

PCT_JP2016_085077_Sequence Listing.txt
SEQUENCE LISTING

<110> The Chemo-Sero-Therapeutic Research Institute
<120> Live virus having a bank of dengue virus attenuated strains,
and a dengue vaccine containing same as antigens
<130> SP102141SGM
<140> JP2015-232013
<141> 2015-11-27
<160> 32
<170> PatentIn version 3.5
<210> 1
<211> 3392
<212> PRT
<213> Dengue virus type 1

<220>
<221> VARIANT
<222> (199)..(199)
<223> Xaa stands for Lys or Glu

<220>
<221> VARIANT
<222> (999)..(999)
<223> Xaa stands for Val or Ile

<220>
<221> VARIANT
<222> (2353)..(2353)
<223> Xaa stands for Thr or Ile

<220>
<221> VARIANT
<222> (2360)..(2360)
<223> Xaa stands for Val or Ala

<400> 1

Met	Asn	Asn	Gln	Arg	Lys	Lys	Thr	Ala	Arg	Pro	Ser	Phe	Asn	Met	Leu
1			5						10					15	

Lys	Arg	Ala	Arg	Asn	Arg	Val	Ser	Thr	Val	Ser	Gln	Leu	Ala	Lys	Arg
			20					25					30		

Phe	Ser	Lys	Gly	Leu	Leu	Ser	Gly	Gln	Gly	Pro	Met	Lys	Leu	Val	Met
		35					40					45			

Ala	Phe	Ile	Ala	Phe	Leu	Arg	Phe	Leu	Ala	Ile	Pro	Pro	Thr	Ala	Gly
	50					55					60				

Ile	Leu	Ala	Arg	Trp	Gly	Ser	Phe	Lys	Lys	Asn	Gly	Ala	Ile	Lys	Val
65					70					75					80

Leu	Arg	Gly	Phe	Lys	Lys	Glu	Ile	Ser	Asn	Met	Leu	Asn	Ile	Met	Asn
				85					90					95	

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Arg Arg Lys Arg Ser Val Thr Met Leu Leu Met Leu Met Pro Thr Ala
100 105 110

Leu Ala Phe His Leu Thr Thr Arg Gly Gly Glu Pro His Met Ile Val
115 120 125

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

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

Asp Thr Met Thr Tyr Lys Cys Pro Arg Ile Thr Glu Ala Glu Pro Asp
165 170 175

Asp Val Asp Cys Trp Cys Asn Ala Thr Asp Thr Trp Val Thr Tyr Gly
180 185 190

Thr Cys Ser Gln Thr Gly Xaa His Arg Arg Asp Lys Arg Ser Val Ala
195 200 205

Leu Ala Pro His Val Gly Leu Gly Leu Glu Thr Arg Thr Glu Thr Trp
210 215 220

Met Ser Ser Glu Gly Ala Trp Lys Gln Ile Gln Arg Val Glu Thr Trp
225 230 235 240

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

Ala Ile Gly Thr Ser Ile Thr Gln Lys Gly Ile Ile Phe Ile Leu Leu
260 265 270

Met Leu Val Thr Pro Ser Met Ala Met Arg Cys Val Gly Ile Gly Ser
275 280 285

Arg Asp Phe Val Glu Gly Leu Ser Gly Ala Thr Trp Val Asp Val Val
290 295 300

Leu Glu His Gly Ser Cys Val Thr Thr Met Ala Lys Asp Lys Pro Thr
305 310 315 320

Leu Asp Ile Glu Leu Leu Lys Thr Glu Val Thr Asn Pro Ala Val Leu
325 330 335

Arg Lys Leu Cys Ile Glu Ala Lys Ile Ser Asn Thr Thr Thr Asp Ser
340 345 350

Arg Cys Pro Thr Gln Gly Glu Ala Thr Leu Val Glu Glu Gln Asp Ala
355 360 365

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Asn Phe Val Cys Arg Arg Thr Phe Val Asp Arg Gly Trp Gly Asn Gly
370 375 380

Cys Gly Leu Phe Gly Lys Gly Ser Leu Leu Thr Cys Ala Lys Phe Lys
385 390 395 400

Cys Val Thr Lys Leu Glu Gly Lys Ile Val Gln Tyr Glu Asn Leu Lys
405 410 415

Tyr Ser Val Ile Val Thr Val His Thr Gly Asp Gln His Gln Val Gly
420 425 430

Asn Glu Ser Thr Glu His Gly Thr Thr Ala Thr Ile Thr Pro Gln Ala
435 440 445

Pro Thr Thr Glu Ile Gln Leu Thr Asp Tyr Gly Ala Leu Thr Leu Asp
450 455 460

Cys Ser Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Val Leu Leu Thr
465 470 475 480

Met Lys Glu Lys Ser Trp Leu Val His Lys Gln Trp Phe Leu Asp Leu
485 490 495

Pro Leu Pro Trp Thr Ser Gly Ala Ser Thr Ser Gln Glu Thr Trp Asn
500 505 510

Arg Gln Asp Leu Leu Val Thr Phe Lys Thr Ala His Ala Lys Lys Gln
515 520 525

Glu Val Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu
530 535 540

Thr Gly Ala Thr Glu Ile Gln Thr Ser Gly Thr Thr Thr Ile Phe Ala
545 550 555 560

Gly His Leu Lys Cys Arg Leu Lys Met Asp Lys Leu Thr Leu Lys Gly
565 570 575

Met Ser Tyr Val Met Cys Thr Gly Ser Phe Lys Leu Glu Lys Glu Val
580 585 590

Ala Glu Thr Gln His Gly Thr Val Leu Val Gln Ile Lys Tyr Glu Gly
595 600 605

Thr Asp Ala Pro Cys Lys Ile Pro Phe Ser Thr Gln Asp Glu Lys Gly
610 615 620

Val Thr Gln Asn Gly Arg Leu Ile Thr Ala Asn Pro Ile Val Thr Asp
625 630 635 640

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Lys Glu Lys Pro Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Glu Ser
645 650 655

Tyr Ile Val Ile Gly Ala Gly Glu Lys Ala Leu Lys Leu Ser Trp Phe
660 665 670

Lys Lys Gly Ser Ser Ile Gly Lys Met Phe Glu Ala Thr Ala Arg Gly
675 680 685

Ala Arg Arg Met Ala Ile Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser
690 695 700

Ile Gly Gly Val Phe Thr Ser Val Gly Lys Leu Val His Gln Ile Phe
705 710 715 720

Gly Thr Ala Tyr Gly Val Leu Phe Ser Gly Val Ser Trp Thr Met Lys
725 730 735

Ile Gly Ile Gly Val Leu Leu Thr Trp Leu Gly Leu Asn Ser Arg Asn
740 745 750

Thr Ser Leu Ser Met Thr Cys Ile Ala Val Gly Leu Val Thr Leu Tyr
755 760 765

Leu Gly Val Met Val Gln Ala Asp Ser Gly Cys Val Ile Asn Trp Lys
770 775 780

Gly Arg Glu Leu Lys Cys Gly Ser Gly Ile Phe Val Thr Asn Glu Val
785 790 795 800

His Thr Trp Thr Glu Gln Tyr Lys Phe Gln Ala Asp Ser Pro Lys Arg
805 810 815

Leu Ser Ala Ala Ile Gly Lys Ala Trp Glu Glu Gly Val Cys Gly Ile
820 825 830

Arg Ser Ala Thr Arg Leu Glu Asn Ile Met Trp Lys Gln Ile Ser Asn
835 840 845

Glu Leu Asn His Ile Leu Leu Glu Asn Asp Met Lys Phe Thr Val Val
850 855 860

Val Gly Asp Val Ala Gly Ile Leu Ala Gln Gly Lys Lys Met Ile Arg
865 870 875 880

Pro Gln Pro Met Glu His Lys Tyr Ser Trp Lys Ser Trp Gly Lys Ala
885 890 895

Lys Ile Ile Gly Ala Asp Val Gln Asn Ser Thr Phe Ile Ile Asp Gly
900 905 910

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Pro Asn Thr Pro Glu Cys Pro Asp Asp Gln Arg Ala Trp Asn Ile Trp
915 920 925

Glu Val Glu Asp Tyr Gly Phe Gly Ile Phe Thr Thr Asn Ile Trp Leu
930 935 940

Lys Leu Arg Asp Ser Tyr Thr Gln Leu Cys Asp His Arg Leu Met Ser
945 950 955 960

Ala Ala Ile Lys Asp Ser Lys Ala Val His Ala Asp Met Gly Tyr Trp
965 970 975

Ile Glu Ser Glu Lys Asn Glu Thr Trp Lys Leu Ala Arg Ala Ser Phe
980 985 990

Ile Glu Val Lys Thr Cys Xaa Trp Pro Lys Ser His Thr Leu Trp Ser
995 1000 1005

Asn Gly Val Leu Glu Ser Glu Met Ile Ile Pro Lys Ile Tyr Gly
1010 1015 1020

Gly Pro Ile Ser Gln His Asn Tyr Arg Pro Gly Tyr Phe Thr Gln
1025 1030 1035

Thr Val Gly Pro Trp His Leu Gly Lys Leu Glu Leu Asp Phe Asp
1040 1045 1050

Leu Cys Glu Gly Thr Thr Val Val Val Asp Glu His Cys Gly Asn
1055 1060 1065

Arg Gly Pro Ser Leu Arg Thr Thr Thr Val Thr Gly Lys Ile Ile
1070 1075 1080

His Glu Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro Leu Arg Phe
1085 1090 1095

Arg Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg Pro Val
1100 1105 1110

Lys Glu Lys Glu Glu Asn Leu Val Lys Ser Met Val Ser Ala Gly
1115 1120 1125

Ser Gly Glu Val Asp Ser Phe Ser Leu Gly Leu Leu Cys Ile Ser
1130 1135 1140

Ile Met Ile Glu Glu Val Met Arg Ser Arg Trp Ser Arg Lys Met
1145 1150 1155

Leu Met Thr Gly Thr Leu Ala Val Phe Leu Leu Leu Ile Met Gly
1160 1165 1170

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Gln	Leu	Thr	Trp	Asn	Asp	Leu	Ile	Arg	Leu	Cys	Ile	Met	Val	Gly
	1175					1180					1185			
Ala	Asn	Ala	Ser	Asp	Arg	Met	Gly	Met	Gly	Thr	Thr	Tyr	Leu	Ala
	1190					1195					1200			
Leu	Met	Ala	Thr	Phe	Lys	Met	Arg	Pro	Met	Phe	Ala	Val	Gly	Leu
	1205					1210					1215			
Leu	Phe	Arg	Arg	Leu	Thr	Ser	Arg	Glu	Val	Leu	Leu	Leu	Thr	Ile
	1220					1225					1230			
Gly	Leu	Ser	Leu	Val	Ala	Ser	Val	Glu	Leu	Pro	Asn	Ser	Leu	Glu
	1235					1240					1245			
Glu	Leu	Gly	Asp	Gly	Leu	Ala	Met	Gly	Ile	Met	Ile	Leu	Lys	Leu
	1250					1255					1260			
Leu	Thr	Asp	Phe	Gln	Ser	His	Gln	Leu	Trp	Ala	Thr	Leu	Leu	Ser
	1265					1270					1275			
Leu	Thr	Phe	Ile	Lys	Thr	Thr	Phe	Ser	Leu	His	Tyr	Ala	Trp	Lys
	1280					1285					1290			
Thr	Met	Ala	Met	Val	Leu	Ser	Ile	Val	Ser	Leu	Phe	Pro	Leu	Cys
	1295					1300					1305			
Leu	Ser	Thr	Thr	Ser	Gln	Lys	Thr	Thr	Trp	Leu	Pro	Val	Leu	Leu
	1310					1315					1320			
Gly	Ser	Leu	Gly	Cys	Lys	Pro	Leu	Thr	Met	Phe	Leu	Ile	Ala	Glu
	1325					1330					1335			
Asn	Lys	Ile	Trp	Gly	Arg	Lys	Ser	Trp	Pro	Leu	Asn	Glu	Gly	Ile
	1340					1345					1350			
Met	Ala	Val	Gly	Ile	Val	Ser	Ile	Leu	Leu	Ser	Ser	Leu	Leu	Lys
	1355					1360					1365			
Asn	Asp	Val	Pro	Leu	Ala	Gly	Pro	Leu	Ile	Ala	Gly	Gly	Met	Leu
	1370					1375					1380			
Ile	Ala	Cys	Tyr	Val	Ile	Ser	Gly	Ser	Ser	Ala	Asp	Leu	Ser	Leu
	1385					1390					1395			
Glu	Lys	Ala	Ala	Glu	Val	Ser	Trp	Glu	Glu	Glu	Ala	Glu	His	Ser
	1400					1405					1410			
Gly	Ala	Ser	His	Asn	Ile	Leu	Val	Glu	Val	Gln	Asp	Asp	Gly	Thr
	1415					1420					1425			

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Met	Lys	Ile	Lys	Asp	Glu	Glu	Arg	Asp	Asp	Thr	Leu	Thr	Ile	Leu
	1430					1435					1440			
Leu	Lys	Ala	Thr	Leu	Leu	Ala	Val	Ser	Gly	Val	Tyr	Pro	Leu	Ser
	1445					1450					1455			
Ile	Pro	Ala	Thr	Leu	Phe	Val	Trp	Tyr	Phe	Trp	Gln	Lys	Lys	Lys
	1460					1465					1470			
Gln	Arg	Ser	Gly	Val	Leu	Trp	Asp	Thr	Pro	Ser	Pro	Pro	Glu	Val
	1475					1480					1485			
Glu	Arg	Ala	Val	Leu	Asp	Asp	Gly	Ile	Tyr	Arg	Ile	Met	Gln	Arg
	1490					1495					1500			
Gly	Leu	Leu	Gly	Arg	Ser	Gln	Val	Gly	Val	Gly	Val	Phe	Gln	Glu
	1505					1510					1515			
Asn	Val	Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ala	Val	Leu
	1520					1525					1530			
Met	Tyr	Gln	Gly	Lys	Arg	Leu	Glu	Pro	Ser	Trp	Ala	Ser	Val	Lys
	1535					1540					1545			
Lys	Asp	Leu	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Arg	Leu	Gln	Gly	Ser
	1550					1555					1560			
Trp	Asn	Thr	Gly	Glu	Glu	Val	Gln	Val	Ile	Ala	Val	Glu	Pro	Gly
	1565					1570					1575			
Lys	Asn	Pro	Lys	Asn	Val	Gln	Thr	Ala	Pro	Gly	Thr	Phe	Lys	Thr
	1580					1585					1590			
Pro	Glu	Gly	Glu	Val	Gly	Ala	Ile	Ala	Leu	Asp	Phe	Lys	Pro	Gly
	1595					1600					1605			
Thr	Ser	Gly	Ser	Pro	Ile	Val	Asn	Arg	Glu	Gly	Lys	Ile	Val	Gly
	1610					1615					1620			
Leu	Tyr	Gly	Asn	Gly	Val	Val	Thr	Thr	Ser	Gly	Thr	Tyr	Val	Ser
	1625					1630					1635			
Ala	Ile	Ala	Gln	Ala	Lys	Ala	Ser	Gln	Glu	Gly	Pro	Leu	Pro	Glu
	1640					1645					1650			
Ile	Glu	Asp	Glu	Val	Phe	Arg	Lys	Arg	Asn	Leu	Thr	Ile	Met	Asp
	1655					1660					1665			
Leu	His	Pro	Gly	Ser	Gly	Lys	Thr	Arg	Arg	Tyr	Leu	Pro	Ala	Ile
	1670					1675					1680			

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Val	Arg	Glu	Ala	Ile	Lys	Arg	Lys	Leu	Arg	Thr	Leu	Ile	Leu	Ala
	1685					1690					1695			
Pro	Thr	Arg	Val	Val	Ala	Ser	Glu	Met	Ala	Glu	Ala	Leu	Lys	Gly
	1700					1705					1710			
Met	Pro	Ile	Arg	Tyr	Gln	Thr	Thr	Ala	Val	Lys	Ser	Glu	His	Thr
	1715					1720					1725			
Gly	Lys	Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Met
	1730					1735					1740			
Arg	Leu	Leu	Ser	Pro	Val	Arg	Val	Pro	Asn	Tyr	Asn	Met	Ile	Ile
	1745					1750					1755			
Met	Asp	Glu	Ala	His	Phe	Thr	Asp	Pro	Ser	Ser	Ile	Ala	Ala	Arg
	1760					1765					1770			
Gly	Tyr	Ile	Ser	Thr	Arg	Val	Gly	Met	Gly	Glu	Ala	Ala	Ala	Ile
	1775					1780					1785			
Phe	Met	Thr	Ala	Thr	Pro	Pro	Gly	Ser	Val	Glu	Ala	Phe	Pro	Gln
	1790					1795					1800			
Ser	Asn	Ala	Val	Ile	Gln	Asp	Glu	Glu	Arg	Asp	Ile	Pro	Glu	Arg
	1805					1810					1815			
Ser	Trp	Asn	Ser	Gly	Tyr	Glu	Trp	Ile	Thr	Asp	Phe	Pro	Gly	Lys
	1820					1825					1830			
Thr	Val	Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala
	1835					1840					1845			
Asn	Cys	Leu	Arg	Lys	Asn	Gly	Lys	Arg	Val	Ile	Gln	Leu	Ser	Arg
	1850					1855					1860			
Lys	Thr	Phe	Asp	Thr	Glu	Tyr	Gln	Lys	Thr	Lys	Asn	Asn	Asp	Trp
	1865					1870					1875			
Asp	Tyr	Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe
	1880					1885					1890			
Arg	Ala	Asp	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Leu	Lys	Pro	Val
	1895					1900					1905			
Ile	Leu	Lys	Asp	Gly	Pro	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Met
	1910					1915					1920			
Pro	Val	Thr	Val	Ala	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Ile	Gly
	1925					1930					1935			

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Arg	Asn 1940	His	Asn	Lys	Glu	Gly 1945	Asp	Gln	Tyr	Ile	Tyr 1950	Met	Gly	Gln
Pro	Leu 1955	Asn	Asn	Asp	Glu	Asp 1960	His	Ala	His	Trp	Thr 1965	Glu	Ala	Lys
Met	Leu 1970	Leu	Asp	Asn	Ile	Asn 1975	Thr	Pro	Glu	Gly	Ile 1980	Ile	Pro	Ala
Leu	Phe 1985	Glu	Pro	Glu	Arg	Glu 1990	Lys	Ser	Ala	Ala	Ile 1995	Asp	Gly	Glu
Tyr	Arg 2000	Leu	Arg	Gly	Glu	Ala 2005	Arg	Lys	Thr	Phe	Val 2010	Glu	Leu	Met
Arg	Arg 2015	Gly	Asp	Leu	Pro	Val 2020	Trp	Leu	Ser	Tyr	Lys 2025	Val	Ala	Ser
Glu	Gly 2030	Phe	Gln	Tyr	Ser	Asp 2035	Arg	Arg	Trp	Cys	Phe 2040	Asp	Gly	Glu
Arg	Asn 2045	Asn	Gln	Val	Leu	Glu 2050	Glu	Asn	Met	Asp	Val 2055	Glu	Ile	Trp
Thr	Lys 2060	Glu	Gly	Glu	Arg	Lys 2065	Lys	Leu	Arg	Pro	Arg 2070	Trp	Leu	Asp
Ala	Arg 2075	Thr	Tyr	Ser	Asp	Pro 2080	Leu	Ala	Leu	Arg	Glu 2085	Phe	Lys	Glu
Phe	Ala 2090	Ala	Gly	Arg	Arg	Ser 2095	Val	Ser	Gly	Asp	Leu 2100	Ile	Leu	Glu
Ile	Gly 2105	Lys	Leu	Pro	Gln	His 2110	Leu	Thr	Gln	Arg	Ala 2115	Gln	Asn	Ala
Leu	Asp 2120	Asn	Leu	Val	Met	Leu 2125	His	Asn	Ser	Glu	Gln 2130	Gly	Gly	Arg
Ala	Tyr 2135	Arg	His	Ala	Met	Glu 2140	Glu	Leu	Pro	Asp	Thr 2145	Ile	Glu	Thr
Leu	Met 2150	Leu	Leu	Ala	Leu	Ile 2155	Ala	Val	Leu	Thr	Gly 2160	Gly	Val	Thr
Leu	Phe 2165	Phe	Leu	Ser	Gly	Lys 2170	Gly	Leu	Gly	Lys	Thr 2175	Ser	Ile	Gly
Leu	Leu 2180	Cys	Val	Met	Ala	Ser 2185	Ser	Val	Leu	Leu	Trp 2190	Met	Ala	Ser

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Val	Glu	Pro	His	Trp	Ile	Ala	Ala	Ser	Ile	Ile	Leu	Glu	Phe	Phe
	2195					2200					2205			
Leu	Met	Val	Leu	Leu	Ile	Pro	Glu	Pro	Asp	Arg	Gln	Arg	Thr	Pro
	2210					2215					2220			
Gln	Asp	Asn	Gln	Leu	Ala	Tyr	Val	Val	Ile	Gly	Leu	Leu	Phe	Met
	2225					2230					2235			
Ile	Leu	Thr	Val	Ala	Ala	Asn	Glu	Met	Gly	Leu	Leu	Glu	Thr	Thr
	2240					2245					2250			
Lys	Lys	Asp	Leu	Gly	Ile	Gly	His	Val	Ala	Val	Glu	Asn	His	His
	2255					2260					2265			
His	Ala	Ala	Met	Leu	Asp	Val	Asp	Leu	His	Pro	Ala	Ser	Ala	Trp
	2270					2275					2280			
Thr	Leu	Tyr	Ala	Val	Ala	Thr	Thr	Ile	Ile	Thr	Pro	Met	Met	Arg
	2285					2290					2295			
His	Thr	Ile	Glu	Asn	Thr	Thr	Ala	Asn	Ile	Ser	Leu	Thr	Ala	Ile
	2300					2305					2310			
Ala	Asn	Gln	Ala	Ala	Ile	Leu	Met	Gly	Leu	Asp	Lys	Gly	Trp	Pro
	2315					2320					2325			
Ile	Ser	Lys	Met	Asp	Ile	Gly	Val	Pro	Leu	Leu	Ala	Leu	Gly	Cys
	2330					2335					2340			
Tyr	Ser	Gln	Val	Asn	Pro	Leu	Thr	Leu	Xaa	Ala	Ala	Val	Leu	Met
	2345					2350					2355			
Leu	Xaa	Ala	His	Tyr	Ala	Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys
	2360					2365					2370			
Ala	Thr	Arg	Glu	Ala	Gln	Lys	Arg	Thr	Ala	Ala	Gly	Ile	Met	Lys
	2375					2380					2385			
Asn	Pro	Thr	Ile	Asp	Gly	Ile	Val	Ala	Ile	Asp	Leu	Asp	Pro	Val
	2390					2395					2400			
Val	Tyr	Asp	Ala	Lys	Phe	Glu	Lys	Gln	Leu	Gly	Gln	Ile	Met	Leu
	2405					2410					2415			
Leu	Ile	Leu	Cys	Thr	Ser	Gln	Ile	Leu	Leu	Met	Arg	Thr	Thr	Trp
	2420					2425					2430			
Ala	Leu	Cys	Glu	Ser	Ile	Thr	Leu	Ala	Thr	Gly	Pro	Leu	Thr	Thr
	2435					2440					2445			

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Leu	Trp	Glu	Gly	Ser	Pro	Gly	Lys	Phe	Trp	Asn	Thr	Thr	Ile	Ala
2450						2455					2460			
Val	Ser	Met	Ala	Asn	Ile	Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala
2465						2470					2475			
Gly	Leu	Ala	Phe	Ser	Leu	Met	Lys	Ser	Leu	Gly	Gly	Gly	Arg	Arg
2480						2485					2490			
Gly	Thr	Gly	Ala	Gln	Gly	Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Arg
2495						2500					2505			
Gln	Leu	Asn	Gln	Leu	Ser	Lys	Ser	Glu	Phe	Asn	Thr	Tyr	Lys	Arg
2510						2515					2520			
Ser	Gly	Ile	Met	Glu	Val	Asp	Arg	Ser	Glu	Ala	Lys	Glu	Gly	Leu
2525						2530					2535			
Lys	Arg	Gly	Glu	Thr	Thr	Lys	His	Ala	Val	Ser	Arg	Gly	Thr	Ala
2540						2545					2550			
Lys	Leu	Arg	Trp	Phe	Val	Glu	Arg	Asn	Leu	Val	Lys	Pro	Glu	Gly
2555						2560					2565			
Lys	Val	Ile	Asp	Leu	Gly	Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr
2570						2575					2580			
Cys	Ala	Gly	Leu	Lys	Lys	Val	Thr	Glu	Val	Lys	Gly	Tyr	Thr	Lys
2585						2590					2595			
Gly	Gly	Pro	Gly	His	Glu	Glu	Pro	Ile	Pro	Met	Ala	Thr	Tyr	Gly
2600						2605					2610			
Trp	Asn	Leu	Val	Lys	Leu	His	Ser	Gly	Lys	Asp	Val	Phe	Phe	Ile
2615						2620					2625			
Pro	Pro	Glu	Lys	Cys	Asp	Thr	Leu	Leu	Cys	Asp	Ile	Gly	Glu	Ser
2630						2635					2640			
Ser	Pro	Asn	Pro	Thr	Ile	Glu	Glu	Gly	Arg	Thr	Leu	Arg	Val	Leu
2645						2650					2655			
Lys	Met	Val	Glu	Pro	Trp	Leu	Arg	Gly	Asn	Gln	Phe	Cys	Ile	Lys
2660						2665					2670			
Ile	Leu	Asn	Pro	Tyr	Met	Pro	Ser	Val	Val	Glu	Thr	Leu	Glu	Gln
2675						2680					2685			
Met	Gln	Arg	Lys	His	Gly	Gly	Met	Leu	Val	Arg	Asn	Pro	Leu	Ser
2690						2695					2700			

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Arg	Asn	Ser	Thr	His	Glu	Met	Tyr	Trp	Val	Ser	Cys	Gly	Thr	Gly
	2705					2710					2715			
Asn	Ile	Val	Ser	Ala	Val	Asn	Met	Thr	Ser	Arg	Met	Leu	Leu	Asn
	2720					2725					2730			
Arg	Phe	Thr	Met	Ala	His	Arg	Lys	Pro	Thr	Tyr	Glu	Arg	Asp	Val
	2735					2740					2745			
Asp	Leu	Gly	Ala	Gly	Thr	Arg	His	Val	Ala	Val	Glu	Pro	Glu	Val
	2750					2755					2760			
Ala	Asn	Leu	Asp	Ile	Ile	Gly	Gln	Arg	Ile	Glu	Asn	Ile	Lys	His
	2765					2770					2775			
Glu	His	Lys	Ser	Thr	Trp	His	Tyr	Asp	Glu	Asp	Asn	Pro	Tyr	Lys
	2780					2785					2790			
Thr	Trp	Ala	Tyr	His	Gly	Ser	Tyr	Glu	Val	Lys	Pro	Ser	Gly	Ser
	2795					2800					2805			
Ala	Ser	Ser	Met	Val	Asn	Gly	Val	Val	Lys	Leu	Leu	Thr	Lys	Pro
	2810					2815					2820			
Trp	Asp	Val	Ile	Pro	Met	Val	Thr	Gln	Ile	Ala	Met	Thr	Asp	Thr
	2825					2830					2835			
Thr	Pro	Phe	Gly	Gln	Gln	Arg	Val	Phe	Lys	Glu	Lys	Val	Asp	Thr
	2840					2845					2850			
Arg	Thr	Pro	Lys	Ala	Lys	Arg	Gly	Thr	Ala	Gln	Ile	Met	Glu	Val
	2855					2860					2865			
Thr	Ala	Arg	Trp	Leu	Trp	Gly	Phe	Leu	Ser	Arg	Asn	Lys	Lys	Pro
	2870					2875					2880			
Arg	Ile	Cys	Thr	Arg	Glu	Glu	Phe	Thr	Arg	Lys	Val	Arg	Ser	Asn
	2885					2890					2895			
Ala	Ala	Ile	Gly	Ala	Val	Phe	Val	Asp	Glu	Asn	Gln	Trp	Asn	Ser
	2900					2905					2910			
Ala	Lys	Glu	Ala	Val	Glu	Asp	Asp	Arg	Phe	Trp	Asp	Leu	Val	His
	2915					2920					2925			
Arg	Glu	Arg	Glu	Leu	His	Lys	Gln	Gly	Lys	Cys	Ala	Thr	Cys	Val
	2930					2935					2940			
Tyr	Asn	Met	Met	Gly	Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly
	2945					2950					2955			

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Lys	Ala	Lys	Gly	Ser	Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala
2960						2965					2970			
Arg	Phe	Leu	Glu	Phe	Glu	Ala	Leu	Gly	Phe	Met	Asn	Glu	Asp	His
2975						2980					2985			
Trp	Phe	Ser	Arg	Glu	Asn	Ser	Leu	Ser	Gly	Val	Glu	Gly	Glu	Gly
2990						2995					3000			
Leu	His	Lys	Leu	Gly	Tyr	Ile	Leu	Arg	Asp	Ile	Ser	Lys	Ile	Pro
3005						3010					3015			
Gly	Gly	Asn	Met	Tyr	Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg
3020						3025					3030			
Ile	Thr	Glu	Asp	Asp	Leu	Gln	Asn	Glu	Ala	Lys	Ile	Thr	Asp	Ile
3035						3040					3045			
Met	Glu	Pro	Glu	His	Ala	Leu	Leu	Ala	Lys	Ser	Ile	Phe	Lys	Leu
3050						3055					3060			
Thr	Tyr	Gln	Asn	Lys	Val	Val	Arg	Val	Gln	Arg	Pro	Ala	Lys	Asn
3065						3070					3075			
Gly	Thr	Val	Met	Asp	Val	Ile	Ser	Arg	Arg	Asp	Gln	Arg	Gly	Ser
3080						3085					3090			
Gly	Gln	Val	Gly	Thr	Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu
3095						3100					3105			
Ala	Gln	Leu	Ile	Arg	Gln	Met	Glu	Ser	Glu	Gly	Ile	Phe	Ser	Pro
3110						3115					3120			
Asn	Glu	Leu	Glu	Thr	Pro	Asn	Leu	Ala	Glu	Arg	Val	Leu	Asp	Trp
3125						3130					3135			
Leu	Glu	Lys	Tyr	Gly	Val	Glu	Arg	Leu	Lys	Arg	Met	Ala	Ile	Ser
3140						3145					3150			
Gly	Asp	Asp	Cys	Val	Val	Lys	Pro	Ile	Asp	Asp	Arg	Phe	Ala	Thr
3155						3160					3165			
Ala	Leu	Thr	Ala	Leu	Asn	Asp	Met	Gly	Lys	Val	Arg	Lys	Asp	Ile
3170						3175					3180			
Pro	Gln	Trp	Glu	Pro	Ser	Lys	Gly	Trp	Asn	Asp	Trp	Gln	Gln	Val
3185						3190					3195			
Pro	Phe	Cys	Ser	His	His	Phe	His	Gln	Leu	Ile	Met	Lys	Asp	Gly
3200						3205					3210			

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Arg Glu Ile Val Val Pro Cys Arg Asn Gln Asp Glu Leu Val Gly
3215 3220 3225

Arg Ala Arg Val Ser Gln Gly Ala Gly Trp Ser Leu Arg Glu Thr
3230 3235 3240

Ala Cys Leu Gly Lys Ser Tyr Ala Gln Met Trp Gln Leu Met Tyr
3245 3250 3255

Phe His Arg Arg Asp Leu Arg Leu Ala Ala Asn Ala Ile Cys Ser
3260 3265 3270

Ala Val Pro Val Asp Trp Val Pro Thr Ser Arg Thr Thr Trp Ser
3275 3280 3285

Ile His Ala His His Gln Trp Met Thr Thr Glu Asp Met Leu Ser
3290 3295 3300

Val Trp Asn Arg Val Trp Ile Glu Glu Asn Pro Trp Met Glu Asp
3305 3310 3315

Lys Thr Arg Ile Ser Ser Trp Glu Asp Val Pro Tyr Leu Gly Lys
3320 3325 3330

Arg Glu Asp Gln Trp Cys Gly Ser Leu Ile Gly Leu Thr Ala Arg
3335 3340 3345

Ala Thr Trp Ala Thr Asn Ile Gln Val Ala Ile Asn Gln Val Arg
3350 3355 3360

Arg Leu Ile Gly Asn Glu Asn Tyr Ser Asp Tyr Met Thr Ser Met
3365 3370 3375

Lys Arg Phe Lys Asn Glu Ser Glu Pro Glu Gly Ala Leu Trp
3380 3385 3390

<210> 2
<211> 3391
<212> PRT
<213> Dengue virus type 2

<220>
<221> VARIANT
<222> (398)..(398)
<223> Xaa stands for Lys or Met

<220>
<221> VARIANT
<222> (484)..(484)
<223> Xaa stands for Lys or Arg

<400> 2

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

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Arg Asp Phe Val Glu Gly Val Ser Gly Gly Ser Trp Val Asp Ile Val
290 295 300

Leu Glu His Gly Ser Cys Val Thr Thr Met Ala Lys Asn Lys Pro Thr
305 310 315 320

Leu Asp Phe Glu Leu Ile Lys Thr Glu Ala Lys Gln Pro Ala Thr Leu
325 330 335

Arg Lys Tyr Cys Ile Glu Ala Lys Leu Thr Asn Thr Thr Thr Glu Ser
340 345 350

Arg Cys Pro Thr Gln Gly Glu Pro Ser Leu Lys Glu Glu Gln Asp Lys
355 360 365

Arg Phe Val Cys Lys His Ser Met Val Asp Arg Gly Trp Gly Asn Gly
370 375 380

Cys Gly Leu Phe Gly Lys Gly Gly Ile Val Thr Cys Ala Xaa Phe Thr
385 390 395 400

Cys Lys Lys Asn Met Glu Gly Lys Ile Val Gln Pro Glu Asn Leu Glu
405 410 415

Tyr Thr Ile Val Val Thr Pro His Ser Gly Glu Glu His Ala Val Gly
420 425 430

Asn Asp Thr Gly Lys His Gly Lys Glu Ile Lys Val Thr Pro Gln Ser
435 440 445

Ser Ile Thr Glu Ala Glu Leu Thr Gly Tyr Gly Thr Val Thr Met Glu
450 455 460

Cys Ser Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Val Leu Leu Gln
465 470 475 480

Met Glu Asn Xaa Ala Trp Leu Val His Arg Gln Trp Phe Leu Asp Leu
485 490 495

Pro Leu Pro Trp Leu Pro Gly Ala Asp Lys Gln Glu Ser Asn Trp Ile
500 505 510

Gln Lys Glu Thr Leu Val Thr Phe Lys Asn Pro His Ala Lys Lys Gln
515 520 525

Asp Val Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu
530 535 540

Thr Gly Ala Thr Glu Ile Gln Met Ser Ser Gly Asn Leu Leu Phe Thr
545 550 555 560

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Gly His Leu Lys Cys Arg Leu Arg Met Asp Lys Leu Gln Leu Lys Gly
565 570 575

Met Ser Tyr Ser Met Cys Thr Gly Lys Phe Lys Val Val Lys Glu Ile
580 585 590

Ala Glu Thr Gln His Gly Thr Ile Val Ile Arg Val Gln Tyr Glu Gly
595 600 605

Asp Gly Ser Pro Cys Lys Ile Pro Phe Glu Ile Met Asp Leu Glu Lys
610 615 620

Arg Tyr Val Leu Gly Arg Leu Ile Thr Val Asn Pro Ile Val Thr Glu
625 630 635 640

Lys Asp Ser Pro Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Asp Ser
645 650 655

Tyr Ile Ile Ile Gly Val Glu Pro Gly Gln Leu Lys Leu Asn Trp Phe
660 665 670

Lys Lys Gly Ser Ser Ile Gly Gln Met Phe Glu Thr Thr Met Arg Gly
675 680 685

Ala Lys Arg Met Ala Ile Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser
690 695 700

Leu Gly Gly Val Phe Thr Ser Ile Gly Lys Ala Leu His Gln Val Phe
705 710 715 720

Gly Ala Ile Tyr Gly Ala Ala Phe Ser Gly Val Ser Trp Thr Met Lys
725 730 735

Ile Leu Ile Gly Val Ile Ile Thr Trp Ile Gly Met Asn Ser Arg Ser
740 745 750

Thr Ser Leu Ser Val Ser Leu Val Leu Val Gly Ile Val Thr Leu Tyr
755 760 765

Leu Gly Val Met Val Gln Ala Asp Ser Gly Cys Val Val Ser Trp Lys
770 775 780

Asn Lys Glu Leu Lys Cys Gly Ser Gly Ile Phe Ile Thr Asp Asn Val
785 790 795 800

His Thr Trp Thr Glu Gln Tyr Lys Phe Gln Pro Glu Ser Pro Ser Lys
805 810 815

Leu Ala Ser Ala Ile Gln Lys Ala Gln Glu Glu Gly Ile Cys Gly Ile
820 825 830

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Arg Ser Val Thr Arg Leu Glu Asn Leu Met Trp Lys Gln Ile Thr Pro
835 840 845

Glu Leu Asn His Ile Leu Ala Glu Asn Glu Val Lys Leu Thr Ile Met
850 855 860

Thr Gly Asp Ile Lys Gly Ile Met Gln Ala Gly Lys Arg Ser Leu Arg
865 870 875 880

Pro Gln Pro Thr Glu Leu Lys Tyr Ser Trp Lys Thr Trp Gly Lys Ala
885 890 895

Lys Met Leu Ser Thr Glu Ser Tyr Asn Gln Thr Phe Leu Ile Asp Gly
900 905 910

Pro Glu Thr Ala Glu Cys Pro Asn Thr Asn Arg Ala Trp Asn Ser Leu
915 920 925

Glu Val Glu Asp Tyr Gly Phe Gly Val Phe Thr Thr Asn Ile Trp Leu
930 935 940

Lys Leu Lys Glu Lys Gln Asp Ala Phe Cys Asp Ser Lys Leu Met Ser
945 950 955 960

Ala Ala Ile Lys Asp Asn Arg Ala Val His Ala Asp Met Gly Tyr Trp
965 970 975

Ile Glu Ser Ala Leu Asn Asp Thr Trp Lys Ile Glu Lys Ala Ser Phe
980 985 990

Ile Glu Val Lys Asn Cys His Trp Pro Lys Ser His Thr Leu Trp Ser
995 1000 1005

Asn Gly Val Leu Glu Ser Glu Met Ile Ile Pro Lys Asn Leu Ala
1010 1015 1020

Gly Pro Val Ser Gln His Asn Tyr Arg Pro Gly Tyr His Thr Gln
1025 1030 1035

Val Ala Gly Pro Trp His Leu Gly Lys Leu Glu Met Asp Phe Asp
1040 1045 1050

Phe Cys Asp Gly Thr Thr Val Ile Val Thr Glu Asp Cys Gly Asn
1055 1060 1065

Arg Gly Pro Ser Leu Arg Thr Thr Thr Ala Ser Gly Lys Leu Ile
1070 1075 1080

Thr Glu Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro Leu Arg Tyr
1085 1090 1095

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Arg	Gly 1100	Glu	Asp	Gly	Cys	Trp 1105	Tyr	Gly	Met	Glu	Ile 1110	Arg	Pro	Leu
Lys	Glu 1115	Lys	Glu	Glu	Asn	Leu 1120	Val	Asn	Ser	Leu	Val 1125	Thr	Ala	Gly
His	Gly 1130	Gln	Val	Asp	Asn	Phe 1135	Ser	Leu	Gly	Val	Leu 1140	Gly	Met	Ala
Leu	Phe 1145	Leu	Glu	Glu	Met	Leu 1150	Arg	Thr	Arg	Val	Gly 1155	Thr	Lys	His
Ala	Ile 1160	Leu	Leu	Val	Ala	Val 1165	Ser	Phe	Val	Thr	Leu 1170	Ile	Thr	Gly
Asn	Met 1175	Ser	Phe	Lys	Asp	Leu 1180	Gly	Arg	Val	Val	Val 1185	Met	Val	Gly
Ala	Thr 1190	Met	Ala	Asp	Asp	Ile 1195	Gly	Met	Gly	Val	Thr 1200	Tyr	Leu	Ala
Leu	Leu 1205	Ala	Ala	Phe	Lys	Val 1210	Arg	Pro	Thr	Phe	Ala 1215	Ala	Gly	Leu
Leu	Leu 1220	Arg	Lys	Leu	Thr	Ser 1225	Lys	Glu	Leu	Met	Met 1230	Thr	Thr	Ile
Gly	Ile 1235	Val	Leu	Leu	Ser	Gln 1240	Ser	Thr	Ile	Pro	Glu 1245	Thr	Val	Leu
Glu	Leu 1250	Thr	Asp	Ala	Leu	Ala 1255	Leu	Gly	Met	Met	Val 1260	Leu	Lys	Ile
Val	Arg 1265	Asn	Met	Glu	Lys	Tyr 1270	Gln	Leu	Ala	Val	Thr 1275	Ile	Met	Ala
Ile	Leu 1280	Cys	Val	Pro	Asn	Ala 1285	Val	Ile	Leu	Gln	Asn 1290	Ala	Trp	Lys
Val	Ser 1295	Cys	Thr	Ile	Leu	Ala 1300	Val	Val	Ser	Val	Ser 1305	Pro	Leu	Leu
Leu	Thr 1310	Ser	Ser	Gln	Gln	Lys 1315	Thr	Asp	Trp	Ile	Pro 1320	Leu	Ala	Leu
Thr	Ile 1325	Lys	Gly	Leu	Asn	Pro 1330	Thr	Ala	Ile	Phe	Leu 1335	Thr	Thr	Leu
Ser	Arg 1340	Thr	Asn	Lys	Lys	Arg 1345	Ser	Trp	Pro	Leu	Asn 1350	Glu	Ala	Ile

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Met	Ala	Val	Gly	Met	Val	Ser	Ile	Leu	Ala	Ser	Ser	Leu	Leu	Lys
	1355					1360					1365			
Asn	Asp	Ile	Pro	Met	Thr	Gly	Pro	Leu	Val	Ala	Gly	Gly	Leu	Leu
	1370					1375					1380			
Thr	Val	Cys	Tyr	Val	Leu	Thr	Gly	Arg	Ser	Ala	Asp	Leu	Glu	Leu
	1385					1390					1395			
Glu	Arg	Ala	Thr	Asp	Val	Lys	Trp	Glu	Asp	Gln	Ala	Glu	Ile	Ser
	1400					1405					1410			
Gly	Ser	Ser	Pro	Ile	Leu	Ser	Ile	Thr	Ile	Ser	Glu	Asp	Gly	Ser
	1415					1420					1425			
Met	Ser	Ile	Lys	Asn	Glu	Glu	Glu	Glu	Gln	Thr	Leu	Thr	Ile	Leu
	1430					1435					1440			
Ile	Arg	Thr	Gly	Leu	Leu	Val	Ile	Ser	Gly	Leu	Phe	Pro	Ile	Ser
	1445					1450					1455			
Ile	Pro	Val	Thr	Ala	Ala	Ala	Trp	Tyr	Leu	Trp	Glu	Val	Lys	Lys
	1460					1465					1470			
Gln	Arg	Ala	Gly	Val	Leu	Trp	Asp	Val	Pro	Ser	Pro	Pro	Pro	Met
	1475					1480					1485			
Gly	Lys	Ala	Glu	Leu	Glu	Asp	Gly	Ala	Tyr	Arg	Ile	Lys	Gln	Lys
	1490					1495					1500			
Gly	Ile	Leu	Gly	Tyr	Ser	Gln	Ile	Gly	Ala	Gly	Val	Tyr	Lys	Glu
	1505					1510					1515			
Gly	Thr	Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ala	Val	Leu
	1520					1525					1530			
Met	His	Lys	Gly	Lys	Arg	Ile	Glu	Pro	Ser	Trp	Ala	Asp	Val	Lys
	1535					1540					1545			
Lys	Asp	Leu	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Lys	Leu	Glu	Gly	Glu
	1550					1555					1560			
Trp	Lys	Glu	Gly	Glu	Glu	Val	Gln	Val	Leu	Ala	Leu	Glu	Pro	Gly
	1565					1570					1575			
Lys	Asn	Pro	Arg	Ala	Val	Gln	Thr	Lys	Pro	Gly	Leu	Phe	Lys	Thr
	1580					1585					1590			
Asn	Thr	Gly	Thr	Ile	Gly	Ala	Val	Ser	Leu	Asp	Phe	Ser	Pro	Gly
	1595					1600					1605			

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Thr	Ser	Gly	Ser	Pro	Ile	Ile	Asp	Lys	Lys	Gly	Lys	Val	Val	Gly
	1610					1615					1620			
Leu	Tyr	Gly	Asn	Gly	Val	Val	Thr	Arg	Ser	Gly	Ala	Tyr	Val	Ser
	1625					1630					1635			
Ala	Ile	Ala	Gln	Thr	Glu	Lys	Ser	Ile	Glu	Asp	Asn	Pro	Glu	Ile
	1640					1645					1650			
Glu	Asp	Asp	Ile	Phe	Arg	Lys	Arg	Arg	Leu	Thr	Ile	Met	Asp	Leu
	1655					1660					1665			
His	Pro	Gly	Ala	Gly	Lys	Thr	Lys	Arg	Tyr	Leu	Pro	Ala	Ile	Val
	1670					1675					1680			
Arg	Glu	Ala	Ile	Lys	Arg	Gly	Leu	Arg	Thr	Leu	Ile	Leu	Ala	Pro
	1685					1690					1695			
Thr	Arg	Val	Val	Ala	Ala	Glu	Met	Glu	Glu	Ala	Leu	Arg	Gly	Leu
	1700					1705					1710			
Pro	Ile	Arg	Tyr	Gln	Thr	Pro	Ala	Ile	Arg	Ala	Glu	His	Thr	Gly
	1715					1720					1725			
Arg	Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Met	Arg
	1730					1735					1740			
Leu	Leu	Ser	Pro	Val	Arg	Val	Pro	Asn	Tyr	Asn	Leu	Ile	Ile	Met
	1745					1750					1755			
Asp	Glu	Ala	His	Phe	Thr	Asp	Pro	Ala	Ser	Ile	Ala	Ala	Arg	Gly
	1760					1765					1770			
Tyr	Ile	Ser	Thr	Arg	Val	Glu	Met	Gly	Glu	Ala	Ala	Gly	Ile	Phe
	1775					1780					1785			
Met	Thr	Ala	Thr	Pro	Pro	Gly	Ser	Arg	Asp	Pro	Phe	Pro	Gln	Ser
	1790					1795					1800			
Asn	Ala	Pro	Ile	Ile	Asp	Glu	Glu	Arg	Glu	Ile	Pro	Glu	Arg	Ser
	1805					1810					1815			
Trp	Asn	Ser	Gly	His	Glu	Trp	Val	Thr	Asp	Phe	Lys	Gly	Lys	Thr
	1820					1825					1830			
Val	Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala	Ala
	1835					1840					1845			
Cys	Leu	Arg	Lys	Asn	Gly	Lys	Lys	Val	Ile	Gln	Leu	Ser	Arg	Lys
	1850					1855					1860			

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Thr	Phe	Asp	Ser	Glu	Tyr	Val	Lys	Thr	Arg	Thr	Asn	Asp	Trp	Asp
	1865					1870					1875			
Phe	Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe	Lys
	1880					1885					1890			
Ala	Glu	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Met	Lys	Pro	Val	Ile
	1895					1900					1905			
Leu	Thr	Asp	Gly	Glu	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Met	Pro
	1910					1915					1920			
Val	Thr	His	Ser	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Ile	Gly	Arg
	1925					1930					1935			
Asn	Pro	Lys	Asn	Glu	Asn	Asp	Gln	Tyr	Ile	Tyr	Met	Gly	Glu	Pro
	1940					1945					1950			
Leu	Glu	Asn	Asp	Glu	Asp	Cys	Ala	His	Trp	Lys	Glu	Ala	Lys	Met
	1955					1960					1965			
Leu	Leu	Asp	Asn	Ile	Asn	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Ser	Met
	1970					1975					1980			
Phe	Glu	Pro	Glu	Arg	Glu	Lys	Val	Asp	Ala	Ile	Asp	Gly	Glu	Tyr
	1985					1990					1995			
Arg	Leu	Arg	Gly	Glu	Ala	Arg	Lys	Thr	Phe	Val	Asp	Leu	Met	Arg
	2000					2005					2010			
Arg	Gly	Asp	Leu	Pro	Val	Trp	Leu	Ala	Tyr	Lys	Val	Ala	Ala	Glu
	2015					2020					2025			
Gly	Ile	Asn	Tyr	Ala	Asp	Arg	Arg	Trp	Cys	Phe	Asp	Gly	Ile	Lys
	2030					2035					2040			
Asn	Asn	Gln	Ile	Leu	Glu	Glu	Asn	Val	Glu	Val	Glu	Ile	Trp	Thr
	2045					2050					2055			
Lys	Glu	Gly	Glu	Arg	Lys	Lys	Leu	Lys	Pro	Arg	Trp	Leu	Asp	Ala
	2060					2065					2070			
Arg	Ile	Tyr	Ser	Asp	Pro	Leu	Ala	Leu	Lys	Glu	Phe	Lys	Glu	Phe
	2075					2080					2085			
Ala	Ala	Gly	Arg	Lys	Ser	Leu	Thr	Leu	Asn	Leu	Ile	Thr	Glu	Met
	2090					2095					2100			
Gly	Arg	Leu	Pro	Thr	Phe	Met	Thr	Gln	Lys	Thr	Arg	Asp	Ala	Leu
	2105					2110					2115			

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Asp	Asn 2120	Leu	Ala	Val	Leu	His 2125	Thr	Ala	Glu	Ala	Gly 2130	Gly	Arg	Ala
Tyr	Asn 2135	His	Ala	Leu	Ser	Glu 2140	Leu	Pro	Glu	Thr	Leu 2145	Glu	Thr	Leu
Leu	Leu 2150	Leu	Thr	Leu	Leu	Ala 2155	Thr	Val	Thr	Gly	Gly 2160	Ile	Phe	Leu
Phe	Leu 2165	Met	Ser	Gly	Arg	Gly 2170	Ile	Gly	Lys	Met	Thr 2175	Leu	Gly	Met
Cys	Cys 2180	Ile	Ile	Thr	Ala	Ser 2185	Ile	Leu	Leu	Trp	Tyr 2190	Ala	Gln	Ile
Gln	Pro 2195	His	Trp	Ile	Ala	Ala 2200	Ser	Ile	Ile	Leu	Glu 2205	Phe	Phe	Leu
Ile	Val 2210	Leu	Leu	Ile	Pro	Glu 2215	Pro	Glu	Lys	Gln	Arg 2220	Thr	Pro	Gln
Asp	Asn 2225	Gln	Leu	Thr	Tyr	Val 2230	Val	Ile	Ala	Ile	Leu 2235	Thr	Val	Val
Ala	Ala 2240	Thr	Met	Ala	Asn	Glu 2245	Met	Gly	Phe	Leu	Glu 2250	Lys	Thr	Lys
Lys	Asp 2255	Leu	Gly	Leu	Gly	Ser 2260	Ile	Ala	Thr	Gln	Gln 2265	Pro	Glu	Ser
Asn	Ile 2270	Leu	Asp	Ile	Asp	Leu 2275	Arg	Pro	Ala	Ser	Ala 2280	Trp	Thr	Leu
Tyr	Ala 2285	Val	Ala	Thr	Thr	Phe 2290	Val	Thr	Pro	Met	Leu 2295	Arg	His	Ser
Ile	Glu 2300	Asn	Ser	Ser	Val	Asn 2305	Val	Ser	Leu	Thr	Ala 2310	Ile	Ala	Asn
Gln	Ala 2315	Thr	Val	Leu	Met	Gly 2320	Leu	Gly	Lys	Gly	Trp 2325	Pro	Leu	Ser
Lys	Met 2330	Asp	Ile	Gly	Val	Pro 2335	Leu	Leu	Ala	Ile	Gly 2340	Cys	Tyr	Ser
Gln	Val 2345	Asn	Pro	Ile	Thr	Leu 2350	Ile	Ala	Ala	Leu	Leu 2355	Leu	Leu	Val
Ala	His 2360	Tyr	Ala	Ile	Ile	Gly 2365	Pro	Gly	Leu	Gln	Ala 2370	Lys	Ala	Thr

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Arg	Glu	Ala	Gln	Lys	Arg	Ala	Ala	Ala	Gly	Ile	Met	Lys	Asn	Pro
	2375					2380					2385			
Thr	Val	Asp	Gly	Ile	Thr	Val	Ile	Asp	Leu	Asp	Pro	Ile	Pro	Tyr
	2390					2395					2400			
Asp	Pro	Lys	Phe	Glu	Lys	Gln	Leu	Gly	Gln	Val	Met	Leu	Leu	Ile
	2405					2410					2415			
Leu	Cys	Val	Thr	Gln	Val	Leu	Met	Met	Arg	Thr	Thr	Trp	Ala	Leu
	2420					2425					2430			
Cys	Glu	Ala	Leu	Thr	Leu	Ala	Thr	Gly	Pro	Ile	Ser	Thr	Leu	Trp
	2435					2440					2445			
Glu	Gly	Asn	Pro	Gly	Arg	Phe	Trp	Asn	Thr	Thr	Ile	Ala	Val	Ser
	2450					2455					2460			
Met	Ala	Asn	Ile	Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala	Gly	Leu
	2465					2470					2475			
Leu	Phe	Ser	Ile	Met	Lys	Asn	Thr	Thr	Asn	Thr	Arg	Arg	Gly	Thr
	2480					2485					2490			
Gly	Asn	Ile	Gly	Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Ser	Arg	Leu
	2495					2500					2505			
Asn	Ala	Leu	Gly	Lys	Ser	Glu	Phe	Gln	Ile	Tyr	Lys	Lys	Ser	Gly
	2510					2515					2520			
Ile	Gln	Glu	Val	Asp	Arg	Thr	Leu	Ala	Lys	Glu	Gly	Ile	Lys	Arg
	2525					2530					2535			
Gly	Glu	Thr	Asp	His	His	Ala	Val	Ser	Arg	Gly	Ser	Ala	Lys	Leu
	2540					2545					2550			
Arg	Trp	Phe	Val	Glu	Arg	Asn	Met	Val	Thr	Pro	Glu	Gly	Lys	Val
	2555					2560					2565			
Val	Asp	Leu	Gly	Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr	Cys	Gly
	2570					2575					2580			
Gly	Leu	Lys	Asn	Val	Arg	Glu	Val	Lys	Gly	Leu	Thr	Lys	Gly	Gly
	2585					2590					2595			
Pro	Gly	His	Glu	Glu	Pro	Ile	Pro	Met	Ser	Thr	Tyr	Gly	Trp	Asn
	2600					2605					2610			
Leu	Val	Arg	Leu	Gln	Ser	Gly	Val	Asp	Val	Phe	Phe	Ile	Pro	Pro
	2615					2620					2625			

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Glu	Lys	Cys	Asp	Thr	Leu	Leu	Cys	Asp	Ile	Gly	Glu	Ser	Ser	Pro
	2630					2635					2640			
Asn	Pro	Thr	Val	Glu	Ala	Gly	Arg	Thr	Leu	Arg	Val	Leu	Asn	Leu
	2645					2650					2655			
Val	Glu	Asn	Trp	Leu	Asn	Asn	Asn	Thr	Gln	Phe	Cys	Ile	Lys	Val
	2660					2665					2670			
Leu	Asn	Pro	Tyr	Met	Pro	Ser	Val	Ile	Glu	Lys	Met	Glu	Ala	Leu
	2675					2680					2685			
Gln	Arg	Lys	Tyr	Gly	Gly	Ala	Leu	Val	Arg	Asn	Pro	Leu	Ser	Arg
	2690					2695					2700			
Asn	Ser	Thr	His	Glu	Met	Tyr	Trp	Val	Ser	Asn	Ala	Ser	Gly	Asn
	2705					2710					2715			
Ile	Val	Ser	Ser	Val	Asn	Met	Ile	Ser	Arg	Met	Leu	Ile	Asn	Arg
	2720					2725					2730			
Phe	Thr	Met	Arg	His	Lys	Lys	Ala	Thr	Tyr	Glu	Pro	Asp	Val	Asp
	2735					2740					2745			
Leu	Gly	Ser	Gly	Thr	Arg	Asn	Ile	Gly	Val	Glu	Ser	Glu	Ile	Pro
	2750					2755					2760			
Asn	Leu	Asp	Ile	Ile	Gly	Lys	Arg	Ile	Glu	Lys	Ile	Lys	Gln	Glu
	2765					2770					2775			
His	Glu	Thr	Ser	Trp	His	Tyr	Asp	Gln	Asp	His	Pro	Tyr	Lys	Thr
	2780					2785					2790			
Trp	Ala	Tyr	His	Gly	Ser	Tyr	Glu	Thr	Lys	Gln	Thr	Gly	Ser	Ala
	2795					2800					2805			
Ser	Ser	Met	Val	Asn	Gly	Val	Val	Arg	Leu	Leu	Thr	Lys	Pro	Trp
	2810					2815					2820			
Asp	Val	Leu	Pro	Thr	Val	Thr	Gln	Met	Ala	Met	Thr	Asp	Thr	Thr
	2825					2830					2835			
Pro	Phe	Gly	Gln	Gln	Arg	Val	Phe	Lys	Glu	Lys	Val	Asp	Thr	Arg
	2840					2845					2850			
Thr	Gln	Glu	Pro	Lys	Glu	Gly	Thr	Lys	Lys	Leu	Met	Arg	Ile	Thr
	2855					2860					2865			
Ala	Glu	Trp	Leu	Trp	Lys	Glu	Leu	Gly	Lys	Lys	Lys	Thr	Pro	Arg
	2870					2875					2880			

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Met	Cys	Thr	Arg	Glu	Glu	Phe	Thr	Arg	Lys	Val	Arg	Ser	Asn	Ala
	2885					2890					2895			
Ala	Leu	Gly	Ala	Ile	Phe	Thr	Asp	Glu	Asn	Lys	Trp	Lys	Ser	Ala
	2900					2905					2910			
Arg	Glu	Ala	Val	Glu	Asp	Ser	Arg	Phe	Trp	Glu	Leu	Val	Asp	Lys
	2915					2920					2925			
Glu	Arg	Asn	Leu	His	Leu	Glu	Gly	Lys	Cys	Glu	Thr	Cys	Val	Tyr
	2930					2935					2940			
Asn	Met	Met	Gly	Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly	Lys
	2945					2950					2955			
Ala	Lys	Gly	Ser	Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala	Arg
	2960					2965					2970			
Phe	Leu	Glu	Phe	Glu	Ala	Leu	Gly	Phe	Leu	Asn	Glu	Asp	His	Trp
	2975					2980					2985			
Phe	Ser	Arg	Glu	Asn	Ser	Leu	Ser	Gly	Val	Glu	Gly	Glu	Gly	Leu
	2990					2995					3000			
His	Lys	Leu	Gly	Tyr	Ile	Leu	Arg	Asp	Val	Ser	Lys	Lys	Glu	Gly
	3005					3010					3015			
Gly	Ala	Met	Tyr	Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg	Ile
	3020					3025					3030			
Thr	Leu	Glu	Asp	Leu	Lys	Asn	Glu	Glu	Met	Val	Thr	Asn	His	Met
	3035					3040					3045			
Glu	Gly	Glu	His	Lys	Lys	Leu	Ala	Glu	Ala	Ile	Phe	Lys	Leu	Thr
	3050					3055					3060			
Tyr	Gln	Asn	Lys	Val	Val	Arg	Val	Gln	Arg	Pro	Thr	Pro	Arg	Gly
	3065					3070					3075			
Thr	Val	Met	Asp	Ile	Ile	Ser	Arg	Arg	Asp	Gln	Arg	Gly	Ser	Gly
	3080					3085					3090			
Gln	Val	Gly	Thr	Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu	Ala
	3095					3100					3105			
Gln	Leu	Ile	Arg	Gln	Met	Glu	Gly	Glu	Gly	Val	Phe	Lys	Asn	Ile
	3110					3115					3120			
Gln	His	Leu	Thr	Val	Thr	Glu	Glu	Val	Ala	Val	Gln	Asn	Trp	Leu
	3125					3130					3135			

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Ala	Arg	Val	Gly	Arg	Glu	Arg	Leu	Ser	Arg	Met	Ala	Ile	Ser	Gly
	3140					3145					3150			
Asp	Asp	Cys	Val	Val	Lys	Pro	Leu	Asp	Asp	Arg	Phe	Ala	Asn	Ala
	3155					3160					3165			
Leu	Thr	Ala	Leu	Asn	Asp	Met	Gly	Lys	Ile	Arg	Lys	Asp	Ile	Gln
	3170					3175					3180			
Gln	Trp	Glu	Pro	Ser	Lys	Gly	Trp	Asn	Asp	Trp	Thr	Gln	Val	Pro
	3185					3190					3195			
Phe	Cys	Ser	His	His	Phe	His	Glu	Leu	Ile	Met	Lys	Asp	Gly	Arg
	3200					3205					3210			
Val	Leu	Val	Val	Pro	Cys	Arg	Asn	Gln	Asp	Glu	Leu	Ile	Gly	Arg
	3215					3220					3225			
Ala	Arg	Ile	Ser	Gln	Gly	Ala	Gly	Trp	Ser	Leu	Arg	Glu	Thr	Ala
	3230					3235					3240			
Cys	Leu	Gly	Lys	Ser	Tyr	Ala	Gln	Met	Trp	Ser	Leu	Met	Tyr	Phe
	3245					3250					3255			
His	Arg	Arg	Asp	Leu	Arg	Leu	Ala	Ala	Asn	Ala	Ile	Cys	Ser	Ala
	3260					3265					3270			
Val	Pro	Ser	His	Trp	Val	Pro	Thr	Ser	Arg	Thr	Thr	Trp	Ser	Ile
	3275					3280					3285			
His	Ala	Lys	His	Glu	Trp	Met	Thr	Thr	Glu	Asp	Met	Leu	Thr	Val
	3290					3295					3300			
Trp	Asn	Arg	Val	Trp	Ile	Arg	Glu	Asn	Pro	Trp	Met	Glu	Asp	Lys
	3305					3310					3315			
Thr	Pro	Val	Glu	Ser	Trp	Glu	Glu	Ile	Pro	Tyr	Leu	Gly	Lys	Arg
	3320					3325					3330			
Glu	Asp	Gln	Trp	Cys	Gly	Ser	Leu	Ile	Gly	Leu	Thr	Ser	Arg	Ala
	3335					3340					3345			
Thr	Trp	Ala	Lys	Asn	Ile	Gln	Ala	Ala	Ile	Asn	Gln	Val	Arg	Ser
	3350					3355					3360			
Leu	Ile	Gly	Asn	Glu	Glu	Tyr	Thr	Asp	Tyr	Met	Pro	Ser	Met	Lys
	3365					3370					3375			
Arg	Phe	Arg	Arg	Glu	Glu	Glu	Glu	Ala	Gly	Val	Leu	Trp		
	3380					3385					3390			

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<210> 3
 <211> 3390
 <212> PRT
 <213> Dengue virus type 3

<220>
 <221> VARIANT
 <222> (196)..(196)
 <223> Xaa stands for Gln or His

<220>
 <221> VARIANT
 <222> (485)..(485)
 <223> Xaa stands for Met or Leu

<220>
 <221> VARIANT
 <222> (671)..(671)
 <223> Xaa stands for Lys or Arg

<220>
 <221> VARIANT
 <222> (1401)..(1401)
 <223> Xaa stands for Glu or Asp

<220>
 <221> VARIANT
 <222> (2439)..(2439)
 <223> Xaa stands for Val or Ala

<220>
 <221> VARIANT
 <222> (2894)..(2894)
 <223> Xaa stands for Thr or Ala

<400> 3

Met Asn Asn Gln Arg Lys Lys Thr Gly Lys Pro Ser Ile Asn Met Leu
 1 5 10 15

Lys Arg Val Arg Asn Arg Val Ser Thr Gly Ser Gln Leu Ala Lys Arg
 20 25 30

Phe Ser Arg Gly Leu Leu Asn Gly Gln Gly Pro Met Lys Leu Val Met
 35 40 45

Ala Phe Ile Ala Phe Leu Arg Phe Leu Ala Ile Pro Pro Thr Ala Gly
 50 55 60

Val Leu Ala Arg Trp Gly Thr Phe Lys Lys Ser Gly Ala Ile Lys Val
 65 70 75 80

Leu Lys Gly Phe Lys Lys Glu Ile Ser Asn Met Leu Ser Ile Ile Asn
 85 90 95

Lys Arg Lys Lys Thr Ser Leu Cys Leu Met Met Met Leu Pro Ala Thr
 100 105 110

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

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Cys Gly Leu Phe Gly Lys Gly Ser Leu Val Thr Cys Ala Lys Phe Gln
 385 390 395 400

 Cys Leu Glu Ser Ile Glu Gly Lys Val Val Gln His Glu Asn Leu Lys
 405 410 415

 Tyr Thr Val Ile Ile Thr Val His Thr Gly Asp Gln His Gln Val Gly
 420 425 430

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

 Ala Glu Ala Ile Leu Pro Glu Tyr Gly Thr Leu Gly Leu Glu Cys Ser
 450 455 460

 Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Ile Ser Leu Thr Met Lys
 465 470 475 480

 Asn Lys Ala Trp Xaa Val His Arg Gln Trp Phe Phe Asp Leu Pro Leu
 485 490 495

 Pro Trp Thr Ser Gly Ala Thr Ala Glu Thr Pro Thr Trp Asn Arg Lys
 500 505 510

 Glu Leu Leu Val Thr Phe Lys Asn Ala His Ala Lys Lys Gln Glu Val
 515 520 525

 Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu Thr Gly
 530 535 540

 Ala Thr Glu Ile Gln Thr Ser Gly Gly Thr Ser Ile Phe Ala Gly His
 545 550 555 560

 Leu Lys Cys Arg Leu Lys Met Asp Lys Leu Glu Leu Lys Gly Met Ser
 565 570 575

 Tyr Ala Met Cys Leu Ser Ser Phe Val Leu Lys Lys Glu Val Ser Glu
 580 585 590

 Thr Gln His Gly Thr Ile Leu Ile Lys Val Glu Tyr Lys Gly Glu Asp
 595 600 605

 Ala Pro Cys Lys Ile Pro Phe Ser Thr Glu Asp Gly Gln Gly Lys Ala
 610 615 620

 His Asn Gly Arg Leu Ile Thr Ala Asn Pro Val Val Thr Lys Lys Glu
 625 630 635 640

 Glu Pro Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Glu Ser Asn Ile
 645 650 655

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Val Ile Gly Ile Gly Asp Lys Ala Leu Lys Ile Asn Trp Tyr Xaa Lys
660 665 670

Gly Ser Ser Ile Gly Lys Met Phe Glu Ala Thr Ala Arg Gly Ala Arg
675 680 685

Arg Met Ala Ile Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser Val Gly
690 695 700

Gly Val Leu Asn Ser Leu Gly Lys Met Val His Gln Ile Phe Gly Ser
705 710 715 720

Ala Tyr Thr Ala Leu Phe Gly Gly Val Ser Trp Met Met Lys Ile Gly
725 730 735

Ile Gly Val Leu Leu Thr Trp Ile Gly Leu Asn Ser Lys Asn Thr Ser
740 745 750

Met Ser Phe Ser Cys Ile Ala Ile Gly Ile Ile Thr Leu Tyr Leu Gly
755 760 765

Ala Val Val Gln Ala Asp Met Gly Cys Val Ile Asn Trp Lys Gly Lys
770 775 780

Glu Leu Lys Cys Gly Ser Gly Ile Phe Val Thr Asn Glu Val His Thr
785 790 795 800

Trp Thr Glu Gln Tyr Lys Phe Gln Ala Asp Ser Pro Lys Arg Leu Ala
805 810 815

Thr Ala Ile Ala Gly Ala Trp Glu Asn Gly Val Cys Gly Ile Arg Ser
820 825 830

Thr Thr Arg Met Glu Asn Leu Leu Trp Lys Gln Ile Ala Asn Glu Leu
835 840 845

Asn Tyr Ile Leu Trp Glu Asn Asn Ile Lys Leu Thr Val Val Val Gly
850 855 860

Asp Ile Thr Gly Val Leu Glu Gln Gly Lys Arg Thr Leu Thr Pro Gln
865 870 875 880

Pro Met Glu Leu Lys Tyr Ser Trp Lys Thr Trp Gly Lys Ala Lys Ile
885 890 895

Val Thr Ala Glu Thr Gln Asn Ser Ser Phe Ile Ile Asp Gly Pro Ser
900 905 910

Thr Pro Glu Cys Pro Ser Ala Ser Arg Ala Trp Asn Val Trp Glu Val
915 920 925

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Glu Asp Tyr Gly Phe Gly Val Phe Thr Thr Asn Ile Trp Leu Lys Leu
930 935 940

Arg Glu Val Tyr Thr Gln Leu Cys Asp His Arg Leu Met Ser Ala Ala
945 950 955 960

Val Lys Asp Glu Arg Ala Val His Ala Asp Met Gly Tyr Trp Ile Glu
965 970 975

Ser Gln Lys Asn Gly Ser Trp Lys Leu Glu Lys Ala Ser Phe Ile Glu
980 985 990

Val Lys Thr Cys Thr Trp Pro Lys Ser His Thr Leu Trp Ser Asn Gly
995 1000 1005

Val Leu Glu Ser Asp Met Ile Ile Pro Lys Ser Leu Ala Gly Pro
1010 1015 1020

Ile Ser Gln His Asn His Arg Pro Gly Tyr His Thr Gln Thr Ala
1025 1030 1035

Gly Pro Trp His Leu Gly Lys Leu Glu Leu Asp Phe Asn Tyr Cys
1040 1045 1050

Glu Gly Thr Thr Val Val Ile Ser Glu Asn Cys Gly Thr Arg Gly
1055 1060 1065

Pro Ser Leu Arg Thr Thr Thr Val Ser Gly Lys Leu Ile His Glu
1070 1075 1080

Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro Leu Arg Tyr Met Gly
1085 1090 1095

Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg Pro Ile Asn Glu
1100 1105 1110

Lys Glu Glu Asn Met Val Lys Ser Leu Ala Ser Ala Gly Ser Gly
1115 1120 1125

Lys Val Asp Asn Phe Thr Met Gly Val Leu Cys Leu Ala Ile Leu
1130 1135 1140

Phe Glu Glu Val Met Arg Gly Lys Phe Gly Lys Lys His Met Ile
1145 1150 1155

Ala Gly Val Leu Phe Thr Phe Val Leu Leu Leu Ser Gly Gln Ile
1160 1165 1170

Thr Trp Arg Asp Met Ala His Thr Leu Ile Met Ile Gly Ser Asn
1175 1180 1185

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Ala	Ser	Asp	Arg	Met	Gly	Met	Gly	Val	Thr	Tyr	Leu	Ala	Leu	Ile
	1190					1195					1200			
Ala	Thr	Phe	Lys	Ile	Gln	Pro	Phe	Leu	Ala	Leu	Gly	Phe	Phe	Leu
	1205					1210					1215			
Arg	Lys	Leu	Thr	Ser	Arg	Glu	Asn	Leu	Leu	Leu	Gly	Val	Gly	Leu
	1220					1225					1230			
Ala	Met	Ala	Ala	Thr	Leu	Arg	Leu	Pro	Glu	Asp	Ile	Glu	Gln	Met
	1235					1240					1245			
Ala	Asn	Gly	Ile	Ala	Leu	Gly	Leu	Met	Ala	Leu	Lys	Leu	Ile	Thr
	1250					1255					1260			
Gln	Phe	Glu	Thr	Tyr	Gln	Leu	Trp	Thr	Ala	Leu	Val	Ser	Leu	Thr
	1265					1270					1275			
Cys	Ser	Asn	Thr	Ile	Phe	Thr	Leu	Thr	Val	Ala	Trp	Arg	Thr	Ala
	1280					1285					1290			
Thr	Leu	Ile	Leu	Ala	Gly	Ile	Ser	Leu	Leu	Pro	Val	Cys	Gln	Ser
	1295					1300					1305			
Ser	Ser	Met	Arg	Lys	Thr	Asp	Trp	Leu	Pro	Met	Thr	Val	Ala	Ala
	1310					1315					1320			
Met	Gly	Ala	Gln	Pro	Leu	Pro	Leu	Phe	Ile	Phe	Ser	Leu	Lys	Asp
	1325					1330					1335			
Thr	Leu	Lys	Arg	Arg	Ser	Trp	Pro	Leu	Asn	Glu	Gly	Val	Met	Ala
	1340					1345					1350			
Val	Gly	Leu	Val	Ser	Ile	Leu	Ala	Ser	Ser	Leu	Leu	Arg	Asn	Asp
	1355					1360					1365			
Val	Pro	Met	Ala	Gly	Pro	Leu	Val	Ala	Gly	Gly	Leu	Leu	Ile	Ala
	1370					1375					1380			
Cys	Tyr	Val	Ile	Thr	Gly	Thr	Ser	Ala	Asp	Leu	Thr	Val	Glu	Lys
	1385					1390					1395			
Ala	Ala	Xaa	Val	Thr	Trp	Glu	Glu	Glu	Ala	Glu	Gln	Thr	Gly	Val
	1400					1405					1410			
Ser	His	Asn	Leu	Met	Val	Thr	Val	Asp	Asp	Asp	Gly	Thr	Met	Arg
	1415					1420					1425			
Ile	Lys	Asp	Asp	Glu	Thr	Glu	Asn	Ile	Leu	Thr	Val	Leu	Leu	Lys
	1430					1435					1440			

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Thr	Ala	Leu	Leu	Ile	Val	Ser	Gly	Ile	Phe	Pro	Tyr	Ser	Ile	Pro
	1445					1450					1455			
Ala	Thr	Leu	Leu	Val	Trp	His	Thr	Trp	Gln	Lys	Gln	Thr	Gln	Arg
	1460					1465					1470			
Ser	Gly	Val	Leu	Trp	Asp	Val	Pro	Ser	Pro	Pro	Glu	Thr	Gln	Lys
	1475					1480					1485			
Ala	Glu	Leu	Glu	Glu	Gly	Val	Tyr	Arg	Ile	Lys	Gln	Gln	Gly	Ile
	1490					1495					1500			
Phe	Gly	Lys	Thr	Gln	Val	Gly	Val	Gly	Val	Gln	Lys	Glu	Gly	Val
	1505					1510					1515			
Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ala	Val	Leu	Thr	His
	1520					1525					1530			
Asn	Gly	Lys	Arg	Leu	Glu	Pro	Asn	Trp	Ala	Ser	Val	Lys	Lys	Asp
	1535					1540					1545			
Leu	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Arg	Leu	Ser	Ala	Gln	Trp	Gln
	1550					1555					1560			
Lys	Gly	Glu	Glu	Val	Gln	Val	Ile	Ala	Val	Glu	Pro	Gly	Lys	Asn
	1565					1570					1575			
Pro	Lys	Asn	Phe	Gln	Thr	Met	Pro	Gly	Ile	Phe	Gln	Thr	Thr	Thr
	1580					1585					1590			
Gly	Glu	Ile	Gly	Ala	Ile	Ala	Leu	Asp	Phe	Lys	Pro	Gly	Thr	Ser
	1595					1600					1605			
Gly	Ser	Pro	Ile	Ile	Asn	Arg	Glu	Gly	Lys	Val	Val	Gly	Leu	Tyr
	1610					1615					1620			
Gly	Asn	Gly	Val	Val	Thr	Lys	Asn	Gly	Gly	Tyr	Val	Ser	Gly	Ile
	1625					1630					1635			
Ala	Gln	Thr	Asn	Ala	Glu	Pro	Asp	Gly	Pro	Thr	Pro	Glu	Leu	Glu
	1640					1645					1650			
Glu	Glu	Met	Phe	Lys	Lys	Arg	Asn	Leu	Thr	Ile	Met	Asp	Leu	His
	1655					1660					1665			
Pro	Gly	Ser	Gly	Lys	Thr	Arg	Lys	Tyr	Leu	Pro	Ala	Ile	Val	Arg
	1670					1675					1680			
Glu	Ala	Ile	Lys	Arg	Arg	Leu	Arg	Thr	Leu	Ile	Leu	Ala	Pro	Thr
	1685					1690					1695			

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Arg	Val	Val	Ala	Ala	Glu	Met	Glu	Glu	Ala	Leu	Lys	Gly	Leu	Pro
	1700					1705					1710			
Ile	Arg	Tyr	Gln	Thr	Thr	Ala	Thr	Lys	Ser	Glu	His	Thr	Gly	Arg
	1715					1720					1725			
Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Met	Arg	Leu
	1730					1735					1740			
Leu	Ser	Pro	Val	Arg	Val	Pro	Asn	Tyr	Asn	Leu	Ile	Ile	Met	Asp
	1745					1750					1755			
Glu	Ala	His	Phe	Thr	Asp	Pro	Ala	Ser	Ile	Ala	Ala	Arg	Gly	Tyr
	1760					1765					1770			
Ile	Ser	Thr	Arg	Val	Gly	Met	Gly	Glu	Ala	Ala	Ala	Ile	Phe	Met
	1775					1780					1785			
Thr	Ala	Thr	Pro	Pro	Gly	Thr	Ala	Asp	Ala	Phe	Pro	Gln	Ser	Asn
	1790					1795					1800			
Ala	Pro	Ile	Gln	Asp	Glu	Glu	Arg	Asp	Ile	Pro	Glu	Arg	Ser	Trp
	1805					1810					1815			
Asn	Ser	Gly	Asn	Glu	Trp	Ile	Thr	Asp	Phe	Val	Gly	Lys	Thr	Val
	1820					1825					1830			
Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala	Asn	Cys
	1835					1840					1845			
Leu	Arg	Lys	Asn	Gly	Lys	Lys	Val	Ile	Gln	Leu	Ser	Arg	Lys	Thr
	1850					1855					1860			
Phe	Asp	Thr	Glu	Tyr	Gln	Lys	Thr	Lys	Leu	Asn	Asp	Trp	Asp	Phe
	1865					1870					1875			
Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe	Lys	Ala
	1880					1885					1890			
Asp	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Leu	Lys	Pro	Val	Ile	Leu
	1895					1900					1905			
Thr	Asp	Gly	Pro	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Met	Pro	Val
	1910					1915					1920			
Thr	Val	Ala	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Val	Gly	Arg	Asn
	1925					1930					1935			
Pro	Gln	Lys	Glu	Asn	Asp	Gln	Tyr	Ile	Phe	Met	Gly	Gln	Pro	Leu
	1940					1945					1950			

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Asn	Asn	Asp	Glu	Asp	His	Ala	His	Trp	Thr	Glu	Ala	Lys	Met	Leu
	1955					1960					1965			
Leu	Asp	Asn	Ile	Asn	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Ala	Leu	Phe
	1970					1975					1980			
Glu	Pro	Glu	Arg	Glu	Lys	Ser	Ala	Ala	Ile	Asp	Gly	Glu	Tyr	Arg
	1985					1990					1995			
Leu	Lys	Gly	Glu	Ser	Arg	Lys	Thr	Phe	Val	Glu	Leu	Met	Arg	Arg
	2000					2005					2010			
Gly	Asp	Leu	Pro	Val	Trp	Leu	Ala	His	Lys	Val	Ala	Ser	Glu	Gly
	2015					2020					2025			
Ile	Lys	Tyr	Thr	Asp	Arg	Lys	Trp	Cys	Phe	Asp	Gly	Glu	Arg	Asn
	2030					2035					2040			
Asn	Gln	Ile	Leu	Glu	Glu	Asn	Met	Asp	Val	Glu	Ile	Trp	Thr	Lys
	2045					2050					2055			
Glu	Gly	Glu	Lys	Lys	Lys	Leu	Arg	Pro	Arg	Trp	Leu	Asp	Ala	Arg
	2060					2065					2070			
Thr	Tyr	Ser	Asp	Pro	Leu	Ala	Leu	Lys	Glu	Phe	Lys	Asp	Phe	Ala
	2075					2080					2085			
Ala	Gly	Arg	Lys	Ser	Ile	Ala	Leu	Asp	Leu	Val	Thr	Glu	Ile	Gly
	2090					2095					2100			
Arg	Val	Pro	Ser	His	Leu	Ala	His	Arg	Thr	Arg	Asn	Ala	Leu	Asp
	2105					2110					2115			
Asn	Leu	Val	Met	Leu	His	Thr	Ser	Glu	His	Gly	Gly	Arg	Ala	Tyr
	2120					2125					2130			
Arg	His	Ala	Val	Glu	Glu	Leu	Pro	Glu	Thr	Met	Glu	Thr	Leu	Leu
	2135					2140					2145			
Leu	Leu	Gly	Leu	Met	Ile	Leu	Leu	Thr	Gly	Gly	Ala	Met	Leu	Phe
	2150					2155					2160			
Leu	Ile	Ser	Gly	Lys	Gly	Ile	Gly	Lys	Thr	Ser	Ile	Gly	Leu	Ile
	2165					2170					2175			
Cys	Val	Ile	Ala	Ser	Ser	Gly	Met	Leu	Trp	Met	Ala	Asp	Val	Pro
	2180					2185					2190			
Leu	Gln	Trp	Ile	Ala	Ser	Ala	Ile	Val	Leu	Glu	Phe	Phe	Met	Met
	2195					2200					2205			

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Val	Leu	Leu	Ile	Pro	Glu	Pro	Glu	Lys	Gln	Arg	Thr	Pro	Gln	Asp
	2210					2215					2220			
Asn	Gln	Leu	Ala	Tyr	Val	Val	Ile	Gly	Ile	Leu	Thr	Leu	Ala	Ala
	2225					2230					2235			
Ile	Val	Ala	Ala	Asn	Glu	Met	Gly	Leu	Leu	Glu	Thr	Thr	Lys	Arg
	2240					2245					2250			
Asp	Leu	Gly	Met	Ser	Lys	Glu	Pro	Gly	Val	Val	Ser	Pro	Thr	Ser
	2255					2260					2265			
Tyr	Leu	Asp	Val	Asp	Leu	His	Pro	Ala	Ser	Ala	Trp	Thr	Leu	Tyr
	2270					2275					2280			
Ala	Val	Ala	Thr	Thr	Val	Ile	Thr	Pro	Met	Leu	Arg	His	Thr	Ile
	2285					2290					2295			
Glu	Asn	Ser	Thr	Ala	Asn	Val	Ser	Leu	Ala	Ala	Ile	Ala	Asn	Gln
	2300					2305					2310			
Ala	Val	Val	Leu	Met	Gly	Leu	Asp	Lys	Gly	Trp	Pro	Ile	Ser	Lys
	2315					2320					2325			
Met	Asp	Leu	Gly	Val	Pro	Leu	Leu	Ala	Leu	Gly	Cys	Tyr	Ser	Gln
	2330					2335					2340			
Val	Asn	Pro	Leu	Thr	Leu	Ala	Ala	Ala	Val	Leu	Leu	Leu	Val	Thr
	2345					2350					2355			
His	Tyr	Ala	Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys	Ala	Thr	Arg
	2360					2365					2370			
Glu	Ala	Gln	Lys	Arg	Thr	Ala	Ala	Gly	Ile	Met	Lys	Asn	Pro	Thr
	2375					2380					2385			
Val	Asp	Gly	Ile	Met	Thr	Ile	Asp	Leu	Asp	Pro	Val	Ile	Tyr	Asp
	2390					2395					2400			
Ser	Lys	Phe	Glu	Lys	Gln	Leu	Gly	Gln	Val	Met	Leu	Leu	Val	Leu
	2405					2410					2415			
Cys	Ala	Val	Gln	Leu	Leu	Leu	Met	Arg	Thr	Ser	Trp	Ala	Leu	Cys
	2420					2425					2430			
Glu	Val	Leu	Thr	Leu	Xaa	Thr	Gly	Pro	Ile	Thr	Thr	Leu	Trp	Glu
	2435					2440					2445			
Gly	Ser	Pro	Gly	Lys	Phe	Trp	Asn	Thr	Thr	Ile	Ala	Val	Ser	Met
	2450					2455					2460			

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Ala	Asn	Ile	Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala	Gly	Leu	Ala
	2465					2470					2475			
Phe	Ser	Ile	Met	Lys	Ser	Val	Gly	Thr	Gly	Lys	Arg	Gly	Thr	Gly
	2480					2485					2490			
Ser	Gln	Gly	Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Lys	Lys	Leu	Asn
	2495					2500					2505			
Gln	Leu	Ser	Arg	Lys	Glu	Phe	Asp	Leu	Tyr	Lys	Lys	Ser	Gly	Ile
	2510					2515					2520			
Thr	Glu	Val	Asp	Arg	Thr	Glu	Ala	Lys	Glu	Gly	Leu	Lys	Arg	Gly
	2525					2530					2535			
Glu	Ile	Thr	His	His	Ala	Val	Ser	Arg	Gly	Ser	Ala	Lys	Leu	Gln
	2540					2545					2550			
Trp	Phe	Val	Glu	Arg	Asn	Met	Val	Ile	Pro	Glu	Gly	Arg	Val	Ile
	2555					2560					2565			
Asp	Leu	Gly	Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr	Cys	Ala	Gly
	2570					2575					2580			
Leu	Lys	Lys	Val	Thr	Glu	Val	Arg	Gly	Tyr	Thr	Lys	Gly	Gly	Pro
	2585					2590					2595			
Gly	His	Glu	Glu	Pro	Val	Pro	Met	Ser	Thr	Tyr	Gly	Trp	Asn	Ile
	2600					2605					2610			
Val	Lys	Leu	Met	Ser	Gly	Lys	Asp	Val	Phe	Tyr	Leu	Pro	Pro	Glu
	2615					2620					2625			
Lys	Cys	Asp	Thr	Leu	Leu	Cys	Asp	Ile	Gly	Glu	Ser	Ser	Pro	Ser
	2630					2635					2640			
Pro	Thr	Val	Glu	Glu	Ser	Arg	Thr	Ile	Arg	Val	Leu	Lys	Met	Val
	2645					2650					2655			
Glu	Pro	Trp	Leu	Lys	Asn	Asn	Gln	Phe	Cys	Ile	Lys	Val	Leu	Asn
	2660					2665					2670			
Pro	Tyr	Met	Pro	Thr	Val	Ile	Glu	His	Leu	Glu	Arg	Leu	Gln	Arg
	2675					2680					2685			
Lys	His	Gly	Gly	Met	Leu	Val	Arg	Asn	Pro	Leu	Ser	Arg	Asn	Ser
	2690					2695					2700			
Thr	His	Glu	Met	Tyr	Trp	Ile	Ser	Asn	Gly	Thr	Gly	Asn	Ile	Val
	2705					2710					2715			

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Ser	Ser	Val	Asn	Met	Val	Ser	Arg	Leu	Leu	Leu	Asn	Arg	Phe	Thr
	2720					2725					2730			
Met	Thr	His	Arg	Arg	Pro	Thr	Ile	Glu	Lys	Asp	Val	Asp	Leu	Gly
	2735					2740					2745			
Ala	Gly	Thr	Arg	His	Val	Asn	Ala	Glu	Pro	Glu	Thr	Pro	Asn	Met
	2750					2755					2760			
Asp	Val	Ile	Gly	Glu	Arg	Ile	Lys	Arg	Ile	Lys	Glu	Glu	His	Ser
	2765					2770					2775			
Ser	Thr	Trp	His	Tyr	Asp	Asp	Glu	Asn	Pro	Tyr	Lys	Thr	Trp	Ala
	2780					2785					2790			
Tyr	His	Gly	Ser	Tyr	Glu	Val	Lys	Ala	Thr	Gly	Ser	Ala	Ser	Ser
	2795					2800					2805			
Met	Ile	Asn	Gly	Val	Val	Lys	Leu	Leu	Thr	Lys	Pro	Trp	Asp	Val
	2810					2815					2820			
Val	Pro	Met	Val	Thr	Gln	Met	Ala	Met	Thr	Asp	Thr	Thr	Pro	Phe
	2825					2830					2835			
Gly	Gln	Gln	Arg	Val	Phe	Lys	Glu	Lys	Val	Asp	Thr	Arg	Thr	Pro
	2840					2845					2850			
Arg	Pro	Met	Pro	Gly	Thr	Arg	Lys	Val	Met	Glu	Ile	Thr	Ala	Glu
	2855					2860					2865			
Trp	Leu	Trp	Arg	Thr	Leu	Gly	Arg	Asn	Lys	Arg	Pro	Arg	Leu	Cys
	2870					2875					2880			
Thr	Arg	Glu	Glu	Phe	Thr	Lys	Lys	Val	Arg	Xaa	Asn	Ala	Ala	Met
	2885					2890					2895			
Gly	Ala	Val	Phe	Thr	Glu	Glu	Asn	Gln	Trp	Asp	Ser	Ala	Arg	Ala
	2900					2905					2910			
Ala	Val	Glu	Asp	Glu	Glu	Phe	Trp	Lys	Leu	Val	Asp	Arg	Glu	Arg
	2915					2920					2925			
Glu	Leu	His	Lys	Leu	Gly	Lys	Cys	Gly	Ser	Cys	Val	Tyr	Asn	Met
	2930					2935					2940			
Met	Gly	Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly	Lys	Ala	Lys
	2945					2950					2955			
Gly	Ser	Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala	Arg	Tyr	Leu
	2960					2965					2970			

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Glu	Phe	Glu	Ala	Leu	Gly	Phe	Leu	Asn	Glu	Asp	His	Trp	Phe	Ser
	2975					2980					2985			
Arg	Glu	Asn	Ser	Tyr	Ser	Gly	Val	Glu	Gly	Glu	Gly	Leu	His	Lys
	2990					2995					3000			
Leu	Gly	Tyr	Ile	Leu	Arg	Asp	Ile	Ser	Lys	Ile	Pro	Gly	Gly	Ala
	3005					3010					3015			
Met	Tyr	Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg	Ile	Thr	Glu
	3020					3025					3030			
Asp	Asp	Leu	His	Asn	Glu	Glu	Lys	Ile	Thr	Gln	Gln	Met	Asp	Pro
	3035					3040					3045			
Glu	His	Arg	Gln	Leu	Ala	Asn	Ala	Ile	Phe	Lys	Leu	Thr	Tyr	Gln
	3050					3055					3060			
Asn	Lys	Val	Val	Lys	Val	Gln	Arg	Pro	Thr	Pro	Lys	Gly	Thr	Val
	3065					3070					3075			
Met	Asp	Ile	Ile	Ser	Arg	Lys	Asp	Gln	Arg	Gly	Ser	Gly	Gln	Val
	3080					3085					3090			
Gly	Thr	Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu	Ala	Gln	Leu
	3095					3100					3105			
Ile	Arg	Gln	Met	Glu	Gly	Glu	Gly	Val	Leu	Ser	Lys	Ala	Asp	Leu
	3110					3115					3120			
Glu	Asn	Pro	His	Pro	Leu	Glu	Lys	Lys	Ile	Thr	Gln	Trp	Leu	Glu
	3125					3130					3135			
Thr	Lys	Gly	Val	Glu	Arg	Leu	Lys	Arg	Met	Ala	Ile	Ser	Gly	Asp
	3140					3145					3150			
Asp	Cys	Val	Val	Lys	Pro	Ile	Asp	Asp	Arg	Phe	Ala	Asn	Ala	Leu
	3155					3160					3165			
Leu	Ala	Leu	Asn	Asp	Met	Gly	Lys	Val	Arg	Lys	Asp	Ile	Pro	Gln
	3170					3175					3180			
Trp	Gln	Pro	Ser	Lys	Gly	Trp	His	Asp	Trp	Gln	Gln	Val	Pro	Phe
	3185					3190					3195			
Cys	Ser	His	His	Phe	His	Glu	Leu	Ile	Met	Lys	Asp	Gly	Arg	Lys
	3200					3205					3210			
Leu	Val	Val	Pro	Cys	Arg	Pro	Gln	Asp	Glu	Leu	Ile	Gly	Arg	Ala
	3215					3220					3225			

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Arg Ile Ser Gln Gly Ala Gly Trp Ser Leu Arg Glu Thr Ala Cys
 3230 3235 3240

Leu Gly Lys Ala Tyr Ala Gln Met Trp Ala Leu Met Tyr Phe His
 3245 3250 3255

Arg Arg Asp Leu Arg Leu Ala Ser Asn Ala Ile Cys Ser Ala Val
 3260 3265 3270

Pro Val His Trp Val Pro Thr Ser Arg Thr Thr Trp Ser Ile His
 3275 3280 3285

Ala His His Gln Trp Met Thr Thr Glu Asp Met Leu Thr Val Trp
 3290 3295 3300

Asn Arg Val Trp Ile Glu Asp Asn Pro Trp Met Glu Asp Lys Thr
 3305 3310 3315

Pro Val Thr Thr Trp Glu Asp Val Pro Tyr Leu Gly Lys Arg Glu
 3320 3325 3330

Asp Gln Trp Cys Gly Ser Leu Ile Gly Leu Thr Ser Arg Ala Thr
 3335 3340 3345

Trp Ala Gln Asn Ile Leu Thr Ala Ile Gln Gln Val Arg Ser Leu
 3350 3355 3360

Ile Gly Asn Glu Glu Phe Leu Asp Tyr Met Pro Ser Met Lys Arg
 3365 3370 3375

Phe Arg Lys Glu Glu Glu Ser Glu Gly Ala Ile Trp
 3380 3385 3390

<210> 4
 <211> 3387
 <212> PRT
 <213> Dengue virus type 4

<220>
 <221> VARIANT
 <222> (1429)..(1429)
 <223> Xaa stands for Ser or Phe

<220>
 <221> VARIANT
 <222> (2217)..(2217)
 <223> Xaa stands for Lys or Arg

<220>
 <221> VARIANT
 <222> (2255)..(2255)
 <223> Xaa stands for Phe or Leu

<220>
 <221> VARIANT
 <222> (2344)..(2344)

<223> Xaa stands for Thr or Ile

<220>

<221> VARIANT

<222> (2354)..(2354)

<223> Xaa stands for Phe or Leu

<220>

<221> VARIANT

<222> (2877)..(2877)

<223> Xaa stands for Asn or Lys

<400> 4

Met Asn Gln Arg Lys Lys Val Val Arg Pro Pro Phe Asn Met Leu Lys
1 5 10 15

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

Ser Thr Gly Leu Phe Ser Gly Lys Gly Pro Leu Arg Met Val Leu Ala
35 40 45

Phe Ile Thr Phe Leu Arg Val Leu Ser Ile Pro Pro Thr Ala Gly Ile
50 55 60

Leu Lys Arg Trp Gly Gln Leu Lys Lys Asn Lys Ala Ile Arg Ile Leu
65 70 75 80

Ile Gly Phe Arg Lys Glu Ile Gly Arg Met Leu Asn Ile Leu Asn Gly
85 90 95

Arg Lys Arg Ser Thr Ile Thr Leu Leu Cys Leu Ile Pro Thr Val Met
100 105 110

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

Lys His Glu Arg Gly Arg Pro Leu Leu Phe Lys Thr Thr Glu Gly Ile
130 135 140

Asn Lys Cys Thr Leu Ile Ala Met Asp Leu Gly Glu Met Cys Glu Asp
145 150 155 160

Thr Val Thr Tyr Lys Cys Pro Leu Leu Val Asn Thr Glu Pro Glu Asp
165 170 175

Ile Asp Cys Trp Cys Asn Leu Thr Ser Thr Trp Val Met Tyr Gly Thr
180 185 190

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

Thr Pro His Ser Gly Met Gly Leu Glu Thr Arg Ala Glu Thr Trp Met
210 215 220

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Ser Ser Glu Gly Ala Trp Lys His Ala Gln Arg Val Glu Ser Trp Ile
225 230 235 240

Leu Arg Asn Pro Gly Phe Ala Leu Leu Ala Gly Phe Met Ala Tyr Met
245 250 255

Ile Gly Gln Thr Gly Ile Gln Arg Thr Val Phe Phe Val Leu Met Met
260 265 270

Leu Val Ala Pro Ser Tyr Gly Met Arg Cys Val Gly Val Gly Asn Arg
275 280 285

Asp Phe Val Glu Gly Val Ser Gly Gly Ala Trp Val Asp Leu Val Leu
290 295 300

Glu His Gly Gly Cys Val Thr Thr Met Ala Gln Gly Lys Pro Thr Leu
305 310 315 320

Asp Phe Glu Leu Thr Lys Thr Thr Ala Lys Glu Val Ala Leu Leu Arg
325 330 335

Thr Tyr Cys Ile Glu Ala Ser Ile Ser Asn Ile Thr Thr Ala Thr Arg
340 345 350

Cys Pro Thr Gln Gly Glu Pro Tyr Leu Lys Glu Glu Gln Asp Gln Gln
355 360 365

Tyr Ile Cys Arg Arg Asp Val Val Asp Arg Gly Trp Gly Asn Gly Cys
370 375 380

Gly Leu Phe Gly Lys Gly Gly Val Val Thr Cys Ala Lys Phe Ser Cys
385 390 395 400

Ser Gly Lys Ile Thr Gly Asn Leu Val Gln Ile Glu Asn Leu Glu Tyr
405 410 415

Thr Val Val Val Thr Val His Asn Gly Asp Thr His Ala Val Gly Asn
420 425 430

Asp Thr Ser Asn His Gly Val Thr Ala Thr Ile Thr Pro Arg Ser Pro
435 440 445

Ser Val Glu Val Lys Leu Pro Asp Tyr Gly Glu Leu Thr Leu Asp Cys
450 455 460

Glu Pro Arg Ser Gly Ile Asp Phe Asn Glu Met Ile Leu Met Lys Met
465 470 475 480

Lys Lys Lys Thr Trp Leu Val His Lys Gln Trp Phe Leu Asp Leu Pro
485 490 495

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

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Gly Phe Thr Val Gln Ala Asp Met Gly Cys Val Val Ser Trp Ser Gly
770 775 780

Lys Glu Leu Lys Cys Gly Ser Gly Ile Phe Val Val Asp Asn Val His
785 790 795 800

Thr Trp Thr Glu Gln Tyr Lys Phe Gln Pro Glu Ser Pro Ala Arg Leu
805 810 815

Ala Ser Ala Ile Leu Asn Ala His Lys Asp Gly Val Cys Gly Ile Arg
820 825 830

Ser Thr Thr Arg Leu Glu Asn Val Met Trp Lys Gln Ile Thr Asn Glu
835 840 845

Leu Asn Tyr Val Leu Trp Glu Gly Gly His Asp Leu Thr Val Val Ala
850 855 860

Gly Asp Val Lys Gly Val Leu Thr Lys Gly Lys Arg Ala Leu Thr Pro
865 870 875 880

Pro Val Asn Asp Leu Lys Tyr Ser Trp Lys Thr Trp Gly Lys Ala Lys
885 890 895

Ile Phe Thr Pro Glu Ala Arg Asn Ser Thr Phe Leu Ile Asp Gly Pro
900 905 910

Asp Thr Ser Glu Cys Pro Asn Glu Arg Arg Ala Trp Asn Phe Leu Glu
915 920 925

Val Glu Asp Tyr Gly Phe Gly Met Phe Thr Thr Asn Ile Trp Met Lys
930 935 940

Phe Arg Glu Gly Ser Ser Glu Val Cys Asp His Arg Leu Met Ser Ala
945 950 955 960

Ala Ile Lys Asp Gln Lys Ala Val His Ala Asp Met Gly Tyr Trp Ile
965 970 975

Glu Ser Ser Lys Asn Gln Thr Trp Gln Ile Glu Lys Ala Ser Leu Ile
980 985 990

Glu Val Lys Thr Cys Leu Trp Pro Lys Thr His Thr Leu Trp Ser Asn
995 1000 1005

Gly Val Leu Glu Ser Gln Met Leu Ile Pro Lys Ser Tyr Ala Gly
1010 1015 1020

Pro Phe Ser Gln His Asn Tyr Arg Gln Gly Tyr Ala Thr Gln Thr
1025 1030 1035

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Val	Gly	Pro	Trp	His	Leu	Gly	Lys	Leu	Glu	Ile	Asp	Phe	Gly	Glu
	1040					1045					1050			
Cys	Pro	Gly	Thr	Thr	Val	Ala	Ile	Gln	Glu	Asp	Cys	Asp	His	Arg
	1055					1060					1065			
Gly	Pro	Ser	Leu	Arg	Thr	Thr	Thr	Ala	Ser	Gly	Lys	Leu	Val	Thr
	1070					1075					1080			
Gln	Trp	Cys	Cys	Arg	Ser	Cys	Thr	Met	Pro	Pro	Leu	Arg	Phe	Leu
	1085					1090					1095			
Gly	Glu	Asp	Gly	Cys	Trp	Tyr	Gly	Met	Glu	Ile	Arg	Pro	Leu	Ser
	1100					1105					1110			
Glu	Lys	Glu	Glu	Asn	Met	Val	Lys	Ser	Gln	Val	Thr	Ala	Gly	Gln
	1115					1120					1125			
Gly	Thr	Ser	Glu	Thr	Phe	Ser	Met	Gly	Leu	Leu	Cys	Leu	Thr	Leu
	1130					1135					1140			
Phe	Val	Glu	Glu	Cys	Leu	Arg	Arg	Arg	Val	Thr	Arg	Lys	His	Met
	1145					1150					1155			
Ile	Leu	Val	Val	Val	Ile	Thr	Leu	Cys	Ala	Ile	Ile	Leu	Gly	Gly
	1160					1165					1170			
Leu	Thr	Trp	Met	Asp	Leu	Leu	Arg	Ala	Leu	Ile	Met	Leu	Gly	Asp
	1175					1180					1185			
Thr	Met	Ser	Gly	Arg	Ile	Gly	Gly	Gln	Ile	His	Leu	Ala	Ile	Met
	1190					1195					1200			
Ala	Val	Phe	Lys	Met	Ser	Pro	Gly	Tyr	Val	Leu	Gly	Val	Phe	Leu
	1205					1210					1215			
Arg	Lys	Leu	Thr	Ser	Arg	Glu	Thr	Ala	Leu	Met	Val	Ile	Gly	Met
	1220					1225					1230			
Ala	Met	Thr	Thr	Val	Leu	Ser	Ile	Pro	His	Asp	Leu	Met	Glu	Leu
	1235					1240					1245			
Ile	Asp	Gly	Ile	Ser	Leu	Gly	Leu	Ile	Leu	Leu	Lys	Ile	Val	Thr
	1250					1255					1260			
His	Phe	Asp	Asn	Thr	Gln	Val	Gly	Thr	Leu	Ala	Leu	Ser	Leu	Thr
	1265					1270					1275			
Phe	Ile	Arg	Ser	Thr	Met	Pro	Leu	Val	Met	Ala	Trp	Arg	Thr	Ile
	1280					1285					1290			

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Met	Ala	Val	Leu	Phe	Val	Val	Thr	Leu	Ile	Pro	Leu	Cys	Arg	Thr
	1295					1300					1305			
Ser	Cys	Leu	Gln	Lys	Gln	Ser	His	Trp	Val	Glu	Ile	Thr	Ala	Leu
	1310					1315					1320			
Ile	Leu	Gly	Ala	Gln	Ala	Leu	Pro	Val	Tyr	Leu	Met	Thr	Leu	Met
	1325					1330					1335			
Lys	Gly	Ala	Ser	Arg	Arg	Ser	Trp	Pro	Leu	Asn	Glu	Gly	Ile	Met
	1340					1345					1350			
Ala	Val	Gly	Leu	Val	Ser	Leu	Leu	Gly	Ser	Ala	Leu	Leu	Lys	Asn
	1355					1360					1365			
Asp	Val	Pro	Leu	Ala	Gly	Pro	Met	Val	Ala	Gly	Gly	Leu	Leu	Leu
	1370					1375					1380			
Ala	Ala	Tyr	Val	Met	Ser	Gly	Ser	Ser	Ala	Asp	Leu	Ser	Leu	Glu
	1385					1390					1395			
Lys	Ala	Ala	Asn	Val	Gln	Trp	Asp	Glu	Met	Ala	Asp	Ile	Thr	Gly
	1400					1405					1410			
Ser	Ser	Pro	Ile	Ile	Glu	Val	Lys	Gln	Asp	Glu	Asp	Gly	Ser	Phe
	1415					1420					1425			
Xaa	Ile	Arg	Asp	Val	Glu	Glu	Thr	Asn	Met	Ile	Thr	Leu	Leu	Val
	1430					1435					1440			
Lys	Leu	Ala	Leu	Ile	Thr	Val	Ser	Gly	Leu	Tyr	Pro	Leu	Ala	Ile
	1445					1450					1455			
Pro	Val	Thr	Met	Thr	Leu	Trp	Tyr	Met	Trp	Gln	Val	Lys	Thr	Gln
	1460					1465					1470			
Arg	Ser	Gly	Ala	Leu	Trp	Asp	Val	Pro	Ser	Pro	Ala	Ala	Thr	Gln
	1475					1480					1485			
Lys	Ala	Ala	Leu	Ser	Glu	Gly	Val	Tyr	Arg	Ile	Met	Gln	Arg	Gly
	1490					1495					1500			
Leu	Phe	Gly	Lys	Thr	Gln	Val	Gly	Val	Gly	Ile	His	Met	Glu	Gly
	1505					1510					1515			
Val	Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ser	Val	Ile	Cys
	1520					1525					1530			
His	Glu	Thr	Gly	Arg	Leu	Glu	Pro	Ser	Trp	Ala	Asp	Val	Arg	Asn
	1535					1540					1545			

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Asp	Met	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Arg	Leu	Gly	Asp	Lys	Trp
	1550					1555					1560			
Asp	Lys	Glu	Glu	Asp	Val	Gln	Val	Leu	Ala	Ile	Glu	Pro	Gly	Lys
	1565					1570					1575			
Asn	Pro	Lys	His	Val	Gln	Thr	Lys	Pro	Gly	Leu	Phe	Lys	Thr	Leu
	1580					1585					1590			
Thr	Gly	Glu	Ile	Gly	Ala	Val	Thr	Leu	Asp	Phe	Lys	Pro	Gly	Thr
	1595					1600					1605			
Ser	Gly	Ser	Pro	Ile	Ile	Asn	Arg	Lys	Gly	Lys	Val	Ile	Gly	Leu
	1610					1615					1620			
Tyr	Gly	Asn	Gly	Val	Val	Thr	Lys	Ser	Gly	Asp	Tyr	Val	Ser	Ala
	1625					1630					1635			
Ile	Thr	Gln	Ala	Glu	Arg	Ile	Gly	Glu	Pro	Asp	Tyr	Glu	Val	Asp
	1640					1645					1650			
Glu	Asp	Ile	Phe	Arg	Lys	Lys	Arg	Leu	Thr	Ile	Met	Asp	Leu	His
	1655					1660					1665			
Pro	Gly	Ala	Gly	Lys	Thr	Lys	Arg	Ile	Leu	Pro	Ser	Ile	Val	Arg
	1670					1675					1680			
Glu	Ala	Leu	Lys	Arg	Arg	Leu	Arg	Thr	Leu	Ile	Leu	Ala	Pro	Thr
	1685					1690					1695			
Arg	Val	Val	Ala	Ala	Glu	Met	Glu	Glu	Ala	Leu	Arg	Gly	Leu	Pro
	1700					1705					1710			
Ile	Arg	Tyr	Gln	Thr	Pro	Ala	Val	Lys	Ser	Glu	His	Thr	Gly	Arg
	1715					1720					1725			
Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Thr	Arg	Leu
	1730					1735					1740			
Leu	Ser	Ser	Thr	Arg	Val	Pro	Asn	Tyr	Asn	Leu	Ile	Val	Met	Asp
	1745					1750					1755			
Glu	Ala	His	Phe	Thr	Asp	Pro	Ser	Ser	Val	Ala	Ala	Arg	Gly	Tyr
	1760					1765					1770			
Ile	Ser	Thr	Arg	Val	Glu	Met	Gly	Glu	Ala	Ala	Ala	Ile	Phe	Met
	1775					1780					1785			
Thr	Ala	Thr	Pro	Pro	Gly	Ala	Thr	Asp	Pro	Phe	Pro	Gln	Ser	Asn
	1790					1795					1800			

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Ser	Pro	Ile	Glu	Asp	Ile	Glu	Arg	Glu	Ile	Pro	Glu	Arg	Ser	Trp
	1805					1810					1815			
Asn	Thr	Gly	Phe	Asp	Trp	Ile	Thr	Asp	Tyr	Gln	Gly	Lys	Thr	Val
	1820					1825					1830			
Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala	Asn	Cys
	1835					1840					1845			
Leu	Arg	Lys	Ser	Gly	Lys	Lys	Val	Ile	Gln	Leu	Ser	Arg	Lys	Thr
	1850					1855					1860			
Phe	Asp	Thr	Glu	Tyr	Pro	Lys	Thr	Lys	Leu	Thr	Asp	Trp	Asp	Phe
	1865					1870					1875			
Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe	Arg	Ala
	1880					1885					1890			
Gly	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Leu	Lys	Pro	Val	Ile	Leu
	1895					1900					1905			
Thr	Asp	Gly	Pro	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Ile	Pro	Val
	1910					1915					1920			
Thr	Pro	Ala	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Ile	Gly	Arg	Asn
	1925					1930					1935			
Pro	Ala	Gln	Glu	Asp	Asp	Gln	Tyr	Val	Phe	Ser	Gly	Asp	Pro	Leu
	1940					1945					1950			
Lys	Asn	Asp	Glu	Asp	His	Ala	His	Trp	Thr	Glu	Ala	Lys	Met	Leu
	1955					1960					1965			
Leu	Asp	Asn	Ile	Tyr	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Thr	Leu	Phe
	1970					1975					1980			
Gly	Pro	Glu	Arg	Glu	Lys	Thr	Gln	Ala	Ile	Asp	Gly	Glu	Phe	Arg
	1985					1990					1995			
Leu	Arg	Gly	Glu	Gln	Arg	Lys	Thr	Phe	Val	Glu	Leu	Met	Arg	Arg
	2000					2005					2010			
Gly	Asp	Leu	Pro	Val	Trp	Leu	Ser	Tyr	Lys	Val	Ala	Ser	Ala	Gly
	2015					2020					2025			
Ile	Ser	Tyr	Lys	Asp	Arg	Glu	Trp	Cys	Phe	Thr	Gly	Glu	Arg	Asn
	2030					2035					2040			
Asn	Gln	Ile	Leu	Glu	Glu	Asn	Met	Glu	Val	Glu	Ile	Trp	Thr	Arg
	2045					2050					2055			

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Glu	Gly	Glu	Lys	Lys	Lys	Leu	Arg	Pro	Arg	Trp	Leu	Asp	Ala	Arg
	2060					2065					2070			
Val	Tyr	Ala	Asp	Pro	Met	Ala	Leu	Lys	Asp	Phe	Lys	Glu	Phe	Ala
	2075					2080					2085			
Ser	Gly	Arg	Lys	Ser	Ile	Thr	Leu	Asp	Ile	Leu	Thr	Glu	Ile	Ala
	2090					2095					2100			
Ser	Leu	Pro	Thr	Tyr	Leu	Ser	Ser	Arg	Ala	Lys	Leu	Ala	Leu	Asp
	2105					2110					2115			
Asn	Ile	Val	Met	Leu	His	Thr	Thr	Glu	Arg	Gly	Gly	Arg	Ala	Tyr
	2120					2125					2130			
Gln	His	Ala	Leu	Asn	Glu	Leu	Pro	Glu	Ser	Leu	Glu	Thr	Leu	Met
	2135					2140					2145			
Leu	Val	Ala	Leu	Leu	Gly	Ala	Met	Thr	Ala	Gly	Ile	Phe	Leu	Phe
	2150					2155					2160			
Phe	Met	Gln	Gly	Lys	Gly	Ile	Gly	Lys	Leu	Ser	Met	Gly	Leu	Ile
	2165					2170					2175			
Thr	Ile	Ala	Val	Ala	Ser	Gly	Leu	Leu	Trp	Val	Ala	Glu	Ile	Gln
	2180					2185					2190			
Pro	Gln	Trp	Ile	Ala	Ala	Ser	Ile	Ile	Leu	Glu	Phe	Phe	Leu	Met
	2195					2200					2205			
Val	Leu	Leu	Ile	Pro	Glu	Pro	Glu	Xaa	Gln	Arg	Thr	Pro	Gln	Asp
	2210					2215					2220			
Asn	Gln	Leu	Ile	Tyr	Val	Ile	Leu	Thr	Ile	Leu	Thr	Ile	Ile	Gly
	2225					2230					2235			
Leu	Ile	Ala	Ala	Asn	Glu	Met	Gly	Leu	Ile	Glu	Lys	Thr	Lys	Thr
	2240					2245					2250			
Asp	Xaa	Gly	Phe	Tyr	Gln	Val	Lys	Thr	Glu	Thr	Thr	Ile	Leu	Asp
	2255					2260					2265			
Val	Asp	Leu	Arg	Pro	Ala	Ser	Ala	Trp	Thr	Leu	Tyr	Ala	Val	Ala
	2270					2275					2280			
Thr	Thr	Ile	Leu	Thr	Pro	Met	Leu	Arg	His	Thr	Ile	Glu	Asn	Thr
	2285					2290					2295			
Ser	Ala	Asn	Leu	Ser	Leu	Ala	Ala	Ile	Ala	Asn	Gln	Ala	Ala	Val
	2300					2305					2310			

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Leu	Met	Gly	Leu	Gly	Lys	Gly	Trp	Pro	Leu	His	Arg	Met	Asp	Leu
	2315					2320					2325			
Gly	Val	Pro	Leu	Leu	Ala	Met	Gly	Cys	Tyr	Ser	Gln	Val	Asn	Pro
	2330					2335					2340			
Xaa	Thr	Leu	Thr	Ala	Ser	Leu	Val	Met	Leu	Xaa	Val	His	Tyr	Ala
	2345					2350					2355			
Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys	Ala	Thr	Arg	Glu	Ala	Gln
	2360					2365					2370			
Lys	Arg	Thr	Ala	Ala	Gly	Ile	Met	Lys	Asn	Pro	Thr	Val	Asp	Gly
	2375					2380					2385			
Ile	Thr	Val	Ile	Asp	Leu	Glu	Pro	Ile	Ser	Tyr	Asp	Pro	Lys	Phe
	2390					2395					2400			
Glu	Lys	Gln	Leu	Gly	Gln	Val	Met	Leu	Leu	Val	Leu	Cys	Ala	Gly
	2405					2410					2415			
Gln	Leu	Leu	Leu	Met	Arg	Thr	Thr	Trp	Ala	Phe	Cys	Glu	Val	Leu
	2420					2425					2430			
Thr	Leu	Ala	Thr	Gly	Pro	Ile	Leu	Thr	Leu	Trp	Glu	Gly	Asn	Pro
	2435					2440					2445			
Gly	Arg	Phe	Trp	Asn	Thr	Thr	Ile	Ala	Val	Ser	Thr	Ala	Asn	Ile
	2450					2455					2460			
Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala	Gly	Leu	Ala	Phe	Ser	Leu
	2465					2470					2475			
Ile	Lys	Asn	Val	Gln	Thr	Pro	Arg	Arg	Gly	Thr	Gly	Thr	Thr	Gly
	2480					2485					2490			
Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Arg	Gln	Leu	Asn	Ser	Leu	Asp
	2495					2500					2505			
Arg	Lys	Glu	Phe	Glu	Glu	Tyr	Lys	Arg	Ser	Gly	Ile	Leu	Glu	Val
	2510					2515					2520			
Asp	Arg	Thr	Glu	Ala	Lys	Ser	Ala	Leu	Lys	Asp	Gly	Ser	Lys	Ile
	2525					2530					2535			
Lys	His	Ala	Val	Ser	Arg	Gly	Ser	Ser	Lys	Ile	Arg	Trp	Ile	Val
	2540					2545					2550			
Glu	Arg	Gly	Met	Val	Lys	Pro	Lys	Gly	Lys	Val	Val	Asp	Leu	Gly
	2555					2560					2565			

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Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr	Met	Ala	Thr	Leu	Lys	Asn
	2570					2575					2580			
Val	Thr	Glu	Val	Lys	Gly	Tyr	Thr	Lys	Gly	Gly	Pro	Gly	His	Glu
	2585					2590					2595			
Glu	Pro	Ile	Pro	Met	Ala	Thr	Tyr	Gly	Trp	Asn	Leu	Val	Lys	Leu
	2600					2605					2610			
His	Ser	Gly	Val	Asp	Val	Phe	Tyr	Lys	Pro	Thr	Glu	Gln	Val	Asp
	2615					2620					2625			
Thr	Leu	Leu	Cys	Asp	Ile	Gly	Glu	Ser	Ser	Ser	Asn	Pro	Thr	Ile
	2630					2635					2640			
Glu	Glu	Gly	Arg	Thr	Leu	Arg	Val	Leu	Lys	Met	Val	Glu	Pro	Trp
	2645					2650					2655			
Leu	Ser	Ser	Lys	Pro	Glu	Phe	Cys	Ile	Lys	Val	Leu	Asn	Pro	Tyr
	2660					2665					2670			
Met	Pro	Thr	Val	Ile	Glu	Glu	Leu	Glu	Lys	Leu	Gln	Arg	Lys	His
	2675					2680					2685			
Gly	Gly	Asn	Leu	Val	Arg	Cys	Pro	Leu	Ser	Arg	Asn	Ser	Thr	His
	2690					2695					2700			
Glu	Met	Tyr	Trp	Val	Ser	Gly	Ala	Ser	Gly	Asn	Ile	Val	Ser	Ser
	2705					2710					2715			
Val	Asn	Thr	Thr	Ser	Lys	Met	Leu	Leu	Asn	Arg	Phe	Thr	Thr	Arg
	2720					2725					2730			
His	Arg	Lys	Pro	Thr	Tyr	Glu	Lys	Asp	Val	Asp	Leu	Gly	Ala	Gly
	2735					2740					2745			
Thr	Arg	Ser	Val	Ser	Thr	Glu	Thr	Glu	Lys	Pro	Asp	Met	Thr	Ile
	2750					2755					2760			
Ile	Gly	Arg	Arg	Leu	Gln	Arg	Leu	Gln	Glu	Glu	His	Lys	Glu	Thr
	2765					2770					2775			
Trp	His	Tyr	Asp	Gln	Glu	Asn	Pro	Tyr	Arg	Thr	Trp	Ala	Tyr	His
	2780					2785					2790			
Gly	Ser	Tyr	Glu	Ala	Pro	Ser	Thr	Gly	Ser	Ala	Ser	Ser	Met	Val
	2795					2800					2805			
Asn	Gly	Val	Val	Lys	Leu	Leu	Thr	Lys	Pro	Trp	Asp	Val	Val	Pro
	2810					2815					2820			

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Met	Val	Thr	Gln	Leu	Ala	Met	Thr	Asp	Thr	Thr	Pro	Phe	Gly	Gln
	2825					2830					2835			
Gln	Arg	Val	Phe	Lys	Glu	Lys	Val	Asp	Thr	Arg	Thr	Pro	Gln	Pro
	2840					2845					2850			
Lys	Pro	Gly	Thr	Arg	Met	Val	Met	Thr	Thr	Thr	Ala	Asn	Trp	Leu
	2855					2860					2865			
Trp	Ala	Leu	Leu	Gly	Lys	Lys	Lys	Xaa	Pro	Arg	Leu	Cys	Thr	Arg
	2870					2875					2880			
Glu	Glu	Phe	Ile	Ser	Lys	Val	Arg	Ser	Asn	Ala	Ala	Ile	Gly	Ala
	2885					2890					2895			
Val	Phe	Gln	Glu	Glu	Gln	Gly	Trp	Thr	Ser	Ala	Ser	Glu	Ala	Val
	2900					2905					2910			
Asn	Asp	Ser	Arg	Phe	Trp	Glu	Leu	Val	Asp	Lys	Glu	Arg	Ala	Leu
	2915					2920					2925			
His	Gln	Glu	Gly	Lys	Cys	Glu	Ser	Cys	Val	Tyr	Asn	Met	Met	Gly
	2930					2935					2940			
Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly	Arg	Ala	Lys	Gly	Ser
	2945					2950					2955			
Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala	Arg	Phe	Leu	Glu	Phe
	2960					2965					2970			
Glu	Ala	Leu	Gly	Phe	Leu	Asn	Glu	Asp	His	Trp	Phe	Gly	Arg	Glu
	2975					2980					2985			
Asn	Ser	Trp	Ser	Gly	Val	Glu	Gly	Glu	Gly	Leu	His	Arg	Leu	Gly
	2990					2995					3000			
Tyr	Ile	Leu	Glu	Glu	Ile	Asp	Lys	Lys	Asp	Gly	Asp	Leu	Met	Tyr
	3005					3010					3015			
Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg	Ile	Thr	Glu	Asp	Asp
	3020					3025					3030			
Leu	Gln	Asn	Glu	Glu	Leu	Ile	Thr	Glu	Gln	Met	Ala	Pro	His	His
	3035					3040					3045			
Lys	Ile	Leu	Ala	Lys	Ala	Ile	Phe	Lys	Leu	Thr	Tyr	Gln	Asn	Lys
	3050					3055					3060			
Val	Val	Lys	Val	Leu	Arg	Pro	Thr	Pro	Arg	Gly	Ala	Val	Met	Asp
	3065					3070					3075			

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Ile	Ile	Ser	Arg	Lys	Asp	Gln	Arg	Gly	Ser	Gly	Gln	Val	Gly	Thr
	3080					3085					3090			
Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu	Val	Gln	Leu	Ile	Arg
	3095					3100					3105			
Gln	Met	Glu	Ala	Glu	Gly	Val	Ile	Thr	Gln	Asp	Asp	Met	Gln	Asn
	3110					3115					3120			
Pro	Lys	Gly	Leu	Lys	Glu	Arg	Val	Glu	Lys	Trp	Leu	Lys	Glu	Cys
	3125					3130					3135			
Gly	Val	Asp	Arg	Leu	Lys	Arg	Met	Ala	Ile	Ser	Gly	Asp	Asp	Cys
	3140					3145					3150			
Val	Val	Lys	Pro	Leu	Asp	Glu	Arg	Phe	Gly	Thr	Ser	Leu	Leu	Phe
	3155					3160					3165			
Leu	Asn	Asp	Met	Gly	Lys	Val	Arg	Lys	Asp	Ile	Pro	Gln	Trp	Glu
	3170					3175					3180			
Pro	Ser	Lys	Gly	Trp	Lys	Asn	Trp	Gln	Glu	Val	Pro	Phe	Cys	Ser
	3185					3190					3195			
His	His	Phe	His	Lys	Ile	Phe	Met	Lys	Asp	Gly	Arg	Ser	Leu	Val
	3200					3205					3210			
Val	Pro	Cys	Arg	Asn	Gln	Asp	Glu	Leu	Ile	Gly	Arg	Ala	Arg	Ile
	3215					3220					3225			
Ser	Gln	Gly	Ala	Gly	Trp	Ser	Leu	Arg	Glu	Thr	Ala	Cys	Leu	Gly
	3230					3235					3240			
Lys	Ala	Tyr	Ala	Gln	Met	Trp	Ser	Leu	Met	Tyr	Phe	His	Arg	Arg
	3245					3250					3255			
Asp	Leu	Arg	Leu	Ala	Ser	Met	Ala	Ile	Cys	Ser	Ala	Val	Pro	Thr
	3260					3265					3270			
Glu	Trp	Phe	Pro	Thr	Ser	Arg	Thr	Thr	Trp	Ser	Ile	His	Ala	His
	3275					3280					3285			
His	Gln	Trp	Met	Thr	Thr	Glu	Asp	Met	Leu	Lys	Val	Trp	Asn	Arg
	3290					3295					3300			
Val	Trp	Ile	Glu	Asp	Asn	Pro	Asn	Met	Thr	Asp	Lys	Thr	Pro	Val
	3305					3310					3315			
His	Ser	Trp	Glu	Asp	Ile	Pro	Tyr	Leu	Gly	Lys	Arg	Glu	Asp	Leu
	3320					3325					3330			

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Trp Cys Gly Ser Leu Ile Gly Leu Ser Ser Arg Ala Thr Trp Ala
3335 3340 3345

Lys Asn Ile His Thr Ala Ile Thr Gln Val Arg Asn Leu Ile Gly
3350 3355 3360

Lys Glu Glu Tyr Val Asp Tyr Met Pro Val Met Lys Arg Tyr Ser
3365 3370 3375

Ala Pro Ser Glu Ser Glu Gly Val Leu
3380 3385

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<211> 3392
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<223> Xaa stands for Met or Ile

<220>
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<223> Xaa stands for Thr or Ile

<400> 5

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Lys Arg Ala Arg Asn Arg Val Ser Thr Val Ser Gln Leu Ala Lys Arg
20 25 30

Phe Ser Lys Gly Leu Leu Ser Gly Gln Gly Pro Met Lys Leu Val Met
35 40 45

Ala Phe Ile Ala Phe Leu Arg Phe Leu Ala Ile Pro Pro Thr Ala Gly
50 55 60

Ile Leu Ala Arg Trp Gly Ser Phe Lys Lys Asn Gly Ala Ile Lys Val
65 70 75 80

Leu Arg Gly Phe Lys Lys Glu Ile Ser Asn Met Leu Asn Ile Met Asn
85 90 95

Arg Arg Lys Arg Ser Val Thr Met Leu Leu Met Leu Met Pro Thr Ala
100 105 110

Leu Ala Phe His Leu Thr Thr Arg Gly Gly Glu Pro His Met Ile Val
115 120 125

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

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

Asp Thr Met Thr Tyr Lys Cys Pro Arg Ile Thr Glu Ala Glu Pro Asp
165 170 175

Asp Val Asp Cys Trp Cys Asn Ala Thr Asp Thr Trp Val Thr Tyr Gly
180 185 190

Thr Cys Ser Gln Thr Gly Glu His Arg Arg Asp Lys Arg Ser Val Ala
195 200 205

Leu Ala Pro His Val Gly Leu Gly Leu Glu Thr Arg Thr Glu Thr Trp
210 215 220

Met Ser Ser Glu Gly Ala Trp Lys Gln Ile Gln Arg Val Glu Thr Trp
225 230 235 240

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

Ala Ile Gly Thr Ser Ile Thr Gln Lys Gly Ile Ile Phe Ile Leu Leu
260 265 270

Met Leu Val Thr Pro Ser Met Ala Met Arg Cys Val Gly Ile Gly Ser
275 280 285

Arg Asp Phe Val Glu Gly Leu Ser Gly Ala Thr Trp Val Asp Val Val
290 295 300

Leu Glu His Gly Ser Cys Val Thr Thr Met Ala Lys Asp Lys Pro Thr
305 310 315 320

Leu Asp Ile Glu Leu Leu Lys Thr Glu Val Thr Asn Pro Ala Val Leu
325 330 335

Arg Lys Leu Cys Ile Glu Ala Lys Ile Ser Asn Thr Thr Thr Asp Ser
340 345 350

Arg Cys Pro Thr Gln Gly Glu Ala Thr Leu Val Glu Glu Gln Asp Ala
355 360 365

Asn Phe Val Cys Arg Arg Thr Phe Val Asp Arg Gly Trp Gly Asn Gly
370 375 380

Cys Gly Leu Phe Gly Lys Gly Ser Leu Leu Thr Cys Ala Lys Phe Lys
385 390 395 400

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Cys Val Thr Lys Leu Glu Gly Lys Ile Val Gln Tyr Glu Asn Leu Lys
405 410 415

Tyr Ser Val Ile Val Thr Val His Thr Gly Asp Gln His Gln Val Gly
420 425 430

Asn Glu Ser Thr Glu His Gly Thr Thr Ala Thr Ile Thr Pro Gln Ala
435 440 445

Pro Thr Thr Glu Ile Gln Leu Thr Asp Tyr Gly Ala Leu Thr Leu Asp
450 455 460

Cys Ser Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Val Leu Leu Thr
465 470 475 480

Met Lys Lys Lys Ser Trp Leu Val His Lys Gln Trp Phe Leu Asp Leu
485 490 495

Pro Leu Pro Trp Thr Ser Gly Ala Ser Thr Ser Gln Glu Thr Trp Asn
500 505 510

Arg Gln Asp Leu Leu Val Thr Phe Lys Thr Ala His Ala Lys Lys Gln
515 520 525

Glu Val Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu
530 535 540

Thr Gly Ala Thr Glu Ile Gln Thr Ser Gly Thr Thr Thr Ile Phe Ala
545 550 555 560

Gly His Leu Lys Cys Arg Leu Arg Met Asp Lys Leu Thr Leu Lys Gly
565 570 575

Met Ser Tyr Val Met Cys Thr Gly Ser Phe Lys Leu Glu Lys Glu Val
580 585 590

Ala Glu Thr Gln His Gly Thr Val Leu Val Gln Ile Lys Tyr Glu Gly
595 600 605

Thr Asp Ala Pro Cys Lys Ile Pro Phe Ser Thr Gln Asp Glu Lys Gly
610 615 620

Val Thr Gln Asn Gly Arg Leu Ile Thr Ala Asn Pro Ile Val Thr Asp
625 630 635 640

Lys Glu Lys Pro Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Glu Ser
645 650 655

Tyr Ile Val Ile Gly Ala Gly Glu Lys Ala Leu Lys Leu Ser Trp Phe
660 665 670

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Lys Lys Gly Ser Ser Ile Gly Lys Met Phe Glu Ala Thr Ala Arg Gly
675 680 685

Ala Arg Arg Met Ala Ile Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser
690 695 700

Ile Gly Gly Val Phe Thr Ser Val Gly Lys Leu Val His Gln Ile Phe
705 710 715 720

Gly Thr Ala Tyr Gly Val Leu Phe Ser Gly Val Ser Trp Thr Met Lys
725 730 735

Ile Gly Ile Gly Val Leu Leu Thr Trp Leu Gly Leu Asn Ser Arg Asn
740 745 750

Thr Ser Leu Ser Met Thr Cys Ile Ala Val Gly Leu Val Thr Leu Tyr
755 760 765

Leu Gly Val Met Val Gln Ala Asp Ser Gly Cys Val Ile Asn Trp Lys
770 775 780

Gly Arg Glu Leu Lys Cys Gly Ser Gly Ile Phe Val Thr Asn Glu Val
785 790 795 800

His Thr Trp Thr Glu Gln Tyr Lys Phe Gln Ala Asp Ser Pro Lys Arg
805 810 815

Leu Ser Ala Ala Ile Gly Lys Ala Trp Glu Glu Gly Val Cys Gly Ile
820 825 830

Arg Ser Ala Thr Arg Leu Glu Asn Ile Met Trp Lys Gln Ile Ser Asn
835 840 845

Glu Leu Asn His Ile Leu Leu Glu Asn Asp Met Lys Phe Thr Val Val
850 855 860

Val Gly Asp Val Ala Gly Ile Leu Ala Gln Gly Lys Lys Met Ile Arg
865 870 875 880

Pro Gln Pro Met Glu His Lys Tyr Ser Trp Lys Ser Trp Gly Lys Ala
885 890 895

Lys Ile Xaa Gly Ala Asp Val Gln Asn Ser Thr Phe Ile Ile Asp Gly
900 905 910

Pro Asn Thr Pro Glu Cys Pro Asp Asp Gln Arg Ala Trp Asn Ile Trp
915 920 925

Glu Val Glu Asp Tyr Gly Phe Gly Ile Phe Thr Thr Asn Ile Trp Leu
930 935 940

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Lys Leu Arg Asp Ser Tyr Thr Gln Leu Cys Asp His Arg Leu Met Ser
 945 950 955 960

Ala Ala Ile Lys Asp Ser Lys Ala Val His Ala Asp Met Gly Tyr Trp
 965 970 975

Ile Glu Ser Glu Lys Asn Glu Thr Trp Lys Leu Ala Arg Ala Ser Phe
 980 985 990

Ile Glu Val Lys Thr Cys Ile Trp Pro Lys Ser His Thr Leu Trp Ser
 995 1000 1005

Asn Gly Val Leu Glu Ser Glu Met Ile Ile Pro Lys Ile Tyr Gly
 1010 1015 1020

Gly Pro Ile Ser Gln His Asn Tyr Arg Pro Gly Tyr Phe Thr Gln
 1025 1030 1035

Thr Val Gly Pro Trp His Leu Gly Lys Leu Glu Leu Asp Phe Asp
 1040 1045 1050

Leu Cys Glu Gly Thr Thr Val Val Val Asp Glu His Cys Gly Asn
 1055 1060 1065

Arg Gly Pro Ser Leu Arg Thr Thr Thr Val Thr Gly Lys Ile Ile
 1070 1075 1080

His Glu Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro Leu Arg Phe
 1085 1090 1095

Arg Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg Pro Val
 1100 1105 1110

Lys Glu Lys Glu Glu Asn Leu Val Lys Ser Met Val Ser Ala Gly
 1115 1120 1125

Ser Gly Glu Val Asp Ser Phe Ser Leu Gly Leu Leu Cys Ile Ser
 1130 1135 1140

Ile Met Ile Glu Glu Val Met Arg Ser Arg Trp Ser Arg Lys Met
 1145 1150 1155

Leu Met Thr Gly Thr Leu Ala Val Phe Leu Leu Leu Ile Met Gly
 1160 1165 1170

Gln Leu Thr Trp Asn Asp Leu Ile Arg Leu Cys Ile Met Val Gly
 1175 1180 1185

Ala Asn Ala Ser Asp Arg Met Gly Met Gly Thr Thr Tyr Leu Ala
 1190 1195 1200

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Leu	Met	Ala	Thr	Phe	Lys	Met	Arg	Pro	Met	Phe	Ala	Val	Gly	Leu
	1205					1210					1215			
Leu	Phe	Arg	Arg	Leu	Thr	Ser	Arg	Glu	Val	Leu	Leu	Leu	Thr	Ile
	1220					1225					1230			
Gly	Leu	Ser	Leu	Val	Ala	Ser	Val	Glu	Leu	Pro	Asn	Ser	Leu	Glu
	1235					1240					1245			
Glu	Leu	Gly	Asp	Gly	Leu	Ala	Met	Gly	Ile	Met	Ile	Leu	Lys	Leu
	1250					1255					1260			
Leu	Thr	Asp	Phe	Gln	Ser	His	Gln	Leu	Trp	Ala	Thr	Leu	Leu	Ser
	1265					1270					1275			
Leu	Thr	Phe	Ile	Lys	Thr	Thr	Phe	Ser	Leu	His	Tyr	Ala	Trp	Lys
	1280					1285					1290			
Thr	Met	Ala	Met	Val	Leu	Ser	Ile	Val	Ser	Leu	Phe	Pro	Leu	Cys
	1295					1300					1305			
Leu	Ser	Thr	Thr	Ser	Gln	Lys	Thr	Thr	Trp	Leu	Pro	Val	Leu	Leu
	1310					1315					1320			
Gly	Ser	Leu	Gly	Cys	Lys	Pro	Leu	Thr	Met	Phe	Leu	Ile	Ala	Glu
	1325					1330					1335			
Asn	Lys	Ile	Trp	Gly	Arg	Lys	Ser	Trp	Pro	Leu	Asn	Glu	Gly	Ile
	1340					1345					1350			
Met	Ala	Val	Gly	Ile	Val	Ser	Ile	Leu	Leu	Ser	Ser	Leu	Leu	Lys
	1355					1360					1365			
Asn	Asp	Val	Pro	Leu	Ala	Gly	Pro	Leu	Ile	Ala	Gly	Gly	Met	Leu
	1370					1375					1380			
Ile	Ala	Cys	Tyr	Val	Ile	Ser	Gly	Ser	Ser	Ala	Asp	Leu	Ser	Leu
	1385					1390					1395			
Glu	Lys	Ala	Ala	Glu	Val	Ser	Trp	Glu	Glu	Glu	Ala	Glu	His	Ser
	1400					1405					1410			
Gly	Ala	Ser	His	Asn	Ile	Leu	Val	Glu	Val	Gln	Asp	Asp	Gly	Thr
	1415					1420					1425			
Met	Lys	Ile	Lys	Asp	Glu	Glu	Arg	Asp	Asp	Thr	Leu	Thr	Ile	Leu
	1430					1435					1440			
Leu	Lys	Ala	Thr	Leu	Leu	Ala	Val	Ser	Gly	Val	Tyr	Pro	Leu	Ser
	1445					1450					1455			

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Ile	Pro	Ala	Thr	Leu	Phe	Val	Trp	Tyr	Phe	Trp	Gln	Lys	Lys	Lys
	1460					1465					1470			
Gln	Arg	Ser	Gly	Val	Leu	Trp	Asp	Thr	Pro	Ser	Pro	Pro	Glu	Val
	1475					1480					1485			
Glu	Arg	Ala	Val	Leu	Asp	Asp	Gly	Ile	Tyr	Arg	Ile	Met	Gln	Arg
	1490					1495					1500			
Gly	Leu	Leu	Gly	Arg	Ser	Gln	Val	Gly	Val	Gly	Val	Phe	Gln	Glu
	1505					1510					1515			
Asn	Val	Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ala	Val	Leu
	1520					1525					1530			
Met	Tyr	Gln	Gly	Lys	Arg	Leu	Glu	Pro	Ser	Trp	Ala	Ser	Val	Lys
	1535					1540					1545			
Lys	Asp	Leu	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Arg	Leu	Gln	Gly	Ser
	1550					1555					1560			
Trp	Asn	Thr	Gly	Glu	Glu	Val	Gln	Val	Ile	Ala	Val	Glu	Pro	Gly
	1565					1570					1575			
Lys	Asn	Pro	Lys	Asn	Val	Gln	Thr	Ala	Pro	Gly	Thr	Phe	Lys	Thr
	1580					1585					1590			
Pro	Glu	Gly	Glu	Val	Gly	Ala	Ile	Ala	Leu	Asp	Phe	Lys	Pro	Gly
	1595					1600					1605			
Thr	Ser	Gly	Ser	Pro	Ile	Val	Asn	Arg	Glu	Gly	Lys	Ile	Val	Gly
	1610					1615					1620			
Leu	Tyr	Gly	Asn	Gly	Val	Val	Thr	Thr	Ser	Gly	Thr	Tyr	Val	Ser
	1625					1630					1635			
Ala	Ile	Ala	Gln	Ala	Lys	Ala	Ser	Gln	Glu	Gly	Pro	Leu	Pro	Glu
	1640					1645					1650			
Ile	Glu	Asp	Glu	Val	Phe	Arg	Lys	Arg	Lys	Leu	Thr	Ile	Met	Asp
	1655					1660					1665			
Leu	His	Pro	Gly	Ser	Gly	Lys	Thr	Arg	Arg	Tyr	Leu	Pro	Ala	Ile
	1670					1675					1680			
Val	Arg	Glu	Ala	Ile	Lys	Arg	Lys	Leu	Arg	Thr	Leu	Ile	Leu	Ala
	1685					1690					1695			
Pro	Thr	Arg	Val	Val	Ala	Ser	Glu	Met	Ala	Glu	Ala	Leu	Lys	Gly
	1700					1705					1710			

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Met	Pro	Ile	Arg	Tyr	Gln	Thr	Thr	Ala	Val	Lys	Ser	Glu	His	Thr
	1715					1720					1725			
Gly	Lys	Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Met
	1730					1735					1740			
Arg	Leu	Leu	Ser	Pro	Val	Arg	Val	Pro	Asn	Tyr	Asn	Met	Ile	Ile
	1745					1750					1755			
Met	Asp	Glu	Ala	His	Phe	Thr	Asp	Pro	Ser	Ser	Ile	Ala	Ala	Arg
	1760					1765					1770			
Gly	Tyr	Ile	Ser	Thr	Arg	Val	Gly	Met	Gly	Glu	Ala	Ala	Ala	Ile
	1775					1780					1785			
Phe	Met	Thr	Ala	Thr	Pro	Pro	Gly	Ser	Val	Glu	Ala	Phe	Pro	Gln
	1790					1795					1800			
Ser	Asn	Ala	Val	Ile	Gln	Asp	Glu	Glu	Arg	Asp	Ile	Pro	Glu	Arg
	1805					1810					1815			
Ser	Trp	Asn	Ser	Gly	Tyr	Glu	Trp	Ile	Thr	Asp	Phe	Pro	Gly	Lys
	1820					1825					1830			
Thr	Val	Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala
	1835					1840					1845			
Asn	Cys	Leu	Arg	Lys	Asn	Gly	Lys	Arg	Val	Ile	Gln	Leu	Ser	Arg
	1850					1855					1860			
Lys	Thr	Phe	Asp	Thr	Glu	Tyr	Gln	Lys	Thr	Lys	Asn	Asn	Asp	Trp
	1865					1870					1875			
Asp	Tyr	Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe
	1880					1885					1890			
Arg	Ala	Asp	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Leu	Lys	Pro	Val
	1895					1900					1905			
Ile	Leu	Lys	Asp	Gly	Pro	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Met
	1910					1915					1920			
Pro	Val	Thr	Val	Ala	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Ile	Gly
	1925					1930					1935			
Arg	Asn	His	Asn	Lys	Glu	Gly	Asp	Gln	Tyr	Ile	Tyr	Met	Gly	Gln
	1940					1945					1950			
Pro	Leu	Asn	Asn	Asp	Glu	Asp	His	Ala	His	Trp	Thr	Glu	Ala	Lys
	1955					1960					1965			

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Met	Leu	Leu	Asp	Asn	Ile	Asn	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Ala
1970						1975					1980			
Leu	Phe	Glu	Pro	Glu	Arg	Glu	Lys	Ser	Ala	Ala	Ile	Asp	Gly	Glu
1985						1990					1995			
Tyr	Arg	Leu	Arg	Gly	Glu	Ala	Arg	Lys	Thr	Phe	Val	Glu	Leu	Met
2000						2005					2010			
Arg	Arg	Gly	Asp	Leu	Pro	Val	Trp	Leu	Ser	Tyr	Lys	Val	Ala	Ser
2015						2020					2025			
Glu	Gly	Phe	Gln	Tyr	Ser	Asp	Arg	Arg	Trp	Cys	Phe	Asp	Gly	Glu
2030						2035					2040			
Arg	Asn	Asn	Gln	Val	Leu	Glu	Glu	Asn	Met	Asp	Val	Glu	Ile	Trp
2045						2050					2055			
Thr	Lys	Glu	Gly	Glu	Arg	Lys	Lys	Leu	Arg	Pro	Arg	Trp	Leu	Asp
2060						2065					2070			
Ala	Arg	Thr	Tyr	Ser	Asp	Pro	Leu	Ala	Leu	Arg	Glu	Phe	Lys	Glu
2075						2080					2085			
Phe	Ala	Ala	Gly	Arg	Arg	Ser	Val	Ser	Gly	Asp	Leu	Ile	Leu	Glu
2090						2095					2100			
Ile	Gly	Lys	Leu	Pro	Gln	His	Leu	Thr	Gln	Arg	Ala	Gln	Asn	Ala
2105						2110					2115			
Leu	Asp	Asn	Leu	Val	Met	Leu	His	Asn	Ser	Glu	Gln	Gly	Gly	Arg
2120						2125					2130			
Ala	Tyr	Arg	His	Ala	Met	Glu	Glu	Leu	Pro	Asp	Thr	Ile	Glu	Thr
2135						2140					2145			
Leu	Met	Leu	Leu	Ala	Leu	Ile	Ala	Val	Leu	Thr	Gly	Gly	Val	Thr
2150						2155					2160			
Leu	Phe	Phe	Leu	Ser	Gly	Lys	Gly	Leu	Gly	Lys	Thr	Ser	Ile	Gly
2165						2170					2175			
Leu	Leu	Cys	Val	Met	Ala	Ser	Ser	Val	Leu	Leu	Trp	Met	Ala	Ser
2180						2185					2190			
Val	Glu	Pro	His	Trp	Ile	Ala	Ala	Ser	Ile	Ile	Leu	Glu	Phe	Phe
2195						2200					2205			
Leu	Met	Val	Leu	Leu	Ile	Pro	Glu	Pro	Asp	Arg	Gln	Arg	Thr	Pro
2210						2215					2220			

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Gln	Asp	Asn	Gln	Leu	Ala	Tyr	Val	Val	Ile	Gly	Leu	Leu	Phe	Met
	2225					2230					2235			
Ile	Leu	Thr	Val	Ala	Ala	Asn	Glu	Met	Gly	Leu	Leu	Glu	Thr	Thr
	2240					2245					2250			
Lys	Lys	Asp	Leu	Gly	Ile	Gly	His	Val	Ala	Val	Glu	Asn	His	His
	2255					2260					2265			
His	Ala	Ala	Met	Leu	Asp	Val	Asp	Leu	His	Pro	Ala	Ser	Ala	Trp
	2270					2275					2280			
Thr	Leu	Tyr	Ala	Val	Ala	Thr	Thr	Ile	Ile	Thr	Pro	Met	Met	Arg
	2285					2290					2295			
His	Thr	Ile	Glu	Asn	Thr	Thr	Ala	Asn	Ile	Ser	Leu	Thr	Ala	Ile
	2300					2305					2310			
Ala	Asn	Gln	Ala	Ala	Ile	Leu	Met	Gly	Leu	Asp	Lys	Gly	Trp	Pro
	2315					2320					2325			
Ile	Ser	Lys	Met	Asp	Ile	Gly	Val	Pro	Leu	Leu	Ala	Leu	Gly	Cys
	2330					2335					2340			
Tyr	Ser	Gln	Val	Asn	Pro	Leu	Thr	Leu	Xaa	Ala	Ala	Val	Leu	Met
	2345					2350					2355			
Leu	Val	Ala	His	Tyr	Ala	Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys
	2360					2365					2370			
Ala	Thr	Arg	Glu	Ala	Gln	Lys	Arg	Thr	Ala	Ala	Gly	Ile	Met	Lys
	2375					2380					2385			
Asn	Pro	Thr	Ile	Asp	Gly	Ile	Val	Ala	Ile	Asp	Leu	Asp	Pro	Val
	2390					2395					2400			
Val	Tyr	Asp	Ala	Lys	Phe	Glu	Lys	Gln	Leu	Gly	Gln	Ile	Met	Leu
	2405					2410					2415			
Leu	Ile	Leu	Cys	Thr	Ser	Gln	Ile	Leu	Leu	Met	Arg	Thr	Thr	Trp
	2420					2425					2430			
Ala	Leu	Cys	Glu	Ser	Ile	Thr	Leu	Ala	Thr	Gly	Pro	Leu	Thr	Thr
	2435					2440					2445			
Leu	Trp	Glu	Gly	Ser	Pro	Gly	Lys	Phe	Trp	Asn	Thr	Thr	Ile	Ala
	2450					2455					2460			
Val	Ser	Met	Ala	Asn	Ile	Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala
	2465					2470					2475			

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Gly	Leu	Ala	Phe	Ser	Leu	Met	Lys	Ser	Leu	Gly	Gly	Gly	Arg	Arg
	2480					2485						2490		
Gly	Thr	Gly	Ala	Gln	Gly	Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Arg
	2495					2500					2505			
Gln	Leu	Asn	Gln	Leu	Ser	Lys	Ser	Glu	Phe	Asn	Thr	Tyr	Lys	Arg
	2510					2515					2520			
Ser	Gly	Ile	Met	Glu	Val	Asp	Arg	Ser	Glu	Ala	Lys	Glu	Gly	Leu
	2525					2530					2535			
Lys	Arg	Gly	Glu	Thr	Thr	Lys	His	Ala	Val	Ser	Arg	Gly	Thr	Ala
	2540					2545					2550			
Lys	Leu	Arg	Trp	Phe	Val	Glu	Arg	Asn	Leu	Val	Lys	Pro	Glu	Gly
	2555					2560					2565			
Lys	Val	Ile	Asp	Leu	Gly	Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr
	2570					2575					2580			
Cys	Ala	Gly	Leu	Lys	Lys	Val	Thr	Glu	Val	Lys	Gly	Tyr	Thr	Lys
	2585					2590					2595			
Gly	Gly	Pro	Gly	His	Glu	Glu	Pro	Ile	Pro	Met	Ala	Thr	Tyr	Gly
	2600					2605					2610			
Trp	Asn	Leu	Val	Lys	Leu	His	Ser	Gly	Lys	Asp	Val	Phe	Phe	Ile
	2615					2620					2625			
Pro	Pro	Glu	Lys	Cys	Asp	Thr	Leu	Leu	Cys	Asp	Ile	Gly	Glu	Ser
	2630					2635					2640			
Ser	Pro	Asn	Pro	Thr	Ile	Glu	Glu	Gly	Arg	Thr	Leu	Arg	Val	Leu
	2645					2650					2655			
Lys	Met	Val	Glu	Pro	Trp	Leu	Arg	Gly	Asn	Gln	Phe	Cys	Ile	Lys
	2660					2665					2670			
Ile	Leu	Asn	Pro	Tyr	Met	Pro	Ser	Val	Val	Glu	Thr	Leu	Glu	Gln
	2675					2680					2685			
Met	Gln	Arg	Lys	His	Gly	Gly	Met	Leu	Val	Arg	Asn	Pro	Leu	Ser
	2690					2695					2700			
Arg	Asn	Ser	Thr	His	Glu	Met	Tyr	Trp	Val	Ser	Cys	Gly	Thr	Gly
	2705					2710					2715			
Asn	Ile	Val	Ser	Ala	Val	Asn	Met	Thr	Ser	Arg	Met	Leu	Leu	Asn
	2720					2725					2730			

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Arg	Phe	Thr	Met	Ala	His	Arg	Lys	Pro	Thr	Tyr	Glu	Arg	Asp	Val
	2735					2740					2745			
Asp	Leu	Gly	Ala	Gly	Thr	Arg	His	Val	Ala	Val	Glu	Pro	Glu	Val
	2750					2755					2760			
Ala	Asn	Leu	Asp	Ile	Ile	Gly	Gln	Arg	Ile	Glu	Asn	Ile	Lys	His
	2765					2770					2775			
Glu	His	Lys	Ser	Thr	Trp	His	Tyr	Asp	Glu	Asp	Asn	Pro	Tyr	Lys
	2780					2785					2790			
Thr	Trp	Ala	Tyr	His	Gly	Ser	Tyr	Glu	Val	Lys	Pro	Ser	Gly	Ser
	2795					2800					2805			
Ala	Ser	Ser	Met	Val	Asn	Gly	Val	Val	Lys	Leu	Leu	Thr	Lys	Pro
	2810					2815					2820			
Trp	Asp	Val	Ile	Pro	Met	Val	Thr	Gln	Ile	Ala	Met	Thr	Asp	Thr
	2825					2830					2835			
Thr	Pro	Phe	Gly	Gln	Gln	Arg	Val	Phe	Lys	Glu	Lys	Val	Asp	Thr
	2840					2845					2850			
Arg	Thr	Pro	Lys	Ala	Lys	Arg	Gly	Thr	Ala	Gln	Ile	Met	Glu	Val
	2855					2860					2865			
Thr	Ala	Arg	Trp	Leu	Trp	Gly	Phe	Leu	Ser	Arg	Asn	Lys	Lys	Pro
	2870					2875					2880			
Arg	Ile	Cys	Thr	Arg	Glu	Glu	Phe	Thr	Arg	Lys	Val	Arg	Ser	Asn
	2885					2890					2895			
Ala	Ala	Ile	Gly	Ala	Val	Phe	Val	Asp	Glu	Asn	Gln	Trp	Asn	Ser
	2900					2905					2910			
Ala	Lys	Glu	Ala	Val	Glu	Asp	Asp	Arg	Phe	Trp	Asp	Leu	Val	His
	2915					2920					2925			
Arg	Glu	Arg	Glu	Leu	His	Lys	Gln	Gly	Lys	Cys	Ala	Thr	Cys	Val
	2930					2935					2940			
Tyr	Asn	Met	Met	Gly	Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly
	2945					2950					2955			
Lys	Ala	Lys	Gly	Ser	Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala
	2960					2965					2970			
Arg	Phe	Leu	Glu	Phe	Glu	Ala	Leu	Gly	Phe	Met	Asn	Glu	Asp	His
	2975					2980					2985			

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Trp	Phe	Ser	Arg	Glu	Asn	Ser	Leu	Ser	Gly	Val	Glu	Gly	Glu	Gly
	2990					2995					3000			
Leu	His	Lys	Leu	Gly	Tyr	Ile	Leu	Arg	Asp	Ile	Ser	Lys	Ile	Pro
	3005					3010					3015			
Gly	Gly	Asn	Met	Tyr	Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg
	3020					3025					3030			
Ile	Thr	Glu	Asp	Asp	Leu	Gln	Asn	Glu	Ala	Lys	Ile	Thr	Asp	Ile
	3035					3040					3045			
Met	Glu	Pro	Glu	His	Ala	Leu	Leu	Ala	Lys	Ser	Ile	Phe	Lys	Leu
	3050					3055					3060			
Thr	Tyr	Gln	Asn	Lys	Val	Val	Arg	Val	Gln	Arg	Pro	Ala	Lys	Asn
	3065					3070					3075			
Gly	Thr	Val	Met	Asp	Val	Ile	Ser	Arg	Arg	Asp	Gln	Arg	Gly	Ser
	3080					3085					3090			
Gly	Gln	Val	Gly	Thr	Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu
	3095					3100					3105			
Ala	Gln	Leu	Ile	Arg	Gln	Met	Glu	Ser	Glu	Gly	Ile	Phe	Ser	Pro
	3110					3115					3120			
Asn	Glu	Leu	Glu	Thr	Pro	Asn	Leu	Ala	Glu	Arg	Val	Leu	Asp	Trp
	3125					3130					3135			
Leu	Glu	Lys	Tyr	Gly	Val	Glu	Arg	Leu	Lys	Arg	Met	Ala	Ile	Ser
	3140					3145					3150			
Gly	Asp	Asp	Cys	Val	Val	Lys	Pro	Ile	Asp	Asp	Arg	Phe	Ala	Thr
	3155					3160					3165			
Ala	Leu	Thr	Ala	Leu	Asn	Asp	Met	Gly	Lys	Val	Arg	Lys	Asp	Ile
	3170					3175					3180			
Pro	Gln	Trp	Glu	Pro	Ser	Lys	Gly	Trp	Asn	Asp	Trp	Gln	Gln	Val
	3185					3190					3195			
Pro	Phe	Cys	Ser	His	His	Phe	His	Gln	Leu	Ile	Met	Lys	Asp	Gly
	3200					3205					3210			
Arg	Glu	Ile	Val	Val	Pro	Cys	Arg	Asn	Gln	Asp	Glu	Leu	Val	Gly
	3215					3220					3225			
Arg	Ala	Arg	Val	Ser	Gln	Gly	Ala	Gly	Trp	Ser	Leu	Arg	Glu	Thr
	3230					3235					3240			

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Ala Cys Leu Gly Lys Ser Tyr Ala Gln Met Trp Gln Leu Met Tyr
3245 3250 3255

Phe His Arg Arg Asp Leu Arg Leu Ala Ala Asn Ala Ile Cys Ser
3260 3265 3270

Ala Val Pro Val Asp Trp Val Pro Thr Ser Arg Thr Thr Trp Ser
3275 3280 3285

Ile His Ala His His Gln Trp Met Thr Thr Glu Asp Met Leu Ser
3290 3295 3300

Val Trp Asn Arg Val Trp Ile Glu Glu Asn Pro Trp Met Glu Asp
3305 3310 3315

Lys Thr Arg Ile Ser Ser Trp Glu Asp Val Pro Tyr Leu Gly Lys
3320 3325 3330

Arg Glu Asp Gln Trp Cys Gly Ser Leu Ile Gly Leu Thr Ala Arg
3335 3340 3345

Ala Thr Trp Ala Thr Asn Ile Gln Val Ala Ile Asn Gln Val Arg
3350 3355 3360

Arg Leu Ile Gly Asn Glu Asn Tyr Ser Asp Tyr Met Thr Ser Met
3365 3370 3375

Lys Arg Phe Lys Asn Glu Ser Glu Pro Glu Gly Ala Leu Trp
3380 3385 3390

<210> 6
<211> 3391
<212> PRT
<213> Dengue virus type 2

<220>
<221> VARIANT
<222> (1371)..(1371)
<223> Xaa stands for Val or Ile

<400> 6

Met Asn Asn Gln Arg Lys Lys Ala Lys Asn Thr Pro Phe Asn Met Leu
1 5 10 15

Lys Arg Glu Arg Asn Arg Val Ser Thr Val Gln Gln Leu Thr Lys Arg
20 25 30

Phe Ser Leu Gly Met Leu Gln Gly Arg Gly Pro Leu Lys Leu Phe Met
35 40 45

Ala Leu Val Ala Phe Leu Arg Phe Leu Thr Ile Pro Pro Thr Ala Gly
50 55 60

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Ile Leu Lys Arg Trp Gly Thr Ile Lys Lys Ser Lys Ala Ile Asn Val
65 70 75 80

Leu Arg Gly Phe Arg Lys Glu Ile Gly Arg Met Leu Asn Ile Leu Asn
85 90 95

Arg Arg Arg Arg Ser Ala Gly Met Ile Ile Met Leu Ile Pro Thr Val
100 105 110

Met Ala Phe His Leu Thr Thr Arg Asn Gly Glu Pro His Met Ile Val
115 120 125

Gly Ile Gln Glu Lys Gly Lys Ser Leu Leu Phe Lys Thr Glu Asn Gly
130 135 140

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

Asp Thr Ile Thr Tyr Lys Cys Pro Leu Leu Arg Gln Asn Glu Pro Glu
165 170 175

Asp Ile Asp Cys Trp Cys Asn Ser Thr Ser Thr Trp Val Thr Tyr Gly
180 185 190

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

Leu Val Pro His Val Gly Met Gly Leu Glu Thr Arg Thr Glu Thr Trp
210 215 220

Met Ser Ser Glu Gly Ala Trp Lys His Ala Gln Arg Ile Glu Thr Trp
225 230 235 240

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

Thr Ile Gly Thr Thr His Phe Gln Arg Val Leu Ile Phe Ile Leu Leu
260 265 270

Thr Ala Val Ala Pro Ser Met Thr Met Arg Cys Ile Gly Ile Ser Asn
275 280 285

Arg Asp Phe Val Glu Gly Val Ser Gly Gly Ser Trp Val Asp Ile Val
290 295 300

Leu Glu His Gly Ser Cys Val Thr Thr Met Ala Lys Asn Lys Pro Thr
305 310 315 320

Leu Asp Phe Glu Leu Ile Lys Thr Glu Ala Lys Gln Pro Ala Thr Leu
325 330 335

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Arg Lys Tyr Cys Ile Glu Ala Lys Leu Thr Asn Thr Thr Thr Glu Ser
340 345 350

Arg Cys Pro Thr Gln Gly Glu Pro Ser Leu Lys Glu Glu Gln Asp Lys
355 360 365

Arg Phe Val Cys Lys His Ser Met Val Asp Arg Gly Trp Gly Asn Gly
370 375 380

Cys Gly Leu Phe Gly Lys Gly Gly Ile Val Thr Cys Ala Met Phe Lys
385 390 395 400

Cys Lys Lys Asn Met Glu Gly Lys Ile Val Gln Pro Glu Asn Leu Glu
405 410 415

Tyr Thr Ile Val Val Thr Pro His Ser Gly Glu Glu His Ala Val Gly
420 425 430

Asn Asp Thr Gly Lys His Gly Lys Glu Ile Lys Val Thr Pro Gln Ser
435 440 445

Ser Ile Thr Glu Ala Glu Leu Thr Gly Tyr Gly Thr Val Thr Met Glu
450 455 460

Cys Ser Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Val Leu Leu Gln
465 470 475 480

Met Glu Asn Lys Ala Trp Leu Val His Arg Gln Trp Phe Leu Asp Leu
485 490 495

Pro Leu Pro Trp Leu Pro Gly Ala Asp Lys Gln Glu Ser Asn Trp Ile
500 505 510

Gln Lys Glu Thr Leu Val Thr Phe Lys Asn Pro His Ala Lys Lys Gln
515 520 525

Asp Val Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu
530 535 540

Thr Gly Ala Thr Glu Ile Gln Met Ser Ser Gly Asn Leu Leu Phe Thr
545 550 555 560

Gly His Leu Lys Cys Arg Leu Arg Met Asp Lys Leu Gln Leu Lys Gly
565 570 575

Met Ser Tyr Ser Met Cys Thr Gly Lys Phe Lys Val Val Lys Glu Ile
580 585 590

Ala Glu Thr Gln His Gly Thr Ile Val Ile Arg Val Gln Tyr Glu Gly
595 600 605

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Asp Gly Ser Pro Cys Lys Ile Pro Phe Glu Ile Met Asp Leu Glu Lys
 610 615 620
 Arg Tyr Val Leu Gly Arg Leu Ile Thr Val Asn Pro Ile Val Thr Glu
 625 630 635 640
 Lys Asp Ser Pro Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Asp Ser
 645 650 655
 Tyr Ile Ile Ile Gly Val Glu Pro Gly Gln Leu Lys Leu Asn Trp Phe
 660 665 670
 Lys Lys Gly Ser Ser Ile Gly Gln Met Phe Glu Thr Thr Met Arg Gly
 675 680 685
 Ala Lys Arg Met Ala Ile Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser
 690 695 700
 Leu Gly Gly Val Phe Thr Ser Ile Gly Lys Ala Leu His Gln Val Phe
 705 710 715 720
 Gly Ala Ile Tyr Gly Ala Ala Phe Ser Gly Val Ser Trp Thr Met Lys
 725 730 735
 Ile Leu Ile Gly Val Ile Ile Thr Trp Ile Gly Met Asn Ser Arg Ser
 740 745 750
 Thr Ser Leu Ser Val Ser Leu Val Leu Val Gly Ile Val Thr Leu Tyr
 755 760 765
 Leu Gly Val Met Val Gln Ala Asp Ser Gly Cys Val Val Ser Trp Lys
 770 775 780
 Asn Lys Glu Leu Lys Cys Gly Ser Gly Ile Phe Ile Thr Asp Asn Val
 785 790 795 800
 His Thr Trp Thr Glu Gln Tyr Lys Phe Gln Pro Glu Ser Pro Ser Lys
 805 810 815
 Leu Ala Ser Ala Ile Gln Lys Ala Gln Glu Glu Gly Ile Cys Gly Ile
 820 825 830
 Arg Ser Val Thr Arg Leu Glu Asn Leu Met Trp Lys Gln Ile Thr Pro
 835 840 845
 Glu Leu Asn His Ile Leu Ala Glu Asn Glu Val Lys Leu Thr Ile Met
 850 855 860
 Thr Gly Asp Ile Lys Gly Ile Met Gln Ala Gly Lys Arg Ser Leu Arg
 865 870 875 880

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Pro Gln Pro Thr Glu Leu Lys Tyr Ser Trp Lys Thr Trp Gly Lys Ala
885 890 895

Lys Met Leu Ser Thr Glu Ser Tyr Asn Gln Thr Phe Leu Ile Asp Gly
900 905 910

Pro Glu Thr Ala Glu Cys Pro Asn Thr Asn Arg Ala Trp Asn Ser Leu
915 920 925

Glu Val Glu Asp Tyr Gly Phe Gly Val Phe Thr Thr Asn Ile Trp Leu
930 935 940

Lys Leu Lys Glu Lys Gln Asp Ala Phe Cys Asp Ser Lys Leu Met Ser
945 950 955 960

Ala Ala Ile Lys Asp Asn Arg Ala Val His Ala Asp Met Gly Tyr Trp
965 970 975

Ile Glu Ser Ala Leu Asn Asp Thr Trp Lys Ile Glu Lys Ala Ser Phe
980 985 990

Ile Glu Val Lys Asn Cys His Trp Pro Lys Ser His Thr Leu Trp Ser
995 1000 1005

Asn Gly Val Leu Glu Ser Glu Met Ile Ile Pro Lys Asn Leu Ala
1010 1015 1020

Gly Pro Val Ser Gln His Asn Tyr Arg Pro Gly Tyr His Thr Gln
1025 1030 1035

Val Ala Gly Pro Trp His Leu Gly Lys Leu Glu Met Asp Phe Asp
1040 1045 1050

Phe Cys Asp Gly Thr Thr Val Ile Val Thr Glu Asp Cys Gly Asn
1055 1060 1065

Arg Gly Pro Ser Leu Arg Thr Thr Thr Ala Ser Gly Lys Leu Ile
1070 1075 1080

Thr Glu Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro Leu Arg Tyr
1085 1090 1095

Arg Gly Glu Asn Gly Cys Trp Tyr Gly Met Glu Ile Arg Pro Leu
1100 1105 1110

Lys Glu Lys Glu Glu Asn Leu Val Asn Ser Leu Val Thr Ala Gly
1115 1120 1125

His Gly Gln Val Asp Asn Phe Ser Leu Gly Val Leu Gly Met Ala
1130 1135 1140

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Leu	Phe	Leu	Glu	Glu	Met	Leu	Arg	Thr	Arg	Val	Gly	Thr	Lys	His
	1145					1150					1155			
Ala	Ile	Leu	Leu	Val	Ala	Val	Ser	Phe	Val	Thr	Leu	Ile	Thr	Gly
	1160					1165					1170			
Asn	Met	Ser	Phe	Lys	Asp	Leu	Gly	Arg	Val	Val	Val	Met	Val	Gly
	1175					1180					1185			
Ala	Thr	Met	Ala	Asp	Asp	Ile	Gly	Met	Gly	Val	Thr	Tyr	Leu	Ala
	1190					1195					1200			
Leu	Leu	Ala	Ala	Phe	Lys	Val	Arg	Pro	Thr	Phe	Ala	Ala	Gly	Leu
	1205					1210					1215			
Leu	Leu	Arg	Lys	Leu	Thr	Ser	Lys	Glu	Leu	Met	Met	Thr	Thr	Ile
	1220					1225					1230			
Gly	Ile	Val	Leu	Leu	Ser	Gln	Ser	Thr	Ile	Pro	Glu	Thr	Val	Leu
	1235					1240					1245			
Glu	Leu	Thr	Asp	Ala	Leu	Ala	Leu	Gly	Met	Met	Val	Leu	Lys	Ile
	1250					1255					1260			
Val	Arg	Asn	Met	Glu	Lys	Tyr	Gln	Leu	Ala	Val	Thr	Ile	Met	Ala
	1265					1270					1275			
Ile	Leu	Cys	Val	Pro	Asn	Ala	Val	Ile	Leu	Gln	Asn	Ala	Trp	Lys
	1280					1285					1290			
Val	Ser	Cys	Thr	Ile	Leu	Ala	Val	Val	Ser	Val	Ser	Pro	Leu	Phe
	1295					1300					1305			
Leu	Thr	Ser	Ser	Gln	Gln	Lys	Thr	Asp	Trp	Ile	Pro	Leu	Ala	Leu
	1310					1315					1320			
Thr	Ile	Lys	Gly	Leu	Asn	Pro	Thr	Ala	Ile	Phe	Leu	Thr	Thr	Leu
	1325					1330					1335			
Ser	Arg	Thr	Asn	Lys	Lys	Arg	Ser	Trp	Pro	Leu	Asn	Glu	Ala	Ile
	1340					1345					1350			
Met	Ala	Val	Gly	Met	Val	Ser	Ile	Leu	Ala	Ser	Ser	Leu	Leu	Lys
	1355					1360					1365			
Asn	Asp	Xaa	Pro	Met	Thr	Gly	Pro	Leu	Val	Ala	Gly	Gly	Leu	Leu
	1370					1375					1380			
Thr	Val	Cys	Tyr	Val	Leu	Thr	Gly	Arg	Ser	Ala	Asp	Leu	Glu	Leu
	1385					1390					1395			

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Glu	Arg	Ala	Thr	Asp	Val	Lys	Trp	Glu	Asp	Gln	Ala	Glu	Ile	Ser
1400						1405					1410			
Gly	Ser	Ser	Pro	Ile	Leu	Ser	Ile	Thr	Ile	Ser	Glu	Asp	Gly	Ser
1415						1420					1425			
Met	Ser	Ile	Lys	Asn	Glu	Glu	Glu	Glu	Gln	Thr	Leu	Thr	Ile	Leu
1430						1435					1440			
Ile	Arg	Thr	Gly	Leu	Leu	Val	Ile	Ser	Gly	Leu	Phe	Pro	Ile	Ser
1445						1450					1455			
Ile	Pro	Val	Thr	Ala	Ala	Ala	Trp	Tyr	Leu	Trp	Glu	Val	Lys	Lys
1460						1465					1470			
Gln	Arg	Ala	Gly	Val	Leu	Trp	Asp	Val	Pro	Ser	Pro	Pro	Pro	Met
1475						1480					1485			
Gly	Lys	Ala	Glu	Leu	Glu	Asp	Gly	Ala	Tyr	Arg	Ile	Lys	Gln	Lys
1490						1495					1500			
Gly	Ile	Leu	Gly	Tyr	Ser	Gln	Ile	Gly	Ala	Gly	Val	Tyr	Lys	Glu
1505						1510					1515			
Gly	Thr	Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ala	Val	Leu
1520						1525					1530			
Met	His	Lys	Gly	Lys	Arg	Ile	Glu	Pro	Ser	Trp	Ala	Asp	Val	Lys
1535						1540					1545			
Lys	Asp	Leu	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Lys	Leu	Glu	Gly	Glu
1550						1555					1560			
Trp	Lys	Glu	Gly	Glu	Glu	Val	Gln	Val	Leu	Ala	Leu	Glu	Pro	Gly
1565						1570					1575			
Lys	Asn	Pro	Arg	Ala	Val	Gln	Thr	Lys	Pro	Gly	Leu	Phe	Lys	Thr
1580						1585					1590			
Asn	Thr	Gly	Thr	Ile	Gly	Ala	Val	Ser	Leu	Asp	Phe	Ser	Pro	Gly
1595						1600					1605			
Thr	Ser	Gly	Ser	Pro	Ile	Ile	Asp	Lys	Lys	Gly	Lys	Val	Val	Gly
1610						1615					1620			
Leu	Tyr	Gly	Asn	Gly	Val	Val	Thr	Arg	Ser	Gly	Ala	Tyr	Val	Ser
1625						1630					1635			
Ala	Ile	Ala	Gln	Thr	Glu	Lys	Ser	Ile	Glu	Asp	Asn	Pro	Glu	Ile
1640						1645					1650			

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Lys	Asp	Asp	Ile	Phe	Arg	Lys	Arg	Arg	Leu	Thr	Ile	Met	Asp	Leu
	1655					1660					1665			
His	Pro	Gly	Ala	Gly	Lys	Thr	Lys	Arg	Tyr	Leu	Pro	Ala	Ile	Val
	1670					1675					1680			
Arg	Glu	Ala	Ile	Lys	Arg	Gly	Leu	Arg	Thr	Leu	Ile	Leu	Ala	Pro
	1685					1690					1695			
Thr	Arg	Val	Val	Ala	Ala	Glu	Met	Glu	Glu	Ala	Leu	Arg	Gly	Leu
	1700					1705					1710			
Pro	Ile	Arg	Tyr	Gln	Thr	Pro	Ala	Ile	Arg	Ala	Glu	His	Thr	Gly
	1715					1720					1725			
Arg	Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Met	Arg
	1730					1735					1740			
Leu	Leu	Ser	Pro	Val	Arg	Val	Pro	Asn	Tyr	Asn	Leu	Ile	Ile	Met
	1745					1750					1755			
Asp	Glu	Ala	His	Phe	Thr	Asp	Pro	Ala	Ser	Ile	Ala	Ala	Arg	Gly
	1760					1765					1770			
Tyr	Ile	Ser	Thr	Arg	Val	Glu	Met	Gly	Glu	Ala	Ala	Gly	Ile	Phe
	1775					1780					1785			
Met	Thr	Ala	Thr	Pro	Pro	Gly	Ser	Arg	Asp	Pro	Phe	Pro	Gln	Ser
	1790					1795					1800			
Asn	Ala	Pro	Ile	Ile	Asp	Glu	Glu	Arg	Glu	Ile	Pro	Glu	Arg	Ser
	1805					1810					1815			
Trp	Asn	Ser	Gly	His	Glu	Trp	Val	Thr	Asp	Phe	Lys	Gly	Lys	Thr
	1820					1825					1830			
Val	Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala	Ala
	1835					1840					1845			
Cys	Leu	Arg	Lys	Asn	Gly	Lys	Lys	Val	Ile	Gln	Leu	Ser	Arg	Lys
	1850					1855					1860			
Thr	Phe	Asp	Ser	Glu	Tyr	Val	Lys	Thr	Arg	Thr	Asn	Asp	Trp	Asp
	1865					1870					1875			
Phe	Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe	Lys
	1880					1885					1890			
Ala	Glu	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Met	Lys	Pro	Val	Ile
	1895					1900					1905			

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Leu	Thr	Asp	Gly	Glu	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Met	Pro
	1910					1915					1920			
Val	Thr	His	Ser	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Ile	Gly	Arg
	1925					1930					1935			
Asn	Pro	Lys	Asn	Glu	Asn	Asp	Gln	Tyr	Ile	Tyr	Met	Gly	Glu	Pro
	1940					1945					1950			
Leu	Glu	Asn	Asp	Glu	Asp	Cys	Ala	His	Trp	Lys	Glu	Ala	Lys	Met
	1955					1960					1965			
Leu	Leu	Asp	Asn	Ile	Asn	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Ser	Met
	1970					1975					1980			
Phe	Glu	Pro	Glu	Arg	Glu	Lys	Val	Asp	Ala	Ile	Asp	Gly	Glu	Tyr
	1985					1990					1995			
Arg	Leu	Arg	Gly	Glu	Ala	Arg	Lys	Thr	Phe	Val	Asp	Leu	Met	Arg
	2000					2005					2010			
Arg	Gly	Asp	Leu	Pro	Val	Trp	Leu	Ala	Tyr	Lys	Val	Ala	Ala	Glu
	2015					2020					2025			
Gly	Ile	Asn	Tyr	Ala	Asp	Arg	Arg	Trp	Cys	Phe	Asp	Gly	Ile	Lys
	2030					2035					2040			
Asn	Asn	Gln	Ile	Leu	Glu	Glu	Asn	Val	Glu	Val	Glu	Ile	Trp	Thr
	2045					2050					2055			
Lys	Glu	Gly	Glu	Arg	Lys	Lys	Leu	Lys	Pro	Arg	Trp	Leu	Asp	Ala
	2060					2065					2070			
Arg	Ile	Tyr	Ser	Asp	Pro	Leu	Ala	Leu	Lys	Glu	Phe	Lys	Glu	Phe
	2075					2080					2085			
Ala	Ala	Gly	Arg	Lys	Ser	Leu	Thr	Leu	Asn	Leu	Ile	Thr	Glu	Met
	2090					2095					2100			
Gly	Arg	Leu	Pro	Thr	Phe	Met	Thr	Gln	Lys	Thr	Arg	Asp	Ala	Leu
	2105					2110					2115			
Asp	Asn	Leu	Ala	Val	Leu	His	Thr	Ala	Glu	Ala	Gly	Gly	Arg	Ala
	2120					2125					2130			
Tyr	Asn	His	Ala	Leu	Ser	Glu	Leu	Pro	Glu	Thr	Leu	Glu	Thr	Leu
	2135					2140					2145			
Leu	Leu	Leu	Thr	Leu	Leu	Ala	Thr	Val	Thr	Gly	Gly	Ile	Phe	Leu
	2150					2155					2160			

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Phe	Leu	Met	Ser	Gly	Arg	Gly	Ile	Gly	Lys	Met	Thr	Leu	Gly	Met
	2165					2170					2175			
Cys	Cys	Ile	Ile	Thr	Ala	Ser	Ile	Leu	Leu	Trp	Tyr	Ala	Gln	Ile
	2180					2185					2190			
Gln	Pro	His	Trp	Ile	Ala	Ala	Ser	Ile	Ile	Leu	Glu	Phe	Phe	Leu
	2195					2200					2205			
Ile	Val	Leu	Leu	Ile	Pro	Glu	Pro	Glu	Lys	Gln	Arg	Thr	Pro	Gln
	2210					2215					2220			
Asp	Asn	Gln	Leu	Thr	Tyr	Val	Val	Ile	Ala	Ile	Leu	Thr	Val	Val
	2225					2230					2235			
Ala	Ala	Thr	Met	Ala	Asn	Glu	Met	Gly	Phe	Leu	Glu	Lys	Thr	Lys
	2240					2245					2250			
Lys	Asp	Leu	Gly	Leu	Gly	Ser	Ile	Ala	Thr	Gln	Gln	Pro	Glu	Ser
	2255					2260					2265			
Asn	Ile	Leu	Asp	Ile	Asp	Leu	Arg	Pro	Ala	Ser	Ala	Trp	Thr	Leu
	2270					2275					2280			
Tyr	Ala	Val	Ala	Thr	Thr	Phe	Val	Thr	Pro	Met	Leu	Arg	His	Ser
	2285					2290					2295			
Ile	Glu	Asn	Ser	Ser	Val	Asn	Val	Ser	Leu	Thr	Ala	Ile	Ala	Asn
	2300					2305					2310			
Gln	Ala	Thr	Val	Leu	Met	Gly	Leu	Gly	Lys	Gly	Trp	Pro	Leu	Ser
	2315					2320					2325			
Lys	Met	Asp	Ile	Gly	Val	Pro	Leu	Leu	Ala	Ile	Gly	Cys	Tyr	Ser
	2330					2335					2340			
Gln	Val	Asn	Pro	Ile	Thr	Leu	Thr	Ala	Ala	Leu	Leu	Leu	Leu	Val
	2345					2350					2355			
Ala	His	Tyr	Ala	Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys	Ala	Thr
	2360					2365					2370			
Arg	Glu	Ala	Gln	Lys	Arg	Ala	Ala	Ala	Gly	Ile	Met	Lys	Asn	Pro
	2375					2380					2385			
Thr	Val	Asp	Gly	Ile	Thr	Val	Ile	Asp	Leu	Asp	Pro	Ile	Pro	Tyr
	2390					2395					2400			
Asp	Pro	Lys	Phe	Glu	Lys	Gln	Leu	Gly	Gln	Val	Met	Leu	Leu	Ile
	2405					2410					2415			

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Leu	Cys	Val	Thr	Gln	Val	Leu	Met	Met	Arg	Thr	Thr	Trp	Ala	Leu
	2420					2425					2430			
Cys	Glu	Ala	Leu	Thr	Leu	Ala	Thr	Gly	Pro	Ile	Ser	Thr	Leu	Trp
	2435					2440					2445			
Glu	Gly	Asn	Pro	Gly	Arg	Phe	Trp	Asn	Thr	Thr	Ile	Ala	Val	Ser
	2450					2455					2460			
Met	Ala	Asn	Ile	Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala	Gly	Leu
	2465					2470					2475			
Leu	Phe	Ser	Ile	Met	Lys	Asn	Thr	Thr	Asn	Thr	Arg	Arg	Gly	Thr
	2480					2485					2490			
Gly	Asn	Ile	Gly	Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Ser	Arg	Leu
	2495					2500					2505			
Asn	Ala	Leu	Gly	Lys	Ser	Glu	Phe	Gln	Ile	Tyr	Lys	Lys	Ser	Gly
	2510					2515					2520			
Ile	Gln	Glu	Val	Asp	Arg	Thr	Leu	Ala	Lys	Glu	Gly	Ile	Lys	Arg
	2525					2530					2535			
Gly	Glu	Thr	Asp	His	His	Ala	Val	Ser	Arg	Gly	Ser	Ala	Lys	Leu
	2540					2545					2550			
Arg	Trp	Phe	Val	Glu	Arg	Asn	Met	Val	Thr	Pro	Glu	Gly	Lys	Val
	2555					2560					2565			
Val	Asp	Leu	Gly	Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr	Cys	Gly
	2570					2575					2580			
Gly	Leu	Lys	Asn	Val	Arg	Glu	Val	Lys	Gly	Leu	Thr	Lys	Gly	Gly
	2585					2590					2595			
Pro	Gly	His	Glu	Glu	Pro	Ile	Pro	Met	Ser	Thr	Tyr	Gly	Trp	Asn
	2600					2605					2610			
Leu	Val	Arg	Leu	Gln	Ser	Gly	Val	Asp	Val	Phe	Phe	Ile	Pro	Pro
	2615					2620					2625			
Glu	Lys	Cys	Asp	Thr	Leu	Leu	Cys	Asp	Ile	Gly	Glu	Ser	Ser	Pro
	2630					2635					2640			
Asn	Pro	Thr	Val	Glu	Ala	Gly	Arg	Thr	Leu	Arg	Val	Leu	Asn	Leu
	2645					2650					2655			
Val	Glu	Asn	Trp	Leu	Asn	Asn	Asn	Thr	Gln	Phe	Cys	Ile	Lys	Val
	2660					2665					2670			

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Leu	Asn 2675	Pro	Tyr	Met	Pro	Ser 2680	Val	Ile	Glu	Lys	Met 2685	Glu	Ala	Leu
Gln	Arg 2690	Lys	Tyr	Gly	Gly	Ala 2695	Leu	Val	Arg	Asn	Pro 2700	Leu	Ser	Arg
Asn	Ser 2705	Thr	His	Glu	Met	Tyr 2710	Trp	Val	Ser	Asn	Ala 2715	Ser	Gly	Asn
Ile	Val 2720	Ser	Ser	Val	Asn	Met 2725	Ile	Ser	Arg	Met	Leu 2730	Ile	Asn	Arg
Phe	Thr 2735	Met	Arg	His	Lys	Lys 2740	Ala	Thr	Tyr	Glu	Pro 2745	Asp	Val	Asp
Leu	Gly 2750	Ser	Gly	Thr	Arg	Asn 2755	Ile	Gly	Val	Glu	Ser 2760	Glu	Ile	Pro
Asn	Leu 2765	Asp	Ile	Ile	Gly	Lys 2770	Arg	Ile	Glu	Lys	Ile 2775	Lys	Gln	Glu
His	Glu 2780	Thr	Ser	Trp	His	Tyr 2785	Asp	Gln	Asp	His	Pro 2790	Tyr	Lys	Thr
Trp	Ala 2795	Tyr	His	Gly	Ser	Tyr 2800	Glu	Thr	Lys	Gln	Thr 2805	Gly	Ser	Ala
Ser	Ser 2810	Met	Val	Asn	Gly	Val 2815	Val	Arg	Leu	Leu	Thr 2820	Lys	Pro	Trp
Asp	Val 2825	Leu	Pro	Thr	Val	Thr 2830	Gln	Met	Ala	Met	Thr 2835	Asp	Thr	Thr
Pro	Phe 2840	Gly	Gln	Gln	Arg	Val 2845	Phe	Lys	Glu	Lys	Val 2850	Asp	Thr	Arg
Thr	Gln 2855	Glu	Pro	Lys	Glu	Gly 2860	Thr	Lys	Lys	Leu	Met 2865	Arg	Ile	Thr
Ala	Glu 2870	Trp	Leu	Trp	Lys	Glu 2875	Leu	Gly	Lys	Lys	Lys 2880	Thr	Pro	Arg
Met	Cys 2885	Thr	Arg	Glu	Glu	Phe 2890	Thr	Arg	Lys	Val	Arg 2895	Ser	Asn	Ala
Ala	Leu 2900	Gly	Ala	Ile	Phe	Thr 2905	Asp	Glu	Asn	Lys	Trp 2910	Lys	Ser	Ala
Arg	Glu 2915	Ala	Val	Glu	Asp	Ser 2920	Arg	Phe	Trp	Glu	Leu 2925	Val	Asp	Lys

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Glu	Arg	Asn	Leu	His	Leu	Glu	Gly	Lys	Cys	Glu	Thr	Cys	Val	Tyr
	2930					2935					2940			
Asn	Met	Met	Gly	Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly	Lys
	2945					2950					2955			
Ala	Lys	Gly	Ser	Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala	Arg
	2960					2965					2970			
Phe	Leu	Glu	Phe	Glu	Ala	Leu	Gly	Phe	Leu	Asn	Glu	Asp	His	Trp
	2975					2980					2985			
Phe	Ser	Arg	Glu	Asn	Ser	Leu	Ser	Gly	Val	Glu	Gly	Glu	Gly	Leu
	2990					2995					3000			
His	Lys	Leu	Gly	Tyr	Ile	Leu	Arg	Asp	Val	Ser	Lys	Lys	Glu	Gly
	3005					3010					3015			
Gly	Ala	Met	Tyr	Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg	Ile
	3020					3025					3030			
Thr	Leu	Glu	Asp	Leu	Lys	Asn	Glu	Glu	Met	Val	Thr	Asn	His	Met
	3035					3040					3045			
Glu	Gly	Glu	His	Lys	Lys	Leu	Ala	Glu	Ala	Ile	Phe	Lys	Leu	Thr
	3050					3055					3060			
Tyr	Gln	Asn	Lys	Val	Val	Arg	Val	Gln	Arg	Pro	Thr	Pro	Arg	Gly
	3065					3070					3075			
Thr	Val	Met	Asp	Ile	Ile	Ser	Arg	Arg	Asp	Gln	Arg	Gly	Ser	Gly
	3080					3085					3090			
Gln	Val	Gly	Thr	Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu	Ala
	3095					3100					3105			
Gln	Leu	Ile	Arg	Gln	Met	Glu	Gly	Glu	Gly	Val	Phe	Lys	Asn	Ile
	3110					3115					3120			
Gln	His	Leu	Thr	Val	Thr	Glu	Glu	Val	Ala	Val	Gln	Asn	Trp	Leu
	3125					3130					3135			
Ala	Arg	Val	Gly	Arg	Glu	Arg	Leu	Ser	Arg	Met	Ala	Ile	Ser	Gly
	3140					3145					3150			
Asp	Asp	Cys	Val	Val	Lys	Pro	Leu	Asp	Asp	Arg	Phe	Ala	Asn	Ala
	3155					3160					3165			
Leu	Thr	Ala	Leu	Asn	Asp	Met	Gly	Lys	Ile	Arg	Lys	Asp	Ile	Gln
	3170					3175					3180			

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Gln	Trp	Glu	Pro	Ser	Lys	Gly	Trp	Asn	Asp	Trp	Thr	Gln	Val	Pro	
	3185					3190					3195				
Phe	Cys	Ser	His	His	Phe	His	Glu	Leu	Ile	Met	Lys	Asp	Gly	Arg	
	3200					3205					3210				
Val	Leu	Val	Val	Pro	Cys	Arg	Asn	Gln	Asp	Glu	Leu	Ile	Gly	Arg	
	3215					3220					3225				
Ala	Arg	Ile	Ser	Gln	Gly	Ala	Gly	Trp	Ser	Leu	Arg	Glu	Thr	Ala	
	3230					3235					3240				
Cys	Leu	Gly	Lys	Ser	Tyr	Ala	Gln	Met	Trp	Ser	Leu	Met	Tyr	Phe	
	3245					3250					3255				
His	Arg	Arg	Asp	Leu	Arg	Leu	Ala	Ala	Asn	Ala	Ile	Cys	Ser	Ala	
	3260					3265					3270				
Val	Pro	Ser	His	Trp	Val	Pro	Thr	Ser	Arg	Thr	Thr	Trp	Ser	Ile	
	3275					3280					3285				
His	Ala	Lys	His	Glu	Trp	Met	Thr	Thr	Glu	Asp	Met	Leu	Thr	Val	
	3290					3295					3300				
Trp	Asn	Arg	Val	Trp	Ile	Arg	Glu	Asn	Pro	Trp	Met	Glu	Asp	Lys	
	3305					3310					3315				
Thr	Pro	Val	Glu	Ser	Trp	Glu	Glu	Ile	Pro	Tyr	Leu	Gly	Lys	Arg	
	3320					3325					3330				
Glu	Asp	Gln	Trp	Cys	Gly	Ser	Leu	Ile	Gly	Leu	Thr	Ser	Arg	Ala	
	3335					3340					3345				
Thr	Trp	Ala	Lys	Asn	Ile	Gln	Ala	Ala	Ile	Asn	Gln	Val	Arg	Ser	
	3350					3355					3360				
Leu	Ile	Gly	Asn	Glu	Glu	Tyr	Thr	Asp	Tyr	Met	Pro	Ser	Met	Lys	
	3365					3370					3375				
Arg	Phe	Arg	Arg	Glu	Glu	Glu	Glu	Ala	Gly	Val	Leu	Trp			
	3380					3385					3390				
<210>	7														
<211>	3390														
<212>	PRT														
<213>	Dengue virus type 3														
<400>	7														
Met	Asn	Asn	Gln	Arg	Lys	Lys	Thr	Gly	Lys	Pro	Ser	Ile	Asn	Met	Leu
1					5				10					15	

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

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Arg Asp Phe Val Glu Gly Leu Ser Gly Ala Thr Trp Val Asp Val Val
290 295 300

Leu Glu His Gly Gly Cys Val Thr Thr Met Ala Lys Asn Lys Pro Thr
305 310 315 320

Leu Asp Ile Glu Leu Gln Lys Thr Glu Ala Thr Gln Leu Ala Thr Leu
325 330 335

Arg Lys Leu Cys Ile Glu Gly Lys Ile Thr Asn Ile Thr Thr Asp Ser
340 345 350

Arg Cys Pro Thr Gln Gly Glu Ala Ile Leu Pro Glu Glu Gln Asp Gln
355 360 365

Asn Tyr Val Cys Lys His Thr Tyr Val Asp Arg Gly Trp Gly Asn Gly
370 375 380

Cys Gly Leu Phe Gly Lys Gly Ser Leu Val Thr Cys Ala Lys Phe Gln
385 390 395 400

Cys Leu Glu Ser Ile Glu Gly Lys Val Val Gln His Glu Asn Leu Lys
405 410 415

Tyr Thr Val Ile Ile Thr Val His Thr Gly Asp Gln His Gln Val Gly
420 425 430

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

Ala Glu Ala Ile Leu Pro Glu Tyr Gly Thr Leu Gly Leu Glu Cys Ser
450 455 460

Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Ile Ser Leu Thr Met Lys
465 470 475 480

Asn Lys Ala Trp Met Val His Arg Gln Trp Phe Phe Asp Leu Pro Leu
485 490 495

Pro Trp Thr Ser Gly Ala Thr Ala Glu Thr Pro Thr Trp Asn Arg Lys
500 505 510

Glu Leu Leu Val Thr Phe Lys Asn Ala His Ala Lys Lys Gln Glu Val
515 520 525

Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu Thr Gly
530 535 540

Ala Thr Glu Ile Gln Thr Ser Gly Gly Thr Ser Ile Phe Ala Gly His
545 550 555 560

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Leu Lys Cys Arg Leu Lys Met Asp Lys Leu Glu Leu Lys Gly Met Ser
565 570 575

Tyr Ala Met Cys Leu Gly Ser Phe Val Leu Lys Lys Glu Val Ser Glu
580 585 590

Thr Gln His Gly Thr Ile Leu Ile Lys Val Glu Tyr Lys Gly Lys Asp
595 600 605

Ala Pro Cys Lys Ile Pro Phe Ser Thr Glu Asp Gly Gln Gly Lys Ala
610 615 620

His Asn Gly Arg Leu Ile Thr Ala Asn Pro Val Val Thr Lys Lys Glu
625 630 635 640

Glu Pro Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Glu Ser Asn Ile
645 650 655

Val Ile Gly Ile Gly Asp Lys Ala Leu Lys Ile Asn Trp Tyr Arg Lys
660 665 670

Gly Ser Ser Ile Gly Lys Met Phe Glu Ala Thr Ala Arg Gly Ala Arg
675 680 685

Arg Met Ala Ile Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser Val Gly
690 695 700

Gly Val Leu Asn Ser Leu Gly Lys Met Val His Gln Ile Phe Gly Ser
705 710 715 720

Ala Tyr Thr Ala Leu Phe Gly Gly Val Ser Trp Met Met Lys Ile Gly
725 730 735

Ile Gly Val Leu Leu Thr Trp Ile Gly Leu Asn Ser Lys Asn Thr Ser
740 745 750

Met Ser Phe Ser Cys Ile Ala Ile Gly Ile Ile Thr Leu Tyr Leu Gly
755 760 765

Ala Val Val Gln Ala Asp Met Gly Cys Val Ile Asn Trp Lys Gly Lys
770 775 780

Glu Leu Lys Cys Gly Ser Gly Ile Phe Val Thr Asn Glu Val His Thr
785 790 795 800

Trp Thr Glu Gln Tyr Lys Phe Gln Ala Asp Ser Pro Lys Arg Leu Ala
805 810 815

Thr Ala Ile Ala Gly Ala Trp Glu Asn Gly Val Cys Gly Ile Arg Ser
820 825 830

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Thr Thr Arg Met Glu Asn Leu Leu Trp Lys Gln Ile Ala Asn Glu Leu
835 840 845

Asn Tyr Ile Leu Trp Glu Asn Asn Ile Lys Leu Thr Val Val Val Gly
850 855 860

Asp Ile Thr Gly Val Leu Glu Gln Gly Lys Arg Thr Leu Thr Pro Gln
865 870 875 880

Pro Met Glu Leu Lys Tyr Ser Trp Lys Thr Trp Gly Lys Ala Lys Ile
885 890 895

Val Thr Ala Glu Thr Gln Asn Ser Ser Phe Ile Ile Asp Gly Pro Ser
900 905 910

Thr Pro Glu Cys Pro Ser Ala Ser Arg Ala Trp Asn Val Trp Glu Val
915 920 925

Glu Asp Tyr Gly Phe Gly Val Phe Thr Thr Asn Ile Trp Leu Lys Leu
930 935 940

Arg Glu Val Tyr Thr Gln Leu Cys Asp His Arg Leu Met Ser Ala Ala
945 950 955 960

Val Lys Asp Glu Arg Ala Val His Ala Asp Met Gly Tyr Trp Ile Glu
965 970 975

Ser Gln Lys Asn Gly Ser Trp Lys Leu Glu Lys Ala Ser Phe Ile Glu
980 985 990

Val Lys Thr Cys Thr Trp Pro Lys Ser His Thr Leu Trp Ser Asn Gly
995 1000 1005

Val Leu Glu Ser Asp Met Ile Ile Pro Lys Ser Leu Ala Gly Pro
1010 1015 1020

Ile Ser Gln His Asn His Arg Pro Gly Tyr His Thr Gln Thr Ala
1025 1030 1035

Gly Pro Trp His Leu Gly Lys Leu Glu Leu Asp Phe Asn Tyr Cys
1040 1045 1050

Glu Gly Thr Thr Val Val Ile Ser Glu Asn Cys Gly Thr Arg Gly
1055 1060 1065

Pro Ser Leu Arg Thr Thr Thr Val Ser Gly Lys Leu Ile His Glu
1070 1075 1080

Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro Leu Arg Tyr Met Gly
1085 1090 1095

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Glu	Asp	Gly	Cys	Trp	Tyr	Gly	Met	Glu	Ile	Arg	Pro	Ile	Asn	Glu
1100						1105					1110			
Lys	Glu	Glu	Asn	Met	Val	Lys	Ser	Leu	Ala	Ser	Ala	Gly	Ser	Gly
1115						1120					1125			
Lys	Val	Asp	Asn	Phe	Thr	Met	Gly	Val	Leu	Cys	Leu	Ala	Ile	Leu
1130						1135					1140			
Phe	Glu	Glu	Val	Met	Arg	Gly	Lys	Phe	Gly	Lys	Lys	His	Met	Ile
1145						1150					1155			
Ala	Gly	Val	Leu	Phe	Thr	Phe	Val	Leu	Leu	Leu	Ser	Gly	Gln	Ile
1160						1165					1170			
Thr	Trp	Arg	Asp	Met	Ala	His	Thr	Leu	Ile	Met	Ile	Gly	Ser	Asn
1175						1180					1185			
Ala	Ser	Asp	Arg	Met	Gly	Met	Gly	Val	Thr	Tyr	Leu	Ala	Leu	Ile
1190						1195					1200			
Ala	Thr	Phe	Lys	Ile	Gln	Pro	Leu	Leu	Ala	Leu	Gly	Phe	Phe	Leu
1205						1210					1215			
Arg	Lys	Leu	Thr	Ser	Arg	Glu	Asn	Leu	Leu	Leu	Gly	Val	Gly	Leu
1220						1225					1230			
Ala	Met	Ala	Ala	Thr	Leu	Arg	Leu	Pro	Glu	Asp	Ile	Glu	Gln	Met
1235						1240					1245			
Ala	Asn	Gly	Ile	Ala	Leu	Gly	Leu	Met	Ala	Leu	Lys	Leu	Ile	Thr
1250						1255					1260			
Gln	Phe	Glu	Thr	Tyr	Gln	Leu	Trp	Thr	Ala	Leu	Val	Ser	Leu	Thr
1265						1270					1275			
Cys	Ser	Asn	Thr	Ile	Phe	Thr	Leu	Thr	Val	Ala	Trp	Arg	Thr	Ala
1280						1285					1290			
Thr	Leu	Ile	Leu	Ala	Gly	Ile	Ser	Leu	Leu	Pro	Val	Cys	Gln	Ser
1295						1300					1305			
Ser	Ser	Met	Arg	Lys	Thr	Asp	Trp	Leu	Pro	Met	Thr	Val	Ala	Ala
1310						1315					1320			
Met	Gly	Ala	Gln	Pro	Leu	Pro	Leu	Phe	Ile	Phe	Ser	Leu	Lys	Asp
1325						1330					1335			
Thr	Leu	Lys	Arg	Arg	Ser	Trp	Pro	Leu	Asn	Glu	Gly	Val	Met	Ala
1340						1345					1350			

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Val	Gly	Leu	Val	Ser	Ile	Leu	Ala	Ser	Ser	Leu	Leu	Arg	Asn	Asp
	1355					1360					1365			
Val	Pro	Met	Ala	Gly	Pro	Leu	Val	Ala	Gly	Gly	Leu	Leu	Ile	Ala
	1370					1375					1380			
Cys	Tyr	Val	Ile	Thr	Gly	Thr	Ser	Ala	Asp	Leu	Thr	Val	Glu	Lys
	1385					1390					1395			
Ala	Ala	Asp	Val	Thr	Trp	Glu	Glu	Glu	Ala	Glu	Gln	Thr	Gly	Val
	1400					1405					1410			
Ser	His	Asn	Leu	Met	Val	Thr	Val	Asp	Asp	Asp	Gly	Thr	Met	Arg
	1415					1420					1425			
Ile	Lys	Asp	Asp	Glu	Thr	Glu	Asn	Ile	Leu	Thr	Val	Leu	Leu	Lys
	1430					1435					1440			
Thr	Ala	Leu	Leu	Ile	Val	Ser	Gly	Ile	Phe	Pro	Tyr	Ser	Ile	Pro
	1445					1450					1455			
Ala	Thr	Leu	Leu	Val	Trp	His	Thr	Trp	Gln	Lys	Gln	Thr	Gln	Arg
	1460					1465					1470			
Ser	Gly	Val	Leu	Trp	Asp	Val	Pro	Ser	Pro	Pro	Glu	Thr	Gln	Lys
	1475					1480					1485			
Ala	Glu	Leu	Glu	Glu	Gly	Val	Tyr	Arg	Ile	Lys	Gln	Gln	Gly	Ile
	1490					1495					1500			
Phe	Gly	Lys	Thr	Gln	Val	Gly	Val	Gly	Val	Gln	Lys	Glu	Gly	Val
	1505					1510					1515			
Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ala	Val	Leu	Thr	His
	1520					1525					1530			
Asn	Gly	Lys	Arg	Leu	Glu	Pro	Asn	Trp	Ala	Ser	Val	Lys	Lys	Asp
	1535					1540					1545			
Leu	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Arg	Leu	Ser	Ala	Gln	Trp	Lys
	1550					1555					1560			
Lys	Gly	Glu	Glu	Val	Gln	Val	Ile	Ala	Val	Glu	Pro	Gly	Lys	Asn
	1565					1570					1575			
Pro	Lys	Asn	Phe	Gln	Thr	Met	Pro	Gly	Ile	Phe	Gln	Thr	Thr	Thr
	1580					1585					1590			
Gly	Glu	Ile	Gly	Ala	Ile	Ala	Leu	Asp	Phe	Lys	Pro	Gly	Thr	Ser
	1595					1600					1605			

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Gly	Ser	Pro	Ile	Ile	Asn	Arg	Glu	Gly	Lys	Val	Val	Gly	Leu	Tyr
1610						1615						1620		
Gly	Asn	Gly	Val	Val	Thr	Lys	Asn	Gly	Gly	Tyr	Val	Ser	Gly	Ile
1625						1630					1635			
Ala	Gln	Thr	Asn	Ala	Glu	Pro	Asp	Gly	Pro	Thr	Pro	Glu	Leu	Glu
1640						1645					1650			
Glu	Glu	Met	Phe	Lys	Lys	Arg	Asn	Leu	Thr	Ile	Met	Asp	Leu	His
1655						1660					1665			
Pro	Gly	Ser	Gly	Lys	Thr	Arg	Lys	Tyr	Leu	Pro	Ala	Ile	Val	Arg
1670						1675					1680			
Glu	Ala	Ile	Lys	Arg	Arg	Leu	Arg	Thr	Leu	Ile	Leu	Ala	Pro	Thr
1685						1690					1695			
Arg	Val	Val	Ala	Ala	Glu	Met	Glu	Glu	Ala	Leu	Lys	Gly	Leu	Pro
1700						1705					1710			
Ile	Arg	Tyr	Gln	Thr	Thr	Ala	Thr	Lys	Ser	Glu	His	Thr	Gly	Arg
1715						1720					1725			
Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Met	Arg	Leu
1730						1735					1740			
Leu	Ser	Pro	Val	Arg	Val	Pro	Asn	Tyr	Asn	Leu	Ile	Ile	Met	Asp
1745						1750					1755			
Glu	Ala	His	Phe	Thr	Asp	Pro	Ala	Ser	Ile	Ala	Ala	Arg	Gly	Tyr
1760						1765					1770			
Ile	Ser	Thr	Arg	Val	Gly	Met	Gly	Glu	Ala	Ala	Ala	Ile	Phe	Met
1775						1780					1785			
Thr	Ala	Thr	Pro	Pro	Gly	Thr	Ala	Asp	Ala	Phe	Pro	Gln	Ser	Asn
1790						1795					1800			
Ala	Pro	Ile	Gln	Asp	Glu	Glu	Arg	Asp	Ile	Pro	Glu	Arg	Ser	Trp
1805						1810					1815			
Asn	Ser	Gly	Asn	Glu	Trp	Ile	Thr	Asp	Phe	Val	Gly	Lys	Thr	Val
1820						1825					1830			
Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala	Asn	Cys
1835						1840					1845			
Leu	Arg	Lys	Asn	Gly	Lys	Lys	Val	Ile	Gln	Leu	Ser	Arg	Lys	Thr
1850						1855					1860			

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Phe	Asp	Thr	Glu	Tyr	Gln	Lys	Thr	Lys	Leu	Asn	Asp	Trp	Asp	Phe
	1865					1870					1875			
Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe	Lys	Ala
	1880					1885					1890			
Asp	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Leu	Lys	Pro	Val	Ile	Leu
	1895					1900					1905			
Thr	Asp	Gly	Pro	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Met	Pro	Val
	1910					1915					1920			
Thr	Val	Ala	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Val	Gly	Arg	Asn
	1925					1930					1935			
Pro	Gln	Lys	Glu	Asn	Asp	Gln	Tyr	Ile	Phe	Met	Gly	Gln	Pro	Leu
	1940					1945					1950			
Asn	Asn	Asp	Glu	Asp	His	Ala	His	Trp	Thr	Glu	Ala	Lys	Met	Leu
	1955					1960					1965			
Leu	Asp	Asn	Ile	Asn	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Ala	Leu	Phe
	1970					1975					1980			
Glu	Pro	Glu	Arg	Glu	Lys	Ser	Ala	Ala	Ile	Asp	Gly	Glu	Tyr	Arg
	1985					1990					1995			
Leu	Lys	Gly	Glu	Ser	Arg	Lys	Thr	Phe	Val	Glu	Leu	Met	Arg	Arg
	2000					2005					2010			
Gly	Asp	Leu	Pro	Val	Trp	Leu	Ala	His	Lys	Val	Ala	Ser	Glu	Gly
	2015					2020					2025			
Ile	Lys	Tyr	Thr	Asp	Arg	Lys	Trp	Cys	Phe	Asp	Gly	Glu	Arg	Asn
	2030					2035					2040			
Asn	Gln	Ile	Leu	Glu	Glu	Asn	Met	Asp	Val	Glu	Ile	Trp	Thr	Lys
	2045					2050					2055			
Glu	Gly	Glu	Lys	Lys	Lys	Leu	Arg	Pro	Arg	Trp	Leu	Asp	Ala	Arg
	2060					2065					2070			
Thr	Tyr	Ser	Asp	Pro	Leu	Ala	Leu	Lys	Glu	Phe	Lys	Asp	Phe	Ala
	2075					2080					2085			
Ala	Gly	Arg	Lys	Ser	Ile	Ala	Leu	Asp	Leu	Val	Thr	Glu	Ile	Gly
	2090					2095					2100			
Arg	Val	Pro	Ser	His	Leu	Ala	His	Arg	Thr	Arg	Asn	Ala	Leu	Asp
	2105					2110					2115			

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Asn	Leu	Val	Met	Leu	His	Thr	Ser	Glu	His	Gly	Gly	Arg	Ala	Tyr
	2120					2125						2130		
Arg	His	Ala	Val	Glu	Glu	Leu	Pro	Glu	Thr	Met	Glu	Thr	Leu	Leu
	2135					2140					2145			
Leu	Leu	Gly	Leu	Met	Ile	Leu	Leu	Thr	Gly	Gly	Ala	Met	Leu	Phe
	2150					2155					2160			
Leu	Ile	Ser	Gly	Lys	Gly	Ile	Gly	Lys	Thr	Ser	Ile	Gly	Leu	Ile
	2165					2170					2175			
Cys	Val	Ile	Ala	Ser	Ser	Gly	Met	Leu	Trp	Met	Ala	Asp	Val	Pro
	2180					2185					2190			
Leu	Gln	Trp	Ile	Ala	Ser	Ala	Ile	Val	Leu	Glu	Phe	Phe	Met	Met
	2195					2200					2205			
Val	Leu	Leu	Ile	Pro	Glu	Pro	Glu	Lys	Gln	Arg	Thr	Pro	Gln	Asp
	2210					2215					2220			
Asn	Gln	Leu	Ala	Tyr	Val	Val	Ile	Gly	Ile	Leu	Thr	Leu	Ala	Ala
	2225					2230					2235			
Ile	Val	Ala	Ala	Asn	Glu	Met	Gly	Leu	Leu	Glu	Thr	Thr	Lys	Arg
	2240					2245					2250			
Asp	Leu	Gly	Met	Ser	Lys	Glu	Pro	Gly	Val	Val	Ser	Pro	Thr	Ser
	2255					2260					2265			
Tyr	Leu	Asp	Val	Asp	Leu	His	Pro	Ala	Ser	Ala	Trp	Thr	Leu	Tyr
	2270					2275					2280			
Ala	Val	Ala	Thr	Thr	Val	Ile	Thr	Pro	Met	Leu	Arg	His	Thr	Ile
	2285					2290					2295			
Glu	Asn	Ser	Thr	Ala	Asn	Val	Ser	Leu	Ala	Ala	Ile	Ala	Asn	Gln
	2300					2305					2310			
Ala	Val	Val	Leu	Met	Gly	Leu	Asp	Lys	Gly	Trp	Pro	Ile	Ser	Lys
	2315					2320					2325			
Met	Asp	Leu	Gly	Val	Pro	Leu	Leu	Ala	Leu	Gly	Cys	Tyr	Ser	Gln
	2330					2335					2340			
Val	Asn	Pro	Leu	Thr	Leu	Ala	Ala	Ala	Val	Leu	Leu	Leu	Val	Thr
	2345					2350					2355			
His	Tyr	Ala	Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys	Ala	Thr	Arg
	2360					2365					2370			

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Glu	Ala	Gln	Lys	Arg	Thr	Ala	Ala	Gly	Ile	Met	Lys	Asn	Pro	Thr
	2375					2380					2385			
Val	Asp	Gly	Ile	Met	Thr	Ile	Asp	Leu	Asp	Pro	Val	Ile	Tyr	Asp
	2390					2395					2400			
Ser	Lys	Phe	Glu	Lys	Gln	Leu	Gly	Gln	Val	Met	Leu	Leu	Val	Leu
	2405					2410					2415			
Cys	Ala	Val	Gln	Leu	Leu	Leu	Met	Arg	Thr	Ser	Trp	Ala	Leu	Cys
	2420					2425					2430			
Glu	Val	Leu	Thr	Leu	Ala	Thr	Gly	Pro	Ile	Thr	Thr	Leu	Trp	Glu
	2435					2440					2445			
Gly	Ser	Pro	Gly	Lys	Phe	Trp	Asn	Thr	Thr	Ile	Ala	Val	Ser	Met
	2450					2455					2460			
Ala	Asn	Ile	Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala	Gly	Leu	Ala
	2465					2470					2475			
Phe	Ser	Ile	Met	Lys	Ser	Val	Gly	Thr	Gly	Lys	Arg	Gly	Thr	Gly
	2480					2485					2490			
Ser	Gln	Gly	Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Lys	Lys	Leu	Asn
	2495					2500					2505			
Gln	Leu	Ser	Arg	Lys	Glu	Phe	Asp	Leu	Tyr	Lys	Lys	Ser	Gly	Ile
	2510					2515					2520			
Thr	Glu	Val	Asp	Arg	Thr	Glu	Ala	Lys	Glu	Gly	Leu	Lys	Arg	Gly
	2525					2530					2535			
Glu	Ile	Thr	His	His	Ala	Val	Ser	Arg	Gly	Ser	Ala	Lys	Leu	Gln
	2540					2545					2550			
Trp	Phe	Val	Glu	Arg	Asn	Met	Val	Ile	Pro	Glu	Gly	Arg	Val	Ile
	2555					2560					2565			
Asp	Leu	Gly	Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr	Cys	Ala	Gly
	2570					2575					2580			
Leu	Lys	Lys	Val	Thr	Glu	Val	Arg	Gly	Tyr	Thr	Lys	Gly	Gly	Pro
	2585					2590					2595			
Gly	His	Glu	Glu	Pro	Val	Pro	Met	Ser	Thr	Tyr	Gly	Trp	Asn	Ile
	2600					2605					2610			
Val	Lys	Leu	Met	Ser	Gly	Lys	Asp	Val	Phe	Tyr	Leu	Pro	Pro	Glu
	2615					2620					2625			

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Lys Cys Asp Thr Leu Leu Cys Asp Ile Gly Glu Ser Ser Pro Ser
2630 2635 2640

Pro Thr Val Glu Glu Ser Arg Thr Ile Arg Val Leu Lys Met Val
2645 2650 2655

Glu Pro Trp Leu Lys Asn Asn Gln Phe Cys Ile Lys Val Leu Asn
2660 2665 2670

Pro Tyr Met Pro Thr Val Ile Glu His Leu Glu Arg Leu Gln Arg
2675 2680 2685

Lys His Gly Gly Met Leu Val Arg Asn Pro Leu Ser Arg Asn Ser
2690 2695 2700

Thr His Glu Met Tyr Trp Ile Ser Asn Gly Thr Gly Asn Ile Val
2705 2710 2715

Ser Ser Val Asn Met Val Ser Arg Leu Leu Leu Asn Arg Phe Thr
2720 2725 2730

Met Thr His Arg Arg Pro Thr Ile Glu Lys Asp Val Asp Leu Gly
2735 2740 2745

Ala Gly Thr Arg His Val Asn Ala Glu Pro Glu Thr Pro Asn Met
2750 2755 2760

Asp Val Ile Gly Glu Arg Ile Lys Arg Ile Lys Glu Glu His Ser
2765 2770 2775

Ser Thr Trp His Tyr Asp Asp Glu Asn Pro Tyr Lys Thr Trp Ala
2780 2785 2790

Tyr His Gly Ser Tyr Glu Val Lys Ala Thr Gly Ser Ala Ser Ser
2795 2800 2805

Met Ile Asn Gly Val Val Lys Leu Leu Thr Lys Pro Trp Asp Val
2810 2815 2820

Val Pro Met Val Thr Gln Met Ala Met Thr Asp Thr Thr Pro Phe
2825 2830 2835

Gly Gln Gln Arg Val Phe Lys Glu Lys Val Asp Thr Arg Thr Pro
2840 2845 2850

Arg Pro Met Pro Gly Thr Arg Lys Val Met Glu Ile Thr Ala Glu
2855 2860 2865

Trp Leu Trp Arg Thr Leu Gly Arg Asn Lys Arg Pro Arg Leu Cys
2870 2875 2880

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Thr	Arg	Glu	Glu	Phe	Thr	Lys	Lys	Val	Arg	Thr	Asn	Ala	Ala	Met
	2885					2890					2895			
Gly	Ala	Val	Phe	Thr	Glu	Glu	Asn	Gln	Trp	Asp	Ser	Ala	Arg	Ala
	2900					2905					2910			
Ala	Val	Glu	Asp	Glu	Glu	Phe	Trp	Lys	Leu	Val	Asp	Arg	Glu	Arg
	2915					2920					2925			
Glu	Leu	His	Lys	Leu	Gly	Lys	Cys	Gly	Ser	Cys	Val	Tyr	Asn	Met
	2930					2935					2940			
Met	Gly	Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly	Lys	Ala	Lys
	2945					2950					2955			
Gly	Ser	Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala	Arg	Tyr	Leu
	2960					2965					2970			
Glu	Phe	Glu	Ala	Leu	Gly	Phe	Leu	Asn	Glu	Asp	His	Trp	Phe	Ser
	2975					2980					2985			
Arg	Glu	Asn	Ser	Tyr	Ser	Gly	Val	Glu	Gly	Glu	Gly	Leu	His	Lys
	2990					2995					3000			
Leu	Gly	Tyr	Ile	Leu	Arg	Asp	Ile	Ser	Lys	Ile	Pro	Gly	Gly	Ala
	3005					3010					3015			
Met	Tyr	Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg	Ile	Thr	Glu
	3020					3025					3030			
Asp	Asp	Leu	His	Asn	Glu	Glu	Lys	Ile	Thr	Gln	Gln	Met	Asp	Pro
	3035					3040					3045			
Glu	His	Arg	Gln	Leu	Ala	Asn	Ala	Ile	Phe	Lys	Leu	Thr	Tyr	Gln
	3050					3055					3060			
Asn	Lys	Val	Val	Lys	Val	Gln	Arg	Pro	Thr	Pro	Lys	Gly	Thr	Val
	3065					3070					3075			
Met	Asp	Ile	Ile	Ser	Arg	Lys	Asp	Gln	Arg	Gly	Ser	Gly	Gln	Val
	3080					3085					3090			
Gly	Thr	Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu	Ala	Gln	Leu
	3095					3100					3105			
Ile	Arg	Gln	Met	Glu	Gly	Glu	Gly	Val	Leu	Ser	Lys	Ala	Asp	Leu
	3110					3115					3120			
Glu	Asn	Pro	His	Pro	Leu	Glu	Lys	Lys	Ile	Thr	Gln	Trp	Leu	Glu
	3125					3130					3135			

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Thr	Lys	Gly	Val	Glu	Arg	Leu	Lys	Arg	Met	Ala	Ile	Ser	Gly	Asp
	3140					3145					3150			
Asp	Cys	Val	Val	Lys	Pro	Ile	Asp	Asp	Arg	Phe	Ala	Asn	Ala	Leu
	3155					3160					3165			
Leu	Ala	Leu	Asn	Asp	Met	Gly	Lys	Val	Arg	Lys	Asp	Ile	Pro	Gln
	3170					3175					3180			
Trp	Gln	Pro	Ser	Lys	Gly	Trp	His	Asp	Trp	Gln	Gln	Val	Pro	Phe
	3185					3190					3195			
Cys	Ser	His	His	Phe	His	Glu	Leu	Ile	Met	Lys	Asp	Gly	Arg	Lys
	3200					3205					3210			
Leu	Val	Val	Pro	Cys	Arg	Pro	Gln	Asp	Glu	Leu	Ile	Gly	Arg	Ala
	3215					3220					3225			
Arg	Ile	Ser	Gln	Gly	Ala	Gly	Trp	Ser	Leu	Arg	Glu	Thr	Ala	Cys
	3230					3235					3240			
Leu	Gly	Lys	Ala	Tyr	Ala	Gln	Met	Trp	Ala	Leu	Met	Tyr	Phe	His
	3245					3250					3255			
Arg	Arg	Asp	Leu	Arg	Leu	Ala	Ser	Asn	Ala	Ile	Cys	Ser	Ala	Val
	3260					3265					3270			
Pro	Val	His	Trp	Val	Pro	Thr	Ser	Arg	Thr	Thr	Trp	Ser	Ile	His
	3275					3280					3285			
Ala	His	His	Gln	Trp	Met	Thr	Thr	Glu	Asp	Met	Leu	Thr	Val	Trp
	3290					3295					3300			
Asn	Arg	Val	Trp	Ile	Glu	Asp	Asn	Pro	Trp	Met	Glu	Asp	Lys	Thr
	3305					3310					3315			
Pro	Val	Thr	Thr	Trp	Glu	Asp	Val	Pro	Tyr	Leu	Gly	Lys	Arg	Glu
	3320					3325					3330			
Asp	Gln	Trp	Cys	Gly	Ser	Leu	Ile	Gly	Leu	Thr	Ser	Arg	Ala	Thr
	3335					3340					3345			
Trp	Ala	Gln	Asn	Ile	Leu	Thr	Ala	Ile	Gln	Gln	Val	Arg	Ser	Leu
	3350					3355					3360			
Ile	Gly	Asn	Glu	Glu	Phe	Leu	Asp	Tyr	Met	Pro	Ser	Met	Lys	Arg
	3365					3370					3375			
Phe	Arg	Lys	Glu	Glu	Glu	Ser	Glu	Gly	Ala	Ile	Trp			
	3380					3385					3390			

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<210> 8
 <211> 3387
 <212> PRT
 <213> Dengue virus type 4

<220>
 <221> VARIANT
 <222> (742)..(742)
 <223> Xaa stands for Val or Met

<220>
 <221> VARIANT
 <222> (1027)..(1027)
 <223> Xaa stands for Gln or His

<220>
 <221> VARIANT
 <222> (1628)..(1628)
 <223> Xaa stands for Val or Leu

<220>
 <221> VARIANT
 <222> (2286)..(2286)
 <223> Xaa stands for Phe or Ile

<220>
 <221> VARIANT
 <222> (2482)..(2482)
 <223> Xaa stands for Val or Ala

<220>
 <221> VARIANT
 <222> (2508)..(2508)
 <223> Xaa stands for Tyr or Asp

<400> 8

Met Asn Gln Arg Lys Lys Val Val Arg Pro Pro Phe Asn Met Leu Lys
 1 5 10 15

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

Ser Thr Gly Leu Phe Ser Gly Lys Gly Pro Leu Arg Met Val Leu Ala
 35 40 45

Phe Ile Thr Phe Leu Arg Val Leu Ser Ile Pro Pro Thr Ala Gly Ile
 50 55 60

Leu Lys Arg Trp Gly Gln Leu Lys Lys Asn Lys Ala Ile Arg Ile Leu
 65 70 75 80

Ile Gly Phe Arg Lys Glu Ile Gly Arg Met Leu Asn Ile Leu Asn Gly
 85 90 95

Arg Lys Arg Ser Thr Ile Thr Leu Leu Cys Leu Ile Pro Thr Val Met
 100 105 110

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

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

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Ser Gly Lys Ile Thr Gly Asn Leu Val Gln Ile Glu Asn Leu Glu Tyr
405 410 415

Thr Val Val Val Thr Val His Asn Gly Asp Thr His Ala Val Gly Asn
420 425 430

Asp Thr Ser Asn His Gly Val Thr Ala Thr Ile Thr Pro Arg Ser Pro
435 440 445

Ser Val Glu Val Lys Leu Pro Asp Tyr Gly Glu Leu Thr Leu Asp Cys
450 455 460

Glu Pro Arg Ser Gly Ile Asp Phe Asn Glu Met Ile Leu Met Lys Met
465 470 475 480

Lys Lys Lys Thr Trp Leu Val His Lys Gln Trp Phe Leu Asp Leu Pro
485 490 495

Leu Pro Trp Thr Ala Gly Ala Asp Thr Ser Glu Val His Trp Asn Tyr
500 505 510

Lys Glu Arg Met Val Thr Phe Lys Val Pro His Ala Lys Arg Gln Asp
515 520 525

Val Thr Val Leu Gly Ser Gln Glu Gly Ala Met His Ser Ala Leu Ala
530 535 540

Gly Ala Thr Glu Val Asp Ser Gly Asp Gly Asn His Met Phe Ala Gly
545 550 555 560

His Leu Lys Cys Lys Val Arg Met Glu Lys Leu Arg Ile Lys Gly Met
565 570 575

Ser Tyr Thr Met Cys Ser Gly Lys Phe Ser Ile Asp Lys Glu Met Ala
580 585 590

Glu Thr Gln His Gly Thr Thr Val Val Lys Val Lys Tyr Glu Gly Ala
595 600 605

Gly Ala Pro Cys Lys Val Pro Ile Glu Ile Arg Asp Val Asn Lys Lys
610 615 620

Lys Val Val Gly Arg Ile Ile Ser Ser Thr Pro Leu Ala Glu Asn Thr
625 630 635 640

Asn Ser Ala Thr Asn Ile Glu Leu Glu Pro Pro Phe Gly Asp Ser Tyr
645 650 655

Ile Val Ile Gly Val Gly Asn Ser Ala Leu Thr Leu His Trp Phe Arg
660 665 670

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

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Phe Arg Glu Gly Ser Ser Glu Val Cys Asp His Arg Leu Met Ser Ala
 945 950 955 960
 Ala Ile Lys Asp Gln Lys Ala Val His Ala Asp Met Gly Tyr Trp Ile
 965 970 975
 Glu Ser Ser Lys Asn Gln Thr Trp Gln Ile Glu Lys Ala Ser Leu Ile
 980 985 990
 Glu Val Lys Thr Cys Leu Trp Pro Lys Thr His Thr Leu Trp Ser Asn
 995 1000 1005
 Gly Val Leu Glu Ser Gln Met Leu Ile Pro Lys Ser Tyr Ala Gly
 1010 1015 1020
 Pro Phe Ser Xaa His Asn Tyr Arg Gln Gly Tyr Ala Thr Gln Thr
 1025 1030 1035
 Val Gly Pro Trp His Leu Gly Lys Leu Glu Ile Asp Phe Gly Glu
 1040 1045 1050
 Cys Pro Gly Thr Thr Val Ala Ile Gln Glu Asp Cys Asp His Arg
 1055 1060 1065
 Gly Pro Ser Leu Arg Thr Thr Thr Ala Ser Gly Lys Leu Val Thr
 1070 1075 1080
 Gln Trp Cys Cys Arg Ser Cys Thr Met Pro Pro Leu Arg Phe Leu
 1085 1090 1095
 Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg Pro Leu Ser
 1100 1105 1110
 Glu Lys Glu Glu Asn Met Val Lys Ser Gln Val Thr Ala Gly Gln
 1115 1120 1125
 Gly Thr Ser Glu Thr Phe Ser Met Gly Leu Leu Cys Leu Thr Leu
 1130 1135 1140
 Phe Val Glu Glu Cys Leu Arg Arg Arg Val Thr Arg Lys His Met
 1145 1150 1155
 Ile Leu Val Val Val Ile Thr Leu Cys Ala Ile Ile Leu Gly Gly
 1160 1165 1170
 Leu Thr Trp Met Asp Leu Leu Arg Ala Leu Ile Met Leu Gly Asp
 1175 1180 1185
 Thr Met Ser Gly Arg Ile Gly Gly Gln Ile His Leu Ala Ile Met
 1190 1195 1200

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Ala	Val	Phe	Lys	Met	Ser	Pro	Gly	Tyr	Val	Leu	Gly	Val	Phe	Leu
	1205					1210					1215			
Arg	Lys	Leu	Thr	Ser	Arg	Glu	Thr	Ala	Leu	Met	Val	Ile	Gly	Met
	1220					1225					1230			
Ala	Met	Thr	Thr	Val	Leu	Ser	Ile	Pro	His	Asp	Leu	Met	Glu	Leu
	1235					1240					1245			
Ile	Asp	Gly	Ile	Ser	Leu	Gly	Leu	Ile	Leu	Leu	Lys	Ile	Val	Thr
	1250					1255					1260			
His	Phe	Asp	Asn	Thr	Gln	Val	Gly	Thr	Leu	Ala	Leu	Ser	Leu	Thr
	1265					1270					1275			
Phe	Ile	Arg	Ser	Thr	Met	Pro	Leu	Val	Met	Ala	Trp	Arg	Thr	Ile
	1280					1285					1290			
Met	Ala	Val	Leu	Phe	Val	Val	Thr	Leu	Ile	Pro	Leu	Cys	Arg	Thr
	1295					1300					1305			
Ser	Cys	Leu	Gln	Lys	Gln	Ser	His	Trp	Val	Glu	Ile	Thr	Ala	Leu
	1310					1315					1320			
Ile	Leu	Gly	Ala	Gln	Ala	Leu	Pro	Val	Tyr	Leu	Met	Thr	Leu	Met
	1325					1330					1335			
Lys	Gly	Ala	Ser	Arg	Arg	Ser	Trp	Pro	Leu	Asn	Glu	Gly	Ile	Met
	1340					1345					1350			
Ala	Val	Gly	Leu	Val	Ser	Leu	Leu	Gly	Ser	Ala	Leu	Leu	Lys	Asn
	1355					1360					1365			
Asp	Val	Pro	Leu	Ala	Gly	Pro	Met	Val	Ala	Gly	Gly	Leu	Leu	Leu
	1370					1375					1380			
Ala	Ala	Tyr	Val	Met	Ser	Gly	Ser	Ser	Ala	Asp	Leu	Ser	Leu	Glu
	1385					1390					1395			
Lys	Ala	Ala	Asn	Val	Gln	Trp	Asp	Glu	Met	Ala	Asp	Ile	Thr	Gly
	1400					1405					1410			
Ser	Ser	Pro	Ile	Ile	Glu	Val	Lys	Gln	Asp	Glu	Asp	Gly	Ser	Phe
	1415					1420					1425			
Ser	Ile	Arg	Asp	Val	Glu	Glu	Thr	Asn	Met	Ile	Thr	Leu	Leu	Val
	1430					1435					1440			
Lys	Leu	Ala	Leu	Ile	Thr	Val	Ser	Gly	Leu	Tyr	Pro	Leu	Ala	Ile
	1445					1450					1455			

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Pro	Val	Thr	Met	Thr	Leu	Trp	Tyr	Met	Trp	Gln	Val	Lys	Thr	Gln
	1460					1465					1470			
Arg	Ser	Gly	Ala	Leu	Trp	Asp	Val	Pro	Ser	Pro	Ala	Ala	Thr	Gln
	1475					1480					1485			
Lys	Ala	Ala	Leu	Ser	Glu	Gly	Val	Tyr	Arg	Ile	Met	Gln	Arg	Gly
	1490					1495					1500			
Leu	Phe	Gly	Lys	Thr	Gln	Val	Gly	Val	Gly	Ile	His	Met	Glu	Gly
	1505					1510					1515			
Val	Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ser	Val	Ile	Cys
	1520					1525					1530			
His	Glu	Thr	Gly	Arg	Leu	Glu	Pro	Ser	Trp	Ala	Asp	Val	Arg	Asn
	1535					1540					1545			
Asp	Met	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Arg	Leu	Gly	Asp	Lys	Trp
	1550					1555					1560			
Asp	Lys	Glu	Glu	Asp	Val	Gln	Val	Leu	Ala	Ile	Glu	Pro	Gly	Lys
	1565					1570					1575			
Asn	Pro	Lys	His	Val	Gln	Thr	Lys	Pro	Gly	Leu	Phe	Lys	Thr	Leu
	1580					1585					1590			
Thr	Gly	Glu	Ile	Gly	Ala	Val	Thr	Leu	Asp	Phe	Lys	Pro	Gly	Thr
	1595					1600					1605			
Ser	Gly	Ser	Pro	Ile	Ile	Asn	Arg	Lys	Gly	Lys	Val	Ile	Gly	Leu
	1610					1615					1620			
Tyr	Gly	Asn	Gly	Xaa	Val	Thr	Lys	Ser	Gly	Asp	Tyr	Val	Ser	Ala
	1625					1630					1635			
Ile	Thr	Gln	Ala	Glu	Arg	Ile	Gly	Glu	Pro	Asp	Tyr	Glu	Val	Asp
	1640					1645					1650			
Glu	Asp	Ile	Phe	Arg	Lys	Lys	Arg	Leu	Thr	Ile	Met	Asp	Leu	His
	1655					1660					1665			
Pro	Gly	Ala	Gly	Lys	Thr	Lys	Arg	Ile	Leu	Pro	Ser	Ile	Val	Arg
	1670					1675					1680			
Glu	Ala	Leu	Lys	Arg	Arg	Leu	Arg	Thr	Leu	Ile	Leu	Ala	Pro	Thr
	1685					1690					1695			
Arg	Val	Val	Ala	Ala	Glu	Met	Glu	Glu	Ala	Leu	Arg	Gly	Leu	Pro
	1700					1705					1710			

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Ile	Arg	Tyr	Gln	Thr	Pro	Ala	Val	Lys	Ser	Glu	His	Thr	Gly	Arg
1715						1720					1725			
Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Thr	Arg	Leu
1730						1735					1740			
Leu	Ser	Ser	Thr	Arg	Val	Pro	Asn	Tyr	Asn	Leu	Ile	Val	Met	Asp
1745						1750					1755			
Glu	Ala	His	Phe	Thr	Asp	Pro	Ser	Ser	Val	Ala	Ala	Arg	Gly	Tyr
1760						1765					1770			
Ile	Ser	Thr	Arg	Val	Glu	Met	Gly	Glu	Ala	Ala	Ala	Ile	Phe	Met
1775						1780					1785			
Thr	Ala	Thr	Pro	Pro	Gly	Ala	Thr	Asp	Pro	Phe	Pro	Gln	Ser	Asn
1790						1795					1800			
Ser	Pro	Ile	Glu	Asp	Ile	Glu	Arg	Glu	Ile	Pro	Glu	Arg	Ser	Trp
1805						1810					1815			
Asn	Thr	Gly	Phe	Asp	Trp	Ile	Thr	Asp	Tyr	Gln	Gly	Lys	Thr	Val
1820						1825					1830			
Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala	Asn	Cys
1835						1840					1845			
Leu	Arg	Lys	Ser	Gly	Lys	Lys	Val	Ile	Gln	Leu	Ser	Arg	Lys	Thr
1850						1855					1860			
Phe	Asp	Thr	Glu	Tyr	Pro	Lys	Thr	Lys	Leu	Thr	Asp	Trp	Asp	Phe
1865						1870					1875			
Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe	Arg	Ala
1880						1885					1890			
Gly	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Leu	Lys	Pro	Val	Ile	Leu
1895						1900					1905			
Thr	Asp	Gly	Pro	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Ile	Pro	Val
1910						1915					1920			
Thr	Pro	Ala	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Ile	Gly	Arg	Asn
1925						1930					1935			
Pro	Ala	Gln	Glu	Asp	Asp	Gln	Tyr	Val	Phe	Ser	Gly	Asp	Pro	Leu
1940						1945					1950			
Lys	Asn	Asp	Glu	Asp	His	Ala	His	Trp	Thr	Glu	Ala	Lys	Met	Leu
1955						1960					1965			

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Leu	Asp	Asn	Ile	Tyr	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Thr	Leu	Phe
	1970					1975					1980			
Gly	Pro	Glu	Arg	Glu	Lys	Thr	Gln	Ala	Ile	Asp	Gly	Glu	Phe	Arg
	1985					1990					1995			
Leu	Arg	Gly	Glu	Gln	Arg	Lys	Thr	Phe	Val	Glu	Leu	Met	Arg	Arg
	2000					2005					2010			
Gly	Asp	Leu	Pro	Val	Trp	Leu	Ser	Tyr	Lys	Val	Ala	Ser	Ala	Gly
	2015					2020					2025			
Ile	Ser	Tyr	Lys	Asp	Arg	Glu	Trp	Cys	Phe	Thr	Gly	Glu	Arg	Asn
	2030					2035					2040			
Asn	Gln	Ile	Leu	Glu	Glu	Asn	Met	Glu	Val	Glu	Ile	Trp	Thr	Arg
	2045					2050					2055			
Glu	Gly	Glu	Lys	Lys	Lys	Leu	Arg	Pro	Arg	Trp	Leu	Asp	Ala	Arg
	2060					2065					2070			
Val	Tyr	Ala	Asp	Pro	Met	Ala	Leu	Lys	Asp	Phe	Lys	Glu	Phe	Ala
	2075					2080					2085			
Ser	Gly	Arg	Lys	Ser	Ile	Thr	Leu	Asp	Ile	Leu	Thr	Glu	Ile	Ala
	2090					2095					2100			
Ser	Leu	Pro	Thr	Tyr	Leu	Ser	Ser	Arg	Ala	Lys	Leu	Ala	Leu	Asp
	2105					2110					2115			
Asn	Ile	Val	Met	Leu	His	Thr	Thr	Glu	Arg	Gly	Gly	Arg	Ala	Tyr
	2120					2125					2130			
Gln	His	Ala	Leu	Asn	Glu	Leu	Pro	Glu	Ser	Leu	Glu	Thr	Leu	Met
	2135					2140					2145			
Leu	Val	Ala	Leu	Leu	Gly	Ala	Met	Thr	Ala	Gly	Ile	Phe	Leu	Phe
	2150					2155					2160			
Phe	Met	Gln	Gly	Lys	Gly	Ile	Gly	Lys	Leu	Ser	Met	Gly	Leu	Ile
	2165					2170					2175			
Thr	Ile	Ala	Val	Ala	Ser	Gly	Leu	Phe	Trp	Val	Ala	Glu	Ile	Gln
	2180					2185					2190			
Pro	Gln	Trp	Ile	Ala	Ala	Ser	Ile	Ile	Leu	Glu	Phe	Phe	Leu	Met
	2195					2200					2205			
Val	Leu	Leu	Ile	Pro	Glu	Pro	Glu	Lys	Gln	Arg	Thr	Pro	Gln	Asp
	2210					2215					2220			

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Asn	Gln	Leu	Ile	Tyr	Val	Ile	Leu	Thr	Ile	Leu	Thr	Ile	Ile	Gly
2225						2230					2235			
Leu	Ile	Ala	Ala	Asn	Glu	Met	Gly	Leu	Ile	Glu	Lys	Thr	Lys	Thr
2240						2245					2250			
Asp	Phe	Gly	Phe	Tyr	Gln	Val	Lys	Thr	Glu	Thr	Thr	Ile	Leu	Asp
2255						2260					2265			
Val	Asp	Leu	Arg	Pro	Ala	Ser	Ala	Trp	Thr	Leu	Tyr	Ala	Val	Ala
2270						2275					2280			
Thr	Thr	Xaa	Leu	Thr	Pro	Met	Leu	Arg	His	Thr	Ile	Glu	Asn	Thr
2285						2290					2295			
Ser	Ala	Asn	Leu	Ser	Leu	Ala	Ala	Ile	Ala	Asn	Gln	Ala	Ala	Val
2300						2305					2310			
Leu	Met	Gly	Leu	Gly	Lys	Gly	Trp	Pro	Leu	His	Arg	Met	Asp	Leu
2315						2320					2325			
Gly	Val	Pro	Leu	Leu	Ala	Met	Gly	Cys	Tyr	Ser	Gln	Val	Asn	Pro
2330						2335					2340			
Thr	Thr	Leu	Thr	Ala	Ser	Leu	Val	Met	Leu	Ser	Val	His	Tyr	Ala
2345						2350					2355			
Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys	Ala	Thr	Arg	Glu	Ala	Gln
2360						2365					2370			
Lys	Arg	Thr	Ala	Ala	Gly	Ile	Met	Lys	Asn	Pro	Thr	Val	Asp	Gly
2375						2380					2385			
Ile	Thr	Val	Ile	Asp	Leu	Glu	Pro	Ile	Ser	Tyr	Asp	Pro	Lys	Phe
2390						2395					2400			
Glu	Lys	Gln	Leu	Gly	Gln	Val	Met	Leu	Leu	Val	Leu	Cys	Ala	Gly
2405						2410					2415			
Gln	Leu	Leu	Leu	Met	Arg	Thr	Thr	Trp	Ala	Phe	Cys	Glu	Val	Leu
2420						2425					2430			
Thr	Leu	Ala	Thr	Gly	Pro	Ile	Leu	Thr	Leu	Trp	Glu	Gly	Asn	Pro
2435						2440					2445			
Gly	Arg	Phe	Trp	Asn	Thr	Thr	Ile	Ala	Val	Ser	Thr	Ala	Asn	Ile
2450						2455					2460			
Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala	Gly	Leu	Ala	Phe	Ser	Leu
2465						2470					2475			

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Ile	Lys	Asn	Xaa	Gln	Thr	Pro	Arg	Arg	Gly	Thr	Gly	Thr	Thr	Gly
	2480					2485					2490			
Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Arg	Gln	Leu	Asn	Ser	Leu	Xaa
	2495					2500					2505			
Arg	Lys	Glu	Phe	Glu	Glu	Tyr	Lys	Arg	Ser	Gly	Ile	Leu	Glu	Val
	2510					2515					2520			
Asp	Arg	Thr	Glu	Ala	Lys	Ser	Ala	Leu	Lys	Asp	Gly	Ser	Lys	Ile
	2525					2530					2535			
Lys	His	Ala	Val	Ser	Arg	Gly	Ser	Ser	Lys	Ile	Arg	Trp	Ile	Val
	2540					2545					2550			
Glu	Arg	Gly	Met	Val	Lys	Pro	Lys	Gly	Lys	Val	Val	Asp	Leu	Gly
	2555					2560					2565			
Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr	Met	Ala	Thr	Leu	Lys	Asn
	2570					2575					2580			
Val	Thr	Glu	Val	Lys	Gly	Tyr	Thr	Lys	Gly	Gly	Pro	Gly	His	Glu
	2585					2590					2595			
Glu	Pro	Ile	Pro	Met	Ala	Thr	Tyr	Gly	Trp	Asn	Leu	Val	Lys	Leu
	2600					2605					2610			
His	Ser	Gly	Val	Asp	Val	Phe	Tyr	Lys	Pro	Thr	Glu	Gln	Val	Asp
	2615					2620					2625			
Thr	Leu	Leu	Cys	Asp	Ile	Gly	Glu	Ser	Ser	Ser	Asn	Pro	Thr	Ile
	2630					2635					2640			
Glu	Glu	Gly	Arg	Thr	Leu	Arg	Val	Leu	Lys	Met	Val	Glu	Pro	Trp
	2645					2650					2655			
Leu	Ser	Ser	Lys	Pro	Glu	Phe	Cys	Ile	Lys	Val	Leu	Asn	Pro	Tyr
	2660					2665					2670			
Met	Pro	Thr	Val	Ile	Glu	Glu	Leu	Glu	Lys	Leu	Gln	Arg	Lys	His
	2675					2680					2685			
Gly	Gly	Asn	Leu	Val	Arg	Cys	Pro	Leu	Ser	Arg	Asn	Ser	Thr	His
	2690					2695					2700			
Glu	Met	Tyr	Trp	Val	Ser	Gly	Ala	Ser	Gly	Asn	Ile	Val	Ser	Ser
	2705					2710					2715			
Val	Asn	Thr	Thr	Ser	Lys	Met	Leu	Leu	Asn	Arg	Phe	Thr	Thr	Arg
	2720					2725					2730			

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His	Arg	Lys	Pro	Thr	Tyr	Glu	Lys	Asp	Val	Asp	Leu	Gly	Ala	Gly
	2735					2740					2745			
Thr	Arg	Ser	Val	Ser	Thr	Glu	Thr	Glu	Lys	Pro	Asp	Met	Thr	Ile
	2750					2755					2760			
Ile	Gly	Arg	Arg	Leu	Gln	Arg	Leu	Gln	Glu	Glu	His	Lys	Glu	Thr
	2765					2770					2775			
Trp	His	Tyr	Asp	Gln	Glu	Asn	Pro	Tyr	Arg	Thr	Trp	Ala	Tyr	His
	2780					2785					2790			
Gly	Ser	Tyr	Glu	Ala	Pro	Ser	Thr	Gly	Ser	Ala	Ser	Ser	Met	Val
	2795					2800					2805			
Asn	Gly	Val	Val	Lys	Leu	Leu	Thr	Lys	Pro	Trp	Asp	Val	Val	Pro
	2810					2815					2820			
Met	Val	Thr	Gln	Leu	Ala	Met	Thr	Asp	Thr	Thr	Pro	Phe	Gly	Gln
	2825					2830					2835			
Gln	Arg	Val	Phe	Lys	Glu	Lys	Val	Asp	Thr	Arg	Thr	Pro	Gln	Pro
	2840					2845					2850			
Lys	Pro	Gly	Thr	Arg	Met	Val	Met	Thr	Thr	Thr	Ala	Asn	Trp	Leu
	2855					2860					2865			
Trp	Ala	Leu	Leu	Gly	Lys	Lys	Lys	Asn	Pro	Arg	Leu	Cys	Thr	Arg
	2870					2875					2880			
Glu	Glu	Phe	Ile	Ser	Lys	Val	Arg	Ser	Asn	Ala	Ala	Ile	Gly	Ala
	2885					2890					2895			
Val	Phe	Gln	Glu	Glu	Gln	Gly	Trp	Thr	Ser	Ala	Ser	Glu	Ala	Val
	2900					2905					2910			
Asn	Asp	Ser	Arg	Phe	Trp	Glu	Leu	Val	Asp	Lys	Glu	Arg	Ala	Leu
	2915					2920					2925			
His	Gln	Glu	Gly	Lys	Cys	Glu	Ser	Cys	Val	Tyr	Asn	Met	Met	Gly
	2930					2935					2940			
Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly	Arg	Ala	Lys	Gly	Ser
	2945					2950					2955			
Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala	Arg	Phe	Leu	Glu	Phe
	2960					2965					2970			
Glu	Ala	Leu	Gly	Phe	Leu	Asn	Glu	Asp	His	Trp	Phe	Gly	Arg	Glu
	2975					2980					2985			

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Asn	Ser	Trp	Ser	Gly	Val	Glu	Gly	Glu	Gly	Leu	His	Arg	Leu	Gly
	2990					2995					3000			
Tyr	Ile	Leu	Glu	Glu	Ile	Asp	Lys	Lys	Asp	Gly	Asp	Leu	Met	Tyr
	3005					3010					3015			
Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg	Ile	Thr	Glu	Asp	Asp
	3020					3025					3030			
Leu	Gln	Asn	Glu	Glu	Leu	Ile	Thr	Glu	Gln	Met	Ala	Pro	His	His
	3035					3040					3045			
Lys	Ile	Leu	Ala	Lys	Ala	Ile	Phe	Lys	Leu	Thr	Tyr	Gln	Asn	Lys
	3050					3055					3060			
Val	Val	Lys	Val	Leu	Arg	Pro	Thr	Pro	Arg	Gly	Ala	Val	Met	Asp
	3065					3070					3075			
Ile	Ile	Ser	Arg	Lys	Asp	Gln	Arg	Gly	Ser	Gly	Gln	Val	Gly	Thr
	3080					3085					3090			
Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu	Val	Gln	Leu	Ile	Arg
	3095					3100					3105			
Gln	Met	Glu	Ala	Glu	Gly	Val	Ile	Thr	Gln	Asp	Asp	Met	Gln	Asn
	3110					3115					3120			
Pro	Lys	Gly	Leu	Lys	Glu	Arg	Val	Glu	Lys	Trp	Leu	Lys	Glu	Cys
	3125					3130					3135			
Gly	Val	Asp	Arg	Leu	Lys	Arg	Met	Ala	Ile	Ser	Gly	Asp	Asp	Cys
	3140					3145					3150			
Val	Val	Lys	Pro	Leu	Asp	Glu	Arg	Phe	Gly	Thr	Ser	Leu	Leu	Phe
	3155					3160					3165			
Leu	Asn	Asp	Met	Gly	Lys	Val	Arg	Lys	Asp	Ile	Pro	Gln	Trp	Glu
	3170					3175					3180			
Pro	Ser	Lys	Gly	Trp	Lys	Asn	Trp	Gln	Glu	Val	Pro	Phe	Cys	Ser
	3185					3190					3195			
His	His	Phe	His	Lys	Ile	Phe	Met	Lys	Asp	Gly	Arg	Ser	Leu	Val
	3200					3205					3210			
Val	Pro	Cys	Arg	Asn	Gln	Asp	Glu	Leu	Ile	Gly	Arg	Ala	Arg	Ile
	3215					3220					3225			
Ser	Gln	Gly	Ala	Gly	Trp	Ser	Leu	Arg	Glu	Thr	Ala	Cys	Leu	Gly
	3230					3235					3240			

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Lys Ala Tyr Ala Gln Met Trp Ser Leu Met Tyr Phe His Arg Arg
3245 3250 3255

Asp Leu Arg Leu Ala Ser Met Ala Ile Cys Ser Ala Val Pro Thr
3260 3265 3270

Glu Trp Phe Pro Thr Ser Arg Thr Thr Trp Ser Ile His Ala His
3275 3280 3285

His Gln Trp Met Thr Thr Glu Asp Met Leu Lys Val Trp Asn Arg
3290 3295 3300

Val Trp Ile Glu Asp Asn Pro Asn Met Thr Asp Lys Thr Pro Val
3305 3310 3315

His Ser Trp Glu Asp Ile Pro Tyr Leu Gly Lys Arg Glu Asp Leu
3320 3325 3330

Trp Cys Gly Ser Leu Ile Gly Leu Ser Ser Arg Ala Thr Trp Ala
3335 3340 3345

Lys Asn Ile His Thr Ala Ile Thr Gln Val Arg Asn Leu Ile Gly
3350 3355 3360

Lys Glu Glu Tyr Val Asp Tyr Met Pro Val Met Lys Arg Tyr Ser
3365 3370 3375

Ala Pro Ser Glu Ser Glu Gly Val Leu
3380 3385

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<211> 3392
<212> PRT
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<223> Xaa stands for Lys or Glu

<220>
<221> VARIANT
<222> (484)..(484)
<223> Xaa stands for Lys or Arg

<220>
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<222> (2357)..(2357)
<223> Xaa stands for Phe or Leu

<220>
<221> VARIANT
<222> (2364)..(2364)
<223> Xaa stands for Thr or Ala

<400> 9

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

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Met Leu Val Thr Pro Ser Met Ala Met Arg Cys Val Gly Ile Gly Ser
275 280 285

Arg Asp Phe Val Glu Gly Leu Ser Gly Ala Thr Trp Val Asp Val Val
290 295 300

Leu Glu His Gly Ser Cys Val Thr Thr Met Ala Lys Asp Lys Pro Thr
305 310 315 320

Leu Asp Ile Glu Leu Leu Lys Thr Glu Val Thr Asn Pro Ala Val Leu
325 330 335

Arg Lys Leu Cys Ile Glu Ala Lys Ile Ser Asn Thr Thr Thr Asp Ser
340 345 350

Arg Cys Pro Thr Gln Gly Glu Ala Thr Leu Val Glu Glu Gln Asp Ala
355 360 365

Asn Phe Val Cys Arg Arg Thr Phe Val Asp Arg Gly Trp Gly Asn Gly
370 375 380

Cys Gly Leu Phe Gly Lys Gly Ser Leu Leu Thr Cys Ala Lys Phe Lys
385 390 395 400

Cys Val Thr Lys Leu Glu Gly Lys Ile Val Gln Tyr Glu Asn Leu Lys
405 410 415

Tyr Ser Val Ile Val Thr Val His Thr Gly Asp Gln His Gln Val Gly
420 425 430

Asn Glu Ser Thr Glu His Gly Thr Thr Ala Thr Ile Thr Pro Gln Ala
435 440 445

Pro Thr Thr Glu Ile Gln Leu Thr Asp Tyr Gly Ala Leu Thr Leu Asp
450 455 460

Cys Ser Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Val Leu Leu Thr
465 470 475 480

Met Xaa Lys Xaa Ser Trp Leu Val His Lys Gln Trp Phe Leu Asp Leu
485 490 495

Pro Leu Pro Trp Thr Ser Gly Ala Ser Thr Ser Gln Glu Thr Trp Asn
500 505 510

Arg Gln Asp Leu Leu Val Thr Phe Lys Thr Ala His Ala Lys Lys Gln
515 520 525

Glu Val Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu
530 535 540

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Thr Gly Ala Thr Glu Ile Gln Thr Ser Gly Thr Thr Thr Ile Phe Ala
545 550 555 560

Gly His Leu Lys Cys Arg Leu Arg Met Asp Lys Leu Thr Leu Lys Gly
565 570 575

Met Ser Tyr Val Met Cys Thr Gly Ser Phe Lys Leu Glu Lys Glu Val
580 585 590

Ala Glu Thr Gln His Gly Thr Val Leu Val Gln Ile Lys Tyr Glu Gly
595 600 605

Thr Asp Ala Pro Cys Lys Ile Pro Phe Ser Thr Gln Asp Glu Lys Gly
610 615 620

Val Thr Gln Asn Gly Arg Leu Ile Thr Ala Asn Pro Ile Val Thr Asp
625 630 635 640

Lys Glu Lys Pro Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Glu Ser
645 650 655

Tyr Ile Val Ile Gly Ala Gly Glu Lys Ala Leu Lys Leu Ser Trp Phe
660 665 670

Lys Lys Gly Ser Ser Ile Gly Lys Met Phe Glu Ala Thr Ala Arg Gly
675 680 685

Ala Arg Arg Met Ala Ile Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser
690 695 700

Ile Gly Gly Val Phe Thr Ser Val Gly Lys Leu Val His Gln Ile Phe
705 710 715 720

Gly Thr Ala Tyr Gly Val Leu Phe Ser Gly Val Ser Trp Thr Met Lys
725 730 735

Ile Gly Ile Gly Val Leu Leu Thr Trp Leu Gly Leu Asn Ser Arg Asn
740 745 750

Thr Ser Leu Ser Met Thr Cys Ile Ala Val Gly Leu Val Thr Leu Tyr
755 760 765

Leu Gly Val Met Val Gln Ala Asp Ser Gly Cys Val Ile Asn Trp Lys
770 775 780

Gly Arg Glu Leu Lys Cys Gly Ser Gly Ile Phe Val Thr Asn Glu Val
785 790 795 800

His Thr Trp Thr Glu Gln Tyr Lys Phe Gln Ala Asp Ser Pro Lys Arg
805 810 815

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Leu Ser Ala Ala Ile Gly Lys Ala Trp Glu Glu Gly Val Cys Gly Ile
 820 825 830
 Arg Ser Ala Thr Arg Leu Glu Asn Ile Met Trp Lys Gln Ile Ser Asn
 835 840 845
 Glu Leu Asn His Ile Leu Leu Glu Asn Asp Met Lys Phe Thr Val Val
 850 855 860
 Val Gly Asp Val Ala Gly Ile Leu Ala Gln Gly Lys Lys Met Ile Arg
 865 870 875 880
 Pro Gln Pro Met Glu His Lys Tyr Ser Trp Lys Ser Trp Gly Lys Ala
 885 890 895
 Lys Ile Ile Gly Ala Asp Val Gln Asn Ser Thr Phe Ile Ile Asp Gly
 900 905 910
 Pro Asn Thr Pro Glu Cys Pro Asp Asp Gln Arg Ala Trp Asn Ile Trp
 915 920 925
 Glu Val Glu Asp Tyr Gly Phe Gly Ile Phe Thr Thr Asn Ile Trp Leu
 930 935 940
 Lys Leu Arg Asp Ser Tyr Thr Gln Leu Cys Asp His Arg Leu Met Ser
 945 950 955 960
 Ala Ala Ile Lys Asp Ser Lys Ala Val His Ala Asp Met Gly Tyr Trp
 965 970 975
 Ile Glu Ser Glu Lys Asn Glu Thr Trp Lys Leu Ala Arg Ala Ser Phe
 980 985 990
 Ile Glu Val Lys Thr Cys Ile Trp Pro Lys Ser His Thr Leu Trp Ser
 995 1000 1005
 Asn Gly Val Leu Glu Ser Glu Met Ile Ile Pro Lys Ile Tyr Gly
 1010 1015 1020
 Gly Pro Ile Ser Gln His Asn Tyr Arg Pro Gly Tyr Phe Thr Gln
 1025 1030 1035
 Thr Val Gly Pro Trp His Leu Gly Lys Leu Glu Leu Asp Phe Asp
 1040 1045 1050
 Leu Cys Glu Gly Thr Thr Val Val Val Asp Glu His Cys Gly Asn
 1055 1060 1065
 Arg Gly Pro Ser Leu Arg Thr Thr Thr Val Thr Gly Lys Ile Ile
 1070 1075 1080

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His	Glu	Trp	Cys	Cys	Arg	Ser	Cys	Thr	Leu	Pro	Pro	Leu	Arg	Phe
	1085					1090					1095			
Arg	Gly	Glu	Asp	Gly	Cys	Trp	Tyr	Gly	Met	Glu	Ile	Arg	Pro	Val
	1100					1105					1110			
Lys	Glu	Lys	Glu	Glu	Asn	Leu	Val	Lys	Ser	Met	Val	Ser	Ala	Gly
	1115					1120					1125			
Ser	Gly	Glu	Val	Asp	Ser	Phe	Ser	Leu	Gly	Leu	Leu	Cys	Ile	Ser
	1130					1135					1140			
Ile	Met	Ile	Glu	Glu	Val	Met	Arg	Ser	Arg	Trp	Ser	Arg	Lys	Met
	1145					1150					1155			
Leu	Met	Thr	Gly	Thr	Leu	Ala	Val	Phe	Leu	Leu	Leu	Ile	Met	Gly
	1160					1165					1170			
Gln	Leu	Thr	Trp	Asn	Asp	Leu	Ile	Arg	Leu	Cys	Ile	Met	Val	Gly
	1175					1180					1185			
Ala	Asn	Ala	Ser	Asp	Arg	Met	Gly	Met	Gly	Thr	Thr	Tyr	Leu	Ala
	1190					1195					1200			
Leu	Met	Ala	Thr	Phe	Lys	Met	Arg	Pro	Met	Phe	Ala	Val	Gly	Leu
	1205					1210					1215			
Leu	Phe	Arg	Arg	Leu	Thr	Ser	Arg	Glu	Val	Leu	Leu	Leu	Thr	Ile
	1220					1225					1230			
Gly	Leu	Ser	Leu	Val	Ala	Ser	Val	Glu	Leu	Pro	Asn	Ser	Leu	Glu
	1235					1240					1245			
Glu	Leu	Gly	Asp	Gly	Leu	Ala	Met	Gly	Ile	Met	Ile	Leu	Lys	Leu
	1250					1255					1260			
Leu	Thr	Asp	Phe	Gln	Ser	His	Gln	Leu	Trp	Ala	Thr	Leu	Leu	Ser
	1265					1270					1275			
Leu	Thr	Phe	Ile	Lys	Thr	Thr	Phe	Ser	Leu	His	Tyr	Ala	Trp	Lys
	1280					1285					1290			
Thr	Met	Ala	Met	Val	Leu	Ser	Ile	Val	Ser	Leu	Phe	Pro	Leu	Cys
	1295					1300					1305			
Leu	Ser	Thr	Thr	Ser	Gln	Lys	Thr	Thr	Trp	Leu	Pro	Val	Leu	Leu
	1310					1315					1320			
Gly	Ser	Leu	Gly	Cys	Lys	Pro	Leu	Thr	Met	Phe	Leu	Ile	Ala	Glu
	1325					1330					1335			

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Asn	Lys	Ile	Trp	Gly	Arg	Lys	Ser	Trp	Pro	Leu	Asn	Glu	Gly	Ile
	1340					1345					1350			
Met	Ala	Val	Gly	Ile	Val	Ser	Ile	Leu	Leu	Ser	Ser	Leu	Leu	Lys
	1355					1360					1365			
Asn	Asp	Val	Pro	Leu	Ala	Gly	Pro	Leu	Ile	Ala	Gly	Gly	Met	Leu
	1370					1375					1380			
Ile	Ala	Cys	Tyr	Val	Ile	Ser	Gly	Ser	Ser	Ala	Asp	Leu	Ser	Leu
	1385					1390					1395			
Glu	Lys	Ala	Ala	Glu	Val	Ser	Trp	Glu	Glu	Glu	Ala	Glu	His	Ser
	1400					1405					1410			
Gly	Ala	Ser	His	Asn	Ile	Leu	Val	Glu	Val	Gln	Asp	Asp	Gly	Thr
	1415					1420					1425			
Met	Lys	Ile	Lys	Asp	Glu	Glu	Arg	Asp	Asp	Thr	Leu	Thr	Ile	Leu
	1430					1435					1440			
Leu	Lys	Ala	Thr	Leu	Leu	Ala	Val	Ser	Gly	Val	Tyr	Pro	Leu	Ser
	1445					1450					1455			
Ile	Pro	Ala	Thr	Leu	Phe	Val	Trp	Tyr	Phe	Trp	Gln	Lys	Lys	Lys
	1460					1465					1470			
Gln	Arg	Ser	Gly	Val	Leu	Trp	Asp	Thr	Pro	Ser	Pro	Pro	Glu	Val
	1475					1480					1485			
Glu	Arg	Ala	Val	Leu	Asp	Asp	Gly	Ile	Tyr	Arg	Ile	Met	Gln	Arg
	1490					1495					1500			
Gly	Leu	Leu	Gly	Arg	Ser	Gln	Val	Gly	Val	Gly	Val	Phe	Gln	Glu
	1505					1510					1515			
Asn	Val	Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ala	Val	Leu
	1520					1525					1530			
Met	Tyr	Gln	Gly	Lys	Arg	Leu	Glu	Pro	Ser	Trp	Ala	Ser	Val	Lys
	1535					1540					1545			
Lys	Asp	Leu	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Arg	Leu	Gln	Gly	Ser
	1550					1555					1560			
Trp	Asn	Thr	Gly	Glu	Glu	Val	Gln	Val	Ile	Ala	Val	Glu	Pro	Gly
	1565					1570					1575			
Lys	Asn	Pro	Lys	Asn	Val	Gln	Thr	Ala	Pro	Gly	Thr	Phe	Lys	Thr
	1580					1585					1590			

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Pro	Glu	Gly	Glu	Val	Gly	Ala	Ile	Ala	Leu	Asp	Phe	Lys	Pro	Gly
	1595					1600					1605			
Thr	Ser	Gly	Ser	Pro	Ile	Val	Asn	Arg	Glu	Gly	Lys	Ile	Val	Gly
	1610					1615					1620			
Leu	Tyr	Gly	Asn	Gly	Val	Val	Thr	Thr	Ser	Gly	Thr	Tyr	Val	Ser
	1625					1630					1635			
Ala	Ile	Ala	Gln	Ala	Lys	Ala	Ser	Gln	Glu	Gly	Pro	Leu	Pro	Glu
	1640					1645					1650			
Ile	Glu	Asp	Glu	Val	Phe	Arg	Lys	Arg	Lys	Leu	Thr	Ile	Met	Asp
	1655					1660					1665			
Leu	His	Pro	Gly	Ser	Gly	Lys	Thr	Arg	Arg	Tyr	Leu	Pro	Ala	Ile
	1670					1675					1680			
Val	Arg	Glu	Ala	Ile	Lys	Arg	Lys	Leu	Arg	Thr	Leu	Ile	Leu	Ala
	1685					1690					1695			
Pro	Thr	Arg	Val	Val	Ala	Ser	Glu	Met	Ala	Glu	Ala	Leu	Lys	Gly
	1700					1705					1710			
Met	Pro	Ile	Arg	Tyr	Gln	Thr	Thr	Ala	Val	Lys	Ser	Glu	His	Thr
	1715					1720					1725			
Gly	Lys	Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Met
	1730					1735					1740			
Arg	Leu	Leu	Ser	Pro	Val	Arg	Val	Pro	Asn	Tyr	Asn	Met	Ile	Ile
	1745					1750					1755			
Met	Asp	Glu	Ala	His	Phe	Thr	Asp	Pro	Ser	Ser	Ile	Ala	Ala	Arg
	1760					1765					1770			
Gly	Tyr	Ile	Ser	Thr	Arg	Val	Gly	Met	Gly	Glu	Ala	Ala	Ala	Ile
	1775					1780					1785			
Phe	Met	Thr	Ala	Thr	Pro	Pro	Gly	Ser	Val	Glu	Ala	Phe	Pro	Gln
	1790					1795					1800			
Ser	Asn	Ala	Val	Ile	Gln	Asp	Glu	Glu	Arg	Asp	Ile	Pro	Glu	Arg
	1805					1810					1815			
Ser	Trp	Asn	Ser	Gly	Tyr	Glu	Trp	Ile	Thr	Asp	Phe	Pro	Gly	Lys
	1820					1825					1830			
Thr	Val	Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala
	1835					1840					1845			

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Asn	Cys	Leu	Arg	Lys	Asn	Gly	Lys	Arg	Val	Ile	Gln	Leu	Ser	Arg
	1850					1855					1860			
Lys	Thr	Phe	Asp	Thr	Glu	Tyr	Gln	Lys	Thr	Lys	Asn	Asn	Asp	Trp
	1865					1870					1875			
Asp	Tyr	Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe
	1880					1885					1890			
Arg	Ala	Asp	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Leu	Lys	Pro	Val
	1895					1900					1905			
Ile	Leu	Lys	Asp	Gly	Pro	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Met
	1910					1915					1920			
Pro	Val	Thr	Val	Ala	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Ile	Gly
	1925					1930					1935			
Arg	Asn	His	Asn	Lys	Glu	Gly	Asp	Gln	Tyr	Ile	Tyr	Met	Gly	Gln
	1940					1945					1950			
Pro	Leu	Asn	Asn	Asp	Glu	Asp	His	Ala	His	Trp	Thr	Glu	Ala	Lys
	1955					1960					1965			
Met	Leu	Leu	Asp	Asn	Ile	Asn	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Ala
	1970					1975					1980			
Leu	Phe	Glu	Pro	Glu	Arg	Glu	Lys	Ser	Ala	Ala	Ile	Asp	Gly	Glu
	1985					1990					1995			
Tyr	Arg	Leu	Arg	Gly	Glu	Ala	Arg	Lys	Thr	Phe	Val	Glu	Leu	Met
	2000					2005					2010			
Arg	Arg	Gly	Asp	Leu	Pro	Val	Trp	Leu	Ser	Tyr	Lys	Val	Ala	Ser
	2015					2020					2025			
Glu	Gly	Phe	Gln	Tyr	Ser	Asp	Arg	Arg	Trp	Cys	Phe	Asp	Gly	Glu
	2030					2035					2040			
Arg	Asn	Asn	Gln	Val	Leu	Glu	Glu	Asn	Met	Asp	Val	Glu	Ile	Trp
	2045					2050					2055			
Thr	Lys	Glu	Gly	Glu	Arg	Lys	Lys	Leu	Arg	Pro	Arg	Trp	Leu	Asp
	2060					2065					2070			
Ala	Arg	Thr	Tyr	Ser	Asp	Pro	Leu	Ala	Leu	Arg	Glu	Phe	Lys	Glu
	2075					2080					2085			
Phe	Ala	Ala	Gly	Arg	Arg	Ser	Val	Ser	Gly	Asp	Leu	Ile	Leu	Glu
	2090					2095					2100			

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Ile	Gly	Lys	Leu	Pro	Gln	His	Leu	Thr	Gln	Arg	Ala	Gln	Asn	Ala
2105						2110					2115			
Leu	Asp	Asn	Leu	Val	Met	Leu	His	Asn	Ser	Glu	Gln	Gly	Gly	Arg
2120						2125					2130			
Ala	Tyr	Arg	His	Ala	Met	Glu	Glu	Leu	Pro	Asp	Thr	Ile	Glu	Thr
2135						2140					2145			
Leu	Met	Leu	Leu	Ala	Leu	Ile	Ala	Val	Leu	Thr	Gly	Gly	Val	Thr
2150						2155					2160			
Leu	Phe	Phe	Leu	Ser	Gly	Lys	Gly	Leu	Gly	Lys	Thr	Ser	Ile	Gly
2165						2170					2175			
Leu	Leu	Cys	Val	Met	Ala	Ser	Ser	Val	Leu	Leu	Trp	Met	Ala	Ser
2180						2185					2190			
Val	Glu	Pro	His	Trp	Ile	Ala	Ala	Ser	Ile	Ile	Leu	Glu	Phe	Phe
2195						2200					2205			
Leu	Met	Val	Leu	Leu	Ile	Pro	Glu	Pro	Asp	Arg	Gln	Arg	Thr	Pro
2210						2215					2220			
Gln	Asp	Asn	Gln	Leu	Ala	Tyr	Val	Val	Ile	Gly	Leu	Leu	Phe	Met
2225						2230					2235			
Ile	Leu	Thr	Val	Ala	Ala	Asn	Glu	Met	Gly	Leu	Leu	Glu	Thr	Thr
2240						2245					2250			
Lys	Lys	Asp	Leu	Gly	Ile	Gly	His	Val	Ala	Val	Glu	Asn	His	His
2255						2260					2265			
His	Ala	Ala	Met	Leu	Asp	Val	Asp	Leu	His	Pro	Ala	Ser	Ala	Trp
2270						2275					2280			
Thr	Leu	Tyr	Ala	Val	Ala	Thr	Thr	Ile	Ile	Thr	Pro	Met	Met	Arg
2285						2290					2295			
His	Thr	Ile	Glu	Asn	Thr	Thr	Ala	Asn	Ile	Ser	Leu	Thr	Ala	Ile
2300						2305					2310			
Ala	Asn	Gln	Ala	Ala	Ile	Leu	Met	Gly	Leu	Asp	Lys	Gly	Trp	Pro
2315						2320					2325			
Ile	Ser	Lys	Met	Asp	Ile	Gly	Val	Pro	Leu	Leu	Ala	Leu	Gly	Cys
2330						2335					2340			
Tyr	Ser	Gln	Val	Asn	Pro	Leu	Thr	Leu	Thr	Ala	Ala	Val	Xaa	Met
2345						2350					2355			

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Leu	Val	Ala	His	Tyr	Xaa	Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys
2360						2365					2370			
Ala	Thr	Arg	Glu	Ala	Gln	Lys	Arg	Thr	Ala	Ala	Gly	Ile	Met	Lys
2375						2380					2385			
Asn	Pro	Thr	Ile	Asp	Gly	Ile	Val	Ala	Ile	Asp	Leu	Asp	Pro	Val
2390						2395					2400			
Val	Tyr	Asp	Ala	Lys	Phe	Glu	Lys	Gln	Leu	Gly	Gln	Ile	Met	Leu
2405						2410					2415			
Leu	Ile	Leu	Cys	Thr	Ser	Gln	Ile	Leu	Leu	Met	Arg	Thr	Thr	Trp
2420						2425					2430			
Ala	Leu	Cys	Glu	Ser	Ile	Thr	Leu	Ala	Thr	Gly	Pro	Leu	Thr	Thr
2435						2440					2445			
Leu	Trp	Glu	Gly	Ser	Pro	Gly	Lys	Phe	Trp	Asn	Thr	Thr	Ile	Ala
2450						2455					2460			
Val	Ser	Met	Ala	Asn	Ile	Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala
2465						2470					2475			
Gly	Leu	Ala	Phe	Ser	Leu	Met	Lys	Ser	Leu	Gly	Gly	Gly	Arg	Arg
2480						2485					2490			
Gly	Thr	Gly	Ala	Gln	Gly	Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Arg
2495						2500					2505			
Gln	Leu	Asn	Gln	Leu	Ser	Lys	Ser	Glu	Phe	Asn	Thr	Tyr	Lys	Arg
2510						2515					2520			
Ser	Gly	Ile	Met	Glu	Val	Asp	Arg	Ser	Glu	Ala	Lys	Glu	Gly	Leu
2525						2530					2535			
Lys	Arg	Gly	Glu	Thr	Thr	Lys	His	Ala	Val	Ser	Arg	Gly	Thr	Ala
2540						2545					2550			
Lys	Leu	Arg	Trp	Phe	Val	Glu	Arg	Asn	Leu	Val	Lys	Pro	Glu	Gly
2555						2560					2565			
Lys	Val	Ile	Asp	Leu	Gly	Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr
2570						2575					2580			
Cys	Ala	Gly	Leu	Lys	Lys	Val	Thr	Glu	Val	Lys	Gly	Tyr	Thr	Lys
2585						2590					2595			
Gly	Gly	Pro	Gly	His	Glu	Glu	Pro	Ile	Pro	Met	Ala	Thr	Tyr	Gly
2600						2605					2610			

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Trp	Asn 2615	Leu	Val	Lys	Leu	His 2620	Ser	Gly	Lys	Asp	Val 2625	Phe	Phe	Ile
Pro	Pro 2630	Glu	Lys	Cys	Asp	Thr 2635	Leu	Leu	Cys	Asp	Ile 2640	Gly	Glu	Ser
Ser	Pro 2645	Asn	Pro	Thr	Ile	Glu 2650	Glu	Gly	Arg	Thr	Leu 2655	Arg	Val	Leu
Lys	Met 2660	Val	Glu	Pro	Trp	Leu 2665	Arg	Gly	Asn	Gln	Phe 2670	Cys	Ile	Lys
Ile	Leu 2675	Asn	Pro	Tyr	Met	Pro 2680	Ser	Val	Val	Glu	Thr 2685	Leu	Glu	Gln
Met	Gln 2690	Arg	Lys	His	Gly	Gly 2695	Met	Leu	Val	Arg	Asn 2700	Pro	Leu	Ser
Arg	Asn 2705	Ser	Thr	His	Glu	Met 2710	Tyr	Trp	Val	Ser	Cys 2715	Gly	Thr	Gly
Asn	Ile 2720	Val	Ser	Ala	Val	Asn 2725	Met	Thr	Ser	Arg	Met 2730	Leu	Leu	Asn
Arg	Phe 2735	Thr	Met	Ala	His	Arg 2740	Lys	Pro	Thr	Tyr	Glu 2745	Arg	Asp	Val
Asp	Leu 2750	Gly	Ala	Gly	Thr	Arg 2755	His	Val	Ala	Val	Glu 2760	Pro	Glu	Val
Ala	Asn 2765	Leu	Asp	Ile	Ile	Gly 2770	Gln	Arg	Ile	Glu	Asn 2775	Ile	Lys	His
Glu	His 2780	Lys	Ser	Thr	Trp	His 2785	Tyr	Asp	Glu	Asp	Asn 2790	Pro	Tyr	Lys
Thr	Trp 2795	Ala	Tyr	His	Gly	Ser 2800	Tyr	Glu	Val	Lys	Pro 2805	Ser	Gly	Ser
Ala	Ser 2810	Ser	Met	Val	Asn	Gly 2815	Val	Val	Lys	Leu	Leu 2820	Thr	Lys	Pro
Trp	Asp 2825	Val	Ile	Pro	Met	Val 2830	Thr	Gln	Ile	Ala	Met 2835	Thr	Asp	Thr
Thr	Pro 2840	Phe	Gly	Gln	Gln	Arg 2845	Val	Phe	Lys	Glu	Lys 2850	Val	Asp	Thr
Arg	Thr 2855	Pro	Lys	Ala	Lys	Arg 2860	Gly	Thr	Ala	Gln	Ile 2865	Met	Glu	Val

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Thr	Ala	Arg	Trp	Leu	Trp	Gly	Phe	Leu	Ser	Arg	Asn	Lys	Lys	Pro
	2870					2875					2880			
Arg	Ile	Cys	Thr	Arg	Glu	Glu	Phe	Thr	Arg	Lys	Val	Arg	Ser	Asn
	2885					2890					2895			
Ala	Ala	Ile	Gly	Ala	Val	Phe	Val	Asp	Glu	Asn	Gln	Trp	Asn	Ser
	2900					2905					2910			
Ala	Lys	Glu	Ala	Val	Glu	Asp	Asp	Arg	Phe	Trp	Asp	Leu	Val	His
	2915					2920					2925			
Arg	Glu	Arg	Glu	Leu	His	Lys	Gln	Gly	Lys	Cys	Ala	Thr	Cys	Val
	2930					2935					2940			
Tyr	Asn	Met	Met	Gly	Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly
	2945					2950					2955			
Lys	Ala	Lys	Gly	Ser	Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala
	2960					2965					2970			
Arg	Phe	Leu	Glu	Phe	Glu	Ala	Leu	Gly	Phe	Met	Asn	Glu	Asp	His
	2975					2980					2985			
Trp	Phe	Ser	Arg	Glu	Asn	Ser	Leu	Ser	Gly	Val	Glu	Gly	Glu	Gly
	2990					2995					3000			
Leu	His	Lys	Leu	Gly	Tyr	Ile	Leu	Arg	Asp	Ile	Ser	Lys	Ile	Pro
	3005					3010					3015			
Gly	Gly	Asn	Met	Tyr	Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg
	3020					3025					3030			
Ile	Thr	Glu	Asp	Asp	Leu	Gln	Asn	Glu	Ala	Lys	Ile	Thr	Asp	Ile
	3035					3040					3045			
Met	Glu	Pro	Glu	His	Ala	Leu	Leu	Ala	Lys	Ser	Ile	Phe	Lys	Leu
	3050					3055					3060			
Thr	Tyr	Gln	Asn	Lys	Val	Val	Arg	Val	Gln	Arg	Pro	Ala	Lys	Asn
	3065					3070					3075			
Gly	Thr	Val	Met	Asp	Val	Ile	Ser	Arg	Arg	Asp	Gln	Arg	Gly	Ser
	3080					3085					3090			
Gly	Gln	Val	Gly	Thr	Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu
	3095					3100					3105			
Ala	Gln	Leu	Ile	Arg	Gln	Met	Glu	Ser	Glu	Gly	Ile	Phe	Ser	Pro
	3110					3115					3120			

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Asn	Glu	Leu	Glu	Thr	Pro	Asn	Leu	Ala	Glu	Arg	Val	Leu	Asp	Trp
	3125					3130					3135			
Leu	Glu	Lys	Tyr	Gly	Val	Glu	Arg	Leu	Lys	Arg	Met	Ala	Ile	Ser
	3140					3145					3150			
Gly	Asp	Asp	Cys	Val	Val	Lys	Pro	Ile	Asp	Asp	Arg	Phe	Ala	Thr
	3155					3160					3165			
Ala	Leu	Thr	Ala	Leu	Asn	Asp	Met	Gly	Lys	Val	Arg	Lys	Asp	Ile
	3170					3175					3180			
Pro	Gln	Trp	Glu	Pro	Ser	Lys	Gly	Trp	Asn	Asp	Trp	Gln	Gln	Val
	3185					3190					3195			
Pro	Phe	Cys	Ser	His	His	Phe	His	Gln	Leu	Ile	Met	Lys	Asp	Gly
	3200					3205					3210			
Arg	Glu	Ile	Val	Val	Pro	Cys	Arg	Asn	Gln	Asp	Glu	Leu	Val	Gly
	3215					3220					3225			
Arg	Ala	Arg	Val	Ser	Gln	Gly	Ala	Gly	Trp	Ser	Leu	Arg	Glu	Thr
	3230					3235					3240			
Ala	Cys	Leu	Gly	Lys	Ser	Tyr	Ala	Gln	Met	Trp	Gln	Leu	Met	Tyr
	3245					3250					3255			
Phe	His	Arg	Arg	Asp	Leu	Arg	Leu	Ala	Ala	Asn	Ala	Ile	Cys	Ser
	3260					3265					3270			
Ala	Val	Pro	Val	Asp	Trp	Val	Pro	Thr	Ser	Arg	Thr	Thr	Trp	Ser
	3275					3280					3285			
Ile	His	Ala	His	His	Gln	Trp	Met	Thr	Thr	Glu	Asp	Met	Leu	Ser
	3290					3295					3300			
Val	Trp	Asn	Arg	Val	Trp	Ile	Glu	Glu	Asn	Pro	Trp	Met	Glu	Asp
	3305					3310					3315			
Lys	Thr	Arg	Ile	Ser	Ser	Trp	Glu	Asp	Val	Pro	Tyr	Leu	Gly	Lys
	3320					3325					3330			
Arg	Glu	Asp	Gln	Trp	Cys	Gly	Ser	Leu	Ile	Gly	Leu	Thr	Ala	Arg
	3335					3340					3345			
Ala	Thr	Trp	Ala	Thr	Asn	Ile	Gln	Val	Ala	Ile	Asn	Gln	Val	Arg
	3350					3355					3360			
Arg	Leu	Ile	Gly	Asn	Glu	Asn	Tyr	Ser	Asp	Tyr	Met	Thr	Ser	Met
	3365					3370					3375			

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Lys Arg Phe Lys Asn Glu Ser Glu Pro Glu Gly Ala Leu Trp
3380 3385 3390

<210> 10
<211> 3391
<212> PRT
<213> Dengue virus type 2

<220>
<221> VARIANT
<222> (1461)..(1461)
<223> Xaa stands for Val or Ala

<220>
<221> VARIANT
<222> (2190)..(2190)
<223> Xaa stands for Tyr or Cys

<220>
<221> VARIANT
<222> (2347)..(2347)
<223> Xaa stands for Leu or Pro

<220>
<221> VARIANT
<222> (2828)..(2828)
<223> Xaa stands for Thr or Met

<220>
<221> VARIANT
<222> (3020)..(3020)
<223> Xaa stands for Thr or Ala

<400> 10

Met Asn Asn Gln Arg Lys Lys Ala Lys Asn Thr Pro Phe Asn Met Leu
1 5 10 15

Lys Arg Glu Arg Asn Arg Val Ser Thr Val Gln Gln Leu Thr Lys Arg
20 25 30

Phe Ser Leu Gly Met Leu Gln Gly Arg Gly Pro Leu Lys Leu Phe Met
35 40 45

Ala Leu Val Ala Phe Leu Arg Phe Leu Thr Ile Pro Pro Thr Ala Gly
50 55 60

Ile Leu Lys Arg Trp Gly Thr Ile Lys Lys Ser Lys Ala Ile Asn Val
65 70 75 80

Leu Arg Gly Phe Arg Lys Glu Ile Gly Arg Met Leu Asn Ile Leu Asn
85 90 95

Arg Arg Arg Arg Ser Ala Gly Met Ile Ile Met Leu Ile Pro Thr Val
100 105 110

Met Ala Phe His Leu Thr Thr Arg Asn Gly Glu Pro His Met Ile Val
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115

120

125

Gly Ile Gln Glu Lys Gly Lys Ser Leu Leu Phe Lys Thr Glu Asn Gly
 130 135 140

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

Asp Thr Ile Thr Tyr Lys Cys Pro Leu Leu Arg Gln Asn Glu Pro Glu
 165 170 175

Asp Ile Asp Cys Trp Cys Asn Ser Thr Ser Thr Trp Val Thr Tyr Gly
 180 185 190

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

Leu Val Pro His Val Gly Met Gly Leu Glu Thr Arg Thr Glu Thr Trp
 210 215 220

Met Ser Ser Glu Gly Ala Trp Lys His Ala Gln Arg Ile Glu Thr Trp
 225 230 235 240

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

Thr Ile Gly Thr Thr His Phe Gln Arg Val Leu Ile Phe Ile Leu Leu
 260 265 270

Thr Ala Val Ala Pro Ser Met Thr Met Arg Cys Ile Gly Ile Ser Asn
 275 280 285

Arg Asp Phe Val Glu Gly Val Ser Gly Gly Ser Trp Val Asp Ile Val
 290 295 300

Leu Glu His Gly Ser Cys Val Thr Thr Met Ala Lys Asn Lys Pro Thr
 305 310 315 320

Leu Asp Phe Glu Leu Ile Lys Thr Glu Ala Lys Gln Pro Ala Thr Leu
 325 330 335

Arg Lys Tyr Cys Ile Glu Ala Lys Leu Thr Asn Thr Thr Thr Glu Ser
 340 345 350

Arg Cys Pro Thr Gln Gly Glu Pro Ser Leu Lys Glu Glu Gln Asp Lys
 355 360 365

Arg Phe Val Cys Lys His Ser Met Val Asp Arg Gly Trp Gly Asn Gly
 370 375 380

Cys Gly Leu Phe Gly Lys Gly Gly Ile Val Thr Cys Ala Met Phe Lys

385 390 395 400

Cys Lys Lys Asn Met Glu Gly Lys Ile Val Gln Pro Glu Asn Leu Glu
405 410 415

Tyr Thr Ile Val Val Thr Pro His Ser Gly Glu Glu His Ala Val Gly
420 425 430

Asn Asp Thr Gly Lys His Gly Lys Glu Ile Lys Val Thr Pro Gln Ser
435 440 445

Ser Ile Thr Glu Ala Glu Leu Thr Gly Tyr Gly Thr Val Thr Met Glu
450 455 460

Cys Ser Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Val Leu Leu Gln
465 470 475 480

Met Glu Asn Lys Ala Trp Leu Val His Arg Gln Trp Phe Leu Asp Leu
485 490 495

Pro Leu Pro Trp Leu Pro Gly Ala Asp Lys Gln Glu Ser Asn Trp Ile
500 505 510

Gln Lys Glu Thr Leu Val Thr Phe Lys Asn Pro His Ala Lys Lys Gln
515 520 525

Asp Val Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu
530 535 540

Thr Gly Ala Thr Glu Ile Gln Met Ser Ser Gly Asn Leu Leu Phe Thr
545 550 555 560

Gly His Leu Lys Cys Arg Leu Arg Met Asp Lys Leu Gln Leu Lys Gly
565 570 575

Met Ser Tyr Ser Met Cys Thr Gly Lys Phe Lys Val Val Lys Glu Ile
580 585 590

Ala Glu Thr Gln His Gly Thr Ile Val Ile Arg Val Gln Tyr Glu Gly
595 600 605

Asp Gly Ser Pro Cys Lys Ile Pro Phe Glu Ile Met Asp Leu Glu Lys
610 615 620

Arg Tyr Val Leu Gly Arg Leu Ile Thr Val Asn Pro Ile Val Thr Glu
625 630 635 640

Lys Asp Ser Pro Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Asp Ser
645 650 655

Tyr Ile Ile Ile Gly Val Glu Pro Gly Gln Leu Lys Leu Asn Trp Phe
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660

665

670

Lys Lys Gly Ser Ser Ile Gly Gln Met Phe Glu Thr Thr Met Arg Gly
 675 680 685

Ala Lys Arg Met Ala Ile Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser
 690 695 700

Leu Gly Gly Val Phe Thr Ser Ile Gly Lys Ala Leu His Gln Val Phe
 705 710 715 720

Gly Ala Ile Tyr Gly Ala Ala Phe Ser Gly Val Ser Trp Thr Met Lys
 725 730 735

Ile Leu Ile Gly Val Ile Ile Thr Trp Ile Gly Met Asn Ser Arg Ser
 740 745 750

Thr Ser Leu Ser Val Ser Leu Val Leu Val Gly Ile Val Thr Leu Tyr
 755 760 765

Leu Gly Val Met Val Gln Ala Asp Ser Gly Cys Val Val Ser Trp Lys
 770 775 780

Asn Lys Glu Leu Lys Cys Gly Ser Gly Ile Phe Ile Thr Asp Asn Val
 785 790 795 800

His Thr Trp Thr Glu Gln Tyr Lys Phe Gln Pro Glu Ser Pro Ser Lys
 805 810 815

Leu Ala Ser Ala Ile Gln Lys Ala Gln Glu Glu Gly Ile Cys Gly Ile
 820 825 830

Arg Ser Val Thr Arg Leu Glu Asn Leu Met Trp Lys Gln Ile Thr Pro
 835 840 845

Glu Leu Asn His Ile Leu Ala Glu Asn Glu Val Lys Leu Thr Ile Met
 850 855 860

Thr Gly Asp Ile Lys Gly Ile Met Gln Ala Gly Lys Arg Ser Leu Arg
 865 870 875 880

Pro Gln Pro Thr Glu Leu Lys Tyr Ser Trp Lys Thr Trp Gly Lys Ala
 885 890 895

Lys Met Leu Ser Thr Glu Ser Tyr Asn Gln Thr Phe Leu Ile Asp Gly
 900 905 910

Pro Glu Thr Ala Glu Cys Pro Asn Thr Asn Arg Ala Trp Asn Ser Leu
 915 920 925

Glu Val Glu Asp Tyr Gly Phe Gly Val Phe Thr Thr Asn Ile Trp Leu

930

935

940

Lys Leu Lys Glu Lys Gln Asp Ala Phe Cys Asp Ser Lys Leu Met Ser
 945 950 955 960

Ala Ala Ile Lys Asp Asn Arg Ala Val His Ala Asp Met Gly Tyr Trp
 965 970 975

Ile Glu Ser Ala Leu Asn Asp Thr Trp Lys Ile Glu Lys Ala Ser Phe
 980 985 990

Ile Glu Val Lys Asn Cys His Trp Pro Lys Ser His Thr Leu Trp Ser
 995 1000 1005

Asn Gly Val Leu Glu Ser Glu Met Ile Ile Pro Lys Asn Leu Ala
 1010 1015 1020

Gly Pro Val Ser Gln His Asn Tyr Arg Pro Gly Tyr His Thr Gln
 1025 1030 1035

Val Ala Gly Pro Trp His Leu Gly Lys Leu Glu Met Asp Phe Asp
 1040 1045 1050

Phe Cys Asp Gly Thr Thr Val Ile Val Thr Glu Asp Cys Gly Asn
 1055 1060 1065

Arg Gly Pro Ser Leu Arg Thr Thr Thr Ala Ser Gly Lys Leu Ile
 1070 1075 1080

Thr Glu Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro Leu Arg Tyr
 1085 1090 1095

Arg Gly Glu Asn Gly Cys Trp Tyr Gly Met Glu Ile Arg Pro Leu
 1100 1105 1110

Lys Glu Lys Glu Glu Asn Leu Val Asn Ser Leu Val Thr Ala Gly
 1115 1120 1125

His Gly Gln Val Asp Asn Phe Ser Leu Gly Val Leu Gly Met Ala
 1130 1135 1140

Leu Phe Leu Glu Glu Met Leu Arg Thr Arg Val Gly Thr Lys His
 1145 1150 1155

Ala Ile Leu Leu Val Ala Val Ser Phe Val Thr Leu Ile Thr Gly
 1160 1165 1170

Asn Met Ser Phe Lys Asp Leu Gly Arg Val Val Val Met Val Gly
 1175 1180 1185

Ala Thr Met Ala Asp Asp Ile Gly Met Gly Val Thr Tyr Leu Ala

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1190

1195

1200

Leu Leu Ala Ala Phe Lys Val Arg Pro Thr Phe Ala Ala Gly Leu
1205 1210 1215

Leu Leu Arg Lys Leu Thr Ser Lys Glu Leu Met Met Thr Thr Ile
1220 1225 1230

Gly Ile Val Leu Leu Ser Gln Ser Thr Ile Pro Glu Thr Val Leu
1235 1240 1245

Glu Leu Thr Asp Ala Leu Ala Leu Gly Met Met Val Leu Lys Ile
1250 1255 1260

Val Arg Asn Met Glu Lys Tyr Gln Leu Ala Val Thr Ile Met Ala
1265 1270 1275

Ile Leu Cys Val Pro Asn Ala Val Ile Leu Gln Asn Ala Trp Lys
1280 1285 1290

Val Ser Cys Thr Ile Leu Ala Val Val Ser Val Ser Pro Leu Phe
1295 1300 1305

Leu Thr Ser Ser Gln Gln Lys Thr Asp Trp Ile Pro Leu Ala Leu
1310 1315 1320

Thr Ile Lys Gly Leu Asn Pro Thr Ala Ile Phe Leu Thr Thr Leu
1325 1330 1335

Ser Arg Thr Asn Lys Lys Arg Ser Trp Pro Leu Asn Glu Ala Ile
1340 1345 1350

Met Ala Val Gly Met Val Ser Ile Leu Ala Ser Ser Leu Leu Lys
1355 1360 1365

Asn Asp Ile Pro Met Thr Gly Pro Leu Val Ala Gly Gly Leu Leu
1370 1375 1380

Thr Val Cys Tyr Val Leu Thr Gly Arg Ser Ala Asp Leu Glu Leu
1385 1390 1395

Glu Arg Ala Thr Asp Val Lys Trp Glu Asp Gln Ala Glu Ile Ser
1400 1405 1410

Gly Ser Ser Pro Ile Leu Ser Ile Thr Ile Ser Glu Asp Gly Ser
1415 1420 1425

Met Ser Ile Lys Asn Glu Glu Glu Glu Gln Thr Leu Thr Ile Leu
1430 1435 1440

Ile Arg Thr Gly Leu Leu Val Ile Ser Gly Leu Phe Pro Ile Ser

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1445

1450

1455

Ile Pro Xaa Thr Ala Ala Ala Trp Tyr Leu Trp Glu Val Lys Lys
1460 1465 1470

Gln Arg Ala Gly Val Leu Trp Asp Val Pro Ser Pro Pro Pro Met
1475 1480 1485

Gly Lys Ala Glu Leu Glu Asp Gly Ala Tyr Arg Ile Lys Gln Lys
1490 1495 1500

Gly Ile Leu Gly Tyr Ser Gln Ile Gly Ala Gly Val Tyr Lys Glu
1505 1510 1515

Gly Thr Phe His Thr Met Trp His Val Thr Arg Gly Ala Val Leu
1520 1525 1530

Met His Lys Gly Lys Arg Ile Glu Pro Ser Trp Ala Asp Val Lys
1535 1540 1545

Lys Asp Leu Ile Ser Tyr Gly Gly Gly Trp Lys Leu Glu Gly Glu
1550 1555 1560

Trp Lys Glu Gly Glu Glu Val Gln Val Leu Ala Leu Glu Pro Gly
1565 1570 1575

Lys Asn Pro Arg Ala Val Gln Thr Lys Pro Gly Leu Phe Lys Thr
1580 1585 1590

Asn Thr Gly Thr Ile Gly Ala Val Ser Leu Asp Phe Ser Pro Gly
1595 1600 1605

Thr Ser Gly Ser Pro Ile Ile Asp Lys Lys Gly Lys Val Val Gly
1610 1615 1620

Leu Tyr Gly Asn Gly Val Val Thr Arg Ser Gly Ala Tyr Val Ser
1625 1630 1635

Ala Ile Ala Gln Thr Glu Lys Ser Ile Glu Asp Asn Pro Glu Ile
1640 1645 1650

Lys Asp Asp Ile Phe Arg Lys Arg Arg Leu Thr Ile Met Asp Leu
1655 1660 1665

His Pro Gly Ala Gly Lys Thr Lys Arg Tyr Leu Pro Ala Ile Val
1670 1675 1680

Arg Glu Ala Ile Lys Arg Gly Leu Arg Thr Leu Ile Leu Ala Pro
1685 1690 1695

Thr Arg Val Val Ala Ala Glu Met Glu Glu Ala Leu Arg Gly Leu

1700

1705

1710

Pro Ile Arg Tyr Gln Thr Pro Ala Ile Arg Ala Glu His Thr Gly
1715 1720 1725

Arg Glu Ile Val Asp Leu Met Cys His Ala Thr Phe Thr Met Arg
1730 1735 1740

Leu Leu Ser Pro Val Arg Val Pro Asn Tyr Asn Leu Ile Ile Met
1745 1750 1755

Asp Glu Ala His Phe Thr Asp Pro Ala Ser Ile Ala Ala Arg Gly
1760 1765 1770

Tyr Ile Ser Thr Arg Val Glu Met Gly Glu Ala Ala Gly Ile Phe
1775 1780 1785

Met Thr Ala Thr Pro Pro Gly Ser Arg Asp Pro Phe Pro Gln Ser
1790 1795 1800

Asn Ala Pro Ile Ile Asp Glu Glu Arg Glu Ile Pro Glu Arg Ser
1805 1810 1815

Trp Asn Ser Gly His Glu Trp Val Thr Asp Phe Lys Gly Lys Thr
1820 1825 1830

Val Trp Phe Val Pro Ser Ile Lys Ala Gly Asn Asp Ile Ala Ala
1835 1840 1845

Cys Leu Arg Lys Asn Gly Lys Lys Val Ile Gln Leu Ser Arg Lys
1850 1855 1860

Thr Phe Asp Ser Glu Tyr Val Lys Thr Arg Thr Asn Asp Trp Asp
1865 1870 1875

Phe Val Val Thr Thr Asp Ile Ser Glu Met Gly Ala Asn Phe Lys
1880 1885 1890

Ala Glu Arg Val Ile Asp Pro Arg Arg Cys Met Lys Pro Val Ile
1895 1900 1905

Leu Thr Asp Gly Glu Glu Arg Val Ile Leu Ala Gly Pro Met Pro
1910 1915 1920

Val Thr His Ser Ser Ala Ala Gln Arg Arg Gly Arg Ile Gly Arg
1925 1930 1935

Asn Pro Lys Asn Glu Asn Asp Gln Tyr Ile Tyr Met Gly Glu Pro
1940 1945 1950

Leu Glu Asn Asp Glu Asp Cys Ala His Trp Lys Glu Ala Lys Met

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1955														
						1960								1965
Leu	Leu	Asp	Asn	Ile	Asn	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Ser	Met
	1970					1975					1980			
Phe	Glu	Pro	Glu	Arg	Glu	Lys	Val	Asp	Ala	Ile	Asp	Gly	Glu	Tyr
	1985					1990					1995			
Arg	Leu	Arg	Gly	Glu	Ala	Arg	Lys	Thr	Phe	Val	Asp	Leu	Met	Arg
	2000					2005					2010			
Arg	Gly	Asp	Leu	Pro	Val	Trp	Leu	Ala	Tyr	Lys	Val	Ala	Ala	Glu
	2015					2020					2025			
Gly	Ile	Asn	Tyr	Ala	Asp	Arg	Arg	Trp	Cys	Phe	Asp	Gly	Ile	Lys
	2030					2035					2040			
Asn	Asn	Gln	Ile	Leu	Glu	Glu	Asn	Val	Glu	Val	Glu	Ile	Trp	Thr
	2045					2050					2055			
Lys	Glu	Gly	Glu	Arg	Lys	Lys	Leu	Lys	Pro	Arg	Trp	Leu	Asp	Ala
	2060					2065					2070			
Arg	Ile	Tyr	Ser	Asp	Pro	Leu	Ala	Leu	Lys	Glu	Phe	Lys	Glu	Phe
	2075					2080					2085			
Ala	Ala	Gly	Arg	Lys	Ser	Leu	Thr	Leu	Asn	Leu	Ile	Thr	Glu	Met
	2090					2095					2100			
Gly	Arg	Leu	Pro	Thr	Phe	Met	Thr	Gln	Lys	Thr	Arg	Asp	Ala	Leu
	2105					2110					2115			
Asp	Asn	Leu	Ala	Val	Leu	His	Thr	Ala	Glu	Ala	Gly	Gly	Arg	Ala
	2120					2125					2130			
Tyr	Asn	His	Ala	Leu	Ser	Glu	Leu	Pro	Glu	Thr	Leu	Glu	Thr	Leu
	2135					2140					2145			
Leu	Leu	Leu	Thr	Leu	Leu	Ala	Thr	Val	Thr	Gly	Gly	Ile	Phe	Leu
	2150					2155					2160			
Phe	Leu	Met	Ser	Gly	Arg	Gly	Ile	Gly	Lys	Met	Thr	Leu	Gly	Met
	2165					2170					2175			
Cys	Cys	Ile	Ile	Thr	Ala	Ser	Ile	Leu	Leu	Trp	Xaa	Ala	Gln	Ile
	2180					2185					2190			
Gln	Pro	His	Trp	Ile	Ala	Ala	Ser	Ile	Ile	Leu	Glu	Phe	Phe	Leu
	2195					2200					2205			
Ile	Val	Leu	Leu	Ile	Pro	Glu	Pro	Glu	Lys	Gln	Arg	Thr	Pro	Gln

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2210														
						2215						2220		
Asp	Asn	Gln	Leu	Thr	Tyr	Val	Val	Ile	Ala	Ile	Leu	Thr	Val	Val
	2225					2230					2235			
Ala	Ala	Thr	Met	Ala	Asn	Glu	Met	Gly	Phe	Leu	Glu	Lys	Thr	Lys
	2240					2245					2250			
Lys	Asp	Leu	Gly	Leu	Gly	Ser	Ile	Ala	Thr	Gln	Gln	Pro	Glu	Ser
	2255					2260					2265			
Asn	Ile	Leu	Asp	Ile	Asp	Leu	Arg	Pro	Ala	Ser	Ala	Trp	Thr	Leu
	2270					2275					2280			
Tyr	Ala	Val	Ala	Thr	Thr	Phe	Val	Thr	Pro	Met	Leu	Arg	His	Ser
	2285					2290					2295			
Ile	Glu	Asn	Ser	Ser	Val	Asn	Val	Ser	Leu	Thr	Ala	Ile	Ala	Asn
	2300					2305					2310			
Gln	Ala	Thr	Val	Leu	Met	Gly	Leu	Gly	Lys	Gly	Trp	Pro	Leu	Ser
	2315					2320					2325			
Lys	Met	Asp	Ile	Gly	Val	Pro	Leu	Leu	Ala	Ile	Gly	Cys	Tyr	Ser
	2330					2335					2340			
Gln	Val	Asn	Xaa	Ile	Thr	Leu	Thr	Ala	Ala	Leu	Leu	Leu	Leu	Val
	2345					2350					2355			
Ala	His	Tyr	Ala	Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys	Ala	Thr
	2360					2365					2370			
Arg	Glu	Ala	Gln	Lys	Arg	Ala	Ala	Ala	Gly	Ile	Met	Lys	Asn	Pro
	2375					2380					2385			
Thr	Val	Asp	Gly	Ile	Thr	Val	Ile	Asp	Leu	Asp	Pro	Ile	Pro	Tyr
	2390					2395					2400			
Asp	Pro	Lys	Phe	Glu	Lys	Gln	Leu	Gly	Gln	Val	Met	Leu	Leu	Ile
	2405					2410					2415			
Leu	Cys	Val	Thr	Gln	Val	Leu	Met	Met	Arg	Thr	Thr	Trp	Ala	Leu
	2420					2425					2430			
Cys	Glu	Ala	Leu	Thr	Leu	Ala	Thr	Gly	Pro	Ile	Ser	Thr	Leu	Trp
	2435					2440					2445			
Glu	Gly	Asn	Pro	Gly	Arg	Phe	Trp	Asn	Thr	Thr	Ile	Ala	Val	Ser
	2450					2455					2460			
Met	Ala	Asn	Ile	Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala	Gly	Leu

2465

2470

2475

Leu Phe Ser Ile Met Lys Asn Thr Thr Asn Thr Arg Arg Gly Thr
 2480 2485 2490

Gly Asn Ile Gly Glu Thr Leu Gly Glu Lys Trp Lys Ser Arg Leu
 2495 2500 2505

Asn Ala Leu Gly Lys Ser Glu Phe Gln Ile Tyr Lys Lys Ser Gly
 2510 2515 2520

Ile Gln Glu Val Asp Arg Thr Leu Ala Lys Glu Gly Ile Lys Arg
 2525 2530 2535

Gly Glu Thr Asp His His Ala Val Ser Arg Gly Ser Ala Lys Leu
 2540 2545 2550

Arg Trp Phe Val Glu Arg Asn Met Val Thr Pro Glu Gly Lys Val
 2555 2560 2565

Val Asp Leu Gly Cys Gly Arg Gly Gly Trp Ser Tyr Tyr Cys Gly
 2570 2575 2580

Gly Leu Lys Asn Val Arg Glu Val Lys Gly Leu Thr Lys Gly Gly
 2585 2590 2595

Pro Gly His Glu Glu Pro Ile Pro Met Ser Thr Tyr Gly Trp Asn
 2600 2605 2610

Leu Val Arg Leu Gln Ser Gly Val Asp Val Phe Phe Ile Pro Pro
 2615 2620 2625

Glu Lys Cys Asp Thr Leu Leu Cys Asp Ile Gly Glu Ser Ser Pro
 2630 2635 2640

Asn Pro Thr Val Glu Ala Gly Arg Thr Leu Arg Val Leu Asn Leu
 2645 2650 2655

Val Glu Asn Trp Leu Asn Asn Asn Thr Gln Phe Cys Ile Lys Val
 2660 2665 2670

Leu Asn Pro Tyr Met Pro Ser Val Ile Glu Lys Met Glu Ala Leu
 2675 2680 2685

Gln Arg Lys Tyr Gly Gly Ala Leu Val Arg Asn Pro Leu Ser Arg
 2690 2695 2700

Asn Ser Thr His Glu Met Tyr Trp Val Ser Asn Ala Ser Gly Asn
 2705 2710 2715

Ile Val Ser Ser Val Asn Met Ile Ser Arg Met Leu Ile Asn Arg

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2720

2725

2730

Phe Thr Met Arg His Lys Lys Ala Thr Tyr Glu Pro Asp Val Asp
2735 2740 2745

Leu Gly Ser Gly Thr Arg Asn Ile Gly Val Glu Ser Glu Ile Pro
2750 2755 2760

Asn Leu Asp Ile Ile Gly Lys Arg Ile Glu Lys Ile Lys Gln Glu
2765 2770 2775

His Glu Thr Ser Trp His Tyr Asp Gln Asp His Pro Tyr Lys Thr
2780 2785 2790

Trp Ala Tyr His Gly Ser Tyr Glu Thr Lys Gln Thr Gly Ser Ala
2795 2800 2805

Ser Ser Met Val Asn Gly Val Val Arg Leu Leu Thr Lys Pro Trp
2810 2815 2820

Asp Val Leu Pro Xaa Val Thr Gln Met Ala Met Thr Asp Thr Thr
2825 2830 2835

Pro Phe Gly Gln Gln Arg Val Phe Lys Glu Lys Val Asp Thr Arg
2840 2845 2850

Thr Gln Glu Pro Lys Glu Gly Thr Lys Lys Leu Met Arg Ile Thr
2855 2860 2865

Ala Glu Trp Leu Trp Lys Glu Leu Gly Lys Lys Lys Thr Pro Arg
2870 2875 2880

Met Cys Thr Arg Glu Glu Phe Thr Arg Lys Val Arg Ser Asn Ala
2885 2890 2895

Ala Leu Gly Ala Ile Phe Thr Asp Glu Asn Lys Trp Lys Ser Ala
2900 2905 2910

Arg Glu Ala Val Glu Asp Ser Arg Phe Trp Glu Leu Val Asp Lys
2915 2920 2925

Glu Arg Asn Leu His Leu Glu Gly Lys Cys Glu Thr Cys Val Tyr
2930 2935 2940

Asn Met Met Gly Lys Arg Glu Lys Lys Leu Gly Glu Phe Gly Lys
2945 2950 2955

Ala Lys Gly Ser Arg Ala Ile Trp Tyr Met Trp Leu Gly Ala Arg
2960 2965 2970

Phe Leu Glu Phe Glu Ala Leu Gly Phe Leu Asn Glu Asp His Trp

2975

2980

2985

Phe Ser Arg Glu Asn Ser Leu Ser Gly Val Glu Gly Glu Gly Leu
2990 2995 3000

His Lys Leu Gly Tyr Ile Leu Arg Asp Val Ser Lys Lys Glu Gly
3005 3010 3015

Gly Xaa Met Tyr Ala Asp Asp Thr Ala Gly Trp Asp Thr Arg Ile
3020 3025 3030

Thr Leu Glu Asp Leu Lys Asn Glu Glu Met Val Thr Asn His Met
3035 3040 3045

Glu Gly Glu His Lys Lys Leu Ala Glu Ala Ile Phe Lys Leu Thr
3050 3055 3060

Tyr Gln Asn Lys Val Val Arg Val Gln Arg Pro Thr Pro Arg Gly
3065 3070 3075

Thr Val Met Asp Ile Ile Ser Arg Arg Asp Gln Arg Gly Ser Gly
3080 3085 3090

Gln Val Gly Thr Tyr Gly Leu Asn Thr Phe Thr Asn Met Glu Ala
3095 3100 3105

Gln Leu Ile Arg Gln Met Glu Gly Glu Gly Val Phe Lys Asn Ile
3110 3115 3120

Gln His Leu Thr Val Thr Glu Glu Val Ala Val Gln Asn Trp Leu
3125 3130 3135

Ala Arg Val Gly Arg Glu Arg Leu Ser Arg Met Ala Ile Ser Gly
3140 3145 3150

Asp Asp Cys Val Val Lys Pro Leu Asp Asp Arg Phe Ala Asn Ala
3155 3160 3165

Leu Thr Ala Leu Asn Asp Met Gly Lys Ile Arg Lys Asp Ile Gln
3170 3175 3180

Gln Trp Glu Pro Ser Lys Gly Trp Asn Asp Trp Thr Gln Val Pro
3185 3190 3195

Phe Cys Ser His His Phe His Glu Leu Ile Met Lys Asp Gly Arg
3200 3205 3210

Val Leu Val Val Pro Cys Arg Asn Gln Asp Glu Leu Ile Gly Arg
3215 3220 3225

Ala Arg Ile Ser Gln Gly Ala Gly Trp Ser Leu Arg Glu Thr Ala

3230

3235

3240

Cys Leu Gly Lys Ser Tyr Ala Gln Met Trp Ser Leu Met Tyr Phe
 3245 3250 3255

His Arg Arg Asp Leu Arg Leu Ala Ala Asn Ala Ile Cys Ser Ala
 3260 3265 3270

Val Pro Ser His Trp Val Pro Thr Ser Arg Thr Thr Trp Ser Ile
 3275 3280 3285

His Ala Lys His Glu Trp Met Thr Thr Glu Asp Met Leu Thr Val
 3290 3295 3300

Trp Asn Arg Val Trp Ile Arg Glu Asn Pro Trp Met Glu Asp Lys
 3305 3310 3315

Thr Pro Val Glu Ser Trp Glu Glu Ile Pro Tyr Leu Gly Lys Arg
 3320 3325 3330

Glu Asp Gln Trp Cys Gly Ser Leu Ile Gly Leu Thr Ser Arg Ala
 3335 3340 3345

Thr Trp Ala Lys Asn Ile Gln Ala Ala Ile Asn Gln Val Arg Ser
 3350 3355 3360

Leu Ile Gly Asn Glu Glu Tyr Thr Asp Tyr Met Pro Ser Met Lys
 3365 3370 3375

Arg Phe Arg Arg Glu Glu Glu Glu Ala Gly Val Leu Trp
 3380 3385 3390

<210> 11

<211> 3390

<212> PRT

<213> Dengue virus type 3

<220>

<221> VARIANT

<222> (764)..(764)

<223> Xaa stands for Thr or Ile

<400> 11

Met Asn Asn Gln Arg Lys Lys Thr Gly Lys Pro Ser Ile Asn Met Leu
 1 5 10 15

Lys Arg Val Arg Asn Arg Val Ser Thr Gly Ser Gln Leu Ala Lys Arg
 20 25 30

Phe Ser Arg Gly Leu Leu Asn Gly Gln Gly Pro Met Lys Leu Val Met
 35 40 45

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Ala Phe Ile Ala Phe Leu Arg Phe Leu Ala Ile Pro Thr Ala Gly
50 55 60

Val Leu Ala Arg Trp Gly Thr Phe Lys Lys Ser Gly Ala Ile Lys Val
65 70 75 80

Leu Lys Gly Phe Lys Lys Glu Ile Ser Asn Met Leu Ser Ile Ile Asn
85 90 95

Lys Arg Lys Lys Thr Ser Leu Cys Leu Met Met Met Leu Pro Ala Thr
100 105 110

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

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

Ile Asn Met Cys Thr Leu Ile Ala Met Asp Leu Gly Glu Met Cys Asp
145 150 155 160

Asp Thr Val Thr Tyr Lys Cys Pro His Ile Thr Glu Val Glu Pro Glu
165 170 175

Asp Ile Asp Cys Trp Cys Asn Leu Thr Ser Thr Trp Val Thr Tyr Gly
180 185 190

Thr Cys Asn Gln Ala Gly Glu His Arg Arg Asp Lys Arg Ser Val Ala
195 200 205

Leu Ala Pro His Val Gly Met Gly Leu Asp Thr Arg Thr Gln Thr Trp
210 215 220

Met Ser Ala Glu Gly Ala Trp Arg Gln Val Glu Lys Val Glu Thr Trp
225 230 235 240

Ala Leu Arg His Pro Gly Phe Thr Ile Leu Ala Leu Phe Leu Ala His
245 250 255

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

Met Leu Val Thr Pro Ser Met Thr Met Arg Cys Val Gly Val Gly Asn
275 280 285

Arg Asp Phe Val Glu Gly Leu Ser Gly Ala Thr Trp Val Asp Val Val
290 295 300

Leu Glu His Gly Gly Cys Val Thr Thr Met Ala Lys Asn Lys Pro Thr
305 310 315 320

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Leu Asp Ile Glu Leu Gln Lys Thr Glu Ala Thr Gln Leu Ala Thr Leu
325 330 335

Arg Lys Leu Cys Ile Glu Gly Lys Ile Thr Asn Ile Thr Thr Asp Ser
340 345 350

Arg Cys Pro Thr Gln Gly Glu Ala Ile Leu Pro Glu Glu Gln Asp Gln
355 360 365

Asn Tyr Val Cys Lys His Thr Tyr Val Asp Arg Gly Trp Gly Asn Gly
370 375 380

Cys Gly Leu Phe Gly Lys Gly Ser Leu Val Thr Cys Ala Lys Phe Gln
385 390 395 400

Cys Leu Glu Ser Ile Glu Gly Lys Val Val Gln His Glu Asn Leu Lys
405 410 415

Tyr Thr Val Ile Ile Thr Val His Thr Gly Asp Gln His Gln Val Gly
420 425 430

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

Ala Glu Ala Ile Leu Pro Glu Tyr Gly Thr Leu Gly Leu Glu Cys Ser
450 455 460

Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Ile Ser Leu Thr Met Lys
465 470 475 480

Asn Lys Ala Trp Met Val His Arg Gln Trp Phe Phe Asp Leu Pro Leu
485 490 495

Pro Trp Thr Ser Gly Ala Thr Ala Glu Thr Pro Thr Trp Asn Arg Lys
500 505 510

Glu Leu Leu Val Thr Phe Lys Asn Ala His Ala Lys Lys Gln Glu Val
515 520 525

Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu Thr Gly
530 535 540

Ala Thr Glu Ile Gln Thr Ser Gly Gly Thr Ser Ile Phe Ala Gly His
545 550 555 560

Leu Lys Cys Arg Leu Lys Met Asp Lys Leu Glu Leu Lys Gly Met Ser
565 570 575

Tyr Ala Met Cys Leu Gly Ser Phe Val Leu Lys Lys Glu Val Ser Glu
580 585 590

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Thr Gln His Gly Thr Ile Leu Ile Lys Val Glu Tyr Lys Gly Glu Asp
595 600 605

Ala Pro Cys Lys Ile Pro Phe Ser Thr Glu Asp Gly Gln Gly Lys Ala
610 615 620

His Asn Gly Arg Leu Ile Thr Ala Asn Pro Val Val Thr Lys Lys Glu
625 630 635 640

Glu Pro Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Glu Ser Asn Ile
645 650 655

Val Ile Gly Ile Gly Asp Lys Ala Leu Lys Ile Asn Trp Tyr Lys Lys
660 665 670

Gly Ser Ser Ile Gly Lys Met Phe Glu Ala Thr Ala Arg Gly Val Arg
675 680 685

Arg Met Ala Ile Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser Val Gly
690 695 700

Gly Val Leu Asn Ser Leu Gly Lys Met Val His Gln Ile Phe Gly Ser
705 710 715 720

Ala Tyr Thr Ala Leu Phe Gly Gly Val Ser Trp Met Met Lys Ile Gly
725 730 735

Ile Gly Val Leu Leu Thr Trp Ile Gly Leu Asn Ser Lys Asn Thr Ser
740 745 750

Met Ser Phe Ser Cys Ile Ala Ile Gly Ile Ile Xaa Leu Tyr Leu Gly
755 760 765

Ala Val Val Gln Ala Asp Met Gly Cys Val Ile Asn Trp Lys Gly Lys
770 775 780

Glu Leu Lys Cys Gly Ser Gly Ile Phe Val Thr Asn Glu Val His Thr
785 790 795 800

Trp Thr Glu Gln Tyr Lys Phe Gln Ala Asp Ser Pro Lys Arg Leu Ala
805 810 815

Thr Ala Ile Ala Gly Ala Trp Glu Asn Gly Val Cys Gly Ile Arg Ser
820 825 830

Thr Thr Arg Met Glu Asn Leu Leu Trp Lys Gln Ile Ala Asn Glu Leu
835 840 845

Asn Tyr Ile Leu Trp Glu Asn Asn Ile Lys Leu Thr Val Val Val Gly
850 855 860

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Asp Ile Thr Gly Val Leu Glu Gln Gly Lys Arg Thr Leu Thr Pro Gln
 865 870 875 880

 Pro Met Glu Leu Lys Tyr Ser Trp Lys Thr Trp Gly Lys Ala Lys Ile
 885 890 895

 Val Thr Ala Glu Thr Gln Asn Ser Ser Phe Ile Ile Asp Gly Pro Ser
 900 905 910

 Thr Pro Glu Cys Pro Ser Ala Ser Arg Ala Trp Asn Val Trp Glu Val
 915 920 925

 Glu Asp Tyr Gly Phe Gly Val Phe Thr Thr Asn Ile Trp Leu Lys Leu
 930 935 940

 Arg Glu Val Tyr Thr Gln Leu Cys Asp His Arg Leu Met Ser Ala Ala
 945 950 955 960

 Val Lys Asp Glu Arg Ala Val His Ala Asp Met Gly Tyr Trp Ile Glu
 965 970 975

 Ser Gln Lys Asn Gly Ser Trp Lys Leu Glu Lys Ala Ser Phe Ile Glu
 980 985 990

 Val Lys Thr Cys Thr Trp Pro Lys Ser His Thr Leu Trp Ser Asn Gly
 995 1000 1005

 Val Leu Glu Ser Asp Met Ile Ile Pro Lys Ser Leu Ala Gly Pro
 1010 1015 1020

 Ile Ser Gln His Asn His Arg Pro Gly Tyr His Thr Gln Thr Ala
 1025 1030 1035

 Gly Pro Trp His Leu Gly Lys Leu Glu Leu Asp Phe Asn Tyr Cys
 1040 1045 1050

 Glu Gly Thr Thr Val Val Ile Ser Glu Asn Cys Gly Thr Arg Gly
 1055 1060 1065

 Pro Ser Leu Arg Thr Thr Thr Val Ser Gly Lys Leu Ile His Glu
 1070 1075 1080

 Trp Cys Cys Arg Ser Cys Thr Leu Pro Pro Leu Arg Tyr Met Gly
 1085 1090 1095

 Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg Pro Ile Asn Glu
 1100 1105 1110

 Lys Glu Glu Asn Met Val Lys Ser Leu Ala Ser Ala Gly Ser Gly
 1115 1120 1125

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Lys	Val	Asp	Asn	Phe	Thr	Met	Gly	Val	Leu	Cys	Leu	Ala	Ile	Leu
	1130					1135					1140			
Phe	Glu	Glu	Val	Met	Arg	Gly	Lys	Phe	Gly	Lys	Lys	His	Met	Ile
	1145					1150					1155			
Ala	Gly	Val	Leu	Phe	Thr	Phe	Val	Leu	Leu	Leu	Ser	Gly	Gln	Ile
	1160					1165					1170			
Thr	Trp	Arg	Asp	Met	Ala	His	Thr	Leu	Ile	Met	Ile	Gly	Ser	Asn
	1175					1180					1185			
Ala	Ser	Asp	Arg	Met	Gly	Met	Gly	Val	Thr	Tyr	Leu	Ala	Leu	Ile
	1190					1195					1200			
Ala	Thr	Phe	Lys	Ile	Gln	Pro	Leu	Leu	Ala	Leu	Gly	Phe	Phe	Leu
	1205					1210					1215			
Arg	Lys	Leu	Thr	Ser	Arg	Glu	Asn	Leu	Leu	Leu	Gly	Val	Gly	Leu
	1220					1225					1230			
Ala	Met	Ala	Thr	Thr	Leu	Arg	Leu	Pro	Glu	Asp	Ile	Glu	Gln	Met
	1235					1240					1245			
Ala	Asn	Gly	Ile	Ala	Leu	Gly	Leu	Met	Ala	Leu	Lys	Leu	Ile	Thr
	1250					1255					1260			
Gln	Phe	Glu	Thr	Tyr	Gln	Leu	Trp	Thr	Ala	Leu	Val	Ser	Leu	Thr
	1265					1270					1275			
Cys	Ser	Asn	Thr	Ile	Phe	Thr	Leu	Thr	Val	Ala	Trp	Arg	Thr	Ala
	1280					1285					1290			
Thr	Leu	Ile	Leu	Ala	Gly	Ile	Ser	Leu	Leu	Pro	Val	Cys	Gln	Ser
	1295					1300					1305			
Ser	Ser	Met	Arg	Lys	Thr	Asp	Trp	Leu	Pro	Met	Thr	Val	Ala	Ala
	1310					1315					1320			
Met	Gly	Ala	Gln	Pro	Leu	Pro	Leu	Phe	Ile	Phe	Ser	Leu	Lys	Asp
	1325					1330					1335			
Thr	Leu	Lys	Arg	Arg	Ser	Trp	Pro	Leu	Asn	Glu	Gly	Val	Met	Ala
	1340					1345					1350			
Val	Gly	Leu	Val	Ser	Ile	Leu	Ala	Ser	Ser	Leu	Leu	Arg	Asn	Asp
	1355					1360					1365			
Val	Pro	Met	Ala	Gly	Pro	Leu	Val	Ala	Gly	Gly	Leu	Leu	Ile	Ala
	1370					1375					1380			

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Cys	Tyr	Val	Ile	Thr	Gly	Thr	Ser	Ala	Asp	Leu	Thr	Val	Glu	Lys
	1385					1390					1395			
Ala	Ala	Asp	Val	Thr	Trp	Glu	Glu	Glu	Ala	Glu	Gln	Thr	Gly	Val
	1400					1405					1410			
Ser	His	Asn	Leu	Met	Val	Thr	Val	Asp	Asp	Asp	Gly	Thr	Met	Arg
	1415					1420					1425			
Ile	Lys	Asp	Asp	Glu	Thr	Glu	Asn	Ile	Leu	Thr	Val	Leu	Leu	Lys
	1430					1435					1440			
Thr	Ala	Leu	Leu	Ile	Val	Ser	Gly	Ile	Phe	Pro	Tyr	Ser	Ile	Pro
	1445					1450					1455			
Ala	Thr	Leu	Leu	Val	Trp	His	Thr	Trp	Gln	Lys	Gln	Thr	Gln	Arg
	1460					1465					1470			
Ser	Gly	Val	Leu	Trp	Asp	Val	Pro	Ser	Pro	Pro	Glu	Thr	Gln	Lys
	1475					1480					1485			
Ala	Glu	Leu	Glu	Glu	Gly	Val	Tyr	Arg	Ile	Lys	Gln	Gln	Gly	Ile
	1490					1495					1500			
Phe	Gly	Lys	Thr	Gln	Val	Gly	Val	Gly	Val	Gln	Lys	Glu	Gly	Val
	1505					1510					1515			
Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ala	Val	Leu	Thr	His
	1520					1525					1530			
Asn	Gly	Lys	Arg	Leu	Glu	Pro	Asn	Trp	Ala	Ser	Val	Lys	Lys	Asp
	1535					1540					1545			
Leu	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Arg	Leu	Ser	Ala	Gln	Trp	Lys
	1550					1555					1560			
Lys	Gly	Glu	Glu	Val	Gln	Val	Ile	Ala	Val	Glu	Pro	Gly	Lys	Asn
	1565					1570					1575			
Pro	Lys	Asn	Phe	Gln	Thr	Met	Pro	Gly	Ile	Phe	Gln	Thr	Thr	Thr
	1580					1585					1590			
Gly	Glu	Ile	Gly	Ala	Ile	Ala	Leu	Asp	Phe	Lys	Pro	Gly	Thr	Ser
	1595					1600					1605			
Gly	Ser	Pro	Ile	Ile	Asn	Arg	Glu	Gly	Lys	Val	Val	Gly	Leu	Tyr
	1610					1615					1620			
Gly	Asn	Gly	Val	Val	Thr	Lys	Asn	Gly	Gly	Tyr	Val	Ser	Gly	Ile
	1625					1630					1635			

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Ala	Gln	Thr	Asn	Ala	Glu	Pro	Asp	Gly	Pro	Thr	Pro	Glu	Leu	Glu
1640						1645					1650			
Glu	Glu	Met	Phe	Lys	Lys	Arg	Asn	Leu	Thr	Ile	Met	Asp	Leu	His
1655						1660					1665			
Pro	Gly	Ser	Gly	Lys	Thr	Arg	Lys	Tyr	Leu	Pro	Ala	Ile	Val	Arg
1670						1675					1680			
Glu	Ala	Ile	Lys	Arg	Arg	Leu	Arg	Thr	Leu	Ile	Leu	Ala	Pro	Thr
1685						1690					1695			
Arg	Val	Val	Ala	Ala	Glu	Met	Glu	Glu	Ala	Leu	Lys	Gly	Leu	Pro
1700						1705					1710			
Ile	Arg	Tyr	Gln	Thr	Thr	Ala	Thr	Lys	Ser	Glu	His	Thr	Gly	Arg
1715						1720					1725			
Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Met	Arg	Leu
1730						1735					1740			
Leu	Ser	Pro	Val	Arg	Val	Pro	Asn	Tyr	Asn	Leu	Ile	Ile	Met	Asp
1745						1750					1755			
Glu	Ala	His	Phe	Thr	Asp	Pro	Ala	Ser	Ile	Ala	Ala	Arg	Gly	Tyr
1760						1765					1770			
Ile	Ser	Thr	Arg	Val	Gly	Met	Gly	Glu	Ala	Ala	Ala	Ile	Phe	Met
1775						1780					1785			
Thr	Ala	Thr	Pro	Pro	Gly	Thr	Ala	Asp	Ala	Phe	Pro	Gln	Ser	Asn
1790						1795					1800			
Ala	Pro	Ile	Gln	Asp	Glu	Glu	Arg	Asp	Ile	Pro	Glu	Arg	Ser	Trp
1805						1810					1815			
Asn	Ser	Gly	Asn	Glu	Trp	Ile	Thr	Asp	Phe	Val	Gly	Lys	Thr	Val
1820						1825					1830			
Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala	Asn	Cys
1835						1840					1845			
Leu	Arg	Lys	Asn	Gly	Lys	Lys	Val	Ile	Gln	Leu	Ser	Arg	Lys	Thr
1850						1855					1860			
Phe	Asp	Thr	Glu	Tyr	Gln	Lys	Thr	Lys	Leu	Asn	Asp	Trp	Asp	Phe
1865						1870					1875			
Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe	Lys	Ala
1880						1885					1890			

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Asp	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Leu	Lys	Pro	Val	Ile	Leu
1895						1900					1905			
Thr	Asp	Gly	Pro	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Met	Pro	Val
1910						1915					1920			
Thr	Val	Ala	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Val	Gly	Arg	Asn
1925						1930					1935			
Pro	Gln	Lys	Glu	Asn	Asp	Gln	Tyr	Ile	Phe	Met	Gly	Gln	Pro	Leu
1940						1945					1950			
Asn	Asn	Asp	Glu	Asp	His	Ala	His	Trp	Thr	Glu	Ala	Lys	Met	Leu
1955						1960					1965			
Leu	Asp	Asn	Ile	Asn	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Ala	Leu	Phe
1970						1975					1980			
Glu	Pro	Glu	Arg	Glu	Lys	Ser	Ala	Ala	Ile	Asp	Gly	Glu	Tyr	Arg
1985						1990					1995			
Leu	Lys	Gly	Glu	Ser	Arg	Lys	Thr	Phe	Val	Glu	Leu	Met	Arg	Arg
2000						2005					2010			
Gly	Asp	Leu	Pro	Val	Trp	Leu	Ala	His	Lys	Val	Ala	Ser	Glu	Gly
2015						2020					2025			
Ile	Lys	Tyr	Thr	Asp	Arg	Lys	Trp	Cys	Phe	Asp	Gly	Glu	Arg	Asn
2030						2035					2040			
Asn	Gln	Ile	Leu	Glu	Glu	Asn	Met	Asp	Val	Glu	Ile	Trp	Thr	Lys
2045						2050					2055			
Glu	Gly	Glu	Lys	Lys	Lys	Leu	Arg	Pro	Arg	Trp	Leu	Asp	Ala	Arg
2060						2065					2070			
Thr	Tyr	Ser	Asp	Pro	Leu	Ala	Leu	Lys	Glu	Phe	Lys	Asp	Phe	Ala
2075						2080					2085			
Ala	Gly	Arg	Lys	Ser	Ile	Ala	Leu	Asp	Leu	Val	Thr	Glu	Ile	Gly
2090						2095					2100			
Arg	Val	Pro	Ser	His	Leu	Ala	His	Arg	Thr	Arg	Asn	Ala	Leu	Asp
2105						2110					2115			
Asn	Leu	Val	Met	Leu	His	Thr	Ser	Glu	His	Gly	Gly	Arg	Ala	Tyr
2120						2125					2130			
Arg	His	Ala	Val	Glu	Glu	Leu	Pro	Glu	Thr	Met	Glu	Thr	Leu	Leu
2135						2140					2145			

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Leu Leu Gly Leu Met Ile Leu Leu Thr Gly Gly Ala Met Leu Phe
2150 2155 2160

Leu Ile Ser Gly Lys Gly Ile Gly Lys Thr Ser Ile Gly Leu Ile
2165 2170 2175

Cys Val Ile Ala Ser Ser Gly Met Leu Trp Met Ala Asp Val Pro
2180 2185 2190

Leu Gln Trp Ile Ala Ser Ala Ile Val Leu Glu Phe Phe Met Met
2195 2200 2205

Val Leu Leu Ile Pro Glu Pro Glu Lys Gln Arg Thr Pro Gln Asp
2210 2215 2220

Asn Gln Leu Ala Tyr Val Val Ile Gly Ile Leu Thr Leu Ala Ala
2225 2230 2235

Ile Val Ala Ala Asn Glu Met Gly Leu Leu Glu Thr Thr Lys Arg
2240 2245 2250

Asp Leu Gly Met Ser Lys Glu Pro Gly Val Val Ser Pro Thr Ser
2255 2260 2265

Tyr Leu Asp Val Asp Leu His Pro Ala Ser Ala Trp Thr Leu Tyr
2270 2275 2280

Ala Val Ala Thr Thr Val Ile Thr Pro Met Leu Arg His Thr Ile
2285 2290 2295

Glu Asn Ser Thr Ala Asn Val Ser Leu Ala Ala Ile Ala Asn Gln
2300 2305 2310

Ala Val Val Leu Met Gly Leu Asp Lys Gly Trp Pro Ile Ser Lys
2315 2320 2325

Met Asp Leu Gly Val Pro Leu Leu Ala Leu Gly Cys Tyr Ser Gln
2330 2335 2340

Val Asn Pro Leu Thr Leu Ala Ala Ala Val Leu Leu Leu Val Thr
2345 2350 2355

His Tyr Ala Ile Ile Gly Pro Gly Leu Gln Ala Lys Ala Thr Arg
2360 2365 2370

Glu Ala Gln Lys Arg Thr Ala Ala Gly Ile Met Lys Asn Pro Thr
2375 2380 2385

Val Asp Gly Ile Met Thr Ile Asp Leu Asp Pro Val Ile Tyr Asp
2390 2395 2400

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Ser	Lys	Phe	Glu	Lys	Gln	Leu	Gly	Gln	Val	Met	Leu	Leu	Val	Leu
	2405					2410					2415			
Cys	Ala	Val	Gln	Leu	Leu	Leu	Met	Arg	Thr	Ser	Trp	Ala	Leu	Cys
	2420					2425					2430			
Glu	Val	Leu	Thr	Leu	Ala	Thr	Gly	Pro	Ile	Thr	Thr	Leu	Trp	Glu
	2435					2440					2445			
Gly	Ser	Pro	Gly	Lys	Phe	Trp	Asn	Thr	Thr	Ile	Ala	Val	Ser	Met
	2450					2455					2460			
Ala	Asn	Ile	Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala	Gly	Leu	Ala
	2465					2470					2475			
Phe	Ser	Ile	Met	Lys	Ser	Val	Gly	Thr	Gly	Lys	Arg	Gly	Thr	Gly
	2480					2485					2490			
Ser	Gln	Gly	Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Lys	Lys	Leu	Asn
	2495					2500					2505			
Gln	Leu	Ser	Arg	Lys	Glu	Phe	Asp	Leu	Tyr	Lys	Lys	Ser	Gly	Ile
	2510					2515					2520			
Thr	Glu	Val	Asp	Arg	Thr	Glu	Ala	Lys	Glu	Gly	Leu	Lys	Arg	Gly
	2525					2530					2535			
Glu	Ile	Thr	His	His	Ala	Val	Ser	Arg	Gly	Ser	Ala	Lys	Leu	Gln
	2540					2545					2550			
Trp	Phe	Val	Glu	Arg	Asn	Met	Val	Ile	Pro	Glu	Gly	Arg	Val	Ile
	2555					2560					2565			
Asp	Leu	Gly	Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr	Cys	Ala	Gly
	2570					2575					2580			
Leu	Lys	Lys	Val	Thr	Glu	Val	Arg	Gly	Tyr	Thr	Lys	Gly	Gly	Pro
	2585					2590					2595			
Gly	His	Glu	Glu	Pro	Val	Pro	Met	Ser	Thr	Tyr	Gly	Trp	Asn	Ile
	2600					2605					2610			
Val	Lys	Leu	Met	Ser	Gly	Lys	Asp	Val	Phe	Tyr	Leu	Pro	Pro	Glu
	2615					2620					2625			
Lys	Cys	Asp	Thr	Leu	Leu	Cys	Asp	Ile	Gly	Glu	Ser	Ser	Pro	Ser
	2630					2635					2640			
Pro	Thr	Val	Glu	Glu	Ser	Arg	Thr	Ile	Arg	Val	Leu	Lys	Met	Val
	2645					2650					2655			

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Glu	Pro	Trp	Leu	Lys	Asn	Asn	Gln	Phe	Cys	Ile	Lys	Val	Leu	Asn
	2660					2665					2670			
Pro	Tyr	Met	Pro	Thr	Val	Ile	Glu	His	Leu	Glu	Arg	Leu	Gln	Arg
	2675					2680					2685			
Lys	His	Gly	Gly	Met	Leu	Val	Arg	Asn	Pro	Leu	Ser	Arg	Asn	Ser
	2690					2695					2700			
Thr	His	Glu	Met	Tyr	Trp	Ile	Ser	Asn	Gly	Thr	Gly	Asn	Ile	Val
	2705					2710					2715			
Ser	Ser	Val	Asn	Met	Val	Ser	Arg	Leu	Leu	Leu	Asn	Arg	Phe	Thr
	2720					2725					2730			
Met	Thr	His	Arg	Arg	Pro	Thr	Ile	Glu	Lys	Asp	Val	Asp	Leu	Gly
	2735					2740					2745			
Ala	Gly	Thr	Arg	His	Val	Asn	Ala	Glu	Pro	Glu	Thr	Pro	Asn	Met
	2750					2755					2760			
Asp	Val	Ile	Gly	Glu	Arg	Ile	Lys	Arg	Ile	Lys	Glu	Glu	His	Ser
	2765					2770					2775			
Ser	Thr	Trp	His	Tyr	Asp	Asp	Glu	Asn	Pro	Tyr	Lys	Thr	Trp	Ala
	2780					2785					2790			
Tyr	His	Gly	Ser	Tyr	Glu	Val	Lys	Ala	Thr	Gly	Ser	Ala	Ser	Ser
	2795					2800					2805			
Met	Ile	Asn	Gly	Val	Val	Lys	Leu	Leu	Thr	Lys	Pro	Trp	Asp	Val
	2810					2815					2820			
Val	Pro	Met	Val	Thr	Gln	Met	Ala	Met	Thr	Asp	Thr	Thr	Pro	Phe
	2825					2830					2835			
Gly	Gln	Gln	Arg	Val	Phe	Lys	Glu	Lys	Val	Asp	Thr	Arg	Thr	Pro
	2840					2845					2850			
Arg	Pro	Met	Pro	Gly	Thr	Arg	Lys	Val	Met	Glu	Ile	Thr	Ala	Glu
	2855					2860					2865			
Trp	Leu	Trp	Arg	Thr	Leu	Gly	Arg	Asn	Lys	Arg	Pro	Arg	Leu	Cys
	2870					2875					2880			
Thr	Arg	Glu	Glu	Phe	Thr	Lys	Lys	Val	Arg	Thr	Asn	Ala	Ala	Met
	2885					2890					2895			
Gly	Ala	Val	Phe	Thr	Glu	Glu	Asn	Gln	Trp	Asp	Ser	Ala	Arg	Ala
	2900					2905					2910			

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Ala	Val	Glu	Asp	Glu	Glu	Phe	Trp	Lys	Leu	Val	Asp	Arg	Glu	Arg
	2915					2920					2925			
Glu	Leu	His	Lys	Leu	Gly	Lys	Cys	Gly	Ser	Cys	Val	Tyr	Asn	Met
	2930					2935					2940			
Met	Gly	Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly	Lys	Ala	Lys
	2945					2950					2955			
Gly	Ser	Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala	Arg	Tyr	Leu
	2960					2965					2970			
Glu	Phe	Glu	Ala	Leu	Gly	Phe	Leu	Asn	Glu	Asp	His	Trp	Phe	Ser
	2975					2980					2985			
Arg	Glu	Asn	Ser	Tyr	Ser	Gly	Val	Glu	Gly	Glu	Gly	Leu	His	Lys
	2990					2995					3000			
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Met	Tyr	Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg	Ile	Thr	Glu
	3020					3025					3030			
Asp	Asp	Leu	His	Asn	Glu	Glu	Lys	Ile	Thr	Gln	Gln	Met	Asp	Pro
	3035					3040					3045			
Glu	His	Arg	Gln	Leu	Ala	Asn	Ala	Ile	Phe	Lys	Leu	Thr	Tyr	Gln
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Asn	Lys	Val	Val	Lys	Val	Gln	Arg	Pro	Thr	Pro	Lys	Gly	Thr	Val
	3065					3070					3075			
Met	Asp	Ile	Ile	Ser	Arg	Lys	Asp	Gln	Arg	Gly	Ser	Gly	Gln	Val
	3080					3085					3090			
Gly	Thr	Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu	Ala	Gln	Leu
	3095					3100					3105			
Ile	Arg	Gln	Met	Glu	Gly	Glu	Gly	Val	Leu	Ser	Lys	Ala	Asp	Leu
	3110					3115					3120			
Glu	Asn	Pro	His	Pro	Leu	Glu	Lys	Lys	Ile	Thr	Gln	Trp	Leu	Glu
	3125					3130					3135			
Thr	Lys	Gly	Val	Glu	Arg	Leu	Lys	Arg	Met	Ala	Ile	Ser	Gly	Asp
	3140					3145					3150			
Asp	Cys	Val	Val	Lys	Pro	Ile	Asp	Asp	Arg	Phe	Ala	Asn	Ala	Leu
	3155					3160					3165			

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Leu Ala Leu Asn Asp Met Gly Lys Val Arg Lys Asp Ile Pro Gln
 3170 3175 3180

Trp Gln Pro Ser Lys Gly Trp His Asp Trp Gln Gln Val Pro Phe
 3185 3190 3195

Cys Ser His His Phe His Glu Leu Ile Met Lys Asp Gly Arg Lys
 3200 3205 3210

Leu Val Val Pro Cys Arg Pro Gln Asp Glu Leu Ile Gly Arg Ala
 3215 3220 3225

Arg Ile Ser Gln Gly Ala Gly Trp Ser Leu Arg Glu Thr Ala Cys
 3230 3235 3240

Leu Gly Lys Ala Tyr Ala Gln Met Trp Ala Leu Met Tyr Phe His
 3245 3250 3255

Arg Arg Asp Leu Arg Leu Ala Ser Asn Ala Ile Cys Ser Ala Val
 3260 3265 3270

Pro Val His Trp Val Pro Thr Ser Arg Thr Thr Trp Ser Ile His
 3275 3280 3285

Ala His His Gln Trp Met Thr Thr Glu Asp Met Leu Thr Val Trp
 3290 3295 3300

Asn Arg Val Trp Ile Glu Asp Asn Pro Trp Met Glu Asp Lys Thr
 3305 3310 3315

Pro Val Thr Thr Trp Glu Asp Val Pro Tyr Leu Gly Lys Arg Glu
 3320 3325 3330

Asp Gln Trp Cys Gly Ser Leu Ile Gly Leu Thr Ser Arg Ala Thr
 3335 3340 3345

Trp Ala Gln Asn Ile Leu Thr Ala Ile Gln Gln Val Arg Ser Leu
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Ile Gly Asn Glu Glu Phe Leu Asp Tyr Met Pro Ser Met Lys Arg
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Phe Arg Lys Glu Glu Glu Ser Glu Gly Ala Ile Trp
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 <211> 3387
 <212> PRT
 <213> Dengue virus type 4

<400> 12

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

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275

280

285

Asp Phe Val Glu Gly Val Ser Gly Gly Ala Trp Val Asp Leu Val Leu
 290 295 300

Glu His Gly Gly Cys Val Thr Thr Met Ala Gln Gly Lys Pro Thr Leu
 305 310 315 320

Asp Phe Glu Leu Thr Lys Thr Thr Ala Lys Glu Val Ala Leu Leu Arg
 325 330 335

Thr Tyr Cys Ile Glu Ala Ser Ile Ser Asn Ile Thr Thr Ala Thr Arg
 340 345 350

Cys Pro Thr Gln Gly Glu Pro Tyr Leu Lys Glu Glu Gln Asp Gln Gln
 355 360 365

Tyr Ile Cys Arg Arg Asp Val Val Asp Arg Gly Trp Gly Asn Gly Cys
 370 375 380

Gly Leu Phe Gly Lys Gly Gly Val Val Thr Cys Ala Lys Phe Ser Cys
 385 390 395 400

Ser Gly Lys Ile Thr Gly Asn Leu Val Gln Ile Glu Asn Leu Glu Tyr
 405 410 415

Thr Val Val Val Thr Val His Asn Gly Asp Thr His Ala Val Gly Asn
 420 425 430

Asp Thr Ser Asn His Gly Val Thr Ala Thr Ile Thr Pro Arg Ser Pro
 435 440 445

Ser Val Glu Val Lys Leu Pro Asp Tyr Gly Glu Leu Thr Leu Asp Cys
 450 455 460

Glu Pro Arg Ser Gly Ile Asp Phe Asn Glu Met Ile Leu Met Lys Met
 465 470 475 480

Lys Lys Lys Thr Trp Leu Val His Lys Gln Trp Phe Leu Asp Leu Pro
 485 490 495

Leu Pro Trp Thr Ala Gly Ala Asp Thr Ser Glu Val His Trp Asn Tyr
 500 505 510

Lys Glu Arg Met Val Thr Phe Lys Val Pro His Ala Lys Arg Gln Asp
 515 520 525

Val Thr Val Leu Gly Ser Gln Glu Gly Ala Met His Ser Ala Leu Ala
 530 535 540

Gly Ala Thr Glu Val Asp Ser Gly Asp Gly Asn His Met Phe Ala Gly

545 550 555 560
 His Leu Lys Cys Lys Val Arg Met Glu Lys Leu Arg Ile Lys Gly Met
 565 570 575
 Ser Tyr Thr Met Cys Ser Gly Lys Phe Ser Ile Asp Lys Glu Met Ala
 580 585 590
 Glu Thr Gln His Gly Thr Thr Val Val Lys Val Lys Tyr Glu Gly Ala
 595 600 605
 Gly Ala Pro Cys Lys Val Pro Ile Glu Ile Arg Asp Val Asn Lys Glu
 610 615 620
 Lys Val Val Gly Arg Ile Ile Ser Ser Thr Pro Leu Ala Glu Asn Thr
 625 630 635 640
 Asn Ser Ala Thr Asn Ile Glu Leu Glu Pro Pro Phe Gly Asp Ser Tyr
 645 650 655
 Ile Val Ile Gly Val Gly Asn Ser Ala Leu Thr Leu His Trp Phe Arg
 660 665 670
 Lys Gly Ser Ser Ile Gly Lys Met Phe Glu Ser Thr Tyr Arg Gly Ala
 675 680 685
 Lys Arg Met Ala Ile Leu Gly Glu Thr Ala Trp Asp Phe Gly Ser Val
 690 695 700
 Gly Gly Leu Phe Thr Ser Leu Gly Lys Ala Val His Gln Val Phe Gly
 705 710 715 720
 Ser Val Tyr Thr Thr Met Phe Gly Gly Val Ser Trp Met Ile Arg Ile
 725 730 735
 Leu Ile Gly Phe Leu Val Leu Trp Ile Gly Thr Asn Ser Arg Asn Thr
 740 745 750
 Ser Met Ala Met Thr Cys Ile Ala Val Gly Gly Ile Thr Leu Phe Leu
 755 760 765
 Gly Phe Thr Val Gln Ala Asp Met Gly Cys Val Val Ser Trp Ser Gly
 770 775 780
 Lys Glu Leu Lys Cys Gly Ser Gly Ile Phe Val Val Asp Asn Val His
 785 790 795 800
 Thr Trp Thr Glu Gln Tyr Lys Phe Gln Pro Glu Ser Pro Ala Arg Leu
 805 810 815
 Ala Ser Ala Ile Leu Asn Ala His Lys Asp Gly Val Cys Gly Ile Arg
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820

825

830

Ser Thr Thr Arg Leu Glu Asn Val Met Trp Lys Gln Ile Thr Asn Glu
 835 840 845

Leu Asn Tyr Val Leu Trp Glu Gly Gly His Asp Leu Thr Val Val Ala
 850 855 860

Gly Asp Val Lys Gly Val Leu Thr Lys Gly Lys Arg Ala Leu Thr Pro
 865 870 875 880

Pro Val Asn Asp Leu Lys Tyr Ser Trp Lys Thr Trp Gly Lys Ala Lys
 885 890 895

Ile Phe Thr Pro Glu Ala Arg Asn Ser Thr Phe Leu Ile Asp Gly Pro
 900 905 910

Asp Thr Ser Glu Cys Pro Asn Glu Arg Arg Ala Trp Asn Phe Leu Glu
 915 920 925

Val Glu Asp Tyr Gly Phe Gly Met Phe Thr Thr Asn Ile Trp Met Lys
 930 935 940

Phe Arg Glu Gly Ser Ser Glu Val Cys Asp His Arg Leu Met Ser Ala
 945 950 955 960

Ala Ile Lys Asp Gln Lys Ala Val His Ala Asp Met Gly Tyr Trp Ile
 965 970 975

Glu Ser Ser Lys Asn Gln Thr Trp Gln Ile Glu Lys Ala Ser Leu Ile
 980 985 990

Glu Val Lys Thr Cys Leu Trp Pro Lys Thr His Thr Leu Trp Ser Asn
 995 1000 1005

Gly Val Leu Glu Ser Gln Met Leu Ile Pro Lys Ser Tyr Ala Gly
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Pro Phe Ser His His Asn Tyr Arg Gln Gly Tyr Ala Thr Gln Thr
 1025 1030 1035

Val Gly Pro Trp His Leu Gly Lys Leu Glu Ile Asp Phe Gly Glu
 1040 1045 1050

Cys Pro Gly Thr Thr Val Ala Ile Gln Glu Asp Cys Asp His Arg
 1055 1060 1065

Gly Pro Ser Leu Arg Thr Thr Thr Ala Ser Gly Lys Leu Val Thr
 1070 1075 1080

Gln Trp Cys Cys Arg Ser Cys Thr Met Pro Pro Leu Arg Phe Leu

1085

1090

1095

Gly	Glu	Asp	Gly	Cys	Trp	Tyr	Gly	Met	Glu	Ile	Arg	Pro	Leu	Ser
1100						1105					1110			
Glu	Lys	Glu	Glu	Asn	Met	Val	Lys	Ser	Gln	Val	Thr	Ala	Gly	Gln
1115						1120					1125			
Gly	Thr	Ser	Glu	Thr	Phe	Ser	Met	Gly	Leu	Leu	Cys	Leu	Thr	Leu
1130						1135					1140			
Phe	Val	Glu	Glu	Cys	Leu	Arg	Arg	Arg	Val	Thr	Arg	Lys	His	Met
1145						1150					1155			
Ile	Leu	Val	Val	Val	Ile	Thr	Leu	Cys	Ala	Ile	Ile	Leu	Gly	Gly
1160						1165					1170			
Leu	Thr	Trp	Met	Asp	Leu	Leu	Arg	Ala	Leu	Ile	Met	Leu	Gly	Asp
1175						1180					1185			
Thr	Met	Ser	Gly	Arg	Ile	Gly	Gly	Gln	Ile	His	Leu	Ala	Ile	Met
1190						1195					1200			
Ala	Val	Phe	Lys	Met	Ser	Pro	Gly	Tyr	Val	Leu	Gly	Val	Phe	Leu
1205						1210					1215			
Arg	Lys	Leu	Thr	Ser	Arg	Glu	Thr	Ala	Leu	Met	Val	Ile	Gly	Met
1220						1225					1230			
Ala	Met	Thr	Thr	Val	Leu	Ser	Ile	Pro	His	Asp	Leu	Met	Glu	Leu
1235						1240					1245			
Ile	Asp	Gly	Ile	Ser	Leu	Gly	Leu	Ile	Leu	Leu	Lys	Ile	Val	Thr
1250						1255					1260			
His	Phe	Asp	Asn	Thr	Gln	Val	Gly	Thr	Leu	Ala	Leu	Ser	Leu	Thr
1265						1270					1275			
Phe	Ile	Arg	Ser	Thr	Met	Pro	Leu	Val	Met	Ala	Trp	Arg	Thr	Ile
1280						1285					1290			
Met	Ala	Val	Leu	Phe	Val	Val	Thr	Leu	Ile	Pro	Leu	Cys	Arg	Thr
1295						1300					1305			
Ser	Cys	Leu	Gln	Lys	Gln	Ser	His	Trp	Val	Glu	Ile	Thr	Ala	Leu
1310						1315					1320			
Ile	Leu	Gly	Ala	Gln	Ala	Leu	Pro	Val	Tyr	Leu	Met	Thr	Leu	Met
1325						1330					1335			
Lys	Gly	Ala	Ser	Arg	Arg	Ser	Trp	Pro	Leu	Asn	Glu	Gly	Ile	Met

1340

1345

1350

Ala Val Gly Leu Val Ser Leu Leu Gly Ser Ala Leu Leu Lys Asn
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Asp Val Pro Leu Ala Gly Pro Met Val Ala Gly Gly Leu Leu Leu
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Ala Ala Tyr Val Met Ser Gly Ser Ser Ala Asp Leu Ser Leu Glu
1385 1390 1395

Lys Ala Ala Asn Val Gln Trp Asp Glu Met Ala Asp Ile Thr Gly
1400 1405 1410

Ser Ser Pro Ile Ile Glu Val Lys Gln Asp Glu Asp Gly Ser Phe
1415 1420 1425

Ser Ile Arg Asp Val Glu Glu Thr Asn Met Ile Thr Leu Leu Val
1430 1435 1440

Lys Leu Ala Leu Ile Thr Val Ser Gly Leu Tyr Pro Leu Ala Ile
1445 1450 1455

Pro Val Thr Met Thr Leu Trp Tyr Met Trp Gln Val Lys Thr Gln
1460 1465 1470

Arg Ser Gly Ala Leu Trp Asp Val Pro Ser Pro Ala Ala Thr Gln
1475 1480 1485

Lys Ala Ala Leu Ser Glu Gly Val Tyr Arg Ile Met Gln Arg Gly
1490 1495 1500

Leu Phe Gly Lys Thr Gln Val Gly Val Gly Ile His Met Glu Gly
1505 1510 1515

Val Phe His Thr Met Trp His Val Thr Arg Gly Ser Val Ile Cys
1520 1525 1530

His Glu Thr Gly Arg Leu Glu Pro Ser Trp Ala Asp Val Arg Asn
1535 1540 1545

Asp Met Ile Ser Tyr Gly Gly Gly Trp Arg Leu Gly Asp Lys Trp
1550 1555 1560

Asp Lys Glu Glu Asp Val Gln Val Leu Ala Ile Glu Pro Gly Lys
1565 1570 1575

Asn Pro Lys His Val Gln Thr Lys Pro Gly Leu Phe Lys Thr Leu
1580 1585 1590

Thr Gly Glu Ile Gly Ala Val Thr Leu Asp Phe Lys Pro Gly Thr

1595

1600

1605

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Tyr	Gly	Asn	Gly	Val	Val	Thr	Lys	Ser	Gly	Asp	Tyr	Val	Ser	Ala
	1625					1630					1635			
Ile	Thr	Gln	Ala	Glu	Arg	Ile	Gly	Glu	Pro	Asp	Tyr	Glu	Val	Asp
	1640					1645					1650			
Glu	Asp	Ile	Phe	Arg	Lys	Lys	Arg	Leu	Thr	Ile	Met	Asp	Leu	His
	1655					1660					1665			
Pro	Gly	Ala	Gly	Lys	Thr	Lys	Arg	Ile	Leu	Pro	Ser	Ile	Val	Arg
	1670					1675					1680			
Glu	Ala	Leu	Lys	Arg	Arg	Leu	Arg	Thr	Leu	Ile	Leu	Ala	Pro	Thr
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	1700					1705					1710			
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	1745					1750					1755			
Glu	Ala	His	Phe	Thr	Asp	Pro	Ser	Ser	Val	Ala	Ala	Arg	Gly	Tyr
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	1820					1825					1830			
Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala	Asn	Cys
	1835					1840					1845			
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Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe	Arg	Ala
	1880					1885					1890			
Gly	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Leu	Lys	Pro	Val	Ile	Leu
	1895					1900					1905			
Thr	Asp	Gly	Pro	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Ile	Pro	Val
	1910					1915					1920			
Thr	Pro	Ala	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Ile	Gly	Arg	Asn
	1925					1930					1935			
Pro	Ala	Gln	Glu	Asp	Asp	Gln	Tyr	Val	Phe	Ser	Gly	Asp	Pro	Leu
	1940					1945					1950			
Lys	Asn	Asp	Glu	Asp	His	Ala	His	Trp	Thr	Glu	Ala	Lys	Met	Leu
	1955					1960					1965			
Leu	Asp	Asn	Ile	Tyr	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Thr	Leu	Phe
	1970					1975					1980			
Gly	Pro	Glu	Arg	Glu	Lys	Thr	Gln	Ala	Ile	Asp	Gly	Glu	Phe	Arg
	1985					1990					1995			
Leu	Arg	Gly	Glu	Gln	Arg	Lys	Thr	Phe	Val	Glu	Leu	Met	Arg	Arg
	2000					2005					2010			
Gly	Asp	Leu	Pro	Val	Trp	Leu	Ser	Tyr	Lys	Val	Ala	Ser	Ala	Gly
	2015					2020					2025			
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	2045					2050					2055			
Glu	Gly	Glu	Lys	Lys	Lys	Leu	Arg	Pro	Arg	Trp	Leu	Asp	Ala	Arg
	2060					2065					2070			
Val	Tyr	Ala	Asp	Pro	Met	Ala	Leu	Lys	Asp	Phe	Lys	Glu	Phe	Ala
	2075					2080					2085			
Ser	Gly	Arg	Lys	Ser	Ile	Thr	Leu	Asp	Ile	Leu	Thr	Glu	Ile	Ala
	2090					2095					2100			
Ser	Leu	Pro	Thr	Tyr	Leu	Ser	Ser	Arg	Ala	Lys	Leu	Ala	Leu	Asp

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2105

2110

2115

Asn	Ile	Val	Met	Leu	His	Thr	Thr	Glu	Arg	Gly	Gly	Arg	Ala	Tyr
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Gln	His	Ala	Leu	Asn	Glu	Leu	Pro	Glu	Ser	Leu	Glu	Thr	Leu	Met
2135						2140					2145			
Leu	Val	Ala	Leu	Leu	Gly	Ala	Met	Thr	Ala	Gly	Ile	Phe	Leu	Phe
2150						2155					2160			
Phe	Met	Gln	Gly	Lys	Gly	Ile	Gly	Lys	Leu	Ser	Met	Gly	Leu	Ile
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Thr	Ile	Ala	Val	Ala	Ser	Gly	Leu	Phe	Trp	Val	Ala	Glu	Ile	Gln
2180						2185					2190			
Pro	Gln	Trp	Ile	Ala	Ala	Ser	Ile	Ile	Leu	Glu	Phe	Phe	Leu	Met
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Val	Leu	Leu	Ile	Pro	Glu	Pro	Glu	Lys	Gln	Arg	Thr	Pro	Gln	Asp
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Asn	Gln	Leu	Ile	Tyr	Val	Ile	Leu	Thr	Ile	Leu	Thr	Ile	Ile	Gly
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Leu	Ile	Ala	Ala	Asn	Glu	Met	Gly	Leu	Ile	Glu	Lys	Thr	Lys	Thr
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Asp	Phe	Gly	Phe	Tyr	Gln	Val	Lys	Thr	Glu	Thr	Thr	Ile	Leu	Asp
2255						2260					2265			
Val	Asp	Leu	Arg	Pro	Ala	Ser	Ala	Trp	Thr	Leu	Tyr	Ala	Val	Ala
2270						2275					2280			
Thr	Thr	Ile	Leu	Thr	Pro	Met	Leu	Arg	His	Thr	Ile	Glu	Asn	Thr
2285						2290					2295			
Ser	Ala	Asn	Leu	Ser	Leu	Ala	Ala	Ile	Ala	Asn	Gln	Ala	Ala	Val
2300						2305					2310			
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2315						2320					2325			
Gly	Val	Pro	Leu	Leu	Ala	Met	Gly	Cys	Tyr	Ser	Gln	Val	Asn	Pro
2330						2335					2340			
Thr	Thr	Leu	Thr	Ala	Ser	Leu	Val	Met	Leu	Ser	Val	His	Tyr	Ala
2345						2350					2355			
Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys	Ala	Thr	Arg	Glu	Ala	Gln

2360

2365

2370

Lys Arg Thr Ala Ala Gly Ile Met Lys Asn Pro Thr Val Asp Gly
 2375 2380 2385
 Ile Thr Val Ile Asp Leu Glu Pro Ile Ser Tyr Asp Pro Lys Phe
 2390 2400
 Glu Lys Gln Leu Gly Gln Val Met Leu Leu Val Leu Cys Ala Gly
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 Gln Leu Leu Leu Met Arg Thr Thr Trp Ala Phe Cys Glu Val Leu
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 Thr Leu Ala Thr Gly Pro Ile Leu Thr Leu Trp Glu Gly Asn Pro
 2435 2440 2445
 Gly Arg Phe Trp Asn Thr Thr Ile Ala Val Ser Thr Ala Asn Ile
 2450 2455 2460
 Phe Arg Gly Ser Tyr Leu Ala Gly Ala Gly Leu Ala Phe Ser Leu
 2465 2470 2475
 Ile Lys Asn Val Gln Thr Pro Arg Arg Gly Thr Gly Thr Thr Gly
 2480 2485 2490
 Glu Thr Leu Gly Glu Lys Trp Lys Arg Gln Leu Asn Ser Leu Asp
 2495 2500 2505
 Arg Lys Glu Phe Glu Glu Tyr Lys Arg Ser Gly Ile Leu Glu Val
 2510 2515 2520
 Asp Arg Thr Glu Ala Lys Ser Ala Leu Lys Asp Gly Ser Lys Ile
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 Lys His Ala Val Ser Arg Gly Ser Ser Lys Ile Arg Trp Ile Val
 2540 2545 2550
 Glu Arg Gly Met Val Lys Pro Lys Gly Lys Val Val Asp Leu Gly
 2555 2560 2565
 Cys Gly Arg Gly Gly Trp Ser Tyr Tyr Met Ala Thr Leu Lys Asn
 2570 2575 2580
 Val Thr Glu Val Lys Gly Tyr Thr Lys Gly Gly Pro Gly His Glu
 2585 2590 2595
 Glu Pro Ile Pro Met Ala Thr Tyr Gly Trp Asn Leu Val Lys Leu
 2600 2605 2610
 His Ser Gly Val Asp Val Phe Tyr Lys Pro Thr Glu Gln Val Asp

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2615

2620

2625

Thr	Leu	Leu	Cys	Asp	Ile	Gly	Glu	Ser	Ser	Ser	Asn	Pro	Thr	Ile
	2630					2635					2640			
Glu	Glu	Gly	Arg	Thr	Leu	Arg	Val	Leu	Lys	Met	Val	Glu	Pro	Trp
	2645					2650					2655			
Leu	Ser	Ser	Lys	Pro	Glu	Phe	Cys	Ile	Lys	Val	Leu	Asn	Pro	Tyr
	2660					2665					2670			
Met	Pro	Thr	Val	Ile	Glu	Glu	Leu	Glu	Lys	Leu	Gln	Arg	Lys	His
	2675					2680					2685			
Gly	Gly	Asn	Leu	Val	Arg	Cys	Pro	Leu	Ser	Arg	Asn	Ser	Thr	His
	2690					2695					2700			
Glu	Met	Tyr	Trp	Val	Ser	Gly	Ala	Ser	Gly	Asn	Ile	Val	Ser	Ser
	2705					2710					2715			
Val	Asn	Thr	Thr	Ser	Lys	Met	Leu	Leu	Asn	Arg	Phe	Thr	Thr	Arg
	2720					2725					2730			
His	Arg	Lys	Pro	Thr	Tyr	Glu	Lys	Asp	Val	Asp	Leu	Gly	Ala	Gly
	2735					2740					2745			
Thr	Arg	Ser	Val	Ser	Thr	Glu	Thr	Glu	Lys	Pro	Asp	Met	Thr	Ile
	2750					2755					2760			
Ile	Gly	Arg	Arg	Leu	Gln	Arg	Leu	Gln	Glu	Glu	His	Lys	Glu	Thr
	2765					2770					2775			
Trp	His	Tyr	Asp	Gln	Glu	Asn	Pro	Tyr	Arg	Thr	Trp	Ala	Tyr	His
	2780					2785					2790			
Gly	Ser	Tyr	Glu	Ala	Pro	Ser	Thr	Gly	Ser	Ala	Ser	Ser	Met	Val
	2795					2800					2805			
Asn	Gly	Val	Val	Lys	Leu	Leu	Thr	Lys	Pro	Trp	Asp	Val	Val	Pro
	2810					2815					2820			
Met	Val	Thr	Gln	Leu	Ala	Met	Thr	Asp	Thr	Thr	Pro	Phe	Gly	Gln
	2825					2830					2835			
Gln	Arg	Val	Phe	Lys	Glu	Lys	Val	Asp	Thr	Arg	Thr	Pro	Gln	Pro
	2840					2845					2850			
Lys	Pro	Gly	Thr	Arg	Met	Val	Met	Thr	Thr	Thr	Ala	Asn	Trp	Leu
	2855					2860					2865			
Trp	Ala	Leu	Leu	Gly	Lys	Lys	Lys	Asn	Pro	Arg	Leu	Cys	Thr	Arg

2870

2875

2880

Glu	Glu	Phe	Ile	Ser	Lys	Val	Arg	Ser	Asn	Ala	Ala	Ile	Gly	Ala
2885						2890					2895			
Val	Phe	Gln	Glu	Glu	Gln	Gly	Trp	Thr	Ser	Ala	Ser	Glu	Ala	Val
2900						2905					2910			
Asn	Asp	Ser	Arg	Phe	Trp	Glu	Leu	Val	Asp	Lys	Glu	Arg	Ala	Leu
2915						2920					2925			
His	Gln	Glu	Gly	Lys	Cys	Glu	Ser	Cys	Val	Tyr	Asn	Met	Met	Gly
2930						2935					2940			
Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly	Arg	Ala	Lys	Gly	Ser
2945						2950					2955			
Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala	Arg	Phe	Leu	Glu	Phe
2960						2965					2970			
Glu	Ala	Leu	Gly	Phe	Leu	Asn	Glu	Asp	His	Trp	Phe	Gly	Arg	Glu
2975						2980					2985			
Asn	Ser	Trp	Ser	Gly	Val	Glu	Gly	Glu	Gly	Leu	His	Arg	Leu	Gly
2990						2995					3000			
Tyr	Ile	Leu	Glu	Glu	Ile	Asp	Lys	Lys	Asp	Gly	Asp	Leu	Met	Tyr
3005						3010					3015			
Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg	Ile	Thr	Glu	Asp	Asp
3020						3025					3030			
Leu	Gln	Asn	Glu	Glu	Leu	Ile	Thr	Glu	Gln	Met	Ala	Pro	His	His
3035						3040					3045			
Lys	Ile	Leu	Ala	Lys	Ala	Ile	Phe	Lys	Leu	Thr	Tyr	Gln	Asn	Lys
3050						3055					3060			
Val	Val	Lys	Val	Leu	Arg	Pro	Thr	Pro	Arg	Gly	Ala	Val	Met	Asp
3065						3070					3075			
Ile	Ile	Ser	Arg	Lys	Asp	Gln	Arg	Gly	Ser	Gly	Gln	Val	Gly	Thr
3080						3085					3090			
Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu	Val	Gln	Leu	Ile	Arg
3095						3100					3105			
Gln	Met	Glu	Ala	Glu	Gly	Val	Ile	Thr	Gln	Asp	Asp	Met	Gln	Asn
3110						3115					3120			
Pro	Lys	Gly	Leu	Lys	Glu	Arg	Val	Glu	Lys	Trp	Leu	Lys	Glu	Cys

3125 3130 3135

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3380

<210> 13
<211> 3392
<212> PRT
<213> Dengue virus type 1

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<222> (482)..(482)
<223> Xaa stands for Lys or Glu

<220>
<221> VARIANT
<222> (484)..(484)
<223> Xaa stands for Lys or Arg

<220>
<221> VARIANT
<222> (2364)..(2364)
<223> Xaa stands for Thr or Ala

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Met Asn Asn Gln Arg Lys Lys Thr Ala Arg Pro Ser Phe Asn Met Leu
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Lys Arg Ala Arg Asn Arg Val Ser Thr Val Ser Gln Leu Ala Lys Arg
20 25 30

Phe Ser Lys Gly Leu Leu Ser Gly Gln Gly Pro Met Lys Leu Val Met
35 40 45

Ala Phe Ile Ala Phe Leu Arg Phe Leu Ala Ile Pro Pro Thr Ala Gly
50 55 60

Ile Leu Ala Arg Trp Gly Ser Phe Lys Lys Asn Gly Ala Ile Lys Val
65 70 75 80

Leu Arg Gly Phe Lys Lys Glu Ile Ser Asn Met Leu Asn Ile Met Asn
85 90 95

Arg Arg Lys Arg Ser Val Thr Met Leu Leu Met Leu Met Pro Thr Ala
100 105 110

Leu Ala Phe His Leu Thr Thr Arg Gly Gly Glu Pro His Met Ile Val
115 120 125

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

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

Asp Thr Met Thr Tyr Lys Cys Pro Arg Ile Thr Glu Ala Glu Pro Asp
165 170 175

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Asp Val Asp Cys Trp Cys Asn Ala Thr Asp Thr Trp Val Thr Tyr Gly
180 185 190

Thr Cys Ser Gln Thr Gly Glu His Arg Arg Asp Lys Arg Ser Val Ala
195 200 205

Leu Ala Pro His Val Gly Leu Gly Leu Glu Thr Arg Thr Glu Thr Trp
210 215 220

Met Ser Ser Glu Gly Ala Trp Lys Gln Ile Gln Arg Val Glu Thr Trp
225 230 235 240

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

Ala Ile Gly Thr Ser Ile Thr Gln Lys Gly Ile Ile Phe Ile Leu Leu
260 265 270

Met Leu Val Thr Pro Ser Met Ala Met Arg Cys Val Gly Ile Gly Ser
275 280 285

Arg Asp Phe Val Glu Gly Leu Ser Gly Ala Thr Trp Val Asp Val Val
290 295 300

Leu Glu His Gly Ser Cys Val Thr Thr Met Ala Lys Asp Lys Pro Thr
305 310 315 320

Leu Asp Ile Glu Leu Leu Lys Thr Glu Val Thr Asn Pro Ala Val Leu
325 330 335

Arg Lys Leu Cys Ile Glu Ala Lys Ile Ser Asn Thr Thr Thr Asp Ser
340 345 350

Arg Cys Pro Thr Gln Gly Glu Ala Thr Leu Val Glu Glu Gln Asp Ala
355 360 365

Asn Phe Val Cys Arg Arg Thr Phe Val Asp Arg Gly Trp Gly Asn Gly
370 375 380

Cys Gly Leu Phe Gly Lys Gly Ser Leu Leu Thr Cys Ala Lys Phe Lys
385 390 395 400

Cys Val Thr Lys Leu Glu Gly Lys Ile Val Gln Tyr Glu Asn Leu Lys
405 410 415

Tyr Ser Val Ile Val Thr Val His Thr Gly Asp Gln His Gln Val Gly
420 425 430

Asn Glu Ser Thr Glu His Gly Thr Thr Ala Thr Ile Thr Pro Gln Ala
435 440 445

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Pro Thr Thr Glu Ile Gln Leu Thr Asp Tyr Gly Ala Leu Thr Leu Asp
450 455 460

Cys Ser Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Val Leu Leu Thr
465 470 475 480

Met Xaa Lys Xaa Ser Trp Leu Val His Lys Gln Trp Phe Leu Asp Leu
485 490 495

Pro Leu Pro Trp Thr Ser Gly Ala Ser Thr Ser Gln Glu Thr Trp Asn
500 505 510

Arg Gln Asp Leu Leu Val Thr Phe Lys Thr Ala His Ala Lys Lys Gln
515 520 525

Glu Val Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu
530 535 540

Thr Gly Ala Thr Glu Ile Gln Thr Ser Gly Thr Thr Thr Ile Phe Ala
545 550 555 560

Gly His Leu Lys Cys Arg Leu Arg Met Asp Lys Leu Thr Leu Lys Gly
565 570 575

Met Ser Tyr Val Met Cys Thr Gly Ser Phe Lys Leu Glu Lys Glu Val
580 585 590

Ala Glu Thr Gln His Gly Thr Val Leu Val Gln Ile Lys Tyr Glu Gly
595 600 605

Thr Asp Ala Pro Cys Lys Ile Pro Phe Ser Thr Gln Asp Glu Lys Gly
610 615 620

Val Thr Gln Asn Gly Arg Leu Ile Thr Ala Asn Pro Ile Val Thr Asp
625 630 635 640

Lys Glu Lys Pro Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Glu Ser
645 650 655

Tyr Ile Val Ile Gly Ala Gly Glu Lys Ala Leu Lys Leu Ser Trp Phe
660 665 670

Lys Lys Gly Ser Ser Ile Gly Lys Met Phe Glu Ala Thr Ala Arg Gly
675 680 685

Ala Arg Arg Met Ala Ile Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser
690 695 700

Ile Gly Gly Val Phe Thr Ser Val Gly Lys Leu Val His Gln Ile Phe
705 710 715 720

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Gly Thr Ala Tyr Gly Val Leu Phe Ser Gly Val Ser Trp Thr Met Lys
725 730 735

Ile Gly Ile Gly Val Leu Leu Thr Trp Leu Gly Leu Asn Ser Arg Asn
740 745 750

Thr Ser Leu Ser Met Thr Cys Ile Ala Val Gly Leu Val Thr Leu Tyr
755 760 765

Leu Gly Val Met Val Gln Ala Asp Ser Gly Cys Val Ile Asn Trp Lys
770 775 780

Gly Arg Glu Leu Lys Cys Gly Ser Gly Ile Phe Val Thr Asn Glu Val
785 790 795 800

His Thr Trp Thr Glu Gln Tyr Lys Phe Gln Ala Asp Ser Pro Lys Arg
805 810 815

Leu Ser Ala Ala Ile Gly Lys Ala Trp Glu Glu Gly Val Cys Gly Ile
820 825 830

Arg Ser Ala Thr Arg Leu Glu Asn Ile Met Trp Lys Gln Ile Ser Asn
835 840 845

Glu Leu Asn His Ile Leu Leu Glu Asn Asp Met Lys Phe Thr Val Val
850 855 860

Val Gly Asp Val Ala Gly Ile Leu Ala Gln Gly Lys Lys Met Ile Arg
865 870 875 880

Pro Gln Pro Met Glu His Lys Tyr Ser Trp Lys Ser Trp Gly Lys Ala
885 890 895

Lys Ile Ile Gly Ala Asp Val Gln Asn Ser Thr Phe Ile Ile Asp Gly
900 905 910

Pro Asn Thr Pro Glu Cys Pro Asp Asp Gln Arg Ala Trp Asn Ile Trp
915 920 925

Glu Val Glu Asp Tyr Gly Phe Gly Ile Phe Thr Thr Asn Ile Trp Leu
930 935 940

Lys Leu Arg Asp Ser Tyr Thr Gln Leu Cys Asp His Arg Leu Met Ser
945 950 955 960

Ala Ala Ile Lys Asp Ser Lys Ala Val His Ala Asp Met Gly Tyr Trp
965 970 975

Ile Glu Ser Glu Lys Asn Glu Thr Trp Lys Leu Ala Arg Ala Ser Phe
980 985 990

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Ile	Glu	Val	Lys	Thr	Cys	Ile	Trp	Pro	Lys	Ser	His	Thr	Leu	Trp	Ser
		995					1000					1005			
Asn	Gly	Val	Leu	Glu	Ser	Glu	Met	Ile	Ile	Pro	Lys	Ile	Tyr	Gly	
	1010					1015					1020				
Gly	Pro	Ile	Ser	Gln	His	Asn	Tyr	Arg	Pro	Gly	Tyr	Phe	Thr	Gln	
	1025					1030					1035				
Thr	Val	Gly	Pro	Trp	His	Leu	Gly	Lys	Leu	Glu	Leu	Asp	Phe	Asp	
	1040					1045					1050				
Leu	Cys	Glu	Gly	Thr	Thr	Val	Val	Val	Asp	Glu	His	Cys	Gly	Asn	
	1055					1060					1065				
Arg	Gly	Pro	Ser	Leu	Arg	Thr	Thr	Thr	Val	Thr	Gly	Lys	Ile	Ile	
	1070					1075					1080				
His	Glu	Trp	Cys	Cys	Arg	Ser	Cys	Thr	Leu	Pro	Pro	Leu	Arg	Phe	
	1085					1090					1095				
Arg	Gly	Glu	Asp	Gly	Cys	Trp	Tyr	Gly	Met	Glu	Ile	Arg	Pro	Val	
	1100					1105					1110				
Lys	Glu	Lys	Glu	Glu	Asn	Leu	Val	Lys	Ser	Met	Val	Ser	Ala	Gly	
	1115					1120					1125				
Ser	Gly	Glu	Val	Asp	Ser	Phe	Ser	Leu	Gly	Leu	Leu	Cys	Ile	Ser	
	1130					1135					1140				
Ile	Met	Ile	Glu	Glu	Val	Met	Arg	Ser	Arg	Trp	Ser	Arg	Lys	Met	
	1145					1150					1155				
Leu	Met	Thr	Gly	Thr	Leu	Ala	Val	Phe	Leu	Leu	Leu	Ile	Met	Gly	
	1160					1165					1170				
Gln	Leu	Thr	Trp	Asn	Asp	Leu	Ile	Arg	Leu	Cys	Ile	Met	Val	Gly	
	1175					1180					1185				
Ala	Asn	Ala	Ser	Asp	Arg	Met	Gly	Met	Gly	Thr	Thr	Tyr	Leu	Ala	
	1190					1195					1200				
Leu	Met	Ala	Thr	Phe	Lys	Met	Arg	Pro	Met	Phe	Ala	Val	Gly	Leu	
	1205					1210					1215				
Leu	Phe	Arg	Arg	Leu	Thr	Ser	Arg	Glu	Val	Leu	Leu	Leu	Thr	Ile	
	1220					1225					1230				
Gly	Leu	Ser	Leu	Val	Ala	Ser	Val	Glu	Leu	Pro	Asn	Ser	Leu	Glu	
	1235					1240					1245				

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Glu	Leu	Gly	Asp	Gly	Leu	Ala	Met	Gly	Ile	Met	Ile	Leu	Lys	Leu
	1250					1255					1260			
Leu	Thr	Asp	Phe	Gln	Ser	His	Gln	Leu	Trp	Ala	Thr	Leu	Leu	Ser
	1265					1270					1275			
Leu	Thr	Phe	Ile	Lys	Thr	Thr	Phe	Ser	Leu	His	Tyr	Ala	Trp	Lys
	1280					1285					1290			
Thr	Met	Ala	Met	Val	Leu	Ser	Ile	Val	Ser	Leu	Phe	Pro	Leu	Cys
	1295					1300					1305			
Leu	Ser	Thr	Thr	Ser	Gln	Lys	Thr	Thr	Trp	Leu	Pro	Val	Leu	Leu
	1310					1315					1320			
Gly	Ser	Leu	Gly	Cys	Lys	Pro	Leu	Thr	Met	Phe	Leu	Ile	Ala	Glu
	1325					1330					1335			
Asn	Lys	Ile	Trp	Gly	Arg	Lys	Ser	Trp	Pro	Leu	Asn	Glu	Gly	Ile
	1340					1345					1350			
Met	Ala	Val	Gly	Ile	Val	Ser	Ile	Leu	Leu	Ser	Ser	Leu	Leu	Lys
	1355					1360					1365			
Asn	Asp	Val	Pro	Leu	Ala	Gly	Pro	Leu	Ile	Ala	Gly	Gly	Met	Leu
	1370					1375					1380			
Ile	Ala	Cys	Tyr	Val	Ile	Ser	Gly	Ser	Ser	Ala	Asp	Leu	Ser	Leu
	1385					1390					1395			
Glu	Lys	Ala	Ala	Glu	Val	Ser	Trp	Glu	Glu	Glu	Ala	Glu	His	Ser
	1400					1405					1410			
Gly	Ala	Ser	His	Asn	Ile	Leu	Val	Glu	Val	Gln	Asp	Asp	Gly	Thr
	1415					1420					1425			
Met	Lys	Ile	Lys	Asp	Glu	Glu	Arg	Asp	Asp	Thr	Leu	Thr	Ile	Leu
	1430					1435					1440			
Leu	Lys	Ala	Thr	Leu	Leu	Ala	Val	Ser	Gly	Val	Tyr	Pro	Leu	Ser
	1445					1450					1455			
Ile	Pro	Ala	Thr	Leu	Phe	Val	Trp	Tyr	Phe	Trp	Gln	Lys	Lys	Lys
	1460					1465					1470			
Gln	Arg	Ser	Gly	Val	Leu	Trp	Asp	Thr	Pro	Ser	Pro	Pro	Glu	Val
	1475					1480					1485			
Glu	Arg	Ala	Val	Leu	Asp	Asp	Gly	Ile	Tyr	Arg	Ile	Met	Gln	Arg
	1490					1495					1500			

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Gly	Leu	Leu	Gly	Arg	Ser	Gln	Val	Gly	Val	Gly	Val	Phe	Gln	Glu
1505						1510					1515			
Asn	Val	Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ala	Val	Leu
1520						1525					1530			
Met	Tyr	Gln	Gly	Lys	Arg	Leu	Glu	Pro	Ser	Trp	Ala	Ser	Val	Lys
1535						1540					1545			
Lys	Asp	Leu	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Arg	Leu	Gln	Gly	Ser
1550						1555					1560			
Trp	Asn	Thr	Gly	Glu	Glu	Val	Gln	Val	Ile	Ala	Val	Glu	Pro	Gly
1565						1570					1575			
Lys	Asn	Pro	Lys	Asn	Val	Gln	Thr	Ala	Pro	Gly	Thr	Phe	Lys	Thr
1580						1585					1590			
Pro	Glu	Gly	Glu	Val	Gly	Ala	Ile	Ala	Leu	Asp	Phe	Lys	Pro	Gly
1595						1600					1605			
Thr	Ser	Gly	Ser	Pro	Ile	Val	Asn	Arg	Glu	Gly	Lys	Ile	Val	Gly
1610						1615					1620			
Leu	Tyr	Gly	Asn	Gly	Val	Val	Thr	Thr	Ser	Gly	Thr	Tyr	Val	Ser
1625						1630					1635			
Ala	Ile	Ala	Gln	Ala	Lys	Ala	Ser	Gln	Glu	Gly	Pro	Leu	Pro	Glu
1640						1645					1650			
Ile	Glu	Asp	Glu	Val	Phe	Arg	Lys	Arg	Lys	Leu	Thr	Ile	Met	Asp
1655						1660					1665			
Leu	His	Pro	Gly	Ser	Gly	Lys	Thr	Arg	Arg	Tyr	Leu	Pro	Ala	Ile
1670						1675					1680			
Val	Arg	Glu	Ala	Ile	Lys	Arg	Lys	Leu	Arg	Thr	Leu	Ile	Leu	Ala
1685						1690					1695			
Pro	Thr	Arg	Val	Val	Ala	Ser	Glu	Met	Ala	Glu	Ala	Leu	Lys	Gly
1700						1705					1710			
Met	Pro	Ile	Arg	Tyr	Gln	Thr	Thr	Ala	Val	Lys	Ser	Glu	His	Thr
1715						1720					1725			
Gly	Lys	Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Met
1730						1735					1740			
Arg	Leu	Leu	Ser	Pro	Val	Arg	Val	Pro	Asn	Tyr	Asn	Met	Ile	Ile
1745						1750					1755			

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Met	Asp	Glu	Ala	His	Phe	Thr	Asp	Pro	Ser	Ser	Ile	Ala	Ala	Arg
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Gly	Tyr	Ile	Ser	Thr	Arg	Val	Gly	Met	Gly	Glu	Ala	Ala	Ala	Ile
	1775					1780					1785			
Phe	Met	Thr	Ala	Thr	Pro	Pro	Gly	Ser	Val	Glu	Ala	Phe	Pro	Gln
	1790					1795					1800			
Ser	Asn	Ala	Val	Ile	Gln	Asp	Glu	Glu	Arg	Asp	Ile	Pro	Glu	Arg
	1805					1810					1815			
Ser	Trp	Asn	Ser	Gly	Tyr	Glu	Trp	Ile	Thr	Asp	Phe	Pro	Gly	Lys
	1820					1825					1830			
Thr	Val	Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala
	1835					1840					1845			
Asn	Cys	Leu	Arg	Lys	Asn	Gly	Lys	Arg	Val	Ile	Gln	Leu	Ser	Arg
	1850					1855					1860			
Lys	Thr	Phe	Asp	Thr	Glu	Tyr	Gln	Lys	Thr	Lys	Asn	Asn	Asp	Trp
	1865					1870					1875			
Asp	Tyr	Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe
	1880					1885					1890			
Arg	Ala	Asp	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Leu	Lys	Pro	Val
	1895					1900					1905			
Ile	Leu	Lys	Asp	Gly	Pro	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Met
	1910					1915					1920			
Pro	Val	Thr	Val	Ala	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Ile	Gly
	1925					1930					1935			
Arg	Asn	His	Asn	Lys	Glu	Gly	Asp	Gln	Tyr	Ile	Tyr	Met	Gly	Gln
	1940					1945					1950			
Pro	Leu	Asn	Asn	Asp	Glu	Asp	His	Ala	His	Trp	Thr	Glu	Ala	Lys
	1955					1960					1965			
Met	Leu	Leu	Asp	Asn	Ile	Asn	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Ala
	1970					1975					1980			
Leu	Phe	Glu	Pro	Glu	Arg	Glu	Lys	Ser	Ala	Ala	Ile	Asp	Gly	Glu
	1985					1990					1995			
Tyr	Arg	Leu	Arg	Gly	Glu	Ala	Arg	Lys	Thr	Phe	Val	Glu	Leu	Met
	2000					2005					2010			

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Arg	Arg	Gly	Asp	Leu	Pro	Val	Trp	Leu	Ser	Tyr	Lys	Val	Ala	Ser
	2015					2020					2025			
Glu	Gly	Phe	Gln	Tyr	Ser	Asp	Arg	Arg	Trp	Cys	Phe	Asp	Gly	Glu
	2030					2035					2040			
Arg	Asn	Asn	Gln	Val	Leu	Glu	Glu	Asn	Met	Asp	Val	Glu	Ile	Trp
	2045					2050					2055			
Thr	Lys	Glu	Gly	Glu	Arg	Lys	Lys	Leu	Arg	Pro	Arg	Trp	Leu	Asp
	2060					2065					2070			
Ala	Arg	Thr	Tyr	Ser	Asp	Pro	Leu	Ala	Leu	Arg	Glu	Phe	Lys	Glu
	2075					2080					2085			
Phe	Ala	Ala	Gly	Arg	Arg	Ser	Val	Ser	Gly	Asp	Leu	Ile	Leu	Glu
	2090					2095					2100			
Ile	Gly	Lys	Leu	Pro	Gln	His	Leu	Thr	Gln	Arg	Ala	Gln	Asn	Ala
	2105					2110					2115			
Leu	Asp	Asn	Leu	Val	Met	Leu	His	Asn	Ser	Glu	Gln	Gly	Gly	Arg
	2120					2125					2130			
Ala	Tyr	Arg	His	Ala	Met	Glu	Glu	Leu	Pro	Asp	Thr	Ile	Glu	Thr
	2135					2140					2145			
Leu	Met	Leu	Leu	Ala	Leu	Ile	Ala	Val	Leu	Thr	Gly	Gly	Val	Thr
	2150					2155					2160			
Leu	Phe	Phe	Leu	Ser	Gly	Lys	Gly	Leu	Gly	Lys	Thr	Ser	Ile	Gly
	2165					2170					2175			
Leu	Leu	Cys	Val	Met	Ala	Ser	Ser	Val	Leu	Leu	Trp	Met	Ala	Ser
	2180					2185					2190			
Val	Glu	Pro	His	Trp	Ile	Ala	Ala	Ser	Ile	Ile	Leu	Glu	Phe	Phe
	2195					2200					2205			
Leu	Met	Val	Leu	Leu	Ile	Pro	Glu	Pro	Asp	Arg	Gln	Arg	Thr	Pro
	2210					2215					2220			
Gln	Asp	Asn	Gln	Leu	Ala	Tyr	Val	Val	Ile	Gly	Leu	Leu	Phe	Met
	2225					2230					2235			
Ile	Leu	Thr	Val	Ala	Ala	Asn	Glu	Met	Gly	Leu	Leu	Glu	Thr	Thr
	2240					2245					2250			
Lys	Lys	Asp	Leu	Gly	Ile	Gly	His	Val	Ala	Val	Glu	Asn	His	His
	2255					2260					2265			

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His	Ala	Ala	Met	Leu	Asp	Val	Asp	Leu	His	Pro	Ala	Ser	Ala	Trp
	2270					2275					2280			
Thr	Leu	Tyr	Ala	Val	Ala	Thr	Thr	Ile	Ile	Thr	Pro	Met	Met	Arg
	2285					2290					2295			
His	Thr	Ile	Glu	Asn	Thr	Thr	Ala	Asn	Ile	Ser	Leu	Thr	Ala	Ile
	2300					2305					2310			
Ala	Asn	Gln	Ala	Ala	Ile	Leu	Met	Gly	Leu	Asp	Lys	Gly	Trp	Pro
	2315					2320					2325			
Ile	Ser	Lys	Met	Asp	Ile	Gly	Val	Pro	Leu	Leu	Ala	Leu	Gly	Cys
	2330					2335					2340			
Tyr	Ser	Gln	Val	Asn	Pro	Leu	Thr	Leu	Thr	Ala	Ala	Val	Leu	Met
	2345					2350					2355			
Leu	Val	Ala	His	Tyr	Xaa	Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys
	2360					2365					2370			
Ala	Thr	Arg	Glu	Ala	Gln	Lys	Arg	Thr	Ala	Ala	Gly	Ile	Met	Lys
	2375					2380					2385			
Asn	Pro	Thr	Ile	Asp	Gly	Ile	Val	Ala	Ile	Asp	Leu	Asp	Pro	Val
	2390					2395					2400			
Val	Tyr	Asp	Ala	Lys	Phe	Glu	Lys	Gln	Leu	Gly	Gln	Ile	Met	Leu
	2405					2410					2415			
Leu	Ile	Leu	Cys	Thr	Ser	Gln	Ile	Leu	Leu	Met	Arg	Thr	Thr	Trp
	2420					2425					2430			
Ala	Leu	Cys	Glu	Ser	Ile	Thr	Leu	Ala	Thr	Gly	Pro	Leu	Thr	Thr
	2435					2440					2445			
Leu	Trp	Glu	Gly	Ser	Pro	Gly	Lys	Phe	Trp	Asn	Thr	Thr	Ile	Ala
	2450					2455					2460			
Val	Ser	Met	Ala	Asn	Ile	Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala
	2465					2470					2475			
Gly	Leu	Ala	Phe	Ser	Leu	Met	Lys	Ser	Leu	Gly	Gly	Gly	Arg	Arg
	2480					2485					2490			
Gly	Thr	Gly	Ala	Gln	Gly	Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Arg
	2495					2500					2505			
Gln	Leu	Asn	Gln	Leu	Ser	Lys	Ser	Glu	Phe	Asn	Thr	Tyr	Lys	Arg
	2510					2515					2520			

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Ser	Gly	Ile	Met	Glu	Val	Asp	Arg	Ser	Glu	Ala	Lys	Glu	Gly	Leu
	2525					2530					2535			
Lys	Arg	Gly	Glu	Thr	Thr	Lys	His	Ala	Val	Ser	Arg	Gly	Thr	Ala
	2540					2545					2550			
Lys	Leu	Arg	Trp	Phe	Val	Glu	Arg	Asn	Leu	Val	Lys	Pro	Glu	Gly
	2555					2560					2565			
Lys	Val	Ile	Asp	Leu	Gly	Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr
	2570					2575					2580			
Cys	Ala	Gly	Leu	Lys	Lys	Val	Thr	Glu	Val	Lys	Gly	Tyr	Thr	Lys
	2585					2590					2595			
Gly	Gly	Pro	Gly	His	Glu	Glu	Pro	Ile	Pro	Met	Ala	Thr	Tyr	Gly
	2600					2605					2610			
Trp	Asn	Leu	Val	Lys	Leu	His	Ser	Gly	Lys	Asp	Val	Phe	Phe	Ile
	2615					2620					2625			
Pro	Pro	Glu	Lys	Cys	Asp	Thr	Leu	Leu	Cys	Asp	Ile	Gly	Glu	Ser
	2630					2635					2640			
Ser	Pro	Asn	Pro	Thr	Ile	Glu	Glu	Gly	Arg	Thr	Leu	Arg	Val	Leu
	2645					2650					2655			
Lys	Met	Val	Glu	Pro	Trp	Leu	Arg	Gly	Asn	Gln	Phe	Cys	Ile	Lys
	2660					2665					2670			
Ile	Leu	Asn	Pro	Tyr	Met	Pro	Ser	Val	Val	Glu	Thr	Leu	Glu	Gln
	2675					2680					2685			
Met	Gln	Arg	Lys	His	Gly	Gly	Met	Leu	Val	Arg	Asn	Pro	Leu	Ser
	2690					2695					2700			
Arg	Asn	Ser	Thr	His	Glu	Met	Tyr	Trp	Val	Ser	Cys	Gly	Thr	Gly
	2705					2710					2715			
Asn	Ile	Val	Ser	Ala	Val	Asn	Met	Thr	Ser	Arg	Met	Leu	Leu	Asn
	2720					2725					2730			
Arg	Phe	Thr	Met	Ala	His	Arg	Lys	Pro	Thr	Tyr	Glu	Arg	Asp	Val
	2735					2740					2745			
Asp	Leu	Gly	Ala	Gly	Thr	Arg	His	Val	Ala	Val	Glu	Pro	Glu	Val
	2750					2755					2760			
Ala	Asn	Leu	Asp	Ile	Ile	Gly	Gln	Arg	Ile	Glu	Asn	Ile	Lys	His
	2765					2770					2775			

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Glu	His	Lys	Ser	Thr	Trp	His	Tyr	Asp	Glu	Asp	Asn	Pro	Tyr	Lys
	2780					2785					2790			
Thr	Trp	Ala	Tyr	His	Gly	Ser	Tyr	Glu	Val	Lys	Pro	Ser	Gly	Ser
	2795					2800					2805			
Ala	Ser	Ser	Met	Val	Asn	Gly	Val	Val	Lys	Leu	Leu	Thr	Lys	Pro
	2810					2815					2820			
Trp	Asp	Val	Ile	Pro	Met	Val	Thr	Gln	Ile	Ala	Met	Thr	Asp	Thr
	2825					2830					2835			
Thr	Pro	Phe	Gly	Gln	Gln	Arg	Val	Phe	Lys	Glu	Lys	Val	Asp	Thr
	2840					2845					2850			
Arg	Thr	Pro	Lys	Ala	Lys	Arg	Gly	Thr	Ala	Gln	Ile	Met	Glu	Val
	2855					2860					2865			
Thr	Ala	Arg	Trp	Leu	Trp	Gly	Phe	Leu	Ser	Arg	Asn	Lys	Lys	Pro
	2870					2875					2880			
Arg	Ile	Cys	Thr	Arg	Glu	Glu	Phe	Thr	Arg	Lys	Val	Arg	Ser	Asn
	2885					2890					2895			
Ala	Ala	Ile	Gly	Ala	Val	Phe	Val	Asp	Glu	Asn	Gln	Trp	Asn	Ser
	2900					2905					2910			
Ala	Lys	Glu	Ala	Val	Glu	Asp	Asp	Arg	Phe	Trp	Asp	Leu	Val	His
	2915					2920					2925			
Arg	Glu	Arg	Glu	Leu	His	Lys	Gln	Gly	Lys	Cys	Ala	Thr	Cys	Val
	2930					2935					2940			
Tyr	Asn	Met	Met	Gly	Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly
	2945					2950					2955			
Lys	Ala	Lys	Gly	Ser	Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala
	2960					2965					2970			
Arg	Phe	Leu	Glu	Phe	Glu	Ala	Leu	Gly	Phe	Met	Asn	Glu	Asp	His
	2975					2980					2985			
Trp	Phe	Ser	Arg	Glu	Asn	Ser	Leu	Ser	Gly	Val	Glu	Gly	Glu	Gly
	2990					2995					3000			
Leu	His	Lys	Leu	Gly	Tyr	Ile	Leu	Arg	Asp	Ile	Ser	Lys	Ile	Pro
	3005					3010					3015			
Gly	Gly	Asn	Met	Tyr	Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg
	3020					3025					3030			

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Ile	Thr	Glu	Asp	Asp	Leu	Gln	Asn	Glu	Ala	Lys	Ile	Thr	Asp	Ile
	3035					3040					3045			
Met	Glu	Pro	Glu	His	Ala	Leu	Leu	Ala	Lys	Ser	Ile	Phe	Lys	Leu
	3050					3055					3060			
Thr	Tyr	Gln	Asn	Lys	Val	Val	Arg	Val	Gln	Arg	Pro	Ala	Lys	Asn
	3065					3070					3075			
Gly	Thr	Val	Met	Asp	Val	Ile	Ser	Arg	Arg	Asp	Gln	Arg	Gly	Ser
	3080					3085					3090			
Gly	Gln	Val	Gly	Thr	Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu
	3095					3100					3105			
Ala	Gln	Leu	Ile	Arg	Gln	Met	Glu	Ser	Glu	Gly	Ile	Phe	Ser	Pro
	3110					3115					3120			
Asn	Glu	Leu	Glu	Thr	Pro	Asn	Leu	Ala	Glu	Arg	Val	Leu	Asp	Trp
	3125					3130					3135			
Leu	Glu	Lys	Tyr	Gly	Val	Glu	Arg	Leu	Lys	Arg	Met	Ala	Ile	Ser
	3140					3145					3150			
Gly	Asp	Asp	Cys	Val	Val	Lys	Pro	Ile	Asp	Asp	Arg	Phe	Ala	Thr
	3155					3160					3165			
Ala	Leu	Thr	Ala	Leu	Asn	Asp	Met	Gly	Lys	Val	Arg	Lys	Asp	Ile
	3170					3175					3180			
Pro	Gln	Trp	Glu	Pro	Ser	Lys	Gly	Trp	Asn	Asp	Trp	Gln	Gln	Val
	3185					3190					3195			
Pro	Phe	Cys	Ser	His	His	Phe	His	Gln	Leu	Ile	Met	Lys	Asp	Gly
	3200					3205					3210			
Arg	Glu	Ile	Val	Val	Pro	Cys	Arg	Asn	Gln	Asp	Glu	Leu	Val	Gly
	3215					3220					3225			
Arg	Ala	Arg	Val	Ser	Gln	Gly	Ala	Gly	Trp	Ser	Leu	Arg	Glu	Thr
	3230					3235					3240			
Ala	Cys	Leu	Gly	Lys	Ser	Tyr	Ala	Gln	Met	Trp	Gln	Leu	Met	Tyr
	3245					3250					3255			
Phe	His	Arg	Arg	Asp	Leu	Arg	Leu	Ala	Ala	Asn	Ala	Ile	Cys	Ser
	3260					3265					3270			
Ala	Val	Pro	Val	Asp	Trp	Val	Pro	Thr	Ser	Arg	Thr	Thr	Trp	Ser
	3275					3280					3285			

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Ile His Ala His His Gln Trp Met Thr Thr Glu Asp Met Leu Ser
3290 3295 3300

Val Trp Asn Arg Val Trp Ile Glu Glu Asn Pro Trp Met Glu Asp
3305 3310 3315

Lys Thr Arg Ile Ser Ser Trp Glu Asp Val Pro Tyr Leu Gly Lys
3320 3325 3330

Arg Glu Asp Gln Trp Cys Gly Ser Leu Ile Gly Leu Thr Ala Arg
3335 3340 3345

Ala Thr Trp Ala Thr Asn Ile Gln Val Ala Ile Asn Gln Val Arg
3350 3355 3360

Arg Leu Ile Gly Asn Glu Asn Tyr Ser Asp Tyr Met Thr Ser Met
3365 3370 3375

Lys Arg Phe Lys Asn Glu Ser Glu Pro Glu Gly Ala Leu Trp
3380 3385 3390

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<211> 3391
<212> PRT
<213> Dengue virus type 2

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<221> VARIANT
<222> (363)..(363)
<223> Xaa stands for Lys or Glu

<220>
<221> VARIANT
<222> (506)..(506)
<223> Xaa stands for Lys or Glu

<220>
<221> VARIANT
<222> (2190)..(2190)
<223> Xaa stands for Tyr or Cys

<220>
<221> VARIANT
<222> (2347)..(2347)
<223> Xaa stands for Leu or Pro

<220>
<221> VARIANT
<222> (2351)..(2351)
<223> Xaa stands for Thr or Ile

<220>
<221> VARIANT
<222> (2828)..(2828)
<223> Xaa stands for Thr or Met

<220>
<221> VARIANT

<222> (2894)..(2894)

<223> Xaa stands for Val or Gly

<400> 14

Met Asn Asn Gln Arg Lys Lys Ala Lys Asn Thr Pro Phe Asn Met Leu
 1 5 10 15

Lys Arg Glu Arg Asn Arg Val Ser Thr Val Gln Gln Leu Thr Lys Arg
 20 25 30

Phe Ser Leu Gly Met Leu Gln Gly Arg Gly Pro Leu Lys Leu Phe Met
 35 40 45

Ala Leu Val Ala Phe Leu Arg Phe Leu Thr Ile Pro Pro Thr Ala Gly
 50 55 60

Ile Leu Lys Arg Trp Gly Thr Ile Lys Lys Ser Lys Ala Ile Asn Val
 65 70 75 80

Leu Arg Gly Phe Arg Lys Glu Ile Gly Arg Met Leu Asn Ile Leu Asn
 85 90 95

Arg Arg Arg Arg Ser Ala Gly Met Ile Ile Met Leu Ile Pro Thr Val
 100 105 110

Met Ala Phe His Leu Thr Thr Arg Asn Gly Glu Pro His Met Ile Val
 115 120 125

Gly Ile Gln Glu Lys Gly Lys Ser Leu Leu Phe Lys Thr Glu Asn Gly
 130 135 140

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

Asp Thr Ile Thr Tyr Lys Cys Pro Leu Leu Arg Gln Asn Glu Pro Glu
 165 170 175

Asp Ile Asp Cys Trp Cys Asn Ser Thr Ser Thr Trp Val Thr Tyr Gly
 180 185 190

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

Leu Val Pro His Val Gly Met Gly Leu Glu Thr Arg Thr Glu Thr Trp
 210 215 220

Met Ser Ser Glu Gly Ala Trp Lys His Ala Gln Arg Ile Glu Thr Trp
 225 230 235 240

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

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Thr Ile Gly Thr Thr His Phe Gln Arg Val Leu Ile Phe Ile Leu Leu
260 265 270

Thr Ala Val Ala Pro Ser Met Thr Met Arg Cys Ile Gly Ile Ser Asn
275 280 285

Arg Asp Phe Val Glu Gly Val Ser Gly Gly Ser Trp Val Asp Ile Val
290 295 300

Leu Glu His Gly Ser Cys Val Thr Thr Met Ala Lys Asn Lys Pro Thr
305 310 315 320

Leu Asp Phe Glu Leu Ile Lys Thr Glu Ala Lys Gln Pro Ala Thr Leu
325 330 335

Arg Lys Tyr Cys Ile Glu Ala Lys Leu Thr Asn Thr Thr Thr Glu Ser
340 345 350

Arg Cys Pro Thr Gln Gly Glu Pro Ser Leu Xaa Glu Glu Gln Asp Lys
355 360 365

Arg Phe Val Cys Lys His Ser Met Val Asp Arg Gly Trp Gly Asn Gly
370 375 380

Cys Gly Leu Phe Gly Lys Gly Gly Ile Val Thr Cys Ala Met Phe Lys
385 390 395 400

Cys Lys Lys Asn Met Glu Gly Lys Ile Val Gln Pro Glu Asn Leu Glu
405 410 415

Tyr Thr Ile Val Val Thr Pro His Ser Gly Glu Glu His Ala Val Gly
420 425 430

Asn Asp Thr Gly Lys His Gly Lys Glu Ile Lys Val Thr Pro Gln Ser
435 440 445

Ser Ile Thr Glu Ala Glu Leu Thr Gly Tyr Gly Thr Val Thr Met Glu
450 455 460

Cys Ser Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Val Leu Leu Gln
465 470 475 480

Met Glu Asn Lys Ala Trp Leu Val His Arg Gln Trp Phe Leu Asp Leu
485 490 495

Pro Leu Pro Trp Leu Pro Gly Ala Asp Xaa Gln Glu Ser Asn Trp Ile
500 505 510

Gln Lys Glu Thr Leu Val Thr Phe Lys Asn Pro His Ala Lys Lys Gln
515 520 525

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Asp Val Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu
 530 535 540
 Thr Gly Ala Thr Glu Ile Gln Met Ser Ser Gly Asn Leu Leu Phe Thr
 545 550 555 560
 Gly His Leu Lys Cys Arg Leu Arg Met Asp Lys Leu Gln Leu Lys Gly
 565 570 575
 Met Ser Tyr Ser Met Cys Thr Gly Lys Phe Lys Val Val Lys Glu Ile
 580 585 590
 Ala Glu Thr Gln His Gly Thr Ile Val Ile Arg Val Gln Tyr Glu Gly
 595 600 605
 Asp Gly Ser Pro Cys Lys Ile Pro Phe Glu Ile Met Asp Leu Glu Lys
 610 615 620
 Arg Tyr Val Leu Gly Arg Leu Ile Thr Val Asn Pro Ile Val Thr Glu
 625 630 635 640
 Lys Asp Ser Pro Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Asp Ser
 645 650 655
 Tyr Ile Ile Ile Gly Val Glu Pro Gly Gln Leu Lys Leu Asn Trp Phe
 660 665 670
 Lys Lys Gly Ser Ser Ile Gly Gln Met Phe Glu Thr Thr Met Arg Gly
 675 680 685
 Ala Lys Arg Met Ala Ile Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser
 690 695 700
 Leu Gly Gly Val Phe Thr Ser Ile Gly Lys Ala Leu His Gln Val Phe
 705 710 715 720
 Gly Ala Ile Tyr Gly Ala Ala Phe Ser Gly Val Ser Trp Thr Met Lys
 725 730 735
 Ile Leu Ile Gly Val Ile Ile Thr Trp Ile Gly Met Asn Ser Arg Ser
 740 745 750
 Thr Ser Leu Ser Val Ser Leu Val Leu Val Gly Ile Val Thr Leu Tyr
 755 760 765
 Leu Gly Val Met Val Gln Ala Asp Ser Gly Cys Val Val Ser Trp Lys
 770 775 780
 Asn Lys Glu Leu Lys Cys Gly Ser Gly Ile Phe Ile Thr Asp Asn Val
 785 790 795 800

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His Thr Trp Thr Glu Gln Tyr Lys Phe Gln Pro Glu Ser Pro Ser Lys
805 810 815

Leu Ala Ser Ala Ile Gln Lys Ala Gln Glu Glu Gly Ile Cys Gly Ile
820 825 830

Arg Ser Val Thr Arg Leu Glu Asn Leu Met Trp Lys Gln Ile Thr Pro
835 840 845

Glu Leu Asn His Ile Leu Ala Glu Asn Glu Val Lys Leu Thr Ile Met
850 855 860

Thr Gly Asp Ile Lys Gly Ile Met Gln Ala Gly Lys Arg Ser Leu Arg
865 870 875 880

Pro Gln Pro Thr Glu Leu Lys Tyr Ser Trp Lys Thr Trp Gly Lys Ala
885 890 895

Lys Met Leu Ser Thr Glu Ser Tyr Asn Gln Thr Phe Leu Ile Asp Gly
900 905 910

Pro Glu Thr Ala Glu Cys Pro Asn Thr Asn Arg Ala Trp Asn Ser Leu
915 920 925

Glu Val Glu Asp Tyr Gly Phe Gly Val Phe Thr Thr Asn Ile Trp Leu
930 935 940

Lys Leu Lys Glu Lys Gln Asp Ala Phe Cys Asp Ser Lys Leu Met Ser
945 950 955 960

Ala Ala Ile Lys Asp Asn Arg Ala Val His Ala Asp Met Gly Tyr Trp
965 970 975

Ile Glu Ser Ala Leu Asn Asp Thr Trp Lys Ile Glu Lys Ala Ser Phe
980 985 990

Ile Glu Val Lys Asn Cys His Trp Pro Lys Ser His Thr Leu Trp Ser
995 1000 1005

Asn Gly Val Leu Glu Ser Glu Met Ile Ile Pro Lys Asn Leu Ala
1010 1015 1020

Gly Pro Val Ser Gln His Asn Tyr Arg Pro Gly Tyr His Thr Gln
1025 1030 1035

Val Ala Gly Pro Trp His Leu Gly Lys Leu Glu Met Asp Phe Asp
1040 1045 1050

Phe Cys Asp Gly Thr Thr Val Ile Val Thr Glu Asp Cys Gly Asn
1055 1060 1065

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Arg	Gly 1070	Pro	Ser	Leu	Arg	Thr 1075	Thr	Thr	Ala	Ser	Gly 1080	Lys	Leu	Ile
Thr	Glu 1085	Trp	Cys	Cys	Arg	Ser 1090	Cys	Thr	Leu	Pro	Pro 1095	Leu	Arg	Tyr
Arg	Gly 1100	Glu	Asn	Gly	Cys	Trp 1105	Tyr	Gly	Met	Glu	Ile 1110	Arg	Pro	Leu
Lys	Glu 1115	Lys	Glu	Glu	Asn	Leu 1120	Val	Asn	Ser	Leu	Val 1125	Thr	Ala	Gly
His	Gly 1130	Gln	Val	Asp	Asn	Phe 1135	Ser	Leu	Gly	Val	Leu 1140	Gly	Met	Ala
Leu	Phe 1145	Leu	Glu	Glu	Met	Leu 1150	Arg	Thr	Arg	Val	Gly 1155	Thr	Lys	His
Ala	Ile 1160	Leu	Leu	Val	Ala	Val 1165	Ser	Phe	Val	Thr	Leu 1170	Ile	Thr	Gly
Asn	Met 1175	Ser	Phe	Lys	Asp	Leu 1180	Gly	Arg	Val	Val	Val 1185	Met	Val	Gly
Ala	Thr 1190	Met	Ala	Asp	Asp	Ile 1195	Gly	Met	Gly	Val	Thr 1200	Tyr	Leu	Ala
Leu	Leu 1205	Ala	Ala	Phe	Lys	Val 1210	Arg	Pro	Thr	Phe	Ala 1215	Ala	Gly	Leu
Leu	Leu 1220	Arg	Lys	Leu	Thr	Ser 1225	Lys	Glu	Leu	Met	Met 1230	Thr	Thr	Ile
Gly	Ile 1235	Val	Leu	Leu	Ser	Gln 1240	Ser	Thr	Ile	Pro	Glu 1245	Thr	Val	Leu
Glu	Leu 1250	Thr	Asp	Ala	Leu	Ala 1255	Leu	Gly	Met	Met	Val 1260	Leu	Lys	Ile
Val	Arg 1265	Asn	Met	Glu	Lys	Tyr 1270	Gln	Leu	Ala	Val	Thr 1275	Ile	Met	Ala
Ile	Leu 1280	Cys	Val	Pro	Asn	Ala 1285	Val	Ile	Leu	Gln	Asn 1290	Ala	Trp	Lys
Val	Ser 1295	Cys	Thr	Ile	Leu	Ala 1300	Val	Val	Ser	Val	Ser 1305	Pro	Leu	Phe
Leu	Thr 1310	Ser	Ser	Gln	Gln	Lys 1315	Thr	Asp	Trp	Ile	Pro 1320	Leu	Ala	Leu

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Thr	Ile	Lys	Gly	Leu	Asn	Pro	Thr	Ala	Ile	Phe	Leu	Thr	Thr	Leu
	1325					1330					1335			
Ser	Arg	Thr	Asn	Lys	Lys	Arg	Ser	Trp	Pro	Leu	Asn	Glu	Ala	Ile
	1340					1345					1350			
Met	Ala	Val	Gly	Met	Val	Ser	Ile	Leu	Ala	Ser	Ser	Leu	Leu	Lys
	1355					1360					1365			
Asn	Asp	Ile	Pro	Met	Thr	Gly	Pro	Leu	Val	Ala	Gly	Gly	Leu	Leu
	1370					1375					1380			
Thr	Val	Cys	Tyr	Val	Leu	Thr	Gly	Arg	Ser	Ala	Asp	Leu	Glu	Leu
	1385					1390					1395			
Glu	Arg	Ala	Thr	Asp	Val	Lys	Trp	Glu	Asp	Gln	Ala	Glu	Ile	Ser
	1400					1405					1410			
Gly	Ser	Ser	Pro	Ile	Leu	Ser	Ile	Thr	Ile	Ser	Glu	Asp	Gly	Ser
	1415					1420					1425			
Met	Ser	Ile	Lys	Asn	Glu	Glu	Glu	Glu	Gln	Thr	Leu	Thr	Ile	Leu
	1430					1435					1440			
Ile	Arg	Thr	Gly	Leu	Leu	Val	Ile	Ser	Gly	Leu	Phe	Pro	Ile	Ser
	1445					1450					1455			
Ile	Pro	Val	Thr	Ala	Ala	Ala	Trp	Tyr	Leu	Trp	Glu	Val	Lys	Lys
	1460					1465					1470			
Gln	Arg	Ala	Gly	Val	Leu	Trp	Asp	Val	Pro	Ser	Pro	Pro	Pro	Met
	1475					1480					1485			
Gly	Lys	Ala	Glu	Leu	Glu	Asp	Gly	Ala	Tyr	Arg	Ile	Lys	Gln	Lys
	1490					1495					1500			
Gly	Ile	Leu	Gly	Tyr	Ser	Gln	Ile	Gly	Ala	Gly	Val	Tyr	Lys	Glu
	1505					1510					1515			
Gly	Thr	Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ala	Val	Leu
	1520					1525					1530			
Met	His	Lys	Gly	Lys	Arg	Ile	Glu	Pro	Ser	Trp	Ala	Asp	Val	Lys
	1535					1540					1545			
Lys	Asp	Leu	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Lys	Leu	Glu	Gly	Glu
	1550					1555					1560			
Trp	Lys	Glu	Gly	Glu	Glu	Val	Gln	Val	Leu	Ala	Leu	Glu	Pro	Gly
	1565					1570					1575			

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Lys	Asn	Pro	Arg	Ala	Val	Gln	Thr	Lys	Pro	Gly	Leu	Phe	Lys	Thr
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Asn	Thr	Gly	Thr	Ile	Gly	Ala	Val	Ser	Leu	Asp	Phe	Ser	Pro	Gly
	1595					1600					1605			
Thr	Ser	Gly	Ser	Pro	Ile	Ile	Asp	Lys	Lys	Gly	Lys	Val	Val	Gly
	1610					1615					1620			
Leu	Tyr	Gly	Asn	Gly	Val	Val	Thr	Arg	Ser	Gly	Ala	Tyr	Val	Ser
	1625					1630					1635			
Ala	Ile	Ala	Gln	Thr	Glu	Lys	Ser	Ile	Glu	Asp	Asn	Pro	Glu	Ile
	1640					1645					1650			
Lys	Asp	Asp	Ile	Phe	Arg	Lys	Arg	Arg	Leu	Thr	Ile	Met	Asp	Leu
	1655					1660					1665			
His	Pro	Gly	Ala	Gly	Lys	Thr	Lys	Arg	Tyr	Leu	Pro	Ala	Ile	Val
	1670					1675					1680			
Arg	Glu	Ala	Ile	Lys	Arg	Gly	Leu	Arg	Thr	Leu	Ile	Leu	Ala	Pro
	1685					1690					1695			
Thr	Arg	Val	Val	Ala	Ala	Glu	Met	Glu	Glu	Ala	Leu	Arg	Gly	Leu
	1700					1705					1710			
Pro	Ile	Arg	Tyr	Gln	Thr	Pro	Ala	Ile	Arg	Ala	Glu	His	Thr	Gly
	1715					1720					1725			
Arg	Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Met	Arg
	1730					1735					1740			
Leu	Leu	Ser	Pro	Val	Arg	Val	Pro	Asn	Tyr	Asn	Leu	Ile	Ile	Met
	1745					1750					1755			
Asp	Glu	Ala	His	Phe	Thr	Asp	Pro	Ala	Ser	Ile	Ala	Ala	Arg	Gly
	1760					1765					1770			
Tyr	Ile	Ser	Thr	Arg	Val	Glu	Met	Gly	Glu	Ala	Ala	Gly	Ile	Phe
	1775					1780					1785			
Met	Thr	Ala	Thr	Pro	Pro	Gly	Ser	Arg	Asp	Pro	Phe	Pro	Gln	Ser
	1790					1795					1800			
Asn	Ala	Pro	Ile	Ile	Asp	Glu	Glu	Arg	Glu	Ile	Pro	Glu	Arg	Ser
	1805					1810					1815			
Trp	Asn	Ser	Gly	His	Glu	Trp	Val	Thr	Asp	Phe	Lys	Gly	Lys	Thr
	1820					1825					1830			

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Val	Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala	Ala
	1835					1840					1845			
Cys	Leu	Arg	Lys	Asn	Gly	Lys	Lys	Val	Ile	Gln	Leu	Ser	Arg	Lys
	1850					1855					1860			
Thr	Phe	Asp	Ser	Glu	Tyr	Val	Lys	Thr	Arg	Thr	Asn	Asp	Trp	Asp
	1865					1870					1875			
Phe	Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe	Lys
	1880					1885					1890			
Ala	Glu	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Met	Lys	Pro	Val	Ile
	1895					1900					1905			
Leu	Thr	Asp	Gly	Glu	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Met	Pro
	1910					1915					1920			
Val	Thr	His	Ser	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Ile	Gly	Arg
	1925					1930					1935			
Asn	Pro	Lys	Asn	Glu	Asn	Asp	Gln	Tyr	Ile	Tyr	Met	Gly	Glu	Pro
	1940					1945					1950			
Leu	Glu	Asn	Asp	Glu	Asp	Cys	Ala	His	Trp	Lys	Glu	Ala	Lys	Met
	1955					1960					1965			
Leu	Leu	Asp	Asn	Ile	Asn	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Ser	Met
	1970					1975					1980			
Phe	Glu	Pro	Glu	Arg	Glu	Lys	Val	Asp	Ala	Ile	Asp	Gly	Glu	Tyr
	1985					1990					1995			
Arg	Leu	Arg	Gly	Glu	Ala	Arg	Lys	Thr	Phe	Val	Asp	Leu	Met	Arg
	2000					2005					2010			
Arg	Gly	Asp	Leu	Pro	Val	Trp	Leu	Ala	Tyr	Lys	Val	Ala	Ala	Glu
	2015					2020					2025			
Gly	Ile	Asn	Tyr	Ala	Asp	Arg	Arg	Trp	Cys	Phe	Asp	Gly	Ile	Lys
	2030					2035					2040			
Asn	Asn	Gln	Ile	Leu	Glu	Glu	Asn	Val	Glu	Val	Glu	Ile	Trp	Thr
	2045					2050					2055			
Lys	Glu	Gly	Glu	Arg	Lys	Lys	Leu	Lys	Pro	Arg	Trp	Leu	Asp	Ala
	2060					2065					2070			
Arg	Ile	Tyr	Ser	Asp	Pro	Leu	Ala	Leu	Lys	Glu	Phe	Lys	Glu	Phe
	2075					2080					2085			

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Ala	Ala	Gly	Arg	Lys	Ser	Leu	Thr	Leu	Asn	Leu	Ile	Thr	Glu	Met
	2090					2095					2100			
Gly	Arg	Leu	Pro	Thr	Phe	Met	Thr	Gln	Lys	Thr	Arg	Asp	Ala	Leu
	2105					2110					2115			
Asp	Asn	Leu	Ala	Val	Leu	His	Thr	Ala	Glu	Ala	Gly	Gly	Arg	Ala
	2120					2125					2130			
Tyr	Asn	His	Ala	Leu	Ser	Glu	Leu	Pro	Glu	Thr	Leu	Glu	Thr	Leu
	2135					2140					2145			
Leu	Leu	Leu	Thr	Leu	Leu	Ala	Thr	Val	Thr	Gly	Gly	Ile	Phe	Leu
	2150					2155					2160			
Phe	Leu	Met	Ser	Gly	Arg	Gly	Ile	Gly	Lys	Met	Thr	Leu	Gly	Met
	2165					2170					2175			
Cys	Cys	Ile	Ile	Thr	Ala	Ser	Ile	Leu	Leu	Trp	Xaa	Ala	Gln	Ile
	2180					2185					2190			
Gln	Pro	His	Trp	Ile	Ala	Ala	Ser	Ile	Ile	Leu	Glu	Phe	Phe	Leu
	2195					2200					2205			
Ile	Val	Leu	Leu	Ile	Pro	Glu	Pro	Glu	Lys	Gln	Arg	Thr	Pro	Gln
	2210					2215					2220			
Asp	Asn	Gln	Leu	Thr	Tyr	Val	Val	Ile	Ala	Ile	Leu	Thr	Val	Val
	2225					2230					2235			
Ala	Ala	Thr	Met	Ala	Asn	Glu	Met	Gly	Phe	Leu	Glu	Lys	Thr	Lys
	2240					2245					2250			
Lys	Asp	Leu	Gly	Leu	Gly	Ser	Ile	Ala	Thr	Gln	Gln	Pro	Glu	Ser
	2255					2260					2265			
Asn	Ile	Leu	Asp	Ile	Asp	Leu	Arg	Pro	Ala	Ser	Ala	Trp	Thr	Leu
	2270					2275					2280			
Tyr	Ala	Val	Ala	Thr	Thr	Phe	Val	Thr	Pro	Met	Leu	Arg	His	Ser
	2285					2290					2295			
Ile	Glu	Asn	Ser	Ser	Val	Asn	Val	Ser	Leu	Thr	Ala	Ile	Ala	Asn
	2300					2305					2310			
Gln	Ala	Thr	Val	Leu	Met	Gly	Leu	Gly	Lys	Gly	Trp	Pro	Leu	Ser
	2315					2320					2325			
Lys	Met	Asp	Ile	Gly	Val	Pro	Leu	Leu	Ala	Ile	Gly	Cys	Tyr	Ser
	2330					2335					2340			

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Gln	Val	Asn	Xaa	Ile	Thr	Leu	Xaa	Ala	Ala	Leu	Leu	Leu	Val	
	2345					2350					2355			
Ala	His	Tyr	Ala	Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys	Ala	Thr
	2360					2365					2370			
Arg	Glu	Ala	Gln	Lys	Arg	Ala	Ala	Ala	Gly	Ile	Met	Lys	Asn	Pro
	2375					2380					2385			
Thr	Val	Asp	Gly	Ile	Thr	Val	Ile	Asp	Leu	Asp	Pro	Ile	Pro	Tyr
	2390					2395					2400			
Asp	Pro	Lys	Phe	Glu	Lys	Gln	Leu	Gly	Gln	Val	Met	Leu	Leu	Ile
	2405					2410					2415			
Leu	Cys	Val	Thr	Gln	Val	Leu	Met	Met	Arg	Thr	Thr	Trp	Ala	Leu
	2420					2425					2430			
Cys	Glu	Ala	Leu	Thr	Leu	Ala	Thr	Gly	Pro	Ile	Ser	Thr	Leu	Trp
	2435					2440					2445			
Glu	Gly	Asn	Pro	Gly	Arg	Phe	Trp	Asn	Thr	Thr	Ile	Ala	Val	Ser
	2450					2455					2460			
Met	Ala	Asn	Ile	Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala	Gly	Leu
	2465					2470					2475			
Leu	Phe	Ser	Ile	Met	Lys	Asn	Thr	Thr	Asn	Thr	Arg	Arg	Gly	Thr
	2480					2485					2490			
Gly	Asn	Ile	Gly	Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Ser	Arg	Leu
	2495					2500					2505			
Asn	Ala	Leu	Gly	Lys	Ser	Glu	Phe	Gln	Ile	Tyr	Lys	Lys	Ser	Gly
	2510					2515					2520			
Ile	Gln	Glu	Val	Asp	Arg	Thr	Leu	Ala	Lys	Glu	Gly	Ile	Lys	Arg
	2525					2530					2535			
Gly	Glu	Thr	Asp	His	His	Ala	Val	Ser	Arg	Gly	Ser	Ala	Lys	Leu
	2540					2545					2550			
Arg	Trp	Phe	Val	Glu	Arg	Asn	Met	Val	Thr	Pro	Glu	Gly	Lys	Val
	2555					2560					2565			
Val	Asp	Leu	Gly	Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr	Cys	Gly
	2570					2575					2580			
Gly	Leu	Lys	Asn	Val	Arg	Glu	Val	Lys	Gly	Leu	Thr	Lys	Gly	Gly
	2585					2590					2595			

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Pro	Gly 2600	His	Glu	Glu	Pro	Ile 2605	Pro	Met	Ser	Thr	Tyr 2610	Gly	Trp	Asn
Leu	Val 2615	Arg	Leu	Gln	Ser	Gly 2620	Val	Asp	Val	Phe	Phe 2625	Ile	Pro	Pro
Glu	Lys 2630	Cys	Asp	Thr	Leu	Leu 2635	Cys	Asp	Ile	Gly	Glu 2640	Ser	Ser	Pro
Asn	Pro 2645	Thr	Val	Glu	Ala	Gly 2650	Arg	Thr	Leu	Arg	Val 2655	Leu	Asn	Leu
Val	Glu 2660	Asn	Trp	Leu	Asn	Asn 2665	Asn	Thr	Gln	Phe	Cys 2670	Ile	Lys	Val
Leu	Asn 2675	Pro	Tyr	Met	Pro	Ser 2680	Val	Ile	Glu	Lys	Met 2685	Glu	Ala	Leu
Gln	Arg 2690	Lys	Tyr	Gly	Gly	Ala 2695	Leu	Val	Arg	Asn	Pro 2700	Leu	Ser	Arg
Asn	Ser 2705	Thr	His	Glu	Met	Tyr 2710	Trp	Val	Ser	Asn	Ala 2715	Ser	Gly	Asn
Ile	Val 2720	Ser	Ser	Val	Asn	Met 2725	Ile	Ser	Arg	Met	Leu 2730	Ile	Asn	Arg
Phe	Thr 2735	Met	Arg	His	Lys	Lys 2740	Ala	Thr	Tyr	Glu	Pro 2745	Asp	Val	Asp
Leu	Gly 2750	Ser	Gly	Thr	Arg	Asn 2755	Ile	Gly	Val	Glu	Ser 2760	Glu	Ile	Pro
Asn	Leu 2765	Asp	Ile	Ile	Gly	Lys 2770	Arg	Ile	Glu	Lys	Ile 2775	Lys	Gln	Glu
His	Glu 2780	Thr	Ser	Trp	His	Tyr 2785	Asp	Gln	Asp	His	Pro 2790	Tyr	Lys	Thr
Trp	Ala 2795	Tyr	His	Gly	Ser	Tyr 2800	Glu	Thr	Lys	Gln	Thr 2805	Gly	Ser	Ala
Ser	Ser 2810	Met	Val	Asn	Gly	Val 2815	Val	Arg	Leu	Leu	Thr 2820	Lys	Pro	Trp
Asp	Val 2825	Leu	Pro	Xaa	Val	Thr 2830	Gln	Met	Ala	Met	Thr 2835	Asp	Thr	Thr
Pro	Phe 2840	Gly	Gln	Gln	Arg	Val 2845	Phe	Lys	Glu	Lys	Val 2850	Asp	Thr	Arg

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Thr	Gln	Glu	Pro	Lys	Glu	Gly	Thr	Lys	Lys	Leu	Met	Arg	Ile	Thr
	2855					2860					2865			
Ala	Glu	Trp	Leu	Trp	Lys	Glu	Leu	Gly	Lys	Lys	Lys	Thr	Pro	Arg
	2870					2875					2880			
Met	Cys	Thr	Arg	Glu	Glu	Phe	Thr	Arg	Lys	Xaa	Arg	Ser	Asn	Ala
	2885					2890					2895			
Ala	Leu	Gly	Ala	Ile	Phe	Thr	Asp	Glu	Asn	Lys	Trp	Lys	Ser	Ala
	2900					2905					2910			
Arg	Glu	Ala	Val	Glu	Asp	Ser	Arg	Phe	Trp	Glu	Leu	Val	Asp	Lys
	2915					2920					2925			
Glu	Arg	Asn	Leu	His	Leu	Glu	Gly	Lys	Cys	Glu	Thr	Cys	Val	Tyr
	2930					2935					2940			
Asn	Met	Met	Gly	Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly	Lys
	2945					2950					2955			
Ala	Lys	Gly	Ser	Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala	Arg
	2960					2965					2970			
Phe	Leu	Glu	Phe	Glu	Ala	Leu	Gly	Phe	Leu	Asn	Glu	Asp	His	Trp
	2975					2980					2985			
Phe	Ser	Arg	Glu	Asn	Ser	Leu	Ser	Gly	Val	Glu	Gly	Glu	Gly	Leu
	2990					2995					3000			
His	Lys	Leu	Gly	Tyr	Ile	Leu	Arg	Asp	Val	Ser	Lys	Lys	Glu	Gly
	3005					3010					3015			
Gly	Ala	Met	Tyr	Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg	Ile
	3020					3025					3030			
Thr	Leu	Glu	Asp	Leu	Lys	Asn	Glu	Glu	Met	Val	Thr	Asn	His	Met
	3035					3040					3045			
Glu	Gly	Glu	His	Lys	Lys	Leu	Ala	Glu	Ala	Ile	Phe	Lys	Leu	Thr
	3050					3055					3060			
Tyr	Gln	Asn	Lys	Val	Val	Arg	Val	Gln	Arg	Pro	Thr	Pro	Arg	Gly
	3065					3070					3075			
Thr	Val	Met	Asp	Ile	Ile	Ser	Arg	Arg	Asp	Gln	Arg	Gly	Ser	Gly
	3080					3085					3090			
Gln	Val	Gly	Thr	Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu	Ala
	3095					3100					3105			

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Gln Leu Ile Arg Gln Met Glu Gly Glu Gly Val Phe Lys Asn Ile
 3110 3115 3120
 Gln His Leu Thr Val Thr Glu Glu Val Ala Val Gln Asn Trp Leu
 3125 3130 3135
 Ala Arg Val Gly Arg Glu Arg Leu Ser Arg Met Ala Ile Ser Gly
 3140 3145 3150
 Asp Asp Cys Val Val Lys Pro Leu Asp Asp Arg Phe Ala Asn Ala
 3155 3160 3165
 Leu Thr Ala Leu Asn Asp Met Gly Lys Ile Arg Lys Asp Ile Gln
 3170 3175 3180
 Gln Trp Glu Pro Ser Lys Gly Trp Asn Asp Trp Thr Gln Val Pro
 3185 3190 3195
 Phe Cys Ser His His Phe His Glu Leu Ile Met Lys Asp Gly Arg
 3200 3205 3210
 Val Leu Val Val Pro Cys Arg Asn Gln Asp Glu Leu Ile Gly Arg
 3215 3220 3225
 Ala Arg Ile Ser Gln Gly Ala Gly Trp Ser Leu Arg Glu Thr Ala
 3230 3235 3240
 Cys Leu Gly Lys Ser Tyr Ala Gln Met Trp Ser Leu Met Tyr Phe
 3245 3250 3255
 His Arg Arg Asp Leu Arg Leu Ala Ala Asn Ala Ile Cys Ser Ala
 3260 3265 3270
 Val Pro Ser His Trp Val Pro Thr Ser Arg Thr Thr Trp Ser Ile
 3275 3280 3285
 His Ala Lys His Glu Trp Met Thr Thr Glu Asp Met Leu Thr Val
 3290 3295 3300
 Trp Asn Arg Val Trp Ile Arg Glu Asn Pro Trp Met Glu Asp Lys
 3305 3310 3315
 Thr Pro Val Glu Ser Trp Glu Glu Ile Pro Tyr Leu Gly Lys Arg
 3320 3325 3330
 Glu Asp Gln Trp Cys Gly Ser Leu Ile Gly Leu Thr Ser Arg Ala
 3335 3340 3345
 Thr Trp Ala Lys Asn Ile Gln Ala Ala Ile Asn Gln Val Arg Ser
 3350 3355 3360

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Leu Ile Gly Asn Glu Glu Tyr Thr Asp Tyr Met Pro Ser Met Lys
3365 3370 3375

Arg Phe Arg Arg Glu Glu Glu Glu Ala Gly Val Leu Trp
3380 3385 3390

<210> 15
<211> 3390
<212> PRT
<213> Dengue virus type 3

<220>
<221> VARIANT
<222> (764)..(764)
<223> Xaa stands for Thr or Ile

<400> 15

Met Asn Asn Gln Arg Lys Lys Thr Gly Lys Pro Ser Ile Asn Met Leu
1 5 10 15

Lys Arg Val Arg Asn Arg Val Ser Thr Gly Ser Gln Leu Ala Lys Arg
20 25 30

Phe Ser Arg Gly Leu Leu Asn Gly Gln Gly Pro Met Lys Leu Val Met
35 40 45

Ala Phe Ile Ala Phe Leu Arg Phe Leu Ala Ile Pro Pro Thr Ala Gly
50 55 60

Val Leu Ala Arg Trp Gly Thr Phe Lys Lys Ser Gly Ala Ile Lys Val
65 70 75 80

Leu Lys Gly Phe Lys Lys Glu Ile Ser Asn Met Leu Ser Ile Ile Asn
85 90 95

Lys Arg Lys Lys Thr Ser Leu Cys Leu Met Met Met Leu Pro Ala Thr
100 105 110

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

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

Ile Asn Met Cys Thr Leu Ile Ala Met Asp Leu Gly Glu Met Cys Asp
145 150 155 160

Asp Thr Val Thr Tyr Lys Cys Pro His Ile Thr Glu Val Glu Pro Glu
165 170 175

Asp Ile Asp Cys Trp Cys Asn Leu Thr Ser Thr Trp Val Thr Tyr Gly
180 185 190

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Thr Cys Asn Gln Ala Gly Glu His Arg Arg Asp Lys Arg Ser Val Ala
195 200 205

Leu Ala Pro His Val Gly Met Gly Leu Asp Thr Arg Thr Gln Thr Trp
210 215 220

Met Ser Ala Glu Gly Ala Trp Arg Gln Val Glu Lys Val Glu Thr Trp
225 230 235 240

Ala Leu Arg His Pro Gly Phe Thr Ile Leu Ala Leu Phe Leu Ala His
245 250 255

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

Met Leu Val Thr Pro Ser Met Thr Met Arg Cys Val Gly Val Gly Asn
275 280 285

Arg Asp Phe Val Glu Gly Leu Ser Gly Ala Thr Trp Val Asp Val Val
290 295 300

Leu Glu His Gly Gly Cys Val Thr Thr Met Ala Lys Asn Lys Pro Thr
305 310 315 320

Leu Asp Ile Glu Leu Gln Lys Thr Glu Ala Thr Gln Leu Ala Thr Leu
325 330 335

Arg Lys Leu Cys Ile Glu Gly Lys Ile Thr Asn Ile Thr Thr Asp Ser
340 345 350

Arg Cys Pro Thr Gln Gly Glu Ala Ile Leu Pro Glu Glu Gln Asp Gln
355 360 365

Asn Tyr Val Cys Lys His Thr Tyr Val Asp Arg Gly Trp Gly Asn Gly
370 375 380

Cys Gly Leu Phe Gly Lys Gly Ser Leu Val Thr Cys Ala Lys Phe Gln
385 390 395 400

Cys Leu Glu Ser Ile Glu Gly Lys Val Val Gln His Glu Asn Leu Lys
405 410 415

Tyr Thr Val Ile Ile Thr Val His Thr Gly Asp Gln His Gln Val Gly
420 425 430

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

Ala Glu Ala Ile Leu Pro Glu Tyr Gly Thr Leu Gly Leu Glu Cys Ser
450 455 460

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Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Ile Ser Leu Thr Met Lys
465 470 475 480

Asn Lys Ala Trp Met Val His Arg Gln Trp Phe Phe Asp Leu Pro Leu
485 490 495

Pro Trp Thr Ser Gly Ala Thr Ala Glu Thr Pro Thr Trp Asn Arg Lys
500 505 510

Glu Leu Leu Val Thr Phe Lys Asn Ala His Ala Lys Lys Gln Glu Val
515 520 525

Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu Thr Gly
530 535 540

Ala Thr Glu Ile Gln Thr Ser Gly Gly Thr Ser Ile Phe Ala Gly His
545 550 555 560

Leu Lys Cys Arg Leu Lys Met Asp Lys Leu Glu Leu Lys Gly Met Ser
565 570 575

Tyr Ala Met Cys Leu Gly Ser Phe Val Leu Lys Lys Glu Val Ser Glu
580 585 590

Thr Gln His Gly Thr Ile Leu Ile Lys Val Glu Tyr Lys Gly Glu Asp
595 600 605

Ala Pro Cys Lys Ile Pro Phe Ser Thr Glu Asp Gly Gln Gly Lys Ala
610 615 620

His Asn Gly Arg Leu Ile Thr Ala Asn Pro Val Val Thr Lys Lys Glu
625 630 635 640

Glu Pro Val Asn Ile Glu Ala Glu Pro Pro Phe Gly Glu Ser Asn Ile
645 650 655

Val Ile Gly Ile Gly Asp Lys Ala Leu Lys Ile Asn Trp Tyr Lys Lys
660 665 670

Gly Ser Ser Ile Gly Lys Met Phe Glu Ala Thr Ala Arg Gly Val Arg
675 680 685

Arg Met Ala Ile Leu Gly Asp Thr Ala Trp Asp Phe Gly Ser Val Gly
690 695 700

Gly Val Leu Asn Ser Leu Gly Lys Met Val His Gln Ile Phe Gly Ser
705 710 715 720

Ala Tyr Thr Ala Leu Phe Gly Gly Val Ser Trp Met Met Lys Ile Gly
725 730 735

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Ile Gly Val Leu Leu Thr Trp Ile Gly Leu Asn Ser Lys Asn Thr Ser
740 745 750

Met Ser Phe Ser Cys Ile Ala Ile Gly Ile Ile Xaa Leu Tyr Leu Gly
755 760 765

Ala Val Val Gln Ala Asp Met Gly Cys Val Ile Asn Trp Lys Gly Lys
770 775 780

Glu Leu Lys Cys Gly Ser Gly Ile Phe Val Thr Asn Glu Val His Thr
785 790 795 800

Trp Thr Glu Gln Tyr Lys Phe Gln Ala Asp Ser Pro Lys Arg Leu Ala
805 810 815

Thr Ala Ile Ala Gly Ala Trp Glu Asn Gly Val Cys Gly Ile Arg Ser
820 825 830

Thr Thr Arg Met Glu Asn Leu Leu Trp Lys Gln Ile Ala Asn Glu Leu
835 840 845

Asn Tyr Ile Leu Trp Glu Asn Asn Ile Lys Leu Thr Val Val Val Gly
850 855 860

Asp Ile Thr Gly Val Leu Glu Gln Gly Lys Arg Thr Leu Thr Pro Gln
865 870 875 880

Pro Met Glu Leu Lys Tyr Ser Trp Lys Thr Trp Gly Lys Ala Lys Ile
885 890 895

Val Thr Ala Glu Thr Gln Asn Ser Ser Phe Ile Ile Asp Gly Pro Ser
900 905 910

Thr Pro Glu Cys Pro Ser Ala Ser Arg Ala Trp Asn Val Trp Glu Val
915 920 925

Glu Asp Tyr Gly Phe Gly Val Phe Thr Thr Asn Ile Trp Leu Lys Leu
930 935 940

Arg Glu Val Tyr Thr Gln Leu Cys Asp His Arg Leu Met Ser Ala Ala
945 950 955 960

Val Lys Asp Glu Arg Ala Val His Ala Asp Met Gly Tyr Trp Ile Glu
965 970 975

Ser Gln Lys Asn Gly Ser Trp Lys Leu Glu Lys Ala Ser Phe Ile Glu
980 985 990

Val Lys Thr Cys Thr Trp Pro Lys Ser His Thr Leu Trp Ser Asn Gly
995 1000 1005

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Val	Leu	Glu	Ser	Asp	Met	Ile	Ile	Pro	Lys	Ser	Leu	Ala	Gly	Pro
	1010					1015					1020			
Ile	Ser	Gln	His	Asn	His	Arg	Pro	Gly	Tyr	His	Thr	Gln	Thr	Ala
	1025					1030					1035			
Gly	Pro	Trp	His	Leu	Gly	Lys	Leu	Glu	Leu	Asp	Phe	Asn	Tyr	Cys
	1040					1045					1050			
Glu	Gly	Thr	Thr	Val	Val	Ile	Ser	Glu	Asn	Cys	Gly	Thr	Arg	Gly
	1055					1060					1065			
Pro	Ser	Leu	Arg	Thr	Thr	Thr	Val	Ser	Gly	Lys	Leu	Ile	His	Glu
	1070					1075					1080			
Trp	Cys	Cys	Arg	Ser	Cys	Thr	Leu	Pro	Pro	Leu	Arg	Tyr	Met	Gly
	1085					1090					1095			
Glu	Asp	Gly	Cys	Trp	Tyr	Gly	Met	Glu	Ile	Arg	Pro	Ile	Asn	Glu
	1100					1105					1110			
Lys	Glu	Glu	Asn	Met	Val	Lys	Ser	Leu	Ala	Ser	Ala	Gly	Ser	Gly
	1115					1120					1125			
Lys	Val	Asp	Asn	Phe	Thr	Met	Gly	Val	Leu	Cys	Leu	Ala	Ile	Leu
	1130					1135					1140			
Phe	Glu	Glu	Val	Met	Arg	Gly	Lys	Phe	Gly	Lys	Lys	His	Met	Ile
	1145					1150					1155			
Ala	Gly	Val	Leu	Phe	Thr	Phe	Val	Leu	Leu	Leu	Ser	Gly	Gln	Ile
	1160					1165					1170			
Thr	Trp	Arg	Asp	Met	Ala	His	Thr	Leu	Ile	Met	Ile	Gly	Ser	Asn
	1175					1180					1185			
Ala	Ser	Asp	Arg	Met	Gly	Met	Gly	Val	Thr	Tyr	Leu	Ala	Leu	Ile
	1190					1195					1200			
Ala	Thr	Phe	Lys	Ile	Gln	Pro	Leu	Leu	Ala	Leu	Gly	Phe	Phe	Leu
	1205					1210					1215			
Arg	Lys	Leu	Thr	Ser	Arg	Glu	Asn	Leu	Leu	Leu	Gly	Val	Gly	Leu
	1220					1225					1230			
Ala	Met	Ala	Thr	Thr	Leu	Arg	Leu	Pro	Glu	Asp	Ile	Glu	Gln	Met
	1235					1240					1245			
Ala	Asn	Gly	Ile	Ala	Leu	Gly	Leu	Met	Ala	Leu	Lys	Leu	Ile	Thr
	1250					1255					1260			

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Gln	Phe	Glu	Thr	Tyr	Gln	Leu	Trp	Thr	Ala	Leu	Val	Ser	Leu	Thr
	1265					1270					1275			
Cys	Ser	Asn	Thr	Ile	Phe	Thr	Leu	Thr	Val	Ala	Trp	Arg	Thr	Ala
	1280					1285					1290			
Thr	Leu	Ile	Leu	Ala	Gly	Ile	Ser	Leu	Leu	Pro	Val	Cys	Gln	Ser
	1295					1300					1305			
Ser	Ser	Met	Arg	Lys	Thr	Asp	Trp	Leu	Pro	Met	Thr	Val	Ala	Ala
	1310					1315					1320			
Met	Gly	Ala	Gln	Pro	Leu	Pro	Leu	Phe	Ile	Phe	Ser	Leu	Lys	Asp
	1325					1330					1335			
Thr	Leu	Lys	Arg	Arg	Ser	Trp	Pro	Leu	Asn	Glu	Gly	Val	Met	Ala
	1340					1345					1350			
Val	Gly	Leu	Val	Ser	Ile	Leu	Ala	Ser	Ser	Leu	Leu	Arg	Asn	Asp
	1355					1360					1365			
Val	Pro	Met	Ala	Gly	Pro	Leu	Val	Ala	Gly	Gly	Leu	Leu	Ile	Ala
	1370					1375					1380			
Cys	Tyr	Val	Ile	Thr	Gly	Thr	Ser	Ala	Asp	Leu	Thr	Val	Glu	Lys
	1385					1390					1395			
Ala	Ala	Asp	Val	Thr	Trp	Glu	Glu	Glu	Ala	Glu	Gln	Thr	Gly	Val
	1400					1405					1410			
Ser	His	Asn	Leu	Met	Val	Thr	Val	Asp	Asp	Asp	Gly	Thr	Met	Arg
	1415					1420					1425			
Ile	Lys	Asp	Asp	Glu	Thr	Glu	Asn	Ile	Leu	Thr	Val	Leu	Leu	Lys
	1430					1435					1440			
Thr	Ala	Leu	Leu	Ile	Val	Ser	Gly	Ile	Phe	Pro	Tyr	Ser	Ile	Pro
	1445					1450					1455			
Ala	Thr	Leu	Leu	Val	Trp	His	Thr	Trp	Gln	Lys	Gln	Thr	Gln	Arg
	1460					1465					1470			
Ser	Gly	Val	Leu	Trp	Asp	Val	Pro	Ser	Pro	Pro	Glu	Thr	Gln	Lys
	1475					1480					1485			
Ala	Glu	Leu	Glu	Glu	Gly	Val	Tyr	Arg	Ile	Lys	Gln	Gln	Gly	Ile
	1490					1495					1500			
Phe	Gly	Lys	Thr	Gln	Val	Gly	Val	Gly	Val	Gln	Lys	Glu	Gly	Val
	1505					1510					1515			

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Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ala	Val	Leu	Thr	His
	1520					1525					1530			
Asn	Gly	Lys	Arg	Leu	Glu	Pro	Asn	Trp	Ala	Ser	Val	Lys	Lys	Asp
	1535					1540					1545			
Leu	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Arg	Leu	Ser	Ala	Gln	Trp	Lys
	1550					1555					1560			
Lys	Gly	Glu	Glu	Val	Gln	Val	Ile	Ala	Val	Glu	Pro	Gly	Lys	Asn
	1565					1570					1575			
Pro	Lys	Asn	Phe	Gln	Thr	Met	Pro	Gly	Ile	Phe	Gln	Thr	Thr	Thr
	1580					1585					1590			
Gly	Glu	Ile	Gly	Ala	Ile	Ala	Leu	Asp	Phe	Lys	Pro	Gly	Thr	Ser
	1595					1600					1605			
Gly	Ser	Pro	Ile	Ile	Asn	Arg	Glu	Gly	Lys	Val	Val	Gly	Leu	Tyr
	1610					1615					1620			
Gly	Asn	Gly	Val	Val	Thr	Lys	Asn	Gly	Gly	Tyr	Val	Ser	Gly	Ile
	1625					1630					1635			
Ala	Gln	Thr	Asn	Ala	Glu	Pro	Asp	Gly	Pro	Thr	Pro	Glu	Leu	Glu
	1640					1645					1650			
Glu	Glu	Met	Phe	Lys	Lys	Arg	Asn	Leu	Thr	Ile	Met	Asp	Leu	His
	1655					1660					1665			
Pro	Gly	Ser	Gly	Lys	Thr	Arg	Lys	Tyr	Leu	Pro	Ala	Ile	Val	Arg
	1670					1675					1680			
Glu	Ala	Ile	Lys	Arg	Arg	Leu	Arg	Thr	Leu	Ile	Leu	Ala	Pro	Thr
	1685					1690					1695			
Arg	Val	Val	Ala	Ala	Glu	Met	Glu	Glu	Ala	Leu	Lys	Gly	Leu	Pro
	1700					1705					1710			
Ile	Arg	Tyr	Gln	Thr	Thr	Ala	Thr	Lys	Ser	Glu	His	Thr	Gly	Arg
	1715					1720					1725			
Glu	Ile	Val	Asp	Leu	Met	Cys	His	Ala	Thr	Phe	Thr	Met	Arg	Leu
	1730					1735					1740			
Leu	Ser	Pro	Val	Arg	Val	Pro	Asn	Tyr	Asn	Leu	Ile	Ile	Met	Asp
	1745					1750					1755			
Glu	Ala	His	Phe	Thr	Asp	Pro	Ala	Ser	Ile	Ala	Ala	Arg	Gly	Tyr
	1760					1765					1770			

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Ile	Ser	Thr	Arg	Val	Gly	Met	Gly	Glu	Ala	Ala	Ala	Ile	Phe	Met
1775						1780					1785			
Thr	Ala	Thr	Pro	Pro	Gly	Thr	Ala	Asp	Ala	Phe	Pro	Gln	Ser	Asn
1790						1795					1800			
Ala	Pro	Ile	Gln	Asp	Glu	Glu	Arg	Asp	Ile	Pro	Glu	Arg	Ser	Trp
1805						1810					1815			
Asn	Ser	Gly	Asn	Glu	Trp	Ile	Thr	Asp	Phe	Val	Gly	Lys	Thr	Val
1820						1825					1830			
Trp	Phe	Val	Pro	Ser	Ile	Lys	Ala	Gly	Asn	Asp	Ile	Ala	Asn	Cys
1835						1840					1845			
Leu	Arg	Lys	Asn	Gly	Lys	Lys	Val	Ile	Gln	Leu	Ser	Arg	Lys	Thr
1850						1855					1860			
Phe	Asp	Thr	Glu	Tyr	Gln	Lys	Thr	Lys	Leu	Asn	Asp	Trp	Asp	Phe
1865						1870					1875			
Val	Val	Thr	Thr	Asp	Ile	Ser	Glu	Met	Gly	Ala	Asn	Phe	Lys	Ala
1880						1885					1890			
Asp	Arg	Val	Ile	Asp	Pro	Arg	Arg	Cys	Leu	Lys	Pro	Val	Ile	Leu
1895						1900					1905			
Thr	Asp	Gly	Pro	Glu	Arg	Val	Ile	Leu	Ala	Gly	Pro	Met	Pro	Val
1910						1915					1920			
Thr	Val	Ala	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Val	Gly	Arg	Asn
1925						1930					1935			
Pro	Gln	Lys	Glu	Asn	Asp	Gln	Tyr	Ile	Phe	Met	Gly	Gln	Pro	Leu
1940						1945					1950			
Asn	Asn	Asp	Glu	Asp	His	Ala	His	Trp	Thr	Glu	Ala	Lys	Met	Leu
1955						1960					1965			
Leu	Asp	Asn	Ile	Asn	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Ala	Leu	Phe
1970						1975					1980			
Glu	Pro	Glu	Arg	Glu	Lys	Ser	Ala	Ala	Ile	Asp	Gly	Glu	Tyr	Arg
1985						1990					1995			
Leu	Lys	Gly	Glu	Ser	Arg	Lys	Thr	Phe	Val	Glu	Leu	Met	Arg	Arg
2000						2005					2010			
Gly	Asp	Leu	Pro	Val	Trp	Leu	Ala	His	Lys	Val	Ala	Ser	Glu	Gly
2015						2020					2025			

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Ile	Lys	Tyr	Thr	Asp	Arg	Lys	Trp	Cys	Phe	Asp	Gly	Glu	Arg	Asn
	2030					2035					2040			
Asn	Gln	Ile	Leu	Glu	Glu	Asn	Met	Asp	Val	Glu	Ile	Trp	Thr	Lys
	2045					2050					2055			
Glu	Gly	Glu	Lys	Lys	Lys	Leu	Arg	Pro	Arg	Trp	Leu	Asp	Ala	Arg
	2060					2065					2070			
Thr	Tyr	Ser	Asp	Pro	Leu	Ala	Leu	Lys	Glu	Phe	Lys	Asp	Phe	Ala
	2075					2080					2085			
Ala	Gly	Arg	Lys	Ser	Ile	Ala	Leu	Asp	Leu	Val	Thr	Glu	Ile	Gly
	2090					2095					2100			
Arg	Val	Pro	Ser	His	Leu	Ala	His	Arg	Thr	Arg	Asn	Ala	Leu	Asp
	2105					2110					2115			
Asn	Leu	Val	Met	Leu	His	Thr	Ser	Glu	His	Gly	Gly	Arg	Ala	Tyr
	2120					2125					2130			
Arg	His	Ala	Val	Glu	Glu	Leu	Pro	Glu	Thr	Met	Glu	Thr	Leu	Leu
	2135					2140					2145			
Leu	Leu	Gly	Leu	Met	Ile	Leu	Leu	Thr	Gly	Gly	Ala	Met	Leu	Phe
	2150					2155					2160			
Leu	Ile	Ser	Gly	Lys	Gly	Ile	Gly	Lys	Thr	Ser	Ile	Gly	Leu	Ile
	2165					2170					2175			
Cys	Val	Ile	Ala	Ser	Ser	Gly	Met	Leu	Trp	Met	Ala	Asp	Val	Pro
	2180					2185					2190			
Leu	Gln	Trp	Ile	Ala	Ser	Ala	Ile	Val	Leu	Glu	Phe	Phe	Met	Met
	2195					2200					2205			
Val	Leu	Leu	Ile	Pro	Glu	Pro	Glu	Lys	Gln	Arg	Thr	Pro	Gln	Asp
	2210					2215					2220			
Asn	Gln	Leu	Ala	Tyr	Val	Val	Ile	Gly	Ile	Leu	Thr	Leu	Ala	Ala
	2225					2230					2235			
Ile	Val	Ala	Ala	Asn	Glu	Met	Gly	Leu	Leu	Glu	Thr	Thr	Lys	Arg
	2240					2245					2250			
Asp	Leu	Gly	Met	Ser	Lys	Glu	Pro	Gly	Val	Val	Ser	Pro	Thr	Ser
	2255					2260					2265			
Tyr	Leu	Asp	Val	Asp	Leu	His	Pro	Ala	Ser	Ala	Trp	Thr	Leu	Tyr
	2270					2275					2280			

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Ala	Val	Ala	Thr	Thr	Val	Ile	Thr	Pro	Met	Leu	Arg	His	Thr	Ile
	2285					2290					2295			
Glu	Asn	Ser	Thr	Ala	Asn	Val	Ser	Leu	Ala	Ala	Ile	Ala	Asn	Gln
	2300					2305					2310			
Ala	Val	Val	Leu	Met	Gly	Leu	Asp	Lys	Gly	Trp	Pro	Ile	Ser	Lys
	2315					2320					2325			
Met	Asp	Leu	Gly	Val	Pro	Leu	Leu	Ala	Leu	Gly	Cys	Tyr	Ser	Gln
	2330					2335					2340			
Val	Asn	Pro	Leu	Thr	Leu	Ala	Ala	Ala	Val	Leu	Leu	Leu	Val	Thr
	2345					2350					2355			
His	Tyr	Ala	Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys	Ala	Thr	Arg
	2360					2365					2370			
Glu	Ala	Gln	Lys	Arg	Thr	Ala	Ala	Gly	Ile	Met	Lys	Asn	Pro	Thr
	2375					2380					2385			
Val	Asp	Gly	Ile	Met	Thr	Ile	Asp	Leu	Asp	Pro	Val	Ile	Tyr	Asp
	2390					2395					2400			
Ser	Lys	Phe	Glu	Lys	Gln	Leu	Gly	Gln	Val	Met	Leu	Leu	Val	Leu
	2405					2410					2415			
Cys	Ala	Val	Gln	Leu	Leu	Leu	Met	Arg	Thr	Ser	Trp	Ala	Leu	Cys
	2420					2425					2430			
Glu	Val	Leu	Thr	Leu	Ala	Thr	Gly	Pro	Ile	Thr	Thr	Leu	Trp	Glu
	2435					2440					2445			
Gly	Ser	Pro	Gly	Lys	Phe	Trp	Asn	Thr	Thr	Ile	Ala	Val	Ser	Met
	2450					2455					2460			
Ala	Asn	Ile	Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala	Gly	Leu	Ala
	2465					2470					2475			
Phe	Ser	Ile	Met	Lys	Ser	Val	Gly	Thr	Gly	Lys	Arg	Gly	Thr	Gly
	2480					2485					2490			
Ser	Gln	Gly	Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Lys	Lys	Leu	Asn
	2495					2500					2505			
Gln	Leu	Ser	Arg	Lys	Glu	Phe	Asp	Leu	Tyr	Lys	Lys	Ser	Gly	Ile
	2510					2515					2520			
Thr	Glu	Val	Asp	Arg	Thr	Glu	Ala	Lys	Glu	Gly	Leu	Lys	Arg	Gly
	2525					2530					2535			

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Glu	Ile	Thr	His	His	Ala	Val	Ser	Arg	Gly	Ser	Ala	Lys	Leu	Gln
2540						2545					2550			
Trp	Phe	Val	Glu	Arg	Asn	Met	Val	Ile	Pro	Glu	Gly	Arg	Val	Ile
	2555					2560					2565			
Asp	Leu	Gly	Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr	Cys	Ala	Gly
	2570					2575					2580			
Leu	Lys	Lys	Val	Thr	Glu	Val	Arg	Gly	Tyr	Thr	Lys	Gly	Gly	Pro
	2585					2590					2595			
Gly	His	Glu	Glu	Pro	Val	Pro	Met	Ser	Thr	Tyr	Gly	Trp	Asn	Ile
	2600					2605					2610			
Val	Lys	Leu	Met	Ser	Gly	Lys	Asp	Val	Phe	Tyr	Leu	Pro	Pro	Glu
	2615					2620					2625			
Lys	Cys	Asp	Thr	Leu	Leu	Cys	Asp	Ile	Gly	Glu	Ser	Ser	Pro	Ser
	2630					2635					2640			
Pro	Thr	Val	Glu	Glu	Ser	Arg	Thr	Ile	Arg	Val	Leu	Lys	Met	Val
	2645					2650					2655			
Glu	Pro	Trp	Leu	Lys	Asn	Asn	Gln	Phe	Cys	Ile	Lys	Val	Leu	Asn
	2660					2665					2670			
Pro	Tyr	Met	Pro	Thr	Val	Ile	Glu	His	Leu	Glu	Arg	Leu	Gln	Arg
	2675					2680					2685			
Lys	His	Gly	Gly	Met	Leu	Val	Arg	Asn	Pro	Leu	Ser	Arg	Asn	Ser
	2690					2695					2700			
Thr	His	Glu	Met	Tyr	Trp	Ile	Ser	Asn	Gly	Thr	Gly	Asn	Ile	Val
	2705					2710					2715			
Ser	Ser	Val	Asn	Met	Val	Ser	Arg	Leu	Leu	Leu	Asn	Arg	Phe	Thr
	2720					2725					2730			
Met	Thr	His	Arg	Arg	Pro	Thr	Ile	Glu	Lys	Asp	Val	Asp	Leu	Gly
	2735					2740					2745			
Ala	Gly	Thr	Arg	His	Val	Asn	Ala	Glu	Pro	Glu	Thr	Pro	Asn	Met
	2750					2755					2760			
Asp	Val	Ile	Gly	Glu	Arg	Ile	Lys	Arg	Ile	Lys	Glu	Glu	His	Ser
	2765					2770					2775			
Ser	Thr	Trp	His	Tyr	Asp	Asp	Glu	Asn	Pro	Tyr	Lys	Thr	Trp	Ala
	2780					2785					2790			

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Tyr	His	Gly	Ser	Tyr	Glu	Val	Lys	Ala	Thr	Gly	Ser	Ala	Ser	Ser
	2795					2800					2805			
Met	Ile	Asn	Gly	Val	Val	Lys	Leu	Leu	Thr	Lys	Pro	Trp	Asp	Val
	2810					2815					2820			
Val	Pro	Met	Val	Thr	Gln	Met	Ala	Met	Thr	Asp	Thr	Thr	Pro	Phe
	2825					2830					2835			
Gly	Gln	Gln	Arg	Val	Phe	Lys	Glu	Lys	Val	Asp	Thr	Arg	Thr	Pro
	2840					2845					2850			
Arg	Pro	Met	Pro	Gly	Thr	Arg	Lys	Val	Met	Glu	Ile	Thr	Ala	Glu
	2855					2860					2865			
Trp	Leu	Trp	Arg	Thr	Leu	Gly	Arg	Asn	Lys	Arg	Pro	Arg	Leu	Cys
	2870					2875					2880			
Thr	Arg	Glu	Glu	Phe	Thr	Lys	Lys	Val	Arg	Thr	Asn	Ala	Ala	Met
	2885					2890					2895			
Gly	Ala	Val	Phe	Thr	Glu	Glu	Asn	Gln	Trp	Asp	Ser	Ala	Arg	Ala
	2900					2905					2910			
Ala	Val	Glu	Asp	Glu	Glu	Phe	Trp	Lys	Leu	Val	Asp	Arg	Glu	Arg
	2915					2920					2925			
Glu	Leu	His	Lys	Leu	Gly	Lys	Cys	Gly	Ser	Cys	Val	Tyr	Asn	Met
	2930					2935					2940			
Met	Gly	Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly	Lys	Ala	Lys
	2945					2950					2955			
Gly	Ser	Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala	Arg	Tyr	Leu
	2960					2965					2970			
Glu	Phe	Glu	Ala	Leu	Gly	Phe	Leu	Asn	Glu	Asp	His	Trp	Phe	Ser
	2975					2980					2985			
Arg	Glu	Asn	Ser	Tyr	Ser	Gly	Val	Glu	Gly	Glu	Gly	Leu	His	Lys
	2990					2995					3000			
Leu	Gly	Tyr	Ile	Leu	Arg	Asp	Ile	Ser	Lys	Ile	Pro	Gly	Gly	Ala
	3005					3010					3015			
Met	Tyr	Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg	Ile	Thr	Glu
	3020					3025					3030			
Asp	Asp	Leu	His	Asn	Glu	Glu	Lys	Ile	Thr	Gln	Gln	Met	Asp	Pro
	3035					3040					3045			

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Glu	His	Arg	Gln	Leu	Ala	Asn	Ala	Ile	Phe	Lys	Leu	Thr	Tyr	Gln
	3050					3055					3060			
Asn	Lys	Val	Val	Lys	Val	Gln	Arg	Pro	Thr	Pro	Lys	Gly	Thr	Val
	3065					3070					3075			
Met	Asp	Ile	Ile	Ser	Arg	Lys	Asp	Gln	Arg	Gly	Ser	Gly	Gln	Val
	3080					3085					3090			
Gly	Thr	Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu	Ala	Gln	Leu
	3095					3100					3105			
Ile	Arg	Gln	Met	Glu	Gly	Glu	Gly	Val	Leu	Ser	Lys	Ala	Asp	Leu
	3110					3115					3120			
Glu	Asn	Pro	His	Pro	Leu	Glu	Lys	Lys	Ile	Thr	Gln	Trp	Leu	Glu
	3125					3130					3135			
Thr	Lys	Gly	Val	Glu	Arg	Leu	Lys	Arg	Met	Ala	Ile	Ser	Gly	Asp
	3140					3145					3150			
Asp	Cys	Val	Val	Lys	Pro	Ile	Asp	Asp	Arg	Phe	Ala	Asn	Ala	Leu
	3155					3160					3165			
Leu	Ala	Leu	Asn	Asp	Met	Gly	Lys	Val	Arg	Lys	Asp	Ile	Pro	Gln
	3170					3175					3180			
Trp	Gln	Pro	Ser	Lys	Gly	Trp	His	Asp	Trp	Gln	Gln	Val	Pro	Phe
	3185					3190					3195			
Cys	Ser	His	His	Phe	His	Glu	Leu	Ile	Met	Lys	Asp	Gly	Arg	Lys
	3200					3205					3210			
Leu	Val	Val	Pro	Cys	Arg	Pro	Gln	Asp	Glu	Leu	Ile	Gly	Arg	Ala
	3215					3220					3225			
Arg	Ile	Ser	Gln	Gly	Ala	Gly	Trp	Ser	Leu	Arg	Glu	Thr	Ala	Cys
	3230					3235					3240			
Leu	Gly	Lys	Ala	Tyr	Ala	Gln	Met	Trp	Ala	Leu	Met	Tyr	Phe	His
	3245					3250					3255			
Arg	Arg	Asp	Leu	Arg	Leu	Ala	Ser	Asn	Ala	Ile	Cys	Ser	Ala	Val
	3260					3265					3270			
Pro	Val	His	Trp	Val	Pro	Thr	Ser	Arg	Thr	Thr	Trp	Ser	Ile	His
	3275					3280					3285			
Ala	His	His	Gln	Trp	Met	Thr	Thr	Glu	Asp	Met	Leu	Thr	Val	Trp
	3290					3295					3300			

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Asn Arg Val Trp Ile Glu Asp Asn Pro Trp Met Glu Asp Lys Thr
 3305 3310 3315

Pro Val Thr Thr Trp Glu Asp Val Pro Tyr Leu Gly Lys Arg Glu
 3320 3325 3330

Asp Gln Trp Cys Gly Ser Leu Ile Gly Leu Thr Ser Arg Ala Thr
 3335 3340 3345

Trp Ala Gln Asn Ile Leu Thr Ala Ile Gln Gln Val Arg Ser Leu
 3350 3355 3360

Ile Gly Asn Glu Glu Phe Leu Asp Tyr Met Pro Ser Met Lys Arg
 3365 3370 3375

Phe Arg Lys Glu Glu Glu Ser Glu Gly Ala Ile Trp
 3380 3385 3390

<210> 16
 <211> 3387
 <212> PRT
 <213> Dengue virus type 4

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 <223> Xaa stands for Val or Leu

<220>
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 <222> (1396)..(1396)
 <223> Xaa stands for Ser or Leu

<220>
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 <222> (1506)..(1506)
 <223> Xaa stands for Gly or Trp

<400> 16

Met Asn Gln Arg Lys Lys Val Val Arg Pro Pro Phe Asn Met Leu Lys
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Arg Glu Arg Asn Arg Val Ser Thr Pro Gln Gly Leu Val Lys Arg Phe
 20 25 30

Ser Thr Gly Leu Phe Ser Gly Lys Gly Pro Leu Arg Met Val Leu Ala
 35 40 45

Phe Ile Thr Phe Leu Arg Val Leu Ser Ile Pro Pro Thr Ala Gly Ile
 50 55 60

Leu Lys Arg Trp Gly Gln Leu Lys Lys Asn Lys Ala Ile Arg Ile Leu
 65 70 75 80

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Ile Gly Phe Arg Lys₈₅ Glu Ile Gly Arg Met₉₀ Leu Asn Ile Leu Asn₉₅ Gly

Arg Lys Arg Ser₁₀₀ Thr Ile Thr Leu Leu₁₀₅ Cys Leu Ile Pro Thr₁₁₀ Val Met

Ala Phe His₁₁₅ Leu Ser Thr Arg Asp₁₂₀ Gly Glu Pro Leu Met₁₂₅ Ile Val Ala

Lys His₁₃₀ Glu Arg Gly Arg Pro₁₃₅ Leu Leu Phe Lys Thr₁₄₀ Thr Glu Gly Ile

Asn Lys Cys Thr Leu Ile₁₅₀ Ala Met Asp Leu Gly₁₅₅ Glu Met Cys Glu Asp₁₆₀

Thr Val Thr Tyr Lys₁₆₅ Cys Pro Leu Leu Val₁₇₀ Asn Thr Glu Pro Glu₁₇₅ Asp

Ile Asp Cys Trp₁₈₀ Cys Asn Leu Thr Ser₁₈₅ Thr Trp Val Met Tyr₁₉₀ Gly Thr

Cys Thr Gln₁₉₅ Ser Gly Glu Arg Arg₂₀₀ Arg Glu Lys Arg Ser₂₀₅ Val Ala Leu

Thr Pro₂₁₀ His Ser Gly Met Gly₂₁₅ Leu Glu Thr Arg Ala₂₂₀ Glu Thr Trp Met

Ser₂₂₅ Ser Glu Gly Ala Trp₂₃₀ Lys His Ala Gln Arg₂₃₅ Val Glu Ser Trp Ile₂₄₀

Leu Arg Asn Pro Gly₂₄₅ Phe Ala Leu Leu Ala₂₅₀ Gly Phe Met Ala Tyr₂₅₅ Met

Ile Gly Gln Thr₂₆₀ Gly Ile Gln Arg Thr₂₆₅ Val Phe Phe Val Leu₂₇₀ Met Met

Leu Val Ala₂₇₅ Pro Ser Tyr Gly Met₂₈₀ Arg Cys Val Gly Val₂₈₅ Gly Asn Arg

Asp Phe Val₂₉₀ Glu Gly Val Ser₂₉₅ Gly Gly Ala Trp Val₃₀₀ Asp Leu Val Leu

Glu₃₀₅ His Gly Gly Cys Val₃₁₀ Thr Thr Met Ala Gln₃₁₅ Gly Lys Pro Thr Leu₃₂₀

Asp Phe Glu Leu Thr₃₂₅ Lys Thr Thr Ala Lys₃₃₀ Glu Val Ala Leu Leu₃₃₅ Arg

Thr Tyr Cys Ile₃₄₀ Glu Ala Ser Ile Ser₃₄₅ Asn Ile Thr Thr Ala₃₅₀ Thr Arg

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Cys Pro Thr Gln Gly Glu Pro Tyr Leu Lys Glu Glu Gln Asp Gln Gln
 355 360 365
 Tyr Ile Cys Arg Arg Asp Val Val Asp Arg Gly Trp Gly Asn Gly Cys
 370 375 380
 Gly Leu Phe Gly Lys Gly Gly Val Val Thr Cys Ala Lys Phe Ser Cys
 385 390 395 400
 Ser Gly Lys Ile Thr Gly Asn Leu Val Gln Ile Glu Asn Leu Glu Tyr
 405 410 415
 Thr Val Val Val Thr Val His Asn Gly Asp Thr His Ala Val Gly Asn
 420 425 430
 Asp Thr Ser Asn His Gly Val Thr Ala Thr Ile Thr Pro Arg Ser Pro
 435 440 445
 Ser Val Glu Val Lys Leu Pro Asp Tyr Gly Glu Leu Thr Leu Asp Cys
 450 455 460
 Glu Pro Arg Ser Gly Ile Asp Phe Asn Glu Met Ile Leu Met Lys Met
 465 470 475 480
 Lys Lys Lys Thr Trp Leu Val His Lys Gln Trp Phe Leu Asp Leu Pro
 485 490 495
 Leu Pro Trp Thr Ala Gly Ala Asp Thr Ser Glu Val His Trp Asn Tyr
 500 505 510
 Lys Glu Arg Met Val Thr Phe Lys Xaa Pro His Ala Lys Arg Gln Asp
 515 520 525
 Val Thr Val Leu Gly Ser Gln Glu Gly Ala Met His Ser Ala Leu Ala
 530 535 540
 Gly Ala Thr Glu Val Asp Ser Gly Asp Gly Asn His Met Phe Ala Gly
 545 550 555 560
 His Leu Lys Cys Lys Val Arg Met Glu Lys Leu Arg Ile Lys Gly Met
 565 570 575
 Ser Tyr Thr Met Cys Ser Gly Lys Phe Ser Ile Asp Lys Glu Met Ala
 580 585 590
 Glu Thr Gln His Gly Thr Thr Val Val Lys Val Lys Tyr Glu Gly Ala
 595 600 605
 Gly Ala Pro Cys Lys Val Pro Ile Glu Ile Arg Asp Val Asn Lys Glu
 610 615 620

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Lys Val Val Gly Arg Ile Ile Ser Ser Thr Pro Leu Ala Glu Asn Thr
 625 630 635 640
 Asn Ser Ala Thr Asn Ile Glu Leu Glu Pro Pro Phe Gly Asp Ser Tyr
 645 650 655
 Ile Val Ile Gly Val Gly Asn Ser Ala Leu Thr Leu His Trp Phe Arg
 660 665 670
 Lys Gly Ser Ser Ile Gly Lys Met Phe Glu Ser Thr Tyr Arg Gly Ala
 675 680 685
 Lys Arg Met Ala Ile Leu Gly Glu Thr Ala Trp Asp Phe Gly Ser Val
 690 695 700
 Gly Gly Leu Phe Thr Ser Leu Gly Lys Ala Val His Gln Val Phe Gly
 705 710 715 720
 Ser Val Tyr Thr Thr Met Phe Gly Gly Val Ser Trp Met Ile Arg Ile
 725 730 735
 Leu Ile Gly Phe Leu Val Leu Trp Ile Gly Thr Asn Ser Arg Asn Thr
 740 745 750
 Ser Met Ala Met Thr Cys Ile Ala Val Gly Gly Ile Thr Leu Phe Leu
 755 760 765
 Gly Phe Thr Val Gln Ala Asp Met Gly Cys Val Val Ser Trp Ser Gly
 770 775 780
 Lys Glu Leu Lys Cys Gly Ser Gly Ile Phe Val Val Asp Asn Val His
 785 790 795 800
 Thr Trp Thr Glu Gln Tyr Lys Phe Gln Pro Glu Ser Pro Ala Arg Leu
 805 810 815
 Ala Ser Ala Ile Leu Asn Ala His Lys Asp Gly Val Cys Gly Ile Arg
 820 825 830
 Ser Thr Thr Arg Leu Glu Asn Val Met Trp Lys Gln Ile Thr Asn Glu
 835 840 845
 Leu Asn Tyr Val Leu Trp Glu Gly Gly His Asp Leu Thr Val Val Ala
 850 855 860
 Gly Asp Val Lys Gly Val Leu Thr Lys Gly Lys Arg Ala Leu Thr Pro
 865 870 875 880
 Pro Val Asn Asp Leu Lys Tyr Ser Trp Lys Thr Trp Gly Lys Ala Lys
 885 890 895

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Ile Phe Thr Pro Glu Ala Arg Asn Ser Thr Phe Leu Ile Asp Gly Pro
900 905 910

Asp Thr Ser Glu Cys Pro Asn Glu Arg Arg Ala Trp Asn Phe Leu Glu
915 920 925

Val Glu Asp Tyr Gly Phe Gly Met Phe Thr Thr Asn Ile Trp Met Lys
930 935 940

Phe Arg Glu Gly Ser Ser Glu Val Cys Asp His Arg Leu Met Ser Ala
945 950 955 960

Ala Ile Lys Asp Gln Lys Ala Val His Ala Asp Met Gly Tyr Trp Ile
965 970 975

Glu Ser Ser Lys Asn Gln Thr Trp Gln Ile Glu Lys Ala Ser Leu Ile
980 985 990

Glu Val Lys Thr Cys Leu Trp Pro Lys Thr His Thr Leu Trp Ser Asn
995 1000 1005

Gly Val Leu Glu Ser Gln Met Leu Ile Pro Lys Ser Tyr Ala Gly
1010 1015 1020

Pro Phe Ser His His Asn Tyr Arg Gln Gly Tyr Ala Thr Gln Thr
1025 1030 1035

Val Gly Pro Trp His Leu Gly Lys Leu Glu Ile Asp Phe Gly Glu
1040 1045 1050

Cys Pro Gly Thr Thr Val Ala Ile Gln Glu Asp Cys Asp His Arg
1055 1060 1065

Gly Pro Ser Leu Arg Thr Thr Thr Ala Ser Gly Lys Leu Val Thr
1070 1075 1080

Gln Trp Cys Cys Arg Ser Cys Thr Met Pro Pro Leu Arg Phe Leu
1085 1090 1095

Gly Glu Asp Gly Cys Trp Tyr Gly Met Glu Ile Arg Pro Leu Ser
1100 1105 1110

Glu Lys Glu Glu Asn Met Val Lys Ser Gln Val Thr Ala Gly Gln
1115 1120 1125

Gly Thr Ser Glu Thr Phe Ser Met Gly Leu Leu Cys Leu Thr Leu
1130 1135 1140

Phe Val Glu Glu Cys Leu Arg Arg Arg Val Thr Arg Lys His Met
1145 1150 1155

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Ile	Leu	Val	Val	Val	Ile	Thr	Leu	Cys	Ala	Ile	Ile	Leu	Gly	Gly
	1160					1165					1170			
Leu	Thr	Trp	Met	Asp	Leu	Leu	Arg	Ala	Leu	Ile	Met	Leu	Gly	Asp
	1175					1180					1185			
Thr	Met	Ser	Gly	Arg	Ile	Gly	Gly	Gln	Ile	His	Leu	Ala	Ile	Met
	1190					1195					1200			
Ala	Val	Phe	Lys	Met	Ser	Pro	Gly	Tyr	Val	Leu	Gly	Val	Phe	Leu
	1205					1210					1215			
Arg	Lys	Leu	Thr	Ser	Arg	Glu	Thr	Ala	Leu	Met	Val	Ile	Gly	Met
	1220					1225					1230			
Ala	Met	Thr	Thr	Val	Leu	Ser	Ile	Pro	His	Asp	Leu	Met	Glu	Leu
	1235					1240					1245			
Ile	Asp	Gly	Ile	Ser	Leu	Gly	Leu	Ile	Leu	Leu	Lys	Ile	Val	Thr
	1250					1255					1260			
His	Phe	Asp	Asn	Thr	Gln	Val	Gly	Thr	Leu	Ala	Leu	Ser	Leu	Thr
	1265					1270					1275			
Phe	Ile	Arg	Ser	Thr	Met	Pro	Leu	Val	Met	Ala	Trp	Arg	Thr	Ile
	1280					1285					1290			
Met	Ala	Val	Leu	Phe	Val	Val	Thr	Leu	Ile	Pro	Leu	Cys	Arg	Thr
	1295					1300					1305			
Ser	Cys	Leu	Gln	Lys	Gln	Ser	His	Trp	Val	Glu	Ile	Thr	Ala	Leu
	1310					1315					1320			
Ile	Leu	Gly	Ala	Gln	Ala	Leu	Pro	Val	Tyr	Leu	Met	Thr	Leu	Met
	1325					1330					1335			
Lys	Gly	Ala	Ser	Arg	Arg	Ser	Trp	Pro	Leu	Asn	Glu	Gly	Ile	Met
	1340					1345					1350			
Ala	Val	Gly	Leu	Val	Ser	Leu	Leu	Gly	Ser	Ala	Leu	Leu	Lys	Asn
	1355					1360					1365			
Asp	Val	Pro	Leu	Ala	Gly	Pro	Met	Val	Ala	Gly	Gly	Leu	Leu	Leu
	1370					1375					1380			
Ala	Ala	Tyr	Val	Met	Ser	Gly	Ser	Ser	Ala	Asp	Leu	Xaa	Leu	Glu
	1385					1390					1395			
Lys	Ala	Ala	Asn	Val	Gln	Trp	Asp	Glu	Met	Ala	Asp	Ile	Thr	Gly
	1400					1405					1410			

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Ser	Ser	Pro	Ile	Ile	Glu	Val	Lys	Gln	Asp	Glu	Asp	Gly	Ser	Phe
	1415					1420					1425			
Ser	Ile	Arg	Asp	Val	Glu	Glu	Thr	Asn	Met	Ile	Thr	Leu	Leu	Val
	1430					1435					1440			
Lys	Leu	Ala	Leu	Ile	Thr	Val	Ser	Gly	Leu	Tyr	Pro	Leu	Ala	Ile
	1445					1450					1455			
Pro	Val	Thr	Met	Thr	Leu	Trp	Tyr	Met	Trp	Gln	Val	Lys	Thr	Gln
	1460					1465					1470			
Arg	Ser	Gly	Ala	Leu	Trp	Asp	Val	Pro	Ser	Pro	Ala	Ala	Thr	Gln
	1475					1480					1485			
Lys	Ala	Ala	Leu	Ser	Glu	Gly	Val	Tyr	Arg	Ile	Met	Gln	Arg	Gly
	1490					1495					1500			
Leu	Phe	Xaa	Lys	Thr	Gln	Val	Gly	Val	Gly	Ile	His	Met	Glu	Gly
	1505					1510					1515			
Val	Phe	His	Thr	Met	Trp	His	Val	Thr	Arg	Gly	Ser	Val	Ile	Cys
	1520					1525					1530			
His	Glu	Thr	Gly	Arg	Leu	Glu	Pro	Ser	Trp	Ala	Asp	Val	Arg	Asn
	1535					1540					1545			
Asp	Met	Ile	Ser	Tyr	Gly	Gly	Gly	Trp	Arg	Leu	Gly	Asp	Lys	Trp
	1550					1555					1560			
Asp	Lys	Glu	Glu	Asp	Val	Gln	Val	Leu	Ala	Ile	Glu	Pro	Gly	Lys
	1565					1570					1575			
Asn	Pro	Lys	His	Val	Gln	Thr	Lys	Pro	Gly	Leu	Phe	Lys	Thr	Leu
	1580					1585					1590			
Thr	Gly	Glu	Ile	Gly	Ala	Val	Thr	Leu	Asp	Phe	Lys	Pro	Gly	Thr
	1595					1600					1605			
Ser	Gly	Ser	Pro	Ile	Ile	Asn	Arg	Lys	Gly	Lys	Val	Ile	Gly	Leu
	1610					1615					1620			
Tyr	Gly	Asn	Gly	Val	Val	Thr	Lys	Ser	Gly	Asp	Tyr	Val	Ser	Ala
	1625					1630					1635			
Ile	Thr	Gln	Ala	Glu	Arg	Ile	Gly	Glu	Pro	Asp	Tyr	Glu	Val	Asp
	1640					1645					1650			
Glu	Asp	Ile	Phe	Arg	Lys	Lys	Arg	Leu	Thr	Ile	Met	Asp	Leu	His
	1655					1660					1665			

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Pro	Gly 1670	Ala	Gly	Lys	Thr	Lys 1675	Arg	Ile	Leu	Pro	Ser 1680	Ile	Val	Arg
Glu	Ala 1685	Leu	Lys	Arg	Arg	Leu 1690	Arg	Thr	Leu	Ile	Leu 1695	Ala	Pro	Thr
Arg	Val 1700	Val	Ala	Ala	Glu	Met 1705	Glu	Glu	Ala	Leu	Arg 1710	Gly	Leu	Pro
Ile	Arg 1715	Tyr	Gln	Thr	Pro	Ala 1720	Val	Lys	Ser	Glu	His 1725	Thr	Gly	Arg
Glu	Ile 1730	Val	Asp	Leu	Met	Cys 1735	His	Ala	Thr	Phe	Thr 1740	Thr	Arg	Leu
Leu	Ser 1745	Ser	Thr	Arg	Val	Pro 1750	Asn	Tyr	Asn	Leu	Ile 1755	Val	Met	Asp
Glu	Ala 1760	His	Phe	Thr	Asp	Pro 1765	Ser	Ser	Val	Ala	Ala 1770	Arg	Gly	Tyr
Ile	Ser 1775	Thr	Arg	Val	Glu	Met 1780	Gly	Glu	Ala	Ala	Ala 1785	Ile	Phe	Met
Thr	Ala 1790	Thr	Pro	Pro	Gly	Ala 1795	Thr	Asp	Pro	Phe	Pro 1800	Gln	Ser	Asn
Ser	Pro 1805	Ile	Glu	Asp	Ile	Glu 1810	Arg	Glu	Ile	Pro	Glu 1815	Arg	Ser	Trp
Asn	Thr 1820	Gly	Phe	Asp	Trp	Ile 1825	Thr	Asp	Tyr	Gln	Gly 1830	Lys	Thr	Val
Trp	Phe 1835	Val	Pro	Ser	Ile	Lys 1840	Ala	Gly	Asn	Asp	Ile 1845	Ala	Asn	Cys
Leu	Arg 1850	Lys	Ser	Gly	Lys	Lys 1855	Val	Ile	Gln	Leu	Ser 1860	Arg	Lys	Thr
Phe	Asp 1865	Thr	Glu	Tyr	Pro	Lys 1870	Thr	Lys	Leu	Thr	Asp 1875	Trp	Asp	Phe
Val	Val 1880	Thr	Thr	Asp	Ile	Ser 1885	Glu	Met	Gly	Ala	Asn 1890	Phe	Arg	Ala
Gly	Arg 1895	Val	Ile	Asp	Pro	Arg 1900	Arg	Cys	Leu	Lys	Pro 1905	Val	Ile	Leu
Thr	Asp 1910	Gly	Pro	Glu	Arg	Val 1915	Ile	Leu	Ala	Gly	Pro 1920	Ile	Pro	Val

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Thr	Pro	Ala	Ser	Ala	Ala	Gln	Arg	Arg	Gly	Arg	Ile	Gly	Arg	Asn
	1925					1930					1935			
Pro	Ala	Gln	Glu	Asp	Asp	Gln	Tyr	Val	Phe	Ser	Gly	Asp	Pro	Leu
	1940					1945					1950			
Lys	Asn	Asp	Glu	Asp	His	Ala	His	Trp	Thr	Glu	Ala	Lys	Met	Leu
	1955					1960					1965			
Leu	Asp	Asn	Ile	Tyr	Thr	Pro	Glu	Gly	Ile	Ile	Pro	Thr	Leu	Phe
	1970					1975					1980			
Gly	Pro	Glu	Arg	Glu	Lys	Thr	Gln	Ala	Ile	Asp	Gly	Glu	Phe	Arg
	1985					1990					1995			
Leu	Arg	Gly	Glu	Gln	Arg	Lys	Thr	Phe	Val	Glu	Leu	Met	Arg	Arg
	2000					2005					2010			
Gly	Asp	Leu	Pro	Val	Trp	Leu	Ser	Tyr	Lys	Val	Ala	Ser	Ala	Gly
	2015					2020					2025			
Ile	Ser	Tyr	Lys	Asp	Arg	Glu	Trp	Cys	Phe	Thr	Gly	Glu	Arg	Asn
	2030					2035					2040			
Asn	Gln	Ile	Leu	Glu	Glu	Asn	Met	Glu	Val	Glu	Ile	Trp	Thr	Arg
	2045					2050					2055			
Glu	Gly	Glu	Lys	Lys	Lys	Leu	Arg	Pro	Arg	Trp	Leu	Asp	Ala	Arg
	2060					2065					2070			
Val	Tyr	Ala	Asp	Pro	Met	Ala	Leu	Lys	Asp	Phe	Lys	Glu	Phe	Ala
	2075					2080					2085			
Ser	Gly	Arg	Lys	Ser	Ile	Thr	Leu	Asp	Ile	Leu	Thr	Glu	Ile	Ala
	2090					2095					2100			
Ser	Leu	Pro	Thr	Tyr	Leu	Ser	Ser	Arg	Ala	Lys	Leu	Ala	Leu	Asp
	2105					2110					2115			
Asn	Ile	Val	Met	Leu	His	Thr	Thr	Glu	Arg	Gly	Gly	Arg	Ala	Tyr
	2120					2125					2130			
Gln	His	Ala	Leu	Asn	Glu	Leu	Pro	Glu	Ser	Leu	Glu	Thr	Leu	Met
	2135					2140					2145			
Leu	Val	Ala	Leu	Leu	Gly	Ala	Met	Thr	Ala	Gly	Ile	Phe	Leu	Phe
	2150					2155					2160			
Phe	Met	Gln	Gly	Lys	Gly	Ile	Gly	Lys	Leu	Ser	Met	Gly	Leu	Ile
	2165					2170					2175			

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Thr	Ile	Ala	Val	Ala	Ser	Gly	Leu	Phe	Trp	Val	Ala	Glu	Ile	Gln
	2180					2185					2190			
Pro	Gln	Trp	Ile	Ala	Ala	Ser	Ile	Ile	Leu	Glu	Phe	Phe	Leu	Met
	2195					2200					2205			
Val	Leu	Leu	Ile	Pro	Glu	Pro	Glu	Lys	Gln	Arg	Thr	Pro	Gln	Asp
	2210					2215					2220			
Asn	Gln	Leu	Ile	Tyr	Val	Ile	Leu	Thr	Ile	Leu	Thr	Ile	Ile	Gly
	2225					2230					2235			
Leu	Ile	Ala	Ala	Asn	Glu	Met	Gly	Leu	Ile	Glu	Lys	Thr	Lys	Thr
	2240					2245					2250			
Asp	Phe	Gly	Phe	Tyr	Gln	Val	Lys	Thr	Glu	Thr	Thr	Ile	Leu	Asp
	2255					2260					2265			
Val	Asp	Leu	Arg	Pro	Ala	Ser	Ala	Trp	Thr	Leu	Tyr	Ala	Val	Ala
	2270					2275					2280			
Thr	Thr	Ile	Leu	Thr	Pro	Met	Leu	Arg	His	Thr	Ile	Glu	Asn	Thr
	2285					2290					2295			
Ser	Ala	Asn	Leu	Ser	Leu	Ala	Ala	Ile	Ala	Asn	Gln	Ala	Ala	Val
	2300					2305					2310			
Leu	Met	Gly	Leu	Gly	Lys	Gly	Trp	Pro	Leu	His	Arg	Met	Asp	Leu
	2315					2320					2325			
Gly	Val	Pro	Leu	Leu	Ala	Met	Gly	Cys	Tyr	Ser	Gln	Val	Asn	Pro
	2330					2335					2340			
Thr	Thr	Leu	Thr	Ala	Ser	Leu	Val	Met	Leu	Ser	Val	His	Tyr	Ala
	2345					2350					2355			
Ile	Ile	Gly	Pro	Gly	Leu	Gln	Ala	Lys	Ala	Thr	Arg	Glu	Ala	Gln
	2360					2365					2370			
Lys	Arg	Thr	Ala	Ala	Gly	Ile	Met	Lys	Asn	Pro	Thr	Val	Asp	Gly
	2375					2380					2385			
Ile	Thr	Val	Ile	Asp	Leu	Glu	Pro	Ile	Ser	Tyr	Asp	Pro	Lys	Phe
	2390					2395					2400			
Glu	Lys	Gln	Leu	Gly	Gln	Val	Met	Leu	Leu	Val	Leu	Cys	Ala	Gly
	2405					2410					2415			
Gln	Leu	Leu	Leu	Met	Arg	Thr	Thr	Trp	Ala	Phe	Cys	Glu	Val	Leu
	2420					2425					2430			

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Thr	Leu	Ala	Thr	Gly	Pro	Ile	Leu	Thr	Leu	Trp	Glu	Gly	Asn	Pro
	2435					2440					2445			
Gly	Arg	Phe	Trp	Asn	Thr	Thr	Ile	Ala	Val	Ser	Thr	Ala	Asn	Ile
	2450					2455					2460			
Phe	Arg	Gly	Ser	Tyr	Leu	Ala	Gly	Ala	Gly	Leu	Ala	Phe	Ser	Leu
	2465					2470					2475			
Ile	Lys	Asn	Val	Gln	Thr	Pro	Arg	Arg	Gly	Thr	Gly	Thr	Thr	Gly
	2480					2485					2490			
Glu	Thr	Leu	Gly	Glu	Lys	Trp	Lys	Arg	Gln	Leu	Asn	Ser	Leu	Asp
	2495					2500					2505			
Arg	Lys	Glu	Phe	Glu	Glu	Tyr	Lys	Arg	Ser	Gly	Ile	Leu	Glu	Val
	2510					2515					2520			
Asp	Arg	Thr	Glu	Ala	Lys	Ser	Ala	Leu	Lys	Asp	Gly	Ser	Lys	Ile
	2525					2530					2535			
Lys	His	Ala	Val	Ser	Arg	Gly	Ser	Ser	Lys	Ile	Arg	Trp	Ile	Val
	2540					2545					2550			
Glu	Arg	Gly	Met	Val	Lys	Pro	Lys	Gly	Lys	Val	Val	Asp	Leu	Gly
	2555					2560					2565			
Cys	Gly	Arg	Gly	Gly	Trp	Ser	Tyr	Tyr	Met	Ala	Thr	Leu	Lys	Asn
	2570					2575					2580			
Val	Thr	Glu	Val	Lys	Gly	Tyr	Thr	Lys	Gly	Gly	Pro	Gly	His	Glu
	2585					2590					2595			
Glu	Pro	Ile	Pro	Met	Ala	Thr	Tyr	Gly	Trp	Asn	Leu	Val	Lys	Leu
	2600					2605					2610			
His	Ser	Gly	Val	Asp	Val	Phe	Tyr	Lys	Pro	Thr	Glu	Gln	Val	Asp
	2615					2620					2625			
Thr	Leu	Leu	Cys	Asp	Ile	Gly	Glu	Ser	Ser	Ser	Asn	Pro	Thr	Ile
	2630					2635					2640			
Glu	Glu	Gly	Arg	Thr	Leu	Arg	Val	Leu	Lys	Met	Val	Glu	Pro	Trp
	2645					2650					2655			
Leu	Ser	Ser	Lys	Pro	Glu	Phe	Cys	Ile	Lys	Val	Leu	Asn	Pro	Tyr
	2660					2665					2670			
Met	Pro	Thr	Val	Ile	Glu	Glu	Leu	Glu	Lys	Leu	Gln	Arg	Lys	His
	2675					2680					2685			

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Gly	Gly	Asn	Leu	Val	Arg	Cys	Pro	Leu	Ser	Arg	Asn	Ser	Thr	His
	2690					2695					2700			
Glu	Met	Tyr	Trp	Val	Ser	Gly	Ala	Ser	Gly	Asn	Ile	Val	Ser	Ser
	2705					2710					2715			
Val	Asn	Thr	Thr	Ser	Lys	Met	Leu	Leu	Asn	Arg	Phe	Thr	Thr	Arg
	2720					2725					2730			
His	Arg	Lys	Pro	Thr	Tyr	Glu	Lys	Asp	Val	Asp	Leu	Gly	Ala	Gly
	2735					2740					2745			
Thr	Arg	Ser	Val	Ser	Thr	Glu	Thr	Glu	Lys	Pro	Asp	Met	Thr	Ile
	2750					2755					2760			
Ile	Gly	Arg	Arg	Leu	Gln	Arg	Leu	Gln	Glu	Glu	His	Lys	Glu	Thr
	2765					2770					2775			
Trp	His	Tyr	Asp	Gln	Glu	Asn	Pro	Tyr	Arg	Thr	Trp	Ala	Tyr	His
	2780					2785					2790			
Gly	Ser	Tyr	Glu	Ala	Pro	Ser	Thr	Gly	Ser	Ala	Ser	Ser	Met	Val
	2795					2800					2805			
Asn	Gly	Val	Val	Lys	Leu	Leu	Thr	Lys	Pro	Trp	Asp	Val	Val	Pro
	2810					2815					2820			
Met	Val	Thr	Gln	Leu	Ala	Met	Thr	Asp	Thr	Thr	Pro	Phe	Gly	Gln
	2825					2830					2835			
Gln	Arg	Val	Phe	Lys	Glu	Lys	Val	Asp	Thr	Arg	Thr	Pro	Gln	Pro
	2840					2845					2850			
Lys	Pro	Gly	Thr	Arg	Met	Val	Met	Thr	Thr	Thr	Ala	Asn	Trp	Leu
	2855					2860					2865			
Trp	Ala	Leu	Leu	Gly	Lys	Lys	Lys	Asn	Pro	Arg	Leu	Cys	Thr	Arg
	2870					2875					2880			
Glu	Glu	Phe	Ile	Ser	Lys	Val	Arg	Ser	Asn	Ala	Ala	Ile	Gly	Ala
	2885					2890					2895			
Val	Phe	Gln	Glu	Glu	Gln	Gly	Trp	Thr	Ser	Ala	Ser	Glu	Ala	Val
	2900					2905					2910			
Asn	Asp	Ser	Arg	Phe	Trp	Glu	Leu	Val	Asp	Lys	Glu	Arg	Ala	Leu
	2915					2920					2925			
His	Gln	Glu	Gly	Lys	Cys	Glu	Ser	Cys	Val	Tyr	Asn	Met	Met	Gly
	2930					2935					2940			

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Lys	Arg	Glu	Lys	Lys	Leu	Gly	Glu	Phe	Gly	Arg	Ala	Lys	Gly	Ser
	2945					2950					2955			
Arg	Ala	Ile	Trp	Tyr	Met	Trp	Leu	Gly	Ala	Arg	Phe	Leu	Glu	Phe
	2960					2965					2970			
Glu	Ala	Leu	Gly	Phe	Leu	Asn	Glu	Asp	His	Trp	Phe	Gly	Arg	Glu
	2975					2980					2985			
Asn	Ser	Trp	Ser	Gly	Val	Glu	Gly	Glu	Gly	Leu	His	Arg	Leu	Gly
	2990					2995					3000			
Tyr	Ile	Leu	Glu	Glu	Ile	Asp	Lys	Lys	Asp	Gly	Asp	Leu	Met	Tyr
	3005					3010					3015			
Ala	Asp	Asp	Thr	Ala	Gly	Trp	Asp	Thr	Arg	Ile	Thr	Glu	Asp	Asp
	3020					3025					3030			
Leu	Gln	Asn	Glu	Glu	Leu	Ile	Thr	Glu	Gln	Met	Ala	Pro	His	His
	3035					3040					3045			
Lys	Ile	Leu	Ala	Lys	Ala	Ile	Phe	Lys	Leu	Thr	Tyr	Gln	Asn	Lys
	3050					3055					3060			
Val	Val	Lys	Val	Leu	Arg	Pro	Thr	Pro	Arg	Gly	Ala	Val	Met	Asp
	3065					3070					3075			
Ile	Ile	Ser	Arg	Lys	Asp	Gln	Arg	Gly	Ser	Gly	Gln	Val	Gly	Thr
	3080					3085					3090			
Tyr	Gly	Leu	Asn	Thr	Phe	Thr	Asn	Met	Glu	Val	Gln	Leu	Ile	Arg
	3095					3100					3105			
Gln	Met	Glu	Ala	Glu	Gly	Val	Ile	Thr	Gln	Asp	Asp	Met	Gln	Asn
	3110					3115					3120			
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Lys Ala Tyr Ala Gln Met Trp Ser Leu Met Tyr Phe His Arg Arg
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Asp Leu Arg Leu Ala Ser Met Ala Ile Cys Ser Ala Val Pro Thr
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Glu Trp Phe Pro Thr Ser Arg Thr Thr Trp Ser Ile His Ala His
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His Gln Trp Met Thr Thr Glu Asp Met Leu Lys Val Trp Asn Arg
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Val Trp Ile Glu Asp Asn Pro Asn Met Thr Asp Lys Thr Pro Val
3305 3310 3315

His Ser Trp Glu Asp Ile Pro Tyr Leu Gly Lys Arg Glu Asp Leu
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