

SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.

<120> Anti-CTLA-4 Antibodies and Uses Thereof

<130> 10360W001

<150> 62/537,753

<151> 2017-07-27

<150> 62/588,853

<151> 2017-11-20

<150> 62/645,284

<151> 2018-03-20

<150> 62/685,599

<151> 2018-06-15

<160> 510

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cctggacaag ggcttgagtg gatgggctgg atcagcgttt acaatggtaa tataaactat 180
gcacagaagt tcaagggcag agtcaccatg accacagaca catccacgag cactgcctac 240
atggagctga ggagcctgag atctgacgac atggccgtgt attactgtgc gagagtgacc 300
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Ser Val Lys Val Ser Cys Lys Ala Ser Asp Tyr Thr Phe Thr Ser Tyr
20           25           30
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Gly	Ile	Ser	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu	Glu	Trp	Met
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Gly	Trp	Ile	Ser	Val	Tyr	Asn	Gly	Asn	Ile	Asn	Tyr	Ala	Gln	Lys	Phe
	50					55					60				
Lys	Gly	Arg	Val	Thr	Met	Thr	Thr	Asp	Thr	Ser	Thr	Ser	Thr	Ala	Tyr
65					70					75					80
Met	Glu	Leu	Arg	Ser	Leu	Arg	Ser	Asp	Asp	Met	Ala	Val	Tyr	Tyr	Cys
				85					90					95	
Ala	Arg	Val	Thr	Gln	Phe	Gly	Met	Asp	Val	Trp	Gly	Gln	Gly	Thr	Thr
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Val	Thr	Val	Ser	Ser											
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Ile Ser Val Tyr Asn Gly Asn Ile
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Ala Arg Val Thr Gln Phe Gly Met Asp Val
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gggaaagccc ctaagctcct gatctatact acatccagtt tgcaaggtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctacaacct 240
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 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Asn
 20 25 30
 Leu Asn Trp Tyr Gln Gln Asn Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45
 Tyr Thr Thr Ser Ser Leu Gln Gly Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Phe Arg Thr Pro Phe
 85 90 95
 Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
 100 105

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<400> 12
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tccgggaaag ggctggagtg ggttggccgt attagaggca aagctaatag ttctcgcgaca 180
gcatattctg cgtcgggtgaa aggcagggtt accatctcca gagatgactc aaagaacacg 240
gcgtctctgc aaatgaacag cctgagaacc gaagacacgg ccgtgtattt ttgtactaga 300
gaggatcagc agttggtacg tccatactac taccactacg gtatggacgt ctggggccaa 360
gggaccacgg tcaccgtctc ctca 384

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

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gggaaagccc ctaagtcct gatctatgct acagccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgagacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcaacag agttacagta ccccgctcac tttcggcgga 300
 gggaccaagg tggagatcaa a 321

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

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<400> 28
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<400> 29

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9

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<223> synthetic

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Ala Thr Ala

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<210> 31

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<212> DNA

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<223> synthetic

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Gln Gln Ser Tyr Ser Thr Pro Leu Thr

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<210> 33

<211> 369

<212> DNA

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tatagtccat ctctgaagag caggctcacc attaccaagg acacctcaa aaacctgggtt 240
gtcctcgcaa tggccaacat ggaccccggtg gacacagcca catatttctg tgcacacaga 300
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20     25     30
Gly Val Gly Val Gly Trp Ile Arg Gln Ser Pro Gly Arg Ala Leu Glu
35     40     45
Trp Leu Ala Leu Ile Tyr Trp Asn Asp His Glu Arg Tyr Ser Pro Ser
50     55     60
Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn Leu Val
65     70     75     80
Val Leu Ala Met Ala Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Phe
85     90     95
Cys Ala His Arg Asn Ile Glu Tyr Arg Arg Ser Tyr Phe Phe Asp Tyr
100    105    110
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115    120

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Gly Phe Ser Leu Ser Thr Ser Gly Val Gly

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<220>

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<400> 41

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gggaaagccc ctaaactcct gatctatgct gcatccagtt tacaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcaacag gctaacactt tcccattcac tttcggccct 300
gggaccaaag tggatatcaa a                                     321
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Asp Arg Val Thr Val Thr Cys Arg Ala Ser Gln Asp Ile Asn Asn Trp
          20           25           30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
          35           40           45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
          50           55           60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65           70           75           80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Thr Phe Pro Phe
          85           90           95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
          100          105
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1 5

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9

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Ala Ala Ser
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<210> 47
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27

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acctgcactg tctctggtgg ctccatcaat agttattact ggacctggat ccggcagccc 120
ccaggggaagg gactggagtg gattggatat gtctattaca gtgggagcac cacctacaac 180
ccctccctca agagtcgagt caccatatca gtagacacgt ccaagaacca gttcttcctg 240
aacctgaact ctgtgaccgc tgcggaaacg gccgtgtatt actgtgagag agggacactg 300
gggtactacg gtatggacgt ctggggccaa gggaccacgg tcaccgtctc ctca 354

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

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24

<210> 52
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Gly Gly Ser Ile Asn Ser Tyr Tyr
1 5

<210> 53
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gtctattaca gtgggagcac c

21

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Val Tyr Tyr Ser Gly Ser Thr
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 cctggccagg ctcccaggct cctcatctat ggtacatcca tcagggccac tggcatccca 180
 gacaggttca gtggcagtgg gtctgggaca gacttcactc tcgccatcag cagactggag 240
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 ggagggacca aggtggagat caaa 324

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

<210> 59
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<400> 60
Gln Ser Phe Ser Asn Asn Tyr
1 5

<210> 61
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ggtacatcc

9

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27

<210> 64
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Gln Gln Tyr Gly Arg Ser Pro Leu Thr
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ccaggcaagg ggctggagtg ggtggcagtt acatgggatg atggaagtaa taaacattat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaagt acagcctgag agccgaggac acggctatgt attattgtgt gagagggggg 300
cacctcggcg cttttgatat ctggggccaa gggacaatgg tcaccgtctc ttca 354
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20 25 30
Gly Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Val Thr Trp Tyr Asp Gly Ser Asn Lys His Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80
Leu Gln Met Tyr Ser Leu Arg Ala Glu Asp Thr Ala Met Tyr Tyr Cys
85 90 95
Val Arg Gly Gly His Leu Gly Ala Phe Asp Ile Trp Gly Gln Gly Thr
100 105 110
Met Val Thr Val Ser Ser
115
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<210> 68
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<220>
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 Gly Phe Thr Phe Ser Ser Tyr Gly
 1 5

<210> 69
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<220>
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<400> 69
 acatggtatg atggaagtaa taaa 24

<210> 70
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<220>
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<400> 70
 Thr Trp Tyr Asp Gly Ser Asn Lys
 1 5

<210> 71
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 1 5 10

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 ggccaggctc ccaggctcct catctatggt gcatccagca gggccactgg catcccagac 180
 aggttcagtg gcggtgggtc tgggacagac ttcactctca ccatcagcag actggagcct 240
 gaagattttg cagtgtatta ctgtcagcag tatggtagct caccattcac tttcggccct 300
 gggaccaaag tggatatcaa a 321

<210> 74
 <211> 107
 <212> PRT
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<220>
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<400> 74
 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 Tyr
 20 25 30
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
 35 40 45
 Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly
 50 55 60
 Gly Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
 65 70 75 80
 Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Phe
 85 90 95
 Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
 100 105

<210> 75
 <211> 18

<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 75
cagagtgtta gcagctac

18

<210> 76
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 76
Gln Ser Val Ser Ser Tyr
1 5

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

<220>
<223> synthetic

<400> 77
ggtgcatcc

9

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

<220>
<223> synthetic

<400> 78
Gly Ala Ser
1

<210> 79
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 79

cagcagtatg gtagctcacc attcact

27

<210> 80

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 80

Gln Gln Tyr Gly Ser Ser Pro Phe Thr
1 5

<210> 81

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 81

cagggtccagc tgggtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggctc 60
tcctgcaagg cttctggata caccttcacc gactactata tacactgggt gcgacaggcc 120
cctggacagg ggcttgagt gatgggggtg atcaacccta acaatgggtg ctcaaattat 180
gcacagaagt ttcagggccg ggtcaccatg accagggaca cgtccatcag cacagcctac 240
atggacctga tcaggctgag atctgacgac acggccgtgt attactgtgc gagagagagg 300
gctagctggg actacaacgg tgtggacgtc tggggccaag ggaccacggg caccgtctcc 360
tca 363

<210> 82

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 82

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

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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

<220>
<223> synthetic

<400> 83
ggatacacct tcaccgacta ctat

24

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

<220>
<223> synthetic

<400> 84
Gly Tyr Thr Phe Thr Asp Tyr Tyr
1 5

<210> 85
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 85
atcaacccta acaatggtgt ctca

24

<210> 86
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 86
Ile Asn Pro Asn Asn Gly Val Ser
1 5

<210> 87
<211> 42
<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 87

gcgagagaga gggctagctg ggactacaac ggtgtggacg tc

42

<210> 88

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 88

Ala Arg Glu Arg Ala Ser Trp Asp Tyr Asn Gly Val Asp Val
1 5 10

<210> 89

<211> 336

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 89

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atctcctgca ggtctagtc gagcctcctg catagtaatg gatacagcta tttggattgg 120
tacctgcaga agccagggca gtctccacaa ctctgatct atttgggttc taatcgggcc 180
tccgggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttac actgaaaatc 240
agcagagtgg aggctgagga tgttgggggtt tattactgca tgcaaggctct acaacctccg 300
aacacttttg gccaggggac caagctggag atcaaa 336

<210> 90

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 90

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 Tyr Ser 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	Gly
				85					90					95	
Leu	Gln	Pro	Pro	Asn	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys
			100					105					110		

<210> 91
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 91
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<210> 92
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

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

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

<220>
 <223> synthetic

<400> 93
 ttgggttct 9

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

<220>
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<400> 94
 Leu Gly Ser
 1

<210> 95
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 95
atgcaaggctc tacaacctcc gaacact 27

<210> 96
<211> 9
<212> PRT
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<220>
<223> synthetic

<400> 96
Met Gln Gly Leu Gln Pro Pro Asn Thr
1 5

<210> 97
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 97
cagctgcagc tgcaggagtc gggcccagga ctagtgaagc cttcggagac cctgtccctc 60
acctgtattg tctctggtgg ctccaccagc agtaacactt actactgggg ctggatccgt 120
cagccccag ggaagggctt ggaatggatt gggactatcc attatagtgg gaaccctac 180
tacgaccgt ccctcaagag tcgagtcacc atatccgtag acacgtccaa gaaccacttc 240
tcctgaagc tgaactctgt gaccgccgca gacacggctg tttattactg tacgagacag 300
tacattaact tctttgactt ctggggccag ggaaccctgg tcaccgtctc ctca 354

<210> 98
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 98
Gln Leu Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15
Thr Leu Ser Leu Thr Cys Ile Val Ser Gly Gly Ser Thr Ser Ser Asn
20 25 30
Thr Tyr Tyr Trp Gly Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu
35 40 45

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

<210> 99
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 99
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30

<210> 100
 <211> 10
 <212> PRT
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<220>
 <223> synthetic

<400> 100
 Gly Gly Ser Thr Ser Ser Asn Thr Tyr Tyr
 1 5 10

<210> 101
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 101
 atccattata gtgggaaccc c

21

<210> 102
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 102
Ile His Tyr Ser Gly Asn Pro
1 5

<210> 103
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 103
acgagacagt acattaactt ctttgacttc 30

<210> 104
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 104
Thr Arg Gln Tyr Ile Asn Phe Phe Asp Phe
1 5 10

<210> 105
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 105
gaaattgtgt tgacacagtc tccagccacc ctgtctttgt ctccagggga aagagtcact 60
ctctcctgca gggccagtc gagtattagc agatacttag cctggtatca acagaaacct 120
ggccaggctc ccagggtcct catttatgat gcatccaaca gggccactga catcccagcc 180
aggttcagtg gcagtgggtc tgggacagac ttcactctca ccatcagcag tctagagcct 240
gaagattttg cagtttatta ctgtcagcag cgtagcaatt ggcctatcac cttcggccaa 300
gggacacgac tggagattaa a 321

<210> 106
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 106
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly

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

<210> 107
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 107
 cagagtatta gcagatac

18

<210> 108
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 108
 Gln Ser Ile Ser Arg Tyr
 1 5

<210> 109
 <211> 9
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 109
 gatgcatcc

9

<210> 110
 <211> 3
 <212> PRT
 <213> Artificial Sequence

<220>
<223> synthetic

<400> 110
Asp Ala Ser
1

<210> 111
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 111
cagcagcgta gcaattggcc tatcacc 27

<210> 112
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 112
Gln Gln Arg Ser Asn Trp Pro Ile Thr
1 5

<210> 113
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 113
caggtgcagc tgggtggagtc tggggggaggc gtggtccagc ctgggagggtc cctgagactc 60
tcctgtgcag cctctggact caccttcagt tactatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatcatatg atggaagtaa taaatattat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agctgaggac gcggctgtgt attactgtgc gaaagatttg 300
ggggggggacg actactacgg tatggacgtc tggggccaag ggaccacggt caccgtctcc 360
tca 363

<210> 114
<211> 121
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 114

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

<210> 115

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 115

ggactcacct tcagttacta tggc

24

<210> 116

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 116

Gly	Leu	Thr	Phe	Ser	Tyr	Tyr	Gly
1				5			

<210> 117

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 117

atatcatatg atggaagtaa taaa

24

<210> 118
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
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<400> 118
Ile Ser Tyr Asp Gly Ser Asn Lys
1 5

<210> 119
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 119
gcgaaagatt tgggggggga cgactactac ggtatggacg tc 42

<210> 120
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 120
Ala Lys Asp Leu Gly Gly Asp Asp Tyr Tyr Gly Met Asp Val
1 5 10

<210> 121
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 121
gaaatttgtgt tgacgcagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 60
ctctcctgca gggccagtc gagtgtagc agaacctact tagcctggta ccagcagaaa 120
cctggccagg ctcccaggct cctcatctat ggtgcattca gcagggccac tggcatccca 180
gacaggttca gtggcagtggt gtctgggaca gacttcactc tcaccatcag cagactggag 240
cctgaagatt ttgcagtgtt ttactgtcag cagtatggta gctcaccgta cacttttggc 300
caggggacca agctggagat caaa 324

<210> 122

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

<220>
<223> synthetic

<400> 122
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 Arg Thr
20 25 30
Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
35 40 45
Ile Tyr Gly Ala Phe 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
Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 123
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 123
cagagtgtta gcagaaccta c 21

<210> 124
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 124
Gln Ser Val Ser Arg Thr Tyr
1 5

<210> 125
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 125
ggtgcattc

9

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

<220>
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<400> 126
Gly Ala Phe
1

<210> 127
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 127
cagcagtatg gtagctcacc gtacact

27

<210> 128
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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<400> 128
Gln Gln Tyr Gly Ser Ser Pro Tyr Thr
1 5

<210> 129
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
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<400> 129
caggtgcagc tgggtggagtc tgggggaggc ttggtcaagc ctggagggtc cctgagactc 60
tcctgtgcag cctctggatt caccttcagt gactactaca tgacctggat ccgccaggct 120
ccagggaagg ggctggagtg ggtttcatac attagtagta gtggtggtaa catattctac 180
gcagactctg tgaagggccg attcaccatc tccagggaca acgccaagaa ctactgtat 240
ctgcaaatga acagcctgag aggcgaggac acggccgtgt attactgtgc gagaggtctg 300

gaaccctacc actactatta cggtatggac gtctggggcc aaggaccac ggtcaccgtc 360
tcctca 366

<210> 130
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

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

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

<220>
<223> synthetic

<400> 131
ggattcacct tcagtgacta ctac 24

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

<220>
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<400> 132
Gly Phe Thr Phe Ser Asp Tyr Tyr
1 5

<210> 133

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

<220>
<223> synthetic

<400> 133
attagtagta gtggtggtaa cata

24

<210> 134
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
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<400> 134
Ile Ser Ser Ser Gly Gly Asn Ile
1 5

<210> 135
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 135
gcgagaggtc tggaacccta ccactactat tacggtatgg acgtc

45

<210> 136
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
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<400> 136
Ala Arg Gly Leu Glu Pro Tyr His Tyr Tyr Tyr Gly Met Asp Val
1 5 10 15

<210> 137
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
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<400> 137
gacatccaga tgaccagtc tccatcctcc ctgtctgcat ctgttgaga cagagtcacc 60
atcacttgcc aggcgagtca ggacattagt aattatttaa attggtatca gcagaaacca 120
gggaaagccc ctaaactcct gatctacgat gcatccaatt tggaaacagg ggtcccatca 180
aggttcagtg gaagtggatc tgggacagat tttactttca ccatcagcag cctgcagcct 240
gaagatattg caacatattt ctgtcaacac tatgataatc tcccattcac tttcggccct 300
gggaccaaag tggatatcaa a 321

<210> 138
<211> 107
<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 Gln Ala Ser Gln Asp Ile Ser Asn Tyr
20 25 30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Ile Ala Thr Tyr Phe Cys Gln His Tyr Asp Asn Leu Pro Phe
85 90 95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

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

<220>
<223> synthetic

<400> 139
caggacatta gtaattat 18

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

<220>
<223> synthetic

<400> 140
Gln Asp Ile Ser Asn Tyr
1 5

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

<220>
<223> synthetic

<400> 141
gatgcatcc

9

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

<220>
<223> synthetic

<400> 142
Asp Ala Ser
1

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

<220>
<223> synthetic

<400> 143
caacactatg ataatctccc attcact

27

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

<220>
<223> synthetic

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

<210> 145
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 145
gaggtgcagc tgggtggagtc tggggggaggc ttggtacagc ctgggggggtc cctgagactc 60
tcctgtgcag cctctggatt caccttgagt aattatgtca tgacctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcagct attagtggta gaggtggtaa ttcattattat 180
gcagactccg tgaagggccg gttcagcatt tccagggacc attccaagaa cacgctgtat 240
ctgcaagtga acagcctgag agccgaggac acggccgtat attactgtgc gaaagccgaa 300
cgtggatata gttatggctt caactgggtc gacccctggg gccagggaac cctggtcacc 360
gtctcctca 369

<210> 146
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
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<400> 146
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 Leu Ser Asn Tyr
20 25 30
Val Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Ala Ile Ser Gly Arg Gly Gly Asn Ser Tyr Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Ser Ile Ser Arg Asp His Ser Lys Asn Thr Leu Tyr
65 70 75 80
Leu Gln Val Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Lys Ala Glu Arg Gly Tyr Ser Tyr Gly Phe Asn Trp Phe Asp Pro
100 105 110
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

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

<220>
<223> synthetic

<400> 147
ggattcacct tgagtaatta tgctc 24

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

<220>

<223> synthetic

<400> 148

Gly Phe Thr Leu Ser Asn Tyr Val
1 5

<210> 149

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 149

attagtggtta gaggtggtaa ttca

24

<210> 150

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 150

Ile Ser Gly Arg Gly Gly Asn Ser
1 5

<210> 151

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 151

gcgaaagccg aacgtggata cagttatggc ttcaactggt tcgacccc

48

<210> 152

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 152

Ala Lys Ala Glu Arg Gly Tyr Ser Tyr Gly Phe Asn Trp Phe Asp Pro
1 5 10 15

<210> 153
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 153
gacatccaga tgaccagtc tccatcttcc gtgtctgcat ctgcaggaga cagagtcacc 60
atcacttgtc gggcgagtc ggggtattag agctgggttag cctgggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg catcttacta ttgtcaacag ggtaacaatt tcccgctcac tttcggcgga 300
gggaccaagg tggagatcaa a 321

<210> 154
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 154
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Ala Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
20 25 30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Ser Tyr Tyr Cys Gln Gln Gly Asn Asn Phe Pro Leu
85 90 95
Thr Phe Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 155
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 155
cagggtatta gcagctgg 18

<210> 156
<211> 6

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 156
Gln Gly Ile Ser Ser Trp
1 5

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

<220>
<223> synthetic

<400> 157
gctgcatcc

9

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

<220>
<223> synthetic

<400> 158
Ala Ala Ser
1

<210> 159
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 159
caacagggtg acaatttccc gtcact

27

<210> 160
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 160

Gln Gln Gly Asn Asn Phe Pro Leu Thr
1 5

<210> 161
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 161
caggtgcagc tgggtggagtc tggggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagt acctatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtgacagtt atatgggtat atggaaataa taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acaacctgag agccgaggat acggctttat actactgtgc gagaggaggt 300
gggaggttat cgtactatca tgactactgg ggccagggaa ccctggtcac cgtctcctca 360

<210> 162
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 162
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 Thr Tyr
20 25 30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Thr Val Ile Trp Tyr Asp Gly Asn Asn 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
Leu Gln Met Asn Asn Leu Arg Ala Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95
Ala Arg Gly Gly Gly Arg Leu Ser Tyr Tyr His Asp Tyr Trp Gly Gln
100 105 110
Gly Thr Leu Val Thr Val Ser Ser
115 120

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

<220>
<223> synthetic

<400> 163
ggattcacct tcagtaccta tggc 24

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

<220>
<223> synthetic

<400> 164
Gly Phe Thr Phe Ser Thr Tyr Gly
1 5

<210> 165
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 165
atatggtatg atggaaataa taaa 24

<210> 166
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 166
Ile Trp Tyr Asp Gly Asn Asn Lys
1 5

<210> 167
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 167
gcgagaggag gtgggagggtt atcgtactat catgactac 39

<210> 168
<211> 13
<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 168

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

<210> 169

<211> 321

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 169

gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcattagc acctttttaa attggtatca gcagaaacca 120
gggaaagccc ctaacctcct gatctatggc acatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg cagcttacta ctgtcaacag acttacagta cccattcac tttcggccct 300
gggaccaaa tgatatcaa a 321

<210> 170

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 170

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

<210> 171

<211> 18

<212> DNA

<213> Artificial Sequence

<220>		
<223> synthetic		
<400> 171		
cagagcatta gcaccttt		18
<210> 172		
<211> 6		
<212> PRT		
<213> Artificial Sequence		
<220>		
<223> synthetic		
<400> 172		
Gln Ser Ile Ser Thr Phe		
1 5		
<210> 173		
<211> 9		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic		
<400> 173		
ggtacatcc		9
<210> 174		
<211> 3		
<212> PRT		
<213> Artificial Sequence		
<220>		
<223> synthetic		
<400> 174		
Gly Thr Ser		
1		
<210> 175		
<211> 27		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic		
<400> 175		
caacagactt acagtacccc attcact		27

<210> 176
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 176
 Gln Gln Thr Tyr Ser Thr Pro Phe Thr
 1 5

<210> 177
 <211> 357
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 177
 caggttcagc tgggtgcagtc tggagctgag gtgaagatgt ctggggcctc agtgagggtc 60
 tcctgcaagg cttctgggta cacctttacc agctatggta ttagctggat gcgacaggcc 120
 cctggacaag ggcttgagtg gatgggatgg atcaccgctt acaatggtaa ctcaaactat 180
 gcacagaagc tccagggcag agtcaccatg accacagaca catccacggg cacagcctac 240
 atggagttga ggagcctgac atctgacgac acggccgtgt attactgtgc gagaaggggg 300
 gactaccttg gggtttttcc ctactggggc cagggaaccc tggtcaccgt ctcctca 357

<210> 178
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 178
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Met Ser Gly Ala
 1 5 10 15
 Ser Val Arg Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
 20 25 30
 Gly Ile Ser Trp Met Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45
 Gly Trp Ile Thr Ala Tyr Asn Gly Asn Ser Asn Tyr Ala Gln Lys Leu
 50 55 60
 Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Gly Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Arg Ser Leu Thr Ser Asp Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Arg Gly Asp Tyr Leu Gly Val Phe Pro Tyr Trp Gly Gln Gly
 100 105 110
 Thr Leu Val Thr Val Ser Ser
 115

<210> 179
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 179
ggttacacct ttaccagcta tggt

24

<210> 180
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 180
Gly Tyr Thr Phe Thr Ser Tyr Gly
1 5

<210> 181
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 181
atcaccgctt acaatggtaa ctca

24

<210> 182
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 182
Ile Thr Ala Tyr Asn Gly Asn Ser
1 5

<210> 183
<211> 36
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic

<400> 183

gcgagaaggg gggactacct tggggttttt ccctac

36

<210> 184

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 184

Ala	Arg	Arg	Gly	Asp	Tyr	Leu	Gly	Val	Phe	Pro	Tyr
1				5					10		

<210> 185

<211> 321

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 185

gacatccaga	tgacccagtc	tccatcctcc	ctgtctgcat	ctgtaggaga	cagagtcacc	60
atcacttgcc	gggcaagtca	gagcattagt	agctatttaa	attggtatca	acagaaacca	120
gggaaagccc	ctaacctcct	gatctatact	gcatccagtt	tgcaaagtgg	ggtcccatca	180
aggttcagtg	gcagtggatc	tgggacagac	ttcactctca	ccatcagcag	tctgcaacct	240
gaagattttg	caacttacta	ctgtcaacag	agttacagtt	ccccctcac	tttcggcgga	300
gggaccaagg	tggagatcaa	a				321

<210> 186

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 186

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

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

<210> 187
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 187
cagagcatta gtagctat 18

<210> 188
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 188
Gln Ser Ile Ser Ser Tyr
1 5

<210> 189
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 189
actgcatcc 9

<210> 190
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 190
Thr Ala Ser
1

<210> 191
<211> 27
<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 191

caacagagtt acagttcccc cctcact

27

<210> 192

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 192

Gln Gln Ser Tyr Ser Ser Pro Leu Thr
1 5

<210> 193

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 193

gaggtgcagc tgggtggagtc tggggggaggc ttggtacagc ctggagggtc cctgagactc 60
tcctgtgcag cctctggatt caccttcagt aattatgaga tgagctgggt ccgccaggct 120
ccagggaaagg ggctggagtg ggtttcatcc attagaacta gtggtactac caaatactac 180
gcagactcta tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240
ctgcaaataga acagcctgag agccgaggac acggctgttt attactgtgc gggaggggggt 300
acgttcctcc actactgggg ccaggggaacc ctggtcaccg tctcctca 348

<210> 194

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 194

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

<210> 195
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 195
 ggattcacct tcagtaatta tgag 24

<210> 196
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 196
 Gly Phe Thr Phe Ser Asn Tyr Glu
 1 5

<210> 197
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 197
 attagaacta gtggtactac caaa 24

<210> 198
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 198
 Ile Arg Thr Ser Gly Thr Thr Lys
 1 5

<210> 199
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 199
 gcgggagggg gtacgttcct ccactac 27

<210> 200
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 200
 Ala Gly Gly Gly Thr Phe Leu His Tyr
 1 5

<210> 201
 <211> 324
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 201
 gacatccaga tgaccagtc tccatcttcc gtgtctgcgt ctgtaggaga cagagtcacc 60
 atcacttgtc gggcgagtc gggatttgcc agctatttag cctgggtatca gcagaaacca 120
 gggaaagccc ctaagctcct gatttatgct gcatccagtt tgcaaactgg ggtcccatca 180
 aggttcagcg gcagtggata tgggacagat ttcactctca ccatcagcag cctgcagcct 240
 gaagattttg caacttacta ttgtcaacag gctaagagtt tcccatgta cacttttggc 300
 caggggacca agctggagat caaa 324

<210> 202
 <211> 108
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 202
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ala Ser Tyr
 20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Thr Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Tyr 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 Ala Lys Ser Phe Pro Met
 85 90 95
 Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 203
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 203
 cagggtattg ccagctat

18

<210> 204
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 204
 Gln Gly Ile Ala Ser Tyr
 1 5

<210> 205
 <211> 9
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 205
 gctgcatcc

9

<210> 206
 <211> 3
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 206
Ala Ala Ser
1

<210> 207
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 207
caacaggcta agagtttccc catgtacact 30

<210> 208
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 208
Gln Gln Ala Lys Ser Phe Pro Met Tyr Thr
1 5 10

<210> 209
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 209
cagggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcacc agtggtgggtt actactggag ctggatccgc 120
cagcacccag ggaagggcct ggagtggatt ggatacatct ttacagtgg gatcaccaac 180
tacaacccgt ccctcaagag tcgagttacc atatcagtag acacgtctaa gaaccagttc 240
tccctgaaac tgacctctgt gactgccgcg gacacggccg tgtattactg tgcgacgtat 300
aacagcctcc gactctacta cggatatggac gtctggggcc aagggaccac ggtcaccgtc 360
tcctca 366

<210> 210
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 210

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

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

<220>
 <223> synthetic

<400> 211
 ggtggctcca tcaccagtgg tggttactac 30

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

<220>
 <223> synthetic

<400> 212
 Gly Gly Ser Ile Thr Ser Gly Gly Tyr Tyr
 1 5 10

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

<220>
 <223> synthetic

<400> 213
 atcttttaca gtgggatcac c 21

<210> 214
 <211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 214
Ile Phe Tyr Ser Gly Ile Thr
1 5

<210> 215
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 215
gcgacgtata acagcctccg actctactac ggtatggacg tc 42

<210> 216
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 216
Ala Thr Tyr Asn Ser Leu Arg Leu Tyr Tyr Gly Met Asp Val
1 5 10

<210> 217
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 217
gatgttgatga tgaccagtc tccactctcc ctgcccgtca tccttggaca gccggcctcc 60
atctcctgca ggtctagtca aagcctcgta tacggtgatg gaaacaccta cttgaattgg 120
tttcagcaga ggccaggcca atctccaagg cgactaattt ataaggtttc taaccgggac 180
tctgggggtcc cagacagatt cagcggcagt gggtcaggca ctgatttcac actgaaaatc 240
agcaggggtgg aggctgagga tgttgggggtt tattactgca tgcaaagtac acactggccg 300
ctcactttcg gcggagggac caaggtggag atcaaa 336

<210> 218
<211> 112
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 218

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

<210> 219

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 219

caaagcctcg tatacgggtga tggaaacacc tac

33

<210> 220

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 220

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

<210> 221

<211> 9

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 221

aaggtttct

9

<210> 222
 <211> 3
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 222
 Lys Val Ser
 1

<210> 223
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 223
 atgcaaagta cacactggcc gctcact

27

<210> 224
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 224
 Met Gln Ser Thr His Trp Pro Leu Thr
 1 5

<210> 225
 <211> 360
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 225
 gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctggagggtc cctgagactc 60
 gctgtgcag cctctggatt caccttcagt gactattaca tggactgggt ccgccagggt 120
 ccagggaagg ggctggagtg ggttggccgt tctagagaca aagctaacag tttcaccaca 180
 gaatacgtcg cgtctgtgaa aggtagattc accatctcac gagaagattc aaagaactca 240
 gtgtatctgc aaatgaacag cctgaaaacc gaagacacgg ccgtgtatta ctgtgctaga 300
 acaaattacg atttttcctt ggacgtctgg ggccaaggga ccacggtcac cgtctcctca 360

<210> 226
 <211> 120
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 226
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ala Cys Ala Ala Ser Gly Phe Thr Phe Ser Asp Tyr
 20 25 30
 Tyr Met Asp Trp Val Arg Gln Val Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Gly Arg Ser Arg Asp Lys Ala Asn Ser Phe Thr Thr Glu Tyr Val Ala
 50 55 60
 Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Glu Asp Ser Lys Asn Ser
 65 70 75 80
 Val Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr
 85 90 95
 Tyr Cys Ala Arg Thr Asn Tyr Asp Phe Ser Leu Asp Val Trp Gly Gln
 100 105 110
 Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 227
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 227
 ggattcacct tcagtgacta ttac

24

<210> 228
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 228
 Gly Phe Thr Phe Ser Asp Tyr Tyr
 1 5

<210> 229
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>

<223> synthetic

<400> 229

tctagagaca aagctaacag tttcaccaca

30

<210> 230

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 230

Ser Arg Asp Lys Ala Asn Ser Phe Thr Thr
1 5 10

<210> 231

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 231

gctagaacaa attacgattt ttccttggac gtc

33

<210> 232

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 232

Ala Arg Thr Asn Tyr Asp Phe Ser Leu Asp Val
1 5 10

<210> 233

<211> 321

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 233

gacatccaga tgaccagtc tccatcctca ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca ggacattaac aattatttag cctggtttca gcagaaacca 120

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gggaacgccc ctaagtcctt gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aagttcagcg gcagtggatc tgggacagac ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ctgccaacaa tatagtactt acccgatcac cttcggccaa 300
gggacacgac tggagattaa a                                     321

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<210> 234
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 234

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	Asp	Ile	Asn	Asn	Tyr
	20						25				30				
Leu	Ala	Trp	Phe	Gln	Gln	Lys	Pro	Gly	Asn	Ala	Pro	Lys	Ser	Leu	Ile
	35					40					45				
Tyr	Ala	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	Ser	Thr	Tyr	Pro	Ile
				85				90						95	
Thr	Phe	Gly	Gln	Gly	Thr	Arg	Leu	Glu	Ile	Lys					
			100					105							

<210> 235
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 235
 caggacatta acaattat 18

<210> 236
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 236
 Gln Asp Ile Asn Asn Tyr
 1 5

<210> 237

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

<220>
<223> synthetic

<400> 237
gctgcatcc

9

<210> 238
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 238
Ala Ala Ser
1

<210> 239
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 239
caacaatata gtacttaccc gatcacc

27

<210> 240
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 240
Gln Gln Tyr Ser Thr Tyr Pro Ile Thr
1 5

<210> 241
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 241
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60
acctgtactg tctctggtgg ctccatcagt agttaccact ggagctggat ccggcagcct 120
ctagggaagg gactggagtg gattgggtat atctattaca gtgggagcac caattacaac 180
ccctccctca agagtcgggt caccatatca gtagacacgt ccaaaaacca gttctccctg 240
aagctgagct ctgtgaccgc tgcggatacg gccgtgtatt actgtgagag agggggtagc 300
agcatctggc cctttgacta ctggggccag ggaaccctgg tcaccgtctc ctca 354

<210> 242
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 242
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr
20 25 30
His Trp Ser Trp Ile Arg Gln Pro Leu Gly Lys Gly Leu Glu Trp Ile
35 40 45
Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
50 55 60
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65 70 75 80
Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95
Arg Gly Gly Ser Ser Ile Trp Pro Phe Asp Tyr Trp Gly Gln Gly Thr
100 105 110
Leu Val Thr Val Ser Ser
115

<210> 243
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 243
ggtggctcca tcagtagtta ccac 24

<210> 244
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 244

Gly Gly Ser Ile Ser Ser Tyr His
1 5

<210> 245
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 245
atctattaca gtgggagcac c

21

<210> 246
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 246
Ile Tyr Tyr Ser Gly Ser Thr
1 5

<210> 247
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 247
gcgagagggg gtagcagcat ctggcccttt gactac

36

<210> 248
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 248
Ala Arg Gly Gly Ser Ser Ile Trp Pro Phe Asp Tyr
1 5 10

<210> 249
<211> 321
<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 249

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gacatccaga tgacccagtc tccttccacc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggccagtc gagtattagt agctggttgg cctgggtatca gcagaaatca 120
gggaaagccc ctaaactcct gatctctaag gcgtctactt tagaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca ccatcagcag cctgcagcct 240
gatgattttg caacttatta ctgccaacag tataatatatt attcgtggac gttcggccaa 300
gggaccaagg tggaatcaa a 321
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<210> 250

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 250

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Asp Ile Gln Met Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly
 1           5           10           15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Trp
          20           25           30
Leu Ala Trp Tyr Gln Gln Lys Ser Gly Lys Ala Pro Lys Leu Leu Ile
        35           40           45
Ser Lys Ala Ser Thr Leu Glu 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
Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Ile Tyr Ser Trp
          85           90           95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
        100           105
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<210> 251

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 251

cagagtatta gtagctgg

18

<210> 252

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 252

Gln Ser Ile Ser Ser Trp
1 5

<210> 253

<211> 9

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 253

aaggcgtct

9

<210> 254

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 254

Lys Ala Ser
1

<210> 255

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 255

caacagtata atatttattc gtggacg

27

<210> 256

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 256

Gln Gln Tyr Asn Ile Tyr Ser Trp Thr
1 5

<210> 257
 <211> 360
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 257
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 acctgcacct tctccgggtt ctcactcagc actagtggag tgggtgtggg ctggatccgt 120
 cagccccag gagtggccct ggagtggctt gcactcattt attggaatga tgataaacgc 180
 ttcagcccat ctctgaagag tcggctcacc atcaccaaag acacctcaa aaaccaggtg 240
 gtccttaca tgaccaacat ggacctgtg gacacagcca catattactg tgcacacagg 300
 agacttgga tatactactt tgactactgg ggccaggga ccctggtcac cgtctcctca 360

<210> 258
 <211> 120
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 258
 Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
 1 5 10 15
 Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser
 20 25 30
 Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Val Ala Leu Glu
 35 40 45
 Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Phe Ser Pro Ser
 50 55 60
 Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn Gln Val
 65 70 75 80
 Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
 85 90 95
 Cys Ala His Arg Arg Leu Gly Leu Tyr Tyr Phe Asp Tyr Trp Gly Gln
 100 105 110
 Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 259
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 259
 gggttctcac tcagcactag tggagtgggt

30

<210> 260
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 260
Gly Phe Ser Leu Ser Thr Ser Gly Val Gly
1 5 10

<210> 261
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 261
atttattgga atgatgataa a 21

<210> 262
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 262
Ile Tyr Trp Asn Asp Asp Lys
1 5

<210> 263
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 263
gcacacagga gacttggact atactacttt gactac 36

<210> 264
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 264
 Ala His Arg Arg Leu Gly Leu Tyr Tyr Phe Asp Tyr
 1 5 10

<210> 265
 <211> 321
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 265
 gacatccagt tgaccagtc tccatccttc ctgtctgcat ctgtaggaga cagagtcacc 60
 atcacttgct gggccagtca gggcattagc agttatttag cctggtatca gcaaaaacca 120
 gggaaagccc ctaagctcct gatctatgct gcatccactt tgcaaagtgg ggtcccatca 180
 aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
 gaagattttg caacttatta ctgtcaacag gttcatattt acccattcac tttcggccct 300
 gggaccaaaag tggatatcaa a 321

<210> 266
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 266
 Asp Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Trp Ala Ser Gln Gly Ile Ser Ser Tyr
 20 25 30
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45
 Tyr Ala Ala Ser Thr 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 Gln Gln Val His Ile Tyr Pro Phe
 85 90 95
 Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
 100 105

<210> 267
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 267
cagggcatta gcagttat 18

<210> 268
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 268
Gln Gly Ile Ser Ser Tyr
1 5

<210> 269
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 269
gctgcatcc 9

<210> 270
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 270
Ala Ala Ser
1

<210> 271
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 271
caacaggttc atatttaccc attcact 27

<210> 272
<211> 9
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 272

Gln Gln Val His Ile Tyr Pro Phe Thr

1

5

<210> 273

<211> 366

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 273

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tcctgcaagg cttctgggta caccctaagc agctatggta tcagctgggt gcgacaggcc 120
cctggacaag gacttgagtg gatgggggtgg atcagcgctt acaatggaaa cacaaactat 180
gtcagaagc tccagggtag actcaccatg accacagaca catccacgag cacagcctac 240
atggagctga ggagcctgag atctgacgac acggccgtat attattgttc gagagacggg 300
ccctttaaga tatccttttt cggtatggac gtctggggcc aaggggaccac ggtcaccgtc 360
tcctca 366
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<210> 274

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 274

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1          5          10          15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Leu Ser Ser Tyr
20          25          30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35          40          45
Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu
50          55          60
Gln Gly Arg Leu Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65          70          75          80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85          90          95
Ser Arg Asp Gly Pro Phe Lys Ile Ser Phe Phe Gly Met Asp Val Trp
100         105         110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115          120
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<210> 275

<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 275
ggttacaccc taagcagcta tggt

24

<210> 276
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 276
Gly Tyr Thr Leu Ser Ser Tyr Gly
1 5

<210> 277
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 277
atcagcgctt acaatggaaa caca

24

<210> 278
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 278
Ile Ser Ala Tyr Asn Gly Asn Thr
1 5

<210> 279
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 279

tcgagagacg ggccctttaa gatatccttt ttcggtatgg acgtc

45

<210> 280

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 280

Ser	Arg	Asp	Gly	Pro	Phe	Lys	Ile	Ser	Phe	Phe	Gly	Met	Asp	Val
1				5				10					15	

<210> 281

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 281

gacatccaga	tgaccacgctc	tccatcctcc	ctgtctgcat	ctgtaggaga	cagagtcacc	60
atcacttgcc	gggcaagtca	gagcattagc	agctatttaa	attggtatca	gcagaaacca	120
gggaaagccc	ctaagctcct	gatctatgct	gcatccagtt	tgcaaagtgg	gggtcccgta	180
aggttcagtg	gcagtggatc	tgggacagat	ttcactctca	ccatcagcag	tctgcaacct	240
gaagattttg	caacttacta	ctgtcaacag	agttacagta	cccctccgat	caccttcggc	300
caagggacac	gactggagat	taaa				324

<210> 282

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 282

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

<210> 283
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 283
cagagcatta gcagctat

18

<210> 284
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 284
Gln Ser Ile Ser Ser Tyr
1 5

<210> 285
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 285
gctgcatcc

9

<210> 286
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 286
Ala Ala Ser
1

<210> 287
<211> 30
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic

<400> 287

caacagagtt acagtacccc tccgatcacc

30

<210> 288

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 288

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

<210> 289

<211> 354

<212> DNA

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<400> 289

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ccaggcaagg ggctggagtg ggtggcagtt atatggatat atggaaggaa taaacactat 180
gtagattccg tgaagggccg attcaccatc tccagagaca attccaagaa cacggtgtat 240
ctgcaaataa acagcctgag agccgaggac tcggctgtgt attattgtgt gagagggggg 300
cagctcggcg cttttgatta ctggggccag gggaccctgg tcaccgtctc ctca 354

<210> 290

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

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<400> 290

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

Val	Arg	Gly	Gly	Gln	Leu	Gly	Ala	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr
			100					105					110		
Leu	Val	Thr	Val	Ser	Ser										
			115												

<210> 291
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<400> 291
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<210> 292
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 <212> PRT
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<220>
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<400> 292
 Gly Phe Thr Phe Ser Ser Tyr Gly
 1 5

<210> 293
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 <212> DNA
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<220>
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<400> 293
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<210> 294
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<220>
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<400> 294
 Ile Trp Tyr Asp Gly Arg Asn Lys
 1 5

<210> 295

<211> 33
<212> DNA
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<220>
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<400> 295
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<210> 296
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
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<400> 296
Val Arg Gly Gly Gln Leu Gly Ala Phe Asp Tyr
1 5 10

<210> 297
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<212> DNA
<213> Artificial Sequence

<220>
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cctggccagg ctcccaggct cctcatctat ggtgcatcca gcagggccac tggcatccca 180
gacagggtca gtggcagtggt gtctgggaca gacttcactc tcaccatcag cagactggag 240
cctgaagatt ttgcagtgtg ttactgtcag cagtatggta gctcaccttg gacgttcggc 300
caagggacca aggtggaaat caaa 324

<210> 298
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
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<400> 298
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 Tyr 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			
Trp	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys						
			100					105									

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<220>
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<210> 300
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<220>
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<400> 300
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 1 5

<210> 301
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 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 301
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<210> 302
 <211> 3
 <212> PRT
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<220>
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<400> 302
 Gly Ala Ser
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<210> 303
<211> 27
<212> DNA
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<220>
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<400> 303
cagcagtatg gtagctcacc ttggacg 27

<210> 304
<211> 9
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<220>
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<400> 304
Gln Gln Tyr Gly Ser Ser Pro Trp Thr
1 5

<210> 305
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
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ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtaa taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacactgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagaggggggt 300
ccgtgggggtg cttttgatat ctggggccaa gggacaatgg tcaccgtctc ttca 354

<210> 306
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
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<400> 306
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1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ser Ser Ser Tyr
20 25 30

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

<210> 307
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 307
 ggattcacct ccagtagcta tggc

24

<210> 308
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 308
 Gly Phe Thr Ser Ser Ser Tyr Gly
 1 5

<210> 309
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 309
 atatggtatg atggaagtaa taaa

24

<210> 310
 <211> 8
 <212> PRT
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<220>

<223> synthetic

<400> 310

Ile Trp Tyr Asp Gly Ser Asn Lys
1 5

<210> 311

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 311

gcgagagggg gtccgtgggg tgcttttgat atc 33

<210> 312

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 312

Ala Arg Gly Gly Pro Trp Gly Ala Phe Asp Ile
1 5 10

<210> 313

<211> 366

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 313

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cagcaccag	ggcagggcct	ggagtggatt	ggatacatct	attatattgg	gaacacatac	180
tacaatccgt	cccttgagag	tcgagttacc	atgtcaattg	acacgtctaa	gaaccagttc	240
tccctaaaac	tgagctctgt	gactgccgcg	gacacggcca	tatactactg	tgcgcgacag	300
gagttcgtcc	cgggcgctga	atatttccta	cactggggcc	agggcatacct	ggtcaccgtc	360
tcctca						366

<210> 314

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 314
 Gln Val Gln Leu His Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Ser Val Ser Gly Gly Ser Ile Ser Asn Gly
 20 25 30
 Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Gln Gly Leu Glu
 35 40 45
 Trp Ile Gly Tyr Ile Tyr Tyr Ile Gly Asn Thr Tyr Tyr Asn Pro Ser
 50 55 60
 Leu Glu Ser Arg Val Thr Met Ser Ile Asp Thr Ser Lys Asn Gln Phe
 65 70 75 80
 Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Ile Tyr Tyr
 85 90 95
 Cys Ala Arg Gln Glu Phe Val Pro Gly Ala Glu Tyr Phe Leu His Trp
 100 105 110
 Gly Gln Gly Ile Leu Val Thr Val Ser Ser
 115 120

<210> 315
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 315
 ggtggctcca tcagtaatgg tggttactac 30

<210> 316
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 316
 Gly Gly Ser Ile Ser Asn Gly Gly Tyr Tyr
 1 5 10

<210> 317
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 317
 atctattata ttgggaacac a 21

<210> 318
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 318
Ile Tyr Tyr Ile Gly Asn Thr
1 5

<210> 319
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 319
gcgcgacagg agttcgtccc gggcgctgaa tatttcctac ac 42

<210> 320
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 320
Ala Arg Gln Glu Phe Val Pro Gly Ala Glu Tyr Phe Leu His
1 5 10

<210> 321
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
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<400> 321
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atcacctgcc gggcaagtca gaccgttaac accttttttaa attggtatca acagaaacca 120
gggaaagccc ctaaactcct gatctttggg gcgtccagtt tgcaaagtgg ggtcccatca 180
cggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcgg tctacagcct 240
gaagactttg caatttatta ctgtcagcag agttacagtg tccctccgat caccttcggc 300
caaggacac gactggagat tgaa 324

<210> 322
<211> 108

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 322
Asp 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 Thr Val Asn Thr Phe
20 25 30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Phe Gly Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Gly Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Ile Tyr Tyr Cys Gln Gln Ser Tyr Ser Val Pro Pro
85 90 95
Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Glu
100 105

<210> 323
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
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<400> 323
cagaccgtta acaccttt

18

<210> 324
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 324
Gln Thr Val Asn Thr Phe
1 5

<210> 325
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 325
ggtgctcc

9

<210> 326
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 326
Gly Ala Ser
1

<210> 327
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 327
cagcagagtt acagtgtccc tccgatcacc

30

<210> 328
<211> 10
<212> PRT
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<220>
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<400> 328
Gln Gln Ser Tyr Ser Val Pro Pro Ile Thr
1 5 10

<210> 329
<211> 366
<212> DNA
<213> Artificial Sequence

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<400> 329
gaagtgcagc tgggtggagtc tggggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag gcactggatt catctttgat gactatgcc a tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga acagtaatag tttaggctat 180
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa atccctgtat 240
ttgcaaatga gcagtctgag agctgaggac acggccttgt attactgtgt aaaagatgta 300
actagactgg aactacgagg atttcttgac tatttggggcc agggaacca ggtcaccgtc 360

tcttca

366

<210> 330

<211> 122

<212> PRT

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<220>

<223> synthetic

<400> 330

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

<210> 331

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 331

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24

<210> 332

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 332

Gly	Phe	Ile	Phe	Asp	Asp	Tyr	Ala
1				5			

<210> 333

<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 333
attagttgga acagtaatag tttta

24

<210> 334
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
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<400> 334
Ile Ser Trp Asn Ser Asn Ser Leu
1 5

<210> 335
<211> 45
<212> DNA
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<220>
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<400> 335
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45

<210> 336
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
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<400> 336
Val Lys Asp Val Thr Arg Leu Glu Leu Arg Gly Phe Leu Asp Tyr
1 5 10 15

<210> 337
<211> 321
<212> DNA
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<220>
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<400> 337

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 atcacttgcc gggcaagtca ggacattaga aatgatttag gctggcatca gcagaaatca 120
 gggaaagccc ctaagagcct gatctatgct gcatccagtt tgcaaagtgg ggccccatca 180
 aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
 gaagattctg caacttatta ctgtctacag caaaatagtt accctccgac gttcggccaa 300
 gggaccaagg tggaaatcaa a 321

<210> 338
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 338
 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 Asp Ile Arg Asn Asp
 20 25 30
 Leu Gly Trp His Gln Gln Lys Ser Gly Lys Ala Pro Lys Ser Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Ala 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 Ser Ala Thr Tyr Tyr Cys Leu Gln Gln Asn Ser Tyr Pro Pro
 85 90 95
 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 100 105

<210> 339
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 339
 caggacatta gaaatgat 18

<210> 340
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 340
 Gln Asp Ile Arg Asn Asp
 1 5

<210> 341
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 341
gctgcatcc

9

<210> 342
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
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<400> 342
Ala Ala Ser
1

<210> 343
<211> 27
<212> DNA
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<220>
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<400> 343
ctacagcaaa atagttaccc tccgacg

27

<210> 344
<211> 9
<212> PRT
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<220>
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<400> 344
Leu Gln Gln Asn Ser Tyr Pro Pro Thr
1 5

<210> 345
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<212> DNA
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<220>

<223> synthetic

<400> 345

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ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagaaa taaaaactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgttatat 240
ctggaaatga acagcctgag agccgaggac acggctgtgt attactgtgg gagagttcac 300
caatttgggg cttttgatat ctggggccaa gggacaatgg tcaccgtctc ttca 354
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<210> 346

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 346

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Ser Leu Arg Leu Ser Cys Ile Ala Ser Gly Phe Ile Ile Ser Arg Tyr
 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 Tyr Asp Gly Arg Asn Lys Asn Tyr Ala Asp Ser Val
 50           55           60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65           70           75           80
Leu Glu Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85           90           95
Gly Arg Val His Gln Phe Gly Ala Phe Asp Ile Trp Gly Gln Gly Thr
 100          105          110
Met Val Thr Val Ser Ser
 115
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<210> 347

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 347

ggattcatca tcagtagata tggc

24

<210> 348

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

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<400> 348
Gly Phe Ile Ile Ser Arg Tyr Gly
1 5

<210> 349
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<212> DNA
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<220>
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<400> 349
atatggtatg atggaagaaa taaa

24

<210> 350
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<212> PRT
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<220>
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<400> 350
Ile Trp Tyr Asp Gly Arg Asn Lys
1 5

<210> 351
<211> 33
<212> DNA
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<220>
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<400> 351
gggagagttc accaatttgg ggcttttgat atc

33

<210> 352
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
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<400> 352
Gly Arg Val His Gln Phe Gly Ala Phe Asp Ile
1 5 10

<210> 353

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

<220>
<223> synthetic

<400> 353
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ctctcctgca gggccagtc gagtgtagc agcagcttct tagcctggta ccagcagaaa 120
cctggccagg ctcccaggct cctcatctat ggtgcatcca gcagggccac tggcatccca 180
gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag 240
cctgaagatt ttgcagtgtg ttactgtcag caatatggta ggtcaccttg gacgttcggc 300
caagggacca aggtggcaat caaa 324

<210> 354
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<212> PRT
<213> Artificial Sequence

<220>
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<400> 354
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1 5 10 15
Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser
20 25 30
Phe Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
35 40 45
Ile Tyr 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 Arg Ser Pro
85 90 95
Trp Thr Phe Gly Gln Gly Thr Lys Val Ala Ile Lys
100 105

<210> 355
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
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<400> 355
cagagtgtta gcagcagctt c 21

<210> 356
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<220>

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<400> 356

Gln Ser Val Ser Ser Ser Phe
1 5

<210> 357

<211> 9

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 357

ggtgcatcc

9

<210> 358

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 358

Gly Ala Ser
1

<210> 359

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 359

cagcaatatg gtaggtcacc ttggacg

27

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<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 360

Gln Gln Tyr Gly Arg Ser Pro Trp Thr
1 5

<210> 361
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 361
 caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60
 acctgcactg tttccggtgg ctccatcaac aatggtggtc actactggac ctggatccgg 120
 caacaccag ggaagggcct agaatggatt gggtacattt attatattgg gaccacttat 180
 tacaatccgt ccctcgagag tcgactttcc ctatcagtgg acacgtctaa gaatcagttc 240
 tccctgaagc tgagctctgt gactgccgcg gacacggcca tttattactg tgcgagaagc 300
 agtttatcag tgtctgaggc ttttgatgtc tggggccaag ggacaatggt caccgtctct 360
 tca 363

<210> 362
 <211> 121
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 362
 Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Asn Asn Gly
 20 25 30
 Gly His Tyr Trp Thr Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
 35 40 45
 Trp Ile Gly Tyr Ile Tyr Tyr Ile Gly Thr Thr Tyr Tyr Asn Pro Ser
 50 55 60
 Leu Glu Ser Arg Leu Ser Leu Ser Val Asp Thr Ser Lys Asn Gln Phe
 65 70 75 80
 Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Ile Tyr Tyr
 85 90 95
 Cys Ala Arg Ser Ser Leu Ser Val Ser Glu Ala Phe Asp Val Trp Gly
 100 105 110
 Gln Gly Thr Met Val Thr Val Ser Ser
 115 120

<210> 363
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 363

ggtggctcca tcaacaatgg tggtcactac

30

<210> 364

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 364

Gly Gly Ser Ile Asn Asn Gly Gly His Tyr
1 5 10

<210> 365

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 365

atttattata ttgggaccac t

21

<210> 366

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 366

Ile Tyr Tyr Ile Gly Thr Thr
1 5

<210> 367

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 367

gcgagaagca gtttatcagt gtctgaggct tttgatgtc

39

<210> 368

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 368

Ala Arg Ser Ser Leu Ser Val Ser Glu Ala Phe Asp Val
1 5 10

<210> 369

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 369

gacatccaga tgaccagtc tccatcctcc ctgtctgcat ctgtaggaga cagaatcacc 60
atcacttgcc gggggagtca gaacattggc agctttttaa gttggtatca acagagacca 120
gggaaggccc ctaaactcct aatctttggg gcatacaatt tgcaagggtg ggtcccatca 180
aggttcagtg gcagtggatc cgggacagat ttcactctca ccatcagtag tctgcaacct 240
gaagattttg caacttactt ctgtcagcag agttatagta cccctccgat caccttcggc 300
caagggacac gactggagat taaa 324

<210> 370

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 370

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

<210> 371

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 371

cagaacattg gcagcttt

18

<210> 372

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 372

Gln Asn Ile Gly Ser Phe

1

5

<210> 373

<211> 9

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 373

ggtgcatac

9

<210> 374

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 374

Gly Ala Tyr

1

<210> 375

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 375

cagcagagtt atagtacccc tccgatcacc

30

<210> 376

<211> 10

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 376
Gln Gln Ser Tyr Ser Thr Pro Pro Ile Thr
1 5 10

<210> 377
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 377
caggtgcagc tgcaggagtc gggcccagga ctggtgaggc cttcacagac cctgtccctc 60
acctgcaactg tctctggtgg ctccatcagc aatggtgggtt actattggac ctggatccgc 120
caaaaccag ggaagggcct agaatggatt ggatacatct attacattgg gaccacctac 180
tacaaccgt ccctcgagag tcgactttcc ctatcagtag acacgtctaa gaaccagttc 240
tccctgaagc tgacctctgt gactgccgcg gacacggccg tttattactg tgcgagaagc 300
agtttagcag tgtctgaggc ttttgatatac tggggccaag ggacaatggt caccgtctct 360
tca 363

<210> 378
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 378
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg Pro Ser Gln
1 5 10 15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Asn Gly
20 25 30
Gly Tyr Tyr Trp Thr Trp Ile Arg Gln Asn Pro Gly Lys Gly Leu Glu
35 40 45
Trp Ile Gly Tyr Ile Tyr Tyr Ile Gly Thr Thr Tyr Tyr Asn Pro Ser
50 55 60
Leu Glu Ser Arg Leu Ser Leu Ser Val Asp Thr Ser Lys Asn Gln Phe
65 70 75 80
Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95
Cys Ala Arg Ser Ser Leu Ala Val Ser Glu Ala Phe Asp Ile Trp Gly
100 105 110
Gln Gly Thr Met Val Thr Val Ser Ser
115 120

<210> 379
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 379
ggtaggctcca tcagcaatgg tggttactat 30

<210> 380
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 380
Gly Gly Ser Ile Ser Asn Gly Gly Tyr Tyr
1 5 10

<210> 381
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 381
atctattaca ttgggaccac c 21

<210> 382
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 382
Ile Tyr Tyr Ile Gly Thr Thr
1 5

<210> 383
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 383
gcgagaagca gtttagcagt gtctgaggct tttgatatc 39

<210> 384
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 384
Ala Arg Ser Ser Leu Ala Val Ser Glu Ala Phe Asp Ile
1 5 10

<210> 385
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 385
gacatccaga tgaccagtc tccatcctcc ctgtctgcat ctgtaggcga cagattcacc 60
atcacttgcc gggcgagtca gagcattggc agcttttttaa gttggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaacag agttacaata cccctccgat caccttcggc 300
caaggacac gactggagat taaa 324

<210> 386
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 386
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Phe Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Gly Ser Phe
20 25 30
Leu Ser Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Asn Thr Pro Pro
85 90 95
Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys

<210> 387
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 387
cagagcattg gcagcttt

18

<210> 388
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 388
Gln Ser Ile Gly Ser Phe
1 5

<210> 389
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 389
gctgcatcc

9

<210> 390
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 390
Ala Ala Ser
1

<210> 391
<211> 30
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic

<400> 391

caacagagtt acaataacccc tccgatcacc

30

<210> 392

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 392

Gln Gln Ser Tyr Asn Thr Pro Pro Ile Thr

1

5

10

<210> 393

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 393

caggtgcagc tgggtgcaatc tgggactgag gtgaagaggc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggatt caccttcacc ggctattata tatactgggt gcgacaggcc 120
cctggagagg ggcttgagt gatgggggtg atcaaccctc acagtgggtg cacaaaatac 180
gcacagaagt ttcagggcag ggtcaccctg accagggaca cgtccatcaa tacagcctac 240
ctggacctga tcagtctgcg atctgacgac acggccgtat attactgtgc gagaatcggg 300
ggtgggggct actcttccta ctttgactac tggggccagg gaaccctggt caccgtctcc 360
tca 363

<210> 394

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 394

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

65					70					75				80
Leu	Asp	Leu	Ile	Ser	Leu	Arg	Ser	Asp	Asp	Thr	Ala	Val	Tyr	Tyr
				85					90				95	Cys
Ala	Arg	Ile	Gly	Gly	Gly	Gly	Tyr	Ser	Ser	Tyr	Phe	Asp	Tyr	Trp
			100					105					110	Gly
Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser						
		115					120							

<210> 395
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 395
 ggattcacct tcaccggcta ttat 24

<210> 396
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 396
 Gly Phe Thr Phe Thr Gly Tyr Tyr
 1 5

<210> 397
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 397
 atcaaccctc acagtgggtg caca 24

<210> 398
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 398
 Ile Asn Pro His Ser Gly Gly Thr
 1 5

<210> 399
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 399
gcgagaatcg ggggtggggg ctactcttcc tactttgact ac 42

<210> 400
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

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

<210> 401
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 401
gacatccaac tgaccagtc tccatcttcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gactattagt acctatttaa attggtatca gcagaaacca 120
gggaatgccc ctaaactcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagaggatc tgggacagat ttcactctca ccatcagcag tctccaacct 240
gaagattttg ccacttacta ctgtcaacag ggttacacta cccctccgat caccttcggc 300
caagggacac gactggagat taaa 324

<210> 402
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 402
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 Thr Ile Ser Thr Tyr
20 25 30

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

<210> 403
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 403
 cagactatta gtacctat

18

<210> 404
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 404
 Gln Thr Ile Ser Thr Tyr
 1 5

<210> 405
 <211> 9
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 405
 gctgcatcc

9

<210> 406
 <211> 3
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 406
Ala Ala Ser
1

<210> 407
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 407
caacagggtt acactacccc tccgatcacc 30

<210> 408
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 408
Gln Gln Gly Tyr Thr Thr Pro Pro Ile Thr
1 5 10

<210> 409
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 409
gagggtgcagc tgttgggaatc tggggggaggc ttggtacagc ctgggggggtc cctgagactc 60
tcctgtgcag cctctggatt caccttttagc agctatgccca tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcagat attagtggta gtggtcttag cacatactac 180
gcagactccg tgaagggccg gttcgccatc tccagagaca attccaagaa catgttgtat 240
ctgcaaatga acaggctgag agccgaggac acggccgtct attactgtgc gaaagagccc 300
tctcactgga acggtgaagc gtttgatatt tggggccaag ggacaatggt caccgtctct 360
tca 363

<210> 410
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 410

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

<210> 411
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 411
 ggattcacct ttagcagcta tgcc

24

<210> 412
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 412
 Gly Phe Thr Phe Ser Ser Tyr Ala
 1 5

<210> 413
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 413
 attagtggta gtggtccttag caca

24

<210> 414
 <211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 414
Ile Ser Gly Ser Gly Leu Ser Thr
1 5

<210> 415
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 415
gcgaaagagc cctctcactg gaacggtgaa gcgtttgata tt 42

<210> 416
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 416
Ala Lys Glu Pro Ser His Trp Asn Gly Glu Ala Phe Asp Ile
1 5 10

<210> 417
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 417
gacatccaga tgaccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca ggatattagc agttgggttag cctgggtatca gcagaaacca 120
gggaaagccc ctaaactcct gatctatact acagccaatt tacaaagtgg ggtcccatcc 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagtct 240
gaagattttg caacttacta ttgtcaacag gctaacagtt tcccattcac tttcggctct 300
gggaccaaa gggatataa a 321

<210> 418
<211> 107
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 418

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

<210> 419

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 419

caggatatta gcagttgg

18

<210> 420

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 420

Gln	Asp	Ile	Ser	Ser	Trp
1				5	

<210> 421

<211> 9

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 421

actacagcc

9

<210> 422
 <211> 3
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 422
 Thr Thr Ala
 1

<210> 423
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 423
 caacaggcta acagtttccc attcact

27

<210> 424
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 424
 Gln Gln Ala Asn Ser Phe Pro Phe Thr
 1 5

<210> 425
 <211> 366
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 425
 cagctgcaac tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccttc 60
 acctgcactg tctctggtgg ctccatcagt agtaattatt actactgggg ctgggtccgc 120
 cagtccccgg ggaagggact ggagtggatc gggagtatct atcacactgg gaacgcctac 180
 gacaatccgt ccctcaagag tcgagtcacc atttccgtag acacgtccaa gaatcagttc 240
 tccctgaacc tgaactctgt gaccgccgca gacacggcta tttattattg tgcgagacat 300
 catagcagtt cgtcctggtg gtacttcgat gtctggggcc gtggcaccct ggtcattgtc 360
 tcctca 366

<210> 426
 <211> 122
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 426
 Gln Leu Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
 1 5 10 15
 Thr Leu Ser Phe Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Asn
 20 25 30
 Tyr Tyr Tyr Trp Gly Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu
 35 40 45
 Trp Ile Gly Ser Ile Tyr His Thr Gly Asn Ala Tyr Asp Asn Pro Ser
 50 55 60
 Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe
 65 70 75 80
 Ser Leu Asn Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Ile Tyr Tyr
 85 90 95
 Cys Ala Arg His His Ser Ser Ser Ser Trp Trp Tyr Phe Asp Val Trp
 100 105 110
 Gly Arg Gly Thr Leu Val Ile Val Ser Ser
 115 120

<210> 427
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 427
 ggtggctcca tcagtagtaa ttattactac 30

<210> 428
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 428
 Gly Gly Ser Ile Ser Ser Asn Tyr Tyr Tyr
 1 5 10

<210> 429
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>

<223> synthetic

<400> 429

atctatcaca ctgggaacgc c

21

<210> 430

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 430

Ile Tyr His Thr Gly Asn Ala
1 5

<210> 431

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 431

gcgagacatc atagcagttc gtcctggtgg tacttcgatg tc

42

<210> 432

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 432

Ala Arg His His Ser Ser Ser Ser Trp Trp Tyr Phe Asp Val
1 5 10

<210> 433

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 433

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ctctcctgca gggccagtca gactgttagc aacagccact tagcctggtgta ccagcagaaa 120

cctggccagg ctcccaggct cctcatctat ggtacatcca gcagggccac tggcatccca 180
gacaggttca gtggcagtgg gtctgggacc gacttctctc tcaccatcat cagactggag 240
cctgacgatt ttgcagtata tttctgtcag cagcatgaaa gttcacctcc cacttttggc 300
cagggggcca agctcgagat caaa 324

<210> 434

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 434

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

<210> 435

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 435

cagactgtta gcaacagcca c

21

<210> 436

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 436

Gln	Thr	Val	Ser	Asn	Ser	His
1				5		

<210> 437

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<212> DNA
<213> Artificial Sequence

<220>
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<400> 437
ggtacatcc

9

<210> 438
<211> 3
<212> PRT
<213> Artificial Sequence

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<400> 438
Gly Thr Ser
1

<210> 439
<211> 27
<212> DNA
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<220>
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<400> 439
cagcagcatg aaagttcacc tcccact

27

<210> 440
<211> 9
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<220>
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<400> 440
Gln Gln His Glu Ser Ser Pro Pro Thr
1 5

<210> 441
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
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<400> 441
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tcctgtgcag cctctggaat caccttcagt agctatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcactc acatcatatg atggaagtaa aaaatactat 180
tcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagtctgag acctgaggac acggctgtgt attactgtgc gaaagataaa 300
gggggagacg actactacgg tatggacgtc tggggccaag ggaccacggt caccgtctcc 360
tca 363

<210> 442
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
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<400> 442
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 Ile Thr Phe Ser Ser Tyr
20 25 30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Leu Thr Ser Tyr Asp Gly Ser Lys Lys Tyr Tyr Ser 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 Pro Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Lys Asp Lys Gly Gly Asp Asp Tyr Tyr Gly Met Asp Val Trp Gly
100 105 110
Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 443
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 443
ggaatcacct tcagtagcta tggc 24

<210> 444
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
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<400> 444
Gly Ile Thr Phe Ser Ser Tyr Gly
1 5

<210> 445
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 445
acatcatatg atggaagtaa aaaa

24

<210> 446
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 446
Thr Ser Tyr Asp Gly Ser Lys Lys
1 5

<210> 447
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 447
gcgaaagata aagggggaga cgactactac ggtatggacg tc

42

<210> 448
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 448
Ala Lys Asp Lys Gly Gly Asp Asp Tyr Tyr Gly Met Asp Val
1 5 10

<210> 449
<211> 324

<212> DNA
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<220>
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<400> 449
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ctctcctgca gggccagtca gtggattagc agcagctact tagcctggta ccagcagaaa 120
cctggccagg ctcccaggct cctcatctat ggtgctttca gcagggcccc tggcatccca 180
ggcaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag 240
cctgaagatt ttgcagtgtg ttactgtcag cagtatggta gttcaccgta cacttttggc 300
caggggacca agctggagat caat 324

<210> 450
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 450
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 Trp Ile 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 Tyr Gly Ala Phe Ser Arg Ala Pro Gly Ile Pro Gly 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
Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Asn
100 105

<210> 451
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 451
cagtggatta gcagcagcta c 21

<210> 452
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
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<400> 452
Gln Trp Ile Ser Ser Ser Tyr
1 5

<210> 453
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 453
ggtgctttc 9

<210> 454
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 454
Gly Ala Phe
1

<210> 455
<211> 27
<212> DNA
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<220>
<223> synthetic

<400> 455
cagcagtatg gtagttcacc gtacact 27

<210> 456
<211> 9
<212> PRT
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<220>
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<400> 456
Gln Gln Tyr Gly Ser Ser Pro Tyr Thr
1 5

<210> 457
 <211> 366
 <212> DNA
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<220>
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<400> 457
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 tcctgtaaga cttctgggta cacctttacc aacaatggta tcagctgggt gcgacaggctc 120
 cctggacaag ggcttgagtg gatgggatgg atcagccctt ataatggtaa tacaaagtat 180
 gcacagaagt tccagggcag agtcaccatg accacagaca catcgacgac tacagtctac 240
 atggacgtga ggagcctgag atctgacgac acggccgttt atttctgtgc gagagatggg 300
 cccattacga tctcctactt cggatatggac gtctggggcc aagggaccac ggtcaccgtc 360
 tcctca 366

<210> 458
 <211> 122
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 458
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 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Asn Asn
 20 25 30
 Gly Ile Ser Trp Val Arg Gln Val Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45
 Gly Trp Ile Ser Pro Tyr Asn Gly Asn Thr Lys Tyr Ala Gln Lys Phe
 50 55 60
 Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Thr Thr Val Tyr
 65 70 75 80
 Met Asp Val Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Phe Cys
 85 90 95
 Ala Arg Asp Gly Pro Ile Thr Ile Ser Tyr Phe Gly Met Asp Val Trp
 100 105 110
 Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 459
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 459
 ggttacacct ttaccaacaa tggt

<210> 460
<211> 8
<212> PRT
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<220>
<223> synthetic

<400> 460
Gly Tyr Thr Phe Thr Asn Asn Gly
1 5

<210> 461
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 461
atcagccctt ataatggtaa taca

24

<210> 462
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 462
Ile Ser Pro Tyr Asn Gly Asn Thr
1 5

<210> 463
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 463
gcgagagatg ggcccattac gatctcctac ttcggtatgg acgtc

45

<210> 464
<211> 15
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 464

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

<210> 465

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 465

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atcacttgcc	gggcaagtca	gagtattagc	acctatttaa	attggtatca	gcagaaacca	120
gggaaagccc	ctaaactcct	gatctatgct	gcatccactt	tgcaaagtgg	gggtcccatca	180
aggttcgggtg	gcagtggatc	tgggacagac	ttcactctca	ccgtcagcag	tctgcaacct	240
gaagattttg	caacttacta	ctgtcaacag	agttacagta	cccctccgat	caccttcggc	300
caagggacac	gactggagat	taat				324

<210> 466

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 466

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

<210> 467

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 467
cagagtatta gcacctat 18

<210> 468
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 468
Gln Ser Ile Ser Thr Tyr
1 5

<210> 469
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 469
gctgcatcc 9

<210> 470
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 470
Ala Ala Ser
1

<210> 471
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 471
caacagagtt acagtacccc tccgatcacc 30

<210> 472
<211> 10
<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 472

Gln Gln Ser Tyr Ser Thr Pro Pro Ile Thr

1 5 10

<210> 473

<211> 354

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 473

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tcctgtgcag cgtctggatt caccgtcaat agatatggca tacactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt acatgggtatg atggaagaaa taaatacttt 180
gccgactccg tgaagggccg attctccttc tccagagaca gttccacgaa cacgttgtat 240
ctgcaaatga acagtctgag agccgaggac acggctgtat attactgtgc gagggggggga 300
ttgtttggat actttgacta ctggggccag ggaaccctgg tcaccgtctc ctca 354
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<210> 474

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 474

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1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Val Asn Arg Tyr
20 25 30
Gly Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Val Thr Trp Tyr Asp Gly Arg Asn Lys Tyr Phe Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Ser Phe Ser Arg Asp Ser Ser Thr Asn Thr Leu Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Gly Gly Leu Phe Gly Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
100 105 110
Leu Val Thr Val Ser Ser
115
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<210> 475

<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 475
ggattcaccg tcaatagata tggc

24

<210> 476
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
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<400> 476
Gly Phe Thr Val Asn Arg Tyr Gly
1 5

<210> 477
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 477
acatggtatg atggaagaaa taaa

24

<210> 478
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 478
Thr Trp Tyr Asp Gly Arg Asn Lys
1 5

<210> 479
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 479

gcgagggggg gattgtttgg atactttgac tac

33

<210> 480

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 480

Ala Arg Gly Gly Leu Phe Gly Tyr Phe Asp Tyr
1 5 10

<210> 481

<211> 324

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 481

gaaattgtgt tgacgcagtc tccagacacc ctgtctttgt ctccagggga aagagccacc 60
ctctcctgca gggccagtca gagggttgcc ggcagctact tagcctggta ccagcagaaa 120
cctggccagg ctcccagact cctcatctat ggtgcatcca gcagggccac tggcatccca 180
gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag 240
cctgaagatt ttgcagtgtg ttactgtcag cagtatggta cctcaccttg gacgttcggc 300
caggggacca aggtggaaat caca 324

<210> 482

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 482

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

<210> 483
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 483
cagagtgttg ccggcagcta c

21

<210> 484
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 484
Gln Ser Val Ala Gly Ser Tyr
1 5

<210> 485
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 485
ggtgcatcc

9

<210> 486
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
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<400> 486
Gly Ala Ser
1

<210> 487
<211> 27
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<220>

<223> synthetic

<400> 487

cagcagtatg gtacctcacc ttggacg

27

<210> 488

<211> 9

<212> PRT

<213> Artificial Sequence

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<223> synthetic

<400> 488

Gln Gln Tyr Gly Thr Ser Pro Trp Thr

1

5

<210> 489

<211> 354

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 489

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tcctgtgcag cgtctggatt caccttcagt agctatggca tacactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtatg gtggaaataa taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaataa acagcctgag agccgaggac acggctttat atcactgtgc gagaagtggg 300
aacttcggtg cttttgatat ctggggccaa gggacaatgg tcaccgtctc ttca 354

<210> 490

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 490

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 Ser Tyr
20 25 30
Gly Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Val Ile Trp Tyr Gly Gly Asn Asn 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
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr His Cys
85 90 95

Ala	Arg	Ser	Gly	Asn	Phe	Gly	Ala	Phe	Asp	Ile	Trp	Gly	Gln	Gly	Thr
			100					105					110		
Met	Val	Thr	Val	Ser	Ser										
			115												

<210> 491
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 491
 ggattcacct tcagtagcta tggc 24

<210> 492
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 492
 Gly Phe Thr Phe Ser Ser Tyr Gly
 1 5

<210> 493
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 493
 atatggtatg gtggaaataa taaa 24

<210> 494
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 494
 Ile Trp Tyr Gly Gly Asn Asn Lys
 1 5

<210> 495

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

<220>
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<400> 495
gcgagaagtg ggaacttcgg tgcttttgat atc 33

<210> 496
<211> 11
<212> PRT
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<220>
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<400> 496
Ala Arg Ser Gly Asn Phe Gly Ala Phe Asp Ile
1 5 10

<210> 497
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
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<400> 497
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ctctcctgca gggccagtca gagggttagc agctacttag cctggtacca gcagaaacct 120
ggccaggctc ccaggctcct catctatggt gcatccagca gggccactgg catcccagac 180
aggttcagtg gcagtggtgc tgggacagac ttcattctca ccatcaacag actggagcct 240
gaagattttg cagtctatta ctgtcagcac tatggtaact caccttggac gttcggccaa 300
gggaccaagg tggaaatcaa a 321

<210> 498
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 498
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 Tyr
20 25 30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
35 40 45
Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly

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

<210> 499
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 499
 cagagtgtta gcagctac 18

<210> 500
 <211> 6
 <212> PRT
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<220>
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<400> 500
 Gln Ser Val Ser Ser Tyr
 1 5

<210> 501
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 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 501
 ggtgcatcc 9

<210> 502
 <211> 3
 <212> PRT
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<220>
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<400> 502
 Gly Ala Ser
 1

<210> 503
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 503
 cagcactatg gtaactcacc ttggacg

27

<210> 504
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 504
 Gln His Tyr Gly Asn Ser Pro Trp Thr
 1 5

<210> 505
 <211> 223
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> hCTLA-4 NP_005205.2

<400> 505
 Met Ala Cys Leu Gly Phe Gln Arg His Lys Ala Gln Leu Asn Leu Ala
 1 5 10 15
 Thr Arg Thr Trp Pro Cys Thr Leu Leu Phe Phe Leu Leu Phe Ile Pro
 20 25 30
 Val Phe Cys Lys Ala Met His Val Ala Gln Pro Ala Val Val Leu Ala
 35 40 45
 Ser Ser Arg Gly Ile Ala Ser Phe Val Cys Glu Tyr Ala Ser Pro Gly
 50 55 60
 Lys Ala Thr Glu Val Arg Val Thr Val Leu Arg Gln Ala Asp Ser Gln
 65 70 75 80
 Val Thr Glu Val Cys Ala Ala Thr Tyr Met Met Gly Asn Glu Leu Thr
 85 90 95
 Phe Leu Asp Asp Ser Ile Cys Thr Gly Thr Ser Ser Gly Asn Gln Val
 100 105 110
 Asn Leu Thr Ile Gln Gly Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile
 115 120 125
 Cys Lys Val Glu Leu Met Tyr Pro Pro Pro Tyr Tyr Leu Gly Ile Gly
 130 135 140
 Asn Gly Thr Gln Ile Tyr Val Ile Asp Pro Glu Pro Cys Pro Asp Ser
 145 150 155 160

Asp	Phe	Leu	Leu	Trp	Ile	Leu	Ala	Ala	Val	Ser	Ser	Gly	Leu	Phe	Phe
				165					170					175	
Tyr	Ser	Phe	Leu	Leu	Thr	Ala	Val	Ser	Leu	Ser	Lys	Met	Leu	Lys	Lys
			180					185					190		
Arg	Ser	Pro	Leu	Thr	Thr	Gly	Val	Tyr	Val	Lys	Met	Pro	Pro	Thr	Glu
		195					200					205			
Pro	Glu	Cys	Glu	Lys	Gln	Phe	Gln	Pro	Tyr	Phe	Ile	Pro	Ile	Asn	
	210					215					220				

<210> 506

<211> 154

<212> PRT

<213> Artificial Sequence

<220>

<223> hCTLA-4-mmH (aa K36-D161 of NP_005205.2 with
C-terminal myc-myc-hexahistidine tag)

<400> 506

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

<210> 507

<211> 154

<212> PRT

<213> Artificial Sequence

<220>

<223> MfCTLA-4-mmH (aa K36-D161 of XP_005574071.1 with
C-terminal myc-myc-hexahistidine tag)

<400> 507

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

Asn	Val	Glu	Val	His	Thr	Ala	Gln	Thr	Gln	Thr	His	Arg	Glu	Asp	Tyr
	195						200					205			
Asn	Ser	Thr	Leu	Arg	Val	Val	Ser	Ala	Leu	Pro	Ile	Gln	His	Gln	Asp
	210					215					220				
Trp	Met	Ser	Gly	Lys	Glu	Phe	Lys	Cys	Lys	Val	Asn	Asn	Lys	Asp	Leu
225					230					235					240
Pro	Ala	Pro	Ile	Glu	Arg	Thr	Ile	Ser	Lys	Pro	Lys	Gly	Ser	Val	Arg
				245					250					255	
Ala	Pro	Gln	Val	Tyr	Val	Leu	Pro	Pro	Pro	Glu	Glu	Glu	Met	Thr	Lys
			260					265					270		
Lys	Gln	Val	Thr	Leu	Thr	Cys	Met	Val	Thr	Asp	Phe	Met	Pro	Glu	Asp
	275						280					285			
Ile	Tyr	Val	Glu	Trp	Thr	Asn	Asn	Gly	Lys	Thr	Glu	Leu	Asn	Tyr	Lys
	290					295					300				
Asn	Thr	Glu	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Tyr	Phe	Met	Tyr	Ser
305					310					315					320
Lys	Leu	Arg	Val	Glu	Lys	Lys	Asn	Trp	Val	Glu	Arg	Asn	Ser	Tyr	Ser
			325						330					335	
Cys	Ser	Val	Val	His	Glu	Gly	Leu	His	Asn	His	His	Thr	Thr	Lys	Ser
			340					345					350		
Phe	Ser	Arg	Thr	Pro	Gly	Lys									
			355												

<210> 509

<211> 446

<212> PRT

<213> Artificial Sequence

<220>

<223> R4659: HC

<400> 509

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		
Glu	Met	Ser	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val
	35					40						45			
Ser	Ser	Ile	Arg	Thr	Ser	Gly	Thr	Thr	Lys	Tyr	Tyr	Ala	Asp	Ser	Met
	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	Gly	Gly	Gly	Thr	Phe	Leu	His	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val
			100					105					110		
Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala
			115				120					125			
Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly	Thr	Ala	Ala	Leu	Gly	Cys	Leu
	130					135					140				
Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly
145					150					155					160
Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser
				165					170					175	

Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu
			180					185					190		
Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val	Asn	His	Lys	Pro	Ser	Asn	Thr
		195					200					205			
Lys	Val	Asp	Lys	Lys	Val	Glu	Pro	Lys	Ser	Cys	Asp	Lys	Thr	His	Thr
	210					215					220				
Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu	Leu	Gly	Gly	Pro	Ser	Val	Phe
225					230					235					240
Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro
				245					250					255	
Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val
			260					265					270		
Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr
		275					280					285			
Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val
	290					295					300				
Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys
305					310					315					320
Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser
				325					330					335	
Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro
			340					345					350		
Ser	Arg	Asp	Glu	Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val
		355					360					365			
Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly
	370					375					380				
Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp
385					390					395					400
Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp
				405					410					415	
Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His
			420					425					430		
Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Pro	Gly	Lys		
		435					440					445			

<210> 510

<211> 215

<212> PRT

<213> Artificial Sequence

<220>

<223> R4659: LC

<400> 510

Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Val	Ser	Ala	Ser	Val	Gly
1				5				10						15	
Asp	Arg	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Gly	Ile	Ala	Ser	Tyr
		20						25					30		
Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu	Leu	Ile
		35					40					45			
Tyr	Ala	Ala	Ser	Ser	Leu	Gln	Thr	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly
	50					55				60					
Ser	Gly	Tyr	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	Ala	Lys	Ser	Phe	Pro	Met
				85					90					95	
Tyr	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Arg	Thr	Val	Ala
			100					105					110		
Ala	Pro	Ser	Val	Phe	Ile	Phe	Pro	Pro	Ser	Asp	Glu	Gln	Leu	Lys	Ser
		115					120					125			
Gly	Thr	Ala	Ser	Val	Val	Cys	Leu	Leu	Asn	Asn	Phe	Tyr	Pro	Arg	Glu
	130					135					140				
Ala	Lys	Val	Gln	Trp	Lys	Val	Asp	Asn	Ala	Leu	Gln	Ser	Gly	Asn	Ser
145					150					155					160
Gln	Glu	Ser	Val	Thr	Glu	Gln	Asp	Ser	Lys	Asp	Ser	Thr	Tyr	Ser	Leu
				165					170					175	
Ser	Ser	Thr	Leu	Thr	Leu	Ser	Lys	Ala	Asp	Tyr	Glu	Lys	His	Lys	Val
			180				185						190		
Tyr	Ala	Cys	Glu	Val	Thr	His	Gln	Gly	Leu	Ser	Ser	Pro	Val	Thr	Lys
		195					200					205			
Ser	Phe	Asn	Arg	Gly	Glu	Cys									
	210					215									