

H0616615
SEQUENCE LISTING

<110> Memorial Sloan-Kettering Cancer Center
Eureka Therapeutics, Inc.
Brentjens, Renier J
Jackson, Hollie J
Liu, Cheng

<120> PD-1 Immune Modulating Agents

<130> 3314.070AWO

<150> 62/183,297

<151> 2015-06-23

<150> 62/266,389

<151> 2015-12-11

<160> 143

<170> PatentIn version 3.5

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

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

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gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttactctca ccatcagcag tctgcaacct 240
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gggaccaagg tggagatcaa acgt 324

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<212> PRT
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20 25 30

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

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

Thr Val Ser Ser
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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
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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 Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Ser Arg Gly Gly
100 105 110

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln
115 120 125

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg
130 135 140

Leu Ser Cys Ala Ala Ser Gly Phe Thr Ser Ser Ser Tyr Trp Met Ser
145 150 155 160

Trp Val Arg Gln Ala Pro Gly Arg Gly Leu Glu Trp Val Ala Asn Ile

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170

175

Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val Lys Gly Arg
180 185 190

Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr Leu Gln Met
195 200 205

Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly
210 215 220

Gly Trp Ser Tyr Asp Met Trp Gly Gln Gly Thr Leu Val Thr Val Ser
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Tyr Ala Ser

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gggaccaagg tggagatcaa acgtgggtgt ggtggtagcg gcggcggcgg ctctggtggt 360
ggtggatccg aggtgcagct ggtggagtct gggggaggct tgggtccagcc tgggggggtcc 420
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tcactgtatc tgcaaatgaa cagcctgaga gccgaggaca ctgccgtgta ttactgtgcg      660
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<400> 13

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Phe Asp Pro Glu Asp Gly Glu Thr
1 5

<210> 16

<211> 9

<212> PRT

<213> Homo sapiens

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Ala Arg Ala Tyr Tyr Gly Phe Asp Gln
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<210> 17

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<400> 17

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

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

Ser Gly Ser Gln Phe Gly Ala Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
85 90 95

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100 105 110

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cctgaccgat tctctggctc ccagtttggc gcctctgcct ccctggccat cactggactc 240
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atattcggcg gagggaccaa gctgaccgtc ctaggt 336

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Ser Val Lys Val Ser Cys Lys Val Ser Gly Tyr Thr Leu Thr Glu Leu
20 25 30

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

Gly Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Glu Asp Thr Ser Thr Asp Thr Ala Tyr
65 70 75 80

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

Ala Arg Ala Tyr Tyr Gly Phe Asp Gln Trp Gly Gln Gly Thr Leu Val
 100 105 110

Thr Val Ser Ser
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 cctggaaaag ggcttgagtg gatgggaggt tttgatcctg aagatgggtga aacaatctac 180
 gcacagaagt tccagggcag agtcaccatg accgaggaca catctacaga cacagcctac 240
 atggagctga gcagcctgag gtctgaggac actgccgtgt attactgtgc gcgcgcttac 300
 tacggtttcg atcagtgggg tcaaggtact ctggtgaccg tctcctca 348

<210> 21
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 <213> Homo sapiens

<400> 21

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
 20 25 30

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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 Leu
85 90 95

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

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val
115 120 125

Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser
130 135 140

Cys Lys Val Ser Gly Tyr Thr Leu Thr Glu Leu Ser Met His Trp Val
145 150 155 160

Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Met Gly Gly Phe Asp Pro
165 170 175

Glu Asp Gly Glu Thr Ile Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr
180 185 190

Met Thr Glu Asp Thr Ser Thr Asp Thr Ala Tyr Met Glu Leu Ser Ser
195 200 205

Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ala Tyr Tyr
210 215 220

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

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<400> 22

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Ala Gly Cys Cys Gly Cys Cys Cys Thr Cys Ala Gly Thr Gly Thr Cys
20 25 30

Thr Gly Gly Gly Gly Cys Cys Cys Cys Ala Gly Gly Gly Cys Ala Gly
35 40 45

Ala Gly Gly Gly Thr Cys Ala Cys Cys Ala Thr Cys Thr Cys Cys Thr
50 55 60

Gly Cys Ala Cys Thr Gly Gly Gly Ala Gly Cys Ala Gly Cys Thr Cys
65 70 75 80

Cys Ala Ala Cys Ala Thr Cys Gly Gly Gly Gly Cys Ala Gly Gly Thr
85 90 95

Thr Ala Thr Gly Cys Thr Gly Thr Ala Ala Ala Thr Thr Gly Gly Thr
100 105 110

Ala Cys Cys Ala Gly Cys Thr Thr Cys Thr Thr Cys Cys Ala Gly Gly

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115

120

125

Ala Ala Cys Ala Gly Cys Cys Cys Cys Cys Ala Ala Ala Cys Thr Cys
130 135 140

Cys Thr Cys Ala Thr Cys Thr Cys Thr Ala Cys Thr Ala Ala Cys Ala
145 150 155 160

Ala Cys Ala Ala Thr Cys Gly Gly Cys Cys Cys Thr Cys Ala Gly Gly
165 170 175

Gly Gly Thr Cys Cys Cys Thr Gly Ala Cys Cys Gly Ala Thr Thr Cys
180 185 190

Thr Cys Thr Gly Gly Cys Thr Cys Cys Cys Ala Gly Thr Thr Thr Gly
195 200 205

Gly Cys Gly Cys Cys Thr Cys Thr Gly Cys Cys Thr Cys Cys Cys Thr
210 215 220

Gly Gly Cys Cys Ala Thr Cys Ala Cys Thr Gly Gly Ala Cys Thr Cys
225 230 235 240

Cys Ala Gly Gly Cys Thr Gly Ala Gly Gly Ala Thr Gly Ala Gly Gly
245 250 255

Cys Thr Gly Ala Thr Thr Ala Thr Thr Ala Cys Thr Gly Cys Cys Ala
260 265 270

Gly Thr Cys Cys Thr Ala Thr Gly Ala Cys Ala Gly Thr Ala Gly Thr
275 280 285

Cys Thr Gly Ala Gly Thr Gly Gly Thr Gly Thr Gly Ala Thr Ala Thr
290 295 300

Thr Cys Gly Gly Cys Gly Gly Ala Gly Gly Gly Ala Cys Cys Ala Ala

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305		310		315		320
Gly Cys Thr Gly	Ala Cys Cys Gly Thr	Cys Cys Thr Ala Gly Gly Thr				
	325		330			335
Gly Gly Thr Gly	Gly Thr Gly Gly Thr	Gly Gly Thr Ala Gly Cys Gly				
	340		345			350
Gly Cys Gly Gly	Cys Gly Gly Cys Gly Cys Thr	Cys Thr Gly Gly				
	355		360			365
Thr Gly Gly Thr	Gly Gly Thr Gly Gly Ala Thr	Cys Cys Gly Ala Ala				
	370		375			380
Gly Thr Gly Cys	Ala Gly Cys Thr Gly Gly Thr	Gly Cys Ala Gly Thr				
	385		390			395
Cys Thr Gly Gly	Gly Gly Cys Thr Gly Ala Gly Gly Thr	Gly Ala Ala				
	405		410			415
Gly Ala Ala Gly	Cys Cys Thr Gly Gly Gly Gly Cys Cys Thr	Cys Ala				
	420		425			430
Gly Thr Gly Ala	Ala Gly Gly Thr Cys Thr Cys Cys Thr	Gly Cys Ala				
	435		440			445
Ala Gly Gly Thr	Thr Thr Cys Cys Gly Gly Ala Thr	Ala Cys Ala Cys				
	450		455			460
Cys Cys Thr Cys	Ala Cys Thr Gly Ala Ala Thr Thr	Ala Thr Cys Cys				
	465		470			475
Ala Thr Gly Cys	Ala Cys Thr Gly Gly Gly Thr	Gly Cys Gly Ala Cys				
	485		490			495
Ala Gly Gly Cys	Thr Cys Cys Thr Gly Gly Ala Ala Ala	Gly Gly				

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500

505

510

Gly Cys Thr Thr Gly Ala Gly Thr Gly Gly Ala Thr Gly Gly Gly Ala
 515 520 525

Gly Gly Thr Thr Thr Thr Gly Ala Thr Cys Cys Thr Gly Ala Ala Gly
 530 535 540

Ala Thr Gly Gly Thr Gly Ala Ala Ala Cys Ala Ala Thr Cys Thr Ala
 545 550 555 560

Cys Gly Cys Ala Cys Ala Gly Ala Ala Gly Thr Thr Cys Cys Ala Gly
 565 570 575

Gly Gly Cys Ala Gly Ala Gly Thr Cys Ala Cys Cys Ala Thr Gly Ala
 580 585 590

Cys Cys Gly Ala Gly Gly Ala Cys Ala Cys Ala Thr Cys Thr Ala Cys
 595 600 605

Ala Gly Ala Cys Ala Cys Ala Gly Cys Cys Thr Ala Cys Ala Thr Gly
 610 615 620

Gly Ala Gly Cys Thr Gly Ala Gly Cys Ala Gly Cys Cys Thr Gly Ala
 625 630 635 640

Gly Gly Thr Cys Thr Gly Ala Gly Gly Ala Cys Ala Cys Thr Gly Cys
 645 650 655

Cys Gly Thr Gly Thr Ala Thr Thr Ala Cys Thr Gly Thr Gly Cys Gly
 660 665 670

Cys Gly Cys Gly Cys Thr Thr Ala Cys Thr Ala Cys Gly Gly Thr Thr
 675 680 685

Thr Cys Gly Ala Thr Cys Ala Gly Thr Gly Gly Gly Gly Thr Cys Ala

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690

695

700

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Gly Thr Cys Thr Cys Cys Thr Cys Ala
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Gly Tyr Thr Phe Thr Arg Phe Gly
1 5

<210> 26
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<210> 27

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<400> 27

Ala Arg Tyr Met Tyr Gly Arg Arg Asp Ser
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<210> 28

<211> 111

<212> PRT

<213> Homo sapiens

<400> 28

Gln Ala Val Leu Thr Gln Pro Pro Ser Met Ser Glu Ala Pro Arg Gln
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Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
20 25 30

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

Ile Tyr Tyr Asn Asp Leu Leu Ser Ser Gly Val Ser Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Val
85 90 95

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Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
 100 105 110

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 gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240
 tctgaggatg aggctgatta ttactgtgca gcatgggatg acagtgtgaa tggttatgtc 300
 ttcggaactg ggaccaaggt caccgtccta ggt 333

<210> 30
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<400> 30

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Asp
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg Phe
 20 25 30

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

Gly Trp Ile Ser Val Asn Asn Gly Asn Thr Lys Tyr Ala Gln Lys Tyr
 50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr

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65		70		75		80									
Met	Glu	Leu	Arg	Ser	Leu	Arg	Ser	Asp	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
				85				90					95		
Ala	Arg	Tyr	Met	Tyr	Gly	Arg	Arg	Asp	Ser	Trp	Gly	Gln	Gly	Thr	Leu
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Val	Thr	Val	Ser	Ser											
			115												

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 20 25 30

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

Ile Tyr Tyr Asn Asp Leu Leu Ser Ser Gly Val Ser Asp Arg Phe Ser
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Val
 85 90 95

Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Gly
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 115 120 125

Ser Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly
 130 135 140

Asp Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg
 145 150 155 160

Phe Gly Phe Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp
 165 170 175

Met Gly Trp Ile Ser Val Asn Asn Gly Asn Thr Lys Tyr Ala Gln Lys
 180 185 190

Tyr Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala
 195 200 205

Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr
 210 215 220

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Cys Ala Arg Tyr Met Tyr Gly Arg Arg Asp Ser Trp Gly Gln Gly Thr
225 230 235 240

Leu Val Thr Val Ser Ser Gly Gln His His His His His His Gly Ala
245 250 255

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser
260 265

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<212> DNA

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Asn Ile Gly Ser Lys Ser
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Gln Val Trp Asp Asn His Ser Asp Val Val
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Arg Asn Lys Phe Ser Ser Tyr Ala
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Ile Ser Gly Ser Gly Gly Thr Thr
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Ala Arg Trp Tyr Ser Ser Tyr Tyr Asp Val
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Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val
20 25 30

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

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Asn His Ser Asp Val
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Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105

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<212> DNA

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<400> 40

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caggccccctg tgctgggtcat ctattatgat agcgaccggc cctcagggat ccctgagcga      180
ttctctgggt ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg      240
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gggaccaagc tgaccgtcct aggt                                             324

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<210> 41
 <211> 120
 <212> PRT
 <213> Homo sapiens

<400> 41

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

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```

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

```

```

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

```

```

Glu Trp Val Ser Gly Ile Ser Gly Ser Gly Gly Thr Thr Tyr Tyr Ala
          50           55           60

```

```

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

```

```

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

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Tyr Tyr Cys Ala Arg Trp Tyr Ser Ser Tyr Tyr Asp Val Trp Gly Gln
          100          105          110

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Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 42
<211> 360
<212> DNA
<213> Homo sapiens

<400> 42
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tcctgtgcag cctctggata caccgtaac aaatttagca gctatgccat gagctgggtc 120
cgccaggctc caggggaaggg cctggaatgg gtctcaggta ttagtggttag tggtggtact 180
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acgcagtatc tgcaattgga cagcctgaga gccgaggaca cggccgtata ttactgtgcg 300
cgctggtact cttcttacta cgatgtttgg ggtcaaggta ctctggtgac cgtctcctca 360

<210> 43
<211> 261
<212> PRT
<213> Homo sapiens

<400> 43

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

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

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

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

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

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Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Asn His Ser Asp Val
85 90 95

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Gly
100 105 110

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Val
115 120 125

Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser
130 135 140

Cys Ala Ala Ser Gly Tyr Thr Arg Asn Lys Phe Ser Ser Tyr Ala Met
145 150 155 160

Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Gly
165 170 175

Ile Ser Gly Ser Gly Gly Thr Thr Tyr Tyr Ala Asp Ser Val Lys Gly
180 185 190

Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Gln Tyr Leu Gln
195 200 205

Leu Asp Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Trp Tyr Ser Ser Tyr Tyr Asp Val Trp Gly Gln Gly Thr Leu Val Thr
225 230 235 240

Val Ser Ser His His His His His His Gly Ala Tyr Pro Tyr Asp Val
245 250 255

Pro Asp Tyr Ala Ser
260

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<210> 44
<211> 786
<212> DNA
<213> Homo sapiens

<400> 44
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caggcccctg tgctggtcac ctattatgat agcgaccggc cctcagggat ccctgagcga 180
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agctgggtcc gccaggctcc aggggaagggc ctggaatggg tctcaggat tagtggtagt 540
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tccaagaaca cgcagtatct gcaattggac agcctgagag ccgaggacac ggccgtatat 660
tactgtgcgc gctgggtactc ttcttactac gatgtttggg gtcaaggtag tctggtagacc 720
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tcttag 786

<210> 45
<211> 10
<212> PRT
<213> Homo sapiens

<400> 45

Gln Val Trp Asp Ser Ser Ser Asp Tyr Val
1 5 10

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<210> 46
<211> 8
<212> PRT
<213> Homo sapiens

<400> 46

Gly Phe Thr Phe Ser Ser Tyr Ala
1 5

<210> 47
<211> 8
<212> PRT
<213> Homo sapiens

<400> 47

Ile Ser Gly Ser Gly Gly Ser Thr
1 5

<210> 48
<211> 10
<212> PRT
<213> Homo sapiens

<400> 48

Ala Arg Asn Tyr Ile Ser Met Phe Asp Ser
1 5 10

<210> 49
<211> 108
<212> PRT
<213> Homo sapiens

<400> 49

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

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

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His Trp Tyr Gln Gln Arg Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp Tyr
85 90 95

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

<210> 50
<211> 324
<212> DNA
<213> Homo sapiens

<400> 50
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acctgtggggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaggccaggc 120
caggccccctg tgctgggtcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180
ttctctgggt ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240
gatgaggccg actattactg tcaggtgtgg gatagtagta gtgattatgt cttcggaatt 300
gggaccaagg tcaccgtcct aggt 324

<210> 51
<211> 117
<212> PRT
<213> Homo sapiens

<400> 51

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

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

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

Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr 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 Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

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

Val Thr Val Ser Ser
115

<210> 52
<211> 351
<212> DNA
<213> Homo sapiens

<400> 52
gaggtgcagc tgggtggagtc tggaggaggc ttgatccagc ctgggggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagc agctatgcca tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcagct attagtggta gtggtggttag cacatactac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gcgcaactac 300
atctctatgt tcgattcttg gggtaaggt actctgggtga ccgtctcctc a 351

H0616615

<210> 53
<211> 258
<212> PRT
<213> Homo sapiens

<400> 53

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

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

His Trp Tyr Gln Gln Arg Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp Tyr
85 90 95

Val Phe Gly Ile Gly Thr Lys Val Thr Val Leu Gly Gly Gly Gly Gly
100 105 110

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val
115 120 125

Glu Ser Gly Gly Gly Leu Ile Gln Pro Gly Gly Ser Leu Arg Leu Ser
130 135 140

Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr Ala Met Ser Trp Val
145 150 155 160

H0616615

Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ala Ile Ser Gly
165 170 175

Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr
180 185 190

Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser
195 200 205

Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Asn Tyr Ile
210 215 220

Ser Met Phe Asp Ser Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225 230 235 240

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr
245 250 255

Ala Ser

<210> 54

<211> 777

<212> DNA

<213> Homo sapiens

<400> 54

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caggccccctg tgctgggtcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240

gatgaggccg actattactg tcagggtgtgg gatagtagta gtgattatgt cttcgaatt 300

gggaccaagg tcaccgtcct aggtgggtgg ggtggtagcg gcggcggcgg ctctggtggt 360

ggtggatccg aggtgcagct ggtggagtct ggaggaggct tgatccagcc tgggggggtcc 420

H0616615

ctgagactct cctgtgcagc ctctggattc accttttagca gctatgccat gagctgggtc 480
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acatactacg cagactccgt gaagggccgg ttcaccatct ccagagacaa ttccaagaac 600
acgctgtatc tgcaaataaa cagcctgaga gccgaggaca cggccgtata ttactgtgcg 660
cgcaactaca tctctatggt cgattcttgg ggtcaaggta ctctggtgac cgtctcctca 720
caccatcacc atcaccatgg cgcatacccg tacgacgttc cggactacgc ttcttag 777

<210> 55
<211> 10
<212> PRT
<213> Homo sapiens

<400> 55

Gln Val Trp Asp Ser Ser Ser Asp His Val
1 5 10

<210> 56
<211> 10
<212> PRT
<213> Homo sapiens

<400> 56

Ala Arg Gly Tyr Ser Ser Tyr Tyr Asp Ala
1 5 10

<210> 57
<211> 108
<212> PRT
<213> Homo sapiens

<400> 57

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

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

H0616615

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

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His
85 90 95

Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
100 105

<210> 58
<211> 324
<212> DNA
<213> Homo sapiens

<400> 58
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acctgtggggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120
caggccccctg tgctgggtcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180
ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240
gatgaggccg actattactg tcagggtgtg gatagtagta gtgatcatgt cttcggaact 300
gggaccaagg tcaccgtcct aggt 324

<210> 59
<211> 117
<212> PRT
<213> Homo sapiens

<400> 59

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Gln 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 Thr Phe Ser Ser Tyr
20 25 30

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

Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr 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 Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Gly Tyr Ser Ser Tyr Tyr Asp Ala Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser
115

<210> 60

<211> 351

<212> DNA

<213> Homo sapiens

<400> 60

caggtgcagc tgggtggagtc tgggggaggc ttggtacagc ctgggggggtc cctgagactc 60

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ccagggaagg ggctggagtg ggtctcagct attagtggta gtggtggttag cacatactac 180

gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240

ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gcgcgggttac 300

H0616615

tcttcttact acgatgcttg gggtaaggt actctgggtga ccgtctcctc a

351

<210> 61
<211> 258
<212> PRT
<213> Homo sapiens

<400> 61

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

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

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

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His
85 90 95

Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Gly Gly Gly Gly
100 105 110

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Val
115 120 125

Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser
130 135 140

Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr Ala Met Ser Trp Val
145 150 155 160

H0616615

Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ala Ile Ser Gly
165 170 175

Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr
180 185 190

Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser
195 200 205

Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Tyr Ser
210 215 220

Ser Tyr Tyr Asp Ala Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225 230 235 240

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr
245 250 255

Ala Ser

<210> 62

<211> 777

<212> DNA

<213> Homo sapiens

<400> 62

caggctgtgc tgactcagcc accctcagtg tcagtggccc caggaaagac ggccaggatt 60

acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120

caggccccctg tgctgggtcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240

gatgaggccg actattactg tcagggtgtgg gatagtagta gtgatcatgt cttcggaact 300

gggaccaagg tcaccgtcct aggtgggtggt ggtggtagcg gcggcggcgg ctctggtggt 360

H0616615

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ggtggatccc aggtgcagct ggtggagtct gggggaggct tggtagacc tgggggggtcc 420
ctgagactct cctgtgcagc ctctggattc accttagca gctatgccat gagctgggtc 480
cgccaggctc caggggaaggg gctggagtgg gtctcagcta ttagtggtag tggtggtagc 540
acatactacg cagactccgt gaagggccgg ttcacatct ccagagacaa ttccaagaac 600
acgctgtatc tgcaaatgaa cagcctgaga gccgaggaca cggccgtata ttactgtgcg 660
cgcggttact cttcttacta cgatgcttgg ggtcaaggta ctctggtgac cgtctcctca 720
caccatcacc atcaccatgg cgcatacccg tacgacgttc cggactacgc ttcttag 777
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<210> 63
<211> 8
<212> PRT
<213> Homo sapiens

<400> 63

Arg Ser Asn Ile Gly Glu Asn Thr
1 5

<210> 64
<211> 11
<212> PRT
<213> Homo sapiens

<400> 64

Ala Ala Trp Asp Asp Arg Leu Asn Gly Tyr Val
1 5 10

<210> 65
<211> 8
<212> PRT
<213> Homo sapiens

<400> 65

Gly Tyr Thr Phe Thr Asn Tyr Gly
1 5

H0616615

<210> 66
<211> 8
<212> PRT
<213> Homo sapiens

<400> 66

Ile Gly Ala Gln Lys Gly Asp Thr
1 5

<210> 67
<211> 10
<212> PRT
<213> Homo sapiens

<400> 67

Ala Arg Ser Gln Gly Val Pro Phe Asp Ser
1 5 10

<210> 68
<211> 111
<212> PRT
<213> Homo sapiens

<400> 68

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Arg Ser Asn Ile Gly Glu Asn
20 25 30

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

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu His
65 70 75 80

H0616615

Ser Asp Asp Glu Ala Asp Tyr Phe Cys Ala Ala Trp Asp Asp Arg Leu
85 90 95

Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
100 105 110

<210> 69
<211> 333
<212> DNA
<213> Homo sapiens

<400> 69
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tcttgttctg gaagcaggtc caacatcgga gaaaatactg tcaactggta ccagcagctc 120
ccaggaacgg cccccaaact cctcatctac agtaataatc agcggccctc aggggtccct 180
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggcttcac 240
tctgacgatg aggctgacta tttttgtgca gcatgggatg accgcctcaa tggttatgtc 300
ttcggaactg ggaccaaggt caccgtccta ggt 333

<210> 70
<211> 117
<212> PRT
<213> Homo sapiens

<400> 70

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

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

H0616615

Gly Trp Ile Gly Ala Gln Lys Gly Asp Thr Glu Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Val Tyr
65 70 75 80

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

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

Val Thr Val Ser Ser
115

<210> 71
<211> 351
<212> DNA
<213> Homo sapiens

<400> 71
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tcctgcaagg cttctgggta cacctttacc aactatgggt tcacctgggt gcgacaggcc 120
cctggacaag gtcttgagtg gatgggatgg atcggcgctc aaaaggggtga cacagagtat 180
gcacaaaaat tccagggcag agtcaccatg acgacagaca catccacgag cacagtctac 240
ttggagttga ggagcctgag gtctgacgac acggccgtgt attactgtgc gcgctctcag 300
gggtgtccgt tcgattcttg ggggtcaagg actctgggtga ccgtctcctc a 351

<210> 72
<211> 261
<212> PRT
<213> Homo sapiens

<400> 72

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

H0616615

Arg Val Thr Ile Ser Cys Ser Gly Ser Arg Ser Asn Ile Gly Glu Asn
20 25 30

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

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu His
65 70 75 80

Ser Asp Asp Glu Ala Asp Tyr Phe Cys Ala Ala Trp Asp Asp Arg Leu
85 90 95

Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Gly
100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val
115 120 125

Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr Gly Phe
145 150 155 160

Thr Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Trp
165 170 175

Ile Gly Ala Gln Lys Gly Asp Thr Glu Tyr Ala Gln Lys Phe Gln Gly
180 185 190

Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Val Tyr Leu Glu
195 200 205

H0616615

Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

Ser Gln Gly Val Pro Phe Asp Ser Trp Gly Gln Gly Thr Leu Val Thr
225 230 235 240

Val Ser Ser His His His His His His Gly Ala Tyr Pro Tyr Asp Val
245 250 255

Pro Asp Tyr Ala Ser
260

<210> 73
<211> 786
<212> DNA
<213> Homo sapiens

<400> 73
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tcttgttctg gaagcaggct caacatcgga gaaaatactg tcaactggta ccagcagctc 120
ccaggaacgg cccccaaact cctcatctac agtaataatc agcggccctc aggggtccct 180
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggcttcac 240
tctgacgatg aggctgacta tttttgtgca gcatgggatg accgcctcaa tggttatgtc 300
ttcggaaactg ggaccaaggt caccgtccta ggtgggtgggt gtggtagcgg cggcggcggc 360
tctggtgggtg gtggatccca ggtgcagctg gtgcaatctg gacctgaggt gaagaagcct 420
ggggcctcgg tgaaggctctc ctgcaaggct tctggttaca cttttaccaa ctatggtttc 480
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aagggtgaca cagagtatgc acaaaaattc cagggcagag tcaccatgac gacagacaca 600
tccacgagca cagtctactt ggagttgagg agcctgaggt ctgacgacac ggccgtgtat 660
tactgtgcgc gctctcaggg tggtccgttc gattcttggg gtcaaggtag tctggtgacc 720

H0616615

gtctcctcac accatcacca tcaccatggc gcatacccggt acgacgttcc ggactacgct 780

tcttag 786

<210> 74

<211> 8

<212> PRT

<213> Homo sapiens

<400> 74

Arg Ser Asn Ile Gly Ser Asn Thr

1 5

<210> 75

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<213> Homo sapiens

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Ala Thr Trp Asp Asp Ser Leu Asn Glu Tyr Val

1 5 10

<210> 76

<211> 8

<212> PRT

<213> Homo sapiens

<400> 76

Gly Tyr Thr Phe Thr Arg Tyr Gly

1 5

<210> 77

<211> 8

<212> PRT

<213> Homo sapiens

<400> 77

Ile Ser Gly Tyr Asn Gly Asn Thr

1 5

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<210> 78
<211> 10
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<400> 78

Ala Arg His Gly Tyr Gly Tyr His Gly Asp
1 5 10

<210> 79
<211> 111
<212> PRT
<213> Homo sapiens

<400> 79

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

Arg Gly Thr Ile Ser Cys Ser Gly Gly Arg Ser Asn Ile Gly Ser Asn
20 25 30

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

Ile Tyr Asn Asn Asn Leu Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Arg Gly Leu Gln
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Ser Leu
85 90 95

Asn Glu Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
100 105 110

<210> 80

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<211> 333
<212> DNA
<213> Homo sapiens

<400> 80
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tcgtgttctg gaggcaggtc caacatcgga agtaacactg ttaactggta ccagcagctc 120
ccaggaacgg cccccaaact cctcatctat aataataatc tgcggccctc aggggtccct 180
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag ggggctccag 240
tctgaggatg aggctgatta ttactgtgca acatgggatg acagcctgaa tgaatatgtc 300
ttcggaactg ggaccaaggt caccgtccta ggt 333

<210> 81
<211> 117
<212> PRT
<213> Homo sapiens

<400> 81

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

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

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

Gly Trp Ile Ser Gly Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

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

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Ala Arg His Gly Tyr Gly Tyr His Gly Asp Trp Gly Gln Gly Thr Leu
 100 105 110

Val Thr Val Ser Ser
 115

<210> 82
 <211> 351
 <212> DNA
 <213> Homo sapiens

<400> 82
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 cctggacaag ggcttgagtg gatgggatgg atcagcgggtt acaacggtaa cacaaactat 180
 gcacagaagc tccagggcag agtcaccatg accacagaca catccacgag cacagcctac 240
 atggagctga ggagcctgag gtctgacgac acggccgtgt attactgtgc gcgccatggt 300
 tacggttacc atggtgattg ggggtcaaggt actctgggtga ccgtctcctc a 351

<210> 83
 <211> 261
 <212> PRT
 <213> Homo sapiens

<400> 83

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

Arg Gly Thr Ile Ser Cys Ser Gly Gly Arg Ser Asn Ile Gly Ser Asn
 20 25 30

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

Ile Tyr Asn Asn Asn Leu Arg Pro Ser Gly Val Pro Asp Arg Phe Ser

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50

55

60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Arg Gly Leu Gln
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Ser Leu
85 90 95

Asn Glu Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Gly
100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg Tyr Gly Ile
145 150 155 160

Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Trp
165 170 175

Ile Ser Gly Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu Gln Gly
180 185 190

Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr Met Glu
195 200 205

Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
210 215 220

His Gly Tyr Gly Tyr His Gly Asp Trp Gly Gln Gly Thr Leu Val Thr
225 230 235 240

Val Ser Ser His His His His His His Gly Ala Tyr Pro Tyr Asp Val

Pro Asp Tyr Ala Ser
260

<210> 84
<211> 786
<212> DNA
<213> Homo sapiens

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gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag ggggctccag 240
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agctgggtgc gacaggcccc tggacaaggg cttgagtgga tgggatggat cagcggttac 540
aacggtaaca caaactatgc acagaagctc cagggcagag tcaccatgac cacagacaca 600
tccacgagca cagcctacat ggagctgagg agcctgaggt ctgacgacac ggccgtgtat 660
tactgtgcgc gccatggtta cggttacat ggtgattggg gtcaaggtag tctggtgacc 720
gtctcctcac accatcacca tcaccatggc gcatacccgt acgacgttcc ggactacgct 780
tcttag 786

<210> 85
<211> 9
<212> PRT
<213> Homo sapiens

<400> 85

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Ser Ser Asn Ile Gly Ala Gly Tyr Val
1 5

<210> 86
<211> 11
<212> PRT
<213> Homo sapiens

<400> 86

Gln Ser Tyr Asp Ser Ser Leu Ser Gly Trp Val
1 5 10

<210> 87
<211> 8
<212> PRT
<213> Homo sapiens

<400> 87

Gly Phe Thr Phe Lys Asp Tyr Tyr
1 5

<210> 88
<211> 8
<212> PRT
<213> Homo sapiens

<400> 88

Ile Ser Thr Ser Gly Asn Ser Val
1 5

<210> 89
<211> 11
<212> PRT
<213> Homo sapiens

<400> 89

Ala Arg Ser Pro Gly His Ser Asp Tyr Asp Ser
1 5 10

H0616615

<210> 90
<211> 112
<212> PRT
<213> Homo sapiens

<400> 90

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

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

Tyr Val Val Gln Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
35 40 45

Leu Ile Tyr His Asn Asn Asp Arg Pro Ser Gly Val Pro Tyr Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
85 90 95

Leu Ser Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105 110

<210> 91
<211> 336
<212> DNA
<213> Homo sapiens

<400> 91

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tcctgtactg ggagcagctc caacatcggg gcagggttatg ttgtacagtg gtatcagcag 120

cttccaggaa cagcccccaa actcctcatc tatcataaca acgatcggcc ctcaggggtc 180

H0616615

ccttaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc 240
caggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtggttgg 300
gtgttcggcg gagggaccaa gctgaccgtc ctaggt 336

<210> 92
<211> 118
<212> PRT
<213> Homo sapiens

<400> 92

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

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

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

Ser His Ile Ser Thr Ser Gly Asn Ser Val Asp Tyr Ala 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 Ser Pro Gly His Ser Asp Tyr Asp Ser Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 93
<211> 354

H0616615

<212> DNA

<213> Homo sapiens

<400> 93

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tcctgtgcag cctctggatt cacctttaaa gactactaca tgaactggat ccgccaggct      120
ccagggaagg gcctggagtg gatttcacac attagtagca gcggaatag tgtagattat      180
gcagactctg tcaagggccg gttcaccatc tccagggaca acgccaagaa ttactgtac      240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gcgctctccg      300
ggtcattctg actacgattc ttgggggtcaa ggtactctgg tgaccgtctc ctca          354
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<210> 94

<211> 263

<212> PRT

<213> Homo sapiens

<400> 94

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Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
1              5              10              15
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Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly
20              25              30
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Tyr Val Val Gln Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
35              40              45
```

```
Leu Ile Tyr His Asn Asn Asp Arg Pro Ser Gly Val Pro Tyr Arg Phe
50              55              60
```

```
Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65              70              75              80
```

```
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
85              90              95
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Leu Ser Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
115 120 125

Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly Ser
130 135 140

Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Lys Asp Tyr Tyr
145 150 155 160

Met Asn Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile Ser
165 170 175

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

Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr Leu
195 200 205

Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala
210 215 220

Arg Ser Pro Gly His Ser Asp Tyr Asp Ser Trp Gly Gln Gly Thr Leu
225 230 235 240

Val Thr Val Ser Ser His His His His His His Gly Ala Tyr Pro Tyr
245 250 255

Asp Val Pro Asp Tyr Ala Ser
260

<210> 95
<211> 792
<212> DNA
<213> Homo sapiens

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cttccaggaa cagcccccaa actcctcatc tatcataaca acgatcggcc ctcaggggtc 180
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cctggagggt ccctgagact ctctgtgca gcctctggat tcacctttaa agactactac 480
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aacgccaaga attcactgta cctgcaaagt aacagcctga gagccgagga cacggccgta 660
tattactgtg cgcgctctcc gggtcattct gactacgatt cttgggggtca aggtactctg 720
gtgaccgtct cctcacacca tcaccatcac catggcgcat acccgtaga cgttccggac 780
tacgcttctt ag 792

<210> 96
<211> 6
<212> PRT
<213> Homo sapiens

<400> 96

Asn Ile Gly Asp Lys Ser
1 5

<210> 97
<211> 13
<212> PRT
<213> Homo sapiens

<400> 97

H0616615

Gln Val Trp Ala Ser Gly Thr Asp His Pro Tyr Val Ile
1 5 10

<210> 98
<211> 10
<212> PRT
<213> Homo sapiens

<400> 98

Ala Arg Met Tyr Gly Ser Tyr Thr Asp Met
1 5 10

<210> 99
<211> 111
<212> PRT
<213> Homo sapiens

<400> 99

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1 5 10 15

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

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

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Ala Ser Gly Thr Asp His
85 90 95

Pro Tyr Val Ile Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly

100

105

110

<210> 100

<211> 333

<212> DNA

<213> Homo sapiens

<400> 100

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caggcccctg tgctgggtcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180

ttctctgggt ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240

gacgaggccg actattactg tcagggtgtgg gctagtggta ctgatcatcc ctatgtgata 300

ttcggcggag ggaccaaggt caccgtccta ggt 333

<210> 101

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<212> PRT

<213> Homo sapiens

<400> 101

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

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

Ser	Ala	Ile	Ser	Gly	Ser	Gly	Gly	Ser	Thr	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	

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

Ala Arg Met Tyr Gly Ser Tyr Thr Asp Met Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser
115

<210> 102
<211> 351
<212> DNA
<213> Homo sapiens

<400> 102
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tcctgtgcag cctctggatt cacctttagc agctatgcca tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcagct attagtggta gtggtggtag cacatactac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaataga acagcctgag agccgaggac acggccgtat attactgtgc gcgcatgtac 300
ggttcttaca ctgatatgtg gggtaagggt actctgggtga ccgtctcctc a 351

<210> 103
<211> 261
<212> PRT
<213> Homo sapiens

<400> 103

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1 5 10 15

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

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr

H0616615

35

40

45

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
 50 55 60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Ala Ser Gly Thr Asp His
 85 90 95

Pro Tyr Val Ile Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly Gly
 100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
 115 120 125

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu
 130 135 140

Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr Ala Met
 145 150 155 160

Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ala
 165 170 175

Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys Gly
 180 185 190

Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
 195 200 205

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 210 215 220

Met Tyr Gly Ser Tyr Thr Asp Met Trp Gly Gln Gly Thr Leu Val Thr

225 230 235 240

Pro Asp Tyr Ala Ser
260

$\langle 210 \rangle$	105
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H0616615

<212> PRT

<213> Homo sapiens

<400> 105

Ser Ser Asn Ile Gly Tyr Asn Tyr
1 5

<210> 106

<211> 11

<212> PRT

<213> Homo sapiens

<400> 106

Thr Ser Trp Asp Asp Ser Leu Ser Gly Tyr Val
1 5 10

<210> 107

<211> 8

<212> PRT

<213> Homo sapiens

<400> 107

Gly Asn Ala Phe Thr Asn Phe Tyr
1 5

<210> 108

<211> 9

<212> PRT

<213> Homo sapiens

<400> 108

Ile Asn Pro Ser Gly Thr Asp Leu Thr
1 5

<210> 109

<211> 13

<212> PRT

<213> Homo sapiens

<400> 109

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Ala Arg Gln Tyr Ala Tyr Gly Tyr Ser Gly Phe Asp Met
1 5 10

<210> 110
<211> 111
<212> PRT
<213> Homo sapiens

<400> 110

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Tyr Asn
20 25 30

Tyr Val Tyr Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45

Ile Ser Arg Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

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

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Thr Ser Trp Asp Asp Ser Leu
85 90 95

Ser Gly Tyr Val Phe Gly Pro Gly Thr Lys Val Thr Val Leu Gly
100 105 110

<210> 111
<211> 333
<212> DNA
<213> Homo sapiens

<400> 111

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ccaggaacgg	cccccaaact	cctcatctct	agaaataatc	agcggccctc	aggggtccct	180
gaccgattct	ctggctccaa	gtctggcacc	tcagcctccc	tggccatcag	tgggctccgg	240
tccgaggatg	aggctgacta	ttactgtaca	tcgtgggatg	acagcctgag	tggttatgtc	300
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<210>	112
<211>	121
<212>	PRT
<213>	Homo sapiens

<400> 112

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Asn Ala Phe Thr Asn Phe
20 25 30

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

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

Phe Gln Gly Arg Val Thr Met Thr Arg Asp Thr Pro Thr Ser Thr Val
65 70 75 80

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

Cys Ala Arg Gln Tyr Ala Tyr Gly Tyr Ser Gly Phe Asp Met Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

H0616615

<210> 113
<211> 363
<212> DNA
<213> Homo sapiens

<400> 113
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tcctgcaagg catctggaaa cgccttcacc aacttctata tacactgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatta atcaacccta gtggtactga cctcacaagg 180
tacgcacaga agttccaggg cagagtcacc atgaccaggg acacgcccac gagcacagtc 240
tacatggagc tgagcagcct gaggtctgac gacacggctg tgtattactg tgcgcgccag 300
tacgcttacg gttactctgg tttcgatatg tgggggtcaag gtactctggt gaccgtctcc 360
tca 363

<210> 114
<211> 265
<212> PRT
<213> Homo sapiens

<400> 114

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Tyr Asn
20 25 30

Tyr Val Tyr Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45

Ile Ser Arg Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

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

H0616615

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Thr Ser Trp Asp Asp Ser Leu
85 90 95

Ser Gly Tyr Val Phe Gly Pro Gly Thr Lys Val Thr Val Leu Gly Gly
100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val
115 120 125

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val
130 135 140

Lys Val Ser Cys Lys Ala Ser Gly Asn Ala Phe Thr Asn Phe Tyr Ile
145 150 155 160

His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Leu
165 170 175

Ile Asn Pro Ser Gly Thr Asp Leu Thr Arg Tyr Ala Gln Lys Phe Gln
180 185 190

Gly Arg Val Thr Met Thr Arg Asp Thr Pro Thr Ser Thr Val Tyr Met
195 200 205

Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala
210 215 220

Arg Gln Tyr Ala Tyr Gly Tyr Ser Gly Phe Asp Met Trp Gly Gln Gly
225 230 235 240

Thr Leu Val Thr Val Ser Ser His His His His His His Gly Ala Tyr
245 250 255

Pro Tyr Asp Val Pro Asp Tyr Ala Ser
260 265

H0616615

<210> 115
<211> 798
<212> DNA
<213> Homo sapiens

<400> 115
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ccaggaacgg cccccaaact cctcatctct agaaataatc agcggccctc aggggtccct 180
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccgg 240
tccgaggatg aggctgacta ttactgtaca tcgtgggatg acagcctgag tggttatgtc 300
ttcggacctg ggaccaaggt caccgtccta ggtgggtggg gtggtagcgg cggcggcggc 360
tctgggtggg gtggatccga agtgcagctg gtgcagtctg gggctgaggt gaagaagcct 420
ggggcctcag tgaaggtttc ctgcaaggca tctggaaacg ctttcaccaa cttctatata 480
cactgggtgc gacaggcccc tggacaaggg cttgagtgga tgggattaat caaccctagt 540
ggtactgacc tcacaaggta cgcacagaag ttccagggca gagtcacat gaccaggac 600
acgcccacga gcacagtcta catggagctg agcagcctga ggtctgacga cacggctgtg 660
tattactgtg cgcgccagta cgcttacggg tactctgggt tcgatatgtg ggggtcaaggt 720
actctgggtga ccgtctcctc acaccatcac catcaccatg gcgcataccc gtacgacgtt 780
ccggactacg cttcttag 798

<210> 116
<211> 6
<212> PRT
<213> Homo sapiens

<400> 116

Gln Ser Val Ser Asn Trp
1 5

H0616615

<210> 117
<211> 9
<212> PRT
<213> Homo sapiens

<400> 117

Gln Gln Ser Tyr Ser Thr Pro Ile Thr
1 5

<210> 118
<211> 8
<212> PRT
<213> Homo sapiens

<400> 118

Gly Tyr Thr Phe Thr Ser Tyr Tyr
1 5

<210> 119
<211> 8
<212> PRT
<213> Homo sapiens

<400> 119

Ile Asn Pro Asn Thr Gly Gly Ser
1 5

<210> 120
<211> 9
<212> PRT
<213> Homo sapiens

<400> 120

Ala Arg Gly Asp Val Thr Tyr Asp Glu
1 5

<210> 121
<211> 108
<212> PRT
<213> Homo sapiens

H0616615

<400> 121

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

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

Leu Ala Trp Tyr Gln Leu 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 Ile
85 90 95

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

<210> 122

<211> 324

<212> DNA

<213> Homo sapiens

<400> 122

gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gagtgtagc aactggtag cctggtagtca actgaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggtac tgggacagat ttactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaacag agttacagta ccccgatcac cttcggcgga 300
gggaccaagg tggagatcaa acgt 324

H0616615

<210> 123
<211> 116
<212> PRT
<213> Homo sapiens

<400> 123

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

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

Gly Trp Ile Asn Pro Asn Thr Gly Gly Ser Asn Phe Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Gly Asp Val Thr Tyr Asp Glu Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser
115

<210> 124
<211> 348
<212> DNA
<213> Homo sapiens

<400> 124

cagggtccagc tgggtacagtc tggggctgag gtgaagaagc ctgggacctc agtgaaggtc

60

H0616615

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tcctgcaagg cttctggata caccttcacc tcctactata tacactgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcaacccta acactgggtg ctcaaacttt 180
gcacagaagt ttcagggcag ggtcaccatg accaggggaca cgtccatcag cacagcctac 240
atggagctga acaggctgag gtctgacgac acggccgtgt attactgtgc gcgcggtgac 300
gttacttacg atgaatgggg tcaaggtact ctggtgaccg tctcctca 348
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<210> 125

<211> 257

<212> PRT

<213> Homo sapiens

<400> 125

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

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

```
Leu Ala Trp Tyr Gln Leu 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 Ile
          85          90          95
```

```
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Gly Gly Gly Gly
          100         105         110
```

```
Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Val
```

H0616615

115

120

125

Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Thr Ser Val Lys Val Ser
130 135 140

Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr Tyr Ile His Trp Val
145 150 155 160

Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Trp Ile Asn Pro
165 170 175

Asn Thr Gly Gly Ser Asn Phe Ala Gln Lys Phe Gln Gly Arg Val Thr
180 185 190

Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu Leu Asn Arg
195 200 205

Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Asp Val
210 215 220

Thr Tyr Asp Glu Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser His
225 230 235 240

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
245 250 255

Ser

<210> 126

<211> 774

<212> DNA

<213> Homo sapiens

<400> 126

gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60

atcacttgctc gggcgagtca gagtgttagc aactgggttag cctgggtatca actgaaacca 120

H0616615

```

gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca    180
aggttcagtg gcagtggtatc tgggacagat ttactctca ccatcagcag tctgcaacct    240
gaagattttg caacttacta ctgtcaacag agttacagta ccccgatcac cttcggcgga    300
gggaccaagg tggagatcaa acgtggtggt ggtggtagcg gcggcggcgg ctctggtggt    360
ggtggatccc aggtccagct ggtacagtct ggggctgagg tgaagaagcc tgggacctca    420
gtgaaggctct cctgcaaggc ttctggatac accttcacct cctactatat aactgggtg    480
cgacaggccc ctggacaagg gcttgagtgg atgggatgga tcaaccctaa cactggtggc    540
tcaaactttg cacagaagtt tcagggcagg gtcaccatga ccagggacac gtccatcagc    600
acagcctaca tggagctgaa caggctgagg tctgacgaca cggccgtgta ttactgtgcg    660
cgcggtgacg ttacttacga tgaatggggg caaggtactc tggtgaccgt ctcctcacac    720
catcaccatc accatggcgc ataccgtac gacgttccgg actacgcttc ttag          774

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<210> 127
 <211> 10
 <212> PRT
 <213> Homo sapiens

<400> 127

Gln Val Trp Asp Ile Asn Asp His Tyr Val
 1 5 10

<210> 128
 <211> 10
 <212> PRT
 <213> Homo sapiens

<400> 128

Ala Arg Ser Gln Ala Ser Phe Met Asp Ile
 1 5 10

<210> 129
 <211> 108

H0616615

<212> PRT

<213> Homo sapiens

<400> 129

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

Thr Ala Ser Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val
20 25 30

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

Tyr Asp Asp Met Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Pro Val Glu Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ile Asn Asp His Tyr
85 90 95

Val Phe Ala Ser Gly Thr Lys Val Thr Val Leu Gly
100 105

<210> 130

<211> 324

<212> DNA

<213> Homo sapiens

<400> 130

tcctatgagc tgactcagcc accctcagtgc tcagtggccc caggaaagac ggccagcatt 60

acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120

caggcccctg tgctgggtcat ctattatgat gacatgcggc cctcaggtat ccctgagcga 180

ttctctgggt ccagctctgg gaacacggcc accctgacca tcagcccgggt cgaagccggg 240

gatgaggccg actattactg tcaggtgtgg gatattaatg atcattatgt cttcgcacgc 300

gggaccaagg tcaccgtcct aggt

324

<210> 131
 <211> 117
 <212> PRT
 <213> Homo sapiens

<400> 131

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 Thr Phe Ser Ser Tyr
 20 25 30

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

Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr 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 Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Ser Gln Ala Ser Phe Met Asp Ile Trp Gly Gln Gly Thr Leu
 100 105 110

Val Thr Val Ser Ser
 115

<210> 132
 <211> 351
 <212> DNA
 <213> Homo sapiens

H0616615

<400> 132
gaggtgcagc tgggtggagtc tggggggaggc ttggtacagc ctgggggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagc agctatgcc a tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcagct attagtggta gtggtggtag cacatactac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gcgctctcag 300
gcttctttca tggatatctg gggtaagggt actctggtag ccgtctcctc a 351

<210> 133
<211> 258
<212> PRT
<213> Homo sapiens

<400> 133

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

Thr Ala Ser Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val
20 25 30

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

Tyr Asp Asp Met Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Ser Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Pro Val Glu Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ile Asn Asp His Tyr
85 90 95

Val Phe Ala Ser Gly Thr Lys Val Thr Val Leu Gly Gly Gly Gly Gly
100 105 110

H0616615

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val
115 120 125

Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser
130 135 140

Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr Ala Met Ser Trp Val
145 150 155 160

Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ala Ile Ser Gly
165 170 175

Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr
180 185 190

Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser
195 200 205

Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Gln Ala
210 215 220

Ser Phe Met Asp Ile Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225 230 235 240

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr
245 250 255

Ala Ser

<210> 134

<211> 777

<212> DNA

<213> Homo sapiens

<400> 134

tcctatgagc tgactcagcc accctcagtg tcagtggccc caggaaagac ggccagcatt

60

H0616615

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acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc      120
caggccccctg tgctgggtcat ctattatgat gacatgcggc cctcagggtat ccctgagcga      180
ttctctgggt ccagctctgg gaacacggcc accctgacca tcagcccgggt cgaagccggg      240
gatgaggccg actattactg tcagggtgtgg gatattaatg atcattatgt cttcgcacgc      300
gggaccaagg tcaccgtcct aggtgggtgg ggtggtagcg gcggcggcgg ctctgggtgg      360
ggtggatccg aggtgcagct ggtggagtct gggggaggct tggtagagcc tgggggggtcc      420
ctgagactct cctgtgcagc ctctggattc acctttagca gctatgcat gagctgggtc      480
cgccaggctc cagggaaggg gctggagtgg gtctcagcta ttagtggttag tggtagtagc      540
acatactacg cagactccgt gaagggccgg ttcaccatct ccagagacaa ttccaagaac      600
acgctgtatc tgcaaatgaa cagcctgaga gccgaggaca cggccgtata ttactgtgcg      660
cgctctcagg cttctttcat ggatatctgg ggtcaaggta ctctggtgac cgtctcctca      720
caccatcacc atcaccatgg cgcatacccg tacgacgttc cggactacgc ttcttag      777

```

```

<210> 135
<211> 11
<212> PRT
<213> Homo sapiens

```

<400> 135

```

Gln Val Trp Asp Ser Ser Ser Asp Gln Gly Val
1           5           10

```

```

<210> 136
<211> 7
<212> PRT
<213> Homo sapiens

```

<400> 136

```

Ile Gly Thr Gly Gly Gly Thr
1           5

```

H0616615

<210> 137
<211> 10
<212> PRT
<213> Homo sapiens

<400> 137

Ala Arg Gly Thr Gly Tyr Asp Gly Asp Gln
1 5 10

<210> 138
<211> 109
<212> PRT
<213> Homo sapiens

<400> 138

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

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

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
35 40 45

Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp Gln
85 90 95

Gly Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
100 105

<210> 139
<211> 327

H0616615

<212> DNA

<213> Homo sapiens

<400> 139

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ctgcctgtgc tgactcagcc accctcgggtg tcagtggccc caggacagac ggccaggatc      60
acctgtggggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc      120
caggccccctg tgctgggtcgt ctatgatgat agcgaccggc cctcagggat ccctgagcga      180
ttctctgggt ccaattctgg gaacacggcc accctgacca tcagcagggt cgaagccggg      240
gatgaggccg actattactg tcagggtgtgg gatagtagta gtgatcaggg cgtcttcgga      300
actgggacca aggtcaccgt cctaggt                                           327
```

<210> 140

<211> 116

<212> PRT

<213> Homo sapiens

<400> 140

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

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

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

```
Ser Ala Ile Gly Thr Gly Gly Gly Thr Tyr Tyr Ala Asp Ser Val Lys
50              55              60
```

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

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

H0616615

Arg Gly Thr Gly Tyr Asp Gly Asp Gln Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser
115

<210> 141
<211> 348
<212> DNA
<213> Homo sapiens

<400> 141
gaagtgcagc tgggtgcagtc tgggggaggc ttggtacagc ctaggggggc cctgagactc 60
tcctgtgcag gctctggatt caccttcagt agctatgcta tgcactgggt tcgccaggct 120
ccaggaaaag gtctggagtg ggtatcagct attgggtactg gtgggtggcac atactatgca 180
gactccgtga agggccgatt caccatctcc agggacaatg ccaagaactc cttgtatctt 240
caaatgaaca gcctgagagc cgaggacacc gccatgtatt actgtgcgcg cggtactgggt 300
tacgacgggtg atcagtgggg tcaaggtact ctggtgaccg tctcctca 348

<210> 142
<211> 258
<212> PRT
<213> Homo sapiens

<400> 142

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

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

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
35 40 45

Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

H0616615

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp Gln
85 90 95

Gly Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Gly Gly Gly
100 105 110

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu
115 120 125

Val Gln Ser Gly Gly Gly Leu Val Gln Pro Arg Gly Ser Leu Arg Leu
130 135 140

Ser Cys Ala Gly Ser Gly Phe Thr Phe Ser Ser Tyr Ala Met His Trp
145 150 155 160

Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser Ala Ile Gly
165 170 175

Thr Gly Gly Gly Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr
180 185 190

Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser
195 200 205

Leu Arg Ala Glu Asp Thr Ala Met Tyr Tyr Cys Ala Arg Gly Thr Gly
210 215 220

Tyr Asp Gly Asp Gln Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225 230 235 240

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr
245 250 255

Ala Ser

```

<210> 143
<211> 777
<212> DNA
<213> Homo sapiens

<400> 143
ctgcctgtgc tgactcagcc accctcgggtg tcagtggccc caggacagac ggccaggatc      60
acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc      120
caggccccctg tgctggtcgt ctatgatgat agcgaccggc cctcagggat ccctgagcga      180
ttctctggct ccaattctgg gaacacggcc accctgacca tcagcagggt cgaagccggg      240
gatgaggccg actattactg tcagggtgtgg gatagtagta gtgatcaggg cgtcttcgga      300
actgggacca aggtcaccgt cctaggtggg ggtgggtgga gcggcggcgg cggctctggt      360
ggtgggtggat ccgaagtgca gctgggtgcag tctggggggag gcttgggtaca gcctaggggg      420
tccctgagac tctcctgtgc aggctctgga ttcaccttca gtagctatgc tatgcactgg      480
gttcgccagg ctccaggaaa aggtctggag tgggtatcag ctattggtac tgggtgggtggc      540
acatactatg cagactccgt gaagggccga ttcaccatct ccagggacaa tgccaagaac      600
tccttgtatc ttcaaatgaa cagcctgaga gccgaggaca ccgccatgta ttactgtgcg      660
cgcggtactg gttacgacgg tgatcagtgg ggtcaaggta ctctggtgac cgtctcctca      720
caccatcacc atcaccatgg cgcatacccg tacgacgttc cggactacgc ttcttag      777

```