

SEQUENCE LISTING

<110> MEDIMMUNE, LLC

<120> HUMANIZED ANTI-OX40 ANTIBODIES AND USES THEREOF

<130> OX40H-100W01

<140>

<141>

<150> 62/062,431

<151> 2014-10-10

<160> 98

<170> PatentIn version 3.5

<210> 1

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 1

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

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

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

Tyr	Tyr	Thr	Ser	Lys	Leu	His	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly
	50					55					60				

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

Glu	Asp	Ile	Ala	Thr	Tyr	Phe	Cys	Gln	Gln	Gly	Ser	Ala	Leu	Pro	Trp
				85					90					95	

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

<210> 2
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 2
Arg Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn
1 5 10

<210> 3
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 3
Tyr Thr Ser Lys Leu His Ser
1 5

<210> 4
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 4
Gln Gln Gly Ser Ala Leu Pro Trp Thr
1 5

<210> 5
<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 5

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

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

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

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

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 6

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 6

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 Ala Val Tyr Gly Gly Ser Phe Ser
20 25 30

<210> 7

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 7

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 Ala Val Tyr Gly Asp Ser Phe Ser
20 25 30

<210> 8

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 8

Ser Gly Tyr Trp Asn
1 5

<210> 9

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<221> MOD_RES
<222> (4)..(4)
<223> Gln or Lys

<220>
<221> MOD_RES
<222> (12)..(12)
<223> Trp or Tyr

<220>
<221> MOD_RES
<222> (13)..(13)
<223> Ile or Met

<400> 9
Trp Ile Arg Xaa His Pro Gly Lys Gly Leu Glu Xaa Xaa Gly
1 5 10

<210> 10
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 10
Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly
1 5 10

<210> 11
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 11
Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Met Gly
1 5 10

<210> 12
<211> 14

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 12
Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Trp Ile Gly
1 5 10

<210> 13
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 13
Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile Gly
1 5 10

<210> 14
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 14
Tyr Ile Ser Tyr Asn Gly Ile Thr Tyr His Asn Pro Ser Leu Lys Ser
1 5 10 15

<210> 15
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 15

Tyr Ile Ser Tyr Asn Ala Ile Thr Tyr His Asn Pro Ser Leu Lys Ser
1 5 10 15

<210> 16

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 16

Tyr Ile Ser Tyr Ser Gly Ile Thr Tyr His Asn Pro Ser Leu Lys Ser
1 5 10 15

<210> 17

<211> 32

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
polypeptide

<220>

<221> MOD_RES

<222> (6)..(6)

<223> Pro or Arg

<220>

<221> MOD_RES

<222> (13)..(13)

<223> Phe or Tyr

<220>

<221> MOD_RES

<222> (29)..(29)

<223> Tyr or Phe

<400> 17

Arg Ile Thr Ile Asn Xaa Asp Thr Ser Lys Asn Gln Xaa Ser Leu Gln
1 5 10 15

Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val Tyr Xaa Cys Ala Arg
20 25 30

<210> 18
<211> 32
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 18
Arg Ile Thr Ile Asn Pro Asp Thr Ser Lys Asn Gln Phe Ser Leu Gln
1 5 10 15

Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> 19
<211> 32
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 19
Arg Ile Thr Ile Asn Arg Asp Thr Ser Lys Asn Gln Tyr Ser Leu Gln
1 5 10 15

Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val Tyr Phe Cys Ala Arg
20 25 30

<210> 20
<211> 32
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 20
Arg Ile Thr Ile Asn Arg Asp Thr Ser Lys Asn Gln Phe Ser Leu Gln
1 5 10 15

Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> 21

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 21

Arg Ile Thr Ile Asn Arg Asp Thr Ser Lys Asn Gln Phe Ser Leu Gln
1 5 10 15

Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val Tyr Phe Cys Ala Arg
20 25 30

<210> 22

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 22

Arg Ile Thr Ile Asn Arg Asp Thr Ser Lys Asn Gln Tyr Ser Leu Gln
1 5 10 15

Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> 23

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 23

Arg Ile Thr Ile Asn Pro Asp Thr Ser Lys Asn Gln Tyr Ser Leu Gln
1 5 10 15

Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val Tyr Phe Cys Ala Arg
20 25 30

<210> 24

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 24

Arg Ile Thr Ile Asn Pro Asp Thr Ser Lys Asn Gln Tyr Ser Leu Gln
1 5 10 15

Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> 25

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 25

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

<210> 26

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 26

Tyr Lys Tyr Asp Tyr Asp Ala Gly His Ala Met Asp Tyr
1 5 10

<210> 27

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 27

Tyr Lys Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr
1 5 10

<210> 28

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 28

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
1 5 10

<210> 29

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 29

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 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 Tyr Thr Ser Lys Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

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

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

<210> 30

<211> 214

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 30

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 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 Tyr Thr Ser Lys Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

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

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

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

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

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

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

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

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

Phe Asn Arg Gly Glu Cys
210

<210> 31

<211> 642

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 31

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 ggcaaggccc ccaagctgct gatctactac accagcaagc tgcacagcgg cgtgcccagc 180
 agattcagcg gcagcggctc cggcaccgac tacaccctga ccatcagcag cctgcagccc 240
 gaggacttcg ccacctacta ctgccagcag ggctccgccc tgccctggac ctttggccag 300
 ggcaccaagg tggaaatcaa gcgtacgggtg gctgcaccat ctgtcttcat cttcccgcca 360
 tctgatgagc agttgaaatc tggaactgcc tctgttgtgt gcctgctgaa taacttctat 420
 cccagagagg ccaaagtaca gtggaagggtg gataacgccc tccaatcggg taactcccag 480
 gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg 540
 ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 600
 ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gt 642

<210> 32

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 32

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	Ser	Asn	Tyr
		20						25				30			

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

Tyr	Tyr	Thr	Ser	Lys	Leu	His	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly
	50					55				60					

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

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

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

<210> 33

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 33

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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
20 25 30

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

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

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 34
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

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acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggcagcac 120
cccggcaagg gcctggaatg gatcggtac atcagctaca acggcatcac ctaccacaac 180
cccagcctga agtcccggat caccatcaac cccgacacca gcaagaacca gttctccctg 240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacagatac 300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggt caccgtgtcc 360
tct 363

<210> 35
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 35
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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

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

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 36
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 36
caggtgcagc tgcaggaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg 60
acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac 120
cccggcaagg gcctggaatg gatcggctac atcagctaca acggcatcac ctaccacaac 180
cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gttctccctg 240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccg gtacagatac 300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggg caccgtgtcc 360
tct 363

<210> 37
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

polypeptide

<400> 37

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 Ala Val Tyr Gly Asp Ser Phe Ser Ser Gly
20 25 30

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

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

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 38

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 38

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acctgtgccg tgtacggcga cagcttcagc agcggctact ggaactggat ccggaagcac 120

cccggcaagg gcctggaata catgggctac atcagctaca acggcatcac ctaccacaac 180

cccagcctga agtccccgat caccatcaac cgggacacca gcaagaacca gtactccctg	240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact tctgcgcccgt gtacagatac	300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggt caccgtgtcc	360
tct	363

<210> 39
 <211> 121
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 39
 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 Ala Val Tyr Gly Asp Ser Phe Ser Ser Gly
 20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
 35 40 45

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

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
 100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 40
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 40
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acctgtgccg tgtacggcga cagcttcagc agcggctact ggaactggat ccggaagcac 120
cccggcaagg gcctggaata catcggtac atcagctaca acggcatcac ctaccacaac 180
cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg 240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact tctgcgcccc gtacagatac 300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggc caccgtgtcc 360
tct 363

<210> 41
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 41
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 Ala Val Tyr Gly Asp Ser Phe Ser Ser Gly
20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
35 40 45

Gly Tyr Ile Ser Tyr Asn Gly Ile Thr Tyr His Asn Pro Ser Leu Lys

50

55

60

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 42

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 42

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cccggcaagg gcctggaata catcggctac atcagctaca acggcatcac ctaccacaac 180

cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gttctccctg 240

cagctgaaca gcgtgacccc cgaggacacc gccgtgtact tctgcgcccgtgtacagatac 300

gactacgacg gcggccacgc catggactac tggggccagg gcaccctgggt caccgtgtcc 360

tct 363

<210> 43

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 43

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 Ala Val Tyr Gly Asp Ser Phe Ser Ser Gly
20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
35 40 45

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

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 44

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 44

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acctgtgccg tgtacggcga cagcttcagc agcggctact ggaactggat ccggaagcac 120

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cccggaagg gcctggaata catcggctac atcagctaca acggcatcac ctaccacaac 180
cccagcctga agtccccgat caccatcaac cgggacacca gcaagaacca gtactccctg 240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacagatac 300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggt caccgtgtcc 360
tct 363

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<210> 45
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 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 45
 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 Ala Val Tyr Gly Asp Ser Phe Ser Ser Gly
 20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
 35 40 45

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

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
 100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser

<210> 46
 <211> 363
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 polynucleotide

<400> 46
 cagggtgcagc tgcaggaaag cggccctggc ctgggtcaagc ccagccagac cctgagcctg 60
 acctgtgccg tgtacggcga cagcttcagc agcgggtact ggaactggat ccggaagcac 120
 cccggcaagg gcctggaata catcggctac atcagctaca acggcatcac ctaccacaac 180
 cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gttctccctg 240
 cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacagatac 300
 gactacgacg gcggccacgc catggactac tggggccagg gcaccctggg caccgtgtcc 360
 tct 363

<210> 47
 <211> 121
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 polypeptide

<400> 47
 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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
 20 25 30
 Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
 35 40 45

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

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 48
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 48
caggtgcagc tgcaggaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg 60
acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac 120
cccggcaagg gcctggaata catcggctac atcagctaca acggcatcac ctaccacaac 180
cccagcctga agtcccggat caccatcaac ccgacacca gcaagaacca gtactccctg 240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact tctgcgcccc gtacagatac 300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggg caccgtgtcc 360
tct 363

<210> 49
<211> 121
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 49

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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
35 40 45

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

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 50

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 50

cagggtgcagc tgcaggaaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg 60

acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac 120

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cccggaagg gcctggaata catcggtac atcagctaca acggcatcac ctaccacaac 180
cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg 240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact tctgcgcccg gtacagatac 300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggt caccgtgtcc 360
tct 363

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<210> 51
 <211> 121
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 51
 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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
 20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
 35 40 45

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

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
 100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 52
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 52
cagggtgcagc tgcaggaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg 60
acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac 120
cccggcaagg gcctggaata catcggctac atcagctaca acggcatcac ctaccacaac 180
cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg 240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccg gtacagatac 300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggg caccgtgtcc 360
tct 363

<210> 53
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 53
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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
35 40 45

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

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 54
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 54
caggtgcagc tgcaggaaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg 60
acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac 120
cccggcaagg gcctggaata catcggctac atcagctaca acggcatcac ctaccacaac 180
cccagcctga agtcccggat caccatcaac cccgacacca gcaagaacca gtactccctg 240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacagatac 300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggt caccgtgtcc 360
tct 363

<210> 55
<211> 121
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 55

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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
35 40 45

Gly Tyr Ile Ser Tyr Asn Ala Ile Thr Tyr His Asn Pro Ser Leu Lys
50 55 60

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

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

Arg Tyr Lys Tyr Asp Tyr Asp Ala Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 56

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 56

cagggtgcagc tgcaggaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg

60

acctgtgccg	tgtacggcgg	cagcttcagc	agcggctact	ggaactggat	ccggaagcac	120
cccggcaagg	gcctggaata	catcggctac	atcagctaca	acgccatcac	ctaccacaac	180
cccagcctga	agtcccggat	caccatcaac	cgggacacca	gcaagaacca	gtactccctg	240
cagctgaaca	gcgtgacccc	cgaggacacc	gccgtgtact	actgcgcccg	gtacaaatac	300
gactacgacg	ccggccacgc	catggactac	tggggccagg	gcaccctggg	caccgtgtcc	360
tct						363

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

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

Gly Tyr Ile Ser Tyr Asn Ala Ile Thr Tyr His Asn Pro Ser Leu Lys
50 55 60

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

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 58
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 58
caggtgcagc tgcaggaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg 60
acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac 120
cccggcaagg gcctggaata catcggctac atcagctaca acgccatcac ctaccacaac 180
cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg 240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacagatac 300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggg caccgtgtcc 360
tct 363

<210> 59
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 59
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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
35 40 45

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

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

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

Arg Tyr Lys Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 60

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 60

cagggtgcagc tgcaggaaaag cggccctggc ctgggtcaagc ccagccagac cctgagcctg 60

acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac 120

cccggcaagg gcctggaata catcggctac atcagctaca acggcatcac ctaccacaac 180

cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg 240

cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacaaatac 300

gactacgacg gcggccacgc catggactac tggggccagg gcaccctggt caccgtgtcc 360

tct 363

<210> 61

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 61

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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
35 40 45

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

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 62

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 62

cagggtgcagc tgcaggaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg

60

acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac	120
cccggcaagg gcctggaata catcggctac atcagctaca gcggcatcac ctaccacaac	180
cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg	240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacagatac	300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggc caccgtgtcc	360
tct	363

<210> 63

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 63

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	Ala	Val	Tyr	Gly	Gly	Ser	Phe	Ser	Ser	Gly
			20					25					30		

Tyr	Trp	Asn	Trp	Ile	Arg	Lys	His	Pro	Gly	Lys	Gly	Leu	Glu	Tyr	Ile
		35					40					45			

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

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

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

Arg	Tyr	Lys	Tyr	Asp	Tyr	Asp	Gly	Gly	His	Ala	Met	Asp	Tyr	Trp	Gly
			100					105					110		

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 64
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 64
caggtgcagc tgcaggaaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg 60
acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac 120
cccggcaagg gcctggaata catcggctac atcagctaca gcggcatcac ctaccacaac 180
cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg 240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacaaatac 300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggg caccgtgtcc 360
tct 363

<210> 65
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 65
Glu Val Gln Leu Gln Glu Ser Gly Pro Ser Leu Val Lys Pro Ser Gln
1 5 10 15

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

Tyr Trp Asn Trp Ile Arg Lys Phe Pro Gly Asn Arg Leu Glu Tyr Met

35

40

45

Gly Tyr Ile Ser Tyr Asn Ala Ile Thr Tyr His Asn Pro Ser Leu Lys
 50 55 60

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

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

Arg Tyr Arg Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
 100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 66

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 polynucleotide

<400> 66

gaggtgcagc tgcaggaaag cggccccagc ctggtcaagc ccagccagac cctgagcctg 60

acctgcagcg tgaccggcga cagcttcacc agcggctact ggaactggat ccggaagtgc 120

cccggcaacc ggctcgagta catgggctac atcagctaca acgccatcac ctaccacaac 180

cccagcctga agtcccggat cagcatcacc cgggacacca gcaagaacca ctactacctg 240

cagctgaaca gcgtgaccac cgaggacacc gccacctact tttgcgcccgtacagatac 300

gactacgacg gcggccacgc catggactac tggggccagg gcaccctggc caccgtgtcc 360

tct 363

<210> 67

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 67

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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
35 40 45

Gly Tyr Ile Ser Tyr Asn Ala Ile Thr Tyr His Asn Pro Ser Leu Lys
50 55 60

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

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

Arg Tyr Lys Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 68

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 68

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caggtgcagc tgcaggaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg      60
acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac      120
cccggcaagg gcctggaata catcggctac atcagctaca acgccatcac ctaccacaac      180
cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg      240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccg gtacaaatac      300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggt caccgtgtcc      360
tct                                                                           363

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<210> 69
 <211> 330
 <212> PRT
 <213> Homo sapiens

<400> 69
 Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1 5 10 15

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

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
 35 40 45

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
 65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
 85 90 95

Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
 100 105 110

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro

115

120

125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
 130 135 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
 145 150 155 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
 165 170 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
 180 185 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
 195 200 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
 210 215 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
 225 230 235 240

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
 245 250 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
 260 265 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
 275 280 285

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
 290 295 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
 305 310 315 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
325 330

<210> 70
<211> 990
<212> DNA
<213> Homo sapiens

<400> 70
gcgtcgacca agggcccatc cgtcttcccc ctggcaccct cctccaagag cacctctggg 60
ggcacagcgg ccctgggctg cctgggtcaag gactacttcc ccgaaccggt gacgggtgtcc 120
tggaactcag gcgctctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca 180
ggactctact ccctcagcag cgtgggtgacc gtgccctcca gcagcttggg caccagacc 240
tacatctgca acgtgaatca caagcccagc aacaccaagg tggacaagag agttgagccc 300
aaatcttgtg aaaaaactca cacatgcccc ccgtgcccag cacctgaact cctgggggga 360
ccgtcagtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggaccctt 420
gaggtcacat gcgtgggtgg ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg 480
tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga gcagtacaac 540
agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aggactggct gaatggcaag 600
gagtacaagt gcaaggcttc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc 660
aaagccaaag ggagccccg agaaccacag gtctacaccc tgcccccatc ccgggaggag 720
atgaccaaga accaggtcag cctgacctgc ctgggtcaaag gcttctatcc cagcgacatc 780
gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcctcccggtg 840
ctggactccg acggctcctt cttcctctat agcaagctca ccgtggacaa gagcaggtgg 900
cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacacg 960
cagaagagct taagcctgtc tccgggtaaa 990

<210> 71
<211> 451
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 71

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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
35 40 45

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

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

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

Arg Tyr Lys Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

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

Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
130 135 140

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

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

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

Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
195 200 205

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

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225 230 235 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
245 250 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
260 265 270

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
275 280 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
290 295 300

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305 310 315 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
325 330 335

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

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

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
370 375 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385 390 395 400

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

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
420 425 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
435 440 445

Pro Gly Lys
450

<210> 72

<211> 1353

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 72

cagggtgcagc tgcaggaaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg	60
acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac	120
cccggcaagg gcctggaata catcggctac atcagctaca acggcatcac ctaccacaac	180
cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg	240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacaaatac	300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggt caccgtgtcc	360
tctgcgtcga ccaagggtccc atccgtcttc cccctggcac cctcctcaa gagcacctct	420
gggggcacag cggccctggg ctgcctggtc aaggactact tccccgaacc ggtgacggtg	480
tcctggaact caggcgctct gaccagcggc gtgcacacct tcccggctgt cctacagtcc	540

tcaggactct actccctcag cagcgtggtg accgtgccct ccagcagctt gggcaccag	600
acctacatct gcaacgtgaa tcacaagccc agcaacacca aggtggacaa gagagttgag	660
cccaaattctt gtgacaaaac tcacacatgc ccaccgtgcc cagcacctga actcctgggg	720
ggaccgtcag tcttctctt cccccaaaaa cccaaggaca ccctcatgat ctcccggacc	780
cctgagggtca catgcgtggt ggtggacgtg agccacgaag accctgaggt caagttcaac	840
tggtacgtgg acggcgtgga ggtgcataat gccaaagacaa agccgcggga ggagcagtac	900
aacagcacgt accgtgtggt cagcgtcctc accgtcctgc accaggactg gctgaatggc	960
aaggagtaca agtgcaaggt ctccaacaaa gccctcccag ccccatcga gaaaaccatc	1020
tccaaagcca aagggcagcc ccgagaacca caggctctaca ccctgcccc atcccgggag	1080
gagatgacca agaaccaggt cagcctgacc tgcctggtca aaggcttcta tcccagcgac	1140
atcgccgtgg agtgggagag caatgggcag ccggagaaca actacaagac cagcctccc	1200
gtgctggact ccgacggctc cttcttcctc tatagcaagc tcaccgtgga caagagcagg	1260
tggcagcagg ggaacgtctt ctcatgctcc gtgatgcatg aggctctgca caaccactac	1320
acgcagaaga gcttaagcct gtctccgggt aaa	1353

<210> 73

<211> 448

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 73

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	Ala	Val	Tyr	Gly	Gly	Ser	Phe	Ser	Ser	Gly
			20					25				30			

Tyr	Trp	Asn	Trp	Ile	Arg	Lys	His	Pro	Gly	Lys	Gly	Leu	Glu	Tyr	Ile
		35				40					45				

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

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

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

Arg Tyr Lys Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

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

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

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

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

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

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

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

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

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg

245

250

255

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

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

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

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

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

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

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

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

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

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

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

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

<210> 74
<211> 1344
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 74
caggtgcagc tgcaggaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg 60
acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac 120
cccggcaagg gcctggaata catcggtac atcagctaca acggcatcac ctaccacaac 180
cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg 240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacaaatac 300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggt caccgtgtcc 360
tctgcgtcga ccaagggtccc cagcgtgttc cccctggccc cttgcagcag aagcaccagc 420
gagagcacag ccgccctggg ctgcctggtg aaggactact tccccgagcc cgtgaccgtg 480
tcctggaaca gcggcgctct gaccagcggc gtgcatacct tccccgccgt gctccagagc 540
agcggactgt actccctgag cagcgtggtg accgtgcctt ccagcagcct gggcaccaag 600
acctacacct gcaacgtgga ccacaagccc agcaacacca aggtggacaa gagagtggag 660
agcaagtacg gccctccctg ccccccttgc cctgcccccg agttcctggg cggacctagc 720
gtgttcctgt tccccccaa gcccaaggac accctgatga tcagcagaac ccccgagggtg 780
acctgcgtgg tgggtggacgt gtcccaggag gaccccgagg tccagtttaa ttggtacgtg 840
gacggcgtgg aagtgcataa cgccaagacc aagcccagag aggagcagtt caacagcacc 900
tacagagtgg tgtccgtgct gaccgtgctg caccaggact ggctgaacgg caaggaatac 960
aagtgcagg tctccaacaa gggcctgcct agcagcatcg agaagaccat cagcaaggcc 1020
aagggccagc cacgggagcc ccaggcttac accctgccac ctagccaaga ggagatgacc 1080
aagaaccagg tgtccctgac ctgtctggtg aaaggcttct atcccagcga tatcgccgtg 1140
gagtgggaga gcaacggcca gcccgagaac aactacaaga ccaccccccc tgtgctggac 1200

agcgacggca gcttcttcct gtactccaga ctgaccgtgg acaagtccag atggcaggag 1260
 ggcaacgtct tcagctgctc cgtgatgcac gaggccctgc acaaccacta cacccagaag 1320
 tccctgagcc tgagcctggg caag 1344

<210> 75
 <211> 451
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 75
 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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
 20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
 35 40 45

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

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

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

Arg Tyr Lys Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
 100 105 110

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

Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
130 135 140

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

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

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

Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
195 200 205

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

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Phe Glu Gly
225 230 235 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
245 250 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
260 265 270

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
275 280 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
290 295 300

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305 310 315 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile
325 330 335

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

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

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
370 375 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385 390 395 400

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

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
420 425 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
435 440 445

Pro Gly Lys
450

<210> 76
<211> 1353
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 76
caggtgcagc tgcaggaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg 60
acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac 120
cccggcaagg gcctggaata catcggctac atcagctaca acggcatcac ctaccacaac 180

cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg	240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacaaatac	300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggt caccgtgtcc	360
tctgcgtcga ccaagggccc atccgtcttc cccctggcac cctcctccaa gagcacctct	420
gggggcacag cggccctggg ctgcctggtc aaggactact tccccgaacc ggtgacggtg	480
tcctggaact caggcgctct gaccagcggc gtgcacacct tcccggctgt cctacagtcc	540
tcaggactct actccctcag cagcgtggtg accgtgccct ccagcagctt gggcacccag	600
acctacatct gcaacgtgaa tcacaagccc agcaacacca aggtggacaa gagagttgag	660
cccaaattct gtgacaaaac tcacacatgc ccaccgtgcc cagcacctga attcgagggg	720
ggaccgtcag tcttctctt cccccaaaa cccaaggaca cctcatgat ctcccggacc	780
cctgagggtca catgcgtggg ggtggacgtg agccacgaag accctgaggt caagttcaac	840
tggtagctgg acggcgtgga ggtgcataat gccaagacaa agccgcggga ggagcagtac	900
aacagcacgt accgtgtggg cagcgtcctc accgtcctgc accaggactg gctgaatggc	960
aaggagtaca agtgcaaggt ctccaacaaa gccctcccag cctccatcga gaaaaccatc	1020
tcaaagcca aagggcagcc ccgagaacca caggtctaca ccctgcccc atcccgggag	1080
gagatgacca agaaccaggt cagcctgacc tgcctgggtca aaggcttcta tcccagcgac	1140
atcgccgtgg agtgggagag caatgggcag ccggagaaca actacaagac cacgcctccc	1200
gtgctggact ccgacggctc cttcttcctc tatagcaagc tcaccgtgga caagagcagg	1260
tggcagcagg ggaacgtctt ctcatgctcc gtgatgcatg aggctctgca caaccactac	1320
acgcagaaga gcctctccct gtctccgggt aaa	1353

<210> 77

<211> 448

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 77

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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
35 40 45

Gly Tyr Ile Ser Tyr Asn Ala Ile Thr Tyr His Asn Pro Ser Leu Lys
50 55 60

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

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

Arg Tyr Lys Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

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

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

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

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

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

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

195

200

205

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

<210> 78

<211> 1344

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 78

caggtgcagc tgcaggaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg	60
acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac	120
cccggcaagg gcctggaata catcggctac atcagctaca acgccatcac ctaccacaac	180
cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg	240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacaaatac	300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggg caccgtgtcc	360
tctgcgtcga ccaagggccc cagcgtgttc cccctggccc cttgcagcag aagcaccagc	420
gagagcacag ccgccctggg ctgcctgggt aaggactact tccccgagcc cgtgaccgtg	480
tcctggaaca gcggcgctct gaccagcggc gtgcatacct tccccgccgt gctccagagc	540
agcggactgt actccctgag cagcgtgggt accgtgcctt ccagcagcct gggcaccaag	600
acctacacct gcaacgtgga ccacaagccc agcaacacca aggtggacaa gagagtggag	660
agcaagtacg gccctccctg ccccccttgc cctgcccccg agttcctggg cggacctagc	720
gtgttcctgt tcccccccaa gcccaaggac accctgatga tcagcagaac ccccagggtg	780
acctgcgtgg tgggtggacgt gtcccaggag gaccccgagg tccagtttaa ttggtacgtg	840

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

Arg Tyr Lys Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

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

Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
130 135 140

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

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

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

Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
195 200 205

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

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Phe Glu Gly
225 230 235 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
245 250 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
260 265 270

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
275 280 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
290 295 300

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305 310 315 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile
325 330 335

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

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

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
370 375 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385 390 395 400

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

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
420 425 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
435 440 445

Pro Gly Lys
450

<210> 80

<211> 1353

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 80

caggtgcagc tgcaggaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg	60
acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac	120
cccggcaagg gcctggaata catcggctac atcagctaca acgccatcac ctaccacaac	180
cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg	240
cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccg gtacaaatac	300
gactacgacg gcggccacgc catggactac tggggccagg gcaccctggg caccgtgtcc	360
tctgcgtcga ccaaggggcc atccgtcttc cccctggcac cctcctccaa gagcacctct	420
gggggacag cggccctggg ctgcctgggc aaggactact tccccgaacc ggtgacgggtg	480
tcctggaact caggcgctct gaccagcggc gtgcacacct tcccggctgt cctacagtcc	540
tcaggactct actccctcag cagcgtgggt accgtgccct ccagcagctt gggcacccag	600
acctacatct gcaacgtgaa tcacaagccc agcaacacca aggtggacaa gagagttgag	660
cccaaattct gtgacaaaac tcacacatgc ccaccgtgcc cagcacctga attcgagggg	720
ggaccgtcag tcttcctctt cccccaaaa cccaaggaca ccctcatgat ctccggacc	780
cctgaggtca catgcgtggg ggtggacgtg agccacgaag accctgaggt caagttcaac	840
tgggtacgtg acggcgtgga ggtgcataat gccaagacaa agccgcggga ggagcagtac	900
aacagcacgt accgtgtggg cagcgtcctc accgtcctgc accaggactg gctgaatggc	960
aaggagtaca agtgcaaggt ctccaacaaa gccctcccag cctccatcga gaaaaccatc	1020
tccaaagcca aagggcagcc ccgagaacca caggtctaca ccctgcccc atcccgggag	1080
gagatgacca agaaccaggg cagcctgacc tgcctgggtc aaggcttcta tcccagcgac	1140
atgcccggtg agtgggagag caatgggcag ccggagaaca actacaagac cacgcctccc	1200
gtgctggact ccgacggctc cttcttcctc tatagcaagc tcaccgtgga caagagcagg	1260
tggcagcagg ggaacgtctt ctcatgctcc gtgatgcatg aggctctgca caaccactac	1320

acgcagaaga gcctctccct gtctccgggt aaa

1353

<210> 81

<211> 445

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 81

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 Ala Val Tyr Gly Gly Ser Phe Ser Ser Gly
20 25 30

Tyr Trp Asn Trp Ile Arg Lys His Pro Gly Lys Gly Leu Glu Tyr Ile
35 40 45

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

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

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

Arg Tyr Lys Tyr Asp Tyr Asp Gly Gly His Ala Met Asp Tyr Trp Gly
100 105 110

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

Val Tyr Pro Leu Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val
130 135 140

Thr Leu Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val

145		150		155		160									
Thr	Trp	Asn	Ser	Gly	Ser	Leu	Ser	Ser	Gly	Val	His	Thr	Phe	Pro	Ala
				165					170					175	
Val	Leu	Gln	Ser	Asp	Leu	Tyr	Thr	Leu	Ser	Ser	Ser	Val	Thr	Val	Pro
			180					185					190		
Ser	Ser	Thr	Trp	Pro	Ser	Glu	Thr	Val	Thr	Cys	Asn	Val	Ala	His	Pro
		195					200					205			
Ala	Ser	Ser	Thr	Lys	Val	Asp	Lys	Lys	Ile	Val	Pro	Arg	Asp	Cys	Gly
	210					215					220				
Cys	Lys	Pro	Cys	Ile	Cys	Thr	Val	Pro	Glu	Val	Ser	Ser	Val	Phe	Ile
225					230					235					240
Phe	Pro	Pro	Lys	Pro	Lys	Asp	Val	Leu	Thr	Ile	Thr	Leu	Thr	Pro	Lys
				245					250					255	
Val	Thr	Cys	Val	Val	Val	Asp	Ile	Ser	Lys	Asp	Asp	Pro	Glu	Val	Gln
			260					265					270		
Phe	Ser	Trp	Phe	Val	Asp	Asp	Val	Glu	Val	His	Thr	Ala	Gln	Thr	Gln
		275					280					285			
Pro	Arg	Glu	Glu	Gln	Phe	Asn	Ser	Thr	Phe	Arg	Ser	Val	Ser	Glu	Leu
	290					295					300				
Pro	Ile	Met	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Phe	Lys	Cys	Arg
305					310					315					320
Val	Asn	Ser	Ala	Ala	Phe	Pro	Ala	Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys
				325					330					335	
Thr	Lys	Gly	Arg	Pro	Lys	Ala	Pro	Gln	Val	Tyr	Thr	Ile	Pro	Pro	Pro
			340					345					350		

Lys Glu Gln Met Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr
355 360 365

Asp Phe Phe Pro Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln
370 375 380

Pro Ala Glu Asn Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly
385 390 395 400

Ser Tyr Phe Val Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu
405 410 415

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

His His Thr Glu Lys Ser Leu Ser His Ser Pro Gly Lys
435 440 445

<210> 82

<211> 1335

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 82

caggtgcagc tgcaggaaag cggccctggc ctggtcaagc ccagccagac cctgagcctg 60

acctgtgccg tgtacggcgg cagcttcagc agcggctact ggaactggat ccggaagcac 120

cccggaagg gcctggaata catcggctac atcagctaca acggcatcac ctaccacaac 180

cccagcctga agtcccggat caccatcaac cgggacacca gcaagaacca gtactccctg 240

cagctgaaca gcgtgacccc cgaggacacc gccgtgtact actgcgcccc gtacaaatac 300

gactacgacg gcggccacgc catggactac tggggccagg gcaccctggc caccgtgtcc 360

tctgcgaaga cgacaccccc atctgtctat cacttgcccc ctggatctgc tgcccaaact 420

aactccatgg tgaccctggg atgcctggtc aagggtatt tccctgagcc agtgacagtg 480

acctggaact ctggatccct gtccagcggc gtgcacacct tcccagctgt cctgcagtct	540
gacctctaca ctctgagcag ctccagtact gtccctcca gcacctggcc cagcgagacc	600
gtcacctgca acgttgccca cccggccagc agcaccaagg tggacaagaa aattgtgccc	660
agggattgtg gttgtaagcc ttgcatatgt accgtcccag aagtatcatc tgtcttcatc	720
ttcccccaa agcccaagga tgtgctcacc attactctga ctctaaggt cacgtgtgtt	780
gtggtagaca tcagcaagga tgatcccag gtccagttca gctggtttgt agatgatgtg	840
gaggtgcaca cagctcagac gcaaccccgaggaggagcagt tcaacagcac tttccgctca	900
gtcagtgaac ttcccatcat gcaccaggac tggctcaatg gcaaggagtt caaatgcagg	960
gtcaacagtg cagctttccc tgccccatc gagaaaacca tctccaaaac caaaggcaga	1020
ccgaaggctc cacaggtgta taccattcca cctcccaagg agcagatggc caaggataaa	1080
gtcagtctga cctgcatgat aacagacttc ttccctgaag acattactgt ggagtggcag	1140
tggaatgggc agccagcgga gaactacaag aacactcagc ccatcatgga cacagatggc	1200
tcttacttcg tctacagcaa gctcaatgtg cagaagagca actgggaggc aggaaatact	1260
ttcacctgct ctgtgttaca tgagggcctg cacaaccacc atactgagaa ggcctctcc	1320
cactctcctg gtaaa	1335

<210> 83

<211> 214

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 83

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	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 Tyr Thr Ser Lys Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

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

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

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

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu
145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
210

<210> 84

<211> 642

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 84
gacatccaga tgacccagag ccccagcagc ctgagcgcca gcgtgggcga cagagtgacc 60
atcacctgtc gggccagcca ggacatcagc aactacctga actggtatca gcagaagccc 120
ggcaaggccc ccaagctgct gatctactac accagcaagc tgcacagcgg cgtgcccagc 180
agattcagcg gcagcggctc cggcaccgac tacaccctga ccatcagcag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcag ggctccgccc tgccctggac ctttggccag 300
ggcaccaagg tggaaatcaa gcgggctgat gcggcgccaa ctgtatccat cttcccacca 360
tccagtgagc agttaacatc tggaggtgcc tcagtcgtgt gcttcttgaa caacttctac 420
cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg 480
aacagttgga ctgatcagga cagcaaagac agcacctaca gcatgagcag caccctcacg 540
ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca 600
tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt 642

<210> 85
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 85
Gln Val Gln Leu Lys Glu Ser Gly Pro Gly Leu Val Gln Pro Ser Gln
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Gly Tyr
20 25 30

Asn Leu His Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Met

35

40

45

Gly Arg Met Arg Tyr Asp Gly Asp Thr Tyr Tyr Asn Ser Val Leu Lys
 50 55 60

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

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

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

Val Thr Val Ser Ser
 115

<210> 86

<211> 441

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 86

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Gly Tyr
 20 25 30

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

Gly Arg Met Arg Tyr Asp Gly Asp Thr Tyr Tyr Asn Ser Val Leu Lys
 50 55 60

Ser Arg Leu Ser Ile Ser Arg Asp Thr Ser Lys Asn Gln Val Phe Leu

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

Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg Glu Glu
275 280 285

Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His
290 295 300

Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala
305 310 315 320

Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg
325 330 335

Pro Lys Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met
340 345 350

Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro
355 360 365

Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn
370 375 380

Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val
385 390 395 400

Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr
405 410 415

Phe Thr Cys Ser Val Leu His Glu Gly Leu His Asn His His Thr Glu
420 425 430

Lys Ser Leu Ser His Ser Pro Gly Lys
435 440

<210> 87

<211> 1323

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 87

cagggtgcagc tgaaggagtc aggacctggt ctgggtgcagc cctcacagac cctgtccctc	60
acctgcactg tctctggggt ctcactaacc ggttacaatt tacactgggt tcgccagcct	120
ccaggaaaagg gtctggagtg gatgggaaga atgaggatg atggagacac atattataat	180
tcagttctca aatccccgact gagcatcagc agggacacct ccaagaacca agttttcttg	240
aaaatgaaca gtctgcaaac ggatgacaca gccatttact attgtaccag agacgggcgt	300
ggtgactcct ttgattactg gggccaagga gtcattgtca cagtctcctc cgcgtcgacg	360
acacccccat ctgtctatcc actggccccct ggatctgtctg cccaaactaa ctccatgggtg	420
accctgggat gcctgggtcaa gggctatttc cctgagccag tgacagtgac ctggaactct	480
ggatccctgt ccagcgggtg gcacaccttc ccagctgtcc tgcagtctga cctctacact	540
ctgagcagct cagtgactgt cccctccagc acctggccca gcgagaccgt cacctgcaac	600
gttgcccacc cggccagcag caccaagggtg gacaagaaaa ttgtgcccag ggattgtggt	660
tgtaagcctt gcatatgtac cgtcccagaa gtatcatctg tcttcatctt ccccccaaag	720
cccaaggatg tgctcaccat tactctgact cctaagggtca cgtgtgttgt ggtagacatc	780
agcaaggatg atcccagggt ccagttcagc tggttttag atgatgtgga ggtgcacaca	840
gctcagacgc aaccccggga ggagcagttc aacagcactt tccgctcagt cagtgaactt	900
cccatcatgc accaggactg gctcaatggc aaggagttca aatgcagggt caacagtgca	960
gctttccctg ccccatcga gaaaaccatc tccaaaacca aaggcagacc gaaggctcca	1020
cagggtgtata ccattccacc tccaaggag cagatggcca aggataaagt cagtctgacc	1080
tgcatgataa cagacttctt ccctgaagac attactgtgg agtggcagtg gaatgggcag	1140
ccagcggaga actacaagaa cactcagccc atcatggaca cagatggctc ttacttcgtc	1200
tacagcaagc tcaatgtgca gaagagcaac tgggaggcag gaaatacttt cacctgctct	1260
gtgttacatg agggcctgca caaccacat actgagaaga gcctctccca ctctcctggt	1320
aaa	1323

<210> 88

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 88

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

Glu Ser Ala Ser Ile Thr Cys Arg Ser Ser Gln Ser Leu Val Tyr Lys
20 25 30

Asp Gly Gln Thr Tyr Leu Asn Trp Phe Leu Gln Arg Pro Gly Gln Ser
35 40 45

Pro Gln Leu Leu Thr Tyr Trp Met Ser Thr Arg Ala Ser Gly Val Ser
50 55 60

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

Ser Arg Val Arg Ala Glu Asp Ala Gly Val Tyr Tyr Cys Gln Gln Val
85 90 95

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

<210> 89

<211> 219

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 89

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

Glu Ser Ala Ser Ile Thr Cys Arg Ser Ser Gln Ser Leu Val Tyr Lys
20 25 30

Asp Gly Gln Thr Tyr Leu Asn Trp Phe Leu Gln Arg Pro Gly Gln Ser
35 40 45

Pro Gln Leu Leu Thr Tyr Trp Met Ser Thr Arg Ala Ser Gly Val Ser
50 55 60

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

Ser Arg Val Arg Ala Glu Asp Ala Gly Val Tyr Tyr Cys Gln Gln Val
85 90 95

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

Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu
115 120 125

Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe
130 135 140

Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg
145 150 155 160

Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser
165 170 175

Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu
180 185 190

Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser
195 200 205

Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
210 215

<210> 90
<211> 657
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<400> 90
gatattgtga tgacccaggg tgcactcccc aatcctgtcc cttctggaga gtcagcttcc 60
atcacctgca ggtctagtca gagtctggta tacaaagacg gccagacata cttgaattgg 120
tttctgcaga ggccaggaca gtctcctcag cttctgacct attggatgtc taccctgtga 180
tcaggagtct cagacagggt cagtggcagt gggtcaggaa catatttcac actgaaaatc 240
agtagagtga gggctgagga tgcgggtgtg tattactgtc agcaagttcg agagtatcct 300
ttcactttcg gctcaggac gaagttggaa ataaaacggg ctgatgcggc gccaactgta 360
tccatcttcc caccatccag tgagcagtta acatctggag gtgcctcagt cgtgtgcttc 420
ttgaacaact tctaccccaa agacatcaat gtcaagtga agattgatgg cagtgaacga 480
caaaatggcg tcctgaacag ttggactgat caggacagca aagacagcac ctacagcatg 540
agcagcacc tcacgttgac caaggacgag tatgaacgac ataacagcta tacctgtgag 600
gccactcaca agacatcaac ttcacccatt gtcaagagct tcaacaggaa tgagtgt 657

<210> 91
<211> 277
<212> PRT
<213> Homo sapiens

<400> 91
Met Cys Val Gly Ala Arg Arg Leu Gly Arg Gly Pro Cys Ala Ala Leu
1 5 10 15

Leu Leu Leu Gly Leu Gly Leu Ser Thr Val Thr Gly Leu His Cys Val

20

25

30

Gly Asp Thr Tyr Pro Ser Asn Asp Arg Cys Cys His Glu Cys Arg Pro
 35 40 45

Gly Asn Gly Met Val Ser Arg Cys Ser Arg Ser Gln Asn Thr Val Cys
 50 55 60

Arg Pro Cys Gly Pro Gly Phe Tyr Asn Asp Val Val Ser Ser Lys Pro
 65 70 75 80

Cys Lys Pro Cys Thr Trp Cys Asn Leu Arg Ser Gly Ser Glu Arg Lys
 85 90 95

Gln Leu Cys Thr Ala Thr Gln Asp Thr Val Cys Arg Cys Arg Ala Gly
 100 105 110

Thr Gln Pro Leu Asp Ser Tyr Lys Pro Gly Val Asp Cys Ala Pro Cys
 115 120 125

Pro Pro Gly His Phe Ser Pro Gly Asp Asn Gln Ala Cys Lys Pro Trp
 130 135 140

Thr Asn Cys Thr Leu Ala Gly Lys His Thr Leu Gln Pro Ala Ser Asn
 145 150 155 160

Ser Ser Asp Ala Ile Cys Glu Asp Arg Asp Pro Pro Ala Thr Gln Pro
 165 170 175

Gln Glu Thr Gln Gly Pro Pro Ala Arg Pro Ile Thr Val Gln Pro Thr
 180 185 190

Glu Ala Trp Pro Arg Thr Ser Gln Gly Pro Ser Thr Arg Pro Val Glu
 195 200 205

Val Pro Gly Gly Arg Ala Val Ala Ala Ile Leu Gly Leu Gly Leu Val
 210 215 220

Leu Gly Leu Leu Gly Pro Leu Ala Ile Leu Leu Ala Leu Tyr Leu Leu
225 230 235 240

Arg Arg Asp Gln Arg Leu Pro Pro Asp Ala His Lys Pro Pro Gly Gly
245 250 255

Gly Ser Phe Arg Thr Pro Ile Gln Glu Glu Gln Ala Asp Ala His Ser
260 265 270

Thr Leu Ala Lys Ile
275

<210> 92

<211> 272

<212> PRT

<213> Mus musculus

<400> 92

Met Tyr Val Trp Val Gln Gln Pro Thr Ala Leu Leu Leu Leu Gly Leu
1 5 10 15

Thr Leu Gly Val Thr Ala Arg Arg Leu Asn Cys Val Lys His Thr Tyr
20 25 30

Pro Ser Gly His Lys Cys Cys Arg Glu Cys Gln Pro Gly His Gly Met
35 40 45

Val Ser Arg Cys Asp His Thr Arg Asp Thr Leu Cys His Pro Cys Glu
50 55 60

Thr Gly Phe Tyr Asn Glu Ala Val Asn Tyr Asp Thr Cys Lys Gln Cys
65 70 75 80

Thr Gln Cys Asn His Arg Ser Gly Ser Glu Leu Lys Gln Asn Cys Thr
85 90 95

Pro Thr Gln Asp Thr Val Cys Arg Cys Arg Pro Gly Thr Gln Pro Arg
100 105 110

Gln Asp Ser Gly Tyr Lys Leu Gly Val Asp Cys Val Pro Cys Pro Pro
115 120 125

Gly His Phe Ser Pro Gly Asn Asn Gln Ala Cys Lys Pro Trp Thr Asn
130 135 140

Cys Thr Leu Ser Gly Lys Gln Thr Arg His Pro Ala Ser Asp Ser Leu
145 150 155 160

Asp Ala Val Cys Glu Asp Arg Ser Leu Leu Ala Thr Leu Leu Trp Glu
165 170 175

Thr Gln Arg Pro Thr Phe Arg Pro Thr Thr Val Gln Ser Thr Thr Val
180 185 190

Trp Pro Arg Thr Ser Glu Leu Pro Ser Pro Pro Thr Leu Val Thr Pro
195 200 205

Glu Gly Pro Ala Phe Ala Val Leu Leu Gly Leu Gly Leu Gly Leu Leu
210 215 220

Ala Pro Leu Thr Val Leu Leu Ala Leu Tyr Leu Leu Arg Lys Ala Trp
225 230 235 240

Arg Leu Pro Asn Thr Pro Lys Pro Cys Trp Gly Asn Ser Phe Arg Thr
245 250 255

Pro Ile Gln Glu Glu His Thr Asp Ala His Phe Thr Leu Ala Lys Ile
260 265 270

<210> 93

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 93

Arg Tyr Asp Tyr Asp Gly
1 5

<210> 94

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 94

Lys Tyr Asp Tyr Asp Ala
1 5

<210> 95

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 95

Lys Tyr Asp Tyr Asp Gly
1 5

<210> 96

<211> 177

<212> PRT

<213> Homo sapiens

<400> 96

Met Cys Val Gly Ala Arg Arg Leu Gly Arg Gly Pro Cys Ala Ala Leu
1 5 10 15

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

Gly Asp Thr Tyr Pro Ser Asn Asp Arg Cys Cys His Glu Cys Arg Pro
35 40 45

Gly Asn Gly Met Val Ser Arg Cys Ser Arg Ser Gln Asn Thr Val Cys
50 55 60

Arg Pro Cys Gly Pro Gly Phe Tyr Asn Asp Val Val Ser Ser Lys Pro
65 70 75 80

Cys Lys Pro Cys Thr Trp Cys Asn Leu Arg Ser Gly Ser Glu Arg Lys
85 90 95

Gln Leu Cys Thr Ala Thr Gln Asp Thr Val Cys Arg Cys Arg Ala Gly
100 105 110

Thr Gln Pro Leu Asp Ser Tyr Lys Pro Gly Val Asp Cys Ala Pro Cys
115 120 125

Pro Pro Gly His Phe Ser Pro Gly Asp Asn Gln Ala Cys Lys Pro Trp
130 135 140

Thr Asn Cys Thr Leu Ala Gly Lys His Thr Leu Gln Pro Ala Ser Asn
145 150 155 160

Ser Ser Asp Ala Ile Cys Glu Asp Arg Asp Pro Pro Ala Thr Gln Pro
165 170 175

Gln

<210> 97

<211> 175

<212> PRT

<213> Mus musculus

<400> 97

Met Tyr Val Trp Val Gln Gln Pro Thr Ala Leu Leu Leu Leu Ala Leu
1 5 10 15

Thr Leu Gly Val Thr Ala Arg Arg Leu Asn Cys Val Lys His Thr Tyr
20 25 30

Pro Ser Gly His Lys Cys Cys Arg Glu Cys Gln Pro Gly His Gly Met
35 40 45

Val Ser Arg Cys Asp His Thr Arg Asp Thr Leu Cys His Pro Cys Glu
50 55 60

Thr Gly Phe Tyr Asn Glu Ala Val Asn Tyr Asp Thr Cys Lys Gln Cys
65 70 75 80

Thr Gln Cys Asn His Arg Ser Gly Ser Glu Leu Lys Gln Asn Cys Thr
85 90 95

Pro Thr Gln Asp Thr Val Cys Arg Cys Arg Pro Gly Thr Gln Pro Arg
100 105 110

Gln Asp Ser Gly Tyr Lys Leu Gly Val Asp Cys Val Pro Cys Pro Pro
115 120 125

Gly His Phe Ser Pro Gly Asn Asn Gln Ala Cys Lys Pro Trp Thr Asn
130 135 140

Cys Thr Leu Ser Gly Lys Gln Thr Arg His Pro Ala Ser Asp Ser Leu
145 150 155 160

Asp Ala Val Cys Glu Asp Arg Ser Leu Leu Ala Thr Leu Leu Trp
165 170 175

<210> 98

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
6xHis tag

<400> 98

His His His His His His
1 5

