

SEQUENCE LISTING

<110> Devalaraja-Narashimha, Kishor

<120> ANTI-C5 ANTIBODY COMBINATIONS AND USES THEREOF

<130> 10405

<160> 109

<170> PatentIn version 3.5

<210> 1

<211> 1676

<212> PRT

<213> Homo sapiens

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Trp Gly Gln Glu Gln Thr Tyr Val Ile Ser Ala Pro Lys Ile Phe Arg
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Val Gly Ala Ser Glu Asn Ile Val Ile Gln Val Tyr Gly Tyr Thr Glu
35 40 45

Ala Phe Asp Ala Thr Ile Ser Ile Lys Ser Tyr Pro Asp Lys Lys Phe
50 55 60

Ser Tyr Ser Ser Gly His Val His Leu Ser Ser Glu Asn Lys Phe Gln
65 70 75 80

Asn Ser Ala Ile Leu Thr Ile Gln Pro Lys Gln Leu Pro Gly Gly Gln
85 90 95

Asn Pro Val Ser Tyr Val Tyr Leu Glu Val Val Ser Lys His Phe Ser
100 105 110

Lys Ser Lys Arg Met Pro Ile Thr Tyr Asp Asn Gly Phe Leu Phe Ile
115 120 125

His Thr Asp Lys Pro Val Tyr Thr Pro Asp Gln Ser Val Lys Val Arg
130 135 140

Val Tyr Ser Leu Asn Asp Asp Leu Lys Pro Ala Lys Arg Glu Thr Val
145 150 155 160

Leu Thr Phe Ile Asp Pro Glu Gly Ser Glu Val Asp Met Val Glu Glu
165 170 175

Ile Asp His Ile Gly Ile Ile Ser Phe Pro Asp Phe Lys Ile Pro Ser
180 185 190

Asn Pro Arg Tyr Gly Met Trp Thr Ile Lys Ala Lys Tyr Lys Glu Asp
195 200 205

Phe Ser Thr Thr Gly Thr Ala Tyr Phe Glu Val Lys Glu Tyr Val Leu
210 215 220

Pro His Phe Ser Val Ser Ile Glu Pro Glu Tyr Asn Phe Ile Gly Tyr
225 230 235 240

Lys Asn Phe Lys Asn Phe Glu Ile Thr Ile Lys Ala Arg Tyr Phe Tyr
245 250 255

Asn Lys Val Val Thr Glu Ala Asp Val Tyr Ile Thr Phe Gly Ile Arg
260 265 270

Glu Asp Leu Lys Asp Asp Gln Lys Glu Met Met Gln Thr Ala Met Gln
275 280 285

Asn Thr Met Leu Ile Asn Gly Ile Ala Gln Val Thr Phe Asp Ser Glu
290 295 300

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

Lys Tyr Leu Tyr Ile Ala Val Thr Val Ile Glu Ser Thr Gly Gly Phe
325 330 335

Ser Glu Glu Ala Glu Ile Pro Gly Ile Lys Tyr Val Leu Ser Pro Tyr
340 345 350

Lys Leu Asn Leu Val Ala Thr Pro Leu Phe Leu Lys Pro Gly Ile Pro

355

360

365

Tyr Pro Ile Lys Val Gln Val Lys Asp Ser Leu Asp Gln Leu Val Gly
 370 375 380

Gly Val Pro Val Thr Leu Asn Ala Gln Thr Ile Asp Val Asn Gln Glu
 385 390 395 400

Thr Ser Asp Leu Asp Pro Ser Lys Ser Val Thr Arg Val Asp Asp Gly
 405 410 415

Val Ala Ser Phe Val Leu Asn Leu Pro Ser Gly Val Thr Val Leu Glu
 420 425 430

Phe Asn Val Lys Thr Asp Ala Pro Asp Leu Pro Glu Glu Asn Gln Ala
 435 440 445

Arg Glu Gly Tyr Arg Ala Ile Ala Tyr Ser Ser Leu Ser Gln Ser Tyr
 450 455 460

Leu Tyr Ile Asp Trp Thr Asp Asn His Lys Ala Leu Leu Val Gly Glu
 465 470 475 480

His Leu Asn Ile Ile Val Thr Pro Lys Ser Pro Tyr Ile Asp Lys Ile
 485 490 495

Thr His Tyr Asn Tyr Leu Ile Leu Ser Lys Gly Lys Ile Ile His Phe
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Gly Thr Arg Glu Lys Phe Ser Asp Ala Ser Tyr Gln Ser Ile Asn Ile
 515 520 525

Pro Val Thr Gln Asn Met Val Pro Ser Ser Arg Leu Leu Val Tyr Tyr
 530 535 540

Ile Val Thr Gly Glu Gln Thr Ala Glu Leu Val Ser Asp Ser Val Trp
 545 550 555 560

Leu Asn Ile Glu Glu Lys Cys Gly Asn Gln Leu Gln Val His Leu Ser
 565 570 575

Pro Asp Ala Asp Ala Tyr Ser Pro Gly Gln Thr Val Ser Leu Asn Met
580 585 590

Ala Thr Gly Met Asp Ser Trp Val Ala Leu Ala Ala Val Asp Ser Ala
595 600 605

Val Tyr Gly Val Gln Arg Gly Ala Lys Lys Pro Leu Glu Arg Val Phe
610 615 620

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

Asn Asn Ala Asn Val Phe His Leu Ala Gly Leu Thr Phe Leu Thr Asn
645 650 655

Ala Asn Ala Asp Asp Ser Gln Glu Asn Asp Glu Pro Cys Lys Glu Ile
660 665 670

Leu Arg Pro Arg Arg Thr Leu Gln Lys Lys Ile Glu Glu Ile Ala Ala
675 680 685

Lys Tyr Lys His Ser Val Val Lys Lys Cys Cys Tyr Asp Gly Ala Cys
690 695 700

Val Asn Asn Asp Glu Thr Cys Glu Gln Arg Ala Ala Arg Ile Ser Leu
705 710 715 720

Gly Pro Arg Cys Ile Lys Ala Phe Thr Glu Cys Cys Val Val Ala Ser
725 730 735

Gln Leu Arg Ala Asn Ile Ser His Lys Asp Met Gln Leu Gly Arg Leu
740 745 750

His Met Lys Thr Leu Leu Pro Val Ser Lys Pro Glu Ile Arg Ser Tyr
755 760 765

Phe Pro Glu Ser Trp Leu Trp Glu Val His Leu Val Pro Arg Arg Lys
770 775 780

Gln Leu Gln Phe Ala Leu Pro Asp Ser Leu Thr Thr Trp Glu Ile Gln

785		790		795		800
Gly Val Gly Ile Ser Asn Thr Gly Ile Cys Val Ala Asp Thr Val Lys						
		805		810		815
Ala Lys Val Phe Lys Asp Val Phe Leu Glu Met Asn Ile Pro Tyr Ser						
		820		825		830
Val Val Arg Gly Glu Gln Ile Gln Leu Lys Gly Thr Val Tyr Asn Tyr						
		835		840		845
Arg Thr Ser Gly Met Gln Phe Cys Val Lys Met Ser Ala Val Glu Gly						
		850		855		860
Ile Cys Thr Ser Glu Ser Pro Val Ile Asp His Gln Gly Thr Lys Ser						
		865		870		875
Ser Lys Cys Val Arg Gln Lys Val Glu Gly Ser Ser Ser His Leu Val						
		885		890		895
Thr Phe Thr Val Leu Pro Leu Glu Ile Gly Leu His Asn Ile Asn Phe						
		900		905		910
Ser Leu Glu Thr Trp Phe Gly Lys Glu Ile Leu Val Lys Thr Leu Arg						
		915		920		925
Val Val Pro Glu Gly Val Lys Arg Glu Ser Tyr Ser Gly Val Thr Leu						
		930		935		940
Asp Pro Arg Gly Ile Tyr Gly Thr Ile Ser Arg Arg Lys Glu Phe Pro						
		945		950		955
Tyr Arg Ile Pro Leu Asp Leu Val Pro Lys Thr Glu Ile Lys Arg Ile						
		965		970		975
Leu Ser Val Lys Gly Leu Leu Val Gly Glu Ile Leu Ser Ala Val Leu						
		980		985		990
Ser Gln Glu Gly Ile Asn Ile Leu Thr His Leu Pro Lys Gly Ser Ala						
		995		1000		1005

Glu Ala Glu Leu Met Ser Val Val Pro Val Phe Tyr Val Phe His
1010 1015 1020

Tyr Leu Glu Thr Gly Asn His Trp Asn Ile Phe His Ser Asp Pro
1025 1030 1035

Leu Ile Glu Lys Gln Lys Leu Lys Lys Lys Leu Lys Glu Gly Met
1040 1045 1050

Leu Ser Ile Met Ser Tyr Arg Asn Ala Asp Tyr Ser Tyr Ser Val
1055 1060 1065

Trp Lys Gly Gly Ser Ala Ser Thr Trp Leu Thr Ala Phe Ala Leu
1070 1075 1080

Arg Val Leu Gly Gln Val Asn Lys Tyr Val Glu Gln Asn Gln Asn
1085 1090 1095

Ser Ile Cys Asn Ser Leu Leu Trp Leu Val Glu Asn Tyr Gln Leu
1100 1105 1110

Asp Asn Gly Ser Phe Lys Glu Asn Ser Gln Tyr Gln Pro Ile Lys
1115 1120 1125

Leu Gln Gly Thr Leu Pro Val Glu Ala Arg Glu Asn Ser Leu Tyr
1130 1135 1140

Leu Thr Ala Phe Thr Val Ile Gly Ile Arg Lys Ala Phe Asp Ile
1145 1150 1155

Cys Pro Leu Val Lys Ile Asp Thr Ala Leu Ile Lys Ala Asp Asn
1160 1165 1170

Phe Leu Leu Glu Asn Thr Leu Pro Ala Gln Ser Thr Phe Thr Leu
1175 1180 1185

Ala Ile Ser Ala Tyr Ala Leu Ser Leu Gly Asp Lys Thr His Pro
1190 1195 1200

Gln Phe Arg Ser Ile Val Ser Ala Leu Lys Arg Glu Ala Leu Val

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

Glu Ser Ser Ser Gly Ser Ser His Ala Val Met Asp Ile Ser Leu
1415 1420 1425

Pro Thr Gly Ile Ser Ala Asn Glu Glu Asp Leu Lys Ala Leu Val
1430 1435 1440

Glu Gly Val Asp Gln Leu Phe Thr Asp Tyr Gln Ile Lys Asp Gly
1445 1450 1455

His Val Ile Leu Gln Leu Asn Ser Ile Pro Ser Ser Asp Phe Leu
1460 1465 1470

Cys Val Arg Phe Arg Ile Phe Glu Leu Phe Glu Val Gly Phe Leu
1475 1480 1485

Ser Pro Ala Thr Phe Thr Val Tyr Glu Tyr His Arg Pro Asp Lys
1490 1495 1500

Gln Cys Thr Met Phe Tyr Ser Thr Ser Asn Ile Lys Ile Gln Lys
1505 1510 1515

Val Cys Glu Gly Ala Ala Cys Lys Cys Val Glu Ala Asp Cys Gly
1520 1525 1530

Gln Met Gln Glu Glu Leu Asp Leu Thr Ile Ser Ala Glu Thr Arg
1535 1540 1545

Lys Gln Thr Ala Cys Lys Pro Glu Ile Ala Tyr Ala Tyr Lys Val
1550 1555 1560

Ser Ile Thr Ser Ile Thr Val Glu Asn Val Phe Val Lys Tyr Lys
1565 1570 1575

Ala Thr Leu Leu Asp Ile Tyr Lys Thr Gly Glu Ala Val Ala Glu
1580 1585 1590

Lys Asp Ser Glu Ile Thr Phe Ile Lys Lys Val Thr Cys Thr Asn
1595 1600 1605

Ala Glu Leu Val Lys Gly Arg Gln Tyr Leu Ile Met Gly Lys Glu

1610

1615

1620

Ala Leu Gln Ile Lys Tyr Asn Phe Ser Phe Arg Tyr Ile Tyr Pro
 1625 1630 1635

Leu Asp Ser Leu Thr Trp Ile Glu Tyr Trp Pro Arg Asp Thr Thr
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Cys Ser Ser Cys Gln Ala Phe Leu Ala Asn Leu Asp Glu Phe Ala
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Glu Asp Ile Phe Leu Asn Gly Cys
 1670 1675

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<220>
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 tcc ctg aga ctc tcc tgt gca gcc tct gga ttc acc ttc agt gac cac 96
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asp His
 20 25 30
 tat atg gac tgg gtc cgc cag gct cca ggg aag ggg ctg gac tgg att 144
 Tyr Met Asp Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Asp Trp Ile
 35 40 45
 ggc cgt att aga aac aaa gct aac gct tat aac aca gaa tac gcc gcg 192
 Gly Arg Ile Arg Asn Lys Ala Asn Ala Tyr Asn Thr Glu Tyr Ala Ala
 50 55 60
 tct gtg aga ggc aga ttc acc atc tca aga gat gat tca cag aat tta 240
 Ser Val Arg Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Gln Asn Leu
 65 70 75 80
 ctg tat ctg caa atg aac agc ctg aaa acc gat gac acg gcc gta tat 288
 Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Asp Asp Thr Ala Val Tyr
 85 90 95

tat	tgt	gtt	aga	gtc	tgg	aac	tac	gcc	tac	ttc	gct	atg	gac	gtc	tgg	336
Tyr	Cys	Val	Arg	Val	Trp	Asn	Tyr	Ala	Tyr	Phe	Ala	Met	Asp	Val	Trp	
			100					105					110			

ggc	caa	ggg	acc	acg	gtc	acc	gtc	tcc	tca	366
Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser	
		115					120			

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Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Asp	His
			20					25					30		

Tyr	Met	Asp	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Asp	Trp	Ile
		35					40					45			

Gly	Arg	Ile	Arg	Asn	Lys	Ala	Asn	Ala	Tyr	Asn	Thr	Glu	Tyr	Ala	Ala
	50					55					60				

Ser	Val	Arg	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asp	Ser	Gln	Asn	Leu
65					70					75				80	

Leu	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Lys	Thr	Asp	Asp	Thr	Ala	Val	Tyr
			85						90					95	

Tyr	Cys	Val	Arg	Val	Trp	Asn	Tyr	Ala	Tyr	Phe	Ala	Met	Asp	Val	Trp
			100					105					110		

Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser
		115					120		

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Gly Phe Thr Phe Ser Asp His Tyr
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Ile Arg Asn Lys Ala Asn Ala Tyr Asn Thr
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Val Arg Val Trp Asn Tyr Ala Tyr Phe Ala Met Asp Val
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 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 gac aga gtc acc atc act tgc cgg tca agt cag aac att gga atc ttt 96
 Asp Arg Val Thr Ile Thr Cys Arg Ser Ser Gln Asn Ile Gly Ile Phe
 20 25 30
 tta aac tgg tat caa caa aaa cca ggg gaa gcc cct aac ctc ctg atc 144
 Leu Asn Trp Tyr Gln Gln Lys Pro Gly Glu Ala Pro Asn Leu Leu Ile
 35 40 45
 tcc gct gca tcc agt tta cac agt ggg gtc cct tca agg ttc agt ggc 192
 Ser Ala Ala Ser Ser Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 agt ggg tct ggg aca gat ttc act ctc acc atc ggc agt ctg cag cct 240
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Gly Ser Leu Gln Pro
 65 70 75 80
 gaa gat ttt gcg act tac tac tgt caa cag acg tac aat acc ata ttc 288
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Thr Tyr Asn Thr Ile Phe
 85 90 95
 act ttc ggc cct ggg acc aaa gtg gat atc aaa 321
 Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
 100 105

<210> 11
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Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ser Ser Gln Asn Ile Gly Ile Phe
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Glu Ala Pro Asn Leu Leu Ile
35 40 45

Ser Ala Ala Ser Ser Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Gly Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Thr Tyr Asn Thr Ile Phe
85 90 95

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
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<400> 13

Gln Asn Ile Gly Ile Phe
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Ala Ala Ser
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<213> Homo sapiens

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Gln	Val	Gln	Leu	Gln	Glu	Ser	Gly	Pro	Gly	Leu	Val	Lys	Pro	Ser	Glu	
1			5				10						15			

acc	ctg	tcc	ctc	acc	tgc	act	gtc	tct	ggg	gac	tcc	gtc	agt	agt	tcc	96
Thr	Leu	Ser	Leu	Thr	Cys	Thr	Val	Ser	Gly	Asp	Ser	Val	Ser	Ser	Ser	
			20				25						30			

tac	tgg	acc	tgg	atc	cgg	cag	ccc	cca	ggg	aag	gga	ctg	gag	tgg	att	144
Tyr	Trp	Thr	Trp	Ile	Arg	Gln	Pro	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Ile	
		35				40						45				

ggc	tat	atc	tat	tac	agt	ggg	agt	tcc	aac	tac	aac	ccc	tcc	ctc	aag	192
Gly	Tyr	Ile	Tyr	Tyr	Ser	Gly	Ser	Ser	Asn	Tyr	Asn	Pro	Ser	Leu	Lys	
	50					55					60					

agt cga gcc acc att tca gta gac acg tcc aag aac cag ttc tcc ctg 240
Ser Arg Ala Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65 70 75 80

aag ctg agt tct gtg acc gct gcg gac acg gcc gta tat tac tgt gcg 288
Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

aga gaa ggg aac gtg gat aca act atg ata ttt gac tac tgg ggc cag 336
Arg Glu Gly Asn Val Asp Thr Thr Met Ile Phe Asp Tyr Trp Gly Gln
100 105 110

gga	acc	ctg	gtc	acc	gtc	tcc	tca	360
Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	
		115				120		

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Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
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Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Asp Ser Val Ser Ser Ser
20 25 30

Tyr Trp Thr Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Ser Ser Asn Tyr Asn Pro Ser Leu Lys
50 55 60

Ser Arg Ala Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Glu Gly Asn Val Asp Thr Thr Met Ile Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

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<210> 21
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<400> 21

Gly Asp Ser Val Ser Ser Ser Tyr
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<210> 22
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atctattaca gtgggagttc c

21

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<400> 23

Ile Tyr Tyr Ser Gly Ser Ser
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gcgagagaag ggaacgtgga tacaactatg atatttgact ac

42

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Ala	Arg	Glu	Gly	Asn	Val	Asp	Thr	Thr	Met	Ile	Phe	Asp	Tyr
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Ala	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	
1				5					10					15		

gac	aga	gtc	acc	atc	act	tgc	cgg	gca	agt	cag	ggc	att	aga	aat	gat	96
Asp	Arg	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Gly	Ile	Arg	Asn	Asp	
			20					25					30			

tta	ggc	tgg	tat	caa	cag	aaa	cca	ggg	aaa	gcc	cct	aaa	ctc	ctg	atc	144
Leu	Gly	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu	Leu	Ile	
		35					40					45				

tat	gct	gca	tcc	agt	tta	caa	agt	ggg	gtc	cca	tcg	agg	ttc	gcc	ggc	192
Tyr	Ala	Ala	Ser	Ser	Leu	Gln	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ala	Gly	
	50					55					60					

cgt	gga	tct	ggc	aca	gat	ttc	act	ctc	acc	atc	agc	agc	ctg	cag	cct	240
Arg	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	
65					70					75					80	

gaa	gat	ttt	gca	act	tat	tac	tgt	cta	caa	gat	ttc	aat	tac	ccg	tgg	288
Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Leu	Gln	Asp	Phe	Asn	Tyr	Pro	Trp	
				85					90					95		

acg	ttc	ggc	caa	ggg	acc	aag	gtg	gaa	atc	aaa						321
Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys						
			100					105								

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Ala Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
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 35 40 45

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ala Gly
 50 55 60

Arg Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Asp Phe Asn Tyr Pro Trp
 85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 100 105

<210> 28
 <211> 18
 <212> DNA
 <213> Homo sapiens

<400> 28
 cagggcatta gaaatgat

18

<210> 29
 <211> 6
 <212> PRT
 <213> Homo sapiens

<400> 29

Gln Gly Ile Arg Asn Asp
 1 5

<210> 30
 <211> 9
 <212> DNA
 <213> Homo sapiens

<400> 30
gctgcatcc 9

<210> 31
<211> 3
<212> PRT
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<400> 31

Ala Ala Ser
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<210> 32
<211> 27
<212> DNA
<213> Homo sapiens

<400> 32
ctacaagatt tcaattaccc gtggacg 27

<210> 33
<211> 9
<212> PRT
<213> Homo sapiens

<400> 33

Leu Gln Asp Phe Asn Tyr Pro Trp Thr
1 5

<210> 34
<211> 357
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)..(357)

<400> 34
cag gtg cag ctg gtg gag tct ggg gga ggc gtg gtc cag cct ggg agg 48
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

tcc ctg aga ctc tcc tgt gca gcg tct gga ttc acc ttc agt ggt tat 96
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Gly Tyr
20 25 30

ggc atg cac tgg gtc cgc cag gct cca ggc aag ggg ctg gag tgg gtg	144
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val	
35 40 45	

gca ctt ata tgg ctt gat gga agt aat gac tac tat gca gac tcc gtg	192
Ala Leu Ile Trp Leu Asp Gly Ser Asn Asp Tyr Tyr Ala Asp Ser Val	
50 55 60	

aag ggc cga ttc acc atc tcc aga gac aat tcc aag aac acg tta tat	240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr	
65 70 75 80	

ctg caa atg aac aga ctg aga gcc gag gac acg gct gtg tat tac tgt	288
Leu Gln Met Asn Arg Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys	
85 90 95	

gcg aga gat ggc ccg gtt gct gct ata ccc gac tac tgg ggc cag gga	336
Ala Arg Asp Gly Pro Val Ala Ala Ile Pro Asp Tyr Trp Gly Gln Gly	
100 105 110	

acc ctg gtc acc gtc tcc tca	357
Thr Leu Val Thr Val Ser Ser	
115	

<210> 35
 <211> 119
 <212> PRT
 <213> Homo sapiens

<400> 35

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg	
1 5 10 15	

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

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val	
35 40 45	

Ala Leu Ile Trp Leu Asp Gly Ser Asn Asp Tyr Tyr Ala Asp Ser Val	
50 55 60	

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr	
65 70 75 80	

Leu Gln Met Asn Arg Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys	
85 90 95	

Ala Arg Asp Gly Pro Val Ala Ala Ile Pro Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 36
<211> 24
<212> DNA
<213> Homo sapiens

<400> 36
ggattcacct tcagtgggta tggc

24

<210> 37
<211> 8
<212> PRT
<213> Homo sapiens

<400> 37

Gly Phe Thr Phe Ser Gly Tyr Gly
1 5

<210> 38
<211> 24
<212> DNA
<213> Homo sapiens

<400> 38
atatggcttg atggaagtaa tgac

24

<210> 39
<211> 8
<212> PRT
<213> Homo sapiens

<400> 39

Ile Trp Leu Asp Gly Ser Asn Asp
1 5

<210> 40
<211> 36
<212> DNA
<213> Homo sapiens

<400> 40
gcgagagatg gcccggttgc tgctataccc gactac 36

<210> 41
<211> 12
<212> PRT
<213> Homo sapiens

<400> 41
Ala Arg Asp Gly Pro Val Ala Ala Ile Pro Asp Tyr
1 5 10

<210> 42
<211> 321
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(321)

<400> 42
gac atc cag atg acc cag tct cct tcc acc ctg tct gca tct gta gga 48
Asp Ile Gln Met Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly
1 5 10 15

gac aga gtc acc atc act tgc cgg gcc agt cag agt att agt agg tgg 96
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Arg Trp
20 25 30

ttg gcc tgg tat cag ctg aaa cca ggg aaa gcc cct aag ctc ctg atc 144
Leu Ala Trp Tyr Gln Leu Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

tat aag gcg tct agt tta gaa agt ggg gtc cca tca agg ttc agc ggc 192
Tyr Lys Ala Ser Ser Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

agt gga tct ggg aca gac ttc act ctc acc atc agc agc ctg caa cct 240
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

gat gat ttt gca act tat tac tgc caa cag tat aat act tat tcg tac 288
Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Thr Tyr Ser Tyr
85 90 95

act ttt ggc cag ggg acc aag ctg gag atc aaa 321
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 43
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 43

Asp Ile Gln Met Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Arg Trp
 20 25 30

Leu Ala Trp Tyr Gln Leu Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45

Tyr Lys Ala Ser Ser Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80

Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Thr Tyr Ser Tyr
 85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 44
 <211> 18
 <212> DNA
 <213> Homo sapiens

<400> 44

cagagtatta gtaggtgg

18

<210> 45
 <211> 6
 <212> PRT
 <213> Homo sapiens

<400> 45

Gln Ser Ile Ser Arg Trp

1

5

<210> 46
<211> 9
<212> DNA
<213> Homo sapiens

<400> 46
aaggcgtct

9

<210> 47
<211> 3
<212> PRT
<213> Homo sapiens

<400> 47

Lys Ala Ser
1

<210> 48
<211> 27
<212> DNA
<213> Homo sapiens

<400> 48
caacagtata atacttattc gtacact

27

<210> 49
<211> 9
<212> PRT
<213> Homo sapiens

<400> 49

Gln Gln Tyr Asn Thr Tyr Ser Tyr Thr
1 5

<210> 50
<211> 363
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(363)

<400> 50

gag	gtg	cag	ctg	gtg	gag	tct	ggg	gga	ggt	gtg	gta	cgg	cct	ggg	ggg	48
Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Val	Val	Arg	Pro	Gly	Gly	
1				5					10					15		

tcc	ctg	aga	ctc	tcc	tgt	gca	gcc	tct	gga	ttc	acc	ttt	gat	gaa	tat	96
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asp	Glu	Tyr	
			20					25					30			

ggc	atg	act	tgg	gtc	cgc	caa	gtt	cca	ggg	aag	ggg	ctg	gag	tgg	gtc	144
Gly	Met	Thr	Trp	Val	Arg	Gln	Val	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
		35					40					45				

tct	ggt	att	act	tgg	aat	ggt	ggt	ttc	aca	gat	tat	aca	gac	tct	gtg	192
Ser	Gly	Ile	Thr	Trp	Asn	Gly	Gly	Phe	Thr	Asp	Tyr	Thr	Asp	Ser	Val	
	50					55					60					

aag	ggc	cga	ttc	acc	agc	tcc	aga	gac	aac	gcc	aag	aac	tcc	ctg	tat	240
Lys	Gly	Arg	Phe	Thr	Ser	Ser	Arg	Asp	Asn	Ala	Lys	Asn	Ser	Leu	Tyr	
65					70				75					80		

ctg	caa	atg	aac	agt	ctg	aga	gcc	gag	gac	acg	gcc	ttg	tat	tac	tgt	288
Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Leu	Tyr	Tyr	Cys	
				85					90					95		

gcg	aga	gat	gga	tat	agc	agc	tcg	tgg	ggg	gct	tat	gat	ata	tgg	ggc	336
Ala	Arg	Asp	Gly	Tyr	Ser	Ser	Ser	Trp	Gly	Ala	Tyr	Asp	Ile	Trp	Gly	
			100					105					110			

caa	ggg	aca	atg	gtc	acc	gtc	tct	tca								363
Gln	Gly	Thr	Met	Val	Thr	Val	Ser	Ser								
		115					120									

<210> 51
 <211> 121
 <212> PRT
 <213> Homo sapiens

<400> 51

Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Val	Val	Arg	Pro	Gly	Gly
1				5					10					15	

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

Gly	Met	Thr	Trp	Val	Arg	Gln	Val	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val
		35					40					45			

Ser	Gly	Ile	Thr	Trp	Asn	Gly	Gly	Phe	Thr	Asp	Tyr	Thr	Asp	Ser	Val
	50					55					60				

Lys Gly Arg Phe Thr Ser Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Ala Arg Asp Gly Tyr Ser Ser Ser Trp Gly Ala Tyr Asp Ile Trp Gly
100 105 110

Gln Gly Thr Met Val Thr Val Ser Ser
115 120

<210> 52
<211> 24
<212> DNA
<213> Homo sapiens

<400> 52
ggattcacct ttgatgaata tggc

24

<210> 53
<211> 8
<212> PRT
<213> Homo sapiens

<400> 53

Gly Phe Thr Phe Asp Glu Tyr Gly
1 5

<210> 54
<211> 24
<212> DNA
<213> Homo sapiens

<400> 54
attacttgga atggtggttt caca

24

<210> 55
<211> 8
<212> PRT
<213> Homo sapiens

<400> 55

Ile Thr Trp Asn Gly Gly Phe Thr
1 5

<210> 56
<211> 42
<212> DNA
<213> Homo sapiens

<400> 56
gcgagagatg gatatagcag ctcgtggggg gcttatgata ta 42

<210> 57
<211> 14
<212> PRT
<213> Homo sapiens

<400> 57
Ala Arg Asp Gly Tyr Ser Ser Ser Trp Gly Ala Tyr Asp Ile
1 5 10

<210> 58
<211> 321
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(321)

<400> 58
gac atc cag atg acc cag tct cca tca tcc ctg tct gca tct gtg gga 48
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

gac aga gtc acc atc act tgc cgg gca agt cag agc att agc acc tat 96
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Thr Tyr
20 25 30

tta aat tgg tat cag cag aaa cca ggg aaa gcc cct aag ctc ctg atc 144
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

tat gct gca tcc agt ttg caa agt ggg gtc cca tta agg ttc agt ggc 192
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Leu Arg Phe Ser Gly
50 55 60

agt gga tct ggg act gat ttc act ctc acc atc agc agt ctg caa cct 240
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

gaa	gat	ttt	gca	agt	tat	ttc	tgt	caa	cag	agt	tac	agt	acc	ccg	tac	288
Glu	Asp	Phe	Ala	Ser	Tyr	Phe	Cys	Gln	Gln	Ser	Tyr	Ser	Thr	Pro	Tyr	
			85					90					95			

act	ttt	ggc	cag	ggg	acc	aag	ctg	gag	atc	aaa	321
Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys	
		100					105				

<210> 59
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 59

Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly
1				5				10						15	

Asp	Arg	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Ser	Ile	Ser	Thr	Tyr
		20					25					30			

Leu	Asn	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu	Leu	Ile
	35					40					45				

Tyr	Ala	Ala	Ser	Ser	Leu	Gln	Ser	Gly	Val	Pro	Leu	Arg	Phe	Ser	Gly
50					55					60					

Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro
65				70					75					80	

Glu	Asp	Phe	Ala	Ser	Tyr	Phe	Cys	Gln	Gln	Ser	Tyr	Ser	Thr	Pro	Tyr
			85					90					95		

Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys
		100					105			

<210> 60
 <211> 18
 <212> DNA
 <213> Homo sapiens

<400> 60

cagagcatta gcacctat

<210> 61
<211> 6
<212> PRT
<213> Homo sapiens

<400> 61

Gln Ser Ile Ser Thr Tyr
1 5

<210> 62
<211> 9
<212> DNA
<213> Homo sapiens

<400> 62
gctgcatcc

9

<210> 63
<211> 3
<212> PRT
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<400> 63

Ala Ala Ser
1

<210> 64
<211> 27
<212> DNA
<213> Homo sapiens

<400> 64
caacagagtt acagtacccc gtacact

27

<210> 65
<211> 9
<212> PRT
<213> Homo sapiens

<400> 65

Gln Gln Ser Tyr Ser Thr Pro Tyr Thr
1 5

<210> 66
<211> 360
<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(360)

<400> 66

gaa	gtg	cag	ctg	gtg	gag	tct	ggg	gga	ggc	gtg	gta	cag	cct	ggg	ggg	48
Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Gly	
1				5					10					15		

tcc	ctg	aga	ctc	tcc	tgt	gca	gcc	tct	gga	ttc	acc	ttt	aat	gat	tat	96
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Asp	Tyr	
			20					25					30			

gcc	atg	cac	tgg	gtc	cgt	caa	gct	cca	ggg	aag	ggc	ctg	gag	tgg	gtc	144
Ala	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
		35					40					45				

tct	ctt	att	agt	gga	gat	ggc	ggc	aac	aca	tac	tat	gca	gac	tct	gtg	192
Ser	Leu	Ile	Ser	Gly	Asp	Gly	Gly	Asn	Thr	Tyr	Tyr	Ala	Asp	Ser	Val	
	50					55					60					

aag	ggc	cga	ctc	acc	atc	tcc	aga	gac	aac	agc	aaa	aac	tcc	ctg	tat	240
Lys	Gly	Arg	Leu	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Ser	Leu	Tyr	
65					70				75					80		

ctg	caa	atg	aac	agt	ctg	aga	aca	gag	gac	acc	gcc	tta	tat	tac	tgt	288
Leu	Gln	Met	Asn	Ser	Leu	Arg	Thr	Glu	Asp	Thr	Ala	Leu	Tyr	Tyr	Cys	
			85					90						95		

gca	aaa	gat	aag	ggc	tgg	aac	ttc	ggc	tac	ttc	gat	ctc	tgg	ggc	cgt	336
Ala	Lys	Asp	Lys	Gly	Trp	Asn	Phe	Gly	Tyr	Phe	Asp	Leu	Trp	Gly	Arg	
			100					105					110			

ggc	acc	ctg	gtc	act	gtc	tcc	tca									360
Gly	Thr	Leu	Val	Thr	Val	Ser	Ser									
		115				120										

<210> 67

<211> 120

<212> PRT

<213> Homo sapiens

<400> 67

Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Gly
1				5					10					15	

Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asn	Asp	Tyr
			20					25					30		

Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Leu Ile Ser Gly Asp Gly Gly Asn Thr Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Leu Thr Ile Ser Arg Asp Asn Ser Lys Asn Ser Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Ala Lys Asp Lys Gly Trp Asn Phe Gly Tyr Phe Asp Leu Trp Gly Arg
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 68
<211> 24
<212> DNA
<213> Homo sapiens

<400> 68
ggattcacct ttaatgatta tgcc

24

<210> 69
<211> 8
<212> PRT
<213> Homo sapiens

<400> 69

Gly Phe Thr Phe Asn Asp Tyr Ala
1 5

<210> 70
<211> 24
<212> DNA
<213> Homo sapiens

<400> 70
attagtggag atggtggtaa caca

24

<210> 71
<211> 8
<212> PRT
<213> Homo sapiens

<400> 71

Ile Ser Gly Asp Gly Gly Asn Thr
1 5

<210> 72
<211> 39
<212> DNA
<213> Homo sapiens

<400> 72
gcaaaagata agggctggaa cttcggttac ttcgatctc

39

<210> 73
<211> 13
<212> PRT
<213> Homo sapiens

<400> 73

Ala Lys Asp Lys Gly Trp Asn Phe Gly Tyr Phe Asp Leu
1 5 10

<210> 74
<211> 327
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(327)

<400> 74
gac atc cag atg acc cag tct cca tcc tcc ctg tct aca tct gtg gga 48
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Thr Ser Val Gly
1 5 10 15

gac aga gtc acc atc act tgc cgg gca agt cag aac att gac acc tat 96
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Asp Thr Tyr
20 25 30

tta aat tgg tat cag cag aaa cca ggg aaa gcc cct aaa ctc ctg atc 144
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

tat gat gca tcc agt tta caa agt ggg gtc cca tca cgg ttc agt ggc	192
Tyr Asp Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly	
50 55 60	

agc gga tct ggg aca gat ttc act ctc acc atc acc agt ctg caa cct	240
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Ser Leu Gln Pro	
65 70 75 80	

gaa gat ttt gcc act tac tac tgt caa cag aat gac aat att ctt cac	288
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Asn Asp Asn Ile Leu His	
85 90 95	

cct ctc act ttc ggc gga ggg acc aag gtg gag atc aaa	327
Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys	
100 105	

<210> 75
 <211> 109
 <212> PRT
 <213> Homo sapiens

<400> 75

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Thr Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Asp Thr Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Asp Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Asn Asp Asn Ile Leu His
85 90 95

Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 76

<211> 18
<212> DNA
<213> Homo sapiens

<400> 76
cagaacattg acacctat

18

<210> 77
<211> 6
<212> PRT
<213> Homo sapiens

<400> 77

Gln Asn Ile Asp Thr Tyr
1 5

<210> 78
<211> 9
<212> DNA
<213> Homo sapiens

<400> 78
gatgcatcc

9

<210> 79
<211> 3
<212> PRT
<213> Homo sapiens

<400> 79

Asp Ala Ser
1

<210> 80
<211> 33
<212> DNA
<213> Homo sapiens

<400> 80
caacagaatg acaatattct tcaccctctc act

33

<210> 81
<211> 11
<212> PRT
<213> Homo sapiens

<400> 81

Gln Gln Asn Asp Asn Ile Leu His Pro Leu Thr
1 5 10

<210> 82
<211> 447
<212> PRT
<213> Homo sapiens

<400> 82

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Asp Ser Val Ser Ser Ser
20 25 30

Tyr Trp Thr Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Ser Ser Asn Tyr Asn Pro Ser Leu Lys
50 55 60

Ser Arg Ala Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Glu Gly Asn Val Asp Thr Thr Met Ile Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
115 120 125

Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala
130 135 140

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
145 150 155 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
165 170 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
180 185 190

Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp His Lys
195 200 205

Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr Gly Pro
210 215 220

Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Leu Gly Gly Pro Ser Val
225 230 235 240

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
245 250 255

Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro Glu
260 265 270

Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
275 280 285

Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val Ser
290 295 300

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
305 310 315 320

Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr Ile
325 330 335

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
340 345 350

Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu
355 360 365

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
370 375 380

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
385 390 395 400

Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser Arg
405 410 415

Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Leu His Glu Ala Leu
420 425 430

His Ser His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly Lys
435 440 445

<210> 83
<211> 214
<212> PRT
<213> Homo sapiens

<400> 83

Ala Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Asp
20 25 30

Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ala Gly
50 55 60

Arg Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Asp Phe Asn Tyr Pro Trp
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

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

Phe Asn Arg Gly Glu Cys
210

<210> 84
<211> 224
<212> PRT
<213> Homo sapiens

<400> 84

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

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

Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ala Leu Ile Trp Leu Asp Gly Ser Asn Asp Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Arg Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Gly Pro Val Ala Ala Ile Pro Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
115 120 125

Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu
130 135 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145 150 155 160

Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu
165 170 175

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
180 185 190

Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp His Lys Pro
195 200 205

Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr Gly Pro Pro
210 215 220

<210> 85
<211> 214
<212> PRT
<213> Homo sapiens

<400> 85

Asp Ile Gln Met Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Arg Trp
20 25 30

Leu Ala Trp Tyr Gln Leu Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Lys Ala Ser Ser Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly

50

55

60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Thr Tyr Ser Tyr
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

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

Phe Asn Arg Gly Glu Cys
210

<210> 86
<211> 369
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(369)

<400> 86

gag	gtg	cag	ctg	gtg	gag	tct	ggg	gga	ggc	ttg	gtc	caa	ccg	ggg	ggg	48
Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly	
1				5					10					15		

tcc	ctg	aga	ctc	tcc	tgt	gca	gcc	tct	gga	ttc	cac	tct	aat	aga	tat	96
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	His	Ser	Asn	Arg	Tyr	
			20					25					30			

tgg	atg	gac	tgg	gtc	cgc	cag	gct	cca	ggg	aag	ggg	ctg	gag	tgg	gtg	144
Trp	Met	Asp	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	
		35					40					45				

gcc	aac	ata	aag	caa	gat	gga	agt	gag	gaa	aac	tat	gtg	gac	tct	gtg	192
Ala	Asn	Ile	Lys	Gln	Asp	Gly	Ser	Glu	Glu	Asn	Tyr	Val	Asp	Ser	Val	
	50					55					60					

aag	ggc	cga	ttc	acc	atc	tcc	aga	gac	aac	gcc	aag	aac	tca	ctt	tat	240
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ala	Lys	Asn	Ser	Leu	Tyr	
65					70				75						80	

ctg	caa	atg	aac	agc	ctg	aga	gcc	gag	gac	acg	gct	gtg	tat	tac	tgt	288
Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
				85					90					95		

gcg	aga	gat	cga	agc	acc	tcg	tgg	gtc	cct	tac	tgg	ttc	ttc	gat	ctc	336
Ala	Arg	Asp	Arg	Ser	Thr	Ser	Trp	Val	Pro	Tyr	Trp	Phe	Phe	Asp	Leu	
			100					105					110			

tgg	ggc	cgt	ggc	acc	ctg	gtc	act	gtc	tcc	tca						369
Trp	Gly	Arg	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser						
		115					120									

<210> 87
 <211> 123
 <212> PRT
 <213> Homo sapiens

<400> 87

Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly
1				5					10					15	

Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	His	Ser	Asn	Arg	Tyr
			20					25					30		

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

Ala	Asn	Ile	Lys	Gln	Asp	Gly	Ser	Glu	Glu	Asn	Tyr	Val	Asp	Ser	Val
	50					55					60				

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Arg Ser Thr Ser Trp Val Pro Tyr Trp Phe Phe Asp Leu
100 105 110

Trp Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 88
<211> 24
<212> DNA
<213> Homo sapiens

<400> 88
ggattccact ctaatagata ttgg

24

<210> 89
<211> 8
<212> PRT
<213> Homo sapiens

<400> 89

Gly Phe His Ser Asn Arg Tyr Trp
1 5

<210> 90
<211> 24
<212> DNA
<213> Homo sapiens

<400> 90
ataaagcaag atggaagtga ggaa

24

<210> 91
<211> 8
<212> PRT
<213> Homo sapiens

<400> 91

Ile Lys Gln Asp Gly Ser Glu Glu
1 5

<210> 92
<211> 48
<212> DNA
<213> Homo sapiens

<400> 92
gcgagagatc gaagcacctc gtgggtccct tactggttct tcgatctc 48

<210> 93
<211> 16
<212> PRT
<213> Homo sapiens

<400> 93
Ala Arg Asp Arg Ser Thr Ser Trp Val Pro Tyr Trp Phe Phe Asp Leu
1 5 10 15

<210> 94
<211> 324
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(324)

<400> 94
gac atc cag atg acc cag tct cca tcc tcc ctg tct gca tct gta gga 48
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

gac aga gtc acc atc act tgc cgg gca agt cag agc att agc agc tat 96
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
20 25 30

tta aat tgg tat cag cag aaa cca ggg aaa gcc cct aag ctc ctg atc 144
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

tat gct gca tcc agt ttg caa agt ggg gtc ccg tca agg ttc agt ggc 192
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

agt gga tct ggg aca gat ttc act ctc acc atc agc agt ctg caa cct 240
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

gaa	gat	ttt	gca	act	tac	tac	tgt	caa	cag	agt	tac	agt	acc	cct	ccg	288
Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Ser	Tyr	Ser	Thr	Pro	Pro	
			85					90					95			

atc	acc	ttc	ggc	caa	ggg	aca	cga	ctg	gag	att	aaa	324
Ile	Thr	Phe	Gly	Gln	Gly	Thr	Arg	Leu	Glu	Ile	Lys	
		100						105				

<210> 95
 <211> 108
 <212> PRT
 <213> Homo sapiens

<400> 95

Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly
1				5				10						15	

Asp	Arg	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Ser	Ile	Ser	Ser	Tyr
		20						25					30		

Leu	Asn	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu	Leu	Ile
		35					40					45			

Tyr	Ala	Ala	Ser	Ser	Leu	Gln	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly
	50					55					60				

Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro
65				70						75				80	

Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Ser	Tyr	Ser	Thr	Pro	Pro
			85					90						95	

Ile	Thr	Phe	Gly	Gln	Gly	Thr	Arg	Leu	Glu	Ile	Lys
		100						105			

<210> 96
 <211> 18
 <212> DNA
 <213> Homo sapiens

<400> 96

cagagcatta gcagctat

<210> 97
<211> 6
<212> PRT
<213> Homo sapiens

<400> 97

Gln Ser Ile Ser Ser Tyr
1 5

<210> 98
<211> 9
<212> DNA
<213> Homo sapiens

<400> 98
gctgcatcc

9

<210> 99
<211> 3
<212> PRT
<213> Homo sapiens

<400> 99

Ala Ala Ser
1

<210> 100
<211> 30
<212> DNA
<213> Homo sapiens

<400> 100
caacagagtt acagtacccc tccgatacc

30

<210> 101
<211> 10
<212> PRT
<213> Homo sapiens

<400> 101

Gln Gln Ser Tyr Ser Thr Pro Pro Ile Thr
1 5 10

<210> 102
<211> 360
<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(360)

<400> 102

gaa	gtg	cag	ctg	gtg	gag	tct	ggg	gga	ggc	gtg	gta	cag	cgg	ggg	gag	48
Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Arg	Gly	Glu	
1				5					10					15		

tcc	ctg	aga	ctc	tcc	tgt	tca	gcc	tct	gac	ttc	atc	ttt	aaa	gat	tat	96
Ser	Leu	Arg	Leu	Ser	Cys	Ser	Ala	Ser	Asp	Phe	Ile	Phe	Lys	Asp	Tyr	
			20					25					30			

gcc	atg	tac	tgg	gtc	cgt	caa	att	cca	ggg	aag	ggc	cta	gag	tgg	atc	144
Ala	Met	Tyr	Trp	Val	Arg	Gln	Ile	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Ile	
		35					40					45				

tct	ctt	att	agt	ggc	gat	ggc	gac	act	aca	tgg	tat	gga	gac	tct	gtg	192
Ser	Leu	Ile	Ser	Gly	Asp	Gly	Asp	Thr	Thr	Trp	Tyr	Gly	Asp	Ser	Val	
	50					55					60					

aag	ggc	cga	ttc	acc	atc	tcc	aga	gac	aac	aac	gaa	aac	tcc	ctc	ttt	240
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Asn	Glu	Asn	Ser	Leu	Phe	
65					70					75					80	

ctg	caa	atg	aac	gat	ctg	aga	act	gag	gac	acc	gcc	atg	tac	tac	tgt	288
Leu	Gln	Met	Asn	Asp	Leu	Arg	Thr	Glu	Asp	Thr	Ala	Met	Tyr	Tyr	Cys	
			85						90					95		

gca	aga	gat	atg	ggg	tgg	aac	ttc	ttt	cag	ttg	caa	tac	tgg	ggc	cag	336
Ala	Arg	Asp	Met	Gly	Trp	Asn	Phe	Phe	Gln	Leu	Gln	Tyr	Trp	Gly	Gln	
			100					105					110			

gga	acc	ctg	gtc	acc	gtc	tcc	tca									360
Gly	Thr	Leu	Val	Thr	Val	Ser	Ser									
		115					120									

<210> 103

<211> 120

<212> PRT

<213> Homo sapiens

<400> 103

Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Arg	Gly	Glu
1				5					10					15	

Ser	Leu	Arg	Leu	Ser	Cys	Ser	Ala	Ser	Asp	Phe	Ile	Phe	Lys	Asp	Tyr
			20					25					30		

Ala Met Tyr Trp Val Arg Gln Ile Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Ser Leu Ile Ser Gly Asp Gly Asp Thr Thr Trp Tyr Gly Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Asn Glu Asn Ser Leu Phe
65 70 75 80

Leu Gln Met Asn Asp Leu Arg Thr Glu Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Ala Arg Asp Met Gly Trp Asn Phe Phe Gln Leu Gln Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 104
<211> 24
<212> DNA
<213> Homo sapiens

<400> 104
gacttcacatct ttaaagatta tgcc

24

<210> 105
<211> 8
<212> PRT
<213> Homo sapiens

<400> 105

Asp Phe Ile Phe Lys Asp Tyr Ala
1 5

<210> 106
<211> 24
<212> DNA
<213> Homo sapiens

<400> 106
attagtggtg atggtgacac taca

24

<210> 107
<211> 8
<212> PRT
<213> Homo sapiens

<400> 107

Ile Ser Gly Asp Gly Asp Thr Thr
1 5

<210> 108
<211> 39
<212> DNA
<213> Homo sapiens

<400> 108
gcaagagata tggggtggaa cttctttcag ttgcaatac

39

<210> 109
<211> 13
<212> PRT
<213> Homo sapiens

<400> 109

Ala Arg Asp Met Gly Trp Asn Phe Phe Gln Leu Gln Tyr
1 5 10