

SEQUENCE LISTING

<110> REGENERON PHARMACEUTICALS, INC.

<120> ANTI-PROKINETICIN RECEPTOR (PROKR) ANTIBODIES AND USES THEREOF

<130> 9700-WO

<140> To be assigned

<141> Filed herewith

<150> 61/725,704

<151> 2012-11-13

<150> 61/825,112

<151> 2013-05-20

<160> 180

<170> FastSEQ for Windows Version 4.0

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ccagggaagg gtctggagtg ggttggccgt attaaaagta aaactgatgg tgggacaacg 180
gaccacgctg cccccgtgaa aggcagattc atcgtctcaa gagatgattc aaaaagcacg 240
ctgtatctgc aaatgaacag cctgaaaacc gaggacacag ccgtatatta ttgtaccaat 300
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Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Ala Asn Ala
 20          25          30
Trp Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35          40          45
Gly Arg Ile Lys Ser Lys Thr Asp Gly Gly Thr Thr Asp His Ala Ala
 50          55          60
Pro Val Lys Gly Arg Phe Ile Val Ser Arg Asp Asp Ser Lys Ser Thr
 65          70          75          80
Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
 85          90          95
Tyr Cys Thr Asn Tyr Ala Phe Gln Leu Trp Gly Gln Gly Thr Leu Val
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 Ile Lys Ser Lys Thr Asp Gly Gly Thr Thr
 1 5 10

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<400> 7
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<400> 8
Thr Asn Tyr Ala Phe Gln Leu
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cttcaccaga ggccaggcca gcctccaaga ctcttaattt ataagatttc taaccgggtc 180
tctgggggtcc cagacagatt cactggcagt ggggcaggga cagatttcac actgaaaatc 240
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1 5 10 15
Gln Ser Ala Ser Ile Ser Cys Arg Ser Ser Gln Gly Leu Val His Ser
20 25 30
Asp Gly Asn Thr Tyr Leu Ser Trp Leu His Gln Arg Pro Gly Gln Pro
35 40 45
Pro Arg Leu Leu Ile Tyr Lys Ile Ser Asn Arg Phe Ser Gly Val Pro
50 55 60
Asp Arg Phe Thr Gly Ser Gly Ala 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 Ser
85 90 95
Thr Gln Phe Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 11
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 <400> 11
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 <400> 12
 Gln Gly Leu Val His Ser Asp Gly Asn Thr Tyr
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 <400> 13
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Met Gln Ser Thr Gln Phe Pro Arg Thr
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ccagggaagg gactggagtg ggttggccgt attaaaagca aaattgaagg tgggacaaca 180
gactacgtg catccgtgaa aggagattc accatctcaa gagatgactc aaaaaacacg 240
cagtcacctg aaatgaacag cctgaaaagc gaggacacag ccgtttatta ctgttccaca 300
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<400> 18

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20 25 30
Trp Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Gly Arg Ile Lys Ser Lys Ile Glu Gly Gly Thr Thr Asp Tyr Ala Ala
50 55 60
Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80
Gln Ser Leu Gln Met Asn Ser Leu Lys Ser Glu Asp Thr Ala Val Tyr
85 90 95
Tyr Cys Ser Thr Gly His Leu Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110
Ile Val Ser Ser
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<223> Synthetic

<400> 19
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<400> 20
Gly Phe Thr Phe Ser Asn Val Trp
1 5

<210> 21
<211> 30
<212> DNA
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<400> 21
attaaaagca aaattgaagg tgggacaaca 30

<210> 22
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<220>
<223> Synthetic

<400> 22
Ile Lys Ser Lys Ile Glu Gly Gly Thr Thr
1 5 10

<210> 23
<211> 21
<212> DNA
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<400> 23
tccacaggtc acttagctta c 21

<210> 24
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<220>
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<400> 24
 Ser Thr Gly His Leu Ala Tyr
 1 5

<210> 25
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 <212> DNA
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<220>
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<400> 25
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 cttcagcaga gccagggcca gcctccaaga ctcttaattt ataagatttc taaccgggttc 180
 tctgggggtcc cagacagatt cagtggcagt ggggcaggga cagatttcac actgaaaatc 240
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 Gln Pro Ala Ser Ile Ser Cys Arg Ser Gln Ser Leu Val His Ser
 20 25 30
 Asp Gly Ser Thr Tyr Leu Ser Trp Leu Gln Gln Arg Pro Gly Gln Pro
 35 40 45
 Pro Arg Leu Leu Ile Tyr Lys Ile Ser Asn Arg Phe Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Ile Tyr Tyr Cys Met Gln Ala
 85 90 95
 Thr Gln Phe Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 100 105 110

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<400> 27
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<400> 28

Gln Ser Leu Val His Ser Asp Gly Ser Thr Tyr
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<210> 29

<211> 9

<212> DNA

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<223> Synthetic

<400> 29

aagatttct

9

<210> 30

<211> 3

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<223> Synthetic

<400> 30

Lys Ile Ser
1

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<223> Synthetic

<400> 31

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24

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<223> Synthetic

<400> 32

Met Gln Ala Thr Gln Phe Pro Thr
1 5

<210> 33

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<212> DNA
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ccaggaaggg ggctggagtg gggtggccgt attaaaagta aaactgatgg tgggacaaca 180
gactacgtcg caccctgtaa aggcagattc accatctcaa gagatgatcc aaaaaacacg 240
ctgtatctgc aaatgtacag cctgaaaacc gaggacacag ccgtgtatta ctgtaccact 300
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20 25 30
Trp Met Ser Trp Val Arg Gln Val Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Gly Arg Ile Lys Ser Lys Thr Asp Gly Gly Thr Thr Asp Tyr Ala Ala
50 55 60
Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Pro Lys Asn Thr
65 70 75 80
Leu Tyr Leu Gln Met Tyr Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95
Tyr Cys Thr Thr Arg Ser Met Gln Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110
Thr Val Ser Ser
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<400> 35
ggattcactt tcagtaacgc ctgg 24

<210> 36
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<400> 36
Gly Phe Thr Phe Ser Asn Ala Trp
1 5

<210> 37
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<400> 37
attaaaagta aaactgatgg tgggacaaca 30

<210> 38
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<400> 38
Ile Lys Ser Lys Thr Asp Gly Gly Thr Thr
1 5 10

<210> 39
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<400> 39
accactcgaa gtatgcagta c 21

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<400> 40
Thr Thr Arg Ser Met Gln Tyr
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<210> 41
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cttcagcaga ggccaggcca gcctccaaga ctctaatatt ataagatttc taaccgggttc 180
tctgggggtcc cagacagatt cagtggcagt ggggcaggga cagatttcac actgaaaatc 240
agcaggggtgg aagctgagga tgtcggcatt tattactgca tgcaggctac acaatttccg 300
acgttcggcc aagggaacaa ggtggaaatc aaa 333

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<400> 42
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
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Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser
20 25 30
Asp Gly Tyr Thr Tyr Leu Asn Trp Leu Gln Gln Arg Pro Gly Gln Pro
35 40 45
Pro Arg Leu Leu Ile Tyr Lys Ile Ser Asn Arg Phe Ser Gly Val Pro
50 55 60
Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80
Ser Arg Val Glu Ala Glu Asp Val Gly Ile Tyr Tyr Cys Met Gln Ala
85 90 95
Thr Gln Phe Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 43
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<220>
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<400> 43
caaagcctcg tacacagtga tggatacacc tac 33

<210> 44
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<400> 44
Gln Ser Leu Val His Ser Asp Gly Tyr Thr Tyr
1 5 10

<210> 45
<211> 9

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<400> 45
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9

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<400> 46
Lys Ile Ser
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<210> 47
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<211> 8
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Met Gln Ala Thr Gln Phe Pro Thr
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ccagggaagg ggctggagtg ggttggccgt attaaaagga aaaatgatgg tgggacaata 180
gactacgctg caccctgtaa aggcagattc accatctcaa gagatgattc aaaaaacacg 240
ctgtatctac aaatgaacag cctgagaacc gaggacacag ccgtgtatta ctgtatcccc 300

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Ala
20 25 30
Trp Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Gly Arg Ile Lys Arg Lys Asn Asp Gly Gly Thr Ile Asp Tyr Ala Ala
50 55 60
Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80
Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Val Tyr
85 90 95
Tyr Cys Ile Pro Ser Gly Ser Tyr Tyr Gly Tyr Trp Gly Gln Gly Thr
100 105 110
Leu Val Thr Val Ser Ser
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<212> DNA
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<400> 51
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<210> 52
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<400> 52
Gly Phe Thr Phe Ser Asn Ala Trp
1 5

<210> 53
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<212> DNA
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<220>
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<400> 53
 attaaaagga aaaatgatgg tgggacaata 30

<210> 54
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 <212> PRT
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<220>
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<400> 54
 Ile Lys Arg Lys Asn Asp Gly Gly Thr Ile
 1 5 10

<210> 55
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<400> 55
 atccccagtg ggagctacta cggctac 27

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<400> 56
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<210> 57
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<400> 57
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 cttcagcaga ggccaggcca gcctccaaga ctcctaattt ataagatttc taaccgggtt 180
 tctgggggtcc cagacagatt cagtggcagt ggggcaggga cagatttcac actgaaaatc 240
 agcaggggtgg aagctgagga tgtcgggggtt tattactgca tgcaaactac acaatttccc 300
 acttttggcc aggggaccaa gctggagatc aaa 333

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<400> 58

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

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<212> DNA

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<220>

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caaagcctcg tacacagtga tggaaacacc tac

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Gln	Ser	Leu	Val	His	Ser	Asp	Gly	Asn	Thr	Tyr
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<212> DNA

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9

<210> 62

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 62

Lys Ile Ser

1

<210> 63

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 63

atgcaaacta cacaatttcc cact

24

<210> 64

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 64

Met Gln Thr Thr Gln Phe Pro Thr

1

5

<210> 65

<211> 354

<212> DNA

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<223> Synthetic

<400> 65

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ccaggggaag	ggctggagtg	ggttggccgt	attaaaagca	gaagtgatgg	tgggacaaca	180
gactacgctg	caccctgaa	aggcagattc	accatttcga	gagatgattc	aaaaaatacg	240
ctgtatctgc	aaatgaacag	cctgaaaacc	gaggacacag	ccttgtatta	ctgttcccc	300
cctgggagtc	actacggcta	ctggggccag	ggaaccctgg	tcaccgtctc	ctca	354

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<400> 66

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

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<400> 67
 ggattcactt tcagtaacgc ctgg

24

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<220>
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<400> 68
 Gly Phe Thr Phe Ser Asn Ala Trp
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<400> 70
 Ile Lys Ser Arg Ser Asp Gly Gly Thr Thr
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<210> 71
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 <223> Synthetic

<400> 71
 tccccccctg ggagtcacta cggctac 27

<210> 72
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 72
 Ser Pro Pro Gly Ser His Tyr Gly Tyr
 1 5

<210> 73
 <211> 333
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 73
 gatattgtga tgaccagac tccactctcc tcacctgtca cccttgaca gccggcctcc 60
 atctcctgca ggtctagtca aagcctcgta cacagtgatg gaaacaccta cttgagttgg 120
 cttcagcaga ggccaggcca gcctccaaga ctccctaattt ataagatttc taaccgggtc 180
 tctgggggtcc cagacagatt cagtggcagt ggggcaggga cagatttcac actgaaaatc 240
 agcaggggtgg aagctgagga tgcgggggtt tattactgca tgcaagctac acaatttccc 300
 acttttggcc aggggaccaa gctggagatc aaa 333

<210> 74
 <211> 111
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 74
 Asp Ile Val Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
 1 5 10 15
 Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser
 20 25 30
 Asp Gly Asn Thr Tyr Leu Ser Trp Leu Gln Gln Arg Pro Gly Gln Pro
 35 40 45

Pro	Arg	Leu	Leu	Ile	Tyr	Lys	Ile	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro
	50					55					60				
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ala	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	Ala
				85					90					95	
Thr	Gln	Phe	Pro	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys	
			100					105						110	

<210> 75
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 75
 caaagcctcg tacacagtga tggaaacacc tac

33

<210> 76
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 76
 Gln Ser Leu Val His Ser Asp Gly Asn Thr Tyr
 1 5 10

<210> 77
 <211> 9
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 77
 aagatttct

9

<210> 78
 <211> 3
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 78
 Lys Ile Ser
 1

<210> 79
 <211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 79
atgcaagcta cacaatttcc cact

24

<210> 80
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 80
Met Gln Ala Thr Gln Phe Pro Thr
1 5

<210> 81
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 81
gaggtgcagc tgggtggagtc tggggggaggc ttggtaaagc ctgggggggtc ccttagactc 60
tcctgtgcag tctctggatt cactttcagt aacgcctgga tgacctgggt ccgccagact 120
ccagggaagg ggctggagtg ggttggccgt attaaaagga aaaatgaggg tgggacaata 180
gactacgctg caccctgtaa aggcagattc accatctcaa gagatgattc aaaaaacacc 240
ctgtatctgc aaatgaacag cctgaaaacc gaggacacag ccgtgtatta ctgtaccccc 300
agtgggagct attatggcta ctggggccag ggaaccttg tcaccgtctc ctca 354

<210> 82
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 82
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 Val Ser Gly Phe Thr Phe Ser Asn Ala
20 25 30
Trp Met Thr Trp Val Arg Gln Thr Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Gly Arg Ile Lys Arg Lys Asn Glu Gly Gly Thr Ile Asp Tyr Ala Ala
50 55 60
Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80
Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95
Tyr Cys Thr Pro Ser Gly Ser Tyr Tyr Gly Tyr Trp Gly Gln Gly Thr

100
Leu Val Thr Val Ser Ser
115

105

110

<210> 83
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 83
ggattcactt tcagtaacgc ctgg

24

<210> 84
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 84
Gly Phe Thr Phe Ser Asn Ala Trp
1 5

<210> 85
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 85
attaaaagga aaaatgaggg tgggacaata

30

<210> 86
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 86
Ile Lys Arg Lys Asn Glu Gly Gly Thr Ile
1 5 10

<210> 87
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 87
acccccagtg ggagctatta tggctac

27

<210> 88
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 88
Thr Pro Ser Gly Ser Tyr Tyr Gly Tyr
1 5

<210> 89
<211> 333
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 89
gatattgtga tgaccagac tccactctcc tcacctgtca cccttggaca gccggcctcc 60
atctcctgca ggtctagtca aagcctcgtg cacagtgatg gaaacaccta cttgagttgg 120
cttcagcaga ggccaggcca gcctccaaga ctcttaattt ataagatttc taaccggttc 180
tctgggggtcc cagacagatt cagtggcagt ggggcaggga cagatttcac actgaaaatc 240
agcaggggtgg aagctgagga tgtcgggact tattactgca tgcaaactac gcaatttccc 300
acttttggcc aggggaccaa gctggagatc aaa 333

<210> 90
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

<210> 91
<211> 33

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 91
 caaagcctcg tgcacagtga tggaaacacc tac 33

 <210> 92
 <211> 11
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 92
 Gln Ser Leu Val His Ser Asp Gly Asn Thr Tyr
 1 5 10

 <210> 93
 <211> 9
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 93
 aagatttct 9

 <210> 94
 <211> 3
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 94
 Lys Ile Ser
 1

 <210> 95
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 95
 atgcaaacta cgcaatttcc cact 24

 <210> 96
 <211> 8
 <212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 96

Met Gln Thr Thr Gln Phe Pro Thr
1 5

<210> 97

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 97

gaggtgcagc tgggtggagtc tggggggaggc ttggtaaagc ctgggggggtc ccttagactc 60
tcctgtgcag cctctggatt cactttcagt aacgcctgga tgagctgggt ccgccaggct 120
ccaggaaggg ggctggagtg ggttggccgt attaaaagca aaactgatgg tgggacaaca 180
gaccacgctg caccctgtaa aggcagattc accatctcaa gagatgattc aaaaaacacg 240
ctgtatctgc aaatgaacac cttgaaaacc gaggacacag ccgtgtatta ctgtaccaca 300
ggacatagct cctactgggg ccagggaacc ctggtcaccg tctcctca 348

<210> 98

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 98

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

<210> 99

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 99
ggattcactt tcagtaacgc ctgg 24

<210> 100
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 100
Gly Phe Thr Phe Ser Asn Ala Trp
1 5

<210> 101
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 101
attaaaagca aaactgatgg tgggacaaca 30

<210> 102
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 102
Ile Lys Ser Lys Thr Asp Gly Gly Thr Thr
1 5 10

<210> 103
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 103
accacaggac atagctccta c 21

<210> 104
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 104
 Thr Thr Gly His Ser Ser Tyr
 1 5

<210> 105
 <211> 333
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 105
 gatattgtga tgaccagac tccactctcc tcacctgtca cccttggaca gccggcctcc 60
 atctctgtga ggtctagtca aagcctcgta cacagtgatg gaaacaccta cttgagttgg 120
 cttcagcaga gccagggcca gcctccaaga ctcttaattt ataagatttc taaccgggttc 180
 tctgggggtcc cagacagatt cagtggcagt ggggcaggga cagatttcac actgaaaatc 240
 agcaggggtgg aagctgagga tgtcgggggtt tattactgca tgcaagctac acaatttccc 300
 acttttggcc aggggaccaa gctggagatc aaa 333

<210> 106
 <211> 111
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 106
 Asp Ile Val Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
 1 5 10 15
 Gln Pro Ala Ser Ile Ser Cys Arg Ser Gln Ser Leu Val His Ser
 20 25 30
 Asp Gly Asn Thr Tyr Leu Ser Trp Leu Gln Gln Arg Pro Gly Gln Pro
 35 40 45
 Pro Arg Leu Leu Ile Tyr Lys Ile Ser Asn Arg Phe Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ala 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 Ala
 85 90 95
 Thr Gln Phe Pro Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
 100 105 110

<210> 107
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 107
 caaagcctcg tacacagtga tggaaacacc tac 33

<210> 108
 <211> 11
 <212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 108

Gln Ser Leu Val His Ser Asp Gly Asn Thr Tyr
1 5 10

<210> 109

<211> 9

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 109

aagatttct

9

<210> 110

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 110

Lys Ile Ser
1

<210> 111

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 111

atgcaagcta cacaatttcc cact

24

<210> 112

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 112

Met Gln Ala Thr Gln Phe Pro Thr
1 5

<210> 113

<211> 348

<212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 113
 gaggtgcagc tgggtggagtc tggggggaggc ttggtaaagc ctgggggggtc ccttagactc 60
 tcctgtgcag cctctggatt cactttcagt aacgcctgga tgacctgggt ccgccaggct 120
 ccaggaaggg ggctggagtg gggtggccgt attaaaatca aaactgatgg tgggacaaca 180
 gactacgctg caccctgtaa aggcagattc accatctcaa gagatgattc aaaaaacacg 240
 ctgtatctgc aaatgaacag cctgaaaacc gaggacacag ccgtgtatta ctgtaccaca 300
 ggacatacct cctactgggg ccaggggaacc ctggtcaccg tctcctca 348

<210> 114
 <211> 116
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 114
 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 Ser Asn Ala
 20 25 30
 Trp Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Gly Arg Ile Lys Ile Lys Thr Asp Gly Gly Thr Thr Asp Tyr Ala Ala
 50 55 60
 Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
 65 70 75 80
 Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
 85 90 95
 Tyr Cys Thr Thr Gly His Thr Ser Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110
 Thr Val Ser Ser
 115

<210> 115
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 115
 ggattcactt tcagtaacgc ctgg 24

<210> 116
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 116
Gly Phe Thr Phe Ser Asn Ala Trp
1 5

<210> 117
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 117
attaaaatca aaactgatgg tgggacaaca

30

<210> 118
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 118
Ile Lys Ile Lys Thr Asp Gly Gly Thr Thr
1 5 10

<210> 119
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 119
accacaggac atacctccta c

21

<210> 120
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 120
Thr Thr Gly His Thr Ser Tyr
1 5

<210> 121
<211> 333
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 121
gatattgtga tgacccagac tccactctcc tcacctgtca cccttggaca gccggcctcc 60
atctcctgca ggtctagtca aagcctcgta cacagtgatg gaaacaccta cttgagttgg 120
cttcagcaga ggccaggcca gcctccaaga ctctaatatt ataagatttc taaccggttc 180
tctgggggtcc cagacagatt cagtggcagt ggggcagggga cagatttcac actgaaaatc 240
agcaggggtgg aagctgagga tgtcgggggtt tattactgca tgcaagctac acaatttccc 300
acttttggcc aggggaccaa gctggagatc aaa 333

<210> 122

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 122

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

<210> 123

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 123

caaagcctcg tacacagtga tggaaacacc tac

33

<210> 124

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 124

Gln	Ser	Leu	Val	His	Ser	Asp	Gly	Asn	Thr	Tyr
1				5					10	

<210> 125

<211> 9

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 125
aagatttct

9

<210> 126
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 126
Lys Ile Ser
1

<210> 127
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 127
atgcaagcta cacaatttcc cact

24

<210> 128
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 128
Met Gln Ala Thr Gln Phe Pro Thr
1 5

<210> 129
<211> 348
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 129
gagggtgcagc tgggtggagtc tggggggaggc ttggtaaagc ctgggggggtc ccttagactc 60
tcctgtgcag cctctggatt cactttcagt aatgtctgga tgacttgggt cgcgccaggct 120
ccagggaaagg ggctggagtg gggtggccgt attaaaaacca aaactgatgg tgggacaaca 180
gactacgctg caccctgtaa aggcagattc accatctcaa gagatgattc aaaaaactcg 240
ctgtatctgc aaatgagcag cctgaaaacc gaggacacag ccgtgtatta ctgtaccaca 300

ggacataacct cctactgggg ccagggaacc ctggtcaccg tctcctca

348

<210> 130

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 130

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

<210> 131

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 131

ggattcactt tcagtaatgt ctgg

24

<210> 132

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 132

Gly	Phe	Thr	Phe	Ser	Asn	Val	Trp										
1					5												

<210> 133

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 133
 attaaaacca aaactgatgg tgggacaaca 30

<210> 134
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 134
 Ile Lys Thr Lys Thr Asp Gly Gly Thr Thr
 1 5 10

<210> 135
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 135
 accacaggac atacctccta c 21

<210> 136
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 136
 Thr Thr Gly His Thr Ser Tyr
 1 5

<210> 137
 <211> 333
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 137
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 atctcctgca ggtctagtca aagcctcgta cacagtgatg gaaacaccta cttgagttgg 120
 cttcagcaga ggccaggcca gcctccaaga ctcctaattt ataagatttc taaccgggttc 180
 tctgggggtcc cagacagatt cagtggcagt ggggcaggga cagatttcac actgaaaatc 240
 agcaggggtgg aagctgagga tgtcgggggtt tattactgca tgcaagctac acaatttccc 300
 acttttggcc aggggaccaa gctggagatc aaa 333

<210> 138
 <211> 111
 <212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 138

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

<210> 139

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 139

caaagcctcg tacacagtga tggaaacacc tac

33

<210> 140

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 140

Gln	Ser	Leu	Val	His	Ser	Asp	Gly	Asn	Thr	Tyr
1				5					10	

<210> 141

<211> 9

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 141

aagatttct

9

<210> 142

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 142

Lys Ile Ser

1

<210> 143

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 143

atgcaagcta cacaatttcc cact

24

<210> 144

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 144

Met Gln Ala Thr Gln Phe Pro Thr

1

5

<210> 145

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 145

gaggtgcagc	tggtggagtc	tgggggaggc	ttggtaaagc	ctgggggggtc	ccttagactc	60
tcctgtgcag	cctctggatt	cactttcagt	aacgcctgga	tgacctgggt	cgcgcaggct	120
ccaggggaagg	ggctggagtg	ggttggccgt	actaaaacca	aaactgaagg	tgggacaaca	180
gactacgctg	caccctgaa	aggcagattc	accatctcaa	gagatgattc	aaaaaacacg	240
ctgtatctgc	aatgaacag	cctgaaaacc	gaggacacag	ccgtgtatta	ctgtaccact	300
ggacatat	tttattggg	ccaggggaacc	ctggtcaccg	tctcctca		348

<210> 146

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 146

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

<210> 147
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 147
 ggattcactt tcagtaacgc ctgg

24

<210> 148
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 148
 Gly Phe Thr Phe Ser Asn Ala Trp
 1 5

<210> 149
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 149
 actaaaacca aaactgaagg tgggacaaca

30

<210> 150
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 150
 Thr Lys Thr Lys Thr Glu Gly Gly Thr Thr
 1 5 10

<210> 151
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 151
 accactggac atatattttta t 21

<210> 152
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 152
 Thr Thr Gly His Ile Phe Tyr
 1 5

<210> 153
 <211> 333
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 153
 gatattgtga tgaccagac tccactctcc tcacctgtca cccttgaca gccggcctcc 60
 atctcctgca ggtctagtca aagcctcgta cacagtgatg gaaacaccta cttgagttgg 120
 cttcagcaga ggccaggcca gcctccaaga ctccctaattt ataagatttc taaccgggtc 180
 tctgggggtcc cagacagatt cagtggcagt ggggcaggga cagatttcac actgaaaatc 240
 agcaggggtgg aagctgagga tgcgcggggtt tattactgca tgcaagctac acaatttccc 300
 acttttggcc aggggaccaa gctggagatc aaa 333

<210> 154
 <211> 111
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 154
 Asp Ile Val Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
 1 5 10 15
 Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser
 20 25 30
 Asp Gly Asn Thr Tyr Leu Ser Trp Leu Gln Gln Arg Pro Gly Gln Pro
 35 40 45

Pro	Arg	Leu	Leu	Ile	Tyr	Lys	Ile	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro
	50					55					60				
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ala	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	Ala
				85					90					95	
Thr	Gln	Phe	Pro	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys	
			100					105						110	

<210> 155
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 155
 caaagcctcg tacacagtga tggaaacacc tac 33

<210> 156
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 156
 Gln Ser Leu Val His Ser Asp Gly Asn Thr Tyr
 1 5 10

<210> 157
 <211> 9
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 157
 aagatttct 9

<210> 158
 <211> 3
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 158
 Lys Ile Ser
 1

<210> 159
 <211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 159
atgcaagcta cacaatttcc cact

24

<210> 160
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 160
Met Gln Ala Thr Gln Phe Pro Thr
1 5

<210> 161
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 161
gaggtgcagc tgggtggagtc tggggggaggc ttgataaagc cggggggggtc ccttagactc 60
tcctgtgcag cctctggatt cactttcagt aacgcctgga tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggttggccgt attaaaagga aaagtgatgg tgggacaaca 180
gactacgctg caccctgtaa aggcagattc accatttcaa gagatgattc aaaaaacacg 240
atgtatctgc aaatgaacag cctgaaaacc gaggacacag ccgtgtatta ctgtaccccc 300
agtgggagct actacggcta ctggggccag ggaaccctgg tcactgtctc ctca 354

<210> 162
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 162
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Ile Lys Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Ala
20 25 30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Gly Arg Ile Lys Arg Lys Ser Asp Gly Gly Thr Thr Asp Tyr Ala Ala
50 55 60
Pro Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr
65 70 75 80
Met Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
85 90 95
Tyr Cys Thr Pro Ser Gly Ser Tyr Tyr Gly Tyr Trp Gly Gln Gly Thr

100
Leu Val Thr Val Ser Ser
115

105

110

<210> 163
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 163
ggattcactt tcagtaacgc ctgg

24

<210> 164
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 164
Gly Phe Thr Phe Ser Asn Ala Trp
1 5

<210> 165
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 165
attaaaagga aaagtgatgg tgggacaaca

30

<210> 166
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 166
Ile Lys Arg Lys Ser Asp Gly Gly Thr Thr
1 5 10

<210> 167
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 167
acccccagtg ggagctacta cggctac

27

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

<220>
<223> Synthetic

<400> 168
Thr Pro Ser Gly Ser Tyr Tyr Gly Tyr
1 5

<210> 169
<211> 333
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 169
gatattgtga tgaccagac tccactctcc tcacctgtca cccttggaca gccggcctcc 60
atctcctgca ggtctagtca aagcctcgta cacagtgatg gaaacaccta cttgagttgg 120
cttcagcaga ggccaggcca gcctccaaga ctcttaattt ataagatttc taaccggttc 180
tctgggggtcc cagacagatt cagtggcagt ggggcaggga cagatttcac actgaaaatc 240
agcaggggtgg aagctgagga tgtcgggggtt tattactgca tgcaagctac acaatttccc 300
acttttggcc aggggaccaa gctggagatc aaa 333

<210> 170
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 170
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
1 5 10 15
Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser
20 25 30
Asp Gly Asn Thr Tyr Leu Ser Trp Leu Gln Gln Arg Pro Gly Gln Pro
35 40 45
Pro Arg Leu Leu Ile Tyr Lys Ile Ser Asn Arg Phe Ser Gly Val Pro
50 55 60
Asp Arg Phe Ser Gly Ser Gly Ala 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 Ala
85 90 95
Thr Gln Phe Pro Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 171
<211> 33

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 171
 caaagcctcg tacacagtga tggaaacacc tac 33

 <210> 172
 <211> 11
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 172
 Gln Ser Leu Val His Ser Asp Gly Asn Thr Tyr
 1 5 10

 <210> 173
 <211> 9
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 173
 aagatttct 9

 <210> 174
 <211> 3
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 174
 Lys Ile Ser
 1

 <210> 175
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 175
 atgcaagcta cacaatttcc cact 24

 <210> 176
 <211> 8
 <212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 176

Met Gln Ala Thr Gln Phe Pro Thr
1 5

<210> 177

<211> 393

<212> PRT

<213> Homo sapiens

<400> 177

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

Phe	Lys	Lys	Ile	Met	Leu	Leu	His	Trp	Lys	Ala	Ser	Tyr	Asn	Gly	Gly
		355					360					365			
Lys	Ser	Ser	Ala	Asp	Leu	Asp	Leu	Lys	Thr	Ile	Gly	Met	Pro	Ala	Thr
	370					375					380				
Glu	Glu	Val	Asp	Cys	Ile	Arg	Leu	Lys							
385					390										

<210> 178
 <211> 384
 <212> PRT
 <213> Homo sapiens

<400> 178

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

Thr	Asn	Gly	Val	Pro	Thr	Thr	Glu	Glu	Val	Asp	Cys	Ile	Arg	Leu	Lys
370							375				380				

<210> 179
 <211> 289
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 179

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

Lys

<210> 180
 <211> 280
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 180

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