

SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.

<120> Human Antibodies to the Glucagon Receptor

<130> 1400A-WO

<140> To be assigned

<141> Filed herewith

<150> 61/416,409

<151> 2010-11-23

<150> 61/481,958

<151> 2011-05-03

<150> 61/551,032

<151> 2011-10-25

<160> 207

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cctggaaaag gacttgagt gatggcagg tttgatcctg aagaaggtaa aataatctac 180
gcacagaagt tccagggcag agtcaccatg accgaggaca catctacaga cacagcctac 240
atggagctga gcagcctgag atctggggac acggccgttt attactgtgc aacaagcgat 300
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Ser Val Lys Val Ser Cys Lys Val Ser Gly His Ile Leu Thr Asp Leu
20 25 30
Ser Met His Trp Val Arg Gln Pro Gly Lys Gly Leu Glu Trp Met
35 40 45
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65					70					75					80
Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Gly	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
				85					90					95	
Ala	Thr	Ser	Asp	Ile	Leu	Thr	Gly	Tyr	Tyr	Arg	Asp	Tyr	Tyr	Gly	Leu
			100					105					110		
Asp	Val	Trp	Gly	Gln	Gly	Thr	Thr	Leu	Thr	Val	Ser	Ser			
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 tccgggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttac actgaaaatc 240
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 1 5 10 15
 Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
 20 25 30
 Lys Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser

				35					40					45					
Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly	Ser	Asn	Arg	Ala	Ser	Gly	Val	Pro				
	50						55				60								
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile				
65					70					75					80				
Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr	Cys	Met	Gln	Thr				
				85					90					95					
Leu	Gln	Thr	Pro	Arg	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys				
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 cctggaaaag ggcttgagtg gatgggaggt tttgatcctg aagaagggtga aataatctac 180
 gcacagaagt tccagggcag agtcaccatg accgaggaca catctacaga cacagcctac 240
 atggagctga gcagcctgag atctggggac acggccggtt attactgtgc aacaagcgat 300
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 ctcaccgtct cctca 375

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 Ser Val Lys Val Ser Cys Lys Val Ser Gly His Ile Leu Thr Asp 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 Glu Gly Glu Ile 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
Met Glu Leu Ser Ser Leu Arg Ser Gly Asp Thr Ala Val Tyr Tyr Cys				80
		85		90
Ala Thr Ser Asp Ile Leu Thr Gly Tyr Tyr Arg Asp Tyr Tyr Gly Leu				95
		100		105
Asp Val Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser				110
		115		120
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 Asp Val

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 tacctgcaga agccagggca gtctccacaa ctctgatct atttgggttc taatcggggcc 180
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 20 25 30
 Lys Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45

Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly	Ser	Asn	Arg	Ala	Ser	Gly	Val	Pro
	50					55					60				
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile
65				70						75					80
Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr	Cys	Met	Gln	Thr
				85					90					95	
Leu	Gln	Thr	Pro	Arg	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys
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<400> 29
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<210> 30
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<400> 30
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<210> 31
 <211> 27
 <212> DNA
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<220>
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<400> 31
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 ctgcaaataga acagcctgag agccgaggac acggctgttt attactgtgt gagagaccca 300
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 accgtctcct ca 372

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 20 25 30
 Glu Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ser Tyr Ile Ser Arg Gly Gly Ser Leu Ile His Tyr Thr 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	
Val	Arg	Asp	Pro	Ala	Ala	Arg	Tyr	His	Tyr	Tyr	Tyr	His	Gly	Met	Asp
			100					105					110		
Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser				
		115					120								

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 <212> DNA
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<400> 37
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<210> 38
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 <212> PRT
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<220>
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<400> 38
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 1 5 10 15
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<210> 41
 <211> 336
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 41
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 tatctgcaga agccagggca gtctccacag ctctgatct atttgggttc tagtcggggcc 180
 tccgggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttat actgaaaatc 240
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 tggacgttcg gccgagggac caaggtggaa atcaaa 336

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 Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Asn
 20 25 30
 Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45
 Pro Gln Leu Leu Ile Tyr Leu Gly Ser Ser Arg Ala Ser Gly Val Pro

50		55		60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Ile Leu Lys Ile				
65		70		75
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Ala				
	85		90	95
Leu Gln Thr Pro Trp Thr Phe Gly Arg Gly Thr Lys Val Glu Ile Lys				
	100		105	110

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 ccaggcaagg ggctggagtg ggtggcagtt atatcatctg atggacgtga taaatactat 180
 gtagactccg tgaagggccg attcaccatc tccagagaca actccaagaa cacgctttat 240
 ctgcaaataga acagcctgag agctgaggac acggctgttt attactgtgc gaaagagatg 300
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 gggaccacgg tcaccgtctc ctca 384

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 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20 25 30
 Asp Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Val Ile Ser Ser Asp Gly Arg Asp Lys Tyr Tyr Val 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	Lys	Glu	Met	Val	Tyr	Tyr	Asp	Ile	Leu	Thr	Gly	Tyr	His	Asn	Tyr
			100					105					110		
Tyr	Gly	Met	Asp	Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser
		115					120					125			

<210> 51
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24

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 aagttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
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 gggaccaaag tggagatcaa acga 324

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 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Asn Asn Tyr
 20 25 30
 Leu Ala Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile
 35 40 45
 His Thr Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Lys 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
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Thr Tyr Pro Leu				
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Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg				
	100		105	

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18

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<210> 63

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 ccaggcaagg ggctggagtg ggtggcagtt atatcatctg atggacgtga taaatactat 180
 gtagactccg tgaagggccg attcaccatc tccagagaca actccaagaa cacgctttat 240
 ctgcaaataga acagcctgag agctgaggac acggctgttt attactgtgc gaaagagatg 300
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 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20 25 30
 Asp Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Val Ile Ser Ser Asp Gly Arg Asp Lys Tyr Tyr Val 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	Lys	Glu	Met	Val	Tyr	Tyr	Asp	Ile	Leu	Thr	Gly	Tyr	His	Asn	Tyr
			100					105					110		
Tyr	Gly	Met	Asp	Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	
		115					120					125			

<210> 67
 <211> 321
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 67
 gacatccaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga cagagtcacc 60
 atcacttgtc gggcgagtca gggcattaac aattatttag cctgggtttca gcagaaacca 120
 gggaaagccc ctaagtccct gatccatact gcatccagtt tgcaaagtgg ggtcccatca 180
 aagttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
 gaagatthttg caacttatta ctgccaacag tataatactt accctctcac ttctggcgga 300
 gggaccaagg tggagatcaa a 321

<210> 68
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 68															
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	Gly	Ile	Asn	Asn	Tyr
			20					25					30		
Leu	Ala	Trp	Phe	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Ser	Leu	Ile
		35				40					45				
His	Thr	Ala	Ser	Ser	Leu	Gln	Ser	Gly	Val	Pro	Ser	Lys	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	Tyr	Asn	Thr	Tyr	Pro	Leu
			85					90					95		
Thr	Phe	Gly	Gly	Gly	Thr	Lys	Val	Glu	Ile	Lys					
		100						105							

<210> 69
 <211> 384
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 69
caggtgcagc tgggtgcagtc tggggggaggc ttggtccagc ctgggggggtc cctgagactc 60
tcctgtgcag cctccggatt caccttttagt aactatttga tgaactgggt ccgccaggct 120
ccagggaagg ggctggagt gctggccaac atacaggaag atggaattga gaaatactat 180
gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctactgtat 240
ctgcaaatac acagcctgag agccgaggac acggctgtgt attactgtgc gagagagccc 300
tcccattacg atattttgac tggttatgac tactattacg gtatggacgt ctgggggcca 360
gggaccacgg tcaccgtctc ctca 384

<210> 70
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 70
Gln Val Gln Leu Val Gln 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 Asn Tyr
20 25 30
Leu Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Leu
35 40 45
Ala Asn Ile Gln Glu Asp Gly Ile 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 Glu Pro Ser His Tyr Asp Ile Leu Thr Gly Tyr Asp Tyr Tyr
100 105 110
Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 71
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 71
ggattcacct ttagtaacta ttg 24

<210> 72
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 72
Gly Phe Thr Phe Ser Asn Tyr Leu
1 5

<210> 73
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 73
atacaggaag atggaattga gaaa

24

<210> 74
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 74
Ile Gln Glu Asp Gly Ile Glu Lys
1 5

<210> 75
<211> 63
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 75
gcgagagagc cctcccatta cgatatatttg actggttatg actactatta cggatatggac 60
gtc 63

<210> 76
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 76
Ala Arg Glu Pro Ser His Tyr Asp Ile Leu Thr Gly Tyr Asp Tyr Tyr
1 5 10 15
Tyr Gly Met Asp Val
20

<210> 77
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
 <223> Synthetic

<400> 77
 gacatccagt tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
 atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
 gggaaagccc ctaagcgcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
 aggttcagcg gcagtggatc tgggacagaa ttcattctca cagtcagcag cctgcagcct 240
 gaagactttg caacttatta ctgtctacag tataatagta acccattcac tttcggccct 300
 gggaccaagg tggagatcaa acga 324

<210> 78
 <211> 108
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 78
 Asp Ile Gln Leu 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 Arg 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 Glu Phe Ile Leu Thr Val Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Tyr Asn Ser Asn Pro Phe
 85 90 95
 Thr Phe Gly Pro Gly Thr Lys Val Glu Ile Lys Arg
 100 105

<210> 79
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 79
 cagggcatta gaaatgat 18

<210> 80
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 80
 Gln Gly Ile Arg Asn Asp
 1 5

<210> 81
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 81
gctgcatcc

9

<210> 82
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 82
Ala Ala Ser
1

<210> 83
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 83
ctacagtata atagtaaccc attcact

27

<210> 84
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 84
Leu Gln Tyr Asn Ser Asn Pro Phe Thr
1 5

<210> 85
<211> 381
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

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<400> 85
gaggtgcagc tgggtggagtc tggggggaggc ttggtccagc ctgggggggtc cctgagactc 60
tcctgtgcag cctccggatt caccttttagt aactatttga tgaactgggt ccgccaggct 120
ccaggggaagg ggctggagtg gctggccaac atacaggaag atggaattga gaaatactat 180
gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctactgtat 240
ctgcaaataga acagcctgag agccgaggac acggctgtgt attactgtgc gagagagccc 300
tcccattacg atattttgac tggttatgac tactattacg gtatggacgt ctgggggcca 360
gggaccacgg tcaccgtctc c                                     381

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<210> 86

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 86

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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 Asn Tyr
20           25           30
Leu Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Leu
35           40           45
Ala Asn Ile Gln Glu Asp Gly Ile 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 Glu Pro Ser His Tyr Asp Ile Leu Thr Gly Tyr Asp Tyr Tyr
100          105          110
Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser
115          120          125

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<210> 87

<211> 321

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 87

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gacatccaga tgaccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaagcgct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcattctca cagtcagcag cctgcagcct 240
gaagactttg caacttatta ctgtctacag tataatagta acccattcac tttcggccct 300
gggaccaaag tggatatcaa a                                     321

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<210> 88

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 88

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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 Ala Ser Gln Gly Ile Arg Asn Asp
          20           25           30
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg 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 Glu Phe Ile Leu Thr Val Ser Ser Leu Gln Pro
65           70           75           80
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Tyr Asn Ser Asn Pro Phe
          85           90           95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
          100           105
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<210> 89

<211> 381

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 89

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gaggtgcagc tgggtgcagtc tgggggagcc ttggtacagc ctgggggggtc cctgagactc 60
tcctgtacag cctctgggtt caccttcagt aactacgaca tgcactgggt ccgccaaact 120
acaggaaaag gtctggagtg gatctcagct attgatactg ctgggtgacac atactatcca 180
ggctccgtga agggccgatt caccgtctcc agagaaaatg ccaagaactc cttttatctt 240
caaatgaaca gcctgagagc cggggacacg gctgtgtatt actgtgcaag ggaggggaag 300
tattacgata ttttgactgg tgactaccac tactacggtg tggacgtctg gggccaaggg 360
accacggtca ccgtctctc a 381
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<210> 90

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 90

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Glu Val Gln Leu Val Gln Ser Gly Gly Ala Leu Val Gln Pro Gly Gly
 1           5           10           15
Ser Leu Arg Leu Ser Cys Thr Ala Ser Gly Phe Thr Phe Ser Asn Tyr
          20           25           30
Asp Met His Trp Val Arg Gln Thr Gly Lys Gly Leu Glu Trp Ile
          35           40           45
Ser Ala Ile Asp Thr Ala Gly Asp Thr Tyr Tyr Pro Gly Ser Val Lys
          50           55           60
Gly Arg Phe Thr Val Ser Arg Glu Asn Ala Lys Asn Ser Phe Tyr Leu
65           70           75           80
Gln Met Asn Ser Leu Arg Ala Gly Asp Thr Ala Val Tyr Tyr Cys Ala
          85           90           95
Arg Glu Gly Lys Tyr Tyr Asp Ile Leu Thr Gly Asp Tyr His Tyr Tyr
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	100		105		110
Gly Met	Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser				
	115		120		125

<210> 91
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 91
 ggtttcacct tcagtaacta cgac

24

<210> 92
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 92
 Gly Phe Thr Phe Ser Asn Tyr Asp
 1 5

<210> 93
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 93
 attgatactg ctggtgacac a

21

<210> 94
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 94
 Ile Asp Thr Ala Gly Asp Thr
 1 5

<210> 95
 <211> 63
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 95
 gcaagggagg ggaagtatta cgatatatttg actggtgact accactacta cggtatggac 60
 gtc 63

<210> 96
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 96
 Ala Arg Glu Gly Lys Tyr Tyr Asp Ile Leu Thr Gly Asp Tyr His Tyr
 1 5 10 15
 Tyr Gly Met Asp Val
 20

<210> 97
 <211> 324
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 97
 gccatccgga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
 atcacttgtc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
 gggaaagccc ctaagcgact gatctatgct acatccagtt tgcaaagtgg ggtcccatca 180
 aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
 gaagattttg caacttatta ctgtctacag cataatagtt acccgctcac ttctggcgga 300
 gggaccaagg tggaaatcaa acga 324

<210> 98
 <211> 108
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 98
 Ala Ile Arg 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 Arg Leu Ile
 35 40 45
 Tyr Ala Thr Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Leu

				85					90	
Thr	Phe	Gly	Gly	Gly	Thr	Lys	Val	Glu	Ile	Lys Arg
			100					105		

95

<210> 99
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 99
 cagggcatta gaaatgat

18

<210> 100
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 100
 Gln Gly Ile Arg Asn Asp
 1 5

<210> 101
 <211> 9
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 101
 gctacatcc

9

<210> 102
 <211> 3
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 102
 Ala Thr Ser
 1

<210> 103
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic

<400> 103

ctacagcata atagttaccc gctcact

27

<210> 104

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 104

Leu Gln His Asn Ser Tyr Pro Leu Thr

1

5

<210> 105

<211> 378

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 105

gaggtgcagc tgggtggagtc tggggggagcc ttggtacagc ctgggggggtc cctgagactc 60
tcctgtacag cctctggttt caccttcagt aactacgaca tgcactgggt ccgccaaact 120
acaggaaaag gtctggagtg gatctcagct attgatactg ctgggtgacac atactatcca 180
ggctccgtga agggccgatt caccgtctcc agagaaaatg ccaagaactc cttttatctt 240
caaatgaaca gcctgagagc cggggacacg gctgtgtatt actgtgcaag ggaggggaag 300
tattacgata ttttgactgg tgactaccac tactacggtg tggacgtctg gggccaaggg 360
accacggtca ccgtctcc 378

<210> 106

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 106

Glu Val Gln Leu Val Glu Ser Gly Gly Ala Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Thr Ala Ser Gly Phe Thr Phe Ser Asn Tyr
20 25 30
Asp Met His Trp Val Arg Gln Thr Gly Lys Gly Leu Glu Trp Ile
35 40 45
Ser Ala Ile Asp Thr Ala Gly Asp Thr Tyr Tyr Pro Gly Ser Val Lys
50 55 60
Gly Arg Phe Thr Val Ser Arg Glu Asn Ala Lys Asn Ser Phe Tyr Leu
65 70 75 80
Gln Met Asn Ser Leu Arg Ala Gly Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95
Arg Glu Gly Lys Tyr Tyr Asp Ile Leu Thr Gly Asp Tyr His Tyr Tyr

	100		105		110
Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser					
	115		120		125

<210> 107
 <211> 321
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 107
 gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
 atcacttgtc gggcaagtca gggcattaga aatgatttag gctgggtatca gcagaaacca 120
 gggaaagccc ctaagcgact gatctatgct acatccagtt tgcaaagtgg ggtcccatca 180
 aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
 gaagattttg caacttatta ctgtctacag cataatagtt acccgctcac tttcggcgga 300
 gggaccaagc tggagatcaa a 321

<210> 108
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 108
 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 Gly Ile Arg Asn Asp
 20 25 30
 Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
 35 40 45
 Tyr Ala Thr Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Leu
 85 90 95
 Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 109
 <211> 372
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 109
 caggtgcagc tgggtgcagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
 tcctgtgcag cgtctgggtt cacctttagt aactttggca tgcactgggt ccgccaggct 120
 ccaggcaagg ggctggagtg ggtggcagtt atatggtttg atgaaattga taaatactat 180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
 ccgcaaatac acagcctgag agccgaagac acggctgtgt attactgtgc gcgagaagat 300
 tacgatattt tgactgggta ctattacgct atggacgtct ggggccaagg gaccacgggc 360
 accgtctcct ca 372

<210> 110
 <211> 124
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 110
 Gln Val Gln Leu Val Gln 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 Asn Phe
 20 25 30
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Val Ile Trp Phe Asp Glu Ile Asp Lys 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
 Pro Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Glu Asp Tyr Asp Ile Leu Thr Gly Tyr Tyr Tyr Ala Met Asp
 100 105 110
 Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 111
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 111
 gggttcacct ttagtaactt tggc 24

<210> 112
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 112
 Gly Phe Thr Phe Ser Asn Phe Gly
 1 5

<210> 113
 <211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 113
atatggtttg atgaaattga taaa

24

<210> 114
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 114
Ile Trp Phe Asp Glu Ile Asp Lys
1 5

<210> 115
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 115
gcgcgagaag attacgatat ttgactggt tactattacg ctatggacgt c

51

<210> 116
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 116
Ala Arg Glu Asp Tyr Asp Ile Leu Thr Gly Tyr Tyr Tyr Ala Met Asp
1 5 10 15
Val

<210> 117
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 117
gacatccaga tgaccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
 gggaaagccc ctaagcgcct aatctatgct gcatcccggt tgcaaagtgg ggtcccatcg 180
 aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
 gaagattttg gaacttatta ctgtctacag cataatagtc accccacctt cggccaaggg 300
 accaaggtgg agatcaaacg a 321

<210> 118
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 118
 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 Gly Ile Arg Asn Asp
 20 25 30
 Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
 35 40 45
 Tyr Ala Ala Ser Arg Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Gly Thr Tyr Tyr Cys Leu Gln His Asn Ser His Pro Thr
 85 90 95
 Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
 100 105

<210> 119
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 119
 cagggcatta gaaatgat 18

<210> 120
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 120
 Gln Gly Ile Arg Asn Asp
 1 5

<210> 121
 <211> 9
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 121

gctgcatcc

9

<210> 122

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 122

Ala Ala Ser

1

<210> 123

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 123

ctacagcata atagtcaccc cacc

24

<210> 124

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 124

Leu Gln His Asn Ser His Pro Thr

1

5

<210> 125

<211> 369

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 125

cagggtgcagc tgggtggagtc tggggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctgggtt caccttttagt aactttggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtttg atgaaattga taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240

```

ccgcaaataga acagcctgag agccgaagac acggctgtgt attactgtgc gcgagaagat 300
tacgatatttt tgactgggta ctattacgct atggacgtct ggggccaagg gaccacgggc 360
accgtctcc 369

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```

<210> 126
<211> 123
<212> PRT
<213> Artificial Sequence

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<220>
<223> Synthetic

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<400> 126
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 Asn Phe
20     25     30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35     40     45
Ala Val Ile Trp Phe Asp Glu Ile Asp Lys 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
Pro Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85     90     95
Ala Arg Glu Asp Tyr Asp Ile Leu Thr Gly Tyr Tyr Tyr Ala Met Asp
100    105    110
Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser
115    120

```

```

<210> 127
<211> 318
<212> DNA
<213> Artificial Sequence

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<220>
<223> Synthetic

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<400> 127
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gggcattaga aatgatttag gctgggtatca gcagaaacca 120
gggaaagccc ctaagcgcct aatctatgct gcatcccgtt tgcaaagtgg ggtcccatcg 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
gaagattttg gaacttatta ctgtctacag cataatagtc accccacctt cggccaaggg 300
accaaggtgg agatcaaa 318

```

```

<210> 128
<211> 106
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> Synthetic

```

```

<400> 128
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	Gly	Ile	Lys	Asn	Asp
			20					25					30		
Leu	Gly	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Arg	Leu	Ile
		35					40					45			
Tyr	Ala	Ala	Ser	Arg	Leu	Gln	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly
	50					55					60				
Ser	Gly	Ser	Gly	Thr	Glu	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro
65					70					75					80
Glu	Asp	Phe	Gly	Thr	Tyr	Tyr	Cys	Leu	Gln	His	Asn	Ser	His	Pro	Thr
				85					90					95	
Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys						
			100					105							

<210> 129
 <211> 381
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 129
 gaggtgcagc tgggtggagtc gggggggaggc atggtacagc ctgggggggtc cctgagactc 60
 tcctgtgcag cctctggatt cacctccagt aactacgaca tgcactgggt ccgccaagct 120
 acaggaaaag gtcttgagtg ggtctcaagt attgatactg ctgggggacac ttactatcca 180
 gactccgtga agggccgctt tatcatctcc agagaaaatg ccaaaaactc cctgtatctt 240
 caaatgaata gcctgagagc cggggacacg gctgtgtatt actgtacaag ggagccccga 300
 aattacgaaa ttttgactgg tcactaccac taccacggtg tggacatctg gggccaaggg 360
 accacggtca ccgtctcctc a 381

<210> 130
 <211> 127
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 130
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Met Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ser Ser Asn Tyr
 20 25 30
 Asp Met His Trp Val Arg Gln Ala Thr Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ser Ser Ile Asp Thr Ala Gly Asp Thr Tyr Tyr Pro Asp Ser Val Lys
 50 55 60
 Gly Arg Phe Ile Ile Ser Arg Glu Asn Ala Lys Asn Ser Leu Tyr Leu
 65 70 75 80
 Gln Met Asn Ser Leu Arg Ala Gly Asp Thr Ala Val Tyr Tyr Cys Thr
 85 90 95
 Arg Glu Pro Arg Asn Tyr Glu Ile Leu Thr Gly His Tyr His Tyr His
 100 105 110
 Gly Met Asp Ile Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120 125

<210> 131
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 131
ggattcacct ccagtaacta cgac

24

<210> 132
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 132
Gly Phe Thr Ser Ser Asn Tyr Asp
1 5

<210> 133
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 133
attgatactg ctggggacac t

21

<210> 134
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 134
Ile Asp Thr Ala Gly Asp Thr
1 5

<210> 135
<211> 63
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 135
acaaggagc cccgaaatta cgaaattttg actggtcact accactacca cggtatggac 60

atc

63

<210> 136
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 136
Thr Arg Glu Pro Arg Asn Tyr Glu Ile Leu Thr Gly His Tyr His Tyr
1 5 10 15
His Gly Met Asp Ile
20

<210> 137
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 137
gacatccaga tgacccagtc gccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca ggccattaga aatgatttag gctggatatca gcagaaacca 120
gggaaagccc ctaaactcct gatctatact gcattcagtt tacagagtgg ggtcccatca 180
aggttcagcg gcagtaaadc tggcacagac ttcactctca ccatcagcag cctgcagcct 240
gaagattttg cgacttatta ctgtctgcag gattacacta atcctcggac gttcggccaa 300
gggaccaagg tggagatcaa acga 324

<210> 138
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 138
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 Ala 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 Thr Ala Phe Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Lys 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 Tyr Thr Asn Pro Arg
85 90 95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 139
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 139
caggccatta gaaatgat

18

<210> 140
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 140
Gln Ala Ile Arg Asn Asp
1 5

<210> 141
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 141
actgcattc

9

<210> 142
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 142
Thr Ala Phe
1

<210> 143
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 143
ctgcaggatt acactaatcc tcggacg

27

<210> 144
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 144
 Leu Gln Asp Tyr Thr Asn Pro Arg Thr
 1 5

<210> 145
 <211> 378
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 145
 gaggtgcagc tgggtggagtc gggggggaggc atggtacagc ctgggggggtc cctgagactc 60
 tcctgtgcag cctctggatt cacctccagt aactacgaca tgcactgggt ccgccaagct 120
 acaggaaaag gtcttgagtg ggtctcaagt attgatactg ctgggggacac ttactatcca 180
 gactccgtga agggccgctt tatcatctcc agagaaaatg ccaaaaaactc cctgtatctt 240
 caaatgaata gcctgagagc cgggggacacg gctgtgtatt actgtacaag ggagccccga 300
 aattacgaaa ttttgactgg tcactaccac taccacggta tggacatctg gggccaaggg 360
 accacggtca ccgtctcc 378

<210> 146
 <211> 126
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 146
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Met Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ser Ser Asn Tyr
 20 25 30
 Asp Met His Trp Val Arg Gln Ala Thr Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ser Ser Ile Asp Thr Ala Gly Asp Thr Tyr Tyr Pro Asp Ser Val Lys
 50 55 60
 Gly Arg Phe Ile Ile Ser Arg Glu Asn Ala Lys Asn Ser Leu Tyr Leu
 65 70 75 80
 Gln Met Asn Ser Leu Arg Ala Gly Asp Thr Ala Val Tyr Tyr Cys Thr
 85 90 95
 Arg Glu Pro Arg Asn Tyr Glu Ile Leu Thr Gly His Tyr His Tyr His
 100 105 110
 Gly Met Asp Ile Trp Gly Gln Gly Thr Thr Val Thr Val Ser
 115 120 125

<210> 147
 <211> 321
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 147
 gccatccaga tgacccagtc gccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
 atcacttgcc gggcaagtca ggccattaga aatgatttag gctggatatca gcagaaacca 120
 gggaaagccc ctaaactcct gatctatact gcattcagtt tacagagtgg ggtcccatca 180
 aggttcagcg gcagtaaatac tggcacagac ttcactctca ccatcagcag cctgcagcct 240
 gaagattttg cgacttatta ctgtctgcag gattacacta atcctcggac gttcggccaa 300
 gggaccaagg tggaaatcaa a 321

<210> 148
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 148
 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 Ala 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 Thr Ala Phe Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Lys 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 Tyr Thr Asn Pro Arg
 85 90 95
 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 100 105

<210> 149
 <211> 345
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 149
 Gln Val Met Asp Phe Leu Phe Glu Lys Trp Lys Leu Tyr Gly Asp Gln
 1 5 10 15
 Cys His His Asn Leu Ser Leu Leu Pro Pro Pro Thr Glu Leu Val Cys
 20 25 30
 Asn Arg Thr Phe Asp Lys Tyr Ser Cys Trp Pro Asp Thr Pro Ala Asn
 35 40 45
 Thr Thr Ala Asn Ile Ser Cys Pro Trp Tyr Leu Pro Trp His His Lys
 50 55 60

Val	Gln	His	Arg	Phe	Val	Phe	Lys	Arg	Cys	Gly	Pro	Asp	Gly	Gln	Trp
65					70					75					80
Val	Arg	Gly	Pro	Arg	Gly	Gln	Pro	Trp	Arg	Asp	Ala	Ser	Gln	Cys	Gln
				85					90					95	
Met	Asp	Gly	Glu	Glu	Ile	Glu	Val	Gln	Lys	Glu	Val	Ala	Lys	Met	Tyr
		100						105					110		
Ser	Ser	Phe	Gln	Val	Met	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro
		115					120					125			
Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys
	130					135					140				
Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val
145				150						155					160
Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr
				165					170					175	
Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu
			180					185					190		
Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu	His
		195					200					205			
Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys
	210					215					220				
Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln
225					230					235					240
Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Asp	Glu	Leu
				245					250					255	
Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro
			260					265					270		
Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn
		275					280					285			
Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu
	290					295					300				
Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	Val
305					310					315					320
Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	Asn	His	Tyr	Thr	Gln
				325					330					335	
Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys							
			340					345							

<210> 150

<211> 348

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 150

Gln	Val	Met	Asp	Phe	Leu	Phe	Glu	Lys	Trp	Lys	Leu	Tyr	Gly	Asp	Gln
1				5					10					15	
Cys	His	His	Asn	Leu	Ser	Leu	Leu	Pro	Pro	Pro	Thr	Glu	Leu	Val	Cys
			20					25					30		
Asn	Arg	Thr	Phe	Asp	Lys	Tyr	Ser	Cys	Trp	Pro	Asp	Thr	Pro	Ala	Asn
		35					40					45			
Thr	Thr	Ala	Asn	Ile	Ser	Cys	Pro	Trp	Tyr	Leu	Pro	Trp	His	His	Lys
	50					55					60				
Val	Gln	His	Arg	Phe	Val	Phe	Lys	Arg	Cys	Gly	Pro	Asp	Gly	Gln	Trp
65				70						75					80
Val	Arg	Gly	Pro	Arg	Gly	Gln	Pro	Trp	Arg	Asp	Ala	Ser	Gln	Cys	Gln

				85					90					95			
Met	Asp	Gly	Glu	Glu	Ile	Glu	Val	Gln	Lys	Glu	Val	Ala	Lys	Met	Tyr		
			100					105					110				
Ser	Ser	Phe	Gln	Val	Met	Gly	Pro	Gly	Asp	Lys	Thr	His	Thr	Cys	Pro		
		115					120					125					
Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe		
	130					135				140							
Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val		
145					150					155					160		
Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe		
				165					170					175			
Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro		
		180						185					190				
Arg	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr		
	195						200					205					
Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val		
	210					215					220						
Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala		
225					230					235					240		
Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg		
				245					250					255			
Asp	Glu	Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly		
			260					265					270				
Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro		
	275						280					285					
Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser		
	290					295					300						
Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Gln		
305					310					315					320		
Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	Asn	His		
				325					330					335			
Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys						
		340						345									

<210> 151
 <211> 146
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 151

Gln	Val	Met	Asp	Phe	Leu	Phe	Glu	Lys	Trp	Lys	Leu	Tyr	Gly	Asp	Gln
1				5					10					15	
Cys	His	His	Asn	Leu	Ser	Leu	Leu	Pro	Pro	Pro	Thr	Glu	Leu	Val	Cys
			20					25					30		
Asn	Arg	Thr	Phe	Asp	Lys	Tyr	Ser	Cys	Trp	Pro	Asp	Thr	Pro	Ala	Asn
	35					40						45			
Thr	Thr	Ala	Asn	Ile	Ser	Cys	Pro	Trp	Tyr	Leu	Pro	Trp	His	His	Lys
	50					55					60				
Val	Gln	His	Arg	Phe	Val	Phe	Lys	Arg	Cys	Gly	Pro	Asp	Gly	Gln	Trp
65					70					75					80
Val	Arg	Gly	Pro	Arg	Gly	Gln	Pro	Trp	Arg	Asp	Ala	Ser	Gln	Cys	Gln
				85					90					95	
Met	Asp	Gly	Glu	Glu	Ile	Glu	Val	Gln	Lys	Glu	Val	Ala	Lys	Met	Tyr
			100					105					110		

Ser	Ser	Phe	Gln	Val	Met	Glu	Gln	Lys	Leu	Ile	Ser	Glu	Glu	Asp	Leu
		115					120					125			
Gly	Gly	Glu	Gln	Lys	Leu	Ile	Ser	Glu	Glu	Asp	Leu	His	His	His	His
	130					135					140				
His	His														
145															

<210> 152

<211> 351

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 152

Gly	Ala	Pro	Gln	Val	Met	Asp	Phe	Leu	Phe	Glu	Lys	Trp	Lys	Leu	Tyr
1				5					10					15	
Gly	Asp	Gln	Cys	His	His	Asn	Leu	Ser	Leu	Leu	Pro	Pro	Pro	Thr	Glu
		20					25						30		
Leu	Val	Cys	Asn	Arg	Thr	Phe	Asp	Lys	Tyr	Ser	Cys	Trp	Pro	Asp	Thr
		35					40					45			
Pro	Ala	Asn	Thr	Thr	Ala	Asn	Ile	Ser	Cys	Pro	Trp	Tyr	Leu	Pro	Trp
	50					55					60				
His	His	Lys	Val	Gln	His	Arg	Phe	Val	Phe	Lys	Arg	Cys	Gly	Pro	Asp
65					70					75					80
Gly	Gln	Trp	Val	Arg	Gly	Pro	Arg	Gly	Gln	Pro	Trp	Arg	Asp	Ala	Ser
				85					90					95	
Gln	Cys	Gln	Met	Asp	Gly	Glu	Glu	Leu	Glu	Val	Gln	Lys	Glu	Val	Ala
			100					105					110		
Lys	Met	Tyr	Ser	Ser	Phe	Gln	Val	Met	Gly	Pro	Gly	Asp	Lys	Thr	His
		115					120					125			
Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val
	130					135						140			
Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr
145					150					155					160
Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu
				165					170					175	
Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys
			180					185					190		
Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser
		195					200					205			
Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys
	210					215					220				
Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile
225					230					235					240
Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro
				245					250					255	
Pro	Ser	Arg	Asp	Glu	Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu
			260					265					270		
Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn
		275					280					285			
Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser
	290					295					300				
Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg
305					310					315					320
Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu

				325						330					335
His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys	
			340					345					350		

<210> 153
 <211> 477
 <212> PRT
 <213> Homo sapiens

<400> 153

Met	Pro	Pro	Cys	Gln	Pro	Gln	Arg	Pro	Leu	Leu	Leu	Leu	Leu	Leu	Leu
1				5					10					15	
Leu	Ala	Cys	Gln	Pro	Gln	Val	Pro	Ser	Ala	Gln	Val	Met	Asp	Phe	Leu
			20					25					30		
Phe	Glu	Lys	Trp	Lys	Leu	Tyr	Gly	Asp	Gln	Cys	His	His	Asn	Leu	Ser
		35					40					45			
Leu	Leu	Pro	Pro	Pro	Thr	Glu	Leu	Val	Cys	Asn	Arg	Thr	Phe	Asp	Lys
	50					55					60				
Tyr	Ser	Cys	Trp	Pro	Asp	Thr	Pro	Ala	Asn	Thr	Thr	Ala	Asn	Ile	Ser
65					70					75				80	
Cys	Pro	Trp	Tyr	Leu	Pro	Trp	His	His	Lys	Val	Gln	His	Arg	Phe	Val
				85					90					95	
Phe	Lys	Arg	Cys	Gly	Pro	Asp	Gly	Gln	Trp	Val	Arg	Gly	Pro	Arg	Gly
			100					105					110		
Gln	Pro	Trp	Arg	Asp	Ala	Ser	Gln	Cys	Gln	Met	Asp	Gly	Glu	Glu	Ile
		115					120					125			
Glu	Val	Gln	Lys	Glu	Val	Ala	Lys	Met	Tyr	Ser	Ser	Phe	Gln	Val	Met
	130					135					140				
Tyr	Thr	Val	Gly	Tyr	Ser	Leu	Ser	Leu	Gly	Ala	Leu	Leu	Leu	Ala	Leu
145					150					155					160
Ala	Ile	Leu	Gly	Gly	Leu	Ser	Lys	Leu	His	Cys	Thr	Arg	Asn	Ala	Ile
			165						170					175	
His	Ala	Asn	Leu	Phe	Ala	Ser	Phe	Val	Leu	Lys	Ala	Ser	Ser	Val	Leu
		180						185					190		
Val	Ile	Asp	Gly	Leu	Leu	Arg	Thr	Arg	Tyr	Ser	Gln	Lys	Ile	Gly	Asp
		195					200					205			
Asp	Leu	Ser	Val	Ser	Thr	Trp	Leu	Ser	Asp	Gly	Ala	Val	Ala	Gly	Cys
	210					215					220				
Arg	Val	Ala	Ala	Val	Phe	Met	Gln	Tyr	Gly	Ile	Val	Ala	Asn	Tyr	Cys
225					230					235					240
Trp	Leu	Leu	Val	Glu	Gly	Leu	Tyr	Leu	His	Asn	Leu	Leu	Gly	Leu	Ala
			245						250					255	
Thr	Leu	Pro	Glu	Arg	Ser	Phe	Phe	Ser	Leu	Tyr	Leu	Gly	Ile	Gly	Trp
		260						265					270		
Gly	Ala	Pro	Met	Leu	Phe	Val	Val	Pro	Trp	Ala	Val	Val	Lys	Cys	Leu
		275					280					285			
Phe	Glu	Asn	Val	Gln	Cys	Trp	Thr	Ser	Asn	Asp	Asn	Met	Gly	Phe	Trp
	290					295				300					
Trp	Ile	Leu	Arg	Phe	Pro	Val	Phe	Leu	Ala	Ile	Leu	Ile	Asn	Phe	Phe
305					310					315					320
Ile	Phe	Val	Arg	Ile	Val	Gln	Leu	Leu	Val	Ala	Lys	Leu	Arg	Ala	Arg
			325						330					335	
Gln	Met	His	His	Thr	Asp	Tyr	Lys	Phe	Arg	Leu	Ala	Lys	Ser	Thr	Leu
		340						345					350		
Thr	Leu	Ile	Pro	Leu	Leu	Gly	Val	His	Glu	Val	Val	Phe	Ala	Phe	Val
		355					360					365			
Thr	Asp	Glu	His	Ala	Gln	Gly	Thr	Leu	Arg	Ser	Ala	Lys	Leu	Phe	Phe

370		375		380
Asp Leu Phe Leu Ser Ser Phe Gln Gly Leu Leu Val Ala Val Leu Tyr				
385		390		395
Cys Phe Leu Asn Lys Glu Val Gln Ser Glu Leu Arg Arg Arg Trp His				400
		405		410
Arg Trp Arg Leu Gly Lys Val Leu Trp Glu Glu Arg Asn Thr Ser Asn				415
		420		425
His Arg Ala Ser Ser Ser Pro Gly His Gly Pro Pro Ser Lys Glu Leu				430
		435		440
Gln Phe Gly Arg Gly Gly Gly Ser Gln Asp Ser Ser Ala Glu Thr Pro				445
		450		455
Leu Ala Gly Gly Leu Pro Arg Leu Ala Glu Ser Pro Phe				460
465		470		475

<210> 154
 <211> 485
 <212> PRT
 <213> Mus musculus

<400> 154

Met Ala Leu Thr Gln Leu His Cys Pro His Leu Leu Leu Leu Leu Leu				
1		5		10
Val Leu Ser Cys Leu Pro Glu Ala Pro Ser Ala Gln Val Met Asp Phe				15
		20		25
Leu Phe Glu Lys Trp Lys Leu Tyr Ser Asp Gln Cys His His Asn Leu				30
		35		40
Ser Leu Leu Pro Pro Pro Thr Glu Leu Val Cys Asn Arg Thr Phe Asp				45
		50		55
Lys Tyr Ser Cys Trp Pro Asp Thr Pro Pro Asn Thr Thr Ala Asn Ile				60
65		70		75
Ser Cys Pro Trp Tyr Leu Pro Trp Tyr His Lys Val Gln His Arg Leu				80
		85		90
Val Phe Lys Arg Cys Gly Pro Asp Gly Gln Trp Val Arg Gly Pro Arg				95
		100		105
Gly Gln Pro Trp Arg Asn Ala Ser Gln Cys Gln Leu Asp Asp Glu Glu				110
		115		120
Ile Glu Val Gln Lys Gly Val Ala Lys Met Tyr Ser Ser Gln Gln Val				125
		130		135
Met Tyr Thr Val Gly Tyr Ser Leu Ser Leu Gly Ala Leu Leu Leu Ala				140
145		150		155
Leu Val Ile Leu Leu Gly Leu Arg Lys Leu His Cys Thr Arg Asn Tyr				160
		165		170
Ile His Gly Asn Leu Phe Ala Ser Phe Val Leu Lys Ala Gly Ser Val				175
		180		185
Leu Val Ile Asp Trp Leu Leu Lys Thr Arg Tyr Ser Gln Lys Ile Gly				190
		195		200
Asp Asp Leu Ser Val Ser Val Trp Leu Ser Asp Gly Ala Met Ala Gly				205
		210		215
Cys Arg Val Ala Thr Val Ile Met Gln Tyr Gly Ile Ile Ala Asn Tyr				220
225		230		235
Cys Trp Leu Leu Val Glu Gly Val Tyr Leu Tyr Ser Leu Leu Ser Leu				240
		245		250
Ala Thr Phe Ser Glu Arg Ser Phe Phe Ser Leu Tyr Leu Gly Ile Gly				255
		260		265
Trp Gly Ala Pro Leu Leu Phe Val Ile Pro Trp Val Val Lys Cys				270
		275		280
Leu Phe Glu Asn Val Gln Cys Trp Thr Ser Asn Asp Asn Met Gly Phe				285

290		295		300
Trp Trp Ile Leu Arg	Ile Pro Val Phe Leu	Ala Leu Leu Ile Asn Phe		
305	310	315		320
Phe Ile Phe Val His	Ile Ile His Leu Leu	Val Ala Lys Leu Arg Ala		
	325	330		335
His Gln Met His Tyr	Ala Asp Tyr Lys Phe	Arg Leu Ala Arg Ser Thr		
	340	345		350
Leu Thr Leu Ile Pro	Leu Leu Gly Val His	Glu Val Val Phe Ala Phe		
	355	360		365
Val Thr Asp Glu His	Ala Gln Gly Thr Leu	Arg Ser Thr Lys Leu Phe		
	370	375		380
Phe Asp Leu Phe Leu	Ser Ser Phe Gln Gly	Leu Leu Val Ala Val Leu		
385	390	395		400
Tyr Cys Phe Leu Asn	Lys Glu Val Gln Ala	Glu Leu Met Arg Arg Trp		
	405	410		415
Arg Gln Trp Gln Glu	Gly Lys Ala Leu Gln	Glu Glu Arg Leu Ala Ser		
	420	425		430
Ser His Gly Ser His	Met Ala Pro Ala Gly	Pro Cys His Gly Asp Pro		
	435	440		445
Cys Glu Lys Leu Gln	Leu Met Ser Ala Gly	Ser Ser Ser Gly Thr Gly		
	450	455		460
Cys Val Pro Ser Met	Glu Thr Ser Leu Ala	Ser Ser Leu Pro Arg Leu		
465	470	475		480
Ala Asp Ser Pro Thr				
	485			

<210> 155

<211> 491

<212> PRT

<213> Macaca fascicularis

<400> 155

Met Ala Pro Cys Gln	Pro Arg Arg Pro	Leu Leu Leu Leu Leu Leu
1	5	10 15
Leu Ala Cys Gln	Pro Gln Ala Pro	Ser Ala Gln Val Met Asp Phe Leu
	20	25 30
Phe Glu Lys Trp	Lys Leu Tyr Gly	Asp Gln Cys His His Asn Leu Ser
	35	40 45
Leu Leu Pro Pro	Pro Thr Glu Leu	Val Cys Asn Arg Thr Phe Asp Lys
	50	55 60
Tyr Ser Cys Trp	Pro Asp Thr Pro	Ala Asn Thr Thr Ala Asn Ile Ser
65	70	75 80
Cys Pro Trp Tyr	Leu Pro Trp His	His Lys Val Gln His Arg Phe Val
	85	90 95
Phe Lys Arg Cys	Gly Pro Asp Gly	Gln Trp Val Arg Gly Pro Arg Gly
	100	105 110
Gln Pro Trp Arg	Asp Ala Ser Gln	Cys Gln Met Asp Gly Glu Glu Leu
	115	120 125
Glu Val Gln Lys	Glu Val Ala Lys	Met Tyr Ser Ser Phe Gln Val Met
	130	135 140
Tyr Thr Val Gly	Tyr Ser Leu Ser	Leu Gly Ala Leu Leu Leu Ala Leu
145	150	155 160
Ala Ile Leu Gly	Gly Ile Ser Lys	Leu His Cys Thr Arg Asn Ala Ile
	165	170 175
His Ala Asn Leu	Phe Val Ser Phe	Val Leu Lys Ala Ser Ser Val Leu
	180	185 190
Val Ile Asp Gly	Leu Leu Arg Thr	Arg Tyr Ser Gln Lys Ile Gly Asp

				100					105					110					
Gly	Gln	Ser	Trp	Arg	Asp	Ala	Ser	Gln	Cys	Gln	Met	Asp	Asp	Asp	Glu				
		115					120					125							
Ile	Glu	Val	Gln	Lys	Gly	Val	Ala	Lys	Met	Tyr	Ser	Ser	Tyr	Gln	Val				
	130					135					140								
Met	Tyr	Thr	Val	Gly	Tyr	Ser	Leu	Ser	Leu	Gly	Ala	Leu	Leu	Leu	Ala				
145				150						155					160				
Leu	Val	Ile	Leu	Leu	Gly	Leu	Arg	Lys	Leu	His	Cys	Thr	Arg	Asn	Tyr				
			165					170						175					
Ile	His	Gly	Asn	Leu	Phe	Ala	Ser	Phe	Val	Leu	Lys	Ala	Gly	Ser	Val				
		180					185						190						
Leu	Val	Ile	Asp	Trp	Leu	Leu	Lys	Thr	Arg	Tyr	Ser	Gln	Lys	Ile	Gly				
	195					200						205							
Asp	Asp	Leu	Ser	Val	Ser	Val	Trp	Leu	Ser	Asp	Gly	Ala	Val	Ala	Gly				
	210					215					220								
Cys	Arg	Val	Ala	Thr	Val	Ile	Met	Gln	Tyr	Gly	Ile	Ile	Ala	Asn	Tyr				
225					230					235					240				
Cys	Trp	Leu	Leu	Val	Glu	Gly	Val	Tyr	Leu	Tyr	Ser	Leu	Leu	Ser	Ile				
			245					250						255					
Thr	Thr	Phe	Ser	Glu	Lys	Ser	Phe	Phe	Ser	Leu	Tyr	Leu	Cys	Ile	Gly				
		260					265						270						
Trp	Gly	Ser	Pro	Leu	Leu	Phe	Val	Ile	Pro	Trp	Val	Val	Val	Lys	Cys				
	275					280					285								
Leu	Phe	Glu	Asn	Val	Gln	Cys	Trp	Thr	Ser	Asn	Asp	Asn	Met	Gly	Phe				
	290				295					300									
Trp	Trp	Ile	Leu	Arg	Ile	Pro	Val	Leu	Leu	Ala	Ile	Leu	Ile	Asn	Phe				
305				310						315					320				
Phe	Ile	Phe	Val	Arg	Ile	Ile	His	Leu	Leu	Val	Ala	Lys	Leu	Arg	Ala				
			325				330							335					
His	Gln	Met	His	Tyr	Ala	Asp	Tyr	Lys	Phe	Arg	Leu	Ala	Arg	Ser	Thr				
		340				345							350						
Leu	Thr	Leu	Ile	Pro	Leu	Leu	Gly	Val	His	Glu	Val	Val	Phe	Ala	Phe				
	355					360					365								
Val	Thr	Asp	Glu	His	Ala	Gln	Gly	Thr	Leu	Arg	Ser	Thr	Lys	Leu	Phe				
	370				375						380								
Phe	Asp	Leu	Phe	Phe	Ser	Ser	Phe	Gln	Gly	Leu	Leu	Val	Ala	Val	Leu				
385				390						395					400				
Tyr	Cys	Phe	Leu	Asn	Lys	Glu	Val	Gln	Ala	Glu	Leu	Leu	Arg	Arg	Trp				
			405					410						415					
Arg	Arg	Trp	Gln	Glu	Gly	Lys	Ala	Leu	Gln	Glu	Glu	Arg	Met	Ala	Ser				
		420					425						430						
Ser	His	Gly	Ser	His	Met	Ala	Pro	Ala	Gly	Thr	Cys	His	Gly	Asp	Pro				
	435					440						445							
Cys	Glu	Lys	Leu	Gln	Leu	Met	Ser	Ala	Gly	Ser	Ser	Ser	Gly	Thr	Gly				
	450				455					460									
Cys	Glu	Pro	Ser	Ala	Lys	Thr	Ser	Leu	Ala	Ser	Ser	Leu	Pro	Arg	Leu				
465				470						475					480				
Ala	Asp	Ser	Pro	Thr															
			485																

<210> 157

<211> 1434

<212> DNA

<213> Homo sapiens

<400> 157

atgccccct gccagccaca gcgaccctg ctgctgttgc tgctgctgct ggccctgccag 60

```

ccacaggtcc cctccgctca ggtgatggac ttctgtttg agaagtggaa gctctacggt 120
gaccagtgtc accacaacct gagcctgctg cccctccca cggagctggt gtgcaacaga 180
accttcgaca agtattcctg ctggccggac acccccgcca ataccacggc caacatctcc 240
tgccctggtt acctgccttg gcaccacaaa gtgcaacacc gcttcgtggt caagagatgc 300
gggcccagcg gtcagtgggt gcgtggaccc cgggggcagc cttggcgtga tgcctcccag 360
tgccagatgg atggcgagga gattgaggtc cagaaggagg tggccaagat gtacagcagc 420
ttccaggtga tgtacacagt gggctacagc ctgtccctgg gggccctgct cctcgccttg 480
gccatcctgg ggggcctcag caagctgcac tgcaccgca atgccatcca cgcgaatctg 540
tttgcgtcct tcgtgctgaa agccagctcc gtgctggtca ttgatgggct gctcaggacc 600
cgctacagcc agaaaattgg cgacgacctc agtgtcagca cctggctcag tgatggagcg 660
gtggttggtt gccgtgtggc cgcggtgttc atgcaatatg gcacgtggc caactactgc 720
tggtgctggg tggagggcct gtacctgcac aacctgctgg gcctggccac cctccccgag 780
aggagcttct tcagcctcta cctgggcatc ggctgggggtg ccccatgct gttcgtcgtc 840
ccctgggcag tggatcaagt tctgttcgag aacgtccagt gctggaccag caatgacaac 900
atgggcttct ggtggatcct gcggttcccc gtcttcctgg ccacctgat caacttcttc 960
atcttcgtcc gcacgttca gctgctcgtg gccaaagctgc gggcacggca gatgcaccac
1020
acagactaca agttccggct ggccaagtcc acgctgacct tcatccctct gctgggcgtc
1080
cacgaagtgg tctttgcctt cgtgacggac gagcacgccc agggcaccct gcgctccgcc
1140
aagctcttct tcgacctctt cctcagctcc ttccagggcc tgetggtggc tgtcctctac
1200
tgcttctca acaaggaggt gcagtcggag ctgcggcggc gttggcaccg ctggcgcttg
1260
ggcaaagtgc tatgggagga gcggaacacc agcaaccaca gggcctcatc ttgccccggc
1320
cacggccctc ccagcaagga gctgcagttt gggaggggtg gtggcagcca ggattcatct
1380
gcggagaccc ccttggctgg tggcctccct agattggctg agagcccctt ctga
1434

```

<210> 158
 <211> 354
 <212> DNA
 <213> Homo sapiens

```

<400> 158
caggtgatgg acttcctggt tgagaagtgg aagctctacg gtgaccagtg tcaccacaac 60
ctgagcctgc tgccccctcc cacggagctg gtgtgcaaca gaaccttcga caagtattcc 120
tgctggccgg acacccccgc caataaccag gccaacatct cctgccccctg gtacctgcct 180
tggcaccaca aagtgaaca ccgcttcgtg ttcaagagat gcggggccga cggtcagtgg 240
gtgctggtgg cccgggggga gccttggcgt gatgcctccc agtgccagat ggatggcgag 300
gagattgagg tccagaagga ggtggccaag atgtacagca gcttccaggt gatg 354

```

<210> 159
 <211> 118
 <212> PRT
 <213> Homo sapiens

```

<400> 159
Gln Val Met Asp Phe Leu Phe Glu Lys Trp Lys Leu Tyr Gly Asp Gln
1           5           10          15
Cys His His Asn Leu Ser Leu Leu Pro Pro Pro Thr Glu Leu Val Cys
20          25          30
Asn Arg Thr Phe Asp Lys Tyr Ser Cys Trp Pro Asp Thr Pro Ala Asn
35          40          45
Thr Thr Ala Asn Ile Ser Cys Pro Trp Tyr Leu Pro Trp His His Lys

```

50		55		60											
Val	Gln	His	Arg	Phe	Val	Phe	Lys	Arg	Cys	Gly	Pro	Asp	Gly	Gln	Trp
65		70		75											80
Val	Arg	Gly	Pro	Arg	Gly	Gln	Pro	Trp	Arg	Asp	Ala	Ser	Gln	Cys	Gln
		85		90										95	
Met	Asp	Gly	Glu	Glu	Ile	Glu	Val	Gln	Lys	Glu	Val	Ala	Lys	Met	Tyr
		100		105									110		
Ser	Ser	Phe	Gln	Val	Met										
		115													

<210> 160
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 160
 ggattcacct ttaacaacta tgcc

24

<210> 161
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 161
 Gly Phe Thr Phe Asn Asn Tyr Ala
 1 5

<210> 162
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 162
 attagtggta gcggtggtac taca

24

<210> 163
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 163
 Ile Ser Gly Ser Gly Gly Thr Thr
 1 5

<210> 164
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 164
gcgaaagatt ctaactgggg aaatttcgat ctc

33

<210> 165
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 165
Ala Lys Asp Ser Asn Trp Gly Asn Phe Asp Leu
1 5 10

<210> 166
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 166
cagagtgttt tatacaggtc caacaatagg aacttc

36

<210> 167
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 167
Gln Ser Val Leu Tyr Arg Ser Asn Asn Arg Asn Phe
1 5 10

<210> 168
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 168

tgggcatct

9

<210> 169

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 169

Trp Ala Ser

1

<210> 170

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 170

caacaatatt atactactcc gtacact

27

<210> 171

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 171

Gln Gln Tyr Tyr Thr Thr Pro Tyr Thr

1

5

<210> 172

<211> 354

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 172

gaggtgcagc tgggtggagtc tggggggaggc ttggtacagc ctgggggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttaac aactatgcca tgaactgggt ccgccaggct 120
ccaggaaagg gactggactg ggtctcaact attagtggta gcggtggtac tacaaactac 180
gcagactccg tgaagggccg ttctattatt tcccagagaca gttccaaaca cagctgttat 240
ctgcaaatac acagcctgag agccgaggac acggccgtat attactgtgc gaaagattct 300
aactggggaa atttcgatct ctgggggccgt ggcacctgg tcaactgtctc ctca 354

<210> 173

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 173

```
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 Asn Asn Tyr
 20          25          30
Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Asp Trp Val
 35          40          45
Ser Thr Ile Ser Gly Ser Gly Gly Thr Thr Asn Tyr Ala Asp Ser Val
 50          55          60
Lys Gly Arg Phe Ile Ile Ser Arg Asp Ser Ser Lys His 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 Lys Asp Ser Asn Trp Gly Asn Phe Asp Leu Trp Gly Arg Gly Thr
100          105          110
Leu Val Thr Val Ser Ser
115
```

<210> 174

<211> 339

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 174

```
gacatcgtga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60
atcaactgca agtccagcca gagtggttta tacagggtcca acaataggaa cttcttaggt 120
tggtaccagc agaaaccagg gcagcctcct aatctactca tttactgggc atctaccggg 180
gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240
atcagcagcc tgcaggctga agatgtggca gtttattact gtcaacaata ttatactact 300
ccgtacactt ttggccaggg gaccaagctg gagatcaaa 339
```

<210> 175

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 175

```
Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
 1          5          10          15
Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Arg
 20          25          30
Ser Asn Asn Arg Asn Phe Leu Gly Trp Tyr Gln Gln Lys Pro Gly Gln
 35          40          45
Pro Pro Asn Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
 50          55          60
Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
```

65					70					75					80
Ile	Ser	Ser	Leu	Gln	Ala	Glu	Asp	Val	Ala	Val	Tyr	Tyr	Cys	Gln	Gln
				85					90					95	
Tyr	Tyr	Thr	Thr	Pro	Tyr	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile
			100					105					110		
Lys															

<210> 176
 <211> 381
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 176
 gagatgcaac tgggtggagtc tggggggaggc ttgggtccagc ctgggggggtc cctgagactc 60
 tcctgtgcag cctctggatt caccttttagt agtcactgga tgaagtgggt ccgccaggct 120
 ccagggaagg ggctggagtg ggtggccaac ataaaccaag atggaagtga gaaatactat 180
 gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgttt 240
 ctgcaaataga acagcctgag agccgaggac acggctgtgt attactgtgc gagagatatt 300
 gtactaatgg tctatgatat ggactactac tactacggta tggacgtctg gggccaaggg 360
 accacggtca ccgtctctc a 381

<210> 177
 <211> 127
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 177
 Glu Met 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 His
 20 25 30
 Trp Met Lys Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Asn Ile Asn 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 Phe
 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 Ile Val Leu Met Val Tyr Asp Met Asp Tyr Tyr Tyr Tyr
 100 105 110
 Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120 125

<210> 178
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

 <400> 178
 ggattcacct ttagtagtca ctgg 24

 <210> 179
 <211> 8
 <212> PRT
 <213> Artificial Sequence

 <220>
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 <400> 179
 Gly Phe Thr Phe Ser Ser His Trp
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 <211> 24
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 <220>
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 <400> 180
 ataaaccaag atggaagtga gaaa 24

 <210> 181
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 <212> PRT
 <213> Artificial Sequence

 <220>
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 <400> 181
 Ile Asn Gln Asp Gly Ser Glu Lys
 1 5

 <210> 182
 <211> 60
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 182
 gcgagagata ttgtactaat ggtctatgat atggactact actactacgg tatggacgtc 60

 <210> 183
 <211> 20
 <212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 183

Ala	Arg	Asp	Ile	Val	Leu	Met	Val	Tyr	Asp	Met	Asp	Tyr	Tyr	Tyr	Tyr
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Gly	Met	Asp	Val												
			20												

<210> 184

<211> 336

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 184

gatattgtga	tgactcagtc	tccactctcc	ctgcccgtca	cccctggaga	gccggcctcc	60
atctcctgca	ggctcagtc	gagcctcctg	catagtaatg	gaaacaacta	tttggattgg	120
tacctgcaga	agccagggca	gtctccacag	ctcctgatct	atttgggttc	taatcggggc	180
tccgggggtcc	ctgacaggtt	cagtggcagt	ggatcaggca	cagattttac	actgaaaatc	240
agcagagtgg	aggctgagga	tgttgggggt	tattactgca	tgcaaactct	acaaactccg	300
ctcactttcg	gcggagggac	caaggtggag	atcaaa			336

<210> 185

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 185

Asp	Ile	Val	Met	Thr	Gln	Ser	Pro	Leu	Ser	Leu	Pro	Val	Thr	Pro	Gly
1				5				10					15		
Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Leu	Leu	His	Ser
			20					25				30			
Asn	Gly	Asn	Asn	Tyr	Leu	Asp	Trp	Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser
			35				40					45			
Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly	Ser	Asn	Arg	Ala	Ser	Gly	Val	Pro
			50			55					60				
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile
65					70					75					80
Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr	Cys	Met	Gln	Thr
				85					90					95	
Leu	Gln	Thr	Pro	Leu	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Val	Glu	Ile	Lys
			100					105					110		

<210> 186

<211> 33

<212> DNA

<213> Artificial Sequence

<220>
 <223> Synthetic

<400> 186
 cagagcctcc tgcataagtaa tggaaacaac tat 33

<210> 187
 <211> 11
 <212> PRT
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<220>
 <223> Synthetic

<400> 187
 Gln Ser Leu Leu His Ser Asn Gly Asn Asn Tyr
 1 5 10

<210> 188
 <211> 9
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 188
 ttgggttct 9

<210> 189
 <211> 3
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 189
 Leu Gly Ser
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<210> 190
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 190
 atgcaaactc tacaaactcc gctcact 27

<210> 191
 <211> 9
 <212> PRT
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<220>

<223> Synthetic

<400> 191

Met Gln Thr Leu Gln Thr Pro Leu Thr

1

5

<210> 192

<211> 2076

<212> DNA

<213> Homo sapiens

<400> 192

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ctgggtgctag ccttgcggtc cgaggaggac ggcctggccg aagcaccgga gcacggaacc 180
acagccacct tccaccgctg cgccaaggat ccgtggaggt tgcttggcac ctacgtggtg 240
gtgctgaagg aggagaccca cctctcgtag tcagagcgca ctgcccgcgg cctgcaggcc 300
caggctgccc gccggggata cctcaccaag atcctgcatg tcttccatgg cttcttccct 360
ggcttcctgg tgaagatgag tggcgacctg ctggagctgg ccttgaagtt gcccctatgtc 420
gactacatcg aggaggactc ctctgtcttt gccagagca tcccgtggaa cctggagcgg 480
attaccctc caccgtaccg ggcggtatgaa taccagcccc ccgacggagg cagcctggtg 540
gaggtgtatc tcctagacac cagcatacag agtgaccacc gggaaatcga gggcagggtc 600
atggtcaccg acttcgagaa tgtgcccagag gaggacggga cccgcttcca cagacaggcc 660
agcaagtgtg acagtcattg caccacacct gcaggggtgg tcagcggccg ggatgccggc 720
gtggccaagg gtgccagcat gcgcagcctg cgctgctca actgccaagg gaagggcacg 780
gttagcggca ccctcatagg cctggagttt attcggaaaa gccagctggt ccagcctgtg 840
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tgccagcgcc tggcgagggc tggggctcgtg ctggtcaccg ctgccggcaa cttccgggac 960
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1020
gcccaggacc agccggtgac cctggggact ttggggacca actttggccg ctgtgtggac
1080
ctctttgccc caggggagga catcattggt gcctccagcg actgcagcac ctgctttgtg
1140
tcacagagtg ggacatcaca ggctgctgcc cacgtggctg gcattgcagc catgatgctg
1200
tctgccgagc cggagctcac cctggccgag ttgaggcaga gactgatcca cttctctgcc
1260
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1320
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1380
tggtcagcac actcggggcc tacacggatg gccacagcca tcgcccgtg cgccccagat
1440
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1560
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1620
ccagctgagg ccagcatggg gaccctgtgc cactgccacc aacagggcca cgtcctcaca
1680
ggctgcagct cccactggga ggtggaggac cttggcacc acaagccgcc tgtgctgagg
1740
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ccacgaggtc agcccaacca gtgctgtgggc cacagggagg ccagcatcca cgcttcctgc
1800
tgccatgccc caggtctgga atgcaaagtc aaggagcatg gaatcccggc ccctcaggag
1860
caggtgaccg tggcctgcga ggagggctgg accctgactg gctgcagtgc cctccctggg
1920
acctcccacg tcctgggggc ctacgccgta gacaacacgt gtgtagtcag gagccggggac
1980
gtcagcacta caggcagcac cagcgaagag gccgtgacag ccgttgccat ctgctgccgg
2040
agccggcacc tggcgcaggc ctcccaggag ctccag
2076

<210> 193
<211> 692
<212> PRT
<213> Homo sapiens

<400> 193
Met Gly Thr Val Ser Ser Arg Arg Ser Trp Trp Pro Leu Pro Leu Leu
1 5 10 15
Leu Leu Leu Leu Leu Leu Leu Gly Pro Ala Gly Ala Arg Ala Gln Glu
20 25 30
Asp Glu Asp Gly Asp Tyr Glu Glu Leu Val Leu Ala Leu Arg Ser Glu
35 40 45
Glu Asp Gly Leu Ala Glu Ala Pro Glu His Gly Thr Thr Ala Thr Phe
50 55 60
His Arg Cys Ala Lys Asp Pro Trp Arg Leu Pro Gly Thr Tyr Val Val
65 70 75 80
Val Leu Lys Glu Glu Thr His Leu Ser Gln Ser Glu Arg Thr Ala Arg
85 90 95
Arg Leu Gln Ala Gln Ala Ala Arg Arg Gly Tyr Leu Thr Lys Ile Leu
100 105 110
His Val Phe His Gly Leu Leu Pro Gly Phe Leu Val Lys Met Ser Gly
115 120 125
Asp Leu Leu Glu Leu Ala Leu Lys Leu Pro His Val Asp Tyr Ile Glu
130 135 140
Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg
145 150 155 160
Ile Thr Pro Pro Arg Tyr Arg Ala Asp Glu Tyr Gln Pro Pro Asp Gly
165 170 175
Gly Ser Leu Val Glu Val Tyr Leu Leu Asp Thr Ser Ile Gln Ser Asp
180 185 190
His Arg Glu Ile Glu Gly Arg Val Met Val Thr Asp Phe Glu Asn Val
195 200 205
Pro Glu Glu Asp Gly Thr Arg Phe His Arg Gln Ala Ser Lys Cys Asp
210 215 220
Ser His Gly Thr His Leu Ala Gly Val Val Ser Gly Arg Asp Ala Gly
225 230 235 240
Val Ala Lys Gly Ala Ser Met Arg Ser Leu Arg Val Leu Asn Cys Gln
245 250 255
Gly Lys Gly Thr Val Ser Gly Thr Leu Ile Gly Leu Glu Phe Ile Arg
260 265 270
Lys Ser Gln Leu Val Gln Pro Val Gly Pro Leu Val Val Leu Leu Pro
275 280 285
Leu Ala Gly Gly Tyr Ser Arg Val Leu Asn Ala Ala Cys Gln Arg Leu
290 295 300
Ala Arg Ala Gly Val Val Leu Val Thr Ala Ala Gly Asn Phe Arg Asp

305					310					315					320
Asp	Ala	Cys	Leu	Tyr	Ser	Pro	Ala	Ser	Ala	Pro	Glu	Val	Ile	Thr	Val
				325					330					335	
Gly	Ala	Thr	Asn	Ala	Gln	Asp	Gln	Pro	Val	Thr	Leu	Gly	Thr	Leu	Gly
			340					345					350		
Thr	Asn	Phe	Gly	Arg	Cys	Val	Asp	Leu	Phe	Ala	Pro	Gly	Glu	Asp	Ile
		355					360					365			
Ile	Gly	Ala	Ser	Ser	Asp	Cys	Ser	Thr	Cys	Phe	Val	Ser	Gln	Ser	Gly
	370				375						380				
Thr	Ser	Gln	Ala	Ala	Ala	His	Val	Ala	Gly	Ile	Ala	Ala	Met	Met	Leu
385					390					395					400
Ser	Ala	Glu	Pro	Glu	Leu	Thr	Leu	Ala	Glu	Leu	Arg	Gln	Arg	Leu	Ile
				405					410					415	
His	Phe	Ser	Ala	Lys	Asp	Val	Ile	Asn	Glu	Ala	Trp	Phe	Pro	Glu	Asp
			420					425					430		
Gln	Arg	Val	Leu	Thr	Pro	Asn	Leu	Val	Ala	Ala	Leu	Pro	Pro	Ser	Thr
		435					440					445			
His	Gly	Ala	Gly	Trp	Gln	Leu	Phe	Cys	Arg	Thr	Val	Trp	Ser	Ala	His
	450				455						460				
Ser	Gly	Pro	Thr	Arg	Met	Ala	Thr	Ala	Ile	Ala	Arg	Cys	Ala	Pro	Asp
465					470					475					480
Glu	Glu	Leu	Leu	Ser	Cys	Ser	Ser	Phe	Ser	Arg	Ser	Gly	Lys	Arg	Arg
				485					490					495	
Gly	Glu	Arg	Met	Glu	Ala	Gln	Gly	Gly	Lys	Leu	Val	Cys	Arg	Ala	His
			500					505					510		
Asn	Ala	Phe	Gly	Gly	Glu	Gly	Val	Tyr	Ala	Ile	Ala	Arg	Cys	Cys	Leu
		515					520					525			
Leu	Pro	Gln	Ala	Asn	Cys	Ser	Val	His	Thr	Ala	Pro	Pro	Ala	Glu	Ala
	530					535					540				
Ser	Met	Gly	Thr	Arg	Val	His	Cys	His	Gln	Gln	Gly	His	Val	Leu	Thr
545					550					555					560
Gly	Cys	Ser	Ser	His	Trp	Glu	Val	Glu	Asp	Leu	Gly	Thr	His	Lys	Pro
				565					570					575	
Pro	Val	Leu	Arg	Pro	Arg	Gly	Gln	Pro	Asn	Gln	Cys	Val	Gly	His	Arg
			580					585					590		
Glu	Ala	Ser	Ile	His	Ala	Ser	Cys	Cys	His	Ala	Pro	Gly	Leu	Glu	Cys
		595					600					605			
Lys	Val	Lys	Glu	His	Gly	Ile	Pro	Ala	Pro	Gln	Glu	Gln	Val	Thr	Val
	610					615					620				
Ala	Cys	Glu	Glu	Gly	Trp	Thr	Leu	Thr	Gly	Cys	Ser	Ala	Leu	Pro	Gly
625					630					635					640
Thr	Ser	His	Val	Leu	Gly	Ala	Tyr	Ala	Val	Asp	Asn	Thr	Cys	Val	Val
				645					650					655	
Arg	Ser	Arg	Asp	Val	Ser	Thr	Thr	Gly	Ser	Thr	Ser	Glu	Glu	Ala	Val
			660					665					670		
Thr	Ala	Val	Ala	Ile	Cys	Cys	Arg	Ser	Arg	His	Leu	Ala	Gln	Ala	Ser
		675					680					685			
Gln	Glu	Leu	Gln												
	690														

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<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 194
 Glu Val Gln Leu Val Gln Ser Gly Gly Gly Leu Val His Pro Gly Gly
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 Ser Leu Arg Leu Ser Cys Ala Gly Ser Gly Phe Thr Phe Ser Arg Asn
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 Ala Met Phe Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ser Gly Ile Gly Thr Gly Gly Ala Thr Asn 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 Met Ala Val Tyr Tyr Cys Ala
 85 90 95
 Arg Gly Arg Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
 100 105 110
 Val Ser Ser
 115

<210> 195
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 195
 Gly Phe Thr Phe Ser Arg Asn Ala
 1 5

<210> 196
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 196
 Ile Gly Thr Gly Gly Ala Thr
 1 5

<210> 197
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 197
 Ala Arg Gly Arg Tyr Tyr Phe Asp Tyr
 1 5

<210> 198
 <211> 109
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 198
 Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15
 Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser
 20 25 30
 Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
 35 40 45
 Ile Phe Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser
 50 55 60
 Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu
 65 70 75 80
 Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro
 85 90 95
 Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 100 105

<210> 199
 <211> 7
 <212> PRT
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<220>
 <223> Synthetic

<400> 199
 Gln Ser Val Ser Ser Ser Tyr
 1 5

<210> 200
 <211> 3
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 200
 Gly Ala Ser
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<210> 201
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Synthetic

 <400> 201
 Gln Gln Tyr Gly Ser Ser Pro Pro Trp Thr
 1 5 10

 <210> 202
 <211> 8
 <212> PRT
 <213> Artificial Sequence

 <220>
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 <220>
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 <223> Xaa = Gly

 <220>
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 <222> (2)...(2)
 <223> Xaa = Phe

 <220>
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 <222> (3)...(3)
 <223> Xaa = Thr

 <220>
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 <223> Xaa = Phe or Ser

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 <222> (5)...(5)
 <223> Xaa = Ser

 <220>
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 <222> (6)...(6)
 <223> Xaa = Ser or Asn

 <220>
 <221> VARIANT
 <222> (7)...(7)
 <223> Xaa = Tyr or Phe

 <220>
 <221> VARIANT
 <222> (8)...(8)
 <223> Xaa = Asp, Leu, or Gly

<400> 202
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5

<210> 203
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> VARIANT
<222> (1)...(1)
<223> Xaa = Ile

<220>
<221> VARIANT
<222> (2)...(2)
<223> Xaa = Ser, Gln, Asp, or Trp

<220>
<221> VARIANT
<222> (3)...(3)
<223> Xaa = Ser, Glu, Thr, or Phe

<220>
<221> VARIANT
<222> (4)...(4)
<223> Xaa = Asp or Ala

<220>
<221> VARIANT
<222> (5)...(5)
<223> Xaa = Gly or Glu

<220>
<221> VARIANT
<222> (6)...(6)
<223> Xaa = Arg, Ile, or absent

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa = Asp or Glu

<220>
<221> VARIANT
<222> (8)...(8)
<223> Xaa = Lys or Thr

<400> 203
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5

<210> 204
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
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<222> (1)...(1)
<223> Xaa = Ala or Thr

<220>
<221> VARIANT
<222> (2)...(2)
<223> Xaa = Lys or Arg

<220>
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<222> (3)...(3)
<223> Xaa = Glu

<220>
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<222> (4)...(4)
<223> Xaa = Met, Pro, Gly, or Asp

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<221> VARIANT
<222> (5)...(5)
<223> Xaa = Val, Ser, Lys, Arg, or absent

<220>
<221> VARIANT
<222> (6)...(6)
<223> Xaa = Tyr, His, Asn, or absent

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa = Tyr

<220>
<221> VARIANT
<222> (8)...(8)
<223> Xaa = Asp or Glu

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<222> (9)...(9)
<223> Xaa = Ile

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<223> Xaa = Leu

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<222> (11)...(11)
<223> Xaa = Thr

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<223> Xaa = Gly

<220>
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<222> (13)...(13)
<223> Xaa = Tyr, Asp, or His

<220>
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<222> (14)...(14)
<223> Xaa = His, Asp, Tyr, or absent

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<223> Xaa = Asn, Tyr, His, or absent

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<223> Xaa = Tyr

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<223> Xaa = Tyr or His

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<223> Xaa = Gly or Ala

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<222> (21)...(21)
<223> Xaa = Val or Ile

<400> 204
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1 5 10 15
Xaa Xaa Xaa Xaa Xaa
20

<210> 205
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
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<220>
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<220>
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<222> (2)...(2)
<223> Xaa = Gly or Ala

<220>
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<222> (3)...(3)
<223> Xaa = Ile

<220>
<221> VARIANT
<222> (4)...(4)
<223> Xaa = Asn or Arg

<220>
<221> VARIANT
<222> (5)...(5)

<223> Xaa = Asn

<220>

<221> VARIANT

<222> (6)...(6)

<223> Xaa = Tyr or Asp

<400> 205

Xaa Xaa Xaa Xaa Xaa Xaa

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<210> 206

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

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<222> (1)...(1)

<223> Xaa = Thr or Ala

<220>

<221> VARIANT

<222> (2)...(2)

<223> Xaa = Ala or Thr

<220>

<221> VARIANT

<222> (3)...(3)

<223> Xaa = Ser or Phe

<400> 206

Xaa Xaa Xaa

1

<210> 207

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<220>

<221> VARIANT

<222> (1)...(1)

<223> Xaa = Gln or Leu

<220>

<221> VARIANT

<222> (2)...(2)

<223> Xaa = Gln

<220>
<221> VARIANT
<222> (3)...(3)
<223> Xaa = Tyr, His, or Asp

<220>
<221> VARIANT
<222> (4)...(4)
<223> Xaa = Asn or Tyr

<220>
<221> VARIANT
<222> (5)...(5)
<223> Xaa = Thr or Ser

<220>
<221> VARIANT
<222> (6)...(6)
<223> Xaa = Tyr, Asn, or His

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa = Pro

<220>
<221> VARIANT
<222> (8)...(8)
<223> Xaa = Leu, Phe, Arg, or absent

<220>
<221> VARIANT
<222> (9)...(9)
<223> Xaa = Thr

<400> 207
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5