyr Val
 595 600 605

Thr Glu Gly Met Arg Lys Pro Ala Phe Leu Ser Gly Glu Gln Lys Lys
 610 615 620

Ala Ile Val Asp Leu Leu Phe Lys Thr Asn Arg Lys Val Thr Val Lys
 625 630 635 640

Gln Leu Lys Glu Asp Tyr Phe Lys Lys Ile Glu Cys Phe Asp Ser Val
 645 650 655

Glu Ile Ser Gly Val Glu Asp Arg Phe Asn Ala Ser Leu Gly Thr Tyr
 660 665 670

His Asp Leu Leu Lys Ile Ile Lys Asp Lys Asp Phe Leu Asp Asn Glu
 675 680 685

Glu Asn Glu Asp Ile Leu Glu Asp Ile Val Leu Thr Leu Thr Leu Phe
 690 695 700

Glu Asp Arg Glu Met Ile Glu Glu Arg Leu Lys Thr Tyr Ala His Leu
 705 710 715 720

Phe Asp Asp Lys Val Met Lys Gln Leu Lys Arg Arg Arg Tyr Thr Gly
 725 730 735

Trp Gly Arg Leu Ser Arg Lys Leu Ile Asn Gly Ile Arg Asp Lys Gln

740

745

750

Ser Gly Lys Thr Ile Leu Asp Phe Leu Lys Ser Asp Gly Phe Ala Asn
 755 760 765

Arg Asn Phe Met Gln Leu Ile His Asp Asp Ser Leu Thr Phe Lys Glu
 770 775 780

Asp Ile Gln Lys Ala Gln Val Ser Gly Gln Gly Asp Ser Leu His Glu
 785 790 795 800

His Ile Ala Asn Leu Ala Gly Ser Pro Ala Ile Lys Lys Gly Ile Leu
 805 810 815

Gln Thr Val Lys Val Val Asp Glu Leu Val Lys Val Met Gly Arg His
 820 825 830

Lys Pro Glu Asn Ile Val Ile Glu Met Ala Arg Glu Asn Gln Thr Thr
 835 840 845

Gln Lys Gly Gln Lys Asn Ser Arg Glu Arg Met Lys Arg Ile Glu Glu
 850 855 860

Gly Ile Lys Glu Leu Gly Ser Gln Ile Leu Lys Glu His Pro Val Glu
 865 870 875 880

Asn Thr Gln Leu Gln Asn Glu Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn
 885 890 895

Gly Arg Asp Met Tyr Val Asp Gln Glu Leu Asp Ile Asn Arg Leu Ser
 900 905 910

Asp Tyr Asp Val Asp Ala Ile Val Pro Gln Ser Phe Leu Lys Asp Asp
 915 920 925

Ser Ile Asp Asn Lys Val Leu Thr Arg Ser Asp Lys Asn Arg Gly Lys
 930 935 940

Ser Asp Asn Val Pro Ser Glu Glu Val Val Lys Lys Met Lys Asn Tyr
 945 950 955 960

Trp Arg Gln Leu Leu Asn Ala Lys Leu Ile Thr Gln Arg Lys Phe Asp
 965 970 975

Asn Leu Thr Lys Ala Glu Arg Gly Gly Leu Ser Glu Leu Asp Lys Ala
 980 985 990

Gly Phe Ile Lys Arg Gln Leu Val Glu Thr Arg Gln Ile Thr Lys His
 995 1000 1005

Val Ala Gln Ile Leu Asp Ser Arg Met Asn Thr Lys Tyr Asp Glu
 1010 1015 1020

Asn Asp Lys Leu Ile Arg Glu Val Lys Val Ile Thr Leu Lys Ser
 1025 1030 1035

Lys Leu Val Ser Asp Phe Arg Lys Asp Phe Gln Phe Tyr Lys Val
 1040 1045 1050

Arg Glu Ile Asn Asn Tyr His His Ala His Asp Ala Tyr Leu Asn
 1055 1060 1065

Ala Val Val Gly Thr Ala Leu Ile Lys Lys Tyr Pro Lys Leu Glu
 1070 1075 1080

Ser Glu Phe Val Tyr Gly Asp Tyr Lys Val Tyr Asp Val Arg Lys
 1085 1090 1095

Met Ile Ala Lys Ser Glu Gln Glu Ile Gly Lys Ala Thr Ala Lys
 1100 1105 1110

Tyr Phe Phe Tyr Ser Asn Ile Met Asn Phe Phe Lys Thr Glu Ile
 1115 1120 1125

Thr	Leu	Ala	Asn	Gly	Glu	Ile	Arg	Lys	Arg	Pro	Leu	Ile	Glu	Thr
1130						1135					1140			
Asn	Gly	Glu	Thr	Gly	Glu	Ile	Val	Trp	Asp	Lys	Gly	Arg	Asp	Phe
1145						1150					1155			
Ala	Thr	Val	Arg	Lys	Val	Leu	Ser	Met	Pro	Gln	Val	Asn	Ile	Val
1160						1165					1170			
Lys	Lys	Thr	Glu	Val	Gln	Thr	Gly	Gly	Phe	Ser	Lys	Glu	Ser	Ile
1175						1180					1185			
Leu	Pro	Lys	Arg	Asn	Ser	Asp	Lys	Leu	Ile	Ala	Arg	Lys	Lys	Asp
1190						1195					1200			
Trp	Asp	Pro	Lys	Lys	Tyr	Gly	Gly	Phe	Asp	Ser	Pro	Thr	Val	Ala
1205						1210					1215			
Tyr	Ser	Val	Leu	Val	Val	Ala	Lys	Val	Glu	Lys	Gly	Lys	Ser	Lys
1220						1225					1230			
Lys	Leu	Lys	Ser	Val	Lys	Glu	Leu	Leu	Gly	Ile	Thr	Ile	Met	Glu
1235						1240					1245			
Arg	Ser	Ser	Phe	Glu	Lys	Asn	Pro	Ile	Asp	Phe	Leu	Glu	Ala	Lys
1250						1255					1260			
Gly	Tyr	Lys	Glu	Val	Lys	Lys	Asp	Leu	Ile	Ile	Lys	Leu	Pro	Lys
1265						1270					1275			
Tyr	Ser	Leu	Phe	Glu	Leu	Glu	Asn	Gly	Arg	Lys	Arg	Met	Leu	Ala
1280						1285					1290			
Ser	Ala	Gly	Glu	Leu	Gln	Lys	Gly	Asn	Glu	Leu	Ala	Leu	Pro	Ser
1295						1300					1305			

Lys Tyr Val Asn Phe Leu Tyr Leu Ala Ser His Tyr Glu Lys Leu
1310 1315 1320

Lys Gly Ser Pro Glu Asp Asn Glu Gln Lys Gln Leu Phe Val Glu
1325 1330 1335

Gln His Lys His Tyr Leu Asp Glu Ile Ile Glu Gln Ile Ser Glu
1340 1345 1350

Phe Ser Lys Arg Val Ile Leu Ala Asp Ala Asn Leu Asp Lys Val
1355 1360 1365

Leu Ser Ala Tyr Asn Lys His Arg Asp Lys Pro Ile Arg Glu Gln
1370 1375 1380

Ala Glu Asn Ile Ile His Leu Phe Thr Leu Thr Asn Leu Gly Ala
1385 1390 1395

Pro Ala Ala Phe Lys Tyr Phe Asp Thr Thr Ile Asp Arg Lys Arg
1400 1405 1410

Tyr Thr Ser Thr Lys Glu Val Leu Asp Ala Thr Leu Ile His Gln
1415 1420 1425

Ser Ile Thr Gly Leu Tyr Glu Thr Arg Ile Asp Leu Ser Gln Leu
1430 1435 1440

Gly Gly Asp Ser Arg Ala Asp Tyr Pro Tyr Asp Val Pro Asp Tyr
1445 1450 1455

Ala Ser Gly Ser Pro Lys Lys Lys Arg Lys Val Ser Pro Gly Gly
1460 1465 1470

Gly Pro Ser Ser Gly Ala Pro Pro Pro Ser Gly Gly Ser Pro Ala
1475 1480 1485

Gly Ser Pro Thr Ser Thr Glu Glu Gly Thr Ser Glu Ser Ala Thr

1490						1495						1500			
Pro	Glu	Ser	Gly	Pro	Gly	Thr	Ser	Thr	Glu	Pro	Ser	Glu	Gly	Ser	
1505						1510					1515				
Ala	Pro	Gly	Ser	Pro	Ala	Gly	Ser	Pro	Thr	Ser	Thr	Glu	Glu	Gly	
1520						1525					1530				
Thr	Ser	Thr	Glu	Pro	Ser	Glu	Gly	Ser	Ala	Pro	Gly	Thr	Ser	Thr	
1535						1540					1545				
Glu	Pro	Ser	Glu	Asn	His	Asp	Gln	Glu	Phe	Asp	Pro	Pro	Lys	Val	
1550						1555					1560				
Tyr	Pro	Pro	Val	Pro	Ala	Glu	Lys	Arg	Lys	Pro	Ile	Arg	Val	Leu	
1565						1570					1575				
Ser	Leu	Phe	Asp	Gly	Ile	Ala	Thr	Gly	Leu	Leu	Val	Leu	Lys	Asp	
1580						1585					1590				
Leu	Gly	Ile	Gln	Val	Asp	Arg	Tyr	Ile	Ala	Ser	Glu	Val	Cys	Glu	
1595						1600					1605				
Asp	Ser	Ile	Thr	Val	Gly	Met	Val	Arg	His	Gln	Gly	Lys	Ile	Met	
1610						1615					1620				
Tyr	Val	Gly	Asp	Val	Arg	Ser	Val	Thr	Gln	Lys	His	Ile	Gln	Glu	
1625						1630					1635				
Trp	Gly	Pro	Phe	Asp	Leu	Val	Ile	Gly	Gly	Ser	Pro	Cys	Asn	Asp	
1640						1645					1650				
Leu	Ser	Ile	Val	Asn	Pro	Ala	Arg	Lys	Gly	Leu	Tyr	Glu	Gly	Thr	
1655						1660					1665				
Gly	Arg	Leu	Phe	Phe	Glu	Phe	Tyr	Arg	Leu	Leu	His	Asp	Ala	Arg	
1670						1675					1680				

Pro	Lys	Glu	Gly	Asp	Asp	Arg	Pro	Phe	Phe	Trp	Leu	Phe	Glu	Asn
1685						1690					1695			
Val	Val	Ala	Met	Gly	Val	Ser	Asp	Lys	Arg	Asp	Ile	Ser	Arg	Phe
1700						1705					1710			
Leu	Glu	Ser	Asn	Pro	Val	Met	Ile	Asp	Ala	Lys	Glu	Val	Ser	Ala
1715						1720					1725			
Ala	His	Arg	Ala	Arg	Tyr	Phe	Trp	Gly	Asn	Leu	Pro	Gly	Met	Asn
1730						1735					1740			
Arg	Pro	Leu	Ala	Ser	Thr	Val	Asn	Asp	Lys	Leu	Glu	Leu	Gln	Glu
1745						1750					1755			
Cys	Leu	Glu	His	Gly	Arg	Ile	Ala	Lys	Phe	Ser	Lys	Val	Arg	Thr
1760						1765					1770			
Ile	Thr	Thr	Arg	Ser	Asn	Ser	Ile	Lys	Gln	Gly	Lys	Asp	Gln	His
1775						1780					1785			
Phe	Pro	Val	Phe	Met	Asn	Glu	Lys	Glu	Asp	Ile	Leu	Trp	Cys	Thr
1790						1795					1800			
Glu	Met	Glu	Arg	Val	Phe	Gly	Phe	Pro	Val	His	Tyr	Thr	Asp	Val
1805						1810					1815			
Ser	Asn	Met	Ser	Arg	Leu	Ala	Arg	Gln	Arg	Leu	Leu	Gly	Arg	Ser
1820						1825					1830			
Trp	Ser	Val	Pro	Val	Ile	Arg	His	Leu	Phe	Ala	Pro	Leu	Lys	Glu
1835						1840					1845			
Tyr	Phe	Ala	Cys	Val	Ser	Ser	Gly	Asn	Ser	Asn	Ala	Asn	Ser	Arg
1850						1855					1860			

Gly	Pro	Ser	Phe	Ser	Ser	Gly	Leu	Val	Pro	Leu	Ser	Leu	Arg	Gly
1865						1870					1875			
Ser	His	Met	Gly	Pro	Met	Glu	Ile	Tyr	Lys	Thr	Val	Ser	Ala	Trp
1880						1885					1890			
Lys	Arg	Gln	Pro	Val	Arg	Val	Leu	Ser	Leu	Phe	Arg	Asn	Ile	Asp
1895						1900					1905			
Lys	Val	Leu	Lys	Ser	Leu	Gly	Phe	Leu	Glu	Ser	Gly	Ser	Gly	Ser
1910						1915					1920			
Gly	Gly	Gly	Thr	Leu	Lys	Tyr	Val	Glu	Asp	Val	Thr	Asn	Val	Val
1925						1930					1935			
Arg	Arg	Asp	Val	Glu	Lys	Trp	Gly	Pro	Phe	Asp	Leu	Val	Tyr	Gly
1940						1945					1950			
Ser	Thr	Gln	Pro	Leu	Gly	Ser	Ser	Cys	Asp	Arg	Cys	Pro	Gly	Trp
1955						1960					1965			
Tyr	Met	Phe	Gln	Phe	His	Arg	Ile	Leu	Gln	Tyr	Ala	Leu	Pro	Arg
1970						1975					1980			
Gln	Glu	Ser	Gln	Arg	Pro	Phe	Phe	Trp	Ile	Phe	Met	Asp	Asn	Leu
1985						1990					1995			
Leu	Leu	Thr	Glu	Asp	Asp	Gln	Glu	Thr	Thr	Thr	Arg	Phe	Leu	Gln
2000						2005					2010			
Thr	Glu	Ala	Val	Thr	Leu	Gln	Asp	Val	Arg	Gly	Arg	Asp	Tyr	Gln
2015						2020					2025			
Asn	Ala	Met	Arg	Val	Trp	Ser	Asn	Ile	Pro	Gly	Leu	Lys	Ser	Lys
2030						2035					2040			

His	Ala	Pro	Leu	Thr	Pro	Lys	Glu	Glu	Glu	Tyr	Leu	Gln	Ala	Gln
2045						2050					2055			
Val	Arg	Ser	Arg	Ser	Lys	Leu	Asp	Ala	Pro	Lys	Val	Asp	Leu	Leu
2060						2065					2070			
Val	Lys	Asn	Cys	Leu	Leu	Pro	Leu	Arg	Glu	Tyr	Phe	Lys	Tyr	Phe
2075						2080					2085			
Ser	Gln	Asn	Ser	Leu	Pro	Leu	Ser	Arg	Ala	Asp	Pro	Lys	Lys	Lys
2090						2095					2100			
Arg	Lys	Val	Gly	Ser	Gly	Ala	Thr	Asn	Phe	Ser	Leu	Leu	Lys	Gln
2105						2110					2115			
Ala	Gly	Asp	Val	Glu	Glu	Asn	Pro	Gly	Pro	Gly	Ser	Gly	Ala	Thr
2120						2125					2130			
Asn	Phe	Ser	Leu	Leu	Lys	Gln	Ala	Gly	Asp	Val	Glu	Glu	Asn	Pro
2135						2140					2145			
Gly	Pro	Ser	Glu	Leu	Ile	Lys	Glu	Asn	Met	His	Met	Lys	Leu	Tyr
2150						2155					2160			
Met	Glu	Gly	Thr	Val	Asp	Asn	His	His	Phe	Lys	Cys	Thr	Ser	Glu
2165						2170					2175			
Gly	Glu	Gly	Lys	Pro	Tyr	Glu	Gly	Thr	Gln	Thr	Met	Arg	Ile	Lys
2180						2185					2190			
Val	Val	Glu	Gly	Gly	Pro	Leu	Pro	Phe	Ala	Phe	Asp	Ile	Leu	Ala
2195						2200					2205			
Thr	Ser	Phe	Leu	Tyr	Gly	Ser	Lys	Thr	Phe	Ile	Asn	His	Thr	Gln
2210						2215					2220			
Gly	Ile	Pro	Asp	Phe	Phe	Lys	Gln	Ser	Phe	Pro	Glu	Gly	Phe	Thr

2225

2230

2235

Trp Glu Arg Val Thr Thr Tyr Glu Asp Gly Gly Val Leu Thr Ala
 2240 2245 2250

Thr Gln Asp Thr Ser Leu Gln Asp Gly Cys Leu Ile Tyr Asn Val
 2255 2260 2265

Lys Ile Arg Gly Val Asn Phe Thr Ser Asn Gly Pro Val Met Gln
 2270 2275 2280

Lys Lys Thr Leu Gly Trp Glu Ala Phe Thr Glu Thr Leu Tyr Pro
 2285 2290 2295

Ala Asp Gly Gly Leu Glu Gly Arg Asn Asp Met Ala Leu Lys Leu
 2300 2305 2310

Val Gly Gly Ser His Leu Ile Ala Asn Ile Lys Thr Thr Tyr Arg
 2315 2320 2325

Ser Lys Lys Pro Ala Lys Asn Leu Lys Met Pro Gly Val Tyr Tyr
 2330 2335 2340

Val Asp Tyr Arg Leu Glu Arg Ile Lys Glu Ala Asn Asn Glu Thr
 2345 2350 2355

Tyr Val Glu Gln His Glu Val Ala Val Ala Arg Tyr Cys Asp Leu
 2360 2365 2370

Pro Ser Lys Leu Gly His Lys Leu Asn
 2375 2380

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<211> 2303

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 7

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Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr
20 25 30

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

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

Leu Glu Lys Gly Glu Glu Pro Ser Gly Ser Glu Thr Pro Gly Thr Ser
65 70 75 80

Glu Ser Ala Thr Pro Glu Ser Met Asp Lys Lys Tyr Ser Ile Gly Leu
85 90 95

Ala Ile Gly Thr Asn Ser Val Gly Trp Ala Val Ile Thr Asp Glu Tyr
100 105 110

Lys Val Pro Ser Lys Lys Phe Lys Val Leu Gly Asn Thr Asp Arg His
115 120 125

Ser Ile Lys Lys Asn Leu Ile Gly Ala Leu Leu Phe Asp Ser Gly Glu
130 135 140

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

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

Met Ala Lys Val Asp Asp Ser Phe Phe His Arg Leu Glu Glu Ser Phe

180

185

190

Leu Val Glu Glu Asp Lys Lys His Glu Arg His Pro Ile Phe Gly Asn
 195 200 205

Ile Val Asp Glu Val Ala Tyr His Glu Lys Tyr Pro Thr Ile Tyr His
 210 215 220

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

Ile Tyr Leu Ala Leu Ala His Met Ile Lys Phe Arg Gly His Phe Leu
 245 250 255

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

Ile Gln Leu Val Gln Thr Tyr Asn Gln Leu Phe Glu Glu Asn Pro Ile
 275 280 285

Asn Ala Ser Gly Val Asp Ala Lys Ala Ile Leu Ser Ala Arg Leu Ser
 290 295 300

Lys Ser Arg Arg Leu Glu Asn Leu Ile Ala Gln Leu Pro Gly Glu Lys
 305 310 315 320

Lys Asn Gly Leu Phe Gly Asn Leu Ile Ala Leu Ser Leu Gly Leu Thr
 325 330 335

Pro Asn Phe Lys Ser Asn Phe Asp Leu Ala Glu Asp Ala Lys Leu Gln
 340 345 350

Leu Ser Lys Asp Thr Tyr Asp Asp Asp Leu Asp Asn Leu Leu Ala Gln
 355 360 365

Ile Gly Asp Gln Tyr Ala Asp Leu Phe Leu Ala Ala Lys Asn Leu Ser
 370 375 380

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

Lys Ala Pro Leu Ser Ala Ser Met Ile Lys Arg Tyr Asp Glu His His
 405 410 415

Gln Asp Leu Thr Leu Leu Lys Ala Leu Val Arg Gln Gln Leu Pro Glu
 420 425 430

Lys Tyr Lys Glu Ile Phe Phe Asp Gln Ser Lys Asn Gly Tyr Ala Gly
 435 440 445

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

Pro Ile Leu Glu Lys Met Asp Gly Thr Glu Glu Leu Leu Val Lys Leu
 465 470 475 480

Asn Arg Glu Asp Leu Leu Arg Lys Gln Arg Thr Phe Asp Asn Gly Ser
 485 490 495

Ile Pro His Gln Ile His Leu Gly Glu Leu His Ala Ile Leu Arg Arg
 500 505 510

Gln Glu Asp Phe Tyr Pro Phe Leu Lys Asp Asn Arg Glu Lys Ile Glu
 515 520 525

Lys Ile Leu Thr Phe Arg Ile Pro Tyr Tyr Val Gly Pro Leu Ala Arg
 530 535 540

Gly Asn Ser Arg Phe Ala Trp Met Thr Arg Lys Ser Glu Glu Thr Ile
 545 550 555 560

Thr Pro Trp Asn Phe Glu Glu Val Val Asp Lys Gly Ala Ser Ala Gln
 565 570 575

Ser Phe Ile Glu Arg Met Thr Asn Phe Asp Lys Asn Leu Pro Asn Glu
580 585 590

Lys Val Leu Pro Lys His Ser Leu Leu Tyr Glu Tyr Phe Thr Val Tyr
595 600 605

Asn Glu Leu Thr Lys Val Lys Tyr Val Thr Glu Gly Met Arg Lys Pro
610 615 620

Ala Phe Leu Ser Gly Glu Gln Lys Lys Ala Ile Val Asp Leu Leu Phe
625 630 635 640

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

Lys Lys Ile Glu Cys Phe Asp Ser Val Glu Ile Ser Gly Val Glu Asp
660 665 670

Arg Phe Asn Ala Ser Leu Gly Thr Tyr His Asp Leu Leu Lys Ile Ile
675 680 685

Lys Asp Lys Asp Phe Leu Asp Asn Glu Glu Asn Glu Asp Ile Leu Glu
690 695 700

Asp Ile Val Leu Thr Leu Thr Leu Phe Glu Asp Arg Glu Met Ile Glu
705 710 715 720

Glu Arg Leu Lys Thr Tyr Ala His Leu Phe Asp Asp Lys Val Met Lys
725 730 735

Gln Leu Lys Arg Arg Arg Tyr Thr Gly Trp Gly Arg Leu Ser Arg Lys
740 745 750

Leu Ile Asn Gly Ile Arg Asp Lys Gln Ser Gly Lys Thr Ile Leu Asp
755 760 765

Phe Leu Lys Ser Asp Gly Phe Ala Asn Arg Asn Phe Met Gln Leu Ile
770 775 780

His Asp Asp Ser Leu Thr Phe Lys Glu Asp Ile Gln Lys Ala Gln Val
785 790 795 800

Ser Gly Gln Gly Asp Ser Leu His Glu His Ile Ala Asn Leu Ala Gly
805 810 815

Ser Pro Ala Ile Lys Lys Gly Ile Leu Gln Thr Val Lys Val Val Asp
820 825 830

Glu Leu Val Lys Val Met Gly Arg His Lys Pro Glu Asn Ile Val Ile
835 840 845

Glu Met Ala Arg Glu Asn Gln Thr Thr Gln Lys Gly Gln Lys Asn Ser
850 855 860

Arg Glu Arg Met Lys Arg Ile Glu Glu Gly Ile Lys Glu Leu Gly Ser
865 870 875 880

Gln Ile Leu Lys Glu His Pro Val Glu Asn Thr Gln Leu Gln Asn Glu
885 890 895

Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn Gly Arg Asp Met Tyr Val Asp
900 905 910

Gln Glu Leu Asp Ile Asn Arg Leu Ser Asp Tyr Asp Val Asp Ala Ile
915 920 925

Val Pro Gln Ser Phe Leu Lys Asp Asp Ser Ile Asp Asn Lys Val Leu
930 935 940

Thr Arg Ser Asp Lys Asn Arg Gly Lys Ser Asp Asn Val Pro Ser Glu
945 950 955 960

Glu Val Val Lys Lys Met Lys Asn Tyr Trp Arg Gln Leu Leu Asn Ala

965

970

975

Lys Leu Ile Thr Gln Arg Lys Phe Asp Asn Leu Thr Lys Ala Glu Arg
 980 985 990

Gly Gly Leu Ser Glu Leu Asp Lys Ala Gly Phe Ile Lys Arg Gln Leu
 995 1000 1005

Val Glu Thr Arg Gln Ile Thr Lys His Val Ala Gln Ile Leu Asp
 1010 1015 1020

Ser Arg Met Asn Thr Lys Tyr Asp Glu Asn Asp Lys Leu Ile Arg
 1025 1030 1035

Glu Val Lys Val Ile Thr Leu Lys Ser Lys Leu Val Ser Asp Phe
 1040 1045 1050

Arg Lys Asp Phe Gln Phe Tyr Lys Val Arg Glu Ile Asn Asn Tyr
 1055 1060 1065

His His Ala His Asp Ala Tyr Leu Asn Ala Val Val Gly Thr Ala
 1070 1075 1080

Leu Ile Lys Lys Tyr Pro Lys Leu Glu Ser Glu Phe Val Tyr Gly
 1085 1090 1095

Asp Tyr Lys Val Tyr Asp Val Arg Lys Met Ile Ala Lys Ser Glu
 1100 1105 1110

Gln Glu Ile Gly Lys Ala Thr Ala Lys Tyr Phe Phe Tyr Ser Asn
 1115 1120 1125

Ile Met Asn Phe Phe Lys Thr Glu Ile Thr Leu Ala Asn Gly Glu
 1130 1135 1140

Ile Arg Lys Arg Pro Leu Ile Glu Thr Asn Gly Glu Thr Gly Glu
 1145 1150 1155

Ile Val Trp Asp Lys Gly Arg Asp Phe Ala Thr Val Arg Lys Val
1160 1165 1170

Leu Ser Met Pro Gln Val Asn Ile Val Lys Lys Thr Glu Val Gln
1175 1180 1185

Thr Gly Gly Phe Ser Lys Glu Ser Ile Leu Pro Lys Arg Asn Ser
1190 1195 1200

Asp Lys Leu Ile Ala Arg Lys Lys Asp Trp Asp Pro Lys Lys Tyr
1205 1210 1215

Gly Gly Phe Asp Ser Pro Thr Val Ala Tyr Ser Val Leu Val Val
1220 1225 1230

Ala Lys Val Glu Lys Gly Lys Ser Lys Lys Leu Lys Ser Val Lys
1235 1240 1245

Glu Leu Leu Gly Ile Thr Ile Met Glu Arg Ser Ser Phe Glu Lys
1250 1255 1260

Asn Pro Ile Asp Phe Leu Glu Ala Lys Gly Tyr Lys Glu Val Lys
1265 1270 1275

Lys Asp Leu Ile Ile Lys Leu Pro Lys Tyr Ser Leu Phe Glu Leu
1280 1285 1290

Glu Asn Gly Arg Lys Arg Met Leu Ala Ser Ala Gly Glu Leu Gln
1295 1300 1305

Lys Gly Asn Glu Leu Ala Leu Pro Ser Lys Tyr Val Asn Phe Leu
1310 1315 1320

Tyr Leu Ala Ser His Tyr Glu Lys Leu Lys Gly Ser Pro Glu Asp
1325 1330 1335

Asn	Glu	Gln	Lys	Gln	Leu	Phe	Val	Glu	Gln	His	Lys	His	Tyr	Leu
1340						1345					1350			
Asp	Glu	Ile	Ile	Glu	Gln	Ile	Ser	Glu	Phe	Ser	Lys	Arg	Val	Ile
1355						1360					1365			
Leu	Ala	Asp	Ala	Asn	Leu	Asp	Lys	Val	Leu	Ser	Ala	Tyr	Asn	Lys
1370						1375					1380			
His	Arg	Asp	Lys	Pro	Ile	Arg	Glu	Gln	Ala	Glu	Asn	Ile	Ile	His
1385						1390					1395			
Leu	Phe	Thr	Leu	Thr	Asn	Leu	Gly	Ala	Pro	Ala	Ala	Phe	Lys	Tyr
1400						1405					1410			
Phe	Asp	Thr	Thr	Ile	Asp	Arg	Lys	Arg	Tyr	Thr	Ser	Thr	Lys	Glu
1415						1420					1425			
Val	Leu	Asp	Ala	Thr	Leu	Ile	His	Gln	Ser	Ile	Thr	Gly	Leu	Tyr
1430						1435					1440			
Glu	Thr	Arg	Ile	Asp	Leu	Ser	Gln	Leu	Gly	Gly	Asp	Ser	Arg	Ala
1445						1450					1455			
Asp	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr	Ala	Ser	Gly	Ser	Pro	Lys
1460						1465					1470			
Lys	Lys	Arg	Lys	Val	Glu	Ala	Ser	Gly	Ser	Gly	Arg	Ala	Ser	Pro
1475						1480					1485			
Gly	Ile	Pro	Gly	Ser	Thr	Arg	Asn	His	Asp	Gln	Glu	Phe	Asp	Pro
1490						1495					1500			
Pro	Lys	Val	Tyr	Pro	Pro	Val	Pro	Ala	Glu	Lys	Arg	Lys	Pro	Ile
1505						1510					1515			

Arg Val Leu Ser Leu Phe Asp Gly Ile Ala Thr Gly Leu Leu Val
1520 1525 1530

Leu Lys Asp Leu Gly Ile Gln Val Asp Arg Tyr Ile Ala Ser Glu
1535 1540 1545

Val Cys Glu Asp Ser Ile Thr Val Gly Met Val Arg His Gln Gly
1550 1555 1560

Lys Ile Met Tyr Val Gly Asp Val Arg Ser Val Thr Gln Lys His
1565 1570 1575

Ile Gln Glu Trp Gly Pro Phe Asp Leu Val Ile Gly Gly Ser Pro
1580 1585 1590

Cys Asn Asp Leu Ser Ile Val Asn Pro Ala Arg Lys Gly Leu Tyr
1595 1600 1605

Glu Gly Thr Gly Arg Leu Phe Phe Glu Phe Tyr Arg Leu Leu His
1610 1615 1620

Asp Ala Arg Pro Lys Glu Gly Asp Asp Arg Pro Phe Phe Trp Leu
1625 1630 1635

Phe Glu Asn Val Val Ala Met Gly Val Ser Asp Lys Arg Asp Ile
1640 1645 1650

Ser Arg Phe Leu Glu Ser Asn Pro Val Met Ile Asp Ala Lys Glu
1655 1660 1665

Val Ser Ala Ala His Arg Ala Arg Tyr Phe Trp Gly Asn Leu Pro
1670 1675 1680

Gly Met Asn Arg Pro Leu Ala Ser Thr Val Asn Asp Lys Leu Glu
1685 1690 1695

Leu Gln Glu Cys Leu Glu His Gly Arg Ile Ala Lys Phe Ser Lys

1700						1705						1710			
Val	Arg	Thr	Ile	Thr	Thr	Arg	Ser	Asn	Ser	Ile	Lys	Gln	Gly	Lys	
1715						1720					1725				
Asp	Gln	His	Phe	Pro	Val	Phe	Met	Asn	Glu	Lys	Glu	Asp	Ile	Leu	
1730						1735					1740				
Trp	Cys	Thr	Glu	Met	Glu	Arg	Val	Phe	Gly	Phe	Pro	Val	His	Tyr	
1745						1750					1755				
Thr	Asp	Val	Ser	Asn	Met	Ser	Arg	Leu	Ala	Arg	Gln	Arg	Leu	Leu	
1760						1765					1770				
Gly	Arg	Ser	Trp	Ser	Val	Pro	Val	Ile	Arg	His	Leu	Phe	Ala	Pro	
1775						1780					1785				
Leu	Lys	Glu	Tyr	Phe	Ala	Cys	Val	Ser	Ser	Gly	Asn	Ser	Asn	Ala	
1790						1795					1800				
Asn	Ser	Arg	Gly	Pro	Ser	Phe	Ser	Ser	Gly	Leu	Val	Pro	Leu	Ser	
1805						1810					1815				
Leu	Arg	Gly	Ser	His	Met	Gly	Pro	Met	Glu	Ile	Tyr	Lys	Thr	Val	
1820						1825					1830				
Ser	Ala	Trp	Lys	Arg	Gln	Pro	Val	Arg	Val	Leu	Ser	Leu	Phe	Arg	
1835						1840					1845				
Asn	Ile	Asp	Lys	Val	Leu	Lys	Ser	Leu	Gly	Phe	Leu	Glu	Ser	Gly	
1850						1855					1860				
Ser	Gly	Ser	Gly	Gly	Gly	Thr	Leu	Lys	Tyr	Val	Glu	Asp	Val	Thr	
1865						1870					1875				
Asn	Val	Val	Arg	Arg	Asp	Val	Glu	Lys	Trp	Gly	Pro	Phe	Asp	Leu	
1880						1885					1890				

Val Tyr Gly Ser Thr Gln Pro Leu Gly Ser Ser Cys Asp Arg Cys
1895 1900 1905

Pro Gly Trp Tyr Met Phe Gln Phe His Arg Ile Leu Gln Tyr Ala
1910 1915 1920

Leu Pro Arg Gln Glu Ser Gln Arg Pro Phe Phe Trp Ile Phe Met
1925 1930 1935

Asp Asn Leu Leu Leu Thr Glu Asp Asp Gln Glu Thr Thr Thr Arg
1940 1945 1950

Phe Leu Gln Thr Glu Ala Val Thr Leu Gln Asp Val Arg Gly Arg
1955 1960 1965

Asp Tyr Gln Asn Ala Met Arg Val Trp Ser Asn Ile Pro Gly Leu
1970 1975 1980

Lys Ser Lys His Ala Pro Leu Thr Pro Lys Glu Glu Glu Tyr Leu
1985 1990 1995

Gln Ala Gln Val Arg Ser Arg Ser Lys Leu Asp Ala Pro Lys Val
2000 2005 2010

Asp Leu Leu Val Lys Asn Cys Leu Leu Pro Leu Arg Glu Tyr Phe
2015 2020 2025

Lys Tyr Phe Ser Gln Asn Ser Leu Pro Leu Ser Arg Ala Asp Pro
2030 2035 2040

Lys Lys Lys Arg Lys Val Gly Ser Gly Ala Thr Asn Phe Ser Leu
2045 2050 2055

Leu Lys Gln Ala Gly Asp Val Glu Glu Asn Pro Gly Pro Ser Glu
2060 2065 2070

Leu	Ile	Lys	Glu	Asn	Met	His	Met	Lys	Leu	Tyr	Met	Glu	Gly	Thr
2075						2080					2085			
Val	Asp	Asn	His	His	Phe	Lys	Cys	Thr	Ser	Glu	Gly	Glu	Gly	Lys
2090						2095					2100			
Pro	Tyr	Glu	Gly	Thr	Gln	Thr	Met	Arg	Ile	Lys	Val	Val	Glu	Gly
2105						2110					2115			
Gly	Pro	Leu	Pro	Phe	Ala	Phe	Asp	Ile	Leu	Ala	Thr	Ser	Phe	Leu
2120						2125					2130			
Tyr	Gly	Ser	Lys	Thr	Phe	Ile	Asn	His	Thr	Gln	Gly	Ile	Pro	Asp
2135						2140					2145			
Phe	Phe	Lys	Gln	Ser	Phe	Pro	Glu	Gly	Phe	Thr	Trp	Glu	Arg	Val
2150						2155					2160			
Thr	Thr	Tyr	Glu	Asp	Gly	Gly	Val	Leu	Thr	Ala	Thr	Gln	Asp	Thr
2165						2170					2175			
Ser	Leu	Gln	Asp	Gly	Cys	Leu	Ile	Tyr	Asn	Val	Lys	Ile	Arg	Gly
2180						2185					2190			
Val	Asn	Phe	Thr	Ser	Asn	Gly	Pro	Val	Met	Gln	Lys	Lys	Thr	Leu
2195						2200					2205			
Gly	Trp	Glu	Ala	Phe	Thr	Glu	Thr	Leu	Tyr	Pro	Ala	Asp	Gly	Gly
2210						2215					2220			
Leu	Glu	Gly	Arg	Asn	Asp	Met	Ala	Leu	Lys	Leu	Val	Gly	Gly	Ser
2225						2230					2235			
His	Leu	Ile	Ala	Asn	Ile	Lys	Thr	Thr	Tyr	Arg	Ser	Lys	Lys	Pro
2240						2245					2250			

Ala Lys Asn Leu Lys Met Pro Gly Val Tyr Tyr Val Asp Tyr Arg
2255 2260 2265

Leu Glu Arg Ile Lys Glu Ala Asn Asn Glu Thr Tyr Val Glu Gln
2270 2275 2280

His Glu Val Ala Val Ala Arg Tyr Cys Asp Leu Pro Ser Lys Leu
2285 2290 2295

Gly His Lys Leu Asn
2300

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<211> 2325
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Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr
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Ala Gln Gln Ile Val Tyr Arg Asn Val Met Leu Glu Asn Tyr Lys Asn
35 40 45

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

Leu Glu Lys Gly Glu Glu Pro Ser Gly Ser Glu Thr Pro Gly Thr Ser
65 70 75 80

Glu Ser Ala Thr Pro Glu Ser Met Asp Lys Lys Tyr Ser Ile Gly Leu
85 90 95

Ala Ile Gly Thr Asn Ser Val Gly Trp Ala Val Ile Thr Asp Glu Tyr
100 105 110

Lys Val Pro Ser Lys Lys Phe Lys Val Leu Gly Asn Thr Asp Arg His
115 120 125

Ser Ile Lys Lys Asn Leu Ile Gly Ala Leu Leu Phe Asp Ser Gly Glu
130 135 140

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

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

Met Ala Lys Val Asp Asp Ser Phe Phe His Arg Leu Glu Glu Ser Phe
180 185 190

Leu Val Glu Glu Asp Lys Lys His Glu Arg His Pro Ile Phe Gly Asn
195 200 205

Ile Val Asp Glu Val Ala Tyr His Glu Lys Tyr Pro Thr Ile Tyr His
210 215 220

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

Ile Tyr Leu Ala Leu Ala His Met Ile Lys Phe Arg Gly His Phe Leu
245 250 255

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

Ile Gln Leu Val Gln Thr Tyr Asn Gln Leu Phe Glu Glu Asn Pro Ile
275 280 285

Asn Ala Ser Gly Val Asp Ala Lys Ala Ile Leu Ser Ala Arg Leu Ser
290 295 300

Lys Ser Arg Arg Leu Glu Asn Leu Ile Ala Gln Leu Pro Gly Glu Lys
305 310 315 320

Lys Asn Gly Leu Phe Gly Asn Leu Ile Ala Leu Ser Leu Gly Leu Thr
325 330 335

Pro Asn Phe Lys Ser Asn Phe Asp Leu Ala Glu Asp Ala Lys Leu Gln
340 345 350

Leu Ser Lys Asp Thr Tyr Asp Asp Asp Leu Asp Asn Leu Leu Ala Gln
355 360 365

Ile Gly Asp Gln Tyr Ala Asp Leu Phe Leu Ala Ala Lys Asn Leu Ser
370 375 380

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

Lys Ala Pro Leu Ser Ala Ser Met Ile Lys Arg Tyr Asp Glu His His
405 410 415

Gln Asp Leu Thr Leu Leu Lys Ala Leu Val Arg Gln Gln Leu Pro Glu
420 425 430

Lys Tyr Lys Glu Ile Phe Phe Asp Gln Ser Lys Asn Gly Tyr Ala Gly
435 440 445

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

Pro Ile Leu Glu Lys Met Asp Gly Thr Glu Glu Leu Leu Val Lys Leu
465 470 475 480

Asn Arg Glu Asp Leu Leu Arg Lys Gln Arg Thr Phe Asp Asn Gly Ser

485

490

495

Ile Pro His Gln Ile His Leu Gly Glu Leu His Ala Ile Leu Arg Arg
 500 505 510

Gln Glu Asp Phe Tyr Pro Phe Leu Lys Asp Asn Arg Glu Lys Ile Glu
 515 520 525

Lys Ile Leu Thr Phe Arg Ile Pro Tyr Tyr Val Gly Pro Leu Ala Arg
 530 535 540

Gly Asn Ser Arg Phe Ala Trp Met Thr Arg Lys Ser Glu Glu Thr Ile
 545 550 555 560

Thr Pro Trp Asn Phe Glu Glu Val Val Asp Lys Gly Ala Ser Ala Gln
 565 570 575

Ser Phe Ile Glu Arg Met Thr Asn Phe Asp Lys Asn Leu Pro Asn Glu
 580 585 590

Lys Val Leu Pro Lys His Ser Leu Leu Tyr Glu Tyr Phe Thr Val Tyr
 595 600 605

Asn Glu Leu Thr Lys Val Lys Tyr Val Thr Glu Gly Met Arg Lys Pro
 610 615 620

Ala Phe Leu Ser Gly Glu Gln Lys Lys Ala Ile Val Asp Leu Leu Phe
 625 630 635 640

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

Lys Lys Ile Glu Cys Phe Asp Ser Val Glu Ile Ser Gly Val Glu Asp
 660 665 670

Arg Phe Asn Ala Ser Leu Gly Thr Tyr His Asp Leu Leu Lys Ile Ile
 675 680 685

Lys Asp Lys Asp Phe Leu Asp Asn Glu Glu Asn Glu Asp Ile Leu Glu
690 695 700

Asp Ile Val Leu Thr Leu Thr Leu Phe Glu Asp Arg Glu Met Ile Glu
705 710 715 720

Glu Arg Leu Lys Thr Tyr Ala His Leu Phe Asp Asp Lys Val Met Lys
725 730 735

Gln Leu Lys Arg Arg Arg Tyr Thr Gly Trp Gly Arg Leu Ser Arg Lys
740 745 750

Leu Ile Asn Gly Ile Arg Asp Lys Gln Ser Gly Lys Thr Ile Leu Asp
755 760 765

Phe Leu Lys Ser Asp Gly Phe Ala Asn Arg Asn Phe Met Gln Leu Ile
770 775 780

His Asp Asp Ser Leu Thr Phe Lys Glu Asp Ile Gln Lys Ala Gln Val
785 790 795 800

Ser Gly Gln Gly Asp Ser Leu His Glu His Ile Ala Asn Leu Ala Gly
805 810 815

Ser Pro Ala Ile Lys Lys Gly Ile Leu Gln Thr Val Lys Val Val Asp
820 825 830

Glu Leu Val Lys Val Met Gly Arg His Lys Pro Glu Asn Ile Val Ile
835 840 845

Glu Met Ala Arg Glu Asn Gln Thr Thr Gln Lys Gly Gln Lys Asn Ser
850 855 860

Arg Glu Arg Met Lys Arg Ile Glu Glu Gly Ile Lys Glu Leu Gly Ser
865 870 875 880

Gln Ile Leu Lys Glu His Pro Val Glu Asn Thr Gln Leu Gln Asn Glu
885 890 895

Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn Gly Arg Asp Met Tyr Val Asp
900 905 910

Gln Glu Leu Asp Ile Asn Arg Leu Ser Asp Tyr Asp Val Asp Ala Ile
915 920 925

Val Pro Gln Ser Phe Leu Lys Asp Asp Ser Ile Asp Asn Lys Val Leu
930 935 940

Thr Arg Ser Asp Lys Asn Arg Gly Lys Ser Asp Asn Val Pro Ser Glu
945 950 955 960

Glu Val Val Lys Lys Met Lys Asn Tyr Trp Arg Gln Leu Leu Asn Ala
965 970 975

Lys Leu Ile Thr Gln Arg Lys Phe Asp Asn Leu Thr Lys Ala Glu Arg
980 985 990

Gly Gly Leu Ser Glu Leu Asp Lys Ala Gly Phe Ile Lys Arg Gln Leu
995 1000 1005

Val Glu Thr Arg Gln Ile Thr Lys His Val Ala Gln Ile Leu Asp
1010 1015 1020

Ser Arg Met Asn Thr Lys Tyr Asp Glu Asn Asp Lys Leu Ile Arg
1025 1030 1035

Glu Val Lys Val Ile Thr Leu Lys Ser Lys Leu Val Ser Asp Phe
1040 1045 1050

Arg Lys Asp Phe Gln Phe Tyr Lys Val Arg Glu Ile Asn Asn Tyr
1055 1060 1065

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

1250		1255		1260
Asn Pro Ile Asp Phe Leu Glu Ala Lys Gly Tyr Lys Glu Val Lys				
1265		1270		1275
Lys Asp Leu Ile Ile Lys Leu Pro Lys Tyr Ser Leu Phe Glu Leu				
1280		1285		1290
Glu Asn Gly Arg Lys Arg Met Leu Ala Ser Ala Gly Glu Leu Gln				
1295		1300		1305
Lys Gly Asn Glu Leu Ala Leu Pro Ser Lys Tyr Val Asn Phe Leu				
1310		1315		1320
Tyr Leu Ala Ser His Tyr Glu Lys Leu Lys Gly Ser Pro Glu Asp				
1325		1330		1335
Asn Glu Gln Lys Gln Leu Phe Val Glu Gln His Lys His Tyr Leu				
1340		1345		1350
Asp Glu Ile Ile Glu Gln Ile Ser Glu Phe Ser Lys Arg Val Ile				
1355		1360		1365
Leu Ala Asp Ala Asn Leu Asp Lys Val Leu Ser Ala Tyr Asn Lys				
1370		1375		1380
His Arg Asp Lys Pro Ile Arg Glu Gln Ala Glu Asn Ile Ile His				
1385		1390		1395
Leu Phe Thr Leu Thr Asn Leu Gly Ala Pro Ala Ala Phe Lys Tyr				
1400		1405		1410
Phe Asp Thr Thr Ile Asp Arg Lys Arg Tyr Thr Ser Thr Lys Glu				
1415		1420		1425
Val Leu Asp Ala Thr Leu Ile His Gln Ser Ile Thr Gly Leu Tyr				
1430		1435		1440

Glu Thr	Arg Ile	Asp Leu	Ser	Gln Leu	Gly Gly	Asp	Ser Arg	Ala	
1445			1450			1455			
Asp Tyr	Pro Tyr	Asp Val	Pro	Asp Tyr	Ala Ser	Gly	Ser Pro	Lys	
1460			1465			1470			
Lys Lys	Arg Lys	Val Glu	Ala	Ser Gly	Ser Gly	Arg	Ala Ser	Pro	
1475			1480			1485			
Gly Ile	Pro Gly	Ser Thr	Arg	Asn His	Asp Gln	Glu	Phe Asp	Pro	
1490			1495			1500			
Pro Lys	Val Tyr	Pro Pro	Val	Pro Ala	Glu Lys	Arg	Lys Pro	Ile	
1505			1510			1515			
Arg Val	Leu Ser	Leu Phe	Asp	Gly Ile	Ala Thr	Gly	Leu Leu	Val	
1520			1525			1530			
Leu Lys	Asp Leu	Gly Ile	Gln	Val Asp	Arg Tyr	Ile	Ala Ser	Glu	
1535			1540			1545			
Val Cys	Glu Asp	Ser Ile	Thr	Val Gly	Met Val	Arg	His Gln	Gly	
1550			1555			1560			
Lys Ile	Met Tyr	Val Gly	Asp	Val Arg	Ser Val	Thr	Gln Lys	His	
1565			1570			1575			
Ile Gln	Glu Trp	Gly Pro	Phe	Asp Leu	Val Ile	Gly	Gly Ser	Pro	
1580			1585			1590			
Cys Asn	Asp Leu	Ser Ile	Val	Asn Pro	Ala Arg	Lys	Gly Leu	Tyr	
1595			1600			1605			
Glu Gly	Thr Gly	Arg Leu	Phe	Phe Glu	Phe Tyr	Arg	Leu Leu	His	
1610			1615			1620			

Asp	Ala	Arg	Pro	Lys	Glu	Gly	Asp	Asp	Arg	Pro	Phe	Phe	Trp	Leu
1625						1630					1635			
Phe	Glu	Asn	Val	Val	Ala	Met	Gly	Val	Ser	Asp	Lys	Arg	Asp	Ile
1640						1645					1650			
Ser	Arg	Phe	Leu	Glu	Ser	Asn	Pro	Val	Met	Ile	Asp	Ala	Lys	Glu
1655						1660					1665			
Val	Ser	Ala	Ala	His	Arg	Ala	Arg	Tyr	Phe	Trp	Gly	Asn	Leu	Pro
1670						1675					1680			
Gly	Met	Asn	Arg	Pro	Leu	Ala	Ser	Thr	Val	Asn	Asp	Lys	Leu	Glu
1685						1690					1695			
Leu	Gln	Glu	Cys	Leu	Glu	His	Gly	Arg	Ile	Ala	Lys	Phe	Ser	Lys
1700						1705					1710			
Val	Arg	Thr	Ile	Thr	Thr	Arg	Ser	Asn	Ser	Ile	Lys	Gln	Gly	Lys
1715						1720					1725			
Asp	Gln	His	Phe	Pro	Val	Phe	Met	Asn	Glu	Lys	Glu	Asp	Ile	Leu
1730						1735					1740			
Trp	Cys	Thr	Glu	Met	Glu	Arg	Val	Phe	Gly	Phe	Pro	Val	His	Tyr
1745						1750					1755			
Thr	Asp	Val	Ser	Asn	Met	Ser	Arg	Leu	Ala	Arg	Gln	Arg	Leu	Leu
1760						1765					1770			
Gly	Arg	Ser	Trp	Ser	Val	Pro	Val	Ile	Arg	His	Leu	Phe	Ala	Pro
1775						1780					1785			
Leu	Lys	Glu	Tyr	Phe	Ala	Cys	Val	Ser	Ser	Gly	Asn	Ser	Asn	Ala
1790						1795					1800			

Asn	Ser	Arg	Gly	Pro	Ser	Phe	Ser	Ser	Gly	Leu	Val	Pro	Leu	Ser
1805						1810					1815			
Leu	Arg	Gly	Ser	His	Met	Gly	Pro	Met	Glu	Ile	Tyr	Lys	Thr	Val
1820						1825					1830			
Ser	Ala	Trp	Lys	Arg	Gln	Pro	Val	Arg	Val	Leu	Ser	Leu	Phe	Arg
1835						1840					1845			
Asn	Ile	Asp	Lys	Val	Leu	Lys	Ser	Leu	Gly	Phe	Leu	Glu	Ser	Gly
1850						1855					1860			
Ser	Gly	Ser	Gly	Gly	Gly	Thr	Leu	Lys	Tyr	Val	Glu	Asp	Val	Thr
1865						1870					1875			
Asn	Val	Val	Arg	Arg	Asp	Val	Glu	Lys	Trp	Gly	Pro	Phe	Asp	Leu
1880						1885					1890			
Val	Tyr	Gly	Ser	Thr	Gln	Pro	Leu	Gly	Ser	Ser	Cys	Asp	Arg	Cys
1895						1900					1905			
Pro	Gly	Trp	Tyr	Met	Phe	Gln	Phe	His	Arg	Ile	Leu	Gln	Tyr	Ala
1910						1915					1920			
Leu	Pro	Arg	Gln	Glu	Ser	Gln	Arg	Pro	Phe	Phe	Trp	Ile	Phe	Met
1925						1930					1935			
Asp	Asn	Leu	Leu	Leu	Thr	Glu	Asp	Asp	Gln	Glu	Thr	Thr	Thr	Arg
1940						1945					1950			
Phe	Leu	Gln	Thr	Glu	Ala	Val	Thr	Leu	Gln	Asp	Val	Arg	Gly	Arg
1955						1960					1965			
Asp	Tyr	Gln	Asn	Ala	Met	Arg	Val	Trp	Ser	Asn	Ile	Pro	Gly	Leu
1970						1975					1980			
Lys	Ser	Lys	His	Ala	Pro	Leu	Thr	Pro	Lys	Glu	Glu	Glu	Tyr	Leu

1985	1990	1995
Gln Ala 2000	Gln Val Arg Ser Arg 2005	Ser Lys Leu Asp Ala Pro Lys Val 2010
Asp Leu 2015	Leu Val Lys Asn Cys 2020	Leu Leu Pro Leu Arg Glu Tyr Phe 2025
Lys Tyr 2030	Phe Ser Gln Asn Ser 2035	Leu Pro Leu Ser Arg Ala Asp Pro 2040
Lys Lys 2045	Lys Arg Lys Val Gly 2050	Ser Gly Ala Thr Asn Phe Ser Leu 2055
Leu Lys 2060	Gln Ala Gly Asp Val 2065	Glu Glu Asn Pro Gly Pro Gly Ser 2070
Gly Ala 2075	Thr Asn Phe Ser Leu 2080	Leu Lys Gln Ala Gly Asp Val Glu 2085
Glu Asn 2090	Pro Gly Pro Ser Glu 2095	Leu Ile Lys Glu Asn Met His Met 2100
Lys Leu 2105	Tyr Met Glu Gly Thr 2110	Val Asp Asn His His Phe Lys Cys 2115
Thr Ser 2120	Glu Gly Glu Gly Lys 2125	Pro Tyr Glu Gly Thr Gln Thr Met 2130
Arg Ile 2135	Lys Val Val Glu Gly 2140	Gly Pro Leu Pro Phe Ala Phe Asp 2145
Ile Leu 2150	Ala Thr Ser Phe Leu 2155	Tyr Gly Ser Lys Thr Phe Ile Asn 2160
His Thr 2165	Gln Gly Ile Pro Asp 2170	Phe Phe Lys Gln Ser Phe Pro Glu 2175

Gly Phe Thr Trp Glu Arg Val Thr Thr Tyr Glu Asp Gly Gly Val
 2180 2185 2190

Leu Thr Ala Thr Gln Asp Thr Ser Leu Gln Asp Gly Cys Leu Ile
 2195 2200 2205

Tyr Asn Val Lys Ile Arg Gly Val Asn Phe Thr Ser Asn Gly Pro
 2210 2215 2220

Val Met Gln Lys Lys Thr Leu Gly Trp Glu Ala Phe Thr Glu Thr
 2225 2230 2235

Leu Tyr Pro Ala Asp Gly Gly Leu Glu Gly Arg Asn Asp Met Ala
 2240 2245 2250

Leu Lys Leu Val Gly Gly Ser His Leu Ile Ala Asn Ile Lys Thr
 2255 2260 2265

Thr Tyr Arg Ser Lys Lys Pro Ala Lys Asn Leu Lys Met Pro Gly
 2270 2275 2280

Val Tyr Tyr Val Asp Tyr Arg Leu Glu Arg Ile Lys Glu Ala Asn
 2285 2290 2295

Asn Glu Thr Tyr Val Glu Gln His Glu Val Ala Val Ala Arg Tyr
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Cys Asp Leu Pro Ser Lys Leu Gly His Lys Leu Asn
 2315 2320 2325

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 <211> 2367
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic polypeptide

<400> 9

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Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr
20 25 30

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

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

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

Pro Ser Gly Gly Ser Pro Ala Gly Ser Pro Thr Ser Thr Glu Glu Gly
85 90 95

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

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

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

Thr Ser Thr Glu Pro Ser Glu Met Asp Lys Lys Tyr Ser Ile Gly Leu
145 150 155 160

Ala Ile Gly Thr Asn Ser Val Gly Trp Ala Val Ile Thr Asp Glu Tyr
165 170 175

Lys Val Pro Ser Lys Lys Phe Lys Val Leu Gly Asn Thr Asp Arg His
180 185 190

Ser Ile Lys Lys Asn Leu Ile Gly Ala Leu Leu Phe Asp Ser Gly Glu
195 200 205

Thr Ala Glu Ala Thr Arg Leu Lys Arg Thr Ala Arg Arg Arg Tyr Thr
210 215 220

Arg Arg Lys Asn Arg Ile Cys Tyr Leu Gln Glu Ile Phe Ser Asn Glu
225 230 235 240

Met Ala Lys Val Asp Asp Ser Phe Phe His Arg Leu Glu Glu Ser Phe
245 250 255

Leu Val Glu Glu Asp Lys Lys His Glu Arg His Pro Ile Phe Gly Asn
260 265 270

Ile Val Asp Glu Val Ala Tyr His Glu Lys Tyr Pro Thr Ile Tyr His
275 280 285

Leu Arg Lys Lys Leu Val Asp Ser Thr Asp Lys Ala Asp Leu Arg Leu
290 295 300

Ile Tyr Leu Ala Leu Ala His Met Ile Lys Phe Arg Gly His Phe Leu
305 310 315 320

Ile Glu Gly Asp Leu Asn Pro Asp Asn Ser Asp Val Asp Lys Leu Phe
325 330 335

Ile Gln Leu Val Gln Thr Tyr Asn Gln Leu Phe Glu Glu Asn Pro Ile
340 345 350

Asn Ala Ser Gly Val Asp Ala Lys Ala Ile Leu Ser Ala Arg Leu Ser
355 360 365

Lys Ser Arg Arg Leu Glu Asn Leu Ile Ala Gln Leu Pro Gly Glu Lys
370 375 380

Lys Asn Gly Leu Phe Gly Asn Leu Ile Ala Leu Ser Leu Gly Leu Thr
385 390 395 400

Pro Asn Phe Lys Ser Asn Phe Asp Leu Ala Glu Asp Ala Lys Leu Gln
405 410 415

Leu Ser Lys Asp Thr Tyr Asp Asp Asp Leu Asp Asn Leu Leu Ala Gln
420 425 430

Ile Gly Asp Gln Tyr Ala Asp Leu Phe Leu Ala Ala Lys Asn Leu Ser
435 440 445

Asp Ala Ile Leu Leu Ser Asp Ile Leu Arg Val Asn Thr Glu Ile Thr
450 455 460

Lys Ala Pro Leu Ser Ala Ser Met Ile Lys Arg Tyr Asp Glu His His
465 470 475 480

Gln Asp Leu Thr Leu Leu Lys Ala Leu Val Arg Gln Gln Leu Pro Glu
485 490 495

Lys Tyr Lys Glu Ile Phe Phe Asp Gln Ser Lys Asn Gly Tyr Ala Gly
500 505 510

Tyr Ile Asp Gly Gly Ala Ser Gln Glu Glu Phe Tyr Lys Phe Ile Lys
515 520 525

Pro Ile Leu Glu Lys Met Asp Gly Thr Glu Glu Leu Leu Val Lys Leu
530 535 540

Asn Arg Glu Asp Leu Leu Arg Lys Gln Arg Thr Phe Asp Asn Gly Ser
545 550 555 560

Ile Pro His Gln Ile His Leu Gly Glu Leu His Ala Ile Leu Arg Arg
565 570 575

Gln Glu Asp Phe Tyr Pro Phe Leu Lys Asp Asn Arg Glu Lys Ile Glu
580 585 590

Lys Ile Leu Thr Phe Arg Ile Pro Tyr Tyr Val Gly Pro Leu Ala Arg
595 600 605

Gly Asn Ser Arg Phe Ala Trp Met Thr Arg Lys Ser Glu Glu Thr Ile
610 615 620

Thr Pro Trp Asn Phe Glu Glu Val Val Asp Lys Gly Ala Ser Ala Gln
625 630 635 640

Ser Phe Ile Glu Arg Met Thr Asn Phe Asp Lys Asn Leu Pro Asn Glu
645 650 655

Lys Val Leu Pro Lys His Ser Leu Leu Tyr Glu Tyr Phe Thr Val Tyr
660 665 670

Asn Glu Leu Thr Lys Val Lys Tyr Val Thr Glu Gly Met Arg Lys Pro
675 680 685

Ala Phe Leu Ser Gly Glu Gln Lys Lys Ala Ile Val Asp Leu Leu Phe
690 695 700

Lys Thr Asn Arg Lys Val Thr Val Lys Gln Leu Lys Glu Asp Tyr Phe
705 710 715 720

Lys Lys Ile Glu Cys Phe Asp Ser Val Glu Ile Ser Gly Val Glu Asp
725 730 735

Arg Phe Asn Ala Ser Leu Gly Thr Tyr His Asp Leu Leu Lys Ile Ile
740 745 750

Lys Asp Lys Asp Phe Leu Asp Asn Glu Glu Asn Glu Asp Ile Leu Glu
755 760 765

Asp Ile Val Leu Thr Leu Thr Leu Phe Glu Asp Arg Glu Met Ile Glu

770

775

780

Glu Arg Leu Lys Thr Tyr Ala His Leu Phe Asp Asp Lys Val Met Lys
 785 790 795 800

Gln Leu Lys Arg Arg Arg Tyr Thr Gly Trp Gly Arg Leu Ser Arg Lys
 805 810 815

Leu Ile Asn Gly Ile Arg Asp Lys Gln Ser Gly Lys Thr Ile Leu Asp
 820 825 830

Phe Leu Lys Ser Asp Gly Phe Ala Asn Arg Asn Phe Met Gln Leu Ile
 835 840 845

His Asp Asp Ser Leu Thr Phe Lys Glu Asp Ile Gln Lys Ala Gln Val
 850 855 860

Ser Gly Gln Gly Asp Ser Leu His Glu His Ile Ala Asn Leu Ala Gly
 865 870 875 880

Ser Pro Ala Ile Lys Lys Gly Ile Leu Gln Thr Val Lys Val Val Asp
 885 890 895

Glu Leu Val Lys Val Met Gly Arg His Lys Pro Glu Asn Ile Val Ile
 900 905 910

Glu Met Ala Arg Glu Asn Gln Thr Thr Gln Lys Gly Gln Lys Asn Ser
 915 920 925

Arg Glu Arg Met Lys Arg Ile Glu Glu Gly Ile Lys Glu Leu Gly Ser
 930 935 940

Gln Ile Leu Lys Glu His Pro Val Glu Asn Thr Gln Leu Gln Asn Glu
 945 950 955 960

Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn Gly Arg Asp Met Tyr Val Asp
 965 970 975

Gln Glu Leu Asp Ile Asn Arg Leu Ser Asp Tyr Asp Val Asp Ala Ile
980 985 990

Val Pro Gln Ser Phe Leu Lys Asp Asp Ser Ile Asp Asn Lys Val Leu
995 1000 1005

Thr Arg Ser Asp Lys Asn Arg Gly Lys Ser Asp Asn Val Pro Ser
1010 1015 1020

Glu Glu Val Val Lys Lys Met Lys Asn Tyr Trp Arg Gln Leu Leu
1025 1030 1035

Asn Ala Lys Leu Ile Thr Gln Arg Lys Phe Asp Asn Leu Thr Lys
1040 1045 1050

Ala Glu Arg Gly Gly Leu Ser Glu Leu Asp Lys Ala Gly Phe Ile
1055 1060 1065

Lys Arg Gln Leu Val Glu Thr Arg Gln Ile Thr Lys His Val Ala
1070 1075 1080

Gln Ile Leu Asp Ser Arg Met Asn Thr Lys Tyr Asp Glu Asn Asp
1085 1090 1095

Lys Leu Ile Arg Glu Val Lys Val Ile Thr Leu Lys Ser Lys Leu
1100 1105 1110

Val Ser Asp Phe Arg Lys Asp Phe Gln Phe Tyr Lys Val Arg Glu
1115 1120 1125

Ile Asn Asn Tyr His His Ala His Asp Ala Tyr Leu Asn Ala Val
1130 1135 1140

Val Gly Thr Ala Leu Ile Lys Lys Tyr Pro Lys Leu Glu Ser Glu
1145 1150 1155

Phe	Val	Tyr	Gly	Asp	Tyr	Lys	Val	Tyr	Asp	Val	Arg	Lys	Met	Ile
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Ala	Lys	Ser	Glu	Gln	Glu	Ile	Gly	Lys	Ala	Thr	Ala	Lys	Tyr	Phe
1175						1180					1185			
Phe	Tyr	Ser	Asn	Ile	Met	Asn	Phe	Phe	Lys	Thr	Glu	Ile	Thr	Leu
1190						1195					1200			
Ala	Asn	Gly	Glu	Ile	Arg	Lys	Arg	Pro	Leu	Ile	Glu	Thr	Asn	Gly
1205						1210					1215			
Glu	Thr	Gly	Glu	Ile	Val	Trp	Asp	Lys	Gly	Arg	Asp	Phe	Ala	Thr
1220						1225					1230			
Val	Arg	Lys	Val	Leu	Ser	Met	Pro	Gln	Val	Asn	Ile	Val	Lys	Lys
1235						1240					1245			
Thr	Glu	Val	Gln	Thr	Gly	Gly	Phe	Ser	Lys	Glu	Ser	Ile	Leu	Pro
1250						1255					1260			
Lys	Arg	Asn	Ser	Asp	Lys	Leu	Ile	Ala	Arg	Lys	Lys	Asp	Trp	Asp
1265						1270					1275			
Pro	Lys	Lys	Tyr	Gly	Gly	Phe	Asp	Ser	Pro	Thr	Val	Ala	Tyr	Ser
1280						1285					1290			
Val	Leu	Val	Val	Ala	Lys	Val	Glu	Lys	Gly	Lys	Ser	Lys	Lys	Leu
1295						1300					1305			
Lys	Ser	Val	Lys	Glu	Leu	Leu	Gly	Ile	Thr	Ile	Met	Glu	Arg	Ser
1310						1315					1320			
Ser	Phe	Glu	Lys	Asn	Pro	Ile	Asp	Phe	Leu	Glu	Ala	Lys	Gly	Tyr
1325						1330					1335			

Lys Glu Val Lys Lys Asp Leu Ile Ile Lys Leu Pro Lys Tyr Ser
1340 1345 1350

Leu Phe Glu Leu Glu Asn Gly Arg Lys Arg Met Leu Ala Ser Ala
1355 1360 1365

Gly Glu Leu Gln Lys Gly Asn Glu Leu Ala Leu Pro Ser Lys Tyr
1370 1375 1380

Val Asn Phe Leu Tyr Leu Ala Ser His Tyr Glu Lys Leu Lys Gly
1385 1390 1395

Ser Pro Glu Asp Asn Glu Gln Lys Gln Leu Phe Val Glu Gln His
1400 1405 1410

Lys His Tyr Leu Asp Glu Ile Ile Glu Gln Ile Ser Glu Phe Ser
1415 1420 1425

Lys Arg Val Ile Leu Ala Asp Ala Asn Leu Asp Lys Val Leu Ser
1430 1435 1440

Ala Tyr Asn Lys His Arg Asp Lys Pro Ile Arg Glu Gln Ala Glu
1445 1450 1455

Asn Ile Ile His Leu Phe Thr Leu Thr Asn Leu Gly Ala Pro Ala
1460 1465 1470

Ala Phe Lys Tyr Phe Asp Thr Thr Ile Asp Arg Lys Arg Tyr Thr
1475 1480 1485

Ser Thr Lys Glu Val Leu Asp Ala Thr Leu Ile His Gln Ser Ile
1490 1495 1500

Thr Gly Leu Tyr Glu Thr Arg Ile Asp Leu Ser Gln Leu Gly Gly
1505 1510 1515

Asp Ser Arg Ala Asp Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser

1520							1525							1530
Gly	Ser	Pro	Lys	Lys	Lys	Arg	Lys	Val	Glu	Ala	Ser	Gly	Ser	Gly
1535						1540					1545			
Arg	Ala	Ser	Pro	Gly	Ile	Pro	Gly	Ser	Thr	Arg	Asn	His	Asp	Gln
1550						1555					1560			
Glu	Phe	Asp	Pro	Pro	Lys	Val	Tyr	Pro	Pro	Val	Pro	Ala	Glu	Lys
1565						1570					1575			
Arg	Lys	Pro	Ile	Arg	Val	Leu	Ser	Leu	Phe	Asp	Gly	Ile	Ala	Thr
1580						1585					1590			
Gly	Leu	Leu	Val	Leu	Lys	Asp	Leu	Gly	Ile	Gln	Val	Asp	Arg	Tyr
1595						1600					1605			
Ile	Ala	Ser	Glu	Val	Cys	Glu	Asp	Ser	Ile	Thr	Val	Gly	Met	Val
1610						1615					1620			
Arg	His	Gln	Gly	Lys	Ile	Met	Tyr	Val	Gly	Asp	Val	Arg	Ser	Val
1625						1630					1635			
Thr	Gln	Lys	His	Ile	Gln	Glu	Trp	Gly	Pro	Phe	Asp	Leu	Val	Ile
1640						1645					1650			
Gly	Gly	Ser	Pro	Cys	Asn	Asp	Leu	Ser	Ile	Val	Asn	Pro	Ala	Arg
1655						1660					1665			
Lys	Gly	Leu	Tyr	Glu	Gly	Thr	Gly	Arg	Leu	Phe	Phe	Glu	Phe	Tyr
1670						1675					1680			
Arg	Leu	Leu	His	Asp	Ala	Arg	Pro	Lys	Glu	Gly	Asp	Asp	Arg	Pro
1685						1690					1695			
Phe	Phe	Trp	Leu	Phe	Glu	Asn	Val	Val	Ala	Met	Gly	Val	Ser	Asp
1700						1705					1710			

Lys	Arg	Asp	Ile	Ser	Arg	Phe	Leu	Glu	Ser	Asn	Pro	Val	Met	Ile
1715						1720					1725			
Asp	Ala	Lys	Glu	Val	Ser	Ala	Ala	His	Arg	Ala	Arg	Tyr	Phe	Trp
1730						1735					1740			
Gly	Asn	Leu	Pro	Gly	Met	Asn	Arg	Pro	Leu	Ala	Ser	Thr	Val	Asn
1745						1750					1755			
Asp	Lys	Leu	Glu	Leu	Gln	Glu	Cys	Leu	Glu	His	Gly	Arg	Ile	Ala
1760						1765					1770			
Lys	Phe	Ser	Lys	Val	Arg	Thr	Ile	Thr	Thr	Arg	Ser	Asn	Ser	Ile
1775						1780					1785			
Lys	Gln	Gly	Lys	Asp	Gln	His	Phe	Pro	Val	Phe	Met	Asn	Glu	Lys
1790						1795					1800			
Glu	Asp	Ile	Leu	Trp	Cys	Thr	Glu	Met	Glu	Arg	Val	Phe	Gly	Phe
1805						1810					1815			
Pro	Val	His	Tyr	Thr	Asp	Val	Ser	Asn	Met	Ser	Arg	Leu	Ala	Arg
1820						1825					1830			
Gln	Arg	Leu	Leu	Gly	Arg	Ser	Trp	Ser	Val	Pro	Val	Ile	Arg	His
1835						1840					1845			
Leu	Phe	Ala	Pro	Leu	Lys	Glu	Tyr	Phe	Ala	Cys	Val	Ser	Ser	Gly
1850						1855					1860			
Asn	Ser	Asn	Ala	Asn	Ser	Arg	Gly	Pro	Ser	Phe	Ser	Ser	Gly	Leu
1865						1870					1875			
Val	Pro	Leu	Ser	Leu	Arg	Gly	Ser	His	Met	Gly	Pro	Met	Glu	Ile
1880						1885					1890			

Tyr	Lys	Thr	Val	Ser	Ala	Trp	Lys	Arg	Gln	Pro	Val	Arg	Val	Leu
1895						1900					1905			
Ser	Leu	Phe	Arg	Asn	Ile	Asp	Lys	Val	Leu	Lys	Ser	Leu	Gly	Phe
1910						1915					1920			
Leu	Glu	Ser	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Thr	Leu	Lys	Tyr	Val
1925						1930					1935			
Glu	Asp	Val	Thr	Asn	Val	Val	Arg	Arg	Asp	Val	Glu	Lys	Trp	Gly
1940						1945					1950			
Pro	Phe	Asp	Leu	Val	Tyr	Gly	Ser	Thr	Gln	Pro	Leu	Gly	Ser	Ser
1955						1960					1965			
Cys	Asp	Arg	Cys	Pro	Gly	Trp	Tyr	Met	Phe	Gln	Phe	His	Arg	Ile
1970						1975					1980			
Leu	Gln	Tyr	Ala	Leu	Pro	Arg	Gln	Glu	Ser	Gln	Arg	Pro	Phe	Phe
1985						1990					1995			
Trp	Ile	Phe	Met	Asp	Asn	Leu	Leu	Leu	Thr	Glu	Asp	Asp	Gln	Glu
2000						2005					2010			
Thr	Thr	Thr	Arg	Phe	Leu	Gln	Thr	Glu	Ala	Val	Thr	Leu	Gln	Asp
2015						2020					2025			
Val	Arg	Gly	Arg	Asp	Tyr	Gln	Asn	Ala	Met	Arg	Val	Trp	Ser	Asn
2030						2035					2040			
Ile	Pro	Gly	Leu	Lys	Ser	Lys	His	Ala	Pro	Leu	Thr	Pro	Lys	Glu
2045						2050					2055			
Glu	Glu	Tyr	Leu	Gln	Ala	Gln	Val	Arg	Ser	Arg	Ser	Lys	Leu	Asp
2060						2065					2070			

Ala Pro Lys Val Asp Leu Leu Val Lys Asn Cys Leu Leu Pro Leu
 2075 2080 2085

Arg Glu Tyr Phe Lys Tyr Phe Ser Gln Asn Ser Leu Pro Leu Ser
 2090 2095 2100

Arg Ala Asp Pro Lys Lys Lys Arg Lys Val Gly Ser Gly Ala Thr
 2105 2110 2115

Asn Phe Ser Leu Leu Lys Gln Ala Gly Asp Val Glu Glu Asn Pro
 2120 2125 2130

Gly Pro Ser Glu Leu Ile Lys Glu Asn Met His Met Lys Leu Tyr
 2135 2140 2145

Met Glu Gly Thr Val Asp Asn His His Phe Lys Cys Thr Ser Glu
 2150 2155 2160

Gly Glu Gly Lys Pro Tyr Glu Gly Thr Gln Thr Met Arg Ile Lys
 2165 2170 2175

Val Val Glu Gly Gly Pro Leu Pro Phe Ala Phe Asp Ile Leu Ala
 2180 2185 2190

Thr Ser Phe Leu Tyr Gly Ser Lys Thr Phe Ile Asn His Thr Gln
 2195 2200 2205

Gly Ile Pro Asp Phe Phe Lys Gln Ser Phe Pro Glu Gly Phe Thr
 2210 2215 2220

Trp Glu Arg Val Thr Thr Tyr Glu Asp Gly Gly Val Leu Thr Ala
 2225 2230 2235

Thr Gln Asp Thr Ser Leu Gln Asp Gly Cys Leu Ile Tyr Asn Val
 2240 2245 2250

Lys Ile Arg Gly Val Asn Phe Thr Ser Asn Gly Pro Val Met Gln

2255

2260

2265

Lys Lys Thr Leu Gly Trp Glu Ala Phe Thr Glu Thr Leu Tyr Pro
 2270 2275 2280

Ala Asp Gly Gly Leu Glu Gly Arg Asn Asp Met Ala Leu Lys Leu
 2285 2290 2295

Val Gly Gly Ser His Leu Ile Ala Asn Ile Lys Thr Thr Tyr Arg
 2300 2305 2310

Ser Lys Lys Pro Ala Lys Asn Leu Lys Met Pro Gly Val Tyr Tyr
 2315 2320 2325

Val Asp Tyr Arg Leu Glu Arg Ile Lys Glu Ala Asn Asn Glu Thr
 2330 2335 2340

Tyr Val Glu Gln His Glu Val Ala Val Ala Arg Tyr Cys Asp Leu
 2345 2350 2355

Pro Ser Lys Leu Gly His Lys Leu Asn
 2360 2365

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<211> 2389

<212> PRT

<213> Artificial sequence

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Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr
 20 25 30

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

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

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

Pro Ser Gly Gly Ser Pro Ala Gly Ser Pro Thr Ser Thr Glu Glu Gly
85 90 95

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

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

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

Thr Ser Thr Glu Pro Ser Glu Met Asp Lys Lys Tyr Ser Ile Gly Leu
145 150 155 160

Ala Ile Gly Thr Asn Ser Val Gly Trp Ala Val Ile Thr Asp Glu Tyr
165 170 175

Lys Val Pro Ser Lys Lys Phe Lys Val Leu Gly Asn Thr Asp Arg His
180 185 190

Ser Ile Lys Lys Asn Leu Ile Gly Ala Leu Leu Phe Asp Ser Gly Glu
195 200 205

Thr Ala Glu Ala Thr Arg Leu Lys Arg Thr Ala Arg Arg Arg Tyr Thr
210 215 220

Arg Arg Lys Asn Arg Ile Cys Tyr Leu Gln Glu Ile Phe Ser Asn Glu

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

Ile Gly Asp Gln Tyr Ala Asp Leu Phe Leu Ala Ala Lys Asn Leu Ser
435 440 445

Asp Ala Ile Leu Leu Ser Asp Ile Leu Arg Val Asn Thr Glu Ile Thr
450 455 460

Lys Ala Pro Leu Ser Ala Ser Met Ile Lys Arg Tyr Asp Glu His His
465 470 475 480

Gln Asp Leu Thr Leu Leu Lys Ala Leu Val Arg Gln Gln Leu Pro Glu
485 490 495

Lys Tyr Lys Glu Ile Phe Phe Asp Gln Ser Lys Asn Gly Tyr Ala Gly
500 505 510

Tyr Ile Asp Gly Gly Ala Ser Gln Glu Glu Phe Tyr Lys Phe Ile Lys
515 520 525

Pro Ile Leu Glu Lys Met Asp Gly Thr Glu Glu Leu Leu Val Lys Leu
530 535 540

Asn Arg Glu Asp Leu Leu Arg Lys Gln Arg Thr Phe Asp Asn Gly Ser
545 550 555 560

Ile Pro His Gln Ile His Leu Gly Glu Leu His Ala Ile Leu Arg Arg
565 570 575

Gln Glu Asp Phe Tyr Pro Phe Leu Lys Asp Asn Arg Glu Lys Ile Glu
580 585 590

Lys Ile Leu Thr Phe Arg Ile Pro Tyr Tyr Val Gly Pro Leu Ala Arg
595 600 605

Gly Asn Ser Arg Phe Ala Trp Met Thr Arg Lys Ser Glu Glu Thr Ile
610 615 620

Thr Pro Trp Asn Phe Glu Glu Val Val Asp Lys Gly Ala Ser Ala Gln
625 630 635 640

Ser Phe Ile Glu Arg Met Thr Asn Phe Asp Lys Asn Leu Pro Asn Glu
645 650 655

Lys Val Leu Pro Lys His Ser Leu Leu Tyr Glu Tyr Phe Thr Val Tyr
660 665 670

Asn Glu Leu Thr Lys Val Lys Tyr Val Thr Glu Gly Met Arg Lys Pro
675 680 685

Ala Phe Leu Ser Gly Glu Gln Lys Lys Ala Ile Val Asp Leu Leu Phe
690 695 700

Lys Thr Asn Arg Lys Val Thr Val Lys Gln Leu Lys Glu Asp Tyr Phe
705 710 715 720

Lys Lys Ile Glu Cys Phe Asp Ser Val Glu Ile Ser Gly Val Glu Asp
725 730 735

Arg Phe Asn Ala Ser Leu Gly Thr Tyr His Asp Leu Leu Lys Ile Ile
740 745 750

Lys Asp Lys Asp Phe Leu Asp Asn Glu Glu Asn Glu Asp Ile Leu Glu
755 760 765

Asp Ile Val Leu Thr Leu Thr Leu Phe Glu Asp Arg Glu Met Ile Glu
770 775 780

Glu Arg Leu Lys Thr Tyr Ala His Leu Phe Asp Asp Lys Val Met Lys
785 790 795 800

Gln Leu Lys Arg Arg Arg Tyr Thr Gly Trp Gly Arg Leu Ser Arg Lys
805 810 815

Leu Ile Asn Gly Ile Arg Asp Lys Gln Ser Gly Lys Thr Ile Leu Asp
820 825 830

Phe Leu Lys Ser Asp Gly Phe Ala Asn Arg Asn Phe Met Gln Leu Ile
835 840 845

His Asp Asp Ser Leu Thr Phe Lys Glu Asp Ile Gln Lys Ala Gln Val
850 855 860

Ser Gly Gln Gly Asp Ser Leu His Glu His Ile Ala Asn Leu Ala Gly
865 870 875 880

Ser Pro Ala Ile Lys Lys Gly Ile Leu Gln Thr Val Lys Val Val Asp
885 890 895

Glu Leu Val Lys Val Met Gly Arg His Lys Pro Glu Asn Ile Val Ile
900 905 910

Glu Met Ala Arg Glu Asn Gln Thr Thr Gln Lys Gly Gln Lys Asn Ser
915 920 925

Arg Glu Arg Met Lys Arg Ile Glu Glu Gly Ile Lys Glu Leu Gly Ser
930 935 940

Gln Ile Leu Lys Glu His Pro Val Glu Asn Thr Gln Leu Gln Asn Glu
945 950 955 960

Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn Gly Arg Asp Met Tyr Val Asp
965 970 975

Gln Glu Leu Asp Ile Asn Arg Leu Ser Asp Tyr Asp Val Asp Ala Ile
980 985 990

Val Pro Gln Ser Phe Leu Lys Asp Asp Ser Ile Asp Asn Lys Val Leu
995 1000 1005

Thr Arg Ser Asp Lys Asn Arg Gly Lys Ser Asp Asn Val Pro Ser

1010	1015	1020
Glu Glu Val Val Lys Lys Met 1025	Lys Asn Tyr Trp Arg 1030	Gln Leu Leu 1035
Asn Ala Lys Leu Ile Thr Gln 1040	Arg Lys Phe Asp Asn 1045	Leu Thr Lys 1050
Ala Glu Arg Gly Gly Leu Ser 1055	Glu Leu Asp Lys Ala 1060	Gly Phe Ile 1065
Lys Arg Gln Leu Val Glu Thr 1070	Arg Gln Ile Thr Lys 1075	His Val Ala 1080
Gln Ile Leu Asp Ser Arg Met 1085	Asn Thr Lys Tyr Asp 1090	Glu Asn Asp 1095
Lys Leu Ile Arg Glu Val Lys 1100	Val Ile Thr Leu Lys 1105	Ser Lys Leu 1110
Val Ser Asp Phe Arg Lys Asp 1115	Phe Gln Phe Tyr Lys 1120	Val Arg Glu 1125
Ile Asn Asn Tyr His His Ala 1130	His Asp Ala Tyr Leu 1135	Asn Ala Val 1140
Val Gly Thr Ala Leu Ile Lys 1145	Lys Tyr Pro Lys Leu 1150	Glu Ser Glu 1155
Phe Val Tyr Gly Asp Tyr Lys 1160	Val Tyr Asp Val Arg 1165	Lys Met Ile 1170
Ala Lys Ser Glu Gln Glu Ile 1175	Gly Lys Ala Thr Ala 1180	Lys Tyr Phe 1185
Phe Tyr Ser Asn Ile Met Asn 1190	Phe Phe Lys Thr Glu 1195	Ile Thr Leu 1200

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

Val	Asn	Phe	Leu	Tyr	Leu	Ala	Ser	His	Tyr	Glu	Lys	Leu	Lys	Gly
1385						1390					1395			
Ser	Pro	Glu	Asp	Asn	Glu	Gln	Lys	Gln	Leu	Phe	Val	Glu	Gln	His
1400						1405					1410			
Lys	His	Tyr	Leu	Asp	Glu	Ile	Ile	Glu	Gln	Ile	Ser	Glu	Phe	Ser
1415						1420					1425			
Lys	Arg	Val	Ile	Leu	Ala	Asp	Ala	Asn	Leu	Asp	Lys	Val	Leu	Ser
1430						1435					1440			
Ala	Tyr	Asn	Lys	His	Arg	Asp	Lys	Pro	Ile	Arg	Glu	Gln	Ala	Glu
1445						1450					1455			
Asn	Ile	Ile	His	Leu	Phe	Thr	Leu	Thr	Asn	Leu	Gly	Ala	Pro	Ala
1460						1465					1470			
Ala	Phe	Lys	Tyr	Phe	Asp	Thr	Thr	Ile	Asp	Arg	Lys	Arg	Tyr	Thr
1475						1480					1485			
Ser	Thr	Lys	Glu	Val	Leu	Asp	Ala	Thr	Leu	Ile	His	Gln	Ser	Ile
1490						1495					1500			
Thr	Gly	Leu	Tyr	Glu	Thr	Arg	Ile	Asp	Leu	Ser	Gln	Leu	Gly	Gly
1505						1510					1515			
Asp	Ser	Arg	Ala	Asp	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr	Ala	Ser
1520						1525					1530			
Gly	Ser	Pro	Lys	Lys	Lys	Arg	Lys	Val	Glu	Ala	Ser	Gly	Ser	Gly
1535						1540					1545			
Arg	Ala	Ser	Pro	Gly	Ile	Pro	Gly	Ser	Thr	Arg	Asn	His	Asp	Gln
1550						1555					1560			

Glu Phe Asp Pro Pro Lys Val Tyr Pro Pro Val Pro Ala Glu Lys
1565 1570 1575

Arg Lys Pro Ile Arg Val Leu Ser Leu Phe Asp Gly Ile Ala Thr
1580 1585 1590

Gly Leu Leu Val Leu Lys Asp Leu Gly Ile Gln Val Asp Arg Tyr
1595 1600 1605

Ile Ala Ser Glu Val Cys Glu Asp Ser Ile Thr Val Gly Met Val
1610 1615 1620

Arg His Gln Gly Lys Ile Met Tyr Val Gly Asp Val Arg Ser Val
1625 1630 1635

Thr Gln Lys His Ile Gln Glu Trp Gly Pro Phe Asp Leu Val Ile
1640 1645 1650

Gly Gly Ser Pro Cys Asn Asp Leu Ser Ile Val Asn Pro Ala Arg
1655 1660 1665

Lys Gly Leu Tyr Glu Gly Thr Gly Arg Leu Phe Phe Glu Phe Tyr
1670 1675 1680

Arg Leu Leu His Asp Ala Arg Pro Lys Glu Gly Asp Asp Arg Pro
1685 1690 1695

Phe Phe Trp Leu Phe Glu Asn Val Val Ala Met Gly Val Ser Asp
1700 1705 1710

Lys Arg Asp Ile Ser Arg Phe Leu Glu Ser Asn Pro Val Met Ile
1715 1720 1725

Asp Ala Lys Glu Val Ser Ala Ala His Arg Ala Arg Tyr Phe Trp
1730 1735 1740

Gly Asn Leu Pro Gly Met Asn Arg Pro Leu Ala Ser Thr Val Asn

1745		1750		1755
Asp Lys Leu Glu Leu Gln Glu Cys Leu Glu His Gly Arg Ile Ala				
1760		1765		1770
Lys Phe Ser Lys Val Arg Thr Ile Thr Thr Arg Ser Asn Ser Ile				
1775		1780		1785
Lys Gln Gly Lys Asp Gln His Phe Pro Val Phe Met Asn Glu Lys				
1790		1795		1800
Glu Asp Ile Leu Trp Cys Thr Glu Met Glu Arg Val Phe Gly Phe				
1805		1810		1815
Pro Val His Tyr Thr Asp Val Ser Asn Met Ser Arg Leu Ala Arg				
1820		1825		1830
Gln Arg Leu Leu Gly Arg Ser Trp Ser Val Pro Val Ile Arg His				
1835		1840		1845
Leu Phe Ala Pro Leu Lys Glu Tyr Phe Ala Cys Val Ser Ser Gly				
1850		1855		1860
Asn Ser Asn Ala Asn Ser Arg Gly Pro Ser Phe Ser Ser Gly Leu				
1865		1870		1875
Val Pro Leu Ser Leu Arg Gly Ser His Met Gly Pro Met Glu Ile				
1880		1885		1890
Tyr Lys Thr Val Ser Ala Trp Lys Arg Gln Pro Val Arg Val Leu				
1895		1900		1905
Ser Leu Phe Arg Asn Ile Asp Lys Val Leu Lys Ser Leu Gly Phe				
1910		1915		1920
Leu Glu Ser Gly Ser Gly Ser Gly Gly Gly Thr Leu Lys Tyr Val				
1925		1930		1935

Glu Asp Val Thr Asn Val Val Arg Arg Asp Val Glu Lys Trp Gly
1940 1945 1950

Pro Phe Asp Leu Val Tyr Gly Ser Thr Gln Pro Leu Gly Ser Ser
1955 1960 1965

Cys Asp Arg Cys Pro Gly Trp Tyr Met Phe Gln Phe His Arg Ile
1970 1975 1980

Leu Gln Tyr Ala Leu Pro Arg Gln Glu Ser Gln Arg Pro Phe Phe
1985 1990 1995

Trp Ile Phe Met Asp Asn Leu Leu Leu Thr Glu Asp Asp Gln Glu
2000 2005 2010

Thr Thr Thr Arg Phe Leu Gln Thr Glu Ala Val Thr Leu Gln Asp
2015 2020 2025

Val Arg Gly Arg Asp Tyr Gln Asn Ala Met Arg Val Trp Ser Asn
2030 2035 2040

Ile Pro Gly Leu Lys Ser Lys His Ala Pro Leu Thr Pro Lys Glu
2045 2050 2055

Glu Glu Tyr Leu Gln Ala Gln Val Arg Ser Arg Ser Lys Leu Asp
2060 2065 2070

Ala Pro Lys Val Asp Leu Leu Val Lys Asn Cys Leu Leu Pro Leu
2075 2080 2085

Arg Glu Tyr Phe Lys Tyr Phe Ser Gln Asn Ser Leu Pro Leu Ser
2090 2095 2100

Arg Ala Asp Pro Lys Lys Lys Arg Lys Val Gly Ser Gly Ala Thr
2105 2110 2115

Asn	Phe	Ser	Leu	Leu	Lys	Gln	Ala	Gly	Asp	Val	Glu	Glu	Asn	Pro
2120						2125					2130			
Gly	Pro	Gly	Ser	Gly	Ala	Thr	Asn	Phe	Ser	Leu	Leu	Lys	Gln	Ala
2135						2140					2145			
Gly	Asp	Val	Glu	Glu	Asn	Pro	Gly	Pro	Ser	Glu	Leu	Ile	Lys	Glu
2150						2155					2160			
Asn	Met	His	Met	Lys	Leu	Tyr	Met	Glu	Gly	Thr	Val	Asp	Asn	His
2165						2170					2175			
His	Phe	Lys	Cys	Thr	Ser	Glu	Gly	Glu	Gly	Lys	Pro	Tyr	Glu	Gly
2180						2185					2190			
Thr	Gln	Thr	Met	Arg	Ile	Lys	Val	Val	Glu	Gly	Gly	Pro	Leu	Pro
2195						2200					2205			
Phe	Ala	Phe	Asp	Ile	Leu	Ala	Thr	Ser	Phe	Leu	Tyr	Gly	Ser	Lys
2210						2215					2220			
Thr	Phe	Ile	Asn	His	Thr	Gln	Gly	Ile	Pro	Asp	Phe	Phe	Lys	Gln
2225						2230					2235			
Ser	Phe	Pro	Glu	Gly	Phe	Thr	Trp	Glu	Arg	Val	Thr	Thr	Tyr	Glu
2240						2245					2250			
Asp	Gly	Gly	Val	Leu	Thr	Ala	Thr	Gln	Asp	Thr	Ser	Leu	Gln	Asp
2255						2260					2265			
Gly	Cys	Leu	Ile	Tyr	Asn	Val	Lys	Ile	Arg	Gly	Val	Asn	Phe	Thr
2270						2275					2280			
Ser	Asn	Gly	Pro	Val	Met	Gln	Lys	Lys	Thr	Leu	Gly	Trp	Glu	Ala
2285						2290					2295			

Phe Thr Glu Thr Leu Tyr Pro Ala Asp Gly Gly Leu Glu Gly Arg
 2300 2305 2310

Asn Asp Met Ala Leu Lys Leu Val Gly Gly Ser His Leu Ile Ala
 2315 2320 2325

Asn Ile Lys Thr Thr Tyr Arg Ser Lys Lys Pro Ala Lys Asn Leu
 2330 2335 2340

Lys Met Pro Gly Val Tyr Tyr Val Asp Tyr Arg Leu Glu Arg Ile
 2345 2350 2355

Lys Glu Ala Asn Asn Glu Thr Tyr Val Glu Gln His Glu Val Ala
 2360 2365 2370

Val Ala Arg Tyr Cys Asp Leu Pro Ser Lys Leu Gly His Lys Leu
 2375 2380 2385

Asn

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 <211> 2369
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<400> 11

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Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr
 20 25 30

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

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

Leu Glu Lys Gly Glu Glu Pro Ser Gly Ser Glu Thr Pro Gly Thr Ser
65 70 75 80

Glu Ser Ala Thr Pro Glu Ser Met Asp Lys Lys Tyr Ser Ile Gly Leu
85 90 95

Ala Ile Gly Thr Asn Ser Val Gly Trp Ala Val Ile Thr Asp Glu Tyr
100 105 110

Lys Val Pro Ser Lys Lys Phe Lys Val Leu Gly Asn Thr Asp Arg His
115 120 125

Ser Ile Lys Lys Asn Leu Ile Gly Ala Leu Leu Phe Asp Ser Gly Glu
130 135 140

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

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

Met Ala Lys Val Asp Asp Ser Phe Phe His Arg Leu Glu Glu Ser Phe
180 185 190

Leu Val Glu Glu Asp Lys Lys His Glu Arg His Pro Ile Phe Gly Asn
195 200 205

Ile Val Asp Glu Val Ala Tyr His Glu Lys Tyr Pro Thr Ile Tyr His
210 215 220

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

Ile Tyr Leu Ala Leu Ala His Met Ile Lys Phe Arg Gly His Phe Leu
245 250 255

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

Ile Gln Leu Val Gln Thr Tyr Asn Gln Leu Phe Glu Glu Asn Pro Ile
275 280 285

Asn Ala Ser Gly Val Asp Ala Lys Ala Ile Leu Ser Ala Arg Leu Ser
290 295 300

Lys Ser Arg Arg Leu Glu Asn Leu Ile Ala Gln Leu Pro Gly Glu Lys
305 310 315 320

Lys Asn Gly Leu Phe Gly Asn Leu Ile Ala Leu Ser Leu Gly Leu Thr
325 330 335

Pro Asn Phe Lys Ser Asn Phe Asp Leu Ala Glu Asp Ala Lys Leu Gln
340 345 350

Leu Ser Lys Asp Thr Tyr Asp Asp Asp Leu Asp Asn Leu Leu Ala Gln
355 360 365

Ile Gly Asp Gln Tyr Ala Asp Leu Phe Leu Ala Ala Lys Asn Leu Ser
370 375 380

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

Lys Ala Pro Leu Ser Ala Ser Met Ile Lys Arg Tyr Asp Glu His His
405 410 415

Gln Asp Leu Thr Leu Leu Lys Ala Leu Val Arg Gln Gln Leu Pro Glu
420 425 430

Lys Tyr Lys Glu Ile Phe Phe Asp Gln Ser Lys Asn Gly Tyr Ala Gly

435

440

445

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

Pro Ile Leu Glu Lys Met Asp Gly Thr Glu Glu Leu Leu Val Lys Leu
 465 470 475 480

Asn Arg Glu Asp Leu Leu Arg Lys Gln Arg Thr Phe Asp Asn Gly Ser
 485 490 495

Ile Pro His Gln Ile His Leu Gly Glu Leu His Ala Ile Leu Arg Arg
 500 505 510

Gln Glu Asp Phe Tyr Pro Phe Leu Lys Asp Asn Arg Glu Lys Ile Glu
 515 520 525

Lys Ile Leu Thr Phe Arg Ile Pro Tyr Tyr Val Gly Pro Leu Ala Arg
 530 535 540

Gly Asn Ser Arg Phe Ala Trp Met Thr Arg Lys Ser Glu Glu Thr Ile
 545 550 555 560

Thr Pro Trp Asn Phe Glu Glu Val Val Asp Lys Gly Ala Ser Ala Gln
 565 570 575

Ser Phe Ile Glu Arg Met Thr Asn Phe Asp Lys Asn Leu Pro Asn Glu
 580 585 590

Lys Val Leu Pro Lys His Ser Leu Leu Tyr Glu Tyr Phe Thr Val Tyr
 595 600 605

Asn Glu Leu Thr Lys Val Lys Tyr Val Thr Glu Gly Met Arg Lys Pro
 610 615 620

Ala Phe Leu Ser Gly Glu Gln Lys Lys Ala Ile Val Asp Leu Leu Phe
 625 630 635 640

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

Lys Lys Ile Glu Cys Phe Asp Ser Val Glu Ile Ser Gly Val Glu Asp
660 665 670

Arg Phe Asn Ala Ser Leu Gly Thr Tyr His Asp Leu Leu Lys Ile Ile
675 680 685

Lys Asp Lys Asp Phe Leu Asp Asn Glu Glu Asn Glu Asp Ile Leu Glu
690 695 700

Asp Ile Val Leu Thr Leu Thr Leu Phe Glu Asp Arg Glu Met Ile Glu
705 710 715 720

Glu Arg Leu Lys Thr Tyr Ala His Leu Phe Asp Asp Lys Val Met Lys
725 730 735

Gln Leu Lys Arg Arg Arg Tyr Thr Gly Trp Gly Arg Leu Ser Arg Lys
740 745 750

Leu Ile Asn Gly Ile Arg Asp Lys Gln Ser Gly Lys Thr Ile Leu Asp
755 760 765

Phe Leu Lys Ser Asp Gly Phe Ala Asn Arg Asn Phe Met Gln Leu Ile
770 775 780

His Asp Asp Ser Leu Thr Phe Lys Glu Asp Ile Gln Lys Ala Gln Val
785 790 795 800

Ser Gly Gln Gly Asp Ser Leu His Glu His Ile Ala Asn Leu Ala Gly
805 810 815

Ser Pro Ala Ile Lys Lys Gly Ile Leu Gln Thr Val Lys Val Val Asp
820 825 830

Glu Leu Val Lys Val Met Gly Arg His Lys Pro Glu Asn Ile Val Ile
835 840 845

Glu Met Ala Arg Glu Asn Gln Thr Thr Gln Lys Gly Gln Lys Asn Ser
850 855 860

Arg Glu Arg Met Lys Arg Ile Glu Glu Gly Ile Lys Glu Leu Gly Ser
865 870 875 880

Gln Ile Leu Lys Glu His Pro Val Glu Asn Thr Gln Leu Gln Asn Glu
885 890 895

Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn Gly Arg Asp Met Tyr Val Asp
900 905 910

Gln Glu Leu Asp Ile Asn Arg Leu Ser Asp Tyr Asp Val Asp Ala Ile
915 920 925

Val Pro Gln Ser Phe Leu Lys Asp Asp Ser Ile Asp Asn Lys Val Leu
930 935 940

Thr Arg Ser Asp Lys Asn Arg Gly Lys Ser Asp Asn Val Pro Ser Glu
945 950 955 960

Glu Val Val Lys Lys Met Lys Asn Tyr Trp Arg Gln Leu Leu Asn Ala
965 970 975

Lys Leu Ile Thr Gln Arg Lys Phe Asp Asn Leu Thr Lys Ala Glu Arg
980 985 990

Gly Gly Leu Ser Glu Leu Asp Lys Ala Gly Phe Ile Lys Arg Gln Leu
995 1000 1005

Val Glu Thr Arg Gln Ile Thr Lys His Val Ala Gln Ile Leu Asp
1010 1015 1020

Ser Arg Met Asn Thr Lys Tyr Asp Glu Asn Asp Lys Leu Ile Arg
 1025 1030 1035

 Glu Val Lys Val Ile Thr Leu Lys Ser Lys Leu Val Ser Asp Phe
 1040 1045 1050

 Arg Lys Asp Phe Gln Phe Tyr Lys Val Arg Glu Ile Asn Asn Tyr
 1055 1060 1065

 His His Ala His Asp Ala Tyr Leu Asn Ala Val Val Gly Thr Ala
 1070 1075 1080

 Leu Ile Lys Lys Tyr Pro Lys Leu Glu Ser Glu Phe Val Tyr Gly
 1085 1090 1095

 Asp Tyr Lys Val Tyr Asp Val Arg Lys Met Ile Ala Lys Ser Glu
 1100 1105 1110

 Gln Glu Ile Gly Lys Ala Thr Ala Lys Tyr Phe Phe Tyr Ser Asn
 1115 1120 1125

 Ile Met Asn Phe Phe Lys Thr Glu Ile Thr Leu Ala Asn Gly Glu
 1130 1135 1140

 Ile Arg Lys Arg Pro Leu Ile Glu Thr Asn Gly Glu Thr Gly Glu
 1145 1150 1155

 Ile Val Trp Asp Lys Gly Arg Asp Phe Ala Thr Val Arg Lys Val
 1160 1165 1170

 Leu Ser Met Pro Gln Val Asn Ile Val Lys Lys Thr Glu Val Gln
 1175 1180 1185

 Thr Gly Gly Phe Ser Lys Glu Ser Ile Leu Pro Lys Arg Asn Ser
 1190 1195 1200

 Asp Lys Leu Ile Ala Arg Lys Lys Asp Trp Asp Pro Lys Lys Tyr

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

Leu	Phe	Thr	Leu	Thr	Asn	Leu	Gly	Ala	Pro	Ala	Ala	Phe	Lys	Tyr
1400						1405					1410			
Phe	Asp	Thr	Thr	Ile	Asp	Arg	Lys	Arg	Tyr	Thr	Ser	Thr	Lys	Glu
1415						1420					1425			
Val	Leu	Asp	Ala	Thr	Leu	Ile	His	Gln	Ser	Ile	Thr	Gly	Leu	Tyr
1430						1435					1440			
Glu	Thr	Arg	Ile	Asp	Leu	Ser	Gln	Leu	Gly	Gly	Asp	Ser	Arg	Ala
1445						1450					1455			
Asp	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr	Ala	Ser	Gly	Ser	Pro	Lys
1460						1465					1470			
Lys	Lys	Arg	Lys	Val	Ser	Pro	Gly	Gly	Gly	Pro	Ser	Ser	Gly	Ala
1475						1480					1485			
Pro	Pro	Pro	Ser	Gly	Gly	Ser	Pro	Ala	Gly	Ser	Pro	Thr	Ser	Thr
1490						1495					1500			
Glu	Glu	Gly	Thr	Ser	Glu	Ser	Ala	Thr	Pro	Glu	Ser	Gly	Pro	Gly
1505						1510					1515			
Thr	Ser	Thr	Glu	Pro	Ser	Glu	Gly	Ser	Ala	Pro	Gly	Ser	Pro	Ala
1520						1525					1530			
Gly	Ser	Pro	Thr	Ser	Thr	Glu	Glu	Gly	Thr	Ser	Thr	Glu	Pro	Ser
1535						1540					1545			
Glu	Gly	Ser	Ala	Pro	Gly	Thr	Ser	Thr	Glu	Pro	Ser	Glu	Asn	His
1550						1555					1560			
Asp	Gln	Glu	Phe	Asp	Pro	Pro	Lys	Val	Tyr	Pro	Pro	Val	Pro	Ala
1565						1570					1575			

Glu	Lys	Arg	Lys	Pro	Ile	Arg	Val	Leu	Ser	Leu	Phe	Asp	Gly	Ile
1580						1585					1590			
Ala	Thr	Gly	Leu	Leu	Val	Leu	Lys	Asp	Leu	Gly	Ile	Gln	Val	Asp
1595						1600					1605			
Arg	Tyr	Ile	Ala	Ser	Glu	Val	Cys	Glu	Asp	Ser	Ile	Thr	Val	Gly
1610						1615					1620			
Met	Val	Arg	His	Gln	Gly	Lys	Ile	Met	Tyr	Val	Gly	Asp	Val	Arg
1625						1630					1635			
Ser	Val	Thr	Gln	Lys	His	Ile	Gln	Glu	Trp	Gly	Pro	Phe	Asp	Leu
1640						1645					1650			
Val	Ile	Gly	Gly	Ser	Pro	Cys	Asn	Asp	Leu	Ser	Ile	Val	Asn	Pro
1655						1660					1665			
Ala	Arg	Lys	Gly	Leu	Tyr	Glu	Gly	Thr	Gly	Arg	Leu	Phe	Phe	Glu
1670						1675					1680			
Phe	Tyr	Arg	Leu	Leu	His	Asp	Ala	Arg	Pro	Lys	Glu	Gly	Asp	Asp
1685						1690					1695			
Arg	Pro	Phe	Phe	Trp	Leu	Phe	Glu	Asn	Val	Val	Ala	Met	Gly	Val
1700						1705					1710			
Ser	Asp	Lys	Arg	Asp	Ile	Ser	Arg	Phe	Leu	Glu	Ser	Asn	Pro	Val
1715						1720					1725			
Met	Ile	Asp	Ala	Lys	Glu	Val	Ser	Ala	Ala	His	Arg	Ala	Arg	Tyr
1730						1735					1740			
Phe	Trp	Gly	Asn	Leu	Pro	Gly	Met	Asn	Arg	Pro	Leu	Ala	Ser	Thr
1745						1750					1755			

Val Asn Asp Lys Leu Glu Leu Gln Glu Cys Leu Glu His Gly Arg
1760 1765 1770

Ile Ala Lys Phe Ser Lys Val Arg Thr Ile Thr Thr Arg Ser Asn
1775 1780 1785

Ser Ile Lys Gln Gly Lys Asp Gln His Phe Pro Val Phe Met Asn
1790 1795 1800

Glu Lys Glu Asp Ile Leu Trp Cys Thr Glu Met Glu Arg Val Phe
1805 1810 1815

Gly Phe Pro Val His Tyr Thr Asp Val Ser Asn Met Ser Arg Leu
1820 1825 1830

Ala Arg Gln Arg Leu Leu Gly Arg Ser Trp Ser Val Pro Val Ile
1835 1840 1845

Arg His Leu Phe Ala Pro Leu Lys Glu Tyr Phe Ala Cys Val Ser
1850 1855 1860

Ser Gly Asn Ser Asn Ala Asn Ser Arg Gly Pro Ser Phe Ser Ser
1865 1870 1875

Gly Leu Val Pro Leu Ser Leu Arg Gly Ser His Met Gly Pro Met
1880 1885 1890

Glu Ile Tyr Lys Thr Val Ser Ala Trp Lys Arg Gln Pro Val Arg
1895 1900 1905

Val Leu Ser Leu Phe Arg Asn Ile Asp Lys Val Leu Lys Ser Leu
1910 1915 1920

Gly Phe Leu Glu Ser Gly Ser Gly Ser Gly Gly Gly Thr Leu Lys
1925 1930 1935

Tyr Val Glu Asp Val Thr Asn Val Val Arg Arg Asp Val Glu Lys

1940		1945		1950
Trp Gly 1955	Pro Phe Asp Leu	Val Tyr Gly Ser Thr 1960	Gln Pro Leu Gly 1965	
Ser Ser 1970	Cys Asp Arg Cys	Pro Gly Trp Tyr Met 1975	Phe Gln Phe His 1980	
Arg Ile 1985	Leu Gln Tyr Ala	Leu Pro Arg Gln Glu 1990	Ser Gln Arg Pro 1995	
Phe Phe 2000	Trp Ile Phe Met	Asp Asn Leu Leu Leu 2005	Thr Glu Asp Asp 2010	
Gln Glu 2015	Thr Thr Thr Arg	Phe Leu Gln Thr Glu 2020	Ala Val Thr Leu 2025	
Gln Asp 2030	Val Arg Gly Arg	Asp Tyr Gln Asn Ala 2035	Met Arg Val Trp 2040	
Ser Asn 2045	Ile Pro Gly Leu	Lys Ser Lys His Ala 2050	Pro Leu Thr Pro 2055	
Lys Glu 2060	Glu Glu Tyr Leu	Gln Ala Gln Val Arg 2065	Ser Arg Ser Lys 2070	
Leu Asp 2075	Ala Pro Lys Val	Asp Leu Leu Val Lys 2080	Asn Cys Leu Leu 2085	
Pro Leu 2090	Arg Glu Tyr Phe	Lys Tyr Phe Ser Gln 2095	Asn Ser Leu Pro 2100	
Leu Ser 2105	Arg Ala Asp Pro	Lys Lys Lys Arg Lys 2110	Val Gly Ser Gly 2115	
Ala Thr 2120	Asn Phe Ser Leu	Leu Lys Gln Ala Gly 2125	Asp Val Glu Glu 2130	

Asn	Pro	Gly	Pro	Ser	Glu	Leu	Ile	Lys	Glu	Asn	Met	His	Met	Lys
2135						2140					2145			
Leu	Tyr	Met	Glu	Gly	Thr	Val	Asp	Asn	His	His	Phe	Lys	Cys	Thr
2150						2155					2160			
Ser	Glu	Gly	Glu	Gly	Lys	Pro	Tyr	Glu	Gly	Thr	Gln	Thr	Met	Arg
2165						2170					2175			
Ile	Lys	Val	Val	Glu	Gly	Gly	Pro	Leu	Pro	Phe	Ala	Phe	Asp	Ile
2180						2185					2190			
Leu	Ala	Thr	Ser	Phe	Leu	Tyr	Gly	Ser	Lys	Thr	Phe	Ile	Asn	His
2195						2200					2205			
Thr	Gln	Gly	Ile	Pro	Asp	Phe	Phe	Lys	Gln	Ser	Phe	Pro	Glu	Gly
2210						2215					2220			
Phe	Thr	Trp	Glu	Arg	Val	Thr	Thr	Tyr	Glu	Asp	Gly	Gly	Val	Leu
2225						2230					2235			
Thr	Ala	Thr	Gln	Asp	Thr	Ser	Leu	Gln	Asp	Gly	Cys	Leu	Ile	Tyr
2240						2245					2250			
Asn	Val	Lys	Ile	Arg	Gly	Val	Asn	Phe	Thr	Ser	Asn	Gly	Pro	Val
2255						2260					2265			
Met	Gln	Lys	Lys	Thr	Leu	Gly	Trp	Glu	Ala	Phe	Thr	Glu	Thr	Leu
2270						2275					2280			
Tyr	Pro	Ala	Asp	Gly	Gly	Leu	Glu	Gly	Arg	Asn	Asp	Met	Ala	Leu
2285						2290					2295			
Lys	Leu	Val	Gly	Gly	Ser	His	Leu	Ile	Ala	Asn	Ile	Lys	Thr	Thr
2300						2305					2310			

Tyr Arg Ser Lys Lys Pro Ala Lys Asn Leu Lys Met Pro Gly Val
2315 2320 2325

Tyr Tyr Val Asp Tyr Arg Leu Glu Arg Ile Lys Glu Ala Asn Asn
2330 2335 2340

Glu Thr Tyr Val Glu Gln His Glu Val Ala Val Ala Arg Tyr Cys
2345 2350 2355

Asp Leu Pro Ser Lys Leu Gly His Lys Leu Asn
2360 2365

<210> 12

<211> 2391

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 12

Asp Ala Lys Ser Leu Thr Ala Trp Ser Arg Thr Leu Val Thr Phe Lys
1 5 10 15

Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr
20 25 30

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

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

Leu Glu Lys Gly Glu Glu Pro Ser Gly Ser Glu Thr Pro Gly Thr Ser
65 70 75 80

Glu Ser Ala Thr Pro Glu Ser Met Asp Lys Lys Tyr Ser Ile Gly Leu
85 90 95

Ala Ile Gly Thr Asn Ser Val Gly Trp Ala Val Ile Thr Asp Glu Tyr
100 105 110

Lys Val Pro Ser Lys Lys Phe Lys Val Leu Gly Asn Thr Asp Arg His
115 120 125

Ser Ile Lys Lys Asn Leu Ile Gly Ala Leu Leu Phe Asp Ser Gly Glu
130 135 140

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

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

Met Ala Lys Val Asp Asp Ser Phe Phe His Arg Leu Glu Glu Ser Phe
180 185 190

Leu Val Glu Glu Asp Lys Lys His Glu Arg His Pro Ile Phe Gly Asn
195 200 205

Ile Val Asp Glu Val Ala Tyr His Glu Lys Tyr Pro Thr Ile Tyr His
210 215 220

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

Ile Tyr Leu Ala Leu Ala His Met Ile Lys Phe Arg Gly His Phe Leu
245 250 255

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

Ile Gln Leu Val Gln Thr Tyr Asn Gln Leu Phe Glu Glu Asn Pro Ile
275 280 285

Asn Ala Ser Gly Val Asp Ala Lys Ala Ile Leu Ser Ala Arg Leu Ser
290 295 300

Lys Ser Arg Arg Leu Glu Asn Leu Ile Ala Gln Leu Pro Gly Glu Lys
305 310 315 320

Lys Asn Gly Leu Phe Gly Asn Leu Ile Ala Leu Ser Leu Gly Leu Thr
325 330 335

Pro Asn Phe Lys Ser Asn Phe Asp Leu Ala Glu Asp Ala Lys Leu Gln
340 345 350

Leu Ser Lys Asp Thr Tyr Asp Asp Asp Leu Asp Asn Leu Leu Ala Gln
355 360 365

Ile Gly Asp Gln Tyr Ala Asp Leu Phe Leu Ala Ala Lys Asn Leu Ser
370 375 380

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

Lys Ala Pro Leu Ser Ala Ser Met Ile Lys Arg Tyr Asp Glu His His
405 410 415

Gln Asp Leu Thr Leu Leu Lys Ala Leu Val Arg Gln Gln Leu Pro Glu
420 425 430

Lys Tyr Lys Glu Ile Phe Phe Asp Gln Ser Lys Asn Gly Tyr Ala Gly
435 440 445

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

Pro Ile Leu Glu Lys Met Asp Gly Thr Glu Glu Leu Leu Val Lys Leu
465 470 475 480

Asn Arg Glu Asp Leu Leu Arg Lys Gln Arg Thr Phe Asp Asn Gly Ser
485 490 495

Ile Pro His Gln Ile His Leu Gly Glu Leu His Ala Ile Leu Arg Arg
500 505 510

Gln Glu Asp Phe Tyr Pro Phe Leu Lys Asp Asn Arg Glu Lys Ile Glu
515 520 525

Lys Ile Leu Thr Phe Arg Ile Pro Tyr Tyr Val Gly Pro Leu Ala Arg
530 535 540

Gly Asn Ser Arg Phe Ala Trp Met Thr Arg Lys Ser Glu Glu Thr Ile
545 550 555 560

Thr Pro Trp Asn Phe Glu Glu Val Val Asp Lys Gly Ala Ser Ala Gln
565 570 575

Ser Phe Ile Glu Arg Met Thr Asn Phe Asp Lys Asn Leu Pro Asn Glu
580 585 590

Lys Val Leu Pro Lys His Ser Leu Leu Tyr Glu Tyr Phe Thr Val Tyr
595 600 605

Asn Glu Leu Thr Lys Val Lys Tyr Val Thr Glu Gly Met Arg Lys Pro
610 615 620

Ala Phe Leu Ser Gly Glu Gln Lys Lys Ala Ile Val Asp Leu Leu Phe
625 630 635 640

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

Lys Lys Ile Glu Cys Phe Asp Ser Val Glu Ile Ser Gly Val Glu Asp
660 665 670

Arg Phe Asn Ala Ser Leu Gly Thr Tyr His Asp Leu Leu Lys Ile Ile

675

680

685

Lys Asp Lys Asp Phe Leu Asp Asn Glu Glu Asn Glu Asp Ile Leu Glu
 690 695 700

Asp Ile Val Leu Thr Leu Thr Leu Phe Glu Asp Arg Glu Met Ile Glu
 705 710 715 720

Glu Arg Leu Lys Thr Tyr Ala His Leu Phe Asp Asp Lys Val Met Lys
 725 730 735

Gln Leu Lys Arg Arg Arg Tyr Thr Gly Trp Gly Arg Leu Ser Arg Lys
 740 745 750

Leu Ile Asn Gly Ile Arg Asp Lys Gln Ser Gly Lys Thr Ile Leu Asp
 755 760 765

Phe Leu Lys Ser Asp Gly Phe Ala Asn Arg Asn Phe Met Gln Leu Ile
 770 775 780

His Asp Asp Ser Leu Thr Phe Lys Glu Asp Ile Gln Lys Ala Gln Val
 785 790 795 800

Ser Gly Gln Gly Asp Ser Leu His Glu His Ile Ala Asn Leu Ala Gly
 805 810 815

Ser Pro Ala Ile Lys Lys Gly Ile Leu Gln Thr Val Lys Val Val Asp
 820 825 830

Glu Leu Val Lys Val Met Gly Arg His Lys Pro Glu Asn Ile Val Ile
 835 840 845

Glu Met Ala Arg Glu Asn Gln Thr Thr Gln Lys Gly Gln Lys Asn Ser
 850 855 860

Arg Glu Arg Met Lys Arg Ile Glu Glu Gly Ile Lys Glu Leu Gly Ser
 865 870 875 880

Gln Ile Leu Lys Glu His Pro Val Glu Asn Thr Gln Leu Gln Asn Glu
885 890 895

Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn Gly Arg Asp Met Tyr Val Asp
900 905 910

Gln Glu Leu Asp Ile Asn Arg Leu Ser Asp Tyr Asp Val Asp Ala Ile
915 920 925

Val Pro Gln Ser Phe Leu Lys Asp Asp Ser Ile Asp Asn Lys Val Leu
930 935 940

Thr Arg Ser Asp Lys Asn Arg Gly Lys Ser Asp Asn Val Pro Ser Glu
945 950 955 960

Glu Val Val Lys Lys Met Lys Asn Tyr Trp Arg Gln Leu Leu Asn Ala
965 970 975

Lys Leu Ile Thr Gln Arg Lys Phe Asp Asn Leu Thr Lys Ala Glu Arg
980 985 990

Gly Gly Leu Ser Glu Leu Asp Lys Ala Gly Phe Ile Lys Arg Gln Leu
995 1000 1005

Val Glu Thr Arg Gln Ile Thr Lys His Val Ala Gln Ile Leu Asp
1010 1015 1020

Ser Arg Met Asn Thr Lys Tyr Asp Glu Asn Asp Lys Leu Ile Arg
1025 1030 1035

Glu Val Lys Val Ile Thr Leu Lys Ser Lys Leu Val Ser Asp Phe
1040 1045 1050

Arg Lys Asp Phe Gln Phe Tyr Lys Val Arg Glu Ile Asn Asn Tyr
1055 1060 1065

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

Glu Leu Leu Gly Ile Thr Ile Met Glu Arg Ser Ser Phe Glu Lys
1250 1255 1260

Asn Pro Ile Asp Phe Leu Glu Ala Lys Gly Tyr Lys Glu Val Lys
1265 1270 1275

Lys Asp Leu Ile Ile Lys Leu Pro Lys Tyr Ser Leu Phe Glu Leu
1280 1285 1290

Glu Asn Gly Arg Lys Arg Met Leu Ala Ser Ala Gly Glu Leu Gln
1295 1300 1305

Lys Gly Asn Glu Leu Ala Leu Pro Ser Lys Tyr Val Asn Phe Leu
1310 1315 1320

Tyr Leu Ala Ser His Tyr Glu Lys Leu Lys Gly Ser Pro Glu Asp
1325 1330 1335

Asn Glu Gln Lys Gln Leu Phe Val Glu Gln His Lys His Tyr Leu
1340 1345 1350

Asp Glu Ile Ile Glu Gln Ile Ser Glu Phe Ser Lys Arg Val Ile
1355 1360 1365

Leu Ala Asp Ala Asn Leu Asp Lys Val Leu Ser Ala Tyr Asn Lys
1370 1375 1380

His Arg Asp Lys Pro Ile Arg Glu Gln Ala Glu Asn Ile Ile His
1385 1390 1395

Leu Phe Thr Leu Thr Asn Leu Gly Ala Pro Ala Ala Phe Lys Tyr
1400 1405 1410

Phe Asp Thr Thr Ile Asp Arg Lys Arg Tyr Thr Ser Thr Lys Glu
1415 1420 1425

Val Leu Asp Ala Thr Leu Ile His Gln Ser Ile Thr Gly Leu Tyr

1430						1435						1440			
Glu Thr Arg Ile Asp Leu Ser	Gln Leu Gly Gly Asp Ser Arg Ala														
1445						1450						1455			
Asp Tyr Pro Tyr Asp Val Pro	Asp Tyr Ala Ser Gly Ser Pro Lys														
1460						1465						1470			
Lys Lys Arg Lys Val Ser Pro	Gly Gly Gly Pro Ser Ser Gly Ala														
1475						1480						1485			
Pro Pro Pro Ser Gly Gly Ser	Pro Ala Gly Ser Pro Thr Ser Thr														
1490						1495						1500			
Glu Glu Gly Thr Ser Glu Ser	Ala Thr Pro Glu Ser Gly Pro Gly														
1505						1510						1515			
Thr Ser Thr Glu Pro Ser Glu	Gly Ser Ala Pro Gly Ser Pro Ala														
1520						1525						1530			
Gly Ser Pro Thr Ser Thr Glu	Glu Gly Thr Ser Thr Glu Pro Ser														
1535						1540						1545			
Glu Gly Ser Ala Pro Gly Thr	Ser Thr Glu Pro Ser Glu Asn His														
1550						1555						1560			
Asp Gln Glu Phe Asp Pro Pro	Lys Val Tyr Pro Pro Val Pro Ala														
1565						1570						1575			
Glu Lys Arg Lys Pro Ile Arg	Val Leu Ser Leu Phe Asp Gly Ile														
1580						1585						1590			
Ala Thr Gly Leu Leu Val Leu	Lys Asp Leu Gly Ile Gln Val Asp														
1595						1600						1605			
Arg Tyr Ile Ala Ser Glu Val	Cys Glu Asp Ser Ile Thr Val Gly														
1610						1615						1620			

Met	Val	Arg	His	Gln	Gly	Lys	Ile	Met	Tyr	Val	Gly	Asp	Val	Arg
1625						1630					1635			
Ser	Val	Thr	Gln	Lys	His	Ile	Gln	Glu	Trp	Gly	Pro	Phe	Asp	Leu
1640						1645					1650			
Val	Ile	Gly	Gly	Ser	Pro	Cys	Asn	Asp	Leu	Ser	Ile	Val	Asn	Pro
1655						1660					1665			
Ala	Arg	Lys	Gly	Leu	Tyr	Glu	Gly	Thr	Gly	Arg	Leu	Phe	Phe	Glu
1670						1675					1680			
Phe	Tyr	Arg	Leu	Leu	His	Asp	Ala	Arg	Pro	Lys	Glu	Gly	Asp	Asp
1685						1690					1695			
Arg	Pro	Phe	Phe	Trp	Leu	Phe	Glu	Asn	Val	Val	Ala	Met	Gly	Val
1700						1705					1710			
Ser	Asp	Lys	Arg	Asp	Ile	Ser	Arg	Phe	Leu	Glu	Ser	Asn	Pro	Val
1715						1720					1725			
Met	Ile	Asp	Ala	Lys	Glu	Val	Ser	Ala	Ala	His	Arg	Ala	Arg	Tyr
1730						1735					1740			
Phe	Trp	Gly	Asn	Leu	Pro	Gly	Met	Asn	Arg	Pro	Leu	Ala	Ser	Thr
1745						1750					1755			
Val	Asn	Asp	Lys	Leu	Glu	Leu	Gln	Glu	Cys	Leu	Glu	His	Gly	Arg
1760						1765					1770			
Ile	Ala	Lys	Phe	Ser	Lys	Val	Arg	Thr	Ile	Thr	Thr	Arg	Ser	Asn
1775						1780					1785			
Ser	Ile	Lys	Gln	Gly	Lys	Asp	Gln	His	Phe	Pro	Val	Phe	Met	Asn
1790						1795					1800			

Glu	Lys	Glu	Asp	Ile	Leu	Trp	Cys	Thr	Glu	Met	Glu	Arg	Val	Phe
1805						1810					1815			
Gly	Phe	Pro	Val	His	Tyr	Thr	Asp	Val	Ser	Asn	Met	Ser	Arg	Leu
1820						1825					1830			
Ala	Arg	Gln	Arg	Leu	Leu	Gly	Arg	Ser	Trp	Ser	Val	Pro	Val	Ile
1835						1840					1845			
Arg	His	Leu	Phe	Ala	Pro	Leu	Lys	Glu	Tyr	Phe	Ala	Cys	Val	Ser
1850						1855					1860			
Ser	Gly	Asn	Ser	Asn	Ala	Asn	Ser	Arg	Gly	Pro	Ser	Phe	Ser	Ser
1865						1870					1875			
Gly	Leu	Val	Pro	Leu	Ser	Leu	Arg	Gly	Ser	His	Met	Gly	Pro	Met
1880						1885					1890			
Glu	Ile	Tyr	Lys	Thr	Val	Ser	Ala	Trp	Lys	Arg	Gln	Pro	Val	Arg
1895						1900					1905			
Val	Leu	Ser	Leu	Phe	Arg	Asn	Ile	Asp	Lys	Val	Leu	Lys	Ser	Leu
1910						1915					1920			
Gly	Phe	Leu	Glu	Ser	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Thr	Leu	Lys
1925						1930					1935			
Tyr	Val	Glu	Asp	Val	Thr	Asn	Val	Val	Arg	Arg	Asp	Val	Glu	Lys
1940						1945					1950			
Trp	Gly	Pro	Phe	Asp	Leu	Val	Tyr	Gly	Ser	Thr	Gln	Pro	Leu	Gly
1955						1960					1965			
Ser	Ser	Cys	Asp	Arg	Cys	Pro	Gly	Trp	Tyr	Met	Phe	Gln	Phe	His
1970						1975					1980			

Arg Ile Leu Gln Tyr Ala Leu Pro Arg Gln Glu Ser Gln Arg Pro
1985 1990 1995

Phe Phe Trp Ile Phe Met Asp Asn Leu Leu Leu Thr Glu Asp Asp
2000 2005 2010

Gln Glu Thr Thr Thr Arg Phe Leu Gln Thr Glu Ala Val Thr Leu
2015 2020 2025

Gln Asp Val Arg Gly Arg Asp Tyr Gln Asn Ala Met Arg Val Trp
2030 2035 2040

Ser Asn Ile Pro Gly Leu Lys Ser Lys His Ala Pro Leu Thr Pro
2045 2050 2055

Lys Glu Glu Glu Tyr Leu Gln Ala Gln Val Arg Ser Arg Ser Lys
2060 2065 2070

Leu Asp Ala Pro Lys Val Asp Leu Leu Val Lys Asn Cys Leu Leu
2075 2080 2085

Pro Leu Arg Glu Tyr Phe Lys Tyr Phe Ser Gln Asn Ser Leu Pro
2090 2095 2100

Leu Ser Arg Ala Asp Pro Lys Lys Lys Arg Lys Val Gly Ser Gly
2105 2110 2115

Ala Thr Asn Phe Ser Leu Leu Lys Gln Ala Gly Asp Val Glu Glu
2120 2125 2130

Asn Pro Gly Pro Gly Ser Gly Ala Thr Asn Phe Ser Leu Leu Lys
2135 2140 2145

Gln Ala Gly Asp Val Glu Glu Asn Pro Gly Pro Ser Glu Leu Ile
2150 2155 2160

Lys Glu Asn Met His Met Lys Leu Tyr Met Glu Gly Thr Val Asp

2165		2170		2175
Asn His 2180	His Phe Lys Cys	Thr 2185	Ser Glu Gly Glu Gly	Lys Pro Tyr 2190
Glu Gly 2195	Thr Gln Thr Met	Arg 2200	Ile Lys Val Val Glu	Gly Gly Pro 2205
Leu Pro 2210	Phe Ala Phe Asp	Ile 2215	Leu Ala Thr Ser Phe	Leu Tyr Gly 2220
Ser Lys 2225	Thr Phe Ile Asn	His 2230	Thr Gln Gly Ile Pro	Asp Phe Phe 2235
Lys Gln 2240	Ser Phe Pro Glu	Gly 2245	Phe Thr Trp Glu Arg	Val Thr Thr 2250
Tyr Glu 2255	Asp Gly Gly Val	Leu 2260	Thr Ala Thr Gln Asp	Thr Ser Leu 2265
Gln Asp 2270	Gly Cys Leu Ile	Tyr 2275	Asn Val Lys Ile Arg	Gly Val Asn 2280
Phe Thr 2285	Ser Asn Gly Pro	Val 2290	Met Gln Lys Lys Thr	Leu Gly Trp 2295
Glu Ala 2300	Phe Thr Glu Thr	Leu 2305	Tyr Pro Ala Asp Gly	Gly Leu Glu 2310
Gly Arg 2315	Asn Asp Met Ala	Leu 2320	Lys Leu Val Gly Gly	Ser His Leu 2325
Ile Ala 2330	Asn Ile Lys Thr	Thr 2335	Tyr Arg Ser Lys Lys	Pro Ala Lys 2340
Asn Leu 2345	Lys Met Pro Gly	Val 2350	Tyr Tyr Val Asp Tyr	Arg Leu Glu 2355

Arg Ile Lys Glu Ala Asn Asn Glu Thr Tyr Val Glu Gln His Glu
2360 2365 2370

Val Ala Val Ala Arg Tyr Cys Asp Leu Pro Ser Lys Leu Gly His
2375 2380 2385

Lys Leu Asn
2390

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<212> PRT
<213> Artificial sequence

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Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr
20 25 30

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

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

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

Pro Ser Gly Gly Ser Pro Ala Gly Ser Pro Thr Ser Thr Glu Glu Gly
85 90 95

Thr Ser Glu Ser Ala Thr Pro Glu Ser Gly Pro Gly Thr Ser Thr Glu

100	105	110
Pro Ser Glu Gly Ser Ala Pro Gly Ser Pro Ala Gly Ser Pro Thr Ser		
115	120	125
Thr Glu Glu Gly Thr Ser Thr Glu Pro Ser Glu Gly Ser Ala Pro Gly		
130	135	140
Thr Ser Thr Glu Pro Ser Glu Met Asp Lys Lys Tyr Ser Ile Gly Leu		
145	150	155
Ala Ile Gly Thr Asn Ser Val Gly Trp Ala Val Ile Thr Asp Glu Tyr		
165	170	175
Lys Val Pro Ser Lys Lys Phe Lys Val Leu Gly Asn Thr Asp Arg His		
180	185	190
Ser Ile Lys Lys Asn Leu Ile Gly Ala Leu Leu Phe Asp Ser Gly Glu		
195	200	205
Thr Ala Glu Ala Thr Arg Leu Lys Arg Thr Ala Arg Arg Arg Tyr Thr		
210	215	220
Arg Arg Lys Asn Arg Ile Cys Tyr Leu Gln Glu Ile Phe Ser Asn Glu		
225	230	235
Met Ala Lys Val Asp Asp Ser Phe Phe His Arg Leu Glu Glu Ser Phe		
245	250	255
Leu Val Glu Glu Asp Lys Lys His Glu Arg His Pro Ile Phe Gly Asn		
260	265	270
Ile Val Asp Glu Val Ala Tyr His Glu Lys Tyr Pro Thr Ile Tyr His		
275	280	285
Leu Arg Lys Lys Leu Val Asp Ser Thr Asp Lys Ala Asp Leu Arg Leu		
290	295	300

Ile Tyr Leu Ala Leu Ala His Met Ile Lys Phe Arg Gly His Phe Leu
305 310 315 320

Ile Glu Gly Asp Leu Asn Pro Asp Asn Ser Asp Val Asp Lys Leu Phe
325 330 335

Ile Gln Leu Val Gln Thr Tyr Asn Gln Leu Phe Glu Glu Asn Pro Ile
340 345 350

Asn Ala Ser Gly Val Asp Ala Lys Ala Ile Leu Ser Ala Arg Leu Ser
355 360 365

Lys Ser Arg Arg Leu Glu Asn Leu Ile Ala Gln Leu Pro Gly Glu Lys
370 375 380

Lys Asn Gly Leu Phe Gly Asn Leu Ile Ala Leu Ser Leu Gly Leu Thr
385 390 395 400

Pro Asn Phe Lys Ser Asn Phe Asp Leu Ala Glu Asp Ala Lys Leu Gln
405 410 415

Leu Ser Lys Asp Thr Tyr Asp Asp Asp Leu Asp Asn Leu Leu Ala Gln
420 425 430

Ile Gly Asp Gln Tyr Ala Asp Leu Phe Leu Ala Ala Lys Asn Leu Ser
435 440 445

Asp Ala Ile Leu Leu Ser Asp Ile Leu Arg Val Asn Thr Glu Ile Thr
450 455 460

Lys Ala Pro Leu Ser Ala Ser Met Ile Lys Arg Tyr Asp Glu His His
465 470 475 480

Gln Asp Leu Thr Leu Leu Lys Ala Leu Val Arg Gln Gln Leu Pro Glu
485 490 495

Lys Tyr Lys Glu Ile Phe Phe Asp Gln Ser Lys Asn Gly Tyr Ala Gly
500 505 510

Tyr Ile Asp Gly Gly Ala Ser Gln Glu Glu Phe Tyr Lys Phe Ile Lys
515 520 525

Pro Ile Leu Glu Lys Met Asp Gly Thr Glu Glu Leu Leu Val Lys Leu
530 535 540

Asn Arg Glu Asp Leu Leu Arg Lys Gln Arg Thr Phe Asp Asn Gly Ser
545 550 555 560

Ile Pro His Gln Ile His Leu Gly Glu Leu His Ala Ile Leu Arg Arg
565 570 575

Gln Glu Asp Phe Tyr Pro Phe Leu Lys Asp Asn Arg Glu Lys Ile Glu
580 585 590

Lys Ile Leu Thr Phe Arg Ile Pro Tyr Tyr Val Gly Pro Leu Ala Arg
595 600 605

Gly Asn Ser Arg Phe Ala Trp Met Thr Arg Lys Ser Glu Glu Thr Ile
610 615 620

Thr Pro Trp Asn Phe Glu Glu Val Val Asp Lys Gly Ala Ser Ala Gln
625 630 635 640

Ser Phe Ile Glu Arg Met Thr Asn Phe Asp Lys Asn Leu Pro Asn Glu
645 650 655

Lys Val Leu Pro Lys His Ser Leu Leu Tyr Glu Tyr Phe Thr Val Tyr
660 665 670

Asn Glu Leu Thr Lys Val Lys Tyr Val Thr Glu Gly Met Arg Lys Pro
675 680 685

Ala Phe Leu Ser Gly Glu Gln Lys Lys Ala Ile Val Asp Leu Leu Phe
690 695 700

Lys Thr Asn Arg Lys Val Thr Val Lys Gln Leu Lys Glu Asp Tyr Phe
705 710 715 720

Lys Lys Ile Glu Cys Phe Asp Ser Val Glu Ile Ser Gly Val Glu Asp
725 730 735

Arg Phe Asn Ala Ser Leu Gly Thr Tyr His Asp Leu Leu Lys Ile Ile
740 745 750

Lys Asp Lys Asp Phe Leu Asp Asn Glu Glu Asn Glu Asp Ile Leu Glu
755 760 765

Asp Ile Val Leu Thr Leu Thr Leu Phe Glu Asp Arg Glu Met Ile Glu
770 775 780

Glu Arg Leu Lys Thr Tyr Ala His Leu Phe Asp Asp Lys Val Met Lys
785 790 795 800

Gln Leu Lys Arg Arg Arg Tyr Thr Gly Trp Gly Arg Leu Ser Arg Lys
805 810 815

Leu Ile Asn Gly Ile Arg Asp Lys Gln Ser Gly Lys Thr Ile Leu Asp
820 825 830

Phe Leu Lys Ser Asp Gly Phe Ala Asn Arg Asn Phe Met Gln Leu Ile
835 840 845

His Asp Asp Ser Leu Thr Phe Lys Glu Asp Ile Gln Lys Ala Gln Val
850 855 860

Ser Gly Gln Gly Asp Ser Leu His Glu His Ile Ala Asn Leu Ala Gly
865 870 875 880

Ser Pro Ala Ile Lys Lys Gly Ile Leu Gln Thr Val Lys Val Val Asp

885

890

895

Glu Leu Val Lys Val Met Gly Arg His Lys Pro Glu Asn Ile Val Ile
 900 905 910

Glu Met Ala Arg Glu Asn Gln Thr Thr Gln Lys Gly Gln Lys Asn Ser
 915 920 925

Arg Glu Arg Met Lys Arg Ile Glu Glu Gly Ile Lys Glu Leu Gly Ser
 930 935 940

Gln Ile Leu Lys Glu His Pro Val Glu Asn Thr Gln Leu Gln Asn Glu
 945 950 955 960

Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn Gly Arg Asp Met Tyr Val Asp
 965 970 975

Gln Glu Leu Asp Ile Asn Arg Leu Ser Asp Tyr Asp Val Asp Ala Ile
 980 985 990

Val Pro Gln Ser Phe Leu Lys Asp Asp Ser Ile Asp Asn Lys Val Leu
 995 1000 1005

Thr Arg Ser Asp Lys Asn Arg Gly Lys Ser Asp Asn Val Pro Ser
 1010 1015 1020

Glu Glu Val Val Lys Lys Met Lys Asn Tyr Trp Arg Gln Leu Leu
 1025 1030 1035

Asn Ala Lys Leu Ile Thr Gln Arg Lys Phe Asp Asn Leu Thr Lys
 1040 1045 1050

Ala Glu Arg Gly Gly Leu Ser Glu Leu Asp Lys Ala Gly Phe Ile
 1055 1060 1065

Lys Arg Gln Leu Val Glu Thr Arg Gln Ile Thr Lys His Val Ala
 1070 1075 1080

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

Lys	Arg	Asn	Ser	Asp	Lys	Leu	Ile	Ala	Arg	Lys	Lys	Asp	Trp	Asp
1265						1270					1275			
Pro	Lys	Lys	Tyr	Gly	Gly	Phe	Asp	Ser	Pro	Thr	Val	Ala	Tyr	Ser
1280						1285					1290			
Val	Leu	Val	Val	Ala	Lys	Val	Glu	Lys	Gly	Lys	Ser	Lys	Lys	Leu
1295						1300					1305			
Lys	Ser	Val	Lys	Glu	Leu	Leu	Gly	Ile	Thr	Ile	Met	Glu	Arg	Ser
1310						1315					1320			
Ser	Phe	Glu	Lys	Asn	Pro	Ile	Asp	Phe	Leu	Glu	Ala	Lys	Gly	Tyr
1325						1330					1335			
Lys	Glu	Val	Lys	Lys	Asp	Leu	Ile	Ile	Lys	Leu	Pro	Lys	Tyr	Ser
1340						1345					1350			
Leu	Phe	Glu	Leu	Glu	Asn	Gly	Arg	Lys	Arg	Met	Leu	Ala	Ser	Ala
1355						1360					1365			
Gly	Glu	Leu	Gln	Lys	Gly	Asn	Glu	Leu	Ala	Leu	Pro	Ser	Lys	Tyr
1370						1375					1380			
Val	Asn	Phe	Leu	Tyr	Leu	Ala	Ser	His	Tyr	Glu	Lys	Leu	Lys	Gly
1385						1390					1395			
Ser	Pro	Glu	Asp	Asn	Glu	Gln	Lys	Gln	Leu	Phe	Val	Glu	Gln	His
1400						1405					1410			
Lys	His	Tyr	Leu	Asp	Glu	Ile	Ile	Glu	Gln	Ile	Ser	Glu	Phe	Ser
1415						1420					1425			
Lys	Arg	Val	Ile	Leu	Ala	Asp	Ala	Asn	Leu	Asp	Lys	Val	Leu	Ser
1430						1435					1440			

Ala Tyr Asn Lys His Arg Asp Lys Pro Ile Arg Glu Gln Ala Glu
1445 1450 1455

Asn Ile Ile His Leu Phe Thr Leu Thr Asn Leu Gly Ala Pro Ala
1460 1465 1470

Ala Phe Lys Tyr Phe Asp Thr Thr Ile Asp Arg Lys Arg Tyr Thr
1475 1480 1485

Ser Thr Lys Glu Val Leu Asp Ala Thr Leu Ile His Gln Ser Ile
1490 1495 1500

Thr Gly Leu Tyr Glu Thr Arg Ile Asp Leu Ser Gln Leu Gly Gly
1505 1510 1515

Asp Ser Arg Ala Asp Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser
1520 1525 1530

Gly Ser Pro Lys Lys Lys Arg Lys Val Ser Pro Gly Ser Gly Ser
1535 1540 1545

Glu Thr Pro Gly Thr Ser Glu Ser Ala Thr Pro Glu Ser Asn His
1550 1555 1560

Asp Gln Glu Phe Asp Pro Pro Lys Val Tyr Pro Pro Val Pro Ala
1565 1570 1575

Glu Lys Arg Lys Pro Ile Arg Val Leu Ser Leu Phe Asp Gly Ile
1580 1585 1590

Ala Thr Gly Leu Leu Val Leu Lys Asp Leu Gly Ile Gln Val Asp
1595 1600 1605

Arg Tyr Ile Ala Ser Glu Val Cys Glu Asp Ser Ile Thr Val Gly
1610 1615 1620

Met Val Arg His Gln Gly Lys Ile Met Tyr Val Gly Asp Val Arg

1625		1630		1635
Ser Val Thr Gln Lys His Ile	Gln Glu Trp Gly Pro	Phe Asp Leu		
1640	1645	1650		
Val Ile Gly Gly Ser Pro Cys	Asn Asp Leu Ser Ile	Val Asn Pro		
1655	1660	1665		
Ala Arg Lys Gly Leu Tyr Glu	Gly Thr Gly Arg Leu	Phe Phe Glu		
1670	1675	1680		
Phe Tyr Arg Leu Leu His Asp	Ala Arg Pro Lys Glu	Gly Asp Asp		
1685	1690	1695		
Arg Pro Phe Phe Trp Leu Phe	Glu Asn Val Val Ala	Met Gly Val		
1700	1705	1710		
Ser Asp Lys Arg Asp Ile Ser	Arg Phe Leu Glu Ser	Asn Pro Val		
1715	1720	1725		
Met Ile Asp Ala Lys Glu Val	Ser Ala Ala His Arg	Ala Arg Tyr		
1730	1735	1740		
Phe Trp Gly Asn Leu Pro Gly	Met Asn Arg Pro Leu	Ala Ser Thr		
1745	1750	1755		
Val Asn Asp Lys Leu Glu Leu	Gln Glu Cys Leu Glu	His Gly Arg		
1760	1765	1770		
Ile Ala Lys Phe Ser Lys Val	Arg Thr Ile Thr Thr	Arg Ser Asn		
1775	1780	1785		
Ser Ile Lys Gln Gly Lys Asp	Gln His Phe Pro Val	Phe Met Asn		
1790	1795	1800		
Glu Lys Glu Asp Ile Leu Trp	Cys Thr Glu Met Glu	Arg Val Phe		
1805	1810	1815		

Gly	Phe	Pro	Val	His	Tyr	Thr	Asp	Val	Ser	Asn	Met	Ser	Arg	Leu
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Ala	Arg	Gln	Arg	Leu	Leu	Gly	Arg	Ser	Trp	Ser	Val	Pro	Val	Ile
1835						1840					1845			
Arg	His	Leu	Phe	Ala	Pro	Leu	Lys	Glu	Tyr	Phe	Ala	Cys	Val	Ser
1850						1855					1860			
Ser	Gly	Asn	Ser	Asn	Ala	Asn	Ser	Arg	Gly	Pro	Ser	Phe	Ser	Ser
1865						1870					1875			
Gly	Leu	Val	Pro	Leu	Ser	Leu	Arg	Gly	Ser	His	Met	Gly	Pro	Met
1880						1885					1890			
Glu	Ile	Tyr	Lys	Thr	Val	Ser	Ala	Trp	Lys	Arg	Gln	Pro	Val	Arg
1895						1900					1905			
Val	Leu	Ser	Leu	Phe	Arg	Asn	Ile	Asp	Lys	Val	Leu	Lys	Ser	Leu
1910						1915					1920			
Gly	Phe	Leu	Glu	Ser	Gly	Ser	Gly	Ser	Gly	Gly	Gly	Thr	Leu	Lys
1925						1930					1935			
Tyr	Val	Glu	Asp	Val	Thr	Asn	Val	Val	Arg	Arg	Asp	Val	Glu	Lys
1940						1945					1950			
Trp	Gly	Pro	Phe	Asp	Leu	Val	Tyr	Gly	Ser	Thr	Gln	Pro	Leu	Gly
1955						1960					1965			
Ser	Ser	Cys	Asp	Arg	Cys	Pro	Gly	Trp	Tyr	Met	Phe	Gln	Phe	His
1970						1975					1980			
Arg	Ile	Leu	Gln	Tyr	Ala	Leu	Pro	Arg	Gln	Glu	Ser	Gln	Arg	Pro
1985						1990					1995			

Phe 2000	Phe	Trp	Ile	Phe	Met	Asp 2005	Asn	Leu	Leu	Leu	Thr 2010	Glu	Asp	Asp
Gln 2015	Glu	Thr	Thr	Thr	Arg	Phe 2020	Leu	Gln	Thr	Glu	Ala 2025	Val	Thr	Leu
Gln 2030	Asp	Val	Arg	Gly	Arg	Asp 2035	Tyr	Gln	Asn	Ala	Met 2040	Arg	Val	Trp
Ser 2045	Asn	Ile	Pro	Gly	Leu	Lys 2050	Ser	Lys	His	Ala	Pro 2055	Leu	Thr	Pro
Lys 2060	Glu	Glu	Glu	Tyr	Leu	Gln 2065	Ala	Gln	Val	Arg	Ser 2070	Arg	Ser	Lys
Leu 2075	Asp	Ala	Pro	Lys	Val	Asp 2080	Leu	Leu	Val	Lys	Asn 2085	Cys	Leu	Leu
Pro 2090	Leu	Arg	Glu	Tyr	Phe	Lys 2095	Tyr	Phe	Ser	Gln	Asn 2100	Ser	Leu	Pro
Leu 2105	Ser	Arg	Ala	Asp	Pro	Lys 2110	Lys	Lys	Arg	Lys	Val 2115	Gly	Ser	Gly
Ala 2120	Thr	Asn	Phe	Ser	Leu	Leu 2125	Lys	Gln	Ala	Gly	Asp 2130	Val	Glu	Glu
Asn 2135	Pro	Gly	Pro	Ser	Glu	Leu 2140	Ile	Lys	Glu	Asn	Met 2145	His	Met	Lys
Leu 2150	Tyr	Met	Glu	Gly	Thr	Val 2155	Asp	Asn	His	His	Phe 2160	Lys	Cys	Thr
Ser 2165	Glu	Gly	Glu	Gly	Lys	Pro 2170	Tyr	Glu	Gly	Thr	Gln 2175	Thr	Met	Arg

Ile Lys Val Val Glu Gly Gly Pro Leu Pro Phe Ala Phe Asp Ile
2180 2185 2190

Leu Ala Thr Ser Phe Leu Tyr Gly Ser Lys Thr Phe Ile Asn His
2195 2200 2205

Thr Gln Gly Ile Pro Asp Phe Phe Lys Gln Ser Phe Pro Glu Gly
2210 2215 2220

Phe Thr Trp Glu Arg Val Thr Thr Tyr Glu Asp Gly Gly Val Leu
2225 2230 2235

Thr Ala Thr Gln Asp Thr Ser Leu Gln Asp Gly Cys Leu Ile Tyr
2240 2245 2250

Asn Val Lys Ile Arg Gly Val Asn Phe Thr Ser Asn Gly Pro Val
2255 2260 2265

Met Gln Lys Lys Thr Leu Gly Trp Glu Ala Phe Thr Glu Thr Leu
2270 2275 2280

Tyr Pro Ala Asp Gly Gly Leu Glu Gly Arg Asn Asp Met Ala Leu
2285 2290 2295

Lys Leu Val Gly Gly Ser His Leu Ile Ala Asn Ile Lys Thr Thr
2300 2305 2310

Tyr Arg Ser Lys Lys Pro Ala Lys Asn Leu Lys Met Pro Gly Val
2315 2320 2325

Tyr Tyr Val Asp Tyr Arg Leu Glu Arg Ile Lys Glu Ala Asn Asn
2330 2335 2340

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

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<211> 2391

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

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
 50 55 60

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

Pro Ser Gly Gly Ser Pro Ala Gly Ser Pro Thr Ser Thr Glu Glu Gly
 85 90 95

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

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

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

Thr Ser Thr Glu Pro Ser Glu Met Asp Lys Lys Tyr Ser Ile Gly Leu
145 150 155 160

Ala Ile Gly Thr Asn Ser Val Gly Trp Ala Val Ile Thr Asp Glu Tyr
165 170 175

Lys Val Pro Ser Lys Lys Phe Lys Val Leu Gly Asn Thr Asp Arg His
180 185 190

Ser Ile Lys Lys Asn Leu Ile Gly Ala Leu Leu Phe Asp Ser Gly Glu
195 200 205

Thr Ala Glu Ala Thr Arg Leu Lys Arg Thr Ala Arg Arg Arg Tyr Thr
210 215 220

Arg Arg Lys Asn Arg Ile Cys Tyr Leu Gln Glu Ile Phe Ser Asn Glu
225 230 235 240

Met Ala Lys Val Asp Asp Ser Phe Phe His Arg Leu Glu Glu Ser Phe
245 250 255

Leu Val Glu Glu Asp Lys Lys His Glu Arg His Pro Ile Phe Gly Asn
260 265 270

Ile Val Asp Glu Val Ala Tyr His Glu Lys Tyr Pro Thr Ile Tyr His
275 280 285

Leu Arg Lys Lys Leu Val Asp Ser Thr Asp Lys Ala Asp Leu Arg Leu
290 295 300

Ile Tyr Leu Ala Leu Ala His Met Ile Lys Phe Arg Gly His Phe Leu
305 310 315 320

Ile Glu Gly Asp Leu Asn Pro Asp Asn Ser Asp Val Asp Lys Leu Phe
325 330 335

Ile Gln Leu Val Gln Thr Tyr Asn Gln Leu Phe Glu Glu Asn Pro Ile

340

345

350

Asn Ala Ser Gly Val Asp Ala Lys Ala Ile Leu Ser Ala Arg Leu Ser
 355 360 365

Lys Ser Arg Arg Leu Glu Asn Leu Ile Ala Gln Leu Pro Gly Glu Lys
 370 375 380

Lys Asn Gly Leu Phe Gly Asn Leu Ile Ala Leu Ser Leu Gly Leu Thr
 385 390 395 400

Pro Asn Phe Lys Ser Asn Phe Asp Leu Ala Glu Asp Ala Lys Leu Gln
 405 410 415

Leu Ser Lys Asp Thr Tyr Asp Asp Asp Leu Asp Asn Leu Leu Ala Gln
 420 425 430

Ile Gly Asp Gln Tyr Ala Asp Leu Phe Leu Ala Ala Lys Asn Leu Ser
 435 440 445

Asp Ala Ile Leu Leu Ser Asp Ile Leu Arg Val Asn Thr Glu Ile Thr
 450 455 460

Lys Ala Pro Leu Ser Ala Ser Met Ile Lys Arg Tyr Asp Glu His His
 465 470 475 480

Gln Asp Leu Thr Leu Leu Lys Ala Leu Val Arg Gln Gln Leu Pro Glu
 485 490 495

Lys Tyr Lys Glu Ile Phe Phe Asp Gln Ser Lys Asn Gly Tyr Ala Gly
 500 505 510

Tyr Ile Asp Gly Gly Ala Ser Gln Glu Glu Phe Tyr Lys Phe Ile Lys
 515 520 525

Pro Ile Leu Glu Lys Met Asp Gly Thr Glu Glu Leu Leu Val Lys Leu
 530 535 540

Asn Arg Glu Asp Leu Leu Arg Lys Gln Arg Thr Phe Asp Asn Gly Ser
545 550 555 560

Ile Pro His Gln Ile His Leu Gly Glu Leu His Ala Ile Leu Arg Arg
565 570 575

Gln Glu Asp Phe Tyr Pro Phe Leu Lys Asp Asn Arg Glu Lys Ile Glu
580 585 590

Lys Ile Leu Thr Phe Arg Ile Pro Tyr Tyr Val Gly Pro Leu Ala Arg
595 600 605

Gly Asn Ser Arg Phe Ala Trp Met Thr Arg Lys Ser Glu Glu Thr Ile
610 615 620

Thr Pro Trp Asn Phe Glu Glu Val Val Asp Lys Gly Ala Ser Ala Gln
625 630 635 640

Ser Phe Ile Glu Arg Met Thr Asn Phe Asp Lys Asn Leu Pro Asn Glu
645 650 655

Lys Val Leu Pro Lys His Ser Leu Leu Tyr Glu Tyr Phe Thr Val Tyr
660 665 670

Asn Glu Leu Thr Lys Val Lys Tyr Val Thr Glu Gly Met Arg Lys Pro
675 680 685

Ala Phe Leu Ser Gly Glu Gln Lys Lys Ala Ile Val Asp Leu Leu Phe
690 695 700

Lys Thr Asn Arg Lys Val Thr Val Lys Gln Leu Lys Glu Asp Tyr Phe
705 710 715 720

Lys Lys Ile Glu Cys Phe Asp Ser Val Glu Ile Ser Gly Val Glu Asp
725 730 735

Arg Phe Asn Ala Ser Leu Gly Thr Tyr His Asp Leu Leu Lys Ile Ile
740 745 750

Lys Asp Lys Asp Phe Leu Asp Asn Glu Glu Asn Glu Asp Ile Leu Glu
755 760 765

Asp Ile Val Leu Thr Leu Thr Leu Phe Glu Asp Arg Glu Met Ile Glu
770 775 780

Glu Arg Leu Lys Thr Tyr Ala His Leu Phe Asp Asp Lys Val Met Lys
785 790 795 800

Gln Leu Lys Arg Arg Arg Tyr Thr Gly Trp Gly Arg Leu Ser Arg Lys
805 810 815

Leu Ile Asn Gly Ile Arg Asp Lys Gln Ser Gly Lys Thr Ile Leu Asp
820 825 830

Phe Leu Lys Ser Asp Gly Phe Ala Asn Arg Asn Phe Met Gln Leu Ile
835 840 845

His Asp Asp Ser Leu Thr Phe Lys Glu Asp Ile Gln Lys Ala Gln Val
850 855 860

Ser Gly Gln Gly Asp Ser Leu His Glu His Ile Ala Asn Leu Ala Gly
865 870 875 880

Ser Pro Ala Ile Lys Lys Gly Ile Leu Gln Thr Val Lys Val Val Asp
885 890 895

Glu Leu Val Lys Val Met Gly Arg His Lys Pro Glu Asn Ile Val Ile
900 905 910

Glu Met Ala Arg Glu Asn Gln Thr Thr Gln Lys Gly Gln Lys Asn Ser
915 920 925

Arg Glu Arg Met Lys Arg Ile Glu Glu Gly Ile Lys Glu Leu Gly Ser
930 935 940

Gln Ile Leu Lys Glu His Pro Val Glu Asn Thr Gln Leu Gln Asn Glu
945 950 955 960

Lys Leu Tyr Leu Tyr Tyr Leu Gln Asn Gly Arg Asp Met Tyr Val Asp
965 970 975

Gln Glu Leu Asp Ile Asn Arg Leu Ser Asp Tyr Asp Val Asp Ala Ile
980 985 990

Val Pro Gln Ser Phe Leu Lys Asp Asp Ser Ile Asp Asn Lys Val Leu
995 1000 1005

Thr Arg Ser Asp Lys Asn Arg Gly Lys Ser Asp Asn Val Pro Ser
1010 1015 1020

Glu Glu Val Val Lys Lys Met Lys Asn Tyr Trp Arg Gln Leu Leu
1025 1030 1035

Asn Ala Lys Leu Ile Thr Gln Arg Lys Phe Asp Asn Leu Thr Lys
1040 1045 1050

Ala Glu Arg Gly Gly Leu Ser Glu Leu Asp Lys Ala Gly Phe Ile
1055 1060 1065

Lys Arg Gln Leu Val Glu Thr Arg Gln Ile Thr Lys His Val Ala
1070 1075 1080

Gln Ile Leu Asp Ser Arg Met Asn Thr Lys Tyr Asp Glu Asn Asp
1085 1090 1095

Lys Leu Ile Arg Glu Val Lys Val Ile Thr Leu Lys Ser Lys Leu
1100 1105 1110

Val Ser Asp Phe Arg Lys Asp Phe Gln Phe Tyr Lys Val Arg Glu

1115		1120		1125
Ile Asn Asn Tyr His His Ala His Asp Ala Tyr Leu Asn Ala Val				
1130		1135		1140
Val Gly Thr Ala Leu Ile Lys Lys Tyr Pro Lys Leu Glu Ser Glu				
1145		1150		1155
Phe Val Tyr Gly Asp Tyr Lys Val Tyr Asp Val Arg Lys Met Ile				
1160		1165		1170
Ala Lys Ser Glu Gln Glu Ile Gly Lys Ala Thr Ala Lys Tyr Phe				
1175		1180		1185
Phe Tyr Ser Asn Ile Met Asn Phe Phe Lys Thr Glu Ile Thr Leu				
1190		1195		1200
Ala Asn Gly Glu Ile Arg Lys Arg Pro Leu Ile Glu Thr Asn Gly				
1205		1210		1215
Glu Thr Gly Glu Ile Val Trp Asp Lys Gly Arg Asp Phe Ala Thr				
1220		1225		1230
Val Arg Lys Val Leu Ser Met Pro Gln Val Asn Ile Val Lys Lys				
1235		1240		1245
Thr Glu Val Gln Thr Gly Gly Phe Ser Lys Glu Ser Ile Leu Pro				
1250		1255		1260
Lys Arg Asn Ser Asp Lys Leu Ile Ala Arg Lys Lys Asp Trp Asp				
1265		1270		1275
Pro Lys Lys Tyr Gly Gly Phe Asp Ser Pro Thr Val Ala Tyr Ser				
1280		1285		1290
Val Leu Val Val Ala Lys Val Glu Lys Gly Lys Ser Lys Lys Leu				
1295		1300		1305

Lys Ser Val Lys Glu Leu Leu Gly Ile Thr Ile Met Glu Arg Ser
1310 1315 1320

Ser Phe Glu Lys Asn Pro Ile Asp Phe Leu Glu Ala Lys Gly Tyr
1325 1330 1335

Lys Glu Val Lys Lys Asp Leu Ile Ile Lys Leu Pro Lys Tyr Ser
1340 1345 1350

Leu Phe Glu Leu Glu Asn Gly Arg Lys Arg Met Leu Ala Ser Ala
1355 1360 1365

Gly Glu Leu Gln Lys Gly Asn Glu Leu Ala Leu Pro Ser Lys Tyr
1370 1375 1380

Val Asn Phe Leu Tyr Leu Ala Ser His Tyr Glu Lys Leu Lys Gly
1385 1390 1395

Ser Pro Glu Asp Asn Glu Gln Lys Gln Leu Phe Val Glu Gln His
1400 1405 1410

Lys His Tyr Leu Asp Glu Ile Ile Glu Gln Ile Ser Glu Phe Ser
1415 1420 1425

Lys Arg Val Ile Leu Ala Asp Ala Asn Leu Asp Lys Val Leu Ser
1430 1435 1440

Ala Tyr Asn Lys His Arg Asp Lys Pro Ile Arg Glu Gln Ala Glu
1445 1450 1455

Asn Ile Ile His Leu Phe Thr Leu Thr Asn Leu Gly Ala Pro Ala
1460 1465 1470

Ala Phe Lys Tyr Phe Asp Thr Thr Ile Asp Arg Lys Arg Tyr Thr
1475 1480 1485

Ser	Thr	Lys	Glu	Val	Leu	Asp	Ala	Thr	Leu	Ile	His	Gln	Ser	Ile
1490						1495					1500			
Thr	Gly	Leu	Tyr	Glu	Thr	Arg	Ile	Asp	Leu	Ser	Gln	Leu	Gly	Gly
1505						1510					1515			
Asp	Ser	Arg	Ala	Asp	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr	Ala	Ser
1520						1525					1530			
Gly	Ser	Pro	Lys	Lys	Lys	Arg	Lys	Val	Ser	Pro	Gly	Ser	Gly	Ser
1535						1540					1545			
Glu	Thr	Pro	Gly	Thr	Ser	Glu	Ser	Ala	Thr	Pro	Glu	Ser	Asn	His
1550						1555					1560			
Asp	Gln	Glu	Phe	Asp	Pro	Pro	Lys	Val	Tyr	Pro	Pro	Val	Pro	Ala
1565						1570					1575			
Glu	Lys	Arg	Lys	Pro	Ile	Arg	Val	Leu	Ser	Leu	Phe	Asp	Gly	Ile
1580						1585					1590			
Ala	Thr	Gly	Leu	Leu	Val	Leu	Lys	Asp	Leu	Gly	Ile	Gln	Val	Asp
1595						1600					1605			
Arg	Tyr	Ile	Ala	Ser	Glu	Val	Cys	Glu	Asp	Ser	Ile	Thr	Val	Gly
1610						1615					1620			
Met	Val	Arg	His	Gln	Gly	Lys	Ile	Met	Tyr	Val	Gly	Asp	Val	Arg
1625						1630					1635			
Ser	Val	Thr	Gln	Lys	His	Ile	Gln	Glu	Trp	Gly	Pro	Phe	Asp	Leu
1640						1645					1650			
Val	Ile	Gly	Gly	Ser	Pro	Cys	Asn	Asp	Leu	Ser	Ile	Val	Asn	Pro
1655						1660					1665			

Ala Arg Lys Gly Leu Tyr Glu Gly Thr Gly Arg Leu Phe Phe Glu
1670 1675 1680

Phe Tyr Arg Leu Leu His Asp Ala Arg Pro Lys Glu Gly Asp Asp
1685 1690 1695

Arg Pro Phe Phe Trp Leu Phe Glu Asn Val Val Ala Met Gly Val
1700 1705 1710

Ser Asp Lys Arg Asp Ile Ser Arg Phe Leu Glu Ser Asn Pro Val
1715 1720 1725

Met Ile Asp Ala Lys Glu Val Ser Ala Ala His Arg Ala Arg Tyr
1730 1735 1740

Phe Trp Gly Asn Leu Pro Gly Met Asn Arg Pro Leu Ala Ser Thr
1745 1750 1755

Val Asn Asp Lys Leu Glu Leu Gln Glu Cys Leu Glu His Gly Arg
1760 1765 1770

Ile Ala Lys Phe Ser Lys Val Arg Thr Ile Thr Thr Arg Ser Asn
1775 1780 1785

Ser Ile Lys Gln Gly Lys Asp Gln His Phe Pro Val Phe Met Asn
1790 1795 1800

Glu Lys Glu Asp Ile Leu Trp Cys Thr Glu Met Glu Arg Val Phe
1805 1810 1815

Gly Phe Pro Val His Tyr Thr Asp Val Ser Asn Met Ser Arg Leu
1820 1825 1830

Ala Arg Gln Arg Leu Leu Gly Arg Ser Trp Ser Val Pro Val Ile
1835 1840 1845

Arg His Leu Phe Ala Pro Leu Lys Glu Tyr Phe Ala Cys Val Ser

1850		1855		1860
Ser Gly Asn Ser Asn Ala Asn Ser Arg Gly Pro Ser Phe Ser Ser	1865	1870		1875
Gly Leu Val Pro Leu Ser Leu Arg Gly Ser His Met Gly Pro Met	1880	1885		1890
Glu Ile Tyr Lys Thr Val Ser Ala Trp Lys Arg Gln Pro Val Arg	1895	1900		1905
Val Leu Ser Leu Phe Arg Asn Ile Asp Lys Val Leu Lys Ser Leu	1910	1915		1920
Gly Phe Leu Glu Ser Gly Ser Gly Ser Gly Gly Gly Thr Leu Lys	1925	1930		1935
Tyr Val Glu Asp Val Thr Asn Val Val Arg Arg Asp Val Glu Lys	1940	1945		1950
Trp Gly Pro Phe Asp Leu Val Tyr Gly Ser Thr Gln Pro Leu Gly	1955	1960		1965
Ser Ser Cys Asp Arg Cys Pro Gly Trp Tyr Met Phe Gln Phe His	1970	1975		1980
Arg Ile Leu Gln Tyr Ala Leu Pro Arg Gln Glu Ser Gln Arg Pro	1985	1990		1995
Phe Phe Trp Ile Phe Met Asp Asn Leu Leu Leu Thr Glu Asp Asp	2000	2005		2010
Gln Glu Thr Thr Thr Arg Phe Leu Gln Thr Glu Ala Val Thr Leu	2015	2020		2025
Gln Asp Val Arg Gly Arg Asp Tyr Gln Asn Ala Met Arg Val Trp	2030	2035		2040

Ser	Asn	Ile	Pro	Gly	Leu	Lys	Ser	Lys	His	Ala	Pro	Leu	Thr	Pro
2045						2050					2055			
Lys	Glu	Glu	Glu	Tyr	Leu	Gln	Ala	Gln	Val	Arg	Ser	Arg	Ser	Lys
2060						2065					2070			
Leu	Asp	Ala	Pro	Lys	Val	Asp	Leu	Leu	Val	Lys	Asn	Cys	Leu	Leu
2075						2080					2085			
Pro	Leu	Arg	Glu	Tyr	Phe	Lys	Tyr	Phe	Ser	Gln	Asn	Ser	Leu	Pro
2090						2095					2100			
Leu	Ser	Arg	Ala	Asp	Pro	Lys	Lys	Lys	Arg	Lys	Val	Gly	Ser	Gly
2105						2110					2115			
Ala	Thr	Asn	Phe	Ser	Leu	Leu	Lys	Gln	Ala	Gly	Asp	Val	Glu	Glu
2120						2125					2130			
Asn	Pro	Gly	Pro	Gly	Ser	Gly	Ala	Thr	Asn	Phe	Ser	Leu	Leu	Lys
2135						2140					2145			
Gln	Ala	Gly	Asp	Val	Glu	Glu	Asn	Pro	Gly	Pro	Ser	Glu	Leu	Ile
2150						2155					2160			
Lys	Glu	Asn	Met	His	Met	Lys	Leu	Tyr	Met	Glu	Gly	Thr	Val	Asp
2165						2170					2175			
Asn	His	His	Phe	Lys	Cys	Thr	Ser	Glu	Gly	Glu	Gly	Lys	Pro	Tyr
2180						2185					2190			
Glu	Gly	Thr	Gln	Thr	Met	Arg	Ile	Lys	Val	Val	Glu	Gly	Gly	Pro
2195						2200					2205			
Leu	Pro	Phe	Ala	Phe	Asp	Ile	Leu	Ala	Thr	Ser	Phe	Leu	Tyr	Gly
2210						2215					2220			

Ser	Lys	Thr	Phe	Ile	Asn	His	Thr	Gln	Gly	Ile	Pro	Asp	Phe	Phe
2225						2230					2235			
Lys	Gln	Ser	Phe	Pro	Glu	Gly	Phe	Thr	Trp	Glu	Arg	Val	Thr	Thr
2240						2245					2250			
Tyr	Glu	Asp	Gly	Gly	Val	Leu	Thr	Ala	Thr	Gln	Asp	Thr	Ser	Leu
2255						2260					2265			
Gln	Asp	Gly	Cys	Leu	Ile	Tyr	Asn	Val	Lys	Ile	Arg	Gly	Val	Asn
2270						2275					2280			
Phe	Thr	Ser	Asn	Gly	Pro	Val	Met	Gln	Lys	Lys	Thr	Leu	Gly	Trp
2285						2290					2295			
Glu	Ala	Phe	Thr	Glu	Thr	Leu	Tyr	Pro	Ala	Asp	Gly	Gly	Leu	Glu
2300						2305					2310			
Gly	Arg	Asn	Asp	Met	Ala	Leu	Lys	Leu	Val	Gly	Gly	Ser	His	Leu
2315						2320					2325			
Ile	Ala	Asn	Ile	Lys	Thr	Thr	Tyr	Arg	Ser	Lys	Lys	Pro	Ala	Lys
2330						2335					2340			
Asn	Leu	Lys	Met	Pro	Gly	Val	Tyr	Tyr	Val	Asp	Tyr	Arg	Leu	Glu
2345						2350					2355			
Arg	Ile	Lys	Glu	Ala	Asn	Asn	Glu	Thr	Tyr	Val	Glu	Gln	His	Glu
2360						2365					2370			
Val	Ala	Val	Ala	Arg	Tyr	Cys	Asp	Leu	Pro	Ser	Lys	Leu	Gly	His
2375						2380					2385			
Lys	Leu	Asn												
2390														

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<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 15

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

Ala Thr Gly Leu Leu Val Leu Lys Asp Leu Gly Ile Gln Val Asp Arg
35 40 45

Tyr Ile Ala Ser Glu Val Cys Glu Asp Ser Ile Thr Val Gly Met Val
50 55 60

Arg His Gln Gly Lys Ile Met Tyr Val Gly Asp Val Arg Ser Val Thr
65 70 75 80

Gln Lys His Ile Gln Glu Trp Gly Pro Phe Asp Leu Val Ile Gly Gly
85 90 95

Ser Pro Cys Asn Asp Leu Ser Ile Val Asn Pro Ala Arg Lys Gly Leu
100 105 110

Tyr Glu Gly Thr Gly Arg Leu Phe Phe Glu Phe Tyr Arg Leu Leu His
115 120 125

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

Glu Asn Val Val Ala Met Gly Val Ser Asp Lys Arg Asp Ile Ser Arg
145 150 155 160

Phe Leu Glu Ser Asn Pro Val Met Ile Asp Ala Lys Glu Val Ser Ala
165 170 175

Ala His Arg Ala Arg Tyr Phe Trp Gly Asn Leu Pro Gly Met Asn Arg
180 185 190

Pro Leu Ala Ser Thr Val Asn Asp Lys Leu Glu Leu Gln Glu Cys Leu
195 200 205

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

Arg Ser Asn Ser Ile Lys Gln Gly Lys Asp Gln His Phe Pro Val Phe
225 230 235 240

Met Asn Glu Lys Glu Asp Ile Leu Trp Cys Thr Glu Met Glu Arg Val
245 250 255

Phe Gly Phe Pro Val His Tyr Thr Asp Val Ser Asn Met Ser Arg Leu
260 265 270

Ala Arg Gln Arg Leu Leu Gly Arg Ser Trp Ser Val Pro Val Ile Arg
275 280 285

His Leu Phe Ala Pro Leu Lys Glu Tyr Phe Ala Cys Val Ser Ser Gly
290 295 300

Asn Ser Asn Ala Asn Ser Arg Gly Pro Ser Phe Ser Ser Gly Leu Val
305 310 315 320

Pro Leu Ser Leu Arg Gly Ser His Met Gly Pro Met Glu Ile Tyr Lys
325 330 335

Thr Val Ser Ala Trp Lys Arg Gln Pro Val Arg Val Leu Ser Leu Phe
340 345 350

Arg Asn Ile Asp Lys Val Leu Lys Ser Leu Gly Phe Leu Glu Ser Gly
355 360 365

Ser Gly Ser Gly Gly Gly Thr Leu Lys Tyr Val Glu Asp Val Thr Asn
370 375 380

Val Val Arg Arg Asp Val Glu Lys Trp Gly Pro Phe Asp Leu Val Tyr
385 390 395 400

Gly Ser Thr Gln Pro Leu Gly Ser Ser Cys Asp Arg Cys Pro Gly Trp
405 410 415

Tyr Met Phe Gln Phe His Arg Ile Leu Gln Tyr Ala Leu Pro Arg Gln
420 425 430

Glu Ser Gln Arg Pro Phe Phe Trp Ile Phe Met Asp Asn Leu Leu Leu
435 440 445

Thr Glu Asp Asp Gln Glu Thr Thr Thr Arg Phe Leu Gln Thr Glu Ala
450 455 460

Val Thr Leu Gln Asp Val Arg Gly Arg Asp Tyr Gln Asn Ala Met Arg
465 470 475 480

Val Trp Ser Asn Ile Pro Gly Leu Lys Ser Lys His Ala Pro Leu Thr
485 490 495

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

Leu Asp Ala Pro Lys Val Asp Leu Leu Val Lys Asn Cys Leu Leu Pro
515 520 525

Leu Arg Glu Tyr Phe Lys Tyr Phe Ser Gln Asn Ser Leu Pro Leu Gly
530 535 540

Gly Pro Ser Ser Gly Ala Pro Pro Pro Ser Gly Gly Ser Pro Ala Gly

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

Glu Lys Tyr Pro Thr Ile Tyr His Leu Arg Lys Lys Leu Val Asp Ser
755 760 765

Thr Asp Lys Ala Asp Leu Arg Leu Ile Tyr Leu Ala Leu Ala His Met
770 775 780

Ile Lys Phe Arg Gly His Phe Leu Ile Glu Gly Asp Leu Asn Pro Asp
785 790 795 800

Asn Ser Asp Val Asp Lys Leu Phe Ile Gln Leu Val Gln Thr Tyr Asn
805 810 815

Gln Leu Phe Glu Glu Asn Pro Ile Asn Ala Ser Gly Val Asp Ala Lys
820 825 830

Ala Ile Leu Ser Ala Arg Leu Ser Lys Ser Arg Arg Leu Glu Asn Leu
835 840 845

Ile Ala Gln Leu Pro Gly Glu Lys Lys Asn Gly Leu Phe Gly Asn Leu
850 855 860

Ile Ala Leu Ser Leu Gly Leu Thr Pro Asn Phe Lys Ser Asn Phe Asp
865 870 875 880

Leu Ala Glu Asp Ala Lys Leu Gln Leu Ser Lys Asp Thr Tyr Asp Asp
885 890 895

Asp Leu Asp Asn Leu Leu Ala Gln Ile Gly Asp Gln Tyr Ala Asp Leu
900 905 910

Phe Leu Ala Ala Lys Asn Leu Ser Asp Ala Ile Leu Leu Ser Asp Ile
915 920 925

Leu Arg Val Asn Thr Glu Ile Thr Lys Ala Pro Leu Ser Ala Ser Met
930 935 940

Ile Lys Arg Tyr Asp Glu His His Gln Asp Leu Thr Leu Leu Lys Ala
 945 950 955 960

Leu Val Arg Gln Gln Leu Pro Glu Lys Tyr Lys Glu Ile Phe Phe Asp
 965 970 975

Gln Ser Lys Asn Gly Tyr Ala Gly Tyr Ile Asp Gly Gly Ala Ser Gln
 980 985 990

Glu Glu Phe Tyr Lys Phe Ile Lys Pro Ile Leu Glu Lys Met Asp Gly
 995 1000 1005

Thr Glu Glu Leu Leu Val Lys Leu Asn Arg Glu Asp Leu Leu Arg
 1010 1015 1020

Lys Gln Arg Thr Phe Asp Asn Gly Ser Ile Pro His Gln Ile His
 1025 1030 1035

Leu Gly Glu Leu His Ala Ile Leu Arg Arg Gln Glu Asp Phe Tyr
 1040 1045 1050

Pro Phe Leu Lys Asp Asn Arg Glu Lys Ile Glu Lys Ile Leu Thr
 1055 1060 1065

Phe Arg Ile Pro Tyr Tyr Val Gly Pro Leu Ala Arg Gly Asn Ser
 1070 1075 1080

Arg Phe Ala Trp Met Thr Arg Lys Ser Glu Glu Thr Ile Thr Pro
 1085 1090 1095

Trp Asn Phe Glu Glu Val Val Asp Lys Gly Ala Ser Ala Gln Ser
 1100 1105 1110

Phe Ile Glu Arg Met Thr Asn Phe Asp Lys Asn Leu Pro Asn Glu
 1115 1120 1125

Lys Val Leu Pro Lys His Ser Leu Leu Tyr Glu Tyr Phe Thr Val
1130 1135 1140

Tyr Asn Glu Leu Thr Lys Val Lys Tyr Val Thr Glu Gly Met Arg
1145 1150 1155

Lys Pro Ala Phe Leu Ser Gly Glu Gln Lys Lys Ala Ile Val Asp
1160 1165 1170

Leu Leu Phe Lys Thr Asn Arg Lys Val Thr Val Lys Gln Leu Lys
1175 1180 1185

Glu Asp Tyr Phe Lys Lys Ile Glu Cys Phe Asp Ser Val Glu Ile
1190 1195 1200

Ser Gly Val Glu Asp Arg Phe Asn Ala Ser Leu Gly Thr Tyr His
1205 1210 1215

Asp Leu Leu Lys Ile Ile Lys Asp Lys Asp Phe Leu Asp Asn Glu
1220 1225 1230

Glu Asn Glu Asp Ile Leu Glu Asp Ile Val Leu Thr Leu Thr Leu
1235 1240 1245

Phe Glu Asp Arg Glu Met Ile Glu Glu Arg Leu Lys Thr Tyr Ala
1250 1255 1260

His Leu Phe Asp Asp Lys Val Met Lys Gln Leu Lys Arg Arg Arg
1265 1270 1275

Tyr Thr Gly Trp Gly Arg Leu Ser Arg Lys Leu Ile Asn Gly Ile
1280 1285 1290

Arg Asp Lys Gln Ser Gly Lys Thr Ile Leu Asp Phe Leu Lys Ser
1295 1300 1305

Asp Gly Phe Ala Asn Arg Asn Phe Met Gln Leu Ile His Asp Asp

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

Asn	Tyr	Trp	Arg	Gln	Leu	Leu	Asn	Ala	Lys	Leu	Ile	Thr	Gln	Arg
1505						1510					1515			
Lys	Phe	Asp	Asn	Leu	Thr	Lys	Ala	Glu	Arg	Gly	Gly	Leu	Ser	Glu
1520						1525					1530			
Leu	Asp	Lys	Ala	Gly	Phe	Ile	Lys	Arg	Gln	Leu	Val	Glu	Thr	Arg
1535						1540					1545			
Gln	Ile	Thr	Lys	His	Val	Ala	Gln	Ile	Leu	Asp	Ser	Arg	Met	Asn
1550						1555					1560			
Thr	Lys	Tyr	Asp	Glu	Asn	Asp	Lys	Leu	Ile	Arg	Glu	Val	Lys	Val
1565						1570					1575			
Ile	Thr	Leu	Lys	Ser	Lys	Leu	Val	Ser	Asp	Phe	Arg	Lys	Asp	Phe
1580						1585					1590			
Gln	Phe	Tyr	Lys	Val	Arg	Glu	Ile	Asn	Asn	Tyr	His	His	Ala	His
1595						1600					1605			
Asp	Ala	Tyr	Leu	Asn	Ala	Val	Val	Gly	Thr	Ala	Leu	Ile	Lys	Lys
1610						1615					1620			
Tyr	Pro	Lys	Leu	Glu	Ser	Glu	Phe	Val	Tyr	Gly	Asp	Tyr	Lys	Val
1625						1630					1635			
Tyr	Asp	Val	Arg	Lys	Met	Ile	Ala	Lys	Ser	Glu	Gln	Glu	Ile	Gly
1640						1645					1650			
Lys	Ala	Thr	Ala	Lys	Tyr	Phe	Phe	Tyr	Ser	Asn	Ile	Met	Asn	Phe
1655						1660					1665			
Phe	Lys	Thr	Glu	Ile	Thr	Leu	Ala	Asn	Gly	Glu	Ile	Arg	Lys	Arg
1670						1675					1680			

Pro	Leu	Ile	Glu	Thr	Asn	Gly	Glu	Thr	Gly	Glu	Ile	Val	Trp	Asp
1685						1690					1695			
Lys	Gly	Arg	Asp	Phe	Ala	Thr	Val	Arg	Lys	Val	Leu	Ser	Met	Pro
1700						1705					1710			
Gln	Val	Asn	Ile	Val	Lys	Lys	Thr	Glu	Val	Gln	Thr	Gly	Gly	Phe
1715						1720					1725			
Ser	Lys	Glu	Ser	Ile	Leu	Pro	Lys	Arg	Asn	Ser	Asp	Lys	Leu	Ile
1730						1735					1740			
Ala	Arg	Lys	Lys	Asp	Trp	Asp	Pro	Lys	Lys	Tyr	Gly	Gly	Phe	Asp
1745						1750					1755			
Ser	Pro	Thr	Val	Ala	Tyr	Ser	Val	Leu	Val	Val	Ala	Lys	Val	Glu
1760						1765					1770			
Lys	Gly	Lys	Ser	Lys	Lys	Leu	Lys	Ser	Val	Lys	Glu	Leu	Leu	Gly
1775						1780					1785			
Ile	Thr	Ile	Met	Glu	Arg	Ser	Ser	Phe	Glu	Lys	Asn	Pro	Ile	Asp
1790						1795					1800			
Phe	Leu	Glu	Ala	Lys	Gly	Tyr	Lys	Glu	Val	Lys	Lys	Asp	Leu	Ile
1805						1810					1815			
Ile	Lys	Leu	Pro	Lys	Tyr	Ser	Leu	Phe	Glu	Leu	Glu	Asn	Gly	Arg
1820						1825					1830			
Lys	Arg	Met	Leu	Ala	Ser	Ala	Gly	Glu	Leu	Gln	Lys	Gly	Asn	Glu
1835						1840					1845			
Leu	Ala	Leu	Pro	Ser	Lys	Tyr	Val	Asn	Phe	Leu	Tyr	Leu	Ala	Ser
1850						1855					1860			

His Tyr Glu Lys Leu Lys Gly Ser Pro Glu Asp Asn Glu Gln Lys
1865 1870 1875

Gln Leu Phe Val Glu Gln His Lys His Tyr Leu Asp Glu Ile Ile
1880 1885 1890

Glu Gln Ile Ser Glu Phe Ser Lys Arg Val Ile Leu Ala Asp Ala
1895 1900 1905

Asn Leu Asp Lys Val Leu Ser Ala Tyr Asn Lys His Arg Asp Lys
1910 1915 1920

Pro Ile Arg Glu Gln Ala Glu Asn Ile Ile His Leu Phe Thr Leu
1925 1930 1935

Thr Asn Leu Gly Ala Pro Ala Ala Phe Lys Tyr Phe Asp Thr Thr
1940 1945 1950

Ile Asp Arg Lys Arg Tyr Thr Ser Thr Lys Glu Val Leu Asp Ala
1955 1960 1965

Thr Leu Ile His Gln Ser Ile Thr Gly Leu Tyr Glu Thr Arg Ile
1970 1975 1980

Asp Leu Ser Gln Leu Gly Gly Asp Ala Tyr Pro Tyr Asp Val Pro
1985 1990 1995

Asp Tyr Ala Ser Leu Gly Ser Gly Ser Pro Lys Lys Lys Arg Lys
2000 2005 2010

Val Glu Asp Pro Lys Lys Lys Arg Lys Val Asp Gly Ile Gly Ser
2015 2020 2025

Gly Ser Asn Gly Ser Ser Gly Ser Ser Glu Leu Ile Lys Glu Asn
2030 2035 2040

Met His Met Lys Leu Tyr Met Glu Gly Thr Val Asp Asn His His

2045		2050		2055
Phe Lys Cys Thr Ser Glu Gly	Glu Gly Lys Pro Tyr	Glu Gly Thr		
2060	2065	2070		
Gln Thr Met Arg Ile Lys Val	Val Glu Gly Gly Pro	Leu Pro Phe		
2075	2080	2085		
Ala Phe Asp Ile Leu Ala Thr	Ser Phe Leu Tyr Gly	Ser Lys Thr		
2090	2095	2100		
Phe Ile Asn His Thr Gln Gly	Ile Pro Asp Phe Phe	Lys Gln Ser		
2105	2110	2115		
Phe Pro Glu Gly Phe Thr Trp	Glu Arg Val Thr Thr	Tyr Glu Asp		
2120	2125	2130		
Gly Gly Val Leu Thr Ala Thr	Gln Asp Thr Ser Leu	Gln Asp Gly		
2135	2140	2145		
Cys Leu Ile Tyr Asn Val Lys	Ile Arg Gly Val Asn	Phe Thr Ser		
2150	2155	2160		
Asn Gly Pro Val Met Gln Lys	Lys Thr Leu Gly Trp	Glu Ala Phe		
2165	2170	2175		
Thr Glu Thr Leu Tyr Pro Ala	Asp Gly Gly Leu Glu	Gly Arg Asn		
2180	2185	2190		
Asp Met Ala Leu Lys Leu Val	Gly Gly Ser His Leu	Ile Ala Asn		
2195	2200	2205		
Ile Lys Thr Thr Tyr Arg Ser	Lys Lys Pro Ala Lys	Asn Leu Lys		
2210	2215	2220		
Met Pro Gly Val Tyr Tyr Val	Asp Tyr Arg Leu Glu	Arg Ile Lys		
2225	2230	2235		

Glu Ala Asn Asn Glu Thr Tyr Val Glu Gln His Glu Val Ala Val
 2240 2245 2250

Ala Arg Tyr Cys Asp Leu Pro Ser Lys Leu Gly His Lys Leu Asn
 2255 2260 2265

Gly Gly Gly Gly Gly Met Asp Ala Lys Ser Leu Thr Ala Trp Ser
 2270 2275 2280

Arg Thr Leu Val Thr Phe Lys Asp Val Phe Val Asp Phe Thr Arg
 2285 2290 2295

Glu Glu Trp Lys Leu Leu Asp Thr Ala Gln Gln Ile Val Tyr Arg
 2300 2305 2310

Asn Val Met Leu Glu Asn Tyr Lys Asn Leu Val Ser Leu Gly Tyr
 2315 2320 2325

Gln Leu Thr Lys Pro Asp Val Ile Leu Arg Leu Glu Lys Gly Glu
 2330 2335 2340

Glu Pro
 2345

<210> 16
 <211> 71
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic polypeptide

<400> 16

Asp Ala Lys Ser Leu Thr Ala Trp Ser Arg Thr Leu Val Thr Phe Lys
 1 5 10 15

Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr

20

25

30

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

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

Leu Glu Lys Gly Glu Glu Pro
65 70

<210> 17
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 17

Gly Gly Ser Gly Gly Gly Ser
1 5

<210> 18
<211> 3
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 18

Ser Gly Ser
1

<210> 19
<211> 17
<212> PRT
<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 19

Glu Ala Ser Gly Ser Gly Arg Ala Ser Pro Gly Ile Pro Gly Ser Thr
1 5 10 15

Arg

<210> 20

<211> 4

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 20

Ser Arg Ala Asp
1

<210> 21

<211> 3

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 21

Gly Ser Gly
1

<210> 22

<211> 3

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 22

Ser Pro Gly
1

<210> 23
<211> 1368
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 23

Met Asp Lys Lys Tyr Ser Ile Gly Leu Ala Ile Gly Thr Asn Ser Val
1 5 10 15

Gly Trp Ala Val Ile Thr Asp Glu Tyr Lys Val Pro Ser Lys Lys Phe
20 25 30

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

Gly Ala Leu Leu Phe Asp Ser Gly Glu Thr Ala Glu Ala Thr Arg Leu
50 55 60

Lys Arg Thr Ala Arg Arg Arg Tyr Thr Arg Arg Lys Asn Arg Ile Cys
65 70 75 80

Tyr Leu Gln Glu Ile Phe Ser Asn Glu Met Ala Lys Val Asp Asp Ser
85 90 95

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

His Glu Arg His Pro Ile Phe Gly Asn Ile Val Asp Glu Val Ala Tyr
115 120 125

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

Ser Thr Asp Lys Ala Asp Leu Arg Leu Ile Tyr Leu Ala Leu Ala His
145 150 155 160

Met Ile Lys Phe Arg Gly His Phe Leu Ile Glu Gly Asp Leu Asn Pro
165 170 175

Asp Asn Ser Asp Val Asp Lys Leu Phe Ile Gln Leu Val Gln Thr Tyr
180 185 190

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

Lys Ala Ile Leu Ser Ala Arg Leu Ser Lys Ser Arg Arg Leu Glu Asn
210 215 220

Leu Ile Ala Gln Leu Pro Gly Glu Lys Lys Asn Gly Leu Phe Gly Asn
225 230 235 240

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

Asp Leu Ala Glu Asp Ala Lys Leu Gln Leu Ser Lys Asp Thr Tyr Asp
260 265 270

Asp Asp Leu Asp Asn Leu Leu Ala Gln Ile Gly Asp Gln Tyr Ala Asp
275 280 285

Leu Phe Leu Ala Ala Lys Asn Leu Ser Asp Ala Ile Leu Leu Ser Asp
290 295 300

Ile Leu Arg Val Asn Thr Glu Ile Thr Lys Ala Pro Leu Ser Ala Ser
305 310 315 320

Met Ile Lys Arg Tyr Asp Glu His His Gln Asp Leu Thr Leu Leu Lys
325 330 335

Ala Leu Val Arg Gln Gln Leu Pro Glu Lys Tyr Lys Glu Ile Phe Phe
340 345 350

Asp Gln Ser Lys Asn Gly Tyr Ala Gly Tyr Ile Asp Gly Gly Ala Ser
355 360 365

Gln Glu Glu Phe Tyr Lys Phe Ile Lys Pro Ile Leu Glu Lys Met Asp
370 375 380

Gly Thr Glu Glu Leu Leu Val Lys Leu Asn Arg Glu Asp Leu Leu Arg
385 390 395 400

Lys Gln Arg Thr Phe Asp Asn Gly Ser Ile Pro His Gln Ile His Leu
405 410 415

Gly Glu Leu His Ala Ile Leu Arg Arg Gln Glu Asp Phe Tyr Pro Phe
420 425 430

Leu Lys Asp Asn Arg Glu Lys Ile Glu Lys Ile Leu Thr Phe Arg Ile
435 440 445

Pro Tyr Tyr Val Gly Pro Leu Ala Arg Gly Asn Ser Arg Phe Ala Trp
450 455 460

Met Thr Arg Lys Ser Glu Glu Thr Ile Thr Pro Trp Asn Phe Glu Glu
465 470 475 480

Val Val Asp Lys Gly Ala Ser Ala Gln Ser Phe Ile Glu Arg Met Thr
485 490 495

Asn Phe Asp Lys Asn Leu Pro Asn Glu Lys Val Leu Pro Lys His Ser
500 505 510

Leu Leu Tyr Glu Tyr Phe Thr Val Tyr Asn Glu Leu Thr Lys Val Lys
515 520 525

Tyr Val Thr Glu Gly Met Arg Lys Pro Ala Phe Leu Ser Gly Glu Gln
530 535 540

Lys Lys Ala Ile Val Asp Leu Leu Phe Lys Thr Asn Arg Lys Val Thr
545 550 555 560

Val Lys Gln Leu Lys Glu Asp Tyr Phe Lys Lys Ile Glu Cys Phe Asp
565 570 575

Ser Val Glu Ile Ser Gly Val Glu Asp Arg Phe Asn Ala Ser Leu Gly
580 585 590

Thr Tyr His Asp Leu Leu Lys Ile Ile Lys Asp Lys Asp Phe Leu Asp
595 600 605

Asn Glu Glu Asn Glu Asp Ile Leu Glu Asp Ile Val Leu Thr Leu Thr
610 615 620

Leu Phe Glu Asp Arg Glu Met Ile Glu Glu Arg Leu Lys Thr Tyr Ala
625 630 635 640

His Leu Phe Asp Asp Lys Val Met Lys Gln Leu Lys Arg Arg Arg Tyr
645 650 655

Thr Gly Trp Gly Arg Leu Ser Arg Lys Leu Ile Asn Gly Ile Arg Asp
660 665 670

Lys Gln Ser Gly Lys Thr Ile Leu Asp Phe Leu Lys Ser Asp Gly Phe
675 680 685

Ala Asn Arg Asn Phe Met Gln Leu Ile His Asp Asp Ser Leu Thr Phe
690 695 700

Lys Glu Asp Ile Gln Lys Ala Gln Val Ser Gly Gln Gly Asp Ser Leu
705 710 715 720

His Glu His Ile Ala Asn Leu Ala Gly Ser Pro Ala Ile Lys Lys Gly

725

730

735

Ile Leu Gln Thr Val Lys Val Val Asp Glu Leu Val Lys Val Met Gly
 740 745 750

Arg His Lys Pro Glu Asn Ile Val Ile Glu Met Ala Arg Glu Asn Gln
 755 760 765

Thr Thr Gln Lys Gly Gln Lys Asn Ser Arg Glu Arg Met Lys Arg Ile
 770 775 780

Glu Glu Gly Ile Lys Glu Leu Gly Ser Gln Ile Leu Lys Glu His Pro
 785 790 795 800

Val Glu Asn Thr Gln Leu Gln Asn Glu Lys Leu Tyr Leu Tyr Tyr Leu
 805 810 815

Gln Asn Gly Arg Asp Met Tyr Val Asp Gln Glu Leu Asp Ile Asn Arg
 820 825 830

Leu Ser Asp Tyr Asp Val Asp Ala Ile Val Pro Gln Ser Phe Leu Lys
 835 840 845

Asp Asp Ser Ile Asp Asn Lys Val Leu Thr Arg Ser Asp Lys Asn Arg
 850 855 860

Gly Lys Ser Asp Asn Val Pro Ser Glu Glu Val Val Lys Lys Met Lys
 865 870 875 880

Asn Tyr Trp Arg Gln Leu Leu Asn Ala Lys Leu Ile Thr Gln Arg Lys
 885 890 895

Phe Asp Asn Leu Thr Lys Ala Glu Arg Gly Gly Leu Ser Glu Leu Asp
 900 905 910

Lys Ala Gly Phe Ile Lys Arg Gln Leu Val Glu Thr Arg Gln Ile Thr
 915 920 925

Lys His Val Ala Gln Ile Leu Asp Ser Arg Met Asn Thr Lys Tyr Asp
930 935 940

Glu Asn Asp Lys Leu Ile Arg Glu Val Lys Val Ile Thr Leu Lys Ser
945 950 955 960

Lys Leu Val Ser Asp Phe Arg Lys Asp Phe Gln Phe Tyr Lys Val Arg
965 970 975

Glu Ile Asn Asn Tyr His His Ala His Asp Ala Tyr Leu Asn Ala Val
980 985 990

Val Gly Thr Ala Leu Ile Lys Lys Tyr Pro Lys Leu Glu Ser Glu Phe
995 1000 1005

Val Tyr Gly Asp Tyr Lys Val Tyr Asp Val Arg Lys Met Ile Ala
1010 1015 1020

Lys Ser Glu Gln Glu Ile Gly Lys Ala Thr Ala Lys Tyr Phe Phe
1025 1030 1035

Tyr Ser Asn Ile Met Asn Phe Phe Lys Thr Glu Ile Thr Leu Ala
1040 1045 1050

Asn Gly Glu Ile Arg Lys Arg Pro Leu Ile Glu Thr Asn Gly Glu
1055 1060 1065

Thr Gly Glu Ile Val Trp Asp Lys Gly Arg Asp Phe Ala Thr Val
1070 1075 1080

Arg Lys Val Leu Ser Met Pro Gln Val Asn Ile Val Lys Lys Thr
1085 1090 1095

Glu Val Gln Thr Gly Gly Phe Ser Lys Glu Ser Ile Leu Pro Lys
1100 1105 1110

Arg	Asn	Ser	Asp	Lys	Leu	Ile	Ala	Arg	Lys	Lys	Asp	Trp	Asp	Pro
	1115					1120					1125			
Lys	Lys	Tyr	Gly	Gly	Phe	Asp	Ser	Pro	Thr	Val	Ala	Tyr	Ser	Val
	1130					1135					1140			
Leu	Val	Val	Ala	Lys	Val	Glu	Lys	Gly	Lys	Ser	Lys	Lys	Leu	Lys
	1145					1150					1155			
Ser	Val	Lys	Glu	Leu	Leu	Gly	Ile	Thr	Ile	Met	Glu	Arg	Ser	Ser
	1160					1165					1170			
Phe	Glu	Lys	Asn	Pro	Ile	Asp	Phe	Leu	Glu	Ala	Lys	Gly	Tyr	Lys
	1175					1180					1185			
Glu	Val	Lys	Lys	Asp	Leu	Ile	Ile	Lys	Leu	Pro	Lys	Tyr	Ser	Leu
	1190					1195					1200			
Phe	Glu	Leu	Glu	Asn	Gly	Arg	Lys	Arg	Met	Leu	Ala	Ser	Ala	Gly
	1205					1210					1215			
Glu	Leu	Gln	Lys	Gly	Asn	Glu	Leu	Ala	Leu	Pro	Ser	Lys	Tyr	Val
	1220					1225					1230			
Asn	Phe	Leu	Tyr	Leu	Ala	Ser	His	Tyr	Glu	Lys	Leu	Lys	Gly	Ser
	1235					1240					1245			
Pro	Glu	Asp	Asn	Glu	Gln	Lys	Gln	Leu	Phe	Val	Glu	Gln	His	Lys
	1250					1255					1260			
His	Tyr	Leu	Asp	Glu	Ile	Ile	Glu	Gln	Ile	Ser	Glu	Phe	Ser	Lys
	1265					1270					1275			
Arg	Val	Ile	Leu	Ala	Asp	Ala	Asn	Leu	Asp	Lys	Val	Leu	Ser	Ala
	1280					1285					1290			

Tyr Asn Lys His Arg Asp Lys Pro Ile Arg Glu Gln Ala Glu Asn
1295 1300 1305

Ile Ile His Leu Phe Thr Leu Thr Asn Leu Gly Ala Pro Ala Ala
1310 1315 1320

Phe Lys Tyr Phe Asp Thr Thr Ile Asp Arg Lys Arg Tyr Thr Ser
1325 1330 1335

Thr Lys Glu Val Leu Asp Ala Thr Leu Ile His Gln Ser Ile Thr
1340 1345 1350

Gly Leu Tyr Glu Thr Arg Ile Asp Leu Ser Gln Leu Gly Gly Asp
1355 1360 1365

<210> 24
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 24

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
1 5

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

<220>
<223> Synthetic polypeptide

<400> 25

Pro Lys Lys Lys Arg Lys Val
1 5

<210> 26

<211> 301
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 26

Asn His Asp Gln Glu Phe Asp Pro Pro Lys Val Tyr Pro Pro Val Pro
1 5 10 15

Ala Glu Lys Arg Lys Pro Ile Arg Val Leu Ser Leu Phe Asp Gly Ile
20 25 30

Ala Thr Gly Leu Leu Val Leu Lys Asp Leu Gly Ile Gln Val Asp Arg
35 40 45

Tyr Ile Ala Ser Glu Val Cys Glu Asp Ser Ile Thr Val Gly Met Val
50 55 60

Arg His Gln Gly Lys Ile Met Tyr Val Gly Asp Val Arg Ser Val Thr
65 70 75 80

Gln Lys His Ile Gln Glu Trp Gly Pro Phe Asp Leu Val Ile Gly Gly
85 90 95

Ser Pro Cys Asn Asp Leu Ser Ile Val Asn Pro Ala Arg Lys Gly Leu
100 105 110

Tyr Glu Gly Thr Gly Arg Leu Phe Phe Glu Phe Tyr Arg Leu Leu His
115 120 125

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

Glu Asn Val Val Ala Met Gly Val Ser Asp Lys Arg Asp Ile Ser Arg
145 150 155 160

Phe Leu Glu Ser Asn Pro Val Met Ile Asp Ala Lys Glu Val Ser Ala
165 170 175

Ala His Arg Ala Arg Tyr Phe Trp Gly Asn Leu Pro Gly Met Asn Arg
180 185 190

Pro Leu Ala Ser Thr Val Asn Asp Lys Leu Glu Leu Gln Glu Cys Leu
195 200 205

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

Arg Ser Asn Ser Ile Lys Gln Gly Lys Asp Gln His Phe Pro Val Phe
225 230 235 240

Met Asn Glu Lys Glu Asp Ile Leu Trp Cys Thr Glu Met Glu Arg Val
245 250 255

Phe Gly Phe Pro Val His Tyr Thr Asp Val Ser Asn Met Ser Arg Leu
260 265 270

Ala Arg Gln Arg Leu Leu Gly Arg Ser Trp Ser Val Pro Val Ile Arg
275 280 285

His Leu Phe Ala Pro Leu Lys Glu Tyr Phe Ala Cys Val
290 295 300

<210> 27
<211> 27
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 27

Ser Ser Gly Asn Ser Asn Ala Asn Ser Arg Gly Pro Ser Phe Ser Ser
1 5 10 15

Gly Leu Val Pro Leu Ser Leu Arg Gly Ser His
20 25

<210> 28
<211> 215
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 28

Met Gly Pro Met Glu Ile Tyr Lys Thr Val Ser Ala Trp Lys Arg Gln
1 5 10 15

Pro Val Arg Val Leu Ser Leu Phe Arg Asn Ile Asp Lys Val Leu Lys
20 25 30

Ser Leu Gly Phe Leu Glu Ser Gly Ser Gly Ser Gly Gly Thr Leu
35 40 45

Lys Tyr Val Glu Asp Val Thr Asn Val Val Arg Arg Asp Val Glu Lys
50 55 60

Trp Gly Pro Phe Asp Leu Val Tyr Gly Ser Thr Gln Pro Leu Gly Ser
65 70 75 80

Ser Cys Asp Arg Cys Pro Gly Trp Tyr Met Phe Gln Phe His Arg Ile
85 90 95

Leu Gln Tyr Ala Leu Pro Arg Gln Glu Ser Gln Arg Pro Phe Phe Trp
100 105 110

Ile Phe Met Asp Asn Leu Leu Leu Thr Glu Asp Asp Gln Glu Thr Thr
115 120 125

Thr Arg Phe Leu Gln Thr Glu Ala Val Thr Leu Gln Asp Val Arg Gly
130 135 140

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

Lys Ser Lys His Ala Pro Leu Thr Pro Lys Glu Glu Glu Tyr Leu Gln
165 170 175

Ala Gln Val Arg Ser Arg Ser Lys Leu Asp Ala Pro Lys Val Asp Leu
180 185 190

Leu Val Lys Asn Cys Leu Leu Pro Leu Arg Glu Tyr Phe Lys Tyr Phe
195 200 205

Ser Gln Asn Ser Leu Pro Leu
210 215

<210> 29
<211> 19
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 29

Ala Thr Asn Phe Ser Leu Leu Lys Gln Ala Gly Asp Val Glu Glu Asn
1 5 10 15

Pro Gly Pro

<210> 30
<211> 232
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 30

Ser Glu Leu Ile Lys Glu Asn Met His Met Lys Leu Tyr Met Glu Gly
 1 5 10 15

Thr Val Asp Asn His His Phe Lys Cys Thr Ser Glu Gly Glu Gly Lys
 20 25 30

Pro Tyr Glu Gly Thr Gln Thr Met Arg Ile Lys Val Val Glu Gly Gly
 35 40 45

Pro Leu Pro Phe Ala Phe Asp Ile Leu Ala Thr Ser Phe Leu Tyr Gly
 50 55 60

Ser Lys Thr Phe Ile Asn His Thr Gln Gly Ile Pro Asp Phe Phe Lys
 65 70 75 80

Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Val Thr Thr Tyr Glu
 85 90 95

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

Cys Leu Ile Tyr Asn Val Lys Ile Arg Gly Val Asn Phe Thr Ser Asn
 115 120 125

Gly Pro Val Met Gln Lys Lys Thr Leu Gly Trp Glu Ala Phe Thr Glu
 130 135 140

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

Leu Lys Leu Val Gly Gly Ser His Leu Ile Ala Asn Ile Lys Thr Thr
 165 170 175

Tyr Arg Ser Lys Lys Pro Ala Lys Asn Leu Lys Met Pro Gly Val Tyr
 180 185 190

Tyr Val Asp Tyr Arg Leu Glu Arg Ile Lys Glu Ala Asn Asn Glu Thr
195 200 205

Tyr Val Glu Gln His Glu Val Ala Val Ala Arg Tyr Cys Asp Leu Pro
210 215 220

Ser Lys Leu Gly His Lys Leu Asn
225 230

<210> 31
<211> 16
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 31

Ser Gly Ser Glu Thr Pro Gly Thr Ser Glu Ser Ala Thr Pro Glu Ser
1 5 10 15

<210> 32
<211> 80
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 32

Gly Gly Pro Ser Ser Gly Ala Pro Pro Pro Ser Gly Gly Ser Pro Ala
1 5 10 15

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

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

Gly Ser Pro Ala Gly Ser Pro Thr Ser Thr Glu Glu Gly Thr Ser Thr
207

50

55

60

Glu Pro Ser Glu Gly Ser Ala Pro Gly Thr Ser Thr Glu Pro Ser Glu
65 70 75 80

<210> 33

<211> 543

<212> PRT

<213> Artificial sequence

<220>

<223> Synthetic polypeptide

<400> 33

Asn His Asp Gln Glu Phe Asp Pro Pro Lys Val Tyr Pro Pro Val Pro
1 5 10 15

Ala Glu Lys Arg Lys Pro Ile Arg Val Leu Ser Leu Phe Asp Gly Ile
20 25 30

Ala Thr Gly Leu Leu Val Leu Lys Asp Leu Gly Ile Gln Val Asp Arg
35 40 45

Tyr Ile Ala Ser Glu Val Cys Glu Asp Ser Ile Thr Val Gly Met Val
50 55 60

Arg His Gln Gly Lys Ile Met Tyr Val Gly Asp Val Arg Ser Val Thr
65 70 75 80

Gln Lys His Ile Gln Glu Trp Gly Pro Phe Asp Leu Val Ile Gly Gly
85 90 95

Ser Pro Cys Asn Asp Leu Ser Ile Val Asn Pro Ala Arg Lys Gly Leu
100 105 110

Tyr Glu Gly Thr Gly Arg Leu Phe Phe Glu Phe Tyr Arg Leu Leu His
115 120 125

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

Glu Asn Val Val Ala Met Gly Val Ser Asp Lys Arg Asp Ile Ser Arg
145 150 155 160

Phe Leu Glu Ser Asn Pro Val Met Ile Asp Ala Lys Glu Val Ser Ala
165 170 175

Ala His Arg Ala Arg Tyr Phe Trp Gly Asn Leu Pro Gly Met Asn Arg
180 185 190

Pro Leu Ala Ser Thr Val Asn Asp Lys Leu Glu Leu Gln Glu Cys Leu
195 200 205

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

Arg Ser Asn Ser Ile Lys Gln Gly Lys Asp Gln His Phe Pro Val Phe
225 230 235 240

Met Asn Glu Lys Glu Asp Ile Leu Trp Cys Thr Glu Met Glu Arg Val
245 250 255

Phe Gly Phe Pro Val His Tyr Thr Asp Val Ser Asn Met Ser Arg Leu
260 265 270

Ala Arg Gln Arg Leu Leu Gly Arg Ser Trp Ser Val Pro Val Ile Arg
275 280 285

His Leu Phe Ala Pro Leu Lys Glu Tyr Phe Ala Cys Val Ser Ser Gly
290 295 300

Asn Ser Asn Ala Asn Ser Arg Gly Pro Ser Phe Ser Ser Gly Leu Val
305 310 315 320

Pro Leu Ser Leu Arg Gly Ser His Met Gly Pro Met Glu Ile Tyr Lys
209

325

330

335

Thr Val Ser Ala Trp Lys Arg Gln Pro Val Arg Val Leu Ser Leu Phe
 340 345 350

Arg Asn Ile Asp Lys Val Leu Lys Ser Leu Gly Phe Leu Glu Ser Gly
 355 360 365

Ser Gly Ser Gly Gly Gly Thr Leu Lys Tyr Val Glu Asp Val Thr Asn
 370 375 380

Val Val Arg Arg Asp Val Glu Lys Trp Gly Pro Phe Asp Leu Val Tyr
 385 390 395 400

Gly Ser Thr Gln Pro Leu Gly Ser Ser Cys Asp Arg Cys Pro Gly Trp
 405 410 415

Tyr Met Phe Gln Phe His Arg Ile Leu Gln Tyr Ala Leu Pro Arg Gln
 420 425 430

Glu Ser Gln Arg Pro Phe Phe Trp Ile Phe Met Asp Asn Leu Leu Leu
 435 440 445

Thr Glu Asp Asp Gln Glu Thr Thr Thr Arg Phe Leu Gln Thr Glu Ala
 450 455 460

Val Thr Leu Gln Asp Val Arg Gly Arg Asp Tyr Gln Asn Ala Met Arg
 465 470 475 480

Val Trp Ser Asn Ile Pro Gly Leu Lys Ser Lys His Ala Pro Leu Thr
 485 490 495

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

Leu Asp Ala Pro Lys Val Asp Leu Leu Val Lys Asn Cys Leu Leu Pro
 515 520 525

Leu Arg Glu Tyr Phe Lys Tyr Phe Ser Gln Asn Ser Leu Pro Leu
530 535 540

<210> 34
<211> 1307
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 34

Met Thr Gln Phe Glu Gly Phe Thr Asn Leu Tyr Gln Val Ser Lys Thr
1 5 10 15

Leu Arg Phe Glu Leu Ile Pro Gln Gly Lys Thr Leu Lys His Ile Gln
20 25 30

Glu Gln Gly Phe Ile Glu Glu Asp Lys Ala Arg Asn Asp His Tyr Lys
35 40 45

Glu Leu Lys Pro Ile Ile Asp Arg Ile Tyr Lys Thr Tyr Ala Asp Gln
50 55 60

Cys Leu Gln Leu Val Gln Leu Asp Trp Glu Asn Leu Ser Ala Ala Ile
65 70 75 80

Asp Ser Tyr Arg Lys Glu Lys Thr Glu Glu Thr Arg Asn Ala Leu Ile
85 90 95

Glu Glu Gln Ala Thr Tyr Arg Asn Ala Ile His Asp Tyr Phe Ile Gly
100 105 110

Arg Thr Asp Asn Leu Thr Asp Ala Ile Asn Lys Arg His Ala Glu Ile
115 120 125

Tyr Lys Gly Leu Phe Lys Ala Glu Leu Phe Asn Gly Lys Val Leu Lys

130

135

140

Gln Leu Gly Thr Val Thr Thr Thr Glu His Glu Asn Ala Leu Leu Arg
 145 150 155 160

Ser Phe Asp Lys Phe Thr Thr Tyr Phe Ser Gly Phe Tyr Glu Asn Arg
 165 170 175

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

Ile Val Gln Asp Asn Phe Pro Lys Phe Lys Glu Asn Cys His Ile Phe
 195 200 205

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

Val Lys Lys Ala Ile Gly Ile Phe Val Ser Thr Ser Ile Glu Glu Val
 225 230 235 240

Phe Ser Phe Pro Phe Tyr Asn Gln Leu Leu Thr Gln Thr Gln Ile Asp
 245 250 255

Leu Tyr Asn Gln Leu Leu Gly Gly Ile Ser Arg Glu Ala Gly Thr Glu
 260 265 270

Lys Ile Lys Gly Leu Asn Glu Val Leu Asn Leu Ala Ile Gln Lys Asn
 275 280 285

Asp Glu Thr Ala His Ile Ile Ala Ser Leu Pro His Arg Phe Ile Pro
 290 295 300

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

Glu Glu Phe Lys Ser Asp Glu Glu Val Ile Gln Ser Phe Cys Lys Tyr
 325 330 335

Lys Thr Leu Leu Arg Asn Glu Asn Val Leu Glu Thr Ala Glu Ala Leu
340 345 350

Phe Asn Glu Leu Asn Ser Ile Asp Leu Thr His Ile Phe Ile Ser His
355 360 365

Lys Lys Leu Glu Thr Ile Ser Ser Ala Leu Cys Asp His Trp Asp Thr
370 375 380

Leu Arg Asn Ala Leu Tyr Glu Arg Arg Ile Ser Glu Leu Thr Gly Lys
385 390 395 400

Ile Thr Lys Ser Ala Lys Glu Lys Val Gln Arg Ser Leu Lys His Glu
405 410 415

Asp Ile Asn Leu Gln Glu Ile Ile Ser Ala Ala Gly Lys Glu Leu Ser
420 425 430

Glu Ala Phe Lys Gln Lys Thr Ser Glu Ile Leu Ser His Ala His Ala
435 440 445

Ala Leu Asp Gln Pro Leu Pro Thr Thr Leu Lys Lys Gln Glu Glu Lys
450 455 460

Glu Ile Leu Lys Ser Gln Leu Asp Ser Leu Leu Gly Leu Tyr His Leu
465 470 475 480

Leu Asp Trp Phe Ala Val Asp Glu Ser Asn Glu Val Asp Pro Glu Phe
485 490 495

Ser Ala Arg Leu Thr Gly Ile Lys Leu Glu Met Glu Pro Ser Leu Ser
500 505 510

Phe Tyr Asn Lys Ala Arg Asn Tyr Ala Thr Lys Lys Pro Tyr Ser Val
515 520 525

Glu Lys Phe Lys Leu Asn Phe Gln Met Pro Thr Leu Ala Ser Gly Trp
530 535 540

Asp Val Asn Lys Glu Lys Asn Asn Gly Ala Ile Leu Phe Val Lys Asn
545 550 555 560

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

Ala Leu Ser Phe Glu Pro Thr Glu Lys Thr Ser Glu Gly Phe Asp Lys
580 585 590

Met Tyr Tyr Asp Tyr Phe Pro Asp Ala Ala Lys Met Ile Pro Lys Cys
595 600 605

Ser Thr Gln Leu Lys Ala Val Thr Ala His Phe Gln Thr His Thr Thr
610 615 620

Pro Ile Leu Leu Ser Asn Asn Phe Ile Glu Pro Leu Glu Ile Thr Lys
625 630 635 640

Glu Ile Tyr Asp Leu Asn Asn Pro Glu Lys Glu Pro Lys Lys Phe Gln
645 650 655

Thr Ala Tyr Ala Lys Lys Thr Gly Asp Gln Lys Gly Tyr Arg Glu Ala
660 665 670

Leu Cys Lys Trp Ile Asp Phe Thr Arg Asp Phe Leu Ser Lys Tyr Thr
675 680 685

Lys Thr Thr Ser Ile Asp Leu Ser Ser Leu Arg Pro Ser Ser Gln Tyr
690 695 700

Lys Asp Leu Gly Glu Tyr Tyr Ala Glu Leu Asn Pro Leu Leu Tyr His
705 710 715 720

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

Thr Gly Lys Leu Tyr Leu Phe Gln Ile Tyr Asn Lys Asp Phe Ala Lys
740 745 750

Gly His His Gly Lys Pro Asn Leu His Thr Leu Tyr Trp Thr Gly Leu
755 760 765

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

Ala Glu Leu Phe Tyr Arg Pro Lys Ser Arg Met Lys Arg Met Ala His
785 790 795 800

Arg Leu Gly Glu Lys Met Leu Asn Lys Lys Leu Lys Asp Gln Lys Thr
805 810 815

Pro Ile Pro Asp Thr Leu Tyr Gln Glu Leu Tyr Asp Tyr Val Asn His
820 825 830

Arg Leu Ser His Asp Leu Ser Asp Glu Ala Arg Ala Leu Leu Pro Asn
835 840 845

Val Ile Thr Lys Glu Val Ser His Glu Ile Ile Lys Asp Arg Arg Phe
850 855 860

Thr Ser Asp Lys Phe Phe Phe His Val Pro Ile Thr Leu Asn Tyr Gln
865 870 875 880

Ala Ala Asn Ser Pro Ser Lys Phe Asn Gln Arg Val Asn Ala Tyr Leu
885 890 895

Lys Glu His Pro Glu Thr Pro Ile Ile Gly Ile Asp Arg Gly Glu Arg
900 905 910

Asn Leu Ile Tyr Ile Thr Val Ile Asp Ser Thr Gly Lys Ile Leu Glu

915

920

925

Gln Arg Ser Leu Asn Thr Ile Gln Gln Phe Asp Tyr Gln Lys Lys Leu
 930 935 940

Asp Asn Arg Glu Lys Glu Arg Val Ala Ala Arg Gln Ala Trp Ser Val
 945 950 955 960

Val Gly Thr Ile Lys Asp Leu Lys Gln Gly Tyr Leu Ser Gln Val Ile
 965 970 975

His Glu Ile Val Asp Leu Met Ile His Tyr Gln Ala Val Val Val Leu
 980 985 990

Ala Asn Leu Asn Phe Gly Phe Lys Ser Lys Arg Thr Gly Ile Ala Glu
 995 1000 1005

Lys Ala Val Tyr Gln Gln Phe Glu Lys Met Leu Ile Asp Lys Leu
 1010 1015 1020

Asn Cys Leu Val Leu Lys Asp Tyr Pro Ala Glu Lys Val Gly Gly
 1025 1030 1035

Val Leu Asn Pro Tyr Gln Leu Thr Asp Gln Phe Thr Ser Phe Ala
 1040 1045 1050

Lys Met Gly Thr Gln Ser Gly Phe Leu Phe Tyr Val Pro Ala Pro
 1055 1060 1065

Tyr Thr Ser Lys Ile Asp Pro Leu Thr Gly Phe Val Asp Pro Phe
 1070 1075 1080

Val Trp Lys Thr Ile Lys Asn His Glu Ser Arg Lys His Phe Leu
 1085 1090 1095

Glu Gly Phe Asp Phe Leu His Tyr Asp Val Lys Thr Gly Asp Phe
 1100 1105 1110

Ile Leu His Phe Lys Met Asn Arg Asn Leu Ser Phe Gln Arg Gly
1115 1120 1125

Leu Pro Gly Phe Met Pro Ala Trp Asp Ile Val Phe Glu Lys Asn
1130 1135 1140

Glu Thr Gln Phe Asp Ala Lys Gly Thr Pro Phe Ile Ala Gly Lys
1145 1150 1155

Arg Ile Val Pro Val Ile Glu Asn His Arg Phe Thr Gly Arg Tyr
1160 1165 1170

Arg Asp Leu Tyr Pro Ala Asn Glu Leu Ile Ala Leu Leu Glu Glu
1175 1180 1185

Lys Gly Ile Val Phe Arg Asp Gly Ser Asn Ile Leu Pro Lys Leu
1190 1195 1200

Leu Glu Asn Asp Asp Ser His Ala Ile Asp Thr Met Val Ala Leu
1205 1210 1215

Ile Arg Ser Val Leu Gln Met Arg Asn Ser Asn Ala Ala Thr Gly
1220 1225 1230

Glu Asp Tyr Ile Asn Ser Pro Val Arg Asp Leu Asn Gly Val Cys
1235 1240 1245

Phe Asp Ser Arg Phe Gln Asn Pro Glu Trp Pro Met Asp Ala Asp
1250 1255 1260

Ala Asn Gly Ala Tyr His Ile Ala Leu Lys Gly Gln Leu Leu Leu
1265 1270 1275

Asn His Leu Lys Glu Ser Lys Asp Leu Lys Leu Gln Asn Gly Ile
1280 1285 1290

Ser Asn Gln Asp Trp Leu Ala Tyr Ile Gln Glu Leu Arg Asn
1295 1300 1305

<210> 35
<211> 1228
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic polypeptide

<400> 35

Met Ser Lys Leu Glu Lys Phe Thr Asn Cys Tyr Ser Leu Ser Lys Thr
1 5 10 15

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

Asn Lys Arg Leu Leu Val Glu Asp Glu Lys Arg Ala Glu Asp Tyr Lys
35 40 45

Gly Val Lys Lys Leu Leu Asp Arg Tyr Tyr Leu Ser Phe Ile Asn Asp
50 55 60

Val Leu His Ser Ile Lys Leu Lys Asn Leu Asn Asn Tyr Ile Ser Leu
65 70 75 80

Phe Arg Lys Lys Thr Arg Thr Glu Lys Glu Asn Lys Glu Leu Glu Asn
85 90 95

Leu Glu Ile Asn Leu Arg Lys Glu Ile Ala Lys Ala Phe Lys Gly Asn
100 105 110

Glu Gly Tyr Lys Ser Leu Phe Lys Lys Asp Ile Ile Glu Thr Ile Leu
115 120 125

Pro Glu Phe Leu Asp Asp Lys Asp Glu Ile Ala Leu Val Asn Ser Phe
130 135 140

Asn Gly Phe Thr Thr Ala Phe Thr Gly Phe Phe Asp Asn Arg Glu Asn
 145 150 155 160

Met Phe Ser Glu Glu Ala Lys Ser Thr Ser Ile Ala Phe Arg Cys Ile
 165 170 175

Asn Glu Asn Leu Thr Arg Tyr Ile Ser Asn Met Asp Ile Phe Glu Lys
 180 185 190

Val Asp Ala Ile Phe Asp Lys His Glu Val Gln Glu Ile Lys Glu Lys
 195 200 205

Ile Leu Asn Ser Asp Tyr Asp Val Glu Asp Phe Phe Glu Gly Glu Phe
 210 215 220

Phe Asn Phe Val Leu Thr Gln Glu Gly Ile Asp Val Tyr Asn Ala Ile
 225 230 235 240

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

Glu Tyr Ile Asn Leu Tyr Asn Gln Lys Thr Lys Gln Lys Leu Pro Lys
 260 265 270

Phe Lys Pro Leu Tyr Lys Gln Val Leu Ser Asp Arg Glu Ser Leu Ser
 275 280 285

Phe Tyr Gly Glu Gly Tyr Thr Ser Asp Glu Glu Val Leu Glu Val Phe
 290 295 300

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

Leu Glu Lys Leu Phe Lys Asn Phe Asp Glu Tyr Ser Ser Ala Gly Ile
 325 330 335

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

Gly Glu Trp Asn Val Ile Arg Asp Lys Trp Asn Ala Glu Tyr Asp Asp
355 360 365

Ile His Leu Lys Lys Lys Ala Val Val Thr Glu Lys Tyr Glu Asp Asp
370 375 380

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

Gln Glu Tyr Ala Asp Ala Asp Leu Ser Val Val Glu Lys Leu Lys Glu
405 410 415

Ile Ile Ile Gln Lys Val Asp Glu Ile Tyr Lys Val Tyr Gly Ser Ser
420 425 430

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

Asn Asp Ala Val Val Ala Ile Met Lys Asp Leu Leu Asp Ser Val Lys
450 455 460

Ser Phe Glu Asn Tyr Ile Lys Ala Phe Phe Gly Glu Gly Lys Glu Thr
465 470 475 480

Asn Arg Asp Glu Ser Phe Tyr Gly Asp Phe Val Leu Ala Tyr Asp Ile
485 490 495

Leu Leu Lys Val Asp His Ile Tyr Asp Ala Ile Arg Asn Tyr Val Thr
500 505 510

Gln Lys Pro Tyr Ser Lys Asp Lys Phe Lys Leu Tyr Phe Gln Asn Pro
515 520 525

Gln Phe Met Gly Gly Trp Asp Lys Asp Lys Glu Thr Asp Tyr Arg Ala
530 535 540

Thr Ile Leu Arg Tyr Gly Ser Lys Tyr Tyr Leu Ala Ile Met Asp Lys
545 550 555 560

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

Asn Tyr Glu Lys Ile Asn Tyr Lys Leu Leu Pro Gly Pro Asn Lys Met
580 585 590

Leu Pro Lys Val Phe Phe Ser Lys Lys Trp Met Ala Tyr Tyr Asn Pro
595 600 605

Ser Glu Asp Ile Gln Lys Ile Tyr Lys Asn Gly Thr Phe Lys Lys Gly
610 615 620

Asp Met Phe Asn Leu Asn Asp Cys His Lys Leu Ile Asp Phe Phe Lys
625 630 635 640

Asp Ser Ile Ser Arg Tyr Pro Lys Trp Ser Asn Ala Tyr Asp Phe Asn
645 650 655

Phe Ser Glu Thr Glu Lys Tyr Lys Asp Ile Ala Gly Phe Tyr Arg Glu
660 665 670

Val Glu Glu Gln Gly Tyr Lys Val Ser Phe Glu Ser Ala Ser Lys Lys
675 680 685

Glu Val Asp Lys Leu Val Glu Glu Gly Lys Leu Tyr Met Phe Gln Ile
690 695 700

Tyr Asn Lys Asp Phe Ser Asp Lys Ser His Gly Thr Pro Asn Leu His
705 710 715 720

Thr Met Tyr Phe Lys Leu Leu Phe Asp Glu Asn Asn His Gly Gln Ile

725

730

735

Arg Leu Ser Gly Gly Ala Glu Leu Phe Met Arg Arg Ala Ser Leu Lys
 740 745 750

Lys Glu Glu Leu Val Val His Pro Ala Asn Ser Pro Ile Ala Asn Lys
 755 760 765

Asn Pro Asp Asn Pro Lys Lys Thr Thr Thr Leu Ser Tyr Asp Val Tyr
 770 775 780

Lys Asp Lys Arg Phe Ser Glu Asp Gln Tyr Glu Leu His Ile Pro Ile
 785 790 795 800

Ala Ile Asn Lys Cys Pro Lys Asn Ile Phe Lys Ile Asn Thr Glu Val
 805 810 815

Arg Val Leu Leu Lys His Asp Asp Asn Pro Tyr Val Ile Gly Ile Ala
 820 825 830

Arg Gly Glu Arg Asn Leu Leu Tyr Ile Val Val Val Asp Gly Lys Gly
 835 840 845

Asn Ile Val Glu Gln Tyr Ser Leu Asn Glu Ile Ile Asn Asn Phe Asn
 850 855 860

Gly Ile Arg Ile Lys Thr Asp Tyr His Ser Leu Leu Asp Lys Lys Glu
 865 870 875 880

Lys Glu Arg Phe Glu Ala Arg Gln Asn Trp Thr Ser Ile Glu Asn Ile
 885 890 895

Lys Glu Leu Lys Ala Gly Tyr Ile Ser Gln Val Val His Lys Ile Cys
 900 905 910

Glu Leu Val Glu Lys Tyr Asp Ala Val Ile Ala Leu Ala Asp Leu Asn
 915 920 925

Ser Gly Phe Lys Asn Ser Arg Val Lys Val Glu Lys Gln Val Tyr Gln
930 935 940

Lys Phe Glu Lys Met Leu Ile Asp Lys Leu Asn Tyr Met Val Asp Lys
945 950 955 960

Lys Ser Asn Pro Cys Ala Thr Gly Gly Ala Leu Lys Gly Tyr Gln Ile
965 970 975

Thr Asn Lys Phe Glu Ser Phe Lys Ser Met Ser Thr Gln Asn Gly Phe
980 985 990

Ile Phe Tyr Ile Pro Ala Trp Leu Thr Ser Lys Ile Asp Pro Ser Thr
995 1000 1005

Gly Phe Val Asn Leu Leu Lys Thr Lys Tyr Thr Ser Ile Ala Asp
1010 1015 1020

Ser Lys Lys Phe Ile Ser Ser Phe Asp Arg Ile Met Tyr Val Pro
1025 1030 1035

Glu Glu Asp Leu Phe Glu Phe Ala Leu Asp Tyr Lys Asn Phe Ser
1040 1045 1050

Arg Thr Asp Ala Asp Tyr Ile Lys Lys Trp Lys Leu Tyr Ser Tyr
1055 1060 1065

Gly Asn Arg Ile Arg Ile Phe Arg Asn Pro Lys Lys Asn Asn Val
1070 1075 1080

Phe Asp Trp Glu Glu Val Cys Leu Thr Ser Ala Tyr Lys Glu Leu
1085 1090 1095

Phe Asn Lys Tyr Gly Ile Asn Tyr Gln Gln Gly Asp Ile Arg Ala
1100 1105 1110

Leu Leu Cys Glu Gln Ser Asp Lys Ala Phe Tyr Ser Ser Phe Met
 1115 1120 1125

Ala Leu Met Ser Leu Met Leu Gln Met Arg Asn Ser Ile Thr Gly
 1130 1135 1140

Arg Thr Asp Val Asp Phe Leu Ile Ser Pro Val Lys Asn Ser Asp
 1145 1150 1155

Gly Ile Phe Tyr Asp Ser Arg Asn Tyr Glu Ala Gln Glu Asn Ala
 1160 1165 1170

Ile Leu Pro Lys Asn Ala Asp Ala Asn Gly Ala Tyr Asn Ile Ala
 1175 1180 1185

Arg Lys Val Leu Trp Ala Ile Gly Gln Phe Lys Lys Ala Glu Asp
 1190 1195 1200

Glu Lys Leu Asp Lys Val Lys Ile Ala Ile Ser Asn Lys Glu Trp
 1205 1210 1215

Leu Glu Tyr Ala Gln Thr Ser Val Lys His
 1220 1225

<210> 36
 <211> 1314
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic polypeptide

<400> 36

Met Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser Gly Ser Gly Met Ser
 1 5 10 15

Ile Tyr Gln Glu Phe Val Asn Lys Tyr Ser Leu Ser Lys Thr Leu Arg
 20 25 30

Phe Glu Leu Ile Pro Gln Gly Lys Thr Leu Glu Asn Ile Lys Ala Arg
35 40 45

Gly Leu Ile Leu Asp Asp Glu Lys Arg Ala Lys Asp Tyr Lys Lys Ala
50 55 60

Lys Gln Ile Ile Asp Lys Tyr His Gln Phe Phe Ile Glu Glu Ile Leu
65 70 75 80

Ser Ser Val Cys Ile Ser Glu Asp Leu Leu Gln Asn Tyr Ser Asp Val
85 90 95

Tyr Phe Lys Leu Lys Lys Ser Asp Asp Asp Asn Leu Gln Lys Asp Phe
100 105 110

Lys Ser Ala Lys Asp Thr Ile Lys Lys Gln Ile Ser Glu Tyr Ile Lys
115 120 125

Asp Ser Glu Lys Phe Lys Asn Leu Phe Asn Gln Asn Leu Ile Asp Ala
130 135 140

Lys Lys Gly Gln Glu Ser Asp Leu Ile Leu Trp Leu Lys Gln Ser Lys
145 150 155 160

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

Asp Glu Ala Leu Glu Ile Ile Lys Ser Phe Lys Gly Trp Thr Thr Tyr
180 185 190

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

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

Phe Leu Glu Asn Lys Ala Lys Tyr Glu Ser Leu Lys Asp Lys Ala Pro
 225 230 235 240

Glu Ala Ile Asn Tyr Glu Gln Ile Lys Lys Asp Leu Ala Glu Glu Leu
 245 250 255

Thr Phe Asp Ile Asp Tyr Lys Thr Ser Glu Val Asn Gln Arg Val Phe
 260 265 270

Ser Leu Asp Glu Val Phe Glu Ile Ala Asn Phe Asn Asn Tyr Leu Asn
 275 280 285

Gln Ser Gly Ile Thr Lys Phe Asn Thr Ile Ile Gly Gly Lys Phe Val
 290 295 300

Asn Gly Glu Asn Thr Lys Arg Lys Gly Ile Asn Glu Tyr Ile Asn Leu
 305 310 315 320

Tyr Ser Gln Gln Ile Asn Asp Lys Thr Leu Lys Lys Tyr Lys Met Ser
 325 330 335

Val Leu Phe Lys Gln Ile Leu Ser Asp Thr Glu Ser Lys Ser Phe Val
 340 345 350

Ile Asp Lys Leu Glu Asp Asp Ser Asp Val Val Thr Thr Met Gln Ser
 355 360 365

Phe Tyr Glu Gln Ile Ala Ala Phe Lys Thr Val Glu Glu Lys Ser Ile
 370 375 380

Lys Glu Thr Leu Ser Leu Leu Phe Asp Asp Leu Lys Ala Gln Lys Leu
 385 390 395 400

Asp Leu Ser Lys Ile Tyr Phe Lys Asn Asp Lys Ser Leu Thr Asp Leu
 405 410 415

Ser Gln Gln Val Phe Asp Asp Tyr Ser Val Ile Gly Thr Ala Val Leu
420 425 430

Glu Tyr Ile Thr Gln Gln Ile Ala Pro Lys Asn Leu Asp Asn Pro Ser
435 440 445

Lys Lys Glu Gln Glu Leu Ile Ala Lys Lys Thr Glu Lys Ala Lys Tyr
450 455 460

Leu Ser Leu Glu Thr Ile Lys Leu Ala Leu Glu Glu Phe Asn Lys His
465 470 475 480

Arg Asp Ile Asp Lys Gln Cys Arg Phe Glu Glu Ile Leu Ala Asn Phe
485 490 495

Ala Ala Ile Pro Met Ile Phe Asp Glu Ile Ala Gln Asn Lys Asp Asn
500 505 510

Leu Ala Gln Ile Ser Ile Lys Tyr Gln Asn Gln Gly Lys Lys Asp Leu
515 520 525

Leu Gln Ala Ser Ala Glu Asp Asp Val Lys Ala Ile Lys Asp Leu Leu
530 535 540

Asp Gln Thr Asn Asn Leu Leu His Lys Leu Lys Ile Phe His Ile Ser
545 550 555 560

Gln Ser Glu Asp Lys Ala Asn Ile Leu Asp Lys Asp Glu His Phe Tyr
565 570 575

Leu Val Phe Glu Glu Cys Tyr Phe Glu Leu Ala Asn Ile Val Pro Leu
580 585 590

Tyr Asn Lys Ile Arg Asn Tyr Ile Thr Gln Lys Pro Tyr Ser Asp Glu
595 600 605

Lys Phe Lys Leu Asn Phe Glu Asn Ser Thr Leu Ala Asn Gly Trp Asp

610

615

620

Lys Asn Lys Glu Pro Asp Asn Thr Ala Ile Leu Phe Ile Lys Asp Asp
 625 630 635 640

Lys Tyr Tyr Leu Gly Val Met Asn Lys Lys Asn Asn Lys Ile Phe Asp
 645 650 655

Asp Lys Ala Ile Lys Glu Asn Lys Gly Glu Gly Tyr Lys Lys Ile Val
 660 665 670

Tyr Lys Leu Leu Pro Gly Ala Asn Lys Met Leu Pro Lys Val Phe Phe
 675 680 685

Ser Ala Lys Ser Ile Lys Phe Tyr Asn Pro Ser Glu Asp Ile Leu Arg
 690 695 700

Ile Arg Asn His Ser Thr His Thr Lys Asn Gly Ser Pro Gln Lys Gly
 705 710 715 720

Tyr Glu Lys Phe Glu Phe Asn Ile Glu Asp Cys Arg Lys Phe Ile Asp
 725 730 735

Phe Tyr Lys Gln Ser Ile Ser Lys His Pro Glu Trp Lys Asp Phe Gly
 740 745 750

Phe Arg Phe Ser Asp Thr Gln Arg Tyr Asn Ser Ile Asp Glu Phe Tyr
 755 760 765

Arg Glu Val Glu Asn Gln Gly Tyr Lys Leu Thr Phe Glu Asn Ile Ser
 770 775 780

Glu Ser Tyr Ile Asp Ser Val Val Asn Gln Gly Lys Leu Tyr Leu Phe
 785 790 795 800

Gln Ile Tyr Asn Lys Asp Phe Ser Ala Tyr Ser Lys Gly Arg Pro Asn
 805 810 815

Leu His Thr Leu Tyr Trp Lys Ala Leu Phe Asp Glu Arg Asn Leu Gln
820 825 830

Asp Val Val Tyr Lys Leu Asn Gly Glu Ala Glu Leu Phe Tyr Arg Lys
835 840 845

Gln Ser Ile Pro Lys Lys Ile Thr His Pro Ala Lys Glu Ala Ile Ala
850 855 860

Asn Lys Asn Lys Asp Asn Pro Lys Lys Glu Ser Val Phe Glu Tyr Asp
865 870 875 880

Leu Ile Lys Asp Lys Arg Phe Thr Glu Asp Lys Phe Phe Phe His Cys
885 890 895

Pro Ile Thr Ile Asn Phe Lys Ser Ser Gly Ala Asn Lys Phe Asn Asp
900 905 910

Glu Ile Asn Leu Leu Leu Lys Glu Lys Ala Asn Asp Val His Ile Leu
915 920 925

Ser Ile Ala Arg Gly Glu Arg His Leu Ala Tyr Tyr Thr Leu Val Asp
930 935 940

Gly Lys Gly Asn Ile Ile Lys Gln Asp Thr Phe Asn Ile Ile Gly Asn
945 950 955 960

Asp Arg Met Lys Thr Asn Tyr His Asp Lys Leu Ala Ala Ile Glu Lys
965 970 975

Asp Arg Asp Ser Ala Arg Lys Asp Trp Lys Lys Ile Asn Asn Ile Lys
980 985 990

Glu Met Lys Glu Gly Tyr Leu Ser Gln Val Val His Glu Ile Ala Lys
995 1000 1005

Leu Val 1010	Ile Glu Tyr Asn Ala 1015	Ile Val Val Phe Glu 1020	Asp Leu Asn
Phe Gly 1025	Phe Lys Arg Gly Arg 1030	Phe Lys Val Glu Lys 1035	Gln Val Tyr
Gln Lys 1040	Leu Glu Lys Met Leu 1045	Ile Glu Lys Leu Asn 1050	Tyr Leu Val
Phe Lys 1055	Asp Asn Glu Phe Asp 1060	Lys Thr Gly Gly Val 1065	Leu Arg Ala
Tyr Gln 1070	Leu Thr Ala Pro Phe 1075	Glu Thr Phe Lys Lys 1080	Met Gly Lys
Gln Thr 1085	Gly Ile Ile Tyr Tyr 1090	Val Pro Ala Gly Phe 1095	Thr Ser Lys
Ile Cys 1100	Pro Val Thr Gly Phe 1105	Val Asn Gln Leu Tyr 1110	Pro Lys Tyr
Glu Ser 1115	Val Ser Lys Ser Gln 1120	Glu Phe Phe Ser Lys 1125	Phe Asp Lys
Ile Cys 1130	Tyr Asn Leu Asp Lys 1135	Gly Tyr Phe Glu Phe 1140	Ser Phe Asp
Tyr Lys 1145	Asn Phe Gly Asp Lys 1150	Ala Ala Lys Gly Lys 1155	Trp Thr Ile
Ala Ser 1160	Phe Gly Ser Arg Leu 1165	Ile Asn Phe Arg Asn 1170	Ser Asp Lys
Asn His 1175	Asn Trp Asp Thr Arg 1180	Glu Val Tyr Pro Thr 1185	Lys Glu Leu

Glu Lys Leu Leu Lys Asp Tyr Ser Ile Glu Tyr Gly His Gly Glu
 1190 1195 1200

Cys Ile Lys Ala Ala Ile Cys Gly Glu Ser Asp Lys Lys Phe Phe
 1205 1210 1215

Ala Lys Leu Thr Ser Val Leu Asn Thr Ile Leu Gln Met Arg Asn
 1220 1225 1230

Ser Lys Thr Gly Thr Glu Leu Asp Tyr Leu Ile Ser Pro Val Ala
 1235 1240 1245

Asp Val Asn Gly Asn Phe Phe Asp Ser Arg Gln Ala Pro Lys Asn
 1250 1255 1260

Met Pro Gln Asp Ala Asp Ala Asn Gly Ala Tyr His Ile Gly Leu
 1265 1270 1275

Lys Gly Leu Met Leu Leu Gly Arg Ile Lys Asn Asn Gln Glu Gly
 1280 1285 1290

Lys Lys Leu Asn Leu Val Ile Lys Asn Glu Glu Tyr Phe Glu Phe
 1295 1300 1305

Val Gln Asn Arg Asn Asn
 1310

<210> 37
 <211> 19
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic polynucleotide

<400> 37
 actgcggaaa tttgagcgt

19

<210> 38

<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic polynucleotide

<400> 38
acgctcaaatttccgcagt 19

<210> 39
<211> 19
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic polynucleotide

<400> 39
aggcaatggctgcacatgc 19

<210> 40
<211> 19
<212> DNA
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