

4329191\_1  
SEQUENCE LISTING

<110> MEMORIAL SLOAN-KETTERING CANCER CENTER  
EUREKA THERAPEUTICS, INC.

<120> ANTIBODIES TARGETING FC RECEPTOR-LIKE 5 AND METHODS OF USE

<130> 072734.0436

<140> PCT/US2016/064550

<141> 2016-12-02

<150> 62/263,586

<151> 2015-12-04

<160> 947

<170> PatentIn version 3.5

<210> 1

<211> 333

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polynucleotide

<400> 1

|                                                                   |     |
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| cagtctgtgt tgacgcagcc accctcagcg tctgggaccc cggggcagag ggtcaccatc | 60  |
| tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc | 120 |
| ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct | 180 |
| gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag | 240 |
| tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc | 300 |
| ttcggaactg ggaccaaggt caccgtccta ggt                              | 333 |

<210> 2

<211> 351

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polynucleotide

<400> 2

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| caggtgcagc tacagcagtg gggcgcagga ctgttgaagc cttcggagac cctgtccctc  | 60  |
| acctgcgctg tgtatggtgg gtccttcagt ggttactact ggagctggat ccgccagccc  | 120 |
| ccaggggaagg ggctggagtg gattggggaa atcaatcata gtggaagcac caactacaac | 180 |
| ccgtcccctca agagtcgagt caccatatca gtagacacgt ccaagaacca gttctccctg | 240 |
| aagctgagct ctgtgaccgc cgcggacacg gccgtgtatt actgtgcgcg cgaagggtccg | 300 |
| tacgacgggt tcgattcttg ggggtcaaggt actctggtga ccgtctcctc a          | 351 |

<210> 3

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 3

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

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

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

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

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

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

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

<210> 4

<211> 117

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 4

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

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

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

Gly Glu Ile Asn His 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

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Arg Glu Gly Pro Tyr Asp Gly Phe Asp Ser Trp Gly Gln Gly Thr Leu  
 100 105 110

Val Thr Val Ser Ser  
 115

<210> 5  
 <211> 336  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 5  
 aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
 tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120  
 ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt 180  
 gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
 ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caattctgtg 300  
 gtattcggcg gagggaccaa gctgaccgtc ctaggt 336

<210> 6  
 <211> 348  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 6  
 caggtccagc tggtacagtc tggcactgag gtgaagaagc ctggggcctc agtgagggtc 60  
 gcctgcaagg cttctgggta cccctttaac aaatatgaca tcaactgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggaggc atcatcccta tctttcgtac aacaaactac 180  
 gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac 240  
 atggagctga gcagcctgag atctgaggac acggccgtat attactgtgc gcgcgaatgg 300  
 ttctactggg atatctgggg tcaaggtact ctggtgaccg tctcctca 348

<210> 7  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 7  
 Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15

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

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
35 40 45

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

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

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

<210> 8

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 8

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

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

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

Gly Gly Ile Ile Pro Ile Phe Arg Thr Thr Asn Tyr Ala Gln Lys Phe  
50 55 60

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

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

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

Thr Val Ser Ser  
115

<210> 9

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

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

<400> 9  
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 tcctgtctctg gaaataaatt ggggactaag tatgtttact ggtatcagaa gaggccaggc 120  
 cagtcccctg tgttggtcat gtatgaagat aatcagcggc cctcagggat cccggagcgg 180  
 ttctctggct ccaactctgg gaacacagcc actctgacca tcagagggac ccagactgtg 240  
 gatgaggctg actattactg tcaggcgtgg gactccgaca ctttcgtggt cttcggcgga 300  
 gggaccaagg tcaccgtcct aggt 324

<210> 10  
 <211> 363  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 10  
 gaggtgcagc tgggtggagac cgggggaggc gtggtccagc ctgggaggtc cctgagactc 60  
 tcctgtgcag cctctggatt caccttcagt agttatggca tgcactgggt ccgccaggct 120  
 ccaggcaagg ggctggagtg ggtggcagtt atatcacatg atggaagtaa taaatactac 180  
 gcagactccg tgaagggccg attcaccatc tccagagaca attccaagga cacgctgtat 240  
 ctgcaaataa acagcctgag aggtgaggac acggccgtat attactgtgc gcgctctaac 300  
 cagtggctctg gttacttctc tttcgattac tgggggtcaag gtactctggt gaccgtctcc 360  
 tca 363

<210> 11  
 <211> 108  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 11  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
 1 5 10 15  
 Thr Ala Ser Ile Ser Cys Ser Gly Asn Lys Leu Gly Thr Lys Tyr Val  
 20 25 30  
 Tyr Trp Tyr Gln Lys Arg Pro Gly Gln Ser Pro Val Leu Val Met Tyr  
 35 40 45

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

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

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

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

<210> 12

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 12

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

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

Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120

<210> 13

<211> 330

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

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<400> 13  
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 acctgtgggg gaaacaacat tggaagtaaa agtgtgacct ggtaccagca gaagccaggc 120  
 caggccccctg tgggtggcat ccattatgat agcgaccggc cctcagggat ccctgagcga 180  
 ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
 gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatcatcc ttatgtcttc 300  
 ggaactggga ccaaggtcac cgtcctaggt 330

<210> 14  
 <211> 351  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 14  
 gaggtgcagc tgggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
 tcctgcaagg cttctgggta cacctttacc acctatggta tcagctgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggatgg atcaacactt acaatgggtca cacaaactat 180  
 gcacagaagc tccagggcag agccacaatg accgcagaca catccacgaa cacagcctac 240  
 atggagctga ggagcctgag atctgacgac actgccgtgt attactgtgc gcgcgttata 300  
 tacggttctg gtgattactg ggggtcaaggc actctggtga ccgtctcctc a 351

<210> 15  
 <211> 110  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 15  
 Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15

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

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

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

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
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Pro Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
                   100                  105                  110

<210> 16  
 <211> 117  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 16  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1                  5                  10                  15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Thr 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 Asn Thr Tyr Asn Gly His Thr Asn Tyr Ala Gln Lys Leu  
           50                  55                  60

Gln Gly Arg Ala Thr Met Thr Ala Asp Thr Ser Thr Asn 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

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

Val Thr Val Ser Ser  
           115

<210> 17  
 <211> 327  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 17  
 tcctatgtgc tgactcagcc actctcagtg tcagtggccc caggaaagac ggccaggatt 60  
 acctgtgggg gaaacaacat tggaagtaaa actgtgcact ggtaccagca gaagccaggc 120  
 caggccccctg tgctggtcac ctattatgat agcgaccggc cctcagggat ccctgagcga 180  
 ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
 gatgaggccg actattactg tcagggtgtgg gatagtagta gtgatcatcg ggtgttcggc 300



ggagggacca agctgaccgt cctaggt

327

<210> 18  
 <211> 348  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 18  
 caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60  
 acctgcaatg tctctggtta ctccatcagc agtggttact tttggggctg gatccggcag 120  
 cccccaggga aggggctgga gtggattggg agtatctatc atagtaggag cacctactac 180  
 aaccctgtccc tcaagagtcg agtcaccata tcagtagaca cgtccaagaa ccagttctcc 240  
 ctgaagctga actctgtgac cgccgcagac acggccgtgt attactgtgc gcgcggttac 300  
 gggtacttcg attactgggg tcaaggtact ctggtgaccg tctcctca 348

<210> 19  
 <211> 109  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 19  
 Ser Tyr Val Leu Thr Gln Pro Leu Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15  
 Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Thr Val  
 20 25 30  
 His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
 35 40 45  
 Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60  
 Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80  
 Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
 85 90 95  
 Arg Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105

<210> 20  
 <211> 116  
 <212> PRT

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&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 20

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

&lt;210&gt; 21

&lt;211&gt; 336

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 21

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| caatctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc  | 60  |
| tcctgcactg gaaccagcag tgacgttggt gggtataact atgtctcctg gtaccaacaa  | 120 |
| caccaggca aagcccccaa actcatgatt tatgatgtca gtaatcggcc ctcaggggtt   | 180 |
| tctaatacgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc | 240 |
| caggctgagg acgaggctga ttattactgc agctcatata caagcagcag cacttcgaag  | 300 |
| gtgttcggcg gagggaccaa gctgaccgtc ctaggt                            | 336 |

&lt;210&gt; 22

&lt;211&gt; 360

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

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<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 22  
gaggtgcagc tggtaggagtc tgggggaggt gtggtacggc ctgggggggtc cctgagactc 60  
tcctgtgcag cctctggatt cacctttggt gattatggca tgagctgggt cgcgcaagct 120  
ccaggggaagg ggctggagtg ggtctctggt attaattgga atggtggttag cacaggttat 180  
gcagactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240  
ctgcaaatga acagtctgag agccgaggac acggccgtat attactgtgc gcgctctaaa 300  
tacaacttcc atgtttacta cgattactgg ggtcaaggta ctctggtgac cgtctcctca 360

<210> 23

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 23

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

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr  
20 25 30

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

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

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

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

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

<210> 24

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 24

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

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

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

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

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

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

Ala Arg Ser Lys Tyr Asn Phe His Val Tyr Tyr Asp Tyr Trp Gly Gln  
100 105 110

Gly Thr Leu Val Thr Val Ser Ser  
115 120

<210> 25  
<211> 333  
<212> DNA  
<213> Artificial Sequence

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

<400> 25  
cagtctgtgt tgacgcagcc accctcagcg tctgggaccc ccgggcagac agtcaccatc 60  
tcttgttctg gaagcaactc caacatcgga agtaattatg tatactggta ccagcagctc 120  
ccaggaacgg cccccaaact cctcatctat aggaataatc agcggccctc aggggtccct 180  
gaccgattct caggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccgc 240  
tccgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgag tgcttatgtc 300  
ttcggaactg ggaccaaggt caccgtccta ggt 333

<210> 26  
<211> 360  
<212> DNA  
<213> Artificial Sequence

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

<400> 26  
caggtgcagc tgggtcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
tcctgcaagg cttctggtta cacctttacc agctatggta tcagctgggt gcgacaggcc 120  
cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaaactat 180

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gcacagaagc tccagggcag agtcaccatg accacagaca catccacgag cacagcctac 240  
 atggagctga ggagcctgag atctgacgac actgccgtgt attactgtgc gcgctcttct 300  
 ggtaacatgg tttcttgga agatatgtgg ggtcaaggta ctctggtgac cgtctcctca 360

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

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

<400> 27  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

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

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

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

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

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

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

<210> 28  
 <211> 120  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 28  
 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 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  
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50

55

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

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

Ala Arg Ser Ser Gly Asn Met Val Ser Trp Lys Asp Met Trp Gly Gln  
100 105 110

Gly Thr Leu Val Thr Val Ser Ser  
115 120

&lt;210&gt; 29

&lt;211&gt; 336

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 29

caatctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60  
tcctgcactg gaaccagcag tgacgttggt ggttataact ctgtctcctg gtaccaacaa 120  
caccaggca aagccccag actcatgatt tatgatgtca gtaatcggcc ctgaggggtt 180  
tctaatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240  
caggctgagg acgaggctga ttattactgc agctcatata caagcagcag cacccttta 300  
gtcttcggaa ctgggacaa ggtcaccgtc ctaggt 336

&lt;210&gt; 30

&lt;211&gt; 348

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 30

caggtgcagc tgggtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
tcctgcaagg cttctggtta cacctttacc agctatggta tcagctgggt gcgacaggcc 120  
cctggacaag ggcttgagt gatgggatgg atcagcgctt acaatggtaa cacaactat 180  
gcacagaagc tccagggcag agtcacatg accacagaca catccacgag cacagcctac 240  
atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gcgcggtgct 300  
gttgcttacc atgattgggg tcaaggtact ctggtgaccg tctcctca 348

&lt;210&gt; 31

&lt;211&gt; 112

&lt;212&gt; PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 31

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

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr  
20 25 30

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

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

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

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

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

<210> 32

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 32

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 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 Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr  
65 70 75 80

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

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

Thr Val Ser Ser  
115

<210> 33  
<211> 333  
<212> DNA  
<213> Artificial Sequence

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

<400> 33  
cagtctgtcg tgacgcagcc gccctcagtg tctgcgcccc caggacagag ggtcaccatc 60  
tcctgctctg gaagcagctc caacatttcg atttatgatg tctcctggta tcagcagctc 120  
ccaggaacag cccccaaact cctcatttat ggcaataata agcgaccctc ggggattgct 180  
gaccgattct ctggctccac gtctggcacg tcagccaccc tgggcatcac cggactccag 240  
actggggacg aggccgatta ttactgcgga acatgggatg acagtctgag tggggggggtg 300  
ttcggcggag ggaccaagct gaccgtccta ggt 333

<210> 34  
<211> 354  
<212> DNA  
<213> Artificial Sequence

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

<400> 34  
cagatgcagc tgggtgcaatc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60  
tcctgcgagg cttctggagg caccctcagc agctatgcta tcaactgggt gcgacaggcc 120  
cctggacaag ggcttgagtg gatgggaggg atcatcccta tgtttggtac agcacactac 180  
gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgaa aacagcctac 240  
atggagctga gcagcctgag atctgaggac actgccgtgt attactgtgc gcgcggtggt 300  
cattacgctt ctttcgatca ttgggggtcaa ggtactctgg tgaccgtctc ctca 354

<210> 35  
<211> 111  
<212> PRT  
<213> Artificial Sequence

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

<400> 35  
Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
1 5 10 15



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

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

Ile Tyr Gly Asn Asn Lys Arg Pro Ser Gly Ile Ala Asp Arg Phe Ser  
50 55 60

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

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

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

<210> 36

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 36

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

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

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

Gly Gly Ile Ile Pro Met Phe Gly Thr Ala His Tyr Ala Gln Lys Phe  
50 55 60

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

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

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

Leu Val Thr Val Ser Ser  
115

<210> 37

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

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

<400> 37  
 cagtctgtgt tgacgcagcc gccctcagtg tctgcggccg caggacagaa ggtcaccatc 60  
 tcctgctctg gaagcgactc caacattggg aataattatg tgtcctggta tcaacacctc 120  
 ccagggacag cccccaaact cctcatttat gacgttaaaa atcgaccctc agggattcct 180  
 gaccggttct ccggctccaa gtctggctcg tcagccaccc taggcatcgc cggactccag 240  
 cctggggacg aggccgatta ttactgcgga acatgggaca gtcggctgga tgcctatgtc 300  
 ttcggaactg ggaccaaggt caccgtccta ggt 333

<210> 38  
 <211> 351  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 38  
 cagatgcagc tggtgcaatc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
 tcctgcaaga cttctggttt cccctttaat atctttggaa tcacctgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggatgg atcagcggtt acaacggtaa cacagactac 180  
 ccacagaagt tccagggcag agtcaccatg tccacagaca catccacgag tacagcctac 240  
 atggagctga ggaacctgaa atctgacgac acggccgtgt attactgtgc gcgcggtgct 300  
 tacggtggta tggatacttg gggtaaggt actctggtga ccgtctcctc a 351

<210> 39  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 39  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Ala Gly Gln  
 1 5 10 15

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

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

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

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60

50

55

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

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

Asp Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
100 105 110

<210> 40  
<211> 117  
<212> PRT  
<213> Artificial Sequence

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

<400> 40  
Gln Met 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 Thr Ser Gly Phe Pro Phe Asn Ile Phe  
20 25 30

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

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

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

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

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

Val Thr Val Ser Ser  
115

<210> 41  
<211> 336  
<212> DNA  
<213> Artificial Sequence

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

<400> 41  
cagtctgtcg tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc

60

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tcctgcactg ggagcacctc caacatcggg gcaggttatg atgtacactg gtatcagcag 120  
 cttccaggaa cagcccccaa actcctcatc tatactaaca actttcggcc ctcaggggtc 180  
 cctgaccgat tctctgcctc caagtctggc acttcagctt ccctggccat cactgggtctc 240  
 caggctgagg atgaggctga ttattactgc ggaacatggg atagcagcct gagtgccgtt 300  
 gtgttcggcg gagggaccaa gctgaccgtc ctaggt 336

<210> 42  
 <211> 354  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 42  
 gaggtgcagc tggtggagtc tggaactgag gtgaagaagc ctggggcctc agtgaaagtc 60  
 tcctgcaagg cttctggtta catgtttacc agttatggtc tcaactgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggatgg atcagcgcta acaatggtaa gacaaattat 180  
 gctaagaaat tccaggacag agtcaccatg accagagaca cttccacgag cacaggctac 240  
 atggaactga ggagcctgag atctgacgac acggccgtat attactgtgc gcgccatatc 300  
 ggtggttctt acttcgatcg ttgggggtcaa ggtactcttg tgaccgtctc ctca 354

<210> 43  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 43  
 Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
 1 5 10 15

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

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

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

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

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

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

<210> 44  
 <211> 118  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 44  
 Glu Val Gln Leu Val Glu Ser Gly Thr Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

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

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

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

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

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

Ala Arg His Ile Gly Gly Ser Tyr Phe Asp Arg Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ser  
 115

<210> 45  
 <211> 327  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 45  
 tcctatgtgc tgactcagcc accctcagtgc tcagtggccc caggaaagac ggccaggatt 60  
 acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120  
 caggcccctg tgctggtcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180  
 ttctctggct ccaactctgg gaacacggcc accctgacca tcagcaggggt cgaagccggg 240  
 gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatcatta tgtcttcgga 300  
 actgggacca aggtcaccgt cctaggt 327

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<210> 46  
 <211> 357  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 46  
 gaggtgcagc tgggtggagac tggggggaggc ttggtacagc ctgggggggtc cctgagactc 60  
 tcctgtgcag cctctggatt cacctttagc agctatgccca tgagctgggt ccgccaggct 120  
 ccaggaagg ggctggagt ggtctcagct attagtggta gtgatggtag cacatactac 180  
 gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240  
 ctgcaaatga acagcctgag agacgaggac acggccgtat attactgtgc gcgctctcat 300  
 gaagctaacc tggttggtga ttggtgggggt caaggtactc tggtgaccgt ctctctca 357

<210> 47  
 <211> 109  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 47  
 Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15  
 Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
 20 25 30  
 His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
 35 40 45  
 Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60  
 Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80  
 Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
 85 90 95  
 Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
 100 105

<210> 48  
 <211> 119  
 <212> PRT  
 <213> Artificial Sequence

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&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 48

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

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

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

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

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

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

Ala Arg Ser His Glu Ala Asn Leu Val Gly Asp Trp Trp Gly Gln Gly  
 100 105 110

Thr Leu Val Thr Val Ser Ser  
 115

&lt;210&gt; 49

&lt;211&gt; 324

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 49

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagtctgtgg tgactcagcc accctcagtg tcagtggccc caggaaagac ggccaggatt  | 60  |
| acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc  | 120 |
| cagggccctg tgctgggtcat ctattatgat agcgaccggc cctcagggat ccctgagcga | 180 |
| ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg  | 240 |
| gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatgtggt attcggcgga  | 300 |
| gggaccaagc tgaccgtcct aggt                                         | 324 |

&lt;210&gt; 50

&lt;211&gt; 354

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

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<400> 50  
gaggtccagc tggtagctgag gtgaagaagc ctggggcctc agtgaaggctc 60  
tcctgcaagg cttctggtta cacctttacc agctacggta tcagctgggt gcgacaggcc 120  
cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaaactat 180  
gcacagaagc tccagggcag agtcaccatg accacagaca catccacgag cacagcctac 240  
atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gcgctgggggt 300  
ggtttcggtg ctgttgatca ttgggggtcaa ggtactctgg tgaccgtctc ctca 354

<210> 51  
<211> 108  
<212> PRT  
<213> Artificial Sequence

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

<400> 51  
Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
1 5 10 15  
Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
20 25 30  
His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
35 40 45  
Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60  
Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
65 70 75 80  
Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp Val  
85 90 95  
Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105

<210> 52  
<211> 118  
<212> PRT  
<213> Artificial Sequence

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

<400> 52  
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15  
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr  
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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 Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr  
   65                                  70                                  75                                  80

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

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

Leu Val Thr Val Ser Ser  
           115

&lt;210&gt; 53

&lt;211&gt; 327

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 53

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| tcttctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaagatc  | 60  |
| acgtgccaag gagacagcct cacagactac catgcaacct ggtaccagca gaagccagga  | 120 |
| caggccccctg tcgctgtcat ctatgctaca aacaaccggc ccactgggat cccagaccga | 180 |
| ttctctggtt ccagttccgg aaacacagct tctttgacca tcactggggc tcaggcggaa  | 240 |
| gatgaggctg actattactg taattcccgg gacagcggca cggacgaagt gttattcggc  | 300 |
| ggagggacca agctgaccgt cctaggt                                      | 327 |

&lt;210&gt; 54

&lt;211&gt; 345

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 54

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| gaggtgcagc tggtggagac tgggggaggc ctggtcaagc ctgggggggc cctgagactc  | 60  |
| tcctgtgcag cctctggatt caccttcagt agctatagca tgaactgggt ccgccaggct  | 120 |
| ccaggggaagg ggctggagtg ggtctcatcc attagtagta gtagtagtta catatactac | 180 |
| gcagactcag tgaagggccg attcaccatc tccagagaca acgccaagaa ctactgtat   | 240 |

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ctgcaaatga acagcctgag agccgaggac acggccgtgt attactgtgc gcgcgggtcag 300  
 gggttacgatt actgggggtca aggtactctg gtgaccgtct cctca 345

<210> 55  
 <211> 109  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 55  
 Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln  
 1 5 10 15

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

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

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

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

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser Gly Thr Asp Glu  
 85 90 95

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

<210> 56  
 <211> 115  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 56  
 Glu Val Gln Leu Val Glu Thr 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 Ser Tyr  
 20 25 30

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

Ser Ser Ile Ser Ser Ser Ser Ser Tyr Ile Tyr Tyr Ala Asp Ser Val  
 50 55 60

## 4329191\_1

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

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

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

Val Ser Ser  
115

<210> 57  
<211> 327  
<212> DNA  
<213> Artificial Sequence

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

<400> 57  
tcctatgtgc tgactcagcc accctcgggtg tcagtggccc caggaaagac ggccaggatt 60  
acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120  
caggcccctg tgctggtcgt ctatgatgat agcgaccggc cctcagggat ccctgagcga 180  
ttctctggct ccaactctgg gaacacggcc accctgagca tcagcagggt cgaagccggg 240  
gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatacatc tgtcttcgga 300  
actgggacca aggtcaccgt cctaggt 327

<210> 58  
<211> 345  
<212> DNA  
<213> Artificial Sequence

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

<400> 58  
caggtgcagc tacagcagtg gggcgcagga ctgttgaagc cttcggagac cctgtccctc 60  
acctgcgctg tctatggtgg gtccttcagt gggtactact ggagctggat ccgccagccc 120  
ccagggaagg ggctggagtg gattggggaa atcaatcata gtggaagcac caactacaac 180  
ccgtccctca agagtcgagt caccatatca gtagacacgt ccaagaacca gttctccctg 240  
aagctgagct ctgtgaccgc cgcggacacg gccgtgtatt actgtgcgcg ctactaccg 300  
ggatatgata tgtgggtgca aggtactctg gtgaccgtct cctca 345

<210> 59  
<211> 109  
<212> PRT  
<213> Artificial Sequence

4329191\_1

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 59

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

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

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

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

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

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

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

<210> 60

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 60

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

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

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

Gly Glu Ile Asn His 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 Tyr Tyr Pro Gly Met Asp Met Trp Gly Gln Gly Thr Leu Val Thr

Val Ser Ser  
115

<210> 61  
<211> 333  
<212> DNA  
<213> Artificial Sequence

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

<400> 61  
caggctgtgc tgactcagcc gccctcaacg tctgggaccc cggggcagag ggtcaccatc 60  
tcttgttctg gaagcagctc caacatcggg agaaatgggtg taaactggta ccagcagctc 120  
ccaggagcgg cccccaaagt cctcatctat aatgataatc agcgaccctc aggggtccct 180  
gaccgagtct ctgggtccca gtctggctcc tcaggcaccc tggccatcga tgggcttcgg 240  
tctgaggatg aggctgatta ttactgtgcg gcatgggatg acagcctgca tgggtgtgga 300  
ttcggcggag ggaccaagct gaccgtccta ggt 333

<210> 62  
<211> 345  
<212> DNA  
<213> Artificial Sequence

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

<400> 62  
caggtccagc tggtagctc tggggctgag gtgaagaagc ctggggcctc agtgaaggctc 60  
tcctgcaagg tttccgata caccctcaat gaattatcca tgcactgggt gcgacaggct 120  
cctggaaaag ggcttgagt gatgggaggt tttgatcctg aagatgggtga aacaatctac 180  
gcacagaagt tccagggcag agtcacatg accgaggaca catctacaga cacagcctac 240  
atggagctga gcagcctgag atctgaggac actgccgtgt attactgtgc gcgcgggtggt 300  
tacggtgatt cttgggggtca aggtactctg gtgaccgtct cctca 345

<210> 63  
<211> 111  
<212> PRT  
<213> Artificial Sequence

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

<400> 63  
Gln Ala Val Leu Thr Gln Pro Pro Ser Thr Ser Gly Thr Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Arg Asn  
Page 29

20

25

30

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

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

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

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

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

&lt;210&gt; 64

&lt;211&gt; 115

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 64

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 Val Ser Gly Tyr Thr Leu Asn Glu Leu  
                   20                                  25                                  30

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

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

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

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

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

Val Ser Ser  
           115

&lt;210&gt; 65

&lt;211&gt; 336

&lt;212&gt; DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 65

```
aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc      60
tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc      120
ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt      180
gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga      240
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caattcttgg      300
gtgttcggcg gagggaccaa gctgaccgtc ctaggt                                336
```

<210> 66

<211> 396

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 66

```
caggtgcagc tggtgcaatc tggggctgag gtgaagaggc ctgggtcctc ggtgaaggtc      60
tcctgcacgg cttctggagg caccttcagc agcgatgcta tcagctgggt gcgacaggcc      120
cctggacaag ggcttgagtg gatgggagga atcatcccta tgtttggtac agcaaactac      180
gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac      240
atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gcgcgaaggc      300
tactactacc cgtctgctta cctgggttct gttctgaacg acatctcttc tgtttacgat      360
gaatgggggc aaggctactc ggtgaccgtc tcctca                                396
```

<210> 67

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 67

```
Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys
1           5           10          15
```

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

```
Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val
          35          40          45
```

```
Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
```

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60

50

55

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

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

<210> 68  
<211> 132  
<212> PRT  
<213> Artificial Sequence

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

<400> 68  
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Arg Pro Gly Ser  
1 5 10 15

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

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

Gly Gly Ile Ile Pro Met Phe Gly Thr Ala Asn Tyr Ala Gln Lys Phe  
50 55 60

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

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

Ala Arg Glu Gly Tyr Tyr Tyr Pro Ser Ala Tyr Leu Gly Ser Val Leu  
100 105 110

Asn Asp Ile Ser Ser Val Tyr Asp Glu Trp Gly Gln Gly Thr Leu Val  
115 120 125

Thr Val Ser Ser  
130

<210> 69  
<211> 336  
<212> DNA  
<213> Artificial Sequence

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

<400> 69  
cagtctgtcg tgacgcagcc gccctcagtg tctgcgcccc caggacagaa ggtcaccatc 60  
tcctgctctg gaagcacctc caacattgga aataatgatg tctcctggta ccagcagctc 120  
ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180  
gaccgattct ctggctccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 240  
actggggacg aggccgatta ttactgcgga acatgggata gcagcgtgag tgcttcttgg 300  
gtcttcggca gagggaccaa gctgaccgtc ctaggt 336

<210> 70  
<211> 348  
<212> DNA  
<213> Artificial Sequence

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

<400> 70  
caggtgcagc tgggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
tcctgcaagg cttctgggta cacctttacc agctatggta tcagctgggt gcgacaggcc 120  
cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaactat 180  
ccacagaagc tccagggcag agtcaccatg accacagacc catccacgag cacagcctac 240  
atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gcgctctatg 300  
acttctttcg attactgggg tcaaggtact ctggtgaccg tctcctca 348

<210> 71  
<211> 112  
<212> PRT  
<213> Artificial Sequence

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

<400> 71  
Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
1 5 10 15  
Lys Val Thr Ile Ser Cys Ser Gly Ser Thr Ser Asn Ile Gly Asn Asn  
20 25 30  
Asp Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45  
Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
50 55 60  
Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln  
65 70 75 80

## 4329191\_1

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

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

<210> 72

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 72

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 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 Pro Gln Lys Leu  
50 55 60

Gln Gly Arg Val Thr Met Thr Thr Asp Pro 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

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

Thr Val Ser Ser  
115

<210> 73

<211> 336

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 73

cagtctgtgt tgacgcagcc gccctcagtg tctgcggccc caggacagaa ggtcaccatc 60

tcctgctctg gaagcaactc caacattggg aataattatg tatcctggta tcagcaactc 120

ccagggacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180

gaccgattct ctggctccag gtctggcacg tcagccaccc tgggcatcac cggactccag 240

## 4329191\_1

actggggacg aggccgatta ttactgcgga acatggaata ccactgtgac tcctggctat 300  
gtcttcggaa ctgggaccaa ggtcacgcgtc ctaggt 336

<210> 74  
<211> 348  
<212> DNA  
<213> Artificial Sequence

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

<400> 74  
gaagtgcagc tggatgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggctc 60  
tcctgcaagg cttctgggta cacctttacc agctatggta tcagctgggt gcgacaggcc 120  
cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaaactat 180  
gcacagaagc tccagggcag agtcaccatg accacagaca catccacgag cacagcctac 240  
atggagctga ggagcctgag atctgacgac accgccatgt attactgtgc gcgctctgtt 300  
tacgacctgg atacttgggg tcaaggtact ctggtgaccg tctcctca 348

<210> 75  
<211> 112  
<212> PRT  
<213> Artificial Sequence

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

<400> 75  
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln 15  
1 5 10

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

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

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

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

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asn Thr Thr Val 95  
85 90 95

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

<210> 76

## 4329191\_1

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

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

<400> 76  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr 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 Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr  
 65 70 75 80  
 Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Met Tyr Tyr Cys  
 85 90 95  
 Ala Arg Ser Val Tyr Asp Leu Asp Thr Trp Gly Gln Gly Thr Leu Val  
 100 105 110  
 Thr Val Ser Ser  
 115

<210> 77  
 <211> 336  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 77  
 cagtctgtcg tgacgcagcc gccctcagtg tctgcggccc caggacagaa ggtcaccatc 60  
 tcctgctctg gaagcagctc caacattggg aataattatg tctcctggta ccagcagctc 120  
 ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180  
 gaccgattct ctggctccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 240  
 actggggacg aggccgatta ttactgcgga acatgggata gcagcctggg ggccccttat 300  
 gtcttcggaa ctgggaccaa ggtcaccgtc ctaggt 336

<210> 78  
 <211> 357  
 <212> DNA  
 <213> Artificial Sequence

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&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 78

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| gaggtgcagc | tggtgcagtc | ttggggaggc | tcggaacagc | ctggcaggtc | cctgagactc | 60  |
| tcctgtgcag | cctctggatt | cacctttgat | gattatgcca | tgactgggt  | ccggcaagct | 120 |
| ccaggaagg  | gcctggagt  | ggtctcaggt | attagttgga | atagcggtag | cataggctat | 180 |
| gcggactctg | tgaagggccg | attcaccatc | tccagagaca | acgccaagaa | ttccctgtat | 240 |
| ctgcaaatga | acagtctgag | agctgaggac | accgccatgt | attactgtgc | gcgctaccgt | 300 |
| caggttggtt | ctgcttacga | ttcttggggt | caaggtactc | tggtgaccgt | ctcctca    | 357 |

&lt;210&gt; 79

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 79

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ser | Val | Val | Thr | Gln | Pro | Pro | Ser | Val | Ser | Ala | Ala | Pro | Gly | Gln |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Val | Thr | Ile | Ser | Cys | Ser | Gly | Ser | Ser | Ser | Asn | Ile | Gly | Asn | Asn |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Tyr | Asp | Asn | Asn | Lys | Arg | Pro | Ser | Gly | Ile | Pro | Asp | Arg | Phe | Ser |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |

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

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Pro | Tyr | Val | Phe | Gly | Thr | Gly | Thr | Lys | Val | Thr | Val | Leu | Gly |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |

&lt;210&gt; 80

&lt;211&gt; 119

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 80

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Val | Gln | Leu | Val | Gln | Ser | Trp | Gly | Gly | Ser | Glu | Gln | Pro | Gly | Arg |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

[illegible]

<210> 81  
<211> 330  
<212> DNA  
<213> Artificial Sequence

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

|            |            |            |            |            |            |  |     |
|------------|------------|------------|------------|------------|------------|--|-----|
| <400> 81   |            |            |            |            |            |  |     |
| ctgcctgtgc | tgactcagcc | accctcggtg | tcagtggccc | caggaaagac | ggccaggatt |  | 60  |
| acctgtgggg | gaaacaacat | tggaagtaaa | agtgtgcact | ggtatcagca | gaagccaggc |  | 120 |
| caggcccctg | tgctggtcgt | ctatgctgat | agcgaccggc | cctcagggat | ccctgagcga |  | 180 |
| ttctctggct | ccaactctgg | gaacacggcc | accctgacca | tcagcagggt | cgaagccggg |  | 240 |
| gatgaggccg | actattactg | tcagggtgtg | gatagtagta | gttatcataa | ttatgtcttc |  | 300 |
| ggaactggga | ccaaggtcac | cgtcctaggt |            |            |            |  | 330 |

<210> 82  
<211> 354  
<212> DNA  
<213> Artificial Sequence

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

```
<400> 82
gaggTgcagc tggTgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc      60
tcctgcaagg cttctggtta cacctttacc agctatggta tcagctggggt gcgacaggcc      120
```

## 4329191\_1

cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaaactat 180  
gcacagaagc tccagggcag agtcaccatg accacagaca catccacgag cacagcctac 240  
atggagctga gcagcctgag atctgaggac accgccatgt attactgtgc gcgctactgg 300  
ggtttcggtg tttctgatcg ttgggggtcaa ggtactctgg tgaccgtctc ctca 354

<210> 83  
<211> 110  
<212> PRT  
<213> Artificial Sequence

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

<400> 83  
Leu Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
1 5 10 15

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

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

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

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

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

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

<210> 84  
<211> 118  
<212> PRT  
<213> Artificial Sequence

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

<400> 84  
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

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

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

## 4329191\_1

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

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

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

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

Leu Val Thr Val Ser Ser  
 115

<210> 85  
 <211> 336  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 85  
 aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
 tcctgcaccg gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120  
 ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tgggggtcccc 180  
 gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
 ctgaagactg aggacgaggc tgactactac tgtcagtctt atgacagcag caatctttgg 300  
 gtgttcggcg gagggaccaa gctgaccgtc ctaggt 336

<210> 86  
 <211> 351  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 86  
 cagatgcagc tggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60  
 tcctgcaagg cttctggagg caccttcagc agctatgcta tcagctgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggaggg atcatcccta tctttggtac agcaaactac 180  
 gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac 240  
 atggagctga gcagcctgag atctgaggac actgccgtgt attactgtgc gcgctacaac 300  
 tactactact acgattcttg ggggtcaagg actctggtga ccgtctcctc a 351

<210> 87



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<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 87

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

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

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
35 40 45

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

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

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

<210> 88

<211> 117

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 88

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

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

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

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

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

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys

85

4329191\_1  
90

95

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

Val Thr Val Ser Ser  
115

&lt;210&gt; 89

&lt;211&gt; 324

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 89

gacatccaga tgaccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gagcattagc agctatttaa attggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcaacag agttacagta cccattcac tttcggcctt 300

gggaccaaag tggatatcaa acgt 324

&lt;210&gt; 90

&lt;211&gt; 354

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 90

gaggtgcagc tggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60

tcctgcaagg cttctggagg caccttcagc agctatgcta tcagctgggt gcgacaggcc 120

cctggacaag ggcttgagtg gatgggaggg atcatcccta tctttggtac agcaaactac 180

gcacagaagt tccagggcag agtcacgatt accgcgagc aatccacgag cacagcctac 240

atggagctga gcagcctgag atctgaggac accgccatgt attactgtgc gcgctactgg 300

ggttacgact ctacgatga atgggggtcaa ggtactctgg tgaccgtctc ctca 354

&lt;210&gt; 91

&lt;211&gt; 108

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 91

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly

[illegible]

## 4329191\_1

<210> 93  
 <211> 333  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 93  
 aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
 tcctgcaccg gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120  
 ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt 180  
 gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
 ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caattggggtg 300  
 ttcggcggag ggaccaagct gaccgtccta ggt 333

<210> 94  
 <211> 351  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 94  
 gaggtccagc tggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60  
 tcctgcaagg cttctggagg caccttcagc agctatgcta tcagctgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggaggg atcatcccta tctttggtac agcaaactac 180  
 gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac 240  
 atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gcgcaacaac 300  
 cattactaca acgattactg ggggtcaaggt actctggtga ccgtctcctc a 351

<210> 95  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 95  
 Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15  
 Thr Val Thr Ile Ser Cys Thr Gly Ser Ser Gly Ser Ile Ala Ser Asn  
 20 25 30  
 Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
 35 40 45

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

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

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

<210> 96

<211> 117

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 96

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

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

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

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

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

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

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

Val Thr Val Ser Ser  
115

<210> 97

<211> 336

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

## 4329191\_1

<400> 97  
 cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcaggg ggtcaccatc 60  
 ccctgcactg ggagcagctc caacatcggg gcagggttatg atgtacactg gtaccagcag 120  
 cttccagggg cagcccccaa actcctcatc tatggtaaca acaatcggcc ctcagggggtc 180  
 cctgaccgct tctctggctc caggtctggc tcctcagcct ccctggccat cactgggctc 240  
 caggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtgatgtg 300  
 gtattcggcg gagggaccaa ggtcaccgtc ctaggt 336

<210> 98  
 <211> 378  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 98  
 gaggtccagc tggtgcagtc tggggctgag gtgaagaagc ctggggctac agtgaaaatc 60  
 tcctgcaagg tttctggata caccttcacc gactactaca tgcactgggt gcaacaggcc 120  
 cctggaaaag ggcttgagtg gatgggactt gttgatcctg aagatgggtga aacaatatac 180  
 gcagagaagt tccagggcag agtcaccata accgcggaca cgtctacaga cacagcctac 240  
 atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gcgctactgg 300  
 tcttactctt tcgactacct gtacatgccg gaaggtaacg attggtgggg tcaagggtact 360  
 ctggtgaccg tctcctca 378

<210> 99  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 99  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
 1 5 10 15  
 Gly Val Thr Ile Pro Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly  
 20 25 30  
 Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu  
 35 40 45  
 Leu Ile Tyr Gly Asn Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Phe  
 50 55 60  
 Ser Gly Ser Arg Ser Gly Ser Ser Ala Ser Leu Ala Ile Thr Gly Leu  
 65 70 75 80

## 4329191\_1

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

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

<210> 100

<211> 126

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 100

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

Thr Val Lys Ile Ser Cys Lys Val Ser Gly Tyr Thr Phe Thr Asp Tyr  
20 25 30

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

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

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

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

Ala Arg Tyr Trp Ser Tyr Ser Phe Asp Tyr Leu Tyr Met Pro Glu Gly  
100 105 110

Asn Asp Trp Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125

<210> 101

<211> 333

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 101

cagtctgtgt tgactcagcc accgcgacgc tctgggaccc ccggacagag agtcaccatc 60

tcttgttctg ggggcgtctc caacatcggg agtggtgctc taaattggta ccagcaactc 120

ccaggaacgg cccccaaact cctcatctat agttacaatc agcggccctc aggggtctct 180

gaccgattct ctggctccag gtctgccacc tcagcctccc tggccatcag tgggctccag 240

## 4329191\_1

tctgaggatg aggctgatta ttactgtgca acctgggatg atagtgtgaa tggttgggtg 300  
 ttcggcggag ggaccaagct gaccgtccta ggt 333

<210> 102  
 <211> 357  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 102  
 caggtccagc tggtagctgag gtgaagaagc ctggggattc agtgaaggctc 60  
 tcctgcaagc cttctgggta caattttctc aactatggta tcaactgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggatgg attagcactt acaccggtaa cacaaactat 180  
 gcacagaagc tgcagggcag agtcaccttc accacagaca catccacgag cacagcctac 240  
 atggagatga ggagcctgag atctgacgac acggccgtgt attactgtgc gcgcgacctg 300  
 tactactacg aaggtgttga ttactgggggt caaggtactc tggtgaccgt ctctca 357

<210> 103  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 103  
 Gln Ser Val Leu Thr Gln Pro Pro Ala Ala Ser Gly Thr Pro Gly Gln 15  
 1 5 10

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

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

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

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

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

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

<210> 104



## 4329191\_1

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

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

<400> 104  
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Asp  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Pro Ser Gly Tyr Asn Phe Leu Asn Tyr  
 20 25 30

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

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

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

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

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

Thr Leu Val Thr Val Ser Ser  
 115

<210> 105  
 <211> 327  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 105  
 caggctgtgc tgactcagcc accctcagtgc tcagtggccc caggaaagac ggccagggtt 60  
 acctgtgggg gaaacaacat tggaagtga agtgtgcact ggtaccagca gaagccaggc 120  
 caggccccctg tgttggtcat ctattatgat accgaccggc cctcagggat ccctgagcga 180  
 ttctctggct ccactctgg gaccacggcc accctgacca tcagcagggt cgaagccggg 240  
 gatgaggccg actattactg tcaggtgtgg gatagtagta gggatcatgt ggtattcggc 300  
 ggagggacca agctgaccgt cctaggt 327

<210> 106  
 <211> 357  
 <212> DNA  
 <213> Artificial Sequence

## 4329191\_1

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 106

```

caggtgcagc tgggtgcagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc      60
tcctgtgcgg cctctggatt caccttcagt agctatgcta tgcactgggt ccgccaggct      120
ccaggcaagg gactggagtg ggtggcagtt atatcatatg atggaagcaa taaatactac      180
gcagactccg tgaagggcct attcaccatc tccagagaca attccaagaa cacgctgtat      240
ctgcaaatga acagcctgag agctgaggac acggccgtgt attactgtgc gcgctcttac      300
ttcacttctg gtttctacga ttactggggt caaggtactc tggtgaccgt ctctctca      357

```

&lt;210&gt; 107

&lt;211&gt; 109

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 107

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

&lt;210&gt; 108

&lt;211&gt; 119

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 108

```

Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro Gly Arg

```

[illegible]

<210> 109  
<211> 339  
<212> DNA  
<213> Artificial Sequence

|            |            |            |            |            |            |  |     |
|------------|------------|------------|------------|------------|------------|--|-----|
| <400> 109  |            |            |            |            |            |  |     |
| cagtctgtcg | tgacgcagcc | gccctcagtg | tctggggccc | cagggcagag | ggtcaccatc |  | 60  |
| tcctgcactg | ggagcagttc | caacatcggg | gcaggttatg | atgtaaattg | gtatcagcag |  | 120 |
| tttcaggaa  | cagcccccac | actcctcatc | tatggtaaca | gcaatcggcc | ctcaggggtc |  | 180 |
| cctgaccgat | tctctggctc | caagtctggc | acctcagcct | ccctggccat | actggggtc  |  | 240 |
| caggctgagg | atgaggctga | ttattactgc | cagtcctatg | acagcagcct | gagtggctct |  | 300 |
| tatgtcttcg | gaactgggac | caaggtcacc | gtcctaggt  |            |            |  | 339 |

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

## 4329191\_1

cctggaaaag ggcttgagtg gatgggaggt tttgacacg aagatggtga aacaatctac 180  
gcacagaagt tccagggcag agtcacatg accgaggaca catctacaga cacagcctac 240  
atggagctga gcagcctgag atctgaggac actgccgtgt attactgtgc gcgcatgtct 300  
tctatgtact acgattgggg tcaaggtact ctggtgaccg tctcctca 348

<210> 111  
<211> 113  
<212> PRT  
<213> Artificial Sequence

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

<400> 111  
Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
1 5 10 15

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

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

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

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

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

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

Gly

<210> 112  
<211> 116  
<212> PRT  
<213> Artificial Sequence

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

<400> 112  
Gln Met 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 Leu Thr Glu Leu  
20 25 30

## 4329191\_1

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

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

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

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

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

Thr Val Ser Ser  
          115

<210> 113  
 <211> 324  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 113  
 tcctatgtgc tgactcagcc accctcagtg tcagtggccc caggaaagac ggccaggatt 60  
 acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120  
 cagggccctg tgctggatcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180  
 ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
 gatgaggccg actattactg tcaggtgtgg gatagtagta gtgattatgt cttcggaact 300  
 gggaccaagg tcaccgtcct aggt 324

<210> 114  
 <211> 345  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 114  
 gaggtgcagc tgggtggagac tgggggaggc ttggtcaagc ctggagggtc cctgagactc 60  
 tcctgtgcag cctctggatt caccgtcagt gactactaca tgagctggat ccgccaggct 120  
 ccaggaagg gcctggagtg gatttcatac attagtggta gtggtaatag catatactac 180  
 gcagactctg tgaagggccg attcaccatc tccagggaca acgccaagaa ctcactggat 240  
 ctgcaaatga ccagcctgag agccgaggac acggccgtat attactgtgc gcgctctact 300

aaattcgatt actgggggtca aggtactctg gtgaccgtct cctca

<210> 115  
 <211> 108  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 115  
 Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15

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

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

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

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

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

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

<210> 116  
 <211> 115  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 116  
 Glu Val Gln Leu Val Glu Thr 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 Val Ser Asp Tyr  
 20 25 30

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

Ser Tyr Ile Ser Gly Ser Gly Asn Ser Ile Tyr Tyr Ala Asp Ser Val  
 50 55 60

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

Leu Gln Met Thr Ser<sub>85</sub> Leu Arg Ala Glu Asp<sub>90</sub> Thr Ala Val Tyr Tyr<sub>95</sub> Cys

Ala Arg Ser Thr<sub>100</sub> Lys Phe Asp Tyr Trp<sub>105</sub> Gly Gln Gly Thr Leu<sub>110</sub> Val Thr

Val Ser Ser<sub>115</sub>

<210> 117  
<211> 333  
<212> DNA  
<213> Artificial Sequence

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

|             |            |            |            |            |            |  |     |
|-------------|------------|------------|------------|------------|------------|--|-----|
| <400> 117   |            |            |            |            |            |  |     |
| ctgcctgtgc  | tgactcagcc | accctcagcg | tctgggaccc | ccgggcagag | ggtcaccatc |  | 60  |
| tcttgttctg  | gaagcagctc | caacgtcggg | agttacactg | taaactggta | ccggcaactc |  | 120 |
| ccaggaacgg  | ccccacact  | cctcatctat | aataataatc | agcggccctc | aggggtccct |  | 180 |
| gaccgattct  | ctgactccaa | gtctggcacc | tcggcctccc | tgaccattag | tgggctccag |  | 240 |
| cctgaggatg  | aggctgatta | ttattgtgca | gcatgggatg | acaggctggg | tggttatgtc |  | 300 |
| ttcggaaactg | ggaccaaggt | caccgtccta | ggt        |            |            |  | 333 |

<210> 118  
<211> 357  
<212> DNA  
<213> Artificial Sequence

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

|             |             |            |             |             |            |  |     |
|-------------|-------------|------------|-------------|-------------|------------|--|-----|
| <400> 118   |             |            |             |             |            |  |     |
| gaggtgcagc  | tgggtgcagtc | tggagcagag | gtgaaaaagc  | cggggggagtc | tctgaagatc |  | 60  |
| tcctgtaagg  | gttctggata  | cagctttacc | aactactgga  | tcggctgggt  | gcgccagatg |  | 120 |
| cccgggaaag  | gcctggagtg  | gatggggatc | atctatcctg  | gtgactctga  | taccagatac |  | 180 |
| agcccgtcct  | tccaaggcca  | ggtcaccatc | tcagccgaca  | agtccatcag  | caccgcctac |  | 240 |
| ctacagtgga  | gcagcctgaa  | ggcctcggac | accgccatgt  | attactgtgc  | gcgctctact |  | 300 |
| ggttctttctc | atatgtctga  | tgaatggggg | caagggtactc | tggtgaccgt  | ctcctca    |  | 357 |

```
<210> 119
<211> 111
<212> PRT
<213> Artificial Sequence
```

<220>  
<223> Description of Artificial Sequence: Synthetic  
Page 55

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## polypeptide

&lt;400&gt; 119

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

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

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

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

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

Pro Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Arg Leu  
85 90 95

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

&lt;210&gt; 120

&lt;211&gt; 119

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 120

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

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

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

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

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

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

Ala Arg Ser Thr Gly Ser Ser His Met Ser Asp Glu Trp Gly Gln Gly  
100 105 110



## 4329191\_1

Thr Leu Val Thr Val Ser Ser  
115

<210> 121  
<211> 336  
<212> DNA  
<213> Artificial Sequence

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

<400> 121  
aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
tcctgcaccg gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120  
ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt 180  
gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caatcattgg 300  
gtgttcggcg gagggaccaa gctgaccgtc ctaggt 336

<210> 122  
<211> 345  
<212> DNA  
<213> Artificial Sequence

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

<400> 122  
caagtgcagc tacagcagtg gggcgcagga ctgttgaagc cttcggagac cctgtccctc 60  
acctgcgctg tctatggtgg gtccttcagt ggttactact ggagctggat ccgccagccc 120  
ccagggaagg ggctggagtg gattggggag atcactcata gtggaaggtc caactacaac 180  
ccgtccctca agagtcgagt caccatatca gtagacacgt ccaagaacca gttctccctg 240  
aagctgagct ctgtgaccgc cgcgacacg gccgtgtatt actgtgcgcg ctcttctatc 300  
atgtctgatt actggggtca aggtactctg gtgaccgtct cctca 345

<210> 123  
<211> 112  
<212> PRT  
<213> Artificial Sequence

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

<400> 123  
Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

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

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Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
35 40 45

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

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

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

<210> 124  
<211> 115  
<212> PRT  
<213> Artificial Sequence

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

<400> 124  
Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu Lys Pro Ser Glu  
1 5 10 15

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

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

Gly Glu Ile Thr His Ser Gly Arg Ser 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 Ser Ser Ile Met Ser Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr  
100 105 110

Val Ser Ser  
115

<210> 125  
<211> 336  
<212> DNA  
<213> Artificial Sequence

## 4329191\_1

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 125

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc | 60  |
| tcctgcactg ggagcacctc caacatcggg gcaggttatg atgtacactg gtaccagcag | 120 |
| cttccaggaa cagcccccaa actcctcatc aacaataaca ggaatcggcc ctcaggggtc | 180 |
| cctgaccgat tctctggctc caagtctggc acgtcagcca ccctgggcat caccggactc | 240 |
| cagactgggg acgaggccga ttattactgc ggaacatggg atggcagcct gactggtgca | 300 |
| gtgttcggcg gagggaccaa gctgaccgtc ctaggt                           | 336 |

&lt;210&gt; 126

&lt;211&gt; 354

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 126

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| gaggtccagc tggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc | 60  |
| tcatgcaagg cttctggagg caccttcagc agctatgcta tcagctgggt gcgacaggcc | 120 |
| cctggacaag ggcttgagt gatggggagg atcatcccta tctttggtac agcaaactac  | 180 |
| gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac | 240 |
| atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gcgcggttct | 300 |
| gctctggacc attacgatcg ttgggggtcaa ggtactctgg tgaccgtctc ctca      | 354 |

&lt;210&gt; 127

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 127

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

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

|                                                                 |  |
|-----------------------------------------------------------------|--|
| Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu |  |
| 35                  40                  45                      |  |

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

|                                                                 |  |
|-----------------------------------------------------------------|--|
| Ser Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu |  |
|-----------------------------------------------------------------|--|



## 4329191\_1

gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
 ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcac caattgggtg 300  
 ttcggcggag ggaccaagct gaccgtccta ggt 333

<210> 130  
 <211> 351  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 130  
 caggtgcagc tgggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60  
 tcctgcaagg cttctggagg caccttcagc agctatgcta tcagctgggt gcgacaggcc 120  
 cctggacaag ggcttgagt gatgggaggg atcatcccta tctttggtac agcaaactac 180  
 gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac 240  
 atggagctga gcagcctgag atctgaggac actgccgtgt attactgtgc gcgctacaac 300  
 tactacttca acgattactg ggggtcaaggt actctggtga ccgtctcctc a 351

<210> 131  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 131  
 Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15  
 Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
 20 25 30  
 Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
 35 40 45  
 Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80  
 Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
 85 90 95  
 Thr Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110

## 4329191\_1

<210> 132  
 <211> 117  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 132  
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Ser Tyr  
 20 25 30  
 Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45  
 Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr Ala Gln Lys Phe  
 50 55 60  
 Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr  
 65 70 75 80  
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Tyr Asn Tyr Tyr Phe Asn Asp Tyr Trp Gly Gln Gly Thr Leu  
 100 105 110  
 Val Thr Val Ser Ser  
 115

<210> 133  
 <211> 330  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 133  
 tcctatgtgc tgactcagcc accctcagtgc tcagtggccc caggaaagac ggccaggatt 60  
 acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120  
 caggcccctg tgctggatcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180  
 ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
 gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatcatcc ttatgtcttc 300  
 ggaactggga ccaaggtcac cgtcctaggt 330

<210> 134  
 <211> 351

## 4329191\_1

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 134

```

cagatgcagc tggatgcagc tggagctgag gtgaagaagc ctggggcctc agtgaaggctc      60
tcctgcaagg cttctgggta cacctttacc agctatggta tcagctgggt gcgacaggcc      120
cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaaactat      180
gcacagaagc tccagggcag agtcaccatg accacagaca catccacgag cacagcctac      240
atggagctga ggagcctgag atctgacgac actgccgtgt attactgtgc gcgctctatg      300
ttcggtgctc atgattcttg gggatcaaggc actctggtga ccgtctcctc a              351

```

&lt;210&gt; 135

&lt;211&gt; 110

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 135

```

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

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

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

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

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

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

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

```

&lt;210&gt; 136

&lt;211&gt; 117

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

## 4329191\_1

&lt;400&gt; 136

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

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

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

Val Thr Val Ser Ser  
 115

&lt;210&gt; 137

&lt;211&gt; 336

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 137

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc  | 60  |
| tcctgcactg ggagcagctc caacatcggg gcagggttttg atgtacactg gtaccagcta | 120 |
| cttccaggaa cagcccccaa actcctcatc tatgctaaca gcaatcggcc ctcaggggtc  | 180 |
| cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc  | 240 |
| ctggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtgggtgtg | 300 |
| gtattcggcg gagggaccaa gctgaccgtc ctaggt                            | 336 |

&lt;210&gt; 138

&lt;211&gt; 354

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 138

|                                                                    |    |
|--------------------------------------------------------------------|----|
| caggtgcagc tggtgcaatc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggctc | 60 |
|--------------------------------------------------------------------|----|



## 4329191\_1

tcctgcaagg cttctggagg caccttcagc agctatgcta tcagctgggt gcgacaggcc 120  
 cctggacaag ggcttgagt gatgggaggg atcatcccta tctttggtac agcaaactac 180  
 gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac 240  
 atggagctga gcagcctgag atctgaggac actgccgtgt attactgtgc gcgcggtgct 300  
 tctttcgacc gtcataataa ctgggggtcaa ggtactctgg tgaccgtctc ctca 354

&lt;210&gt; 139

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 139

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

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

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

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

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

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

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

&lt;210&gt; 140

&lt;211&gt; 118

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 140

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

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

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

35

40

45

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

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

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

Ala Arg Gly Ala Ser Phe Asp Arg His Asp Asn Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ser  
 115

&lt;210&gt; 141

&lt;211&gt; 333

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 141

aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
 tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120  
 ccgggcagtt cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt 180  
 gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
 ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caattgggtg 300  
 ttcggcggag ggaccaagct gaccgtccta ggt 333

&lt;210&gt; 142

&lt;211&gt; 351

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 142

gaggtccagc tggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60  
 tcctgcaagg cttctggagg caccttcagc agctatgcta tcagctgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggaggg atcatcccta tctttggtac agcaaactac 180  
 gcacagaagt tccagggcag agtcacgatt accgcgagc aatccacgag cacagcctac 240  
 atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gcgctctaac 300  
 tactactaca acgattactg ggggtcaagg actctggtga ccgtctcctc a 351

## 4329191\_1

<210> 143  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 143  
 Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15  
 Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
 20 25 30  
 Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ser Pro Thr Thr Val  
 35 40 45  
 Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80  
 Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
 85 90 95  
 Ser Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110

<210> 144  
 <211> 117  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 144  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Ser Tyr  
 20 25 30  
 Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45  
 Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr Ala Gln Lys Phe  
 50 55 60  
 Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr  
 65 70 75 80

## 4329191\_1

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

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

Val Thr Val Ser Ser  
                     115

<210> 145

<211> 336

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 145

cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60

tcctgcactg ggagcagctc caacatcggg gcaggttatg atgtacactg gtaccagcag 120

cttccaggaa cagcccccaa actcctcatc tatggtaaca gcaatcggcc ctcaggggtc 180

cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc 240

caggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtgggttat 300

gtcttcggaa ctgggaccaa ggtcaccgtc ctaggt 336

<210> 146

<211> 348

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 146

caggtgcagc tgggtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggctc 60

tcctgcaagg tttccgata caccctcact gaattatcca tgactgggt gcgacaggct 120

cctggaaaag ggcttgagt gatgggaggt tttgatcctg aagatggtga aacaatctac 180

gcacagaagt tccagggcag agtcaccatg accgaggaca catctacaga cacagcctac 240

atggagctga gcagcctgag atctgaggac actgccgtgt attactgtgc gcgctactct 300

gggtgtttact acgattgggg tcaaggtact ctggtgaccg tctcctca 348

<210> 147

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

## 4329191\_1

&lt;400&gt; 147

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

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

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

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

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

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

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

&lt;210&gt; 148

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 148

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

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

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

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

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

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

Thr Val Ser Ser

<210> 149  
 <211> 336  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 149  
 aattttatgc tgactcagcc ccactctgtg tcgggggtctc cggggaagac ggtaaccatc 60  
 tcctgcaccg gcagcagtgg cagcattgcc gacaactttg tgcagtggta ccagcagcgc 120  
 ccggggcggtg tccccaccac tgtgatcttt aatgatgacg aaagaccctc tggcgtcctt 180  
 gatcggttct ctggctccat cgacacctcc tccaattctg cctccctcac catctctgga 240  
 ctgaagactg aggacgaggc tgactactac tgtcagtctt atgataataa taatcgaggg 300  
 gtgttcggcg gagggaccaa gctgaccgtc ctaggt 336

<210> 150  
 <211> 348  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 150  
 caggtccagc tggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60  
 tcctgcaagg cttctggagg caccttcagc agctatgcta tcagctgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggatgg atgaacccta acagtggtaa cacaggctat 180  
 gcacagaagt tccagggcag agtcaccatg accaggaaca cctccataag cacagcctac 240  
 atggagctga gcaacctgag atctgaggac acggccgtgt attactgtgc gcgctactac 300  
 tcttacggtt acgattgggg tcaaggtact ctggtgaccg tctcctca 348

<210> 151  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 151  
 Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Gly Ser Pro Gly Lys  
 1 5 10 15

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

Phe Val Gln Trp Tyr Gln Gln Arg Pro Gly Gly Val Pro Thr Thr Val  
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35

40

45

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

Gly Ser Ile Asp Thr Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80

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

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

<210> 152

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 152

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

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

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

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

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

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

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

Thr Val Ser Ser  
 115

<210> 153

<211> 336

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

## polynucleotide

<400> 153  
 cagtctgtcg tgacgcagcc gccctcagtg tctggggccc cagggcagac ggtcaccatc 60  
 tcctgcactg ggggcagctc caacatcggg acaggttatt ttgtaaattg gtaccagcag 120  
 gttccaggaa aagcccccaa actcctcatc ctgggtaaca ataatcggcc ctcggggggtc 180  
 cctgaccgac tctccggctc cacgtccggc acctcagcct ccctggccat cactgggctc 240  
 caggctgagg atgaggggtac ttattactgc cagtcctatg acagcagcct gagtgggttat 300  
 gtcttcggaa ctgggaccaa ggtcaccgtc ctaggt 336

<210> 154  
 <211> 366  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 154  
 caggtacagc tgcagcagtc aggtccagga ctgggtgaagc cctcgagac cctctcactc 60  
 acctgtggca tctccgggga cagtgtctct accaacagtg ttgcttggca ctggatcagg 120  
 cagtcccat cgagaggcct tgagtggctg ggaaggacat actacaggtc caagtggctt 180  
 aatgactatg gagtatctgt gaaaagtcga atcaccatca tcccagacac atccaagaac 240  
 cagttctccc tgcagctgaa ctctgtgact cccgaggaca cggctgtgta ttactgtgcg 300  
 cgctcttctt cttggtacca gatcttcgat tactgggggtc aaggtactct ggtgaccgtc 360  
 tcctca 366

<210> 155  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 155  
 Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
 1 5 10 15

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

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

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

Ser Gly Ser Thr Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu  
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gatcggttct ctgggtccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
 ctgaagactg aggacgaggc tgtctactat tgtcagtctt atcatagcga caatcgttgg 300  
 gtgttcggcg gcgggaccaa gctgaccgtc ctaggt 336

<210> 158  
 <211> 363  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 158  
 caggtgcagc tgggtggagtc tgggggaggc ttggtacagc ctgggggggc cctgagactc 60  
 tcctgtgcag cctctggatt cacctttagc agctatgcca tgagctgggt ccgccaggct 120  
 ccaggaagg ggctggagtg ggtctcagct attagtggta gtggtggtag cacatactac 180  
 gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240  
 ctgcaaatac acagcctgag agccgaggac acggccgtat attactgtgc gcgctctggt 300  
 gcttactggg actactctgt ttacgatgaa tgggggtcaag gtactctggt gaccgtctcc 360  
 tca 363

<210> 159  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 159  
 Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15

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

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Asn Val  
 35 40 45

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

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Val Tyr Tyr Cys Gln Ser Tyr His Ser  
 85 90 95

Asp Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 Page 74

100 105 4329191\_1 110

<210> 160  
 <211> 121  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 160  
 Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

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

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

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

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

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

Ala Arg Ser Gly Ala Tyr Trp Asp Tyr Ser Val Tyr Asp Glu Trp Gly  
 100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser  
 115 120

<210> 161  
 <211> 324  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 161  
 cagtctgtgt tgactcagcc accctcagt tccgtgtccc caggacagac agccaccatc 60  
 gcctgttctg gacataaatt gggggataaa tatgcttcct ggtatcagca gaagtcgggc 120  
 cagtcccctg tgttgatcat ctatcaggat aataagcggc cctcagggat tcctgagcga 180  
 ttctctggct ccaactctgg gaacacagcc actctgacca tcagcgggac ccaggctctg 240  
 gatgaggctg actattattg tcaggcgtgg gacagtagta cttatgtggc attcggcgga 300  
 gggaccaagc tgaccgtcct aggt 324

## 4329191\_1

<210> 162  
 <211> 357  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 162  
 caggtgcagc tgcaggagtc cggcccagga ctggtgaagc cttcggagac cctgtccctc 60  
 acctgcgttg tctctggtgg ctccatcagc agtagtaact ggtggagctg ggtccgccag 120  
 cccccaggga aggggctgga gtggattggg gaaatctatc atagtgggag ccccaactac 180  
 aacctatccc tcaagagtcg agtcaccata tcagtagaca agtccaagaa ccagttctcc 240  
 ctgaagctga gctctgtgac cgccgaggac acggccgtgt attactgtgc gcgcatgact 300  
 actcatactt tcggttacga tgcttggggg caaggctactc tggtgaccgt ctctca 357

<210> 163  
 <211> 108  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 163  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln 15  
 1 5 10

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

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

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

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

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

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

<210> 164  
 <211> 119  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
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## 4329191\_1

## polypeptide

&lt;400&gt; 164

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 Val Val Ser Gly Gly Ser Ile Ser Ser Ser  
 20 25 30

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

Ile Gly Glu Ile Tyr His Ser Gly Ser Pro Asn Tyr Asn Pro Ser Leu  
 50 55 60

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

Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

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

Thr Leu Val Thr Val Ser Ser  
 115

&lt;210&gt; 165

&lt;211&gt; 327

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 165

cagcctgtgc tgactcagcc accctcagtgc tcagtggccc caggaaagac ggccacgatt 60  
 acttgtgggg gaaacaacat tggaagtga agtgtgcact ggtaccacca gaagccaggc 120  
 caggcccctg tgttgggtcat ctatgatgat gccggccggc cctcagggat ccctgagcga 180  
 ttcactggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
 gatgaggccg actattactg tcaggtgtgg gacagaaata gtgctcagtt tgtcttcgga 300  
 cctgggacca aggtcaccgt cctaggt 327

&lt;210&gt; 166

&lt;211&gt; 345

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 166

## 4329191\_1

gaggtccagc tgggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
 tcctgcaagg cttctgggta cacctttacc agctatggta tcagctgggt gcgacaggcc 120  
 cctggacaag ggcttgagt gatgggatgg atcagcgctt acaatggtaa cacaactat 180  
 gcacagaagc tccagggcag agtcaccatg accacagaca catccacgag cacagcctac 240  
 atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gcgcggtgtt 300  
 catctggatt ggtgggggtca aggtactctg gtgaccgtct cctca 345

&lt;210&gt; 167

&lt;211&gt; 109

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 167

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

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

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

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

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

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

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

&lt;210&gt; 168

&lt;211&gt; 115

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 168

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly 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  
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 Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr  
65 70 75 80

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

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

Val Ser Ser  
115

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

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

<400> 169  
cagtctgtcg tgacgcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
tcttgttctg gaagcagctc caacatcgga agtaattatg tatactggta ccagcagctc 120  
ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct 180  
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccgg 240  
tccgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgag tggttatgtc 300  
ttcggaactg ggaccaagct gaccgtccta ggt 333

<210> 170  
<211> 375  
<212> DNA  
<213> Artificial Sequence

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

<400> 170  
caggtgcagc tacagcagtg gggcgcagga ctgttgaagc cttcggagac cctgtccctc 60  
acctgcgctg tctatggtgg gtccttcagt ggttactact ggagctggat ccgccagccc 120  
ccaggaagg ggctggagt gattggggaa atcaatcata gtggaagcac caactacaac 180  
ccgtccctca agagtcgagt caccatatca gtagacacgt ccaagaacca gttctccctg 240  
aagctgagct ctgtgaccgc cgcggacacg gccgtgtatt actgtgcgcg cctgtacgaa 300

## 4329191\_1

ggtggttacc atggttgggg ttcttggctg tcttctgatt cttgggggtca aggtactctg 360  
 gtgaccgtct cctca 375

<210> 171  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 171  
 Gln Ser Val Val Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

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

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

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

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

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

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

<210> 172  
 <211> 125  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 172  
 Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu Lys Pro Ser Glu  
 1 5 10 15

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

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

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



## 4329191\_1

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 Leu Tyr Glu Gly Gly Tyr His Gly Trp Gly Ser Trp Leu Ser Ser  
100 105 110

Asp Ser Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125

<210> 173

<211> 336

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 173

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| cagtctgtgt tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc | 60  |
| tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc | 120 |
| ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct | 180 |
| gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag | 240 |
| tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttattgg | 300 |
| gtgttcggcg gagggaccaa gctgaccgtc ctaggt                           | 336 |

<210> 174

<211> 351

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 174

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| caggtgcagc tacagcagtg gggcgcagga ctgttgaagc cttcggagac cctgtccctc  | 60  |
| acctgcgctg tctatggtgg gtccttcagt gggtactact ggagctggat ccgccagccc  | 120 |
| ccaggggaagg ggctggagtg gattggggaa atcaatcata gtggaagcac caactacaac | 180 |
| ccgtccctca agagtcgagt caccatatca gtagacacgt ccaagaacca gttctccctg  | 240 |
| aagctgagct ctgtgaccgc cgcggacacg gctgtgtatt actgtgcgcg cgaaggggca  | 300 |
| tttgatgctt ttgatatctg gggccaaggg acaatggtca ccgtctcttc a           | 351 |

<210> 175

<211> 112

<212> PRT

<213> Artificial Sequence

## 4329191\_1

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 175

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

&lt;210&gt; 176

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 176

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

Arg Glu Gly Ala Phe Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met

Val Thr Val Ser  
115

<210> 177  
<211> 333  
<212> DNA  
<213> Artificial Sequence

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

<400> 177  
tcctatgagc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
tcttgttctg gaagcagctc caacatcgga agtaattatg tatactggta ccagcagctc 120  
ccaggaacgg cccccaaact cttcatctat aggaataatc agcggccctc aggggtccct 180  
gaccgattct ctgggtccaa gtctggcacc tcagcctccc tggccatcag tggggtccgg 240  
tccgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgag tggttatctc 300  
ttcggaactg ggaccaaggt caccgtccta ggt 333

<210> 178  
<211> 360  
<212> DNA  
<213> Artificial Sequence

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

<400> 178  
gaggtgcagc tgggtggagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60  
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120  
ccaggaagg gcctggagt ggtctcaggt attagttgga atagtggtag cataggctat 180  
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240  
ctgcaaatga acagtctgag agctgaggac acggccttgt attactgtgc aaatggcgac 300  
tccaactact actacggtat ggacgtctgg ggccaagga ccacggtcac cgtctcctca 360

<210> 179  
<211> 111  
<212> PRT  
<213> Artificial Sequence

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

<400> 179  
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
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20

25

30

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

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

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

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

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

&lt;210&gt; 180

&lt;211&gt; 120

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 180

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr 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 Gly Ser Ile Gly Tyr Ala Asp Ser Val  
       50                                  55                                  60

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

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

Ala Asn Gly Asp Ser Asn Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln  
                   100                                  105                                  110

Gly Thr Thr Val Thr Val Ser Ser  
           115                                  120

&lt;210&gt; 181

&lt;211&gt; 336

&lt;212&gt; DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 181

```
cagtctgccc tgactcagcc tgcctccgtg tccgggtctc ctggacagtc gatcaccatc      60
tcctgcactg gaaccagcag tgacattggg ggttataact atgtctcctg gtaccaacaa      120
caccaggcca aagcccccaa actcatgatt tatgatgtca gtaatcggcc ctcagggggt      180
tctaatacgt tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc      240
caggctgagg acgaggctga ttattactgc atctcatata cacgcacctg gaacccttat      300
gtcttcggga gtgggaccaa ggtcaccgtc ctaggt      336
```

<210> 182

<211> 369

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 182

```
gaggtgcagc tggtgcagtc tgggggaggc gtggtacagc ctgggggggc cctgagactc      60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccgtcaagct      120
ccagggaagg gtctggagtg ggtctctctt attagtgggg atggtggtag cacatactat      180
gcagactctg tgaagggccg attcaccatc tccagagaca acagcaaaaa ctccctgtat      240
ctgcaaatga acagtctgag aactgaggac accgccttgt attactgtgc aaaagatcgg      300
gcagcagctg gctactacta ctacggtatg gacgtctggg gccaagggac cacggtcacc      360
gtctcctca      369
```

<210> 183

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 183

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

```
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Ile Gly Gly Tyr
                20          25          30
```

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

```
Met Ile Tyr Asp Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
```

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60

50

55

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

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

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

<210> 184  
<211> 123  
<212> PRT  
<213> Artificial Sequence

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

<400> 184  
Glu Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr 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 Leu Ile Ser Gly Asp Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val  
50 55 60

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

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

Ala Lys Asp Arg Ala Ala Ala Gly Tyr Tyr Tyr Tyr Gly Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
115 120

<210> 185  
<211> 318  
<212> DNA  
<213> Artificial Sequence

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

<400> 185  
ctgcctgtgc tgactcagcc accctcagtg tccgtgtccc caggacagac agccatcatc

60

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acctgctctg gagataaatt gggggaaaaa tatgtttcct ggtatcagca gaagccaggc 120  
cagtccccctg tactgggtcat cgatcaagat accaggaggc cctcagggat ccctgagcga 180  
ttctctggct ccaactctgg gaccacagcc actctgacca tcagcgggac ccaggctatg 240  
gatgaggctg actattactg tcaggcgtgg gacaggggtg tggatttcgg cggagggacc 300  
aagctgaccg tcctaggt 318

<210> 186  
<211> 369  
<212> DNA  
<213> Artificial Sequence

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

<400> 186  
gaggtgcagc tgggtggagtc tgggggagac ttggtacagc ctggcaggtc cctgagactc 60  
tcctgtgcag cctctggatt cacctttaat gattatgcca tgcactgggt ccggcaagct 120  
ccaggggaagg gcctggagtg ggtctcaggt attagttgga gtggtaataa cataggctat 180  
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240  
ctgcaaatga acagtctgag agctgaggac acggccttgt attactgtgc aaaagatagt 300  
atacggtatg gcatcacctg gggagggtttt gactactggg gccaggggaac cctgggtcacc 360  
gtctcctca 369

<210> 187  
<211> 106  
<212> PRT  
<213> Artificial Sequence

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

<400> 187  
Leu Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
1 5 10 15

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

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

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

Asn Ser Gly Thr Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met  
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Arg Gly Val Val Phe  
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90

95

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

&lt;210&gt; 188

&lt;211&gt; 123

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 188

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

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

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

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

Ala Lys Asp Ser Ile Arg Tyr Gly Ile Thr Trp Gly Gly Phe Asp Tyr  
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120

&lt;210&gt; 189

&lt;211&gt; 333

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 189

cagcctgtgc tgactcagcc accctcggtg tccaagggtg tgagacagac cgccacactc 60

acctgcactg ggaacagcaa caatgttggc aacctaggag tagcttggct gcagcagcac 120

cagggccacc ctcccaaact cctatcctac aggaataaca accggccctc agggatctca 180

gagagattat ctgcatccag gtcaggaaac acagcctccc tgaccattac tggactccag 240

cctgaggacg aggctgacta ttactgctca gcatgggaca gtagcctcag tgcttgggtg 300



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ttcggcggag ggaccaagct gaccgtccta ggt

333

<210> 190  
 <211> 354  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 190  
 gaggtgcagc tgggtggagtc tgggggagtc gtggtacagc ctggggggtc cctgagactc 60  
 tcctgtgcag cctctggatt cacctttgat gattatgcc a tgcactgggt ccgtcaagct 120  
 ccggggaagg gtctggagtg ggtctctctt attaattggg atggtggtag cacctactat 180  
 gcagactctg tgaagggtcg attcaccatc tccagagaca acagcaaaaa ctccctgtat 240  
 ctgcaaataa acagtctgag agctgaggac accgccttgt attactgtgc aaaagggatg 300  
 ggcttgaggg cgtttgacta ctggggccag ggaaccctgg tcaccgtctc ctca 354

<210> 191  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 191  
 Gln Pro Val Leu Thr Gln Pro Pro Ser Val Ser Lys Gly Leu Arg Gln 15  
 1 5 10  
 Thr Ala Thr Leu Thr Cys Thr Gly Asn Ser Asn Asn Val Gly Asn Leu 30  
 20 25 30  
 Gly Val Ala Trp Leu Gln Gln His Gln Gly His Pro Pro Lys Leu Leu 45  
 35 40 45  
 Ser Tyr Arg Asn Asn Asn Arg Pro Ser Gly Ile Ser Glu Arg Leu Ser 60  
 50 55 60  
 Ala Ser Arg Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Leu Gln 80  
 65 70 75 80  
 Pro Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ala Trp Asp Ser Ser Leu 95  
 85 90 95  
 Ser Ala Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly 110  
 100 105 110

<210> 192  
 <211> 118  
 <212> PRT

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&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 192

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

&lt;210&gt; 193

&lt;211&gt; 336

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 193

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| cagtctgtgt tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc | 60  |
| tcctgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc | 120 |
| ccaggaacgg cccccaaact cctcatctat agtaatgac agcgccctc aggggtccct   | 180 |
| gaccgattct ctggctccaa gtccggcacc tcagcctccc tggccatcag tgggctccag | 240 |
| tctgaggatg aggctgatta ttactgtgct tcatgggatg acagcctgaa tggccgttat | 300 |
| gtcttcggaa ctgggaccaa ggtcaccgtc ctaggt                           | 336 |

&lt;210&gt; 194

&lt;211&gt; 366

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

## 4329191\_1

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 194  
 caggtccagc tggtagctc tggggctgag gtgaggaagc ctggggcctc agtgaagggt 60  
 tcctgcaaga cttctggata caccttcagt tggtagctc tacattgggt gcgccaggcc 120  
 cccggacaaa ggcttgagt gatgggatgg atcaacgctg gcaatggaaa cacaaaatat 180  
 tcacagaaat ttcagggcag agtcagtctt accagggaca catccgcgag cacagcctac 240  
 atggagctga gcagcctgag atctgatgac acggctgtgt attactgtgc gagacccgat 300  
 aattatgggt cgggtgggga tgtttttgat atctggggcc aagggaacaat ggtcaccgtc 360  
 tcttca 366

<210> 195

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 195

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

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

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

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

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

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

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

<210> 196

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 196

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Arg Lys Pro Gly Ala

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

<210> 197  
<211> 333  
<212> DNA  
<213> Artificial Sequence

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

|             |            |            |            |            |            |     |
|-------------|------------|------------|------------|------------|------------|-----|
| <400> 197   |            |            |            |            |            |     |
| aatttttatgc | tgactcagcc | ccactctgtg | tcggagtctc | cggggaagac | ggtaaccatc | 60  |
| tcctgcaccc  | gcagcagtgg | cagcattgcc | agcaactttg | tgcagtggta | ccagcagcgc | 120 |
| ccgggacagt  | ccccacccc  | tatgatctat | gaggataaca | acagaccccc | tggggtccct | 180 |
| gatcggttct  | ctgcctccgt | cgacagctcc | tccaactctg | cctccctcac | catctctgga | 240 |
| ctgaagactg  | aggacgaggc | tgactactac | tgtcagtcct | atgataccag | caatgtggta | 300 |
| ttcggcgggg  | ggaccaagct | gaccgtccta | ggt        |            |            | 333 |

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<210> 198
<211> 348
<212> DNA
<213> Artificial Sequence
```

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

<400> 198  
gaggtgcagc tgggtggagtc tgggggaggc ttggtacagc ctggagggtc cctgagactc 60  
tcctgtgcag cctctggatt caccttcagt agttatgaaa tgaactgggt ccgccaggct 120

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ccaggggaagg ggctggagtg ggtttcatatc attagtagta gtggtagtagtac catatactac 180  
gcagactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctactgtat 240  
ctgcaaatga acagcctgag agccgaggac acggctgttt attactgtgc acgctgggac 300  
tacggtatgg acgtctgggg ccaagggacc acggtcaccg tctcctca 348

&lt;210&gt; 199

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 199

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

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

Phe Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Pro Met  
35 40 45

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

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

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Thr  
85 90 95

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

&lt;210&gt; 200

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 200

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

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

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

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

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

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

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

Thr Val Ser Ser  
 115

<210> 201  
 <211> 333  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 201  
 caggctgtgc tgactcagcc accctcagcg tctggggccc ccgggcagag ggtcaccgtc 60  
 tcttgttctg gaagcaactc caacatcgga agtaactacg ttaactggta ccagcagttc 120  
 ccaggaacgg cccccaaact cctcatgtat agtagtagtc agcgccctc aggggtccct 180  
 gaccgattct ctggctcaa gtctggcacc tcagcctccc tggccatcag tgggctccac 240  
 tctgaggatg aggctgatta ttactgtgct acatgggatg acagcctgaa tgcttgggtg 300  
 ttcggcggag ggaccaagct gaccgtccta ggt 333

<210> 202  
 <211> 366  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 202  
 gaggtccagc tggtgcagtc tggggctgag gtgaggaagc ctggggcctc agtgaagggt 60  
 tcctgcaaga cttctggata caccttcact tggtatgcta tacattgggt gcgccaggcc 120  
 cccggacaaa ggcttgagtg gatgggatgg atcaacgctg gcagtggaaa cacaaaatat 180  
 tcacagaaat ttcagggcag agtcaccctt accagggaca catccgcgag cacagcgtag 240  
 atggagctga gcagcctgag atctgatgac acggctgtgt attactgtgc gagaccaat 300  
 aactatggtt cgggtgggga tgtttttgat atctggggcc aagggacaat ggtcaccgtc 360  
 tcttca 366

4329191\_1

<210> 203  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 203  
 Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Ala Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Val Ser Cys Ser Gly Ser Asn Ser Asn Ile Gly Ser Asn  
 20 25 30  
 Tyr Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Met Tyr Ser Ser Ser Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu His  
 65 70 75 80  
 Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Ser Leu  
 85 90 95  
 Asn Ala Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110

<210> 204  
 <211> 122  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 204  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Arg Lys Pro Gly Ala  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Trp Tyr  
 20 25 30  
 Ala Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu Glu Trp Met  
 35 40 45  
 Gly Trp Ile Asn Ala Gly Ser Gly Asn Thr Lys Tyr Ser Gln Lys Phe  
 50 55 60  
 Gln Gly Arg Val Thr Leu Thr Arg Asp Thr Ser Ala Ser Thr Ala Tyr  
 65 70 75 80

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

Ala Arg Pro Asn Asn Tyr Gly Ser Gly Gly Asp Val Phe Asp Ile Trp  
100 105 110

Gly Gln Gly Thr Met Val Thr Val Ser Ser  
115 120

<210> 205  
<211> 333  
<212> DNA  
<213> Artificial Sequence

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

<400> 205  
cagtctgtcg tgacgcagcc gccctcagtg tctgcgcccc caggacagaa ggtcaccatc 60  
tcctgctctg gaagcagctc caacattggg aataattatg tctcctggta ccagcagctc 120  
ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180  
gaccgattct ctgggtccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 240  
actggggacg aggccgatta ttactgcgga acatgggata gcagcctgag tgcttatgtc 300  
ttcggaactg ggaccaaggt caccgtccta ggt 333

<210> 206  
<211> 363  
<212> DNA  
<213> Artificial Sequence

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

<400> 206  
caggtccagc tgggtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaagtt 60  
tcctgcaagg cttctggata caccttcacg aactatgctc tgcattgggt gcgccaggcc 120  
cccggacaag ggcttgagtg gatggcatgg atcaacggtg gcaatggtaa cacaaaatat 180  
tcacagaact tccagggcag agtcaccatt accagggaca catccgagag cacagcctat 240  
atggagctga gcagcctgag atctgaagac acggctgtgt attactgtgc gaaaccggag 300  
gaaacagctg gaacaatcca ctttgactac tggggccagg gaaccccggt caccgtctcc 360  
tca 363

<210> 207  
<211> 111  
<212> PRT  
<213> Artificial Sequence

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



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## polypeptide

&lt;400&gt; 207

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

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

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

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

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

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

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

&lt;210&gt; 208

&lt;211&gt; 121

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 208

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 Asn Tyr  
20 25 30

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

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

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

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

Ala Lys Pro Glu Glu Thr Ala Gly Thr Ile His Phe Asp Tyr Trp Gly  
100 105 110

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Gln Gly Thr Pro Val Thr Val Ser Ser  
 115 120

<210> 209  
 <211> 333  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 209  
 caggctgtgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
 tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120  
 ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt 180  
 gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
 ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcac catcacggtg 300  
 ttcggcggag ggaccaagct gaccgtccta ggt 333

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

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

<400> 210  
 caggctccagc tggtagagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggctc 60  
 tcctgcaagg cttctggagg caccttcagc agctatgcta tcagctgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggaggg atcatcccta tctttggtac agcaaactac 180  
 gcacagaagt tccagggcag agtcacgatt accgcgagc aatccacgag cacagcctac 240  
 atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gggggaggggt 300  
 tactatgata gtagtggtta ttccaacggt gatgcttttg atatctgggg ccaagggaca 360  
 atggtcaccg tctcttca 378

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

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

<400> 211  
 Gln Ala Val Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15

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

25

30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
           35                  40                  45

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

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
   65                  70                  75                  80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
           85                  90                  95

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

&lt;210&gt; 212

&lt;211&gt; 126

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 212

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

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

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

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

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

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

Ala Gly Glu Gly Tyr Tyr Asp Ser Ser Gly Tyr Ser Asn Gly Asp Ala  
          100                 105                 110

Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser  
      115                 120                 125

&lt;210&gt; 213

&lt;211&gt; 333

&lt;212&gt; DNA

## 4329191\_1

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 213

```

aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc      60
tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc      120
ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt      180
gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga      240
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caatgtggta      300
ttcggcggag ggaccaaggt caccgtccta ggt                                     333

```

&lt;210&gt; 214

&lt;211&gt; 348

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 214

```

gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctggagggtc cctgagactc      60
tcctgtgcag cctctggatt caccttcagt agttatgaaa tgaactgggt ccgccaggct      120
ccagggaagg ggctggagtg ggtttcatac attagtagta gtggtagtac catatactac      180
gcagactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctactgtat      240
ctgcaaatga acagcctgag agccgaggac acggctgttt attactgtgc acgctgggac      300
tacggtatgg acgtctgggg ccaagggacc acggtcaccg tctcctca                    348

```

&lt;210&gt; 215

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 215

```

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys
 1          5          10          15

```

```

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

```

```

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val
          35          40          45

```

```

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

```

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Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

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

<210> 216

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 216

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

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

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

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

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

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

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

Thr Val Ser Ser  
115

<210> 217

<211> 321

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 217

tcctatgtgc tgactcagcc accctcagtg tccgtgtccc caggacagac agccagcatc 60

acctgctctg gagatagatt gacgaataaa tatgtttcct ggtatcaaca gaagccaggc 120

## 4329191\_1

cagtcccctg tgttggtcat ctatgaggat gccaaagcggc cctcagggat ccctgcgcga 180  
 ttctctggct ccaactctgg gaacacagcc actctgacca tcagcgggac ccaggctatg 240  
 gatgagtctg aatattactg tcaggcgtgg gacagcagtg tgggtggtttt tggcggaggg 300  
 accaagctga ccgtcctagg t 321

<210> 218  
 <211> 369  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 218  
 gaggtgcagc tggtaggagtc tgggggagggc ttggtacagc ctggcaggtc cctgagactc 60  
 tcctgtgcag cctctggatt tacctttgat gattatgcca tgcactgggt ccggcaagct 120  
 ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag tataggctat 180  
 gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240  
 ctgcaaataa acagtctgag agatgaggac acggccttgt attactgtgc aaaagaccga 300  
 gggggggggag ttatcgtaa ggatgctttt gatatctggg gccaaaggac aatggtcacc 360  
 gtctcttca 369

<210> 219  
 <211> 107  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 219  
 Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
 1 5 10 15  
 Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Thr Asn Lys Tyr Val  
 20 25 30  
 Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Tyr  
 35 40 45  
 Glu Asp Ala Lys Arg Pro Ser Gly Ile Pro Ala Arg Phe Ser Gly Ser  
 50 55 60  
 Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met  
 65 70 75 80  
 Asp Glu Ser Glu Tyr Tyr Cys Gln Ala Trp Asp Ser Ser Val Val Val  
 85 90 95

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

<210> 220  
<211> 123  
<212> PRT  
<213> Artificial Sequence

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

<400> 220  
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg  
1 5 10 15

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

Ala Lys Asp Arg Gly Gly Gly Val Ile Val Lys Asp Ala Phe Asp Ile  
100 105 110

Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser  
115 120

<210> 221  
<211> 333  
<212> DNA  
<213> Artificial Sequence

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

<400> 221  
tcctatgagc tgactcagcc accgcagcg tctgggaccc ccggacagag agtcaccatc 60  
tcttgttctg ggggcgtctc caacatcggg agtggtgctc taaattggta ccagcaactc 120  
ccaggaacgg ccccaaact cctcatctat agttacaatc agcggccctc aggggtctct 180  
gaccgattct ctggctccag gtctgccacc tcagcctccc tggccatcag tgggctccag 240  
tctgaggatg aggctgatta ttactgtgca acctgggatg atagtgtgaa tggttgggtg 300  
ttcggcggag ggaccaagct gaccgtccta ggt 333

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<210> 222  
 <211> 354  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 222  
 gaggtgcagc tgggtggagtc tggagctgag gtgaagaagc ctggggattc agtgaaggtc 60  
 tcctgcaagc cttctgggta caattttctc aactatggta tcaactgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggatgg attagcactt acaccggtaa cacaaactat 180  
 gcacagaagc tgcagggcag agtcaccttc accacagaca catccacgag cacagcctac 240  
 atggagatga ggagcctgag atctgacgac acggccgtgt attactgtgc gcgccagcag 300  
 ggtggtgggtt ggtacgatgt ttgggggtcaa ggtactctgg tcaccgtctc ctca 354

<210> 223  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 223  
 Ser Tyr Glu Leu Thr Gln Pro Pro Ala Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Ile Ser Cys Ser Gly Gly Val Ser Asn Ile Gly Ser Gly  
 20 25 30  
 Ala Leu Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Ile Tyr Ser Tyr Asn Gln Arg Pro Ser Gly Val Ser Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Arg Ser Ala Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
 65 70 75 80  
 Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Ser Val  
 85 90 95  
 Asn Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110

<210> 224  
 <211> 118  
 <212> PRT  
 <213> Artificial Sequence



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&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 224

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

Ser Val Lys Val Ser Cys Lys Pro Ser Gly Tyr Asn Phe Leu Asn Tyr  
 20 25 30

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

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

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

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

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

Leu Val Thr Val Ser Ser  
 115

&lt;210&gt; 225

&lt;211&gt; 336

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 225

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| cagtctgtcg tgacgcagcc gccctcagtg tctgcgcccc caggagagaa ggtcaccatc | 60  |
| tcctgctctg gaagcaactt caatgttgga aataatgatg tatcctggta tcagcaactc | 120 |
| ccaggtgcag ccccaaaact cctcatttat gacaataata agcgaccctc agggattcct | 180 |
| gaccgattct ctggctccaa gtctggcacg tcagccaccc tggacatcac cgggctccac | 240 |
| agtgacgacg aggccgatta ttactgcgga acatgggata gcagcctgaa tactgggggg | 300 |
| gtcttcggaa ctgggaccaa ggtcaccgtc ctaggt                           | 336 |

&lt;210&gt; 226

&lt;211&gt; 369

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

## 4329191\_1

<400> 226  
gaggtccagc tgggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
tcctgcaagg cttctgggta cacctttacc agctatacta tcagctgggt acgacaggcc 120  
cctggacaag ggcttgagtg gatgggatgg atcagcactt acaatgggtct cacaaactat 180  
gcacagaacc tccagggcag agtcaccatg actacagaca cattcacgac cacagcctac 240  
atggagctga ggagcctcag atctgacgac acggccgtgt attactgtgt gagagagggg 300  
tcccccgact acggtgactt cgcgtccttt gactactggg gccagggaac cctggtcacc 360  
gtctcctca 369

<210> 227  
<211> 112  
<212> PRT  
<213> Artificial Sequence

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

<400> 227  
Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Glu  
1 5 10 15

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

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

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

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

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

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

<210> 228  
<211> 123  
<212> PRT  
<213> Artificial Sequence

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

<400> 228  
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

## 4329191\_1

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

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

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

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Phe Thr Thr 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

Val Arg Glu Gly Ser Pro Asp Tyr Gly Asp Phe Ala Ser Phe Asp Tyr  
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120

<210> 229

<211> 336

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 229

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| cagtctgtgt tgacgcagcc gccctcagtg tctgcgcccc cgggacagaa ggtcaccatc | 60  |
| tcctgctctg gaagcagctc caacattggg aataattatg tctcctggta ccagcagttc | 120 |
| ccaggaacag cccccaact cctcatttat gacaataata agcgaccctc agggatttct  | 180 |
| gaccgattct ctggctccaa gtctggcacg tcagccaccc tgggcatcgc cggactccag | 240 |
| actggggacg aggccgatta ttactgcgga acatgggata ccagcctgag tggtttttat | 300 |
| gtcttcggaa gtgggaccaa ggtcacgcgc ctaggt                           | 336 |

<210> 230

<211> 369

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 230

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| gaggtccagc tggtacagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggctc | 60  |
| tcctgcaagg cttctgggta cacctttacc agctatacta tcagctgggt acgacaggcc  | 120 |
| cctggacaag ggcttgagtg gatgggatgg atcagcactt acaatgggtct cacaactat  | 180 |

## 4329191\_1

gcacagaacc tccagggcag agtcaccatg actacagaca cattcacgac cacagcctac 240  
 atggagctga ggagcctcag atctgacgac acggccgtgt attactgtgt gagagagggg 300  
 tccccgcact acggtgactt cgcgtccttt gactactggg gccaggggaac cctggtcacc 360  
 gtctcctca 369

<210> 231  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 231  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Pro Pro Gly Gln  
 1 5 10 15

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

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

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

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

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

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

<210> 232  
 <211> 123  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 232  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

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

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

4329191\_1

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

Gln Gly Arg Val Thr Met Thr Thr Asp Thr Phe Thr Thr 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

Val Arg Glu Gly Ser Pro Asp Tyr Gly Asp Phe Ala Ser Phe Asp Tyr  
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120

<210> 233  
<211> 333  
<212> DNA  
<213> Artificial Sequence

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

<400> 233  
ctgcctgtgc tgactcagcc accctcagcg tctgcgaccc ccgggcagag ggtcaccatc 60  
tcttgttctg gaaccacctc caacatcgga agtaatactg tacactggta ccagcagctc 120  
ccagggacgg cccccaaact cctcatctat aataataatc agcggccctc aggggtccct 180  
gaccgattct ctggctcaa gtctggcacc tcagcctccc tggccatcag tgggctccgg 240  
tccgaggatg aggctacata ttcctgtgca acatgggatg acagcctgag tgggtgtggtc 300  
ttcggcggag ggaccaagct gaccgtccta ggt 333

<210> 234  
<211> 369  
<212> DNA  
<213> Artificial Sequence

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

<400> 234  
gaggtccagc tgggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60  
tcctgcaagg cttctggagg caccttcagc agctatgcta tcagctgggt gcgacaggcc 120  
cctggacaag ggcttgagtg gatgggaggg atcatcccta tctttggtac agcaaactac 180  
gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac 240  
atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagagatccc 300  
gcctacggtg actacgagta tgatgctttt gatatctggg gccaaggac aatggtcacc 360  
gtctcttca 369

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<210> 235  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 235  
 Leu Pro Val Leu Thr Gln Pro Pro Ser Ala Ser Ala Thr Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Ile Ser Cys Ser Gly Thr Thr Ser Asn Ile Gly Ser Asn  
 20 25 30  
 Thr Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Ile Tyr Asn Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg  
 65 70 75 80  
 Ser Glu Asp Glu Ala Thr Tyr Ser Cys Ala Thr Trp Asp Asp Ser Leu  
 85 90 95  
 Ser Gly Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110

<210> 236  
 <211> 123  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 236  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Ser Tyr  
 20 25 30  
 Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45  
 Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr Ala Gln Lys Phe  
 50 55 60  
 Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr  
 65 70 75 80

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

Ala Arg Asp Pro Ala Tyr Gly Asp Tyr Glu Tyr Asp Ala Phe Asp Ile  
                     100                    105                    110

Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser  
                     115                    120

<210> 237

<211> 333

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 237

cagtctgtgt tgacgcagcc gccctcagcg tctgggaccc ccgggcagag ggtcaccatc 60

tcttgttctg gaagcagctc caacatcgga actaatggtg taaactgggt ccagcagttc 120

ccaggaacgg cccccaaact cctcatctat actaatgata agcgccctc aggggtccct 180

gaccgattct ctgggtccaa gtctggcacc tcagcctccc tggccatcag tggggtccag 240

tctgcggatg aggctgatta ttactgtgca gtgtgggacc acagcctgaa tgggtccggtg 300

ttcggcggag ggaccaagct gaccgtccta ggt 333

<210> 238

<211> 354

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 238

caggtgcagc tgggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60

tcctgcaagg cttctggagg caccttcagc agctatgcta tcagctgggt gcgacaggcc 120

cctggacaag ggcttgagtg gatgggaggg atcatcccta tctttggtac agcaaactac 180

gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac 240

atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagaggggcc 300

ggttttgatg cttttgatat ctggggccaa gggacaatgg tcaccgtctc ttca 354

<210> 239

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

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<400> 239

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

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

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

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

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

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

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

<210> 240

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 240

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

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

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

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

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

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

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

Met Val Thr Val Ser Ser



<210> 241  
 <211> 333  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 241  
 caggctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
 tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120  
 ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct 180  
 gaccgattct ctggctcaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
 tctgaggatg agactgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc 300  
 ttcggaactg ggaccaaggt caccgtccta ggt 333

<210> 242  
 <211> 348  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 242  
 caggtgcagc tacagcagtg gggcgcagga ctgttgaagc cttcggagac cctgtccctc 60  
 acctgcgctg tctatggtgg gtccttcagt ggttactact ggagctggat ccgccagccc 120  
 ccagggaagg ggctggagtg gattggggaa atcaatcata gtggaagcac caactacaac 180  
 ccgtccctca agagtcgagt caccatatca gtagacacgt ccaagaacca gttctccctg 240  
 aagctgagct ctgtgaccgc cgcggacacg gctgtgtatt actgtgagag agaggggcta 300  
 gatgcttttg atatctgggg ccaagggaca atggtcaccg tctcttca 348

<210> 243  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 243  
 Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

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

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

40

45

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

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

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

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

&lt;210&gt; 244

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 244

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

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

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

Gly Glu Ile Asn His 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 Glu Gly Leu Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val  
 100 105 110

Thr Val Ser Ser  
 115

&lt;210&gt; 245

&lt;211&gt; 333

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic

## 4329191\_1

## polynucleotide

<400> 245  
caggctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120  
ccaggaacgg cccccaaact cctcatgtat agtaatgata agcggccctc aggggtccct 180  
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
tctgaggatg aggctgatta ttattgtgca gcatgggatg acagcctgaa tggttatgtc 300  
ttcgagctg ggaccagct caccgtttta agt 333

<210> 246  
<211> 348  
<212> DNA  
<213> Artificial Sequence

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

<400> 246  
caggtgcagc tacagcagtg gggcgcagga ctgttgaagc cttcggagac cctgtccctc 60  
acctgcgctg tctatggtgg gtccttcagt ggttactact ggagctggat ccgccagccc 120  
ccagggaagg ggctggagtg gattggggaa atcaatcata gtggaagcac caactacaac 180  
ccgtccctca agagtcgagt caccatatca gtagacacgt ccaagaacca gttctccctg 240  
aagctgagct ctgtgaccgc cgcggacacg gctgtgtatt actgtgagag agaggggcta 300  
gatgcttttg atatctgggg ccaagggaca atggtcaccg tctcttca 348

<210> 247  
<211> 111  
<212> PRT  
<213> Artificial Sequence

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

<400> 247  
Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15  
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
20 25 30  
Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45  
Met Tyr Ser Asn Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60  
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80

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

Asn Gly Tyr Val Phe Ala Ala Gly Thr Gln Leu Thr Val Leu Ser  
100 105 110

<210> 248

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 248

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

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

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

Gly Glu Ile Asn His 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 Glu Gly Leu Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val  
100 105 110

Thr Val Ser Ser  
115

<210> 249

<211> 336

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 249

cagtctgtcg tgacgcagcc gccctcagtg tctgcggccc caggacagaa ggtcaccatc 60

tcctgtctctg gaagcagctc caacattggg aataattatg tatcctggta ccagcagctc 120

ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180

gaccgattct ctggctcaa gtctggcacg tcagccaccc tgggcatcac tggactccag 240

## 4329191\_1

actggggacg aggccgatta ttactgcgga acatgggata gcagcctgag tgctgcttat 300  
gtcttcggaa ctgggaccaa ggtcacgctc ctaggt 336

<210> 250  
<211> 369  
<212> DNA  
<213> Artificial Sequence

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

<400> 250  
caggtccagc tggtacagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
tcctgcaagg cttctggtta cagctttacc agctatacta tcagctgggt tcgacaggcc 120  
cctggacaag gccttgagtg gatgggatgg gtcagcactt acaatgggtct cagaaactat 180  
gcacagaacc tccagggcag agtcaccatg actacagaca cactcacgac cacagcctac 240  
atggagctga ggagcctcag atctgacgac acggccgtgt attattgtgt gagagagggg 300  
tcccccgact acggtgactt cgcggccttt gactactggg gccagggcac cctggtcacc 360  
gtctcctca 369

<210> 251  
<211> 112  
<212> PRT  
<213> Artificial Sequence

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

<400> 251  
Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
1 5 10 15  
Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn  
20 25 30  
Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45  
Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
50 55 60  
Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln  
65 70 75 80  
Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu  
85 90 95  
Ser Ala Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
100 105 110

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<210> 252  
 <211> 123  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 252  
 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 Ser Phe Thr Ser Tyr  
 20 25 30  
 Thr Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45  
 Gly Trp Val Ser Thr Tyr Asn Gly Leu Arg Asn Tyr Ala Gln Asn Leu  
 50 55 60  
 Gln Gly Arg Val Thr Met Thr Thr Asp Thr Leu Thr Thr 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  
 Val Arg Glu Gly Ser Pro Asp Tyr Gly Asp Phe Ala Ala Phe Asp Tyr  
 100 105 110  
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 115 120

<210> 253  
 <211> 330  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 253  
 caggctgtgc tgactcagcc accctcagcg tctgagaccc ccgggcagag ggtcaccatc 60  
 tcttgttctg gaagcaggtc caacatcgga actaatattg tacactggta ccagcagcgc 120  
 ccaggaatgg cccccaaact cctcacttat ggtagtcggc ggccctcagg ggtcccggac 180  
 cgattctctg gtcceaagtt tggcacctca gcctccctgg ccatcagtgg gctccagtct 240  
 gaggatgagg ctgattatta ttgtgcagca tgggatgaca gtctgaatgg tccggctttc 300  
 ggcggaggga ccaagctgac cgtcctaggt 330

<210> 254  
 <211> 348

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<212> DNA  
 <213> Artificial Sequence

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

<400> 254  
 caggtgcagc tacagcagtg gggcgcagga ctgttgaagc cttcggagac cctgtccctc 60  
 acctgcgctg tctatggtgg gtccttcagt ggttactact ggagctggat ccgccagccc 120  
 ccagggaagg ggctggagtg gattggggaa atcaatcata gtggaagcac caactacaac 180  
 ccgtccctca agagtcgagt caccatatca gtagacacgt ccaagaacca gttctccctg 240  
 aagctgagct ctgtgaccgc cgcgacacg gctgtgtatt actgtgagag agacgggtggg 300  
 ggctactttg actactgggg ccagggaacc ctggtcaccg tctcctca 348

<210> 255  
 <211> 110  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 255  
 Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Glu Thr Pro Gly Gln 15  
 1 5 10  
 Arg Val Thr Ile Ser Cys Ser Gly Ser Arg Ser Asn Ile Gly Thr Asn 30  
 20 25 30  
 Ile Val His Trp Tyr Gln Gln Arg Pro Gly Met Ala Pro Lys Leu Leu 45  
 35 40 45  
 Thr Tyr Gly Ser Arg Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly 60  
 50 55 60  
 Ser Lys Phe Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln Ser 80  
 65 70 75 80  
 Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu Asn 95  
 85 90 95  
 Gly Pro Ala Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly 110  
 100 105 110

<210> 256  
 <211> 116  
 <212> PRT  
 <213> Artificial Sequence

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

## 4329191\_1

&lt;400&gt; 256

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

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

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

Gly Glu Ile Asn His 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 Asp Gly Gly Gly Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val  
 100 105 110

Thr Val Ser Ser  
 115

&lt;210&gt; 257

&lt;211&gt; 336

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 257

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc | 60  |
| tcctgcactg ggagcagctc caatatcggg gcacgttatg atgtacactg gtaccagcaa | 120 |
| ctcccaggaa cagccccccg actcctcatc tctgctaact acgatcggcc ctcaggggtc | 180 |
| cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc | 240 |
| caggctgagg atgaggctga ttattactgc cagtcctatg acagcagtgt gagtgccttg | 300 |
| gtgttcggcg gagggaccaa ggtcaccgtc ctaggt                           | 336 |

&lt;210&gt; 258

&lt;211&gt; 363

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 258

|                                                                   |    |
|-------------------------------------------------------------------|----|
| gaagtgcagc tggtgcagtc tggggctgaa gtgaaggagc ctggggcctc agtgaggatc | 60 |
|-------------------------------------------------------------------|----|



## 4329191\_1

tcctgccagg catctggata caacttcatc agttattata tgcactgggt gcggcaggcc 120  
 cctgggcaag gtcttgagt gatgggcacc atcaaccag gcagtgggtga gacagactac 180  
 tcacagaagt tgcagggcag agtcaccatg accagggacc cgtccacggg tacattcgac 240  
 atggggctga gcagcctgac atctggggac acggccgtct attattgtgc gacaggtctc 300  
 atcagaggag ctagcgatgc ttttaatatc tggggccggg ggacaatggt caccgtctct 360  
 tca 363

&lt;210&gt; 259

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 259

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

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

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

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

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

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

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

&lt;210&gt; 260

&lt;211&gt; 121

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 260

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

Ser Val Arg Ile Ser Cys Gln Ala Ser Gly Tyr Asn Phe Ile Ser Tyr  
 20 25 30

## 4329191\_1

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

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

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

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

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

Arg Gly Thr Met Val Thr Val Ser Ser  
 115 120

<210> 261  
 <211> 321  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 261  
 cagcctgtgc tgactcagcc accctcagtg tccgtgtccc caggacagac ggccgccatc 60  
 ccctgttctg gagataagtt gggggataaa tttgcttcct ggtatcagca gaagccaggc 120  
 cagtccccctg tgctggatcat ctatcaagat actaagcggc cctcagggat ccctgagcga 180  
 ttctctggct ccaactctgg gaacacagcc actctgacca tcagcgggac ccaggctatg 240  
 gatgaggctg actattactg tcagacgtgg gccagcggca ttgtggtgtt cggcggaggg 300  
 accaagctga ccgtcctagg t 321

<210> 262  
 <211> 366  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 262  
 caggtacagc tgcagcagtc aggtccagga ctggtgaagc cctcgcagac cctctcactc 60  
 acctgtgcca tctccgggga cagtgtctct agcaacagtg ctgcttgga ctggatcagg 120  
 cagtcacccat cgagaggcct tgagtggctg ggaaggacat actacaggtc caagtggat 180  
 aatgattatg cagtatctgt gaaaagtcga ataaccatca acccagacac atccaagaac 240  
 cagttctccc tgcagctgaa ctctgtgact cccgaggaca cggctgtgta ttactgtgca 300

## 4329191\_1

agagagcgca gtggctggaa gggatttgac tactggggcc agggaaccct ggtcaccgtc 360  
tcctca 366

<210> 263  
<211> 107  
<212> PRT  
<213> Artificial Sequence

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

<400> 263  
Gln Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
1 5 10 15

Thr Ala Ala Ile Pro Cys Ser Gly Asp Lys Leu Gly Asp Lys Phe Ala  
20 25 30

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

Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met  
65 70 75 80

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

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

<210> 264  
<211> 122  
<212> PRT  
<213> Artificial Sequence

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

<400> 264  
Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
1 5 10 15

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

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

Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr Asn Asp Tyr Ala  
50 55 60

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

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

Tyr Tyr Cys Ala Arg Glu Arg Ser Gly Trp Lys Gly Phe Asp Tyr Trp  
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120

<210> 265

<211> 339

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 265

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| gatgttgatga tgactcagtc tccaccctcc ctgtccgtca cccctggaga gccggcctcc | 60  |
| atcacctgca ggtctagtca gaggctcctg gaaagaaatg catacaacta cttggattgg  | 120 |
| tacctgcaga ggccaggaca gtctccacag ctctgatct acttgggttc taatcgggcc   | 180 |
| gccgggggtcc ctgacaggtt cagtggcagt ggatcaggca gagattttac actgaaaatc | 240 |
| agcagagtgg agcctgagga tgttgggggtt tattactgca tgcaagctct acaagctccg | 300 |
| ttcactttcg gcggaggagac caaggtggag atcaaactg                        | 339 |

<210> 266

<211> 357

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 266

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| gaagtgcagc tggtgcagtc tgggggaggc ttggtacagc ctgggggggtc cctgagactc | 60  |
| tcctgtgcag cctctggatt cacctttagc agctatgcca tgagctgggt ccgccaggct  | 120 |
| ccagggaagg ggctggagtg ggtctcagct attagtggta gtggtggtag cacatactac  | 180 |
| gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat  | 240 |
| ctgcaaataa acagcctgag agccgaggac acggccgtat attactgtgc gaaatggggc  | 300 |
| ccgtttcagg atgcttttga tatctggggc caagggacaa tggtcaccgt ctcttca     | 357 |

<210> 267

<211> 113

<212> PRT

<213> Artificial Sequence

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&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 267

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

Glu Pro Ala Ser Ile Thr Cys Arg Ser Ser Gln Ser Leu Leu Glu Arg  
 20 25 30

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

Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ala Gly Val Pro  
 50 55 60

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

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

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

Arg

&lt;210&gt; 268

&lt;211&gt; 119

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 268

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

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

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

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

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

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

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90

95

Ala Lys Trp Gly Pro Phe Gln Asp Ala Phe Asp Ile Trp Gly Gln Gly  
 100 105 110

Thr Met Val Thr Val Ser Ser  
 115

&lt;210&gt; 269

&lt;211&gt; 336

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 269

caggctgtgc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60

tcctgcactg gaaccagcag tgacgttggt gggtataact atgtctcctg gtaccaacag 120

caccggggca aagccccaa actcatgatt tatgaggtca gtaatcggcc ctgaggggtt 180

tctaactcgt tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240

caggctgagg acgaggctga ttattactgc agctcatata caagcagcag cacccttat 300

gtcttcggag cagggaccaa ggtcaccgtc ctaggt 336

&lt;210&gt; 270

&lt;211&gt; 369

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 270

gaggtgcagc tggtggagtc tgggggagggc ttggtacagc ctggcaggtc cctgagactc 60

tcctgtgcag cctctggatt cacctttgat gattatgcc a tgactgggt ccggcaagct 120

ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag cataggctat 180

gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240

ctgcaaata acagtctgag agctgaggac acggccttgt attactgtgc aaaagccagg 300

tggacagcag tggcatcaga ccaccacttt gactactggg gccaggggaac gctggtcacc 360

gtctcctca 369

&lt;210&gt; 271

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

## 4329191\_1

&lt;400&gt; 271

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

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr  
 20 25 30

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

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

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

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

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

&lt;210&gt; 272

&lt;211&gt; 123

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 272

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr 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 Gly Ser Ile Gly Tyr Ala Asp Ser Val  
 50 55 60

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

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

Ala Lys Ala Arg Trp Thr Ala Val Ala Ser Asp His His Phe Asp Tyr  
 100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 Page 127

115

120

<210> 273  
 <211> 333  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 273  
 caggctgtgc ttactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
 tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120  
 ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct 180  
 gaccgattct ctggctcaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
 tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc 300  
 ttcggaactg ggaccaagct gaccgtccta ggt 333

<210> 274  
 <211> 348  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 274  
 gaggtgcagc tggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60  
 tcctgcaagg cttctggagg caccttcagc agctatgcta tcagctgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggaggg atcatcccta tctttggtac agcaaactac 180  
 gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac 240  
 atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagagattgg 300  
 gactacatgg acgtctgggg caaagggacc acggtcaccg tctcctca 348

<210> 275  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 275  
 Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

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

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

40

45

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

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

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

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

&lt;210&gt; 276

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 276

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

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

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

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

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

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

Ala Arg Asp Trp Asp Tyr Met Asp Val Trp Gly Lys Gly Thr Thr Val  
 100 105 110

Thr Val Ser Ser  
 115

&lt;210&gt; 277

&lt;211&gt; 333

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic

## 4329191\_1

## polynucleotide

<400> 277  
 tcctatgagc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
 tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120  
 ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct 180  
 gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
 tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc 300  
 ttcggaactg ggaccaaggt caccgtccta ggt 333

<210> 278  
 <211> 381  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 278  
 gaggtgcagc tgggtggagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
 tcctgcaagg cttctgggta cacctttacc agctatggta tcagctgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaaactat 180  
 gcacagaagc tccagggcag agtcaccatg accacagaca catccacgag cacagcctac 240  
 atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gagagaccta 300  
 tctcggggag ctaaccgcga ttactactac tactacggta tggacgtctg gggccaaggg 360  
 accacgggtca ccgtctcctc a 381

<210> 279  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 279  
 Ser Tyr Glu Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

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

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

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

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
 Page 130

65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu

85 90 95

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

```
<210> 280
<211> 127
<212> PRT
<213> Artificial Sequence
```

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

<400> 280  
Glu Val Gln Leu Val Glu 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 Ser Tyr

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 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 Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Asp Leu Ser Arg Gly Ala Asn Pro His Tyr Tyr Tyr Tyr Tyr  
100 105 110

Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
115 120 125

<210> 281  
<211> 342  
<212> DNA  
<213> Artificial Sequence

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

<400> 281  
cagtcctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcacccgtc 60

tcctgcactg qqagcagatc caacatcggg qcaggatatg atgtacactg qtaccagcaa 120

cttccaggaa cagcccccaa actcctcatc tatggaaata gtaatcggcc tccagggggtc 180

## 4329191\_1

cctgaccgat tctctgggtc taagtctggc acctcagcct ccctgggtcat cactgggctc 240  
 caggctgagg atgccgctga ttattactgc cagtcctatg acaacactgt gcgtgaatca 300  
 ccttatgtct tcggaactgg gaccaagggtc accgtcctag gt 342

<210> 282  
 <211> 375  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 282  
 gaggtccagc tggtacagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggctc 60  
 tcctgcaagg tttccggata caccctcact gaattatcca tgcactgggt gcgacaggct 120  
 cctggaaaag ggcttgagt gatgggaggt tttgatcctg aagatggtga aacaatctac 180  
 gcacagaagt tccagggcag agtcacatg accgaggaca catctacaga cacagcctac 240  
 atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc aacagagagt 300  
 aatttagtgt cccggcacta ctactactac ggtatggacg tctggggcca agggaccacg 360  
 gtcaccgtct cctca 375

<210> 283  
 <211> 114  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 283  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
 1 5 10 15

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

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

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

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

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

Val Arg Glu Ser Pro Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val  
 Page 132

Leu Gly

<210> 284  
 <211> 125  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 284  
 Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

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

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

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

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

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

Ala Thr Glu Ser Asn Leu Val Ser Arg His Tyr Tyr Tyr Tyr Gly Met  
 100 105 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
 115 120 125

<210> 285  
 <211> 333  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 285  
 ctgcctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
 tcttgttctg gaaccagctc caacatcgga agtaattctg tagactggta ccagcagctc 120  
 ccaggaacgg cccccaact cctcatctat agtaataatc agcggccctc aggggtccct 180  
 gaccgaatct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
 tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc 300

ttcggaactg ggaccaaggt caccgtccta ggt

333

&lt;210&gt; 286

&lt;211&gt; 396

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 286

gaagtgcagc tgggtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggtc 60

tcctgcaagg cttctggata caccttcacc ggctactata tgcactgggt gcgacaggcc 120

cctggacaag ggcttgagtg gatgggatgg atcaacccta acagtgggtg cacaaactat 180

gcacagaagt ttcagggcag ggtcaccatg accagggaca cgtccatcag cacagcctac 240

atggagctga gcaggctgag atctgacgac acggccgtgt attactgtgc gagagattac 300

ggatactatg gttcggggag ttattcgagc ggcccccttt actactacta cggtatggac 360

gtctggggcc aagggaccac ggtcaccgtc tcctca 396

&lt;210&gt; 287

&lt;211&gt; 111

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 287

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

&lt;210&gt; 288

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&lt;211&gt; 132

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 288

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

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

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

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

Ala Arg Asp Tyr Gly Tyr Tyr Gly Ser Gly Ser Tyr Ser Ser Gly Pro  
 100 105 110

Leu Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val  
 115 120 125

Thr Val Ser Ser  
 130

&lt;210&gt; 289

&lt;211&gt; 333

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 289

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| caggctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc | 60  |
| tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc | 120 |
| ccaggaacgg cccccaaact cctcatgtat aataatgatc agcggccctc aggggtcctt | 180 |
| gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag | 240 |
| tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctcaa tggttatgtc | 300 |
| ttcggacctg ggaccaaggt caccgtccta ggt                              | 333 |

## 4329191\_1

<210> 290  
 <211> 381  
 <212> DNA  
 <213> Artificial Sequence

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

<400> 290  
 caggtgcagc tggaggagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
 tcctgcaagg cttctgggta cacctttacc agctatggta tcagctgggt gcgacaggcc 120  
 cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaaactat 180  
 gcacagaagc tccagggcag agtcaccatg accacagaca catccacgag cacagcctac 240  
 atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gagagaccta 300  
 tctcggggag ctaacccgca ttactactac tactacggta tggacgtctg gggccaaggg 360  
 accacggtca ccgtctctc a 381

<210> 291  
 <211> 111  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 291  
 Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln 15  
 1 5 10

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

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

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

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

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

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

<210> 292  
 <211> 127  
 <212> PRT  
 <213> Artificial Sequence



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&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 292

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

&lt;210&gt; 293

&lt;211&gt; 333

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 293

|                                                                       |     |
|-----------------------------------------------------------------------|-----|
| aattttatgc tgactcagcc ccacgctgtg tcggagtctc cggggaagac ggtaaccatc     | 60  |
| tcctgcaccc gcagcagtgagg cagtattgcc agcaactatg tgcagtggtgta ccagcagcgc | 120 |
| ccgggcagtt cccccgcac tgtgatttat gaggataatc aaagaccctc tgggggtccct     | 180 |
| ggtcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga     | 240 |
| ctgaagactg aggacgaggc tgactactac tgctcagcttt atgattccac cagtgtgctt    | 300 |
| ttcggcggag ggaccaagct gaccgtccta ggt                                  | 333 |

&lt;210&gt; 294

&lt;211&gt; 360

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

## 4329191\_1

<400> 294  
gaggtccagc tgggtgcagtc tggggctgag gtgaagaagc cagggtcctc ggtgaaggtc 60  
tcctgcaagg cctcgggagg caccttcagc agcaattctc tcagctgggt gcgacaggcc 120  
cctggacaag ggcttgagtg gatgggaagg atcttcctta tcctgggtat aacaaactat 180  
gcacagaagt tccagggcag agtcacgatt accgcggaca aatccacgag cacagcctac 240  
atggagctga gcagcctgag atctgaggac acggccgtct attactgtgc gagaggaaac 300  
taccaatggt atgatgcttt tgatatctgg ggccaaggga caatgggtcac cgtctcttca 360

<210> 295  
<211> 111  
<212> PRT  
<213> Artificial Sequence

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

<400> 295  
Asn Phe Met Leu Thr Gln Pro His Ala Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

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

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ser Pro Arg Thr Val  
35 40 45

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

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

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

<210> 296  
<211> 120  
<212> PRT  
<213> Artificial Sequence

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

<400> 296  
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
1 5 10 15

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

25

30

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

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

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

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

Ala Arg Gly Asn Tyr Gln Trp Tyr Asp Ala Phe Asp Ile Trp Gly Gln  
                                   100                                  105                                  110

Gly Thr Met Val Thr Val Ser Ser  
           115                                  120

&lt;210&gt; 297

&lt;211&gt; 330

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 297

cagcctgtgc tgactcagcc accctcagtg tcagtggtcc caggaaagac ggccaggatt 60

acctgtgggg gaaaaaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120

caggccccctg tggtgggtcat ccattatgat agtgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240

gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatcatcc ttatgtcttc 300

ggaactggga ccaaggtcac cgtcctaggt 330

&lt;210&gt; 298

&lt;211&gt; 351

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 298

caggtgcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60

tcctgcaagg cttctgggta cacctttacc aactatggta tcagctgggt gcgacaggcc 120

cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaaactat 180

gcacataagc tccagggcag agtcaccatg accacagaca catccacgag cacagccaac 240

## 4329191\_1

atggagctga ggagcctgag acctgacgac actgccgtgt attactgtgc gcgctcttac 300  
 ttcggttctc atgattactg ggggtcaaggt actctggtga ccgtctcctc a 351

<210> 299  
 <211> 110  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 299  
 Gln Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Val Pro Gly Lys  
 1 5 10 15

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

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

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

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

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

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

<210> 300  
 <211> 117  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 300  
 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 Asn 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 His Lys Leu  
 50 55 60

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

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

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

Val Thr Val Ser Ser  
115

<210> 301  
<211> 327  
<212> DNA  
<213> Artificial Sequence

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

<400> 301  
tcctatgtgc tgactcagcc accctcgggtg tcagtggccc caggaaagac ggccaggatt 60  
tcctgtgggg gaaacgacat tggaagtaaa agtgttttct ggtatcagca gaggccaggc 120  
caggcccctg tgttggtcgt ctatgatgat agcgaccggc cctcagggtt ccctgagcga 180  
ttctctgggt tcaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
gatgaggccg actattactg tcaagtgtgg gatagtagta gtgatacatta tgtcttcgga 300  
actgggacca aggtcaccgt cctaggt 327

<210> 302  
<211> 369  
<212> DNA  
<213> Artificial Sequence

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

<400> 302  
caggtgcagc tgggtggagtc tgggggaggc ttggtacagc ctggcagggtc cctgagactc 60  
tcctgtgcag cctctggatt cacctttgat gattatgccca tgcactgggt ccggcaagct 120  
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag cataggctat 180  
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240  
ctgcaaatga acagtctgag agctgaggac acggccttgt attactgtgc aaaagatata 300  
acctatggtt cggggagtta tgggtgctttt gatatctggg gcccaaggac aatggtcacc 360  
gtctcttca 369

<210> 303  
<211> 109  
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 303

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

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

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

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

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

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

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

<210> 304

<211> 123

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 304

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr 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 Gly Ser Ile Gly Tyr Ala Asp Ser Val  
50 55 60

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

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

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Ala Lys Asp Ile Thr Tyr Gly Ser Gly Ser Tyr Gly Ala Phe Asp Ile  
100 105 110

Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser  
115 120

<210> 305  
<211> 63  
<212> DNA  
<213> Artificial Sequence

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

<400> 305  
tctagagggtg gtggtggttag cggcggcggc ggctctggtg gtggtggatc cctcgagatg 60  
gcc 63

<210> 306  
<211> 75  
<212> DNA  
<213> Artificial Sequence

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

<400> 306  
actagtggcc aggccggcca gcaccatcac catcaccatg gcgcataccc gtacgacgtt 60  
ccggactacg cttct 75

<210> 307  
<211> 21  
<212> PRT  
<213> Artificial Sequence

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

<400> 307  
Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
1 5 10 15

Ser Leu Glu Met Ala  
20

<210> 308  
<211> 25  
<212> PRT  
<213> Artificial Sequence

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

<400> 308  
Thr Ser Gly Gln Ala Gly Gln His His His His His Gly Ala Tyr

1 5 4329191\_1 15  
10

Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
20 25

<210> 309  
<211> 8  
<212> PRT  
<213> Artificial Sequence

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

<400> 309  
Gly Gly Ser Phe Ser Gly Tyr Tyr  
1 5

<210> 310  
<211> 7  
<212> PRT  
<213> Artificial Sequence

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

<400> 310  
Ile Asn His Ser Gly Ser Thr  
1 5

<210> 311  
<211> 11  
<212> PRT  
<213> Artificial Sequence

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

<400> 311  
Ala Arg Glu Gly Pro Tyr Asp Gly Phe Asp Ser  
1 5 10

<210> 312  
<211> 8  
<212> PRT  
<213> Artificial Sequence

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

<400> 312  
Ser Ser Asn Ile Gly Ser Asn Thr  
1 5

<210> 313  
<211> 3  
<212> PRT  
<213> Artificial Sequence



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

<400> 313  
Ser Asn Asn  
1

<210> 314  
<211> 11  
<212> PRT  
<213> Artificial Sequence

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

<400> 314  
Ala Ala Trp Asp Asp Ser Leu Asn Gly Tyr Val  
1 5 10

<210> 315  
<211> 8  
<212> PRT  
<213> Artificial Sequence

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

<400> 315  
Gly Tyr Pro Phe Asn Lys Tyr Asp  
1 5

<210> 316  
<211> 8  
<212> PRT  
<213> Artificial Sequence

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

<400> 316  
Ile Ile Pro Ile Phe Arg Thr Thr  
1 5

<210> 317  
<211> 9  
<212> PRT  
<213> Artificial Sequence

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

<400> 317  
Ala Arg Glu Trp Phe Tyr Trp Asp Ile  
1 5

<210> 318  
<211> 8  
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 318

Ser Gly Ser Ile Ala Ser Asn Tyr  
1 5

<210> 319

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 319

Glu Asp Asn  
1

<210> 320

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 320

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

<210> 321

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 321

Gly Phe Thr Phe Ser Ser Tyr Gly  
1 5

<210> 322

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 322

Ile Ser His Asp Gly Ser Asn Lys  
1 5

<210> 323

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

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

<400> 323  
 Ala Arg Ser Asn Gln Trp Ser Gly Tyr Phe Ser Phe Asp Tyr  
 1 5 10

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

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

<400> 324  
 Lys Leu Gly Thr Lys Tyr  
 1 5

<210> 325  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 325  
 Gln Ala Trp Asp Ser Asp Thr Phe Val Val  
 1 5 10

<210> 326  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 326  
 Gly Tyr Thr Phe Thr Asn Tyr Gly  
 1 5

<210> 327  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 327  
 Ile Ser Ala Tyr Asn Gly Asn Thr  
 1 5

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<210> 328  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence  
 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide  
 <400> 328  
 Ala Arg Ser Tyr Phe Gly Ser His Asp Tyr  
 1 5 10

<210> 329  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence  
 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide  
 <400> 329  
 Asn Ile Gly Ser Lys Ser  
 1 5

<210> 330  
 <211> 3  
 <212> PRT  
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 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide  
 <400> 330  
 Tyr Asp Ser  
 1

<210> 331  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence  
 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide  
 <400> 331  
 Gln Val Trp Asp Ser Ser Ser Asp His Pro Tyr Val  
 1 5 10

<210> 332  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence  
 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide  
 <400> 332  
 Gly Tyr Thr Phe Thr Thr Tyr Gly

1

5

<210> 333  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 333  
 Ile Asn Thr Tyr Asn Gly His Thr  
 1 5

<210> 334  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 334  
 Ala Arg Val Ile Tyr Gly Ser Gly Asp Tyr  
 1 5 10

<210> 335  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 335  
 Gly Tyr Ser Ile Ser Ser Gly Tyr Phe  
 1 5

<210> 336  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 336  
 Ile Tyr His Ser Arg Ser Thr  
 1 5

<210> 337  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 337  
Ala Arg Gly Tyr Gly Tyr Phe Asp Tyr  
1 5

<210> 338  
<211> 6  
<212> PRT  
<213> Artificial Sequence

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

<400> 338  
Asn Ile Gly Ser Lys Thr  
1 5

<210> 339  
<211> 11  
<212> PRT  
<213> Artificial Sequence

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

<400> 339  
Gln Val Trp Asp Ser Ser Ser Asp His Arg Val  
1 5 10

<210> 340  
<211> 8  
<212> PRT  
<213> Artificial Sequence

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

<400> 340  
Gly Phe Thr Phe Gly Asp Tyr Gly  
1 5

<210> 341  
<211> 8  
<212> PRT  
<213> Artificial Sequence

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

<400> 341  
Ile Asn Trp Asn Gly Gly Ser Thr  
1 5

<210> 342  
<211> 13  
<212> PRT  
<213> Artificial Sequence

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

&lt;400&gt; 342

Ala Arg Ser Lys Tyr Asn Phe His Val Tyr Tyr Asp Tyr  
 1 5 10

&lt;210&gt; 343

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 343

Ser Ser Asp Val Gly Gly Tyr Asn Tyr  
 1 5

&lt;210&gt; 344

&lt;211&gt; 3

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 344

Asp Val Ser  
 1

&lt;210&gt; 345

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 345

Ser Ser Tyr Thr Ser Ser Ser Thr Ser Lys Val  
 1 5 10

&lt;210&gt; 346

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 346

Gly Tyr Thr Phe Thr Ser Tyr Gly  
 1 5

&lt;210&gt; 347

&lt;211&gt; 13

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

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<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 347

Ala Arg Ser Ser Gly Asn Met Val Ser Trp Lys Asp Met  
1 5 10

<210> 348

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 348

Asn Ser Asn Ile Gly Ser Asn Tyr  
1 5

<210> 349

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 349

Arg Asn Asn  
1

<210> 350

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 350

Ala Ala Trp Asp Asp Ser Leu Ser Ala Tyr Val  
1 5 10

<210> 351

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 351

Ala Arg Gly Ala Val Ala Tyr His Asp  
1 5

<210> 352

<211> 9

<212> PRT



<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 352

Ser Ser Asp Val Gly Gly Tyr Asn Ser  
1 5

<210> 353

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 353

Ser Ser Tyr Thr Ser Ser Ser Thr Pro Leu Val  
1 5 10

<210> 354

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 354

Gly Gly Thr Leu Ser Ser Tyr Ala  
1 5

<210> 355

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 355

Ile Ile Pro Met Phe Gly Thr Ala  
1 5

<210> 356

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 356

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

<210> 357

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

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

<400> 357  
 Ser Ser Asn Ile Ser Ile Tyr Asp  
 1 5

<210> 358  
 <211> 3  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 358  
 Gly Asn Asn  
 1

<210> 359  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 359  
 Gly Thr Trp Asp Asp Ser Leu Ser Gly Gly Val  
 1 5 10

<210> 360  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 360  
 Gly Phe Pro Phe Asn Ile Phe Gly  
 1 5

<210> 361  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 361  
 Ile Ser Gly Tyr Asn Gly Asn Thr  
 1 5

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<210> 362  
 <211> 10  
 <212> PRT  
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 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide  
 <400> 362  
 Ala Arg Gly Ala Tyr Gly Gly Met Asp Thr  
 1 5 10

<210> 363  
 <211> 8  
 <212> PRT  
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 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide  
 <400> 363  
 Asp Ser Asn Ile Gly Asn Asn Tyr  
 1 5

<210> 364  
 <211> 3  
 <212> PRT  
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 <223> Description of Artificial Sequence: Synthetic peptide  
 <400> 364  
 Asp Val Lys  
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<210> 365  
 <211> 11  
 <212> PRT  
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 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide  
 <400> 365  
 Gly Thr Trp Asp Ser Arg Leu Asp Ala Tyr Val  
 1 5 10

<210> 366  
 <211> 8  
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 <223> Description of Artificial Sequence: Synthetic peptide  
 <400> 366  
 Gly Tyr Met Phe Thr Ser Tyr Gly

1

5

<210> 367  
<211> 8  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 367  
Ile Ser Ala Asn Asn Gly Lys Thr  
1 5

<210> 368  
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Ala Arg His Ile Gly Gly Ser Tyr Phe Asp Arg  
1 5 10

<210> 369  
<211> 9  
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<223> Description of Artificial Sequence: Synthetic peptide

<400> 369  
Thr Ser Asn Ile Gly Ala Gly Tyr Asp  
1 5

<210> 370  
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<212> PRT  
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<220>  
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Thr Asn Asn  
1

<210> 371  
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Gly Thr Trp Asp Ser Ser Leu Ser Ala Val Val  
1 5 10

<210> 372  
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Gly Phe Thr Phe Ser Ser Tyr Ala  
1 5

<210> 373  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 373  
Ile Ser Gly Ser Asp Gly Ser Thr  
1 5

<210> 374  
<211> 12  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 374  
Ala Arg Ser His Glu Ala Asn Leu Val Gly Asp Trp  
1 5 10

<210> 375  
<211> 11  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 375  
Gln Val Trp Asp Ser Ser Ser Asp His Tyr Val  
1 5 10

<210> 376  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Page 157

## peptide

&lt;400&gt; 376

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Trp | Gly | Gly | Phe | Gly | Ala | Val | Asp | His |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |

&lt;210&gt; 377

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 377

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Val | Trp | Asp | Ser | Ser | Ser | Asp | Val | Val |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

&lt;210&gt; 378

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 378

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Phe | Thr | Phe | Ser | Ser | Tyr | Ser |
| 1   |     |     |     | 5   |     |     |     |

&lt;210&gt; 379

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 379

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ser | Ser | Ser | Ser | Ser | Tyr | Ile |
| 1   |     |     |     | 5   |     |     |     |

&lt;210&gt; 380

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 380

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Gly | Gln | Gly | Tyr | Asp | Tyr |
| 1   |     |     |     | 5   |     |     |     |

&lt;210&gt; 381

&lt;211&gt; 6

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

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

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Ser Leu Thr Asp Tyr His  
1 5

<210> 382  
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Ala Thr Asn  
1

<210> 383  
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<220>  
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Asn Ser Arg Asp Ser Gly Thr Asp Glu Val Leu  
1 5 10

<210> 384  
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Ala Arg Tyr Tyr Pro Gly Met Asp Met  
1 5

<210> 385  
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<223> Description of Artificial Sequence: Synthetic peptide

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Asp Asp Ser  
1

<210> 386  
<211> 11  
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<223> Description of Artificial Sequence: Synthetic peptide

<400> 386

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

<210> 387

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 387

Gly Tyr Thr Leu Asn Glu Leu Ser  
1 5

<210> 388

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 388

Phe Asp Pro Glu Asp Gly Glu Thr  
1 5

<210> 389

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 389

Ala Arg Gly Gly Tyr Gly Asp Ser  
1 5

<210> 390

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 390

Ser Ser Asn Ile Gly Arg Asn Gly  
1 5

<210> 391



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<211> 3  
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<220>  
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<400> 391  
 Asn Asp Asn  
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<210> 392  
 <211> 11  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 392  
 Ala Ala Trp Asp Asp Ser Leu His Gly Val Val  
 1 5 10

<210> 393  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 393  
 Gly Gly Thr Phe Ser Ser Asp Ala  
 1 5

<210> 394  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 394  
 Ala Arg Glu Gly Tyr Tyr Tyr Pro Ser Ala Tyr Leu Gly Ser Val Leu  
 1 5 10 15

Asn Asp Ile Ser Ser Val Tyr Asp Glu  
 20 25

<210> 395  
 <211> 10  
 <212> PRT  
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<220>  
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<400> 395  
Gln Ser Tyr Asp Ser Ser Asn Ser Trp Val  
1 5 10

<210> 396  
<211> 9  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<400> 396  
Ala Arg Ser Met Thr Ser Phe Asp Tyr  
1 5

<210> 397  
<211> 8  
<212> PRT  
<213> Artificial Sequence

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

<400> 397  
Thr Ser Asn Ile Gly Asn Asn Asp  
1 5

<210> 398  
<211> 3  
<212> PRT  
<213> Artificial Sequence

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

<400> 398  
Asp Asn Asn  
1

<210> 399  
<211> 10  
<212> PRT  
<213> Artificial Sequence

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

<400> 399  
Gly Thr Trp Asp Ser Ser Val Ser Ala Ser  
1 5 10

<210> 400  
<211> 9  
<212> PRT  
<213> Artificial Sequence

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

&lt;400&gt; 400

Ala Arg Ser Val Tyr Asp Leu Asp Thr  
1 5

&lt;210&gt; 401

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
peptide

&lt;400&gt; 401

Asn Ser Asn Ile Gly Asn Asn Tyr  
1 5

&lt;210&gt; 402

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
peptide

&lt;400&gt; 402

Gly Thr Trp Asn Thr Thr Val Thr Pro Gly Tyr Val  
1 5 10

&lt;210&gt; 403

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
peptide

&lt;400&gt; 403

Gly Phe Thr Phe Asp Asp Tyr Ala  
1 5

&lt;210&gt; 404

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
peptide

&lt;400&gt; 404

Ile Ser Trp Asn Ser Gly Ser Ile  
1 5

&lt;210&gt; 405

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

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&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 405

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

&lt;210&gt; 406

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 406

Ser Ser Asn Ile Gly Asn Asn Tyr  
1 5

&lt;210&gt; 407

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 407

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

&lt;210&gt; 408

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 408

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

&lt;210&gt; 409

&lt;211&gt; 3

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 409

Ala Asp Ser  
1

&lt;210&gt; 410

&lt;211&gt; 12

&lt;212&gt; PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 410

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

<210> 411

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 411

Gly Gly Thr Phe Ser Ser Tyr Ala  
1 5

<210> 412

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 412

Ile Ile Pro Ile Phe Gly Thr Ala  
1 5

<210> 413

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 413

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

<210> 414

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 414

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

<210> 415

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<211> 11  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 415  
 Ala Arg Tyr Trp Gly Tyr Asp Ser Tyr Asp Glu  
 1 5 10

<210> 416  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 416  
 Gln Ser Ile Ser Ser Tyr  
 1 5

<210> 417  
 <211> 3  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 417  
 Ala Ala Ser  
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<210> 418  
 <211> 9  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 418  
 Gln Gln Ser Tyr Ser Thr Pro Phe Thr  
 1 5

<210> 419  
 <211> 9  
 <212> PRT  
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<220>  
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<400> 419  
 Gln Ser Tyr Asp Ser Ser Asn Trp Val  
 1 5

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<210> 420  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

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

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 Gly Tyr Thr Phe Thr Asp Tyr Tyr  
 1 5

<210> 421  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
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 Val Asp Pro Glu Asp Gly Glu Thr  
 1 5

<210> 422  
 <211> 19  
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 Ala Arg Tyr Trp Ser Tyr Ser Phe Asp Tyr Leu Tyr Met Pro Glu Gly  
 1 5 10 15

Asn Asp Trp

<210> 423  
 <211> 9  
 <212> PRT  
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<220>  
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 Ser Ser Asn Ile Gly Ala Gly Tyr Asp  
 1 5

<210> 424  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence

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

&lt;400&gt; 424

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ser | Tyr | Asp | Ser | Ser | Leu | Ser | Asp | Val | Val |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |

&lt;210&gt; 425

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 425

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Tyr | Asn | Phe | Leu | Asn | Tyr | Gly |
| 1   |     |     |     | 5   |     |     |     |

&lt;210&gt; 426

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 426

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ser | Thr | Tyr | Thr | Gly | Asn | Thr |
| 1   |     |     |     | 5   |     |     |     |

&lt;210&gt; 427

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 427

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Asp | Leu | Tyr | Tyr | Glu | Gly | Val | Asp | Tyr |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |

&lt;210&gt; 428

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 428

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ser | Asn | Ile | Gly | Ser | Gly | Ala |
| 1   |     |     |     | 5   |     |     |     |

&lt;210&gt; 429

&lt;211&gt; 3

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence



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

<400> 429  
Ser Tyr Asn  
1

<210> 430  
<211> 9  
<212> PRT  
<213> Artificial Sequence

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

<400> 430  
Ala Thr Trp Asp Asp Ser Val Asn Gly  
1 5

<210> 431  
<211> 8  
<212> PRT  
<213> Artificial Sequence

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

<400> 431  
Ile Ser Tyr Asp Gly Ser Asn Lys  
1 5

<210> 432  
<211> 12  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 432  
Ala Arg Ser Tyr Phe Thr Ser Gly Phe Tyr Asp Tyr  
1 5 10

<210> 433  
<211> 6  
<212> PRT  
<213> Artificial Sequence

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

<400> 433  
Asn Ile Gly Ser Glu Ser  
1 5

<210> 434  
<211> 3  
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 434

Tyr Asp Thr

1

<210> 435

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 435

Gln Val Trp Asp Ser Ser Arg Asp His Val Val

1

5

10

<210> 436

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 436

Gly Tyr Thr Leu Thr Glu Leu Ser

1

5

<210> 437

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 437

Ala Arg Met Ser Ser Met Tyr Tyr Asp

1

5

<210> 438

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 438

Gly Asn Ser

1

<210> 439

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

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

<400> 439  
 Gln Ser Tyr Asp Ser Ser Leu Ser Gly Ser Tyr Val  
 1 5 10

<210> 440  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

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

<400> 440  
 Gly Phe Thr Val Ser Asp Tyr Tyr  
 1 5

<210> 441  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 441  
 Ile Ser Gly Ser Gly Asn Ser Ile  
 1 5

<210> 442  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 442  
 Ala Arg Ser Thr Lys Phe Asp Tyr  
 1 5

<210> 443  
 <211> 10  
 <212> PRT  
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<220>  
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<400> 443  
 Gln Val Trp Asp Ser Ser Ser Asp Tyr Val  
 1 5 10

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<210> 444  
 <211> 8  
 <212> PRT  
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<220>  
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<400> 444  
 Gly Tyr Ser Phe Thr Asn Tyr Trp  
 1 5

<210> 445  
 <211> 8  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

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 1 5

<210> 446  
 <211> 12  
 <212> PRT  
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<220>  
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<400> 446  
 Ala Arg Ser Thr Gly Ser Ser His Met Ser Asp Glu  
 1 5 10

<210> 447  
 <211> 8  
 <212> PRT  
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<220>  
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<400> 447  
 Ser Ser Asn Val Gly Ser Tyr Thr  
 1 5

<210> 448  
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 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

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 Asn Asn Asn

1

<210> 449  
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 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 449  
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 1 5 10

<210> 450  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 450  
 Ile Thr His Ser Gly Arg Ser  
 1 5

<210> 451  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 451  
 Ala Arg Ser Ser Ile Met Ser Asp Tyr  
 1 5

<210> 452  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 452  
 Gln Ser Tyr Asp Ser Ser Asn His Trp Val  
 1 5 10

<210> 453  
 <211> 11  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

4329191\_1

<400> 453  
Ala Arg Gly Ser Ala Leu Asp His Tyr Asp Arg  
1 5 10

<210> 454  
<211> 3  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 454  
Asn Asn Arg  
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<210> 455  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 455  
Gly Thr Trp Asp Gly Ser Leu Thr Gly Ala Val  
1 5 10

<210> 456  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 456  
Ala Arg Tyr Asn Tyr Tyr Phe Asn Asp Tyr  
1 5 10

<210> 457  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 457  
Gln Ser Tyr Asp Ser Thr Asn Trp Val  
1 5

<210> 458  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
Page 174

## peptide

&lt;400&gt; 458

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Ser | Met | Phe | Gly | Ala | His | Asp | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

&lt;210&gt; 459

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 459

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Gly | Ala | Ser | Phe | Asp | Arg | His | Asp | Asn |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |

&lt;210&gt; 460

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 460

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ser | Asn | Ile | Gly | Ala | Gly | Phe | Asp |
| 1   |     |     |     | 5   |     |     |     |     |

&lt;210&gt; 461

&lt;211&gt; 3

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 461

|     |     |     |
|-----|-----|-----|
| Ala | Asn | Ser |
| 1   |     |     |

&lt;210&gt; 462

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 462

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ser | Tyr | Asp | Ser | Ser | Leu | Ser | Gly | Val | Val |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |

&lt;210&gt; 463

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

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<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 463

Ala Arg Ser Asn Tyr Tyr Tyr Asn Asp Tyr  
1 5 10

<210> 464

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 464

Ala Arg Tyr Ser Gly Val Tyr Tyr Asp  
1 5

<210> 465

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 465

Gln Ser Tyr Asp Ser Ser Leu Ser Gly Tyr Val  
1 5 10

<210> 466

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 466

Met Asn Pro Asn Ser Gly Asn Thr  
1 5

<210> 467

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 467

Ala Arg Tyr Tyr Ser Tyr Gly Tyr Asp  
1 5

<210> 468

<211> 8

<212> PRT



<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 468

Ser Gly Ser Ile Ala Asp Asn Phe  
1 5

<210> 469

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 469

Asn Asp Asp  
1

<210> 470

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 470

Gln Ser Tyr Asp Asn Asn Asn Arg Gly Val  
1 5 10

<210> 471

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 471

Gly Asp Ser Val Ser Thr Asn Ser Val Ala  
1 5 10

<210> 472

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 472

Thr Tyr Tyr Arg Ser Lys Trp Ser Asn  
1 5

<210> 473

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<211> 12  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 473  
 Ala Arg Ser Ser Ser Trp Tyr Gln Ile Phe Asp Tyr  
 1 5 10

<210> 474  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 474  
 Ser Ser Asn Ile Gly Thr Gly Tyr Phe  
 1 5

<210> 475  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 475  
 Ile Ser Gly Ser Gly Gly Ser Thr  
 1 5

<210> 476  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 476  
 Ala Arg Ser Gly Ala Tyr Trp Asp Tyr Ser Val Tyr Asp Glu  
 1 5 10

<210> 477  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 477  
 Ser Asp Ser Ile Ala Asn Asn Tyr  
 1 5

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<210> 478  
 <211> 3  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 478  
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<210> 479  
 <211> 10  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 479  
 Gln Ser Tyr His Ser Asp Asn Arg Trp Val  
 1 5 10

<210> 480  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 480  
 Gly Gly Ser Ile Ser Ser Ser Asn Trp  
 1 5

<210> 481  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 481  
 Ile Tyr His Ser Gly Ser Pro  
 1 5

<210> 482  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 482  
 Ala Arg Met Thr Thr His Thr Phe Gly Tyr Asp Ala  
 Page 179

1

5

<210> 483  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 483  
Lys Leu Gly Asp Lys Tyr  
1 5

<210> 484  
<211> 3  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 484  
Gln Asp Asn  
1

<210> 485  
<211> 10  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

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Gln Ala Trp Asp Ser Ser Thr Tyr Val Ala  
1 5 10

<210> 486  
<211> 8  
<212> PRT  
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<220>  
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Ala Arg Gly Val His Leu Asp Trp  
1 5

<210> 487  
<211> 3  
<212> PRT  
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<220>  
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 Asp Asp Ala  
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<210> 488  
 <211> 11  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic  
 peptide

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 Gln Val Trp Asp Arg Asn Ser Ala Gln Phe Val  
 1 5 10

<210> 489  
 <211> 19  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 peptide

<400> 489  
 Ala Arg Leu Tyr Glu Gly Gly Tyr His Gly Trp Gly Ser Trp Leu Ser  
 1 5 10 15

Ser Asp Ser

<210> 490  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 peptide

<400> 490  
 Ser Ser Asn Ile Gly Ser Asn Tyr  
 1 5

<210> 491  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 peptide

<400> 491  
 Ala Ala Trp Asp Asp Ser Leu Ser Gly Tyr Val  
 1 5 10

<210> 492  
 <211> 11  
 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 492

Ala Arg Glu Gly Ala Phe Asp Ala Phe Asp Ile  
1 5 10

<210> 493

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 493

Ala Ala Trp Asp Asp Ser Leu Asn Gly Tyr  
1 5 10

<210> 494

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 494

Ala Asn Gly Asp Ser Asn Tyr Tyr Tyr Gly Met Asp Val  
1 5 10

<210> 495

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 495

Ala Ala Trp Asp Asp Ser Leu Ser Gly Tyr Leu  
1 5 10

<210> 496

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 496

Ile Ser Gly Asp Gly Gly Ser Thr  
1 5

<210> 497

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<211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 497  
 Ala Lys Asp Arg Ala Ala Ala Gly Tyr Tyr Tyr Tyr Gly Met Asp Val  
 1 5 10 15

<210> 498  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 498  
 Ser Ser Asp Ile Gly Gly Tyr Asn Tyr  
 1 5

<210> 499  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 499  
 Ile Ser Tyr Thr Arg Thr Trp Asn Pro Tyr Val  
 1 5 10

<210> 500  
 <211> 8  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 500  
 Gly Phe Thr Phe Asn Asp Tyr Ala  
 1 5

<210> 501  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 501  
 Ile Ser Trp Ser Gly Asn Asn Ile  
 1 5

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<210> 502  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 502  
 Ala Lys Asp Ser Ile Arg Tyr Gly Ile Thr Trp Gly Gly Phe Asp Tyr  
 1 5 10 15

<210> 503  
 <211> 6  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 503  
 Lys Leu Gly Glu Lys Tyr  
 1 5

<210> 504  
 <211> 3  
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 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 504  
 Gln Asp Thr  
 1

<210> 505  
 <211> 8  
 <212> PRT  
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<220>  
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<400> 505  
 Gln Ala Trp Asp Arg Gly Val Val  
 1 5

<210> 506  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 506  
 Ile Asn Trp Asp Gly Gly Ser Thr



1

5

<210> 507  
 <211> 11  
 <212> PRT  
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<220>  
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 Ala Lys Gly Met Gly Leu Arg Ala Phe Asp Tyr  
 1 5 10

<210> 508  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 508  
 Ser Asn Asn Val Gly Asn Leu Gly  
 1 5

<210> 509  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 509  
 Ser Ala Trp Asp Ser Ser Leu Ser Ala  
 1 5

<210> 510  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 510  
 Gly Tyr Thr Phe Ser Trp Tyr Ala  
 1 5

<210> 511  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 511  
 Ile Asn Ala Gly Asn Gly Asn Thr  
 1 5

<210> 512  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 512  
 Ala Arg Pro Asp Asn Tyr Gly Ser Gly Gly Asp Val Phe Asp Ile  
 1 5 10 15

<210> 513  
 <211> 3  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 513  
 Ser Asn Asp  
 1

<210> 514  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 514  
 Ala Ser Trp Asp Asp Ser Leu Asn Gly Arg Tyr Val  
 1 5 10

<210> 515  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 515  
 Gly Phe Thr Phe Ser Ser Tyr Glu  
 1 5

<210> 516  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
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## peptide

&lt;400&gt; 516

Ile Ser Ser Ser Gly Ser Thr Ile  
1 5

&lt;210&gt; 517

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
peptide

&lt;400&gt; 517

Ala Arg Trp Asp Tyr Gly Met Asp Val  
1 5

&lt;210&gt; 518

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
peptide

&lt;400&gt; 518

Ser Gly Ser Ile Ala Ser Asn Phe  
1 5

&lt;210&gt; 519

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
peptide

&lt;400&gt; 519

Gln Ser Tyr Asp Thr Ser Asn Val Val  
1 5

&lt;210&gt; 520

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
peptide

&lt;400&gt; 520

Gly Tyr Thr Phe Thr Trp Tyr Ala  
1 5

&lt;210&gt; 521

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

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&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 521

Ile Asn Ala Gly Ser Gly Asn Thr  
1 5

&lt;210&gt; 522

&lt;211&gt; 15

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 522

Ala Arg Pro Asn Asn Tyr Gly Ser Gly Gly Asp Val Phe Asp Ile  
1 5 10 15

&lt;210&gt; 523

&lt;211&gt; 3

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 523

Ser Ser Ser  
1

&lt;210&gt; 524

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 524

Ala Thr Trp Asp Asp Ser Leu Asn Ala  
1 5

&lt;210&gt; 525

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 525

Gly Tyr Thr Phe Thr Asn Tyr Ala  
1 5

&lt;210&gt; 526

&lt;211&gt; 8

&lt;212&gt; PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 526

Ile Asn Gly Gly Asn Gly Asn Thr  
1 5

<210> 527

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 527

Ala Lys Pro Glu Glu Thr Ala Gly Thr Ile His Phe Asp Tyr  
1 5 10

<210> 528

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 528

Gly Thr Trp Asp Ser Ser Leu Ser Ala Tyr Val  
1 5 10

<210> 529

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 529

Ala Gly Glu Gly Tyr Tyr Asp Ser Ser Gly Tyr Ser Asn Gly Asp Ala  
1 5 10 15

Phe Asp Ile

<210> 530

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 530

Gln Ser Tyr Asp Ser Thr Ile Thr Val

1

5

<210> 531  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 531  
 Gln Ser Tyr Asp Ser Ser Asn Val Val  
 1 5

<210> 532  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 532  
 Ala Lys Asp Arg Gly Gly Gly Val Ile Val Lys Asp Ala Phe Asp Ile  
 1 5 10 15

<210> 533  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 533  
 Arg Leu Thr Asn Lys Tyr  
 1 5

<210> 534  
 <211> 3  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 534  
 Glu Asp Ala  
 1

<210> 535  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 535  
Gln Ala Trp Asp Ser Ser Val Val Val  
1 5

<210> 536  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 536  
Ala Arg Gln Gln Gly Gly Gly Trp Tyr Asp Val  
1 5 10

<210> 537  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 537  
Gly Tyr Thr Phe Thr Ser Tyr Thr  
1 5

<210> 538  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 538  
Ile Ser Thr Tyr Asn Gly Leu Thr  
1 5

<210> 539  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 539  
Val Arg Glu Gly Ser Pro Asp Tyr Gly Asp Phe Ala Ser Phe Asp Tyr  
1 5 10 15

<210> 540  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
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## peptide

&lt;400&gt; 540

Asn Phe Asn Val Gly Asn Asn Asp  
1 5

&lt;210&gt; 541

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
peptide

&lt;400&gt; 541

Gly Thr Trp Asp Ser Ser Leu Asn Thr Gly Gly Val  
1 5 10

&lt;210&gt; 542

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
peptide

&lt;400&gt; 542

Gly Thr Trp Asp Thr Ser Leu Ser Gly Phe Tyr Val  
1 5 10

&lt;210&gt; 543

&lt;211&gt; 16

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
peptide

&lt;400&gt; 543

Ala Arg Asp Pro Ala Tyr Gly Asp Tyr Glu Tyr Asp Ala Phe Asp Ile  
1 5 10 15

&lt;210&gt; 544

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
peptide

&lt;400&gt; 544

Thr Ser Asn Ile Gly Ser Asn Thr  
1 5

&lt;210&gt; 545

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence



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&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 545

Ala Thr Trp Asp Asp Ser Leu Ser Gly Val Val  
1 5 10

&lt;210&gt; 546

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 546

Ala Arg Gly Ala Gly Phe Asp Ala Phe Asp Ile  
1 5 10

&lt;210&gt; 547

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 547

Ser Ser Asn Ile Gly Thr Asn Gly  
1 5

&lt;210&gt; 548

&lt;211&gt; 3

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 548

Thr Asn Asp  
1

&lt;210&gt; 549

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 549

Ala Val Trp Asp His Ser Leu Asn Gly Pro Val  
1 5 10

&lt;210&gt; 550

&lt;211&gt; 10

&lt;212&gt; PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 550

Ala Arg Glu Gly Leu Asp Ala Phe Asp Ile  
1 5 10

<210> 551

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 551

Gly Tyr Ser Phe Thr Ser Tyr Thr  
1 5

<210> 552

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 552

Val Ser Thr Tyr Asn Gly Leu Arg  
1 5

<210> 553

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 553

Val Arg Glu Gly Ser Pro Asp Tyr Gly Asp Phe Ala Ala Phe Asp Tyr  
1 5 10 15

<210> 554

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 554

Gly Thr Trp Asp Ser Ser Leu Ser Ala Ala Tyr Val  
1 5 10

<210> 555

<211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 555  
 Ala Arg Asp Gly Gly Gly Tyr Phe Asp Tyr  
 1 5 10

<210> 556  
 <211> 8  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 556  
 Arg Ser Asn Ile Gly Thr Asn Ile  
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<210> 557  
 <211> 2  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 557  
 Gly Ser  
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<210> 558  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 558  
 Ala Ala Trp Asp Asp Ser Leu Asn Gly Pro Ala  
 1 5 10

<210> 559  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 559  
 Gly Tyr Asn Phe Ile Ser Tyr Tyr  
 1 5

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<210> 560  
 <211> 8  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 560  
 Ile Asn Pro Gly Ser Gly Glu Thr  
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<210> 561  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 561  
 Ala Thr Gly Leu Ile Arg Gly Ala Ser Asp Ala Phe Asn Ile  
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<210> 562  
 <211> 9  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 562  
 Ser Ser Asn Ile Gly Ala Arg Tyr Asp  
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<210> 563  
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 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 563  
 Ala Asn Tyr  
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<210> 564  
 <211> 11  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 564  
 Gln Ser Tyr Asp Ser Ser Val Ser Ala Trp Val

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|---|---|-----------------|
| 1 | 5 | 4329191_1<br>10 |
|---|---|-----------------|

<210> 565  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence  
  
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 <223> Description of Artificial Sequence: Synthetic peptide  
  
 <400> 565  
 Gly Asp Ser Val Ser Ser Asn Ser Ala Ala  
 1 5 10

<210> 566  
 <211> 9  
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 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide  
  
 <400> 566  
 Thr Tyr Tyr Arg Ser Lys Trp Tyr Asn  
 1 5

<210> 567  
 <211> 12  
 <212> PRT  
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 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide  
  
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 Ala Arg Glu Arg Ser Gly Trp Lys Gly Phe Asp Tyr  
 1 5 10

<210> 568  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide  
  
 <400> 568  
 Lys Leu Gly Asp Lys Phe  
 1 5

<210> 569  
 <211> 9  
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 <220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 569  
Gln Thr Trp Ala Ser Gly Ile Val Val  
1 5

<210> 570  
<211> 12  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

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Ala Lys Trp Gly Pro Phe Gln Asp Ala Phe Asp Ile  
1 5 10

<210> 571  
<211> 11  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 571  
Gln Ser Leu Leu Glu Arg Asn Ala Tyr Asn Tyr  
1 5 10

<210> 572  
<211> 3  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

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Leu Gly Ser  
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<210> 573  
<211> 9  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 573  
Met Gln Ala Leu Gln Ala Pro Phe Thr  
1 5

<210> 574  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
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## peptide

&lt;400&gt; 574

Ala Lys Ala Arg Trp Thr Ala Val Ala Ser Asp His His Phe Asp Tyr  
 1 5 10 15

&lt;210&gt; 575

&lt;211&gt; 3

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 575

Glu Val Ser  
 1

&lt;210&gt; 576

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 576

Ser Ser Tyr Thr Ser Ser Ser Thr Pro Tyr Val  
 1 5 10

&lt;210&gt; 577

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 577

Ala Arg Asp Trp Asp Tyr Met Asp Val  
 1 5

&lt;210&gt; 578

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 578

Ala Arg Asp Leu Ser Arg Gly Ala Asn Pro His Tyr Tyr Tyr Tyr Tyr  
 1 5 10 15

Gly Met Asp Val  
 20

&lt;210&gt; 579

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<211> 18  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 579  
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1 5 10 15

Asp Val

<210> 580  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 580  
Arg Ser Asn Ile Gly Ala Gly Tyr Asp  
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<210> 581  
<211> 13  
<212> PRT  
<213> Artificial Sequence

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<400> 581  
Gln Ser Tyr Asp Asn Thr Val Arg Glu Ser Pro Tyr Val  
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<210> 582  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 582  
Gly Tyr Thr Phe Thr Gly Tyr Tyr  
1 5

<210> 583  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide



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<400> 583  
Ile Asn Pro Asn Ser Gly Gly Thr  
1 5

<210> 584  
<211> 25  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 584  
Ala Arg Asp Tyr Gly Tyr Tyr Gly Ser Gly Ser Tyr Ser Ser Gly Pro  
1 5 10 15

Leu Tyr Tyr Tyr Tyr Gly Met Asp Val  
20 25

<210> 585  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 585  
Ser Ser Asn Ile Gly Ser Asn Ser  
1 5

<210> 586  
<211> 3  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 586  
Asn Asn Asp  
1

<210> 587  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 587  
Ala Lys Asp Ile Thr Tyr Gly Ser Gly Ser Tyr Gly Ala Phe Asp Ile  
1 5 10 15

<210> 588  
<211> 6  
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 588

Asp Ile Gly Ser Lys Ser  
1 5

<210> 589

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 589

Gly Gly Thr Phe Ser Ser Asn Ser  
1 5

<210> 590

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 590

Ile Phe Pro Ile Leu Gly Ile Thr  
1 5

<210> 591

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 591

Ala Arg Gly Asn Tyr Gln Trp Tyr Asp Ala Phe Asp Ile  
1 5 10

<210> 592

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 592

Gln Ser Tyr Asp Ser Thr Ser Val Leu  
1 5

<210> 593

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<211> 822  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

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 tcttgtttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120  
 ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct 180  
 gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
 tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc 300  
 ttcggaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
 ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctaca gcagtggggc 420  
 gcaggactgt tgaagccttc ggagaccctg tccctcacct gcgctgtgta tggtggtgcc 480  
 ttcagtgggt actactggag ctggatccgc cagccccag ggaaggggct ggagtggatt 540  
 ggggaaatca atcatagtgg aagcaccaac tacaaccgt ccctcaagag tcgagtcacc 600  
 atatcagtag acacgtccaa gaaccagttc tccctgaagc tgagctctgt gaccgccgcg 660  
 gacacggccg tgtattactg tgcgcgcgaa ggtccgtacg acggtttcga ttcttggggg 720  
 caagg tactc tggtgaccgt ctctcaact agtggccagg ccggccagca ccatcaccat 780  
 caccatggcg catacccgta cgacgttccg gactacgctt ct 822

<210> 594  
 <211> 274  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 594  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
 20 25 30  
 Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
 65 70 75 80

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Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
85 90 95

Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu  
130 135 140

Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser  
145 150 155 160

Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly  
165 170 175

Leu Glu Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn  
180 185 190

Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn  
195 200 205

Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val  
210 215 220

Tyr Tyr Cys Ala Arg Glu Gly Pro Tyr Asp Gly Phe Asp Ser Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 595

<211> 822

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 595

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tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120

ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tgggggtcct 180

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gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
ctgaagactg aggacgaggc tgactactac tgtcagtcctt atgatagcag caattctgtg 300  
gtattcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtccagct ggtacagtct 420  
ggcactgagg tgaagaagcc tggggcctca gtgagggtcg cctgcaaggc ttctggttac 480  
ccctttaaca aatatgacat caactgggtg cgacaggccc ctggacaagg gcttgagtgg 540  
atgggaggca tcatccctat ctttcgtaca acaaactacg cacagaagtt ccagggcaga 600  
gtcacgatta ccgcggacga atccacgagc acagcctaca tggagctgag cagcctgaga 660  
tctgaggaca cggccgtata ttactgtgcg cgcaaatggt tctactggga tatctggggg 720  
caaggtactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat 780  
caccatggcg catacccgtg cgacgttccg gactacgctt ct 822

&lt;210&gt; 596

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 596

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
35 40 45

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

Ser Asn Ser Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Thr Glu Val  
130 135 140

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Lys Lys Pro Gly Ala Ser Val Arg Val Ala Cys Lys Ala Ser Gly Tyr  
145 150 155 160

Pro Phe Asn Lys Tyr Asp Ile Asn Trp Val Arg Gln Ala Pro Gly Gln  
165 170 175

Gly Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Arg Thr Thr Asn  
180 185 190

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser  
195 200 205

Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
210 215 220

Ala Val Tyr Tyr Cys Ala Arg Glu Trp Phe Tyr Trp Asp Ile Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 597

<211> 825

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

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cagtcccctg tgttggtcat gtatgaagat aatcagcggc cctcagggat cccggagcgg 180

ttctctggct ccaactctgg gaacacagcc actctgacca tcagagggac ccagactgtg 240

gatgaggctg actattactg tcaggcgtgg gactccgaca ctttcgtggt cttcggcgga 300

gggaccaagg tcaccgtcct aggttctaga ggtggtggtg gtagcggcgg cggcggctct 360

ggtggtggtg gatccctcga gatggccgag gtgcagctgg tggagaccgg gggaggcgtg 420

gtccagcctg ggaggtcct gagactctcc tgtgcagcct ctggattcac cttcagtagt 480

tatggcatgc actgggtccg ccaggctcca ggcaaggggc tggagtgggt ggcagttata 540

tcacatgatg gaagtaataa atactacgca gactccgtga agggccgatt caccatctcc 600

agagacaatt ccaaggacac gctgtatctg caaatgaaca gcctgagagg tgaggacacg 660

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gccgtatatt actgtgcgcg ctctaaccag tggctctggtt acttctcttt cgattactgg 720  
 ggtcaaggta ctctgggtgac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
 catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

<210> 598  
 <211> 275  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 598  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
 1 5 10 15

Thr Ala Ser Ile Ser Cys Ser Gly Asn Lys Leu Gly Thr Lys Tyr Val  
 20 25 30

Tyr Trp Tyr Gln Lys Arg Pro Gly Gln Ser Pro Val Leu Val Met Tyr  
 35 40 45

Glu Asp Asn Gln Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Arg Gly Thr Gln Thr Val  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Ser Asp Thr Phe Val  
 85 90 95

Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly Ser Arg Gly Gly  
 100 105 110

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met  
 115 120 125

Ala Glu Val Gln Leu Val Glu Thr Gly Gly Gly Val Val Gln Pro Gly  
 130 135 140

Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser  
 145 150 155 160

Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp  
 165 170 175

Val Ala Val Ile Ser His Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser  
 180 185 190

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asp Thr Leu  
 195 200 205

## 4329191\_1

Tyr Leu Gln Met Asn Ser Leu Arg Gly Glu Asp Thr Ala Val Tyr Tyr  
 210 215 220

Cys Ala Arg Ser Asn Gln Trp Ser Gly Tyr Phe Ser Phe Asp Tyr Trp  
 225 230 235 240

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
 245 250 255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
 260 265 270

Tyr Ala Ser  
 275

<210> 599

<211> 819

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 599

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| acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc  | 120 |
| caggcccctg tgggtggcat ccattatgat agcgaccggc cctcagggat ccctgagcga  | 180 |
| ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg  | 240 |
| gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatcatcc ttatgtcttc  | 300 |
| ggaactggga ccaaggtcac cgtcctaggt tctagagggt gtggtggtag cggcggcggc  | 360 |
| ggctctggtg gtggtggatc cctcgagatg gccgagggtc agctggtgca gtctggagct  | 420 |
| gaggtgaaga agcctggggc ctcagtgaag gtctcctgca aggcttctgg ttacaccttt  | 480 |
| accacctatg gtatcagctg ggtgcgacag gcccttgac aagggttga gtggatggga    | 540 |
| tggatcaaca cttacaatgg tcacacaaac tatgcacaga agctccaggg cagagccaca  | 600 |
| atgaccgcag acacatccac gaacacagcc tacatggagc tgaggagcct gagatctgac  | 660 |
| gacactgccg tgtattactg tgcgcgcgtt atctacggtt ctggtgatta ctgggggtcaa | 720 |
| ggactacttg tgaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac  | 780 |
| catggcgcac acccgtacga cgttccggac tacgcttct                         | 819 |

<210> 600

<211> 273

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic



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## polypeptide

&lt;400&gt; 600

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Val Val Ile His  
35 40 45

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
85 90 95

Pro Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg  
100 105 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu  
115 120 125

Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
130 135 140

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
145 150 155 160

Thr Thr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu  
165 170 175

Glu Trp Met Gly Trp Ile Asn Thr Tyr Asn Gly His Thr Asn Tyr Ala  
180 185 190

Gln Lys Leu Gln Gly Arg Ala Thr Met Thr Ala Asp Thr Ser Thr Asn  
195 200 205

Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val  
210 215 220

Tyr Tyr Cys Ala Arg Val Ile Tyr Gly Ser Gly Asp Tyr Trp Gly Gln  
225 230 235 240

Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
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Ser

<210> 601  
<211> 813  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

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cagggcccctg tgctgggtcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180  
ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
gatgaggccg actattactg tcagggtgtg gatagtagta gtgatcatcg ggtgttcggc 300  
ggagggacca agctgaccgt cctaggttct agaggtggtg gtggtagcgg cggcggcggc 360  
tctggtggtg gtggatccct cgagatggcc cagggtgcagc tgcaggagtc gggcccagga 420  
ctggtgaagc cttcgagac cctgtccctc acctgcaatg tctctggtta ctccatcagc 480  
agtggttact tttggggctg gatccggcag cccccagga aggggctgga gtggattggg 540  
agtatctatc atagtaggag cacctactac aaccgtccc tcaagagtcg agtcaccata 600  
tcagtagaca cgtccaagaa ccagttctcc ctgaagctga actctgtgac cgccgcagac 660  
acggccgtgt attactgtgc gcgcggttac ggttacttcg attactgggg tcaaggtact 720  
ctggtgaccg tctcctcaac tagtggccag gccggccagc accatcacca tcaccatggc 780  
gcatacccgt acgacgttcc ggactacgct tct 813

<210> 602  
<211> 271  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 602  
Ser Tyr Val Leu Thr Gln Pro Leu Ser Val Ser Val Ala Pro Gly Lys  
1 5 10 15  
Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Thr Val  
20 25 30  
His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
35 40 45

## 4329191\_1

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
 85 90 95

Arg Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly  
 100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
 115 120 125

Met Ala Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro  
 130 135 140

Ser Glu Thr Leu Ser Leu Thr Cys Asn Val Ser Gly Tyr Ser Ile Ser  
 145 150 155 160

Ser Gly Tyr Phe Trp Gly Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu  
 165 170 175

Glu Trp Ile Gly Ser Ile Tyr His Ser Arg Ser Thr Tyr Tyr Asn Pro  
 180 185 190

Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln  
 195 200 205

Phe Ser Leu Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr  
 210 215 220

Tyr Cys Ala Arg Gly Tyr Gly Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
 225 230 235 240

Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His  
 245 250 255

His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 260 265 270

<210> 603

<211> 834

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 603

caatctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc

60

## 4329191\_1

```

tcctgcactg gaaccagcag tgacgttggt ggttataact atgtctcctg gtaccaacaa      120
caccaggga aagccccaa actcatgatt tatgatgtca gtaatcggcc ctgaggggtt      180
tctaactgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc      240
caggctgagg acgaggctga ttattactgc agctcatata caagcagcag cacttcgaag      300
gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc      360
ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtgcagct ggtggagtct      420
gggggaggtg tggtagcggc tgggggggtcc ctgagactct cctgtgcagc ctctggattc      480
acctttggtg attatggcat gagctgggtc cgccaagctc caggggaagg gctggagtgg      540
gtctctggta ttaattggaa tgggtgtagc acaggttatg cagactctgt gaagggccga      600
ttcaccatct ccagagacaa cgccaagaac tccctgtatc tgcaaataaa cagtctgaga      660
gccgaggaca cggccgtata ttactgtgcg cgctctaaat acaacttcca tgtttactac      720
gattactggg gtcaaggtac tctggtgacc gtctcctcaa ctagtggcca ggccggccag      780
caccatcacc atcaccatgg cgcatacccg tacgacgttc cggactacgc ttct          834

```

&lt;210&gt; 604

&lt;211&gt; 278

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 604

Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln  
1 5 10 15

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr  
20 25 30

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu  
35 40 45

Met Ile Tyr Asp Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe  
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu  
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser  
85 90 95

Ser Thr Ser Lys Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

## 4329191\_1

Ser Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val  
130 135 140

Val Arg Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe  
145 150 155 160

Thr Phe Gly Asp Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys  
165 170 175

Gly Leu Glu Trp Val Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly  
180 185 190

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala  
195 200 205

Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr  
210 215 220

Ala Val Tyr Tyr Cys Ala Arg Ser Lys Tyr Asn Phe His Val Tyr Tyr  
225 230 235 240

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly  
245 250 255

Gln Ala Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp  
260 265 270

Val Pro Asp Tyr Ala Ser  
275

<210> 605

<211> 831

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 605

cagtctgtgt tgacgcagcc accctcagcg tctgggaccc ccgggcagac agtcaccatc 60

tcttgttctg gaagcaactc caacatcgga agtaattatg tatactggta ccagcagctc 120

ccaggaacgg cccccaaact cctcatctat aggaataatc agcggccctc aggggtccct 180

gaccgattct caggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccgc 240

tccgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgag tgcttatgtc 300

ttcggaaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc 360

ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctggt gcagtctgga 420

gctgaggatga agaagcctgg ggcctcagtg aaggtctcct gcaaggcttc tggttacacc 480

tttaccagct atggtatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg 540

## 4329191\_1

ggatggatca gcgcttacaa tggtaacaca aactatgcac agaagctcca gggcagagtc 600  
 accatgacca cagacacatc caccgagcaca gcctacatgg agctgaggag cctgagatct 660  
 gacgacactg ccgtgtatta ctgtgcgcgc tcttctggta acatggtttc ttggaaagat 720  
 atgtgggggtc aaggtactct ggtgaccgtc tcctcaacta gtggccaggc cggccagcac 780  
 catcaccatc accatggcgc ataccgtac gacgttcggg actacgcttc t 831

&lt;210&gt; 606

&lt;211&gt; 277

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 606

Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

Thr Val Thr Ile Ser Cys Ser Gly Ser Asn Ser Asn Ile Gly Ser Asn  
 20 25 30

Tyr Val Tyr Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Ile Tyr Arg Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg  
 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 85 90 95

Ser Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
 145 150 155 160

Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175

Leu Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr  
 180 185 190

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Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Ser Ser Gly Asn Met Val Ser Trp Lys Asp  
225 230 235 240

Met Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln  
245 250 255

Ala Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val  
260 265 270

Pro Asp Tyr Ala Ser  
275

<210> 607  
<211> 822  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 607  
caatctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60  
tcctgcactg gaaccagcag tgacgttggt gggtataact ctgtctcctg gtaccaacaa 120  
caccaggca aagccccag actcatgatt tatgatgtca gtaatcggcc ctcaggggtt 180  
tctaatacgt tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240  
caggctgagg acgaggctga ttattactgc agctcatata caagcagcag cacccttta 300  
gtcttcggaa ctgggaccaa ggtcacctgc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtgcagct ggtgcagtct 420  
ggggctgagg tgaagaagcc tggggcctca gtgaaggtct cctgcaaggc ttctggttac 480  
acctttacca gctatggtat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg 540  
atgggatgga tcagcgctta caatggtaac acaaactatg cacagaagct ccagggcaga 600  
gtcaccatga ccacagacac atccacgagc acagcctaca tggagctgag gagcctgaga 660  
tctgacgaca cggccgtgta ttactgtgcg cgcggtgctg ttgcttacca tgattgggggt 720  
caaggtactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat 780  
caccatggcg catacccga cgacgttccg gactacgctt ct 822

<210> 608  
<211> 274  
<212> PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 608

Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln  
 1 5 10 15

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr  
 20 25 30

Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Arg Leu  
 35 40 45

Met Ile Tyr Asp Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe  
 50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu  
 65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser  
 85 90 95

Ser Thr Pro Leu Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr  
 145 150 155 160

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175

Gly Leu Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn  
 180 185 190

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser  
 195 200 205

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Ala Arg Gly Ala Val Ala Tyr His Asp Trp Gly  
 225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln



His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 609  
<211> 825  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 609  
cagtctgtcg tgacgcagcc gccctcagtg tctgcgcccc caggacagag ggtcaccatc 60  
tcctgctctg gaagcagctc caacatttcg atttatgatg tctcctggta tcagcagctc 120  
ccaggaacag cccccaaact cctcatttat ggcaataata agcgaccctc ggggattgct 180  
gaccgattct ctggctccac gtctggcacg tcagccaccc tgggcatcac cggactccag 240  
actggggacg aggccgatta ttactgcgga acatgggatg acagtctgag tgggggggtg 300  
ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggcccaga tgcagctggt gcaatctggg 420  
gctgaggtga agaagcctgg gtcctcggtg aaggtctcct gcgaggcttc tggaggcacc 480  
ctcagcagct atgctatcaa ctgggtgcga caggcccctg gacaagggtc tgagtggatg 540  
ggagggatca tccctatggt tggtagagca cactacgcac agaagttcca gggcagagtc 600  
acgattaccg cggacgaatc cacgaaaaca gcctacatgg agctgagcag cctgagatct 660  
gaggacactg ccgtgtatta ctgtgcgcgc ggtgttcatt acgcttcttt cgatcattgg 720  
ggtaaggtga ctctggtgac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

<210> 610  
<211> 275  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 610  
Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Ser Ile Tyr  
20 25 30

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Asp Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Ile Tyr Gly Asn Asn Lys Arg Pro Ser Gly Ile Ala Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Thr Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln  
 65 70 75 80  
 Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Asp Ser Leu  
 85 90 95  
 Ser Gly Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
 100 105 110  
 Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Leu Glu Met Ala Gln Met Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140  
 Lys Pro Gly Ser Ser Val Lys Val Ser Cys Glu Ala Ser Gly Gly Thr  
 145 150 155 160  
 Leu Ser Ser Tyr Ala Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175  
 Leu Glu Trp Met Gly Gly Ile Ile Pro Met Phe Gly Thr Ala His Tyr  
 180 185 190  
 Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
 195 200 205  
 Lys Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 210 215 220  
 Val Tyr Tyr Cys Ala Arg Gly Val His Tyr Ala Ser Phe Asp His Trp  
 225 230 235 240  
 Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
 245 250 255  
 Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
 260 265 270  
 Tyr Ala Ser  
 275

&lt;210&gt; 611

&lt;211&gt; 822

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

## 4329191\_1

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 611

```

cagtctgtgt tgacgcagcc gccctcagtg tctgcggccg caggacagaa ggtcaccatc      60
tcctgctctg gaagcgactc caacattggg aataattatg tgtcctggta tcaacacctc      120
ccagggacag cccccaaact cctcatttat gacgttaaaa atcgaccctc agggattcct      180
gaccggttct ccgggtccaa gtctggctcg tcagccaccc taggcacgcg cggactccag      240
cctggggacg aggccgatta ttactgcgga acatgggaca gtcggctgga tgcctatgtc      300
ttcggaaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc      360
ggcggctctg gtggtggtgg atccctcgag atggcccaga tgcagctggt gcaatctgga      420
gctgaggtga agaagcctgg ggcctcagtg aaggctctct gcaagacttc tggtttcccc      480
tttaatatct ttggaatcac ctgggtgcga caggcccctg gacaagggtc tgagtggatg      540
ggatggatca gcggttacia cggtaacaca gactaccac agaatcca gggcagagtc      600
accatgtcca cagacacatc cacgagtaca gcctacatgg agctgaggaa cctgaaatct      660
gacgacacgg ccgtgtatta ctgtgcgcgc ggtgcttacg gtggtatgga tacttggggg      720
caagg tactc tggtgaccgt ctctcaact agtggccagg ccggccagca ccatcaccat      780
caccatggcg cataccgta cgacgttcg gactacgctt ct                               822

```

&lt;210&gt; 612

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 612

```

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Ala Gly Gln
1           5           10          15

```

```

Lys Val Thr Ile Ser Cys Ser Gly Ser Asp Ser Asn Ile Gly Asn Asn
          20          25          30

```

```

Tyr Val Ser Trp Tyr Gln His Leu Pro Gly Thr Ala Pro Lys Leu Leu
      35          40          45

```

```

Ile Tyr Asp Val Lys Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
  50          55          60

```

```

Gly Ser Lys Ser Gly Ser Ser Ala Thr Leu Gly Ile Ala Gly Leu Gln
65          70          75          80

```

```

Pro Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Arg Leu
      85          90          95

```

## 4329191\_1

Asp Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Gln Met Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Thr Ser Gly Phe Pro  
145 150 155 160

Phe Asn Ile Phe Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Trp Ile Ser Gly Tyr Asn Gly Asn Thr Asp Tyr  
180 185 190

Pro Gln Lys Phe Gln Gly Arg Val Thr Met Ser Thr Asp Thr Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Arg Asn Leu Lys Ser Asp Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Gly Ala Tyr Gly Gly Met Asp Thr Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 613

<211> 828

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 613

cagtcgtcgtg tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60

tcctgcactg ggagcacctc caacatcggg gcagggttatg atgtacactg gtatcagcag 120

cttccaggaa cagcccccaa actcctcatc tatactaaca actttcggcc ctcagggggtc 180

cctgaccgat tctctgcctc caagtctggc acttcagctt ccctggccat cactgggtctc 240

caggctgagg atgaggctga ttattactgc ggaacatggg atagcagcct gagtgccggtt 300

## 4329191\_1

```

gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc      360
ggcggcgggct ctggtggtgg tggatccctc gagatggccg aggtgcagct ggtggagtct      420
ggaactgagg tgaagaagcc tggggcctca gtgaaagtct cctgcaaggc ttctggttac      480
atgtttacca gttatggtct caactgggtg cgacaggccc ctggacaagg gcttgagtgg      540
atgggatgga tcagcgctaa caatggtaag acaaattatg ctaagaaatt ccaggacaga      600
gtcaccatga ccagagacac ttccacgagc acaggctaca tggaactgag gagcctgaga      660
tctgacgaca cggccgtata ttactgtgcg cgccatatcg gtggttctta cttcgatcgt      720
tggggccaag gtactctggt gaccgtctcc tcaactagtg gccaggccgg ccagcaccat      780
caccatcacc atggcgcata cccgtacgac gttccggact acgcttct      828

```

&lt;210&gt; 614

&lt;211&gt; 276

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 614

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Thr Ser Asn Ile Gly Ala Gly  
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu  
35 40 45

Leu Ile Tyr Thr Asn Asn Phe Arg Pro Ser Gly Val Pro Asp Arg Phe  
50 55 60

Ser Ala Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu  
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser  
85 90 95

Leu Ser Ala Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Thr Glu Val  
130 135 140

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr  
145 150 155 160

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Met Phe Thr Ser Tyr Gly Leu Asn Trp Val Arg Gln Ala Pro Gly Gln  
165 170 175

Gly Leu Glu Trp Met Gly Trp Ile Ser Ala Asn Asn Gly Lys Thr Asn  
180 185 190

Tyr Ala Lys Lys Phe Gln Asp Arg Val Thr Met Thr Arg Asp Thr Ser  
195 200 205

Thr Ser Thr Gly Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr  
210 215 220

Ala Val Tyr Tyr Cys Ala Arg His Ile Gly Gly Ser Tyr Phe Asp Arg  
225 230 235 240

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala  
245 250 255

Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro  
260 265 270

Asp Tyr Ala Ser  
275

<210> 615  
<211> 822  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 615  
tcctatgtgc tgactcagcc accctcagtg tcagtggccc caggaaagac ggccaggatt 60  
acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120  
cagggccctg tgctggatcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180  
ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatacatta tgtcttcgga 300  
actgggacca aggtcaccgt cctaggttct agaggtggtg gtggtagcgg cggcggcggc 360  
tctggtggtg gtggatccct cgagatggcc gaggtgcagc tgggtggagac tgggggaggc 420  
ttggtacagc ctgggggggtc cctgagactc tcctgtgcag cctctggatt cacctttagc 480  
agctatgcca tgagctgggt cgcagggt ccagggaagg ggctggagtg ggtctcagct 540  
attagtggta gtgatgtag cacatactac gcagactccg tgaagggccg gttcaccatc 600  
tccagagaca attccaagaa cacgctgtat ctgcaaatga acagcctgag agacgaggac 660  
acggccgtat attactgtgc gcgctctcat gaagctaacc tgggtggtga ttggtggggt 720

## 4329191\_1

caagggtactc tgggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat 780  
 caccatggcg catacccgtg cgacgttccg gactacgctt ct 822

<210> 616  
 <211> 274  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 616  
 Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
 20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
 35 40 45

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
 85 90 95

Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg Gly  
 100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
 115 120 125

Met Ala Glu Val Gln Leu Val Glu Thr Gly Gly Gly Leu Val Gln Pro  
 130 135 140

Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser  
 145 150 155 160

Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu  
 165 170 175

Trp Val Ser Ala Ile Ser Gly Ser Asp Gly Ser Thr Tyr Tyr Ala Asp  
 180 185 190

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr  
 195 200 205

Leu Tyr Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr  
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Tyr Cys Ala Arg Ser His Glu Ala Asn Leu Val Gly Asp Trp Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 617  
<211> 816  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polynucleotide

<400> 617  
cagtctgtgg tgactcagcc accctcagtg tcagtggccc caggaaagac ggccaggatt 60  
acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120  
cagggcccctg tgctgggtcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180  
ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
gatgaggccg actattactg tcagggtgtg gatagtagta gtgatgtggt attcggcgga 300  
gggaccaagc tgaccgtcct aggttctaga ggtggtggtg gtagcggcg cggcggctct 360  
ggtggtggtg gatccctcga gatggccgag gtccagctgg tacagtctgg agctgaggtg 420  
aagaagcctg gggcctcagt gaaggctctc tgcaaggctt ctggttacac ctttaccagc 480  
tacggtatca gctgggtgcg acaggcccct ggacaagggc ttgagtggat gggatggatc 540  
agcgcttaca atggtaacac aaactatgca cagaagctcc agggcagagt caccatgacc 600  
acagacacat ccacgagcac agcctacatg gagctgagga gcctgagatc tgacgacacg 660  
gccgtgtatt actgtgctcg ctggggtggt ttcggtgctg ttgatcattg gggtaaggt 720  
actctggtga ccgtctcctc aactagtggc caggccggcc agcaccatca ccataccat 780  
ggcgcatacc cgtacgacgt tccggactac gcttct 816

<210> 618  
<211> 272  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

&lt;400&gt; 618



## 4329191\_1

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15  
 Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
 20 25 30  
 His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
 35 40 45  
 Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60  
 Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80  
 Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp Val  
 85 90 95  
 Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly Gly  
 100 105 110  
 Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met  
 115 120 125  
 Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly  
 130 135 140  
 Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser  
 145 150 155 160  
 Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp  
 165 170 175  
 Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys  
 180 185 190  
 Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala  
 195 200 205  
 Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr  
 210 215 220  
 Cys Ala Arg Trp Gly Gly Phe Gly Ala Val Asp His Trp Gly Gln Gly  
 225 230 235 240  
 Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His  
 245 250 255  
 His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 260 265 270

## 4329191\_1

<210> 619  
 <211> 810  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 619  
 tcttctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaagatc 60  
 acgtgccaag gagacagcct cacagactac catgcaacct ggtaccagca gaagccagga 120  
 caggcccctg tcgctgtcat ctatgctaca aacaaccggc cactgggat cccagaccga 180  
 ttctctgggt ccagttccgg aaacacagct tctttgacca tcttggggc tcaggcgga 240  
 gatgaggctg actattactg taattcccgg gacagcggca cggacgaagt gttattcggc 300  
 ggagggacca agctgaccgt cctaggttct agaggtggtg gtggtagcgg cggcggcggc 360  
 tctggtggtg gtggatccct cgagatggcc gaggtgcagc tgggtggagac tgggggaggc 420  
 ctggtcaagc ctgggggggc cctgagactc tcctgtgcag cctctggatt caccttcagt 480  
 agctatagca tgaactgggt ccgccaggct ccagggaagg ggctggagtg ggtctcatcc 540  
 attagtagta gtagtagtta catatactac gcagactcag tgaagggccg attcaccatc 600  
 tccagagaca acgccaagaa ctactgtat ctgcaaatga acagcctgag agccgaggac 660  
 acggccgtgt attactgtgc gcgcggtcag ggttacgatt actgggggtca aggtactctg 720  
 gtgaccgtct cctcaactag tggccaggcc ggccagcacc atcaccatca ccatggcgca 780  
 taccgtacg acgttccgga ctacgttct 810

<210> 620  
 <211> 270  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 620  
 Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln  
 1 5 10 15  
 Thr Val Lys Ile Thr Cys Gln Gly Asp Ser Leu Thr Asp Tyr His Ala  
 20 25 30  
 Thr Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Ala Val Ile Tyr  
 35 40 45  
 Ala Thr Asn Asn Arg Pro Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser  
 50 55 60  
 Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu  
 65 70 75 80

## 4329191\_1

Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser Gly Thr Asp Glu  
85 90 95

Val Leu Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly  
100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
115 120 125

Met Ala Glu Val Gln Leu Val Glu Thr Gly Gly Gly Leu Val Lys Pro  
130 135 140

Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser  
145 150 155 160

Ser Tyr Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu  
165 170 175

Trp Val Ser Ser Ile Ser Ser Ser Ser Tyr Ile Tyr Tyr Ala Asp  
180 185 190

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser  
195 200 205

Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr  
210 215 220

Tyr Cys Ala Arg Gly Gln Gly Tyr Asp Tyr Trp Gly Gln Gly Thr Leu  
225 230 235 240

Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His  
245 250 255

His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
260 265 270

<210> 621

<211> 810

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 621

tcctatgtgc tgactcagcc accctcggtg tcagtggccc caggaaagac ggccaggatt 60

acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120

caggccccctg tgctggtcgt ctatgatgat agcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgagca tcagcagggt cgaagccggg 240

gatgaggccg actattactg tcagggtgtgg gatagtagta gtgatcatac tgtcttcgga 300

## 4329191\_1

actgggacca aggtcaccgt cctaggttct agaggtggtg gtggtagcgg cggcggcggc 360  
tctggtggtg gtggatccct cgagatggcc caggtgcagc tacagcagtg gggcgcagga 420  
ctgttgaagc cttcggagac cctgtccctc acctgcgctg tctatggtgg gtccttcagt 480  
ggttactact ggagctggat ccgccagccc ccaggaagg ggctggagtg gattggggaa 540  
atcaatcata gtggaagcac caactacaac ccgtccctca agagtcgagt caccatatca 600  
gtagacacgt ccaagaacca gttctccctg aagctgagct ctgtgaccgc cgcggacacg 660  
gccgtgtatt actgtgcgcg ctactacccg ggtatggata tgtgggggtca aggtactctg 720  
gtgaccgtct cctcaactag tggccaggcc ggccagcacc atcaccatca ccatggcgca 780  
taccctgacg acgttccgga ctacgcttct 810

&lt;210&gt; 622

&lt;211&gt; 270

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 622

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr  
35 40 45

Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Ser Ile Ser Arg Val Glu Ala Gly  
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
85 90 95

Thr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg Gly  
100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
115 120 125

Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu Lys Pro  
130 135 140

Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser Phe Ser  
145 150 155 160

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Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu  
165 170 175

Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn Pro Ser  
180 185 190

Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe  
195 200 205

Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr  
210 215 220

Cys Ala Arg Tyr Tyr Pro Gly Met Asp Met Trp Gly Gln Gly Thr Leu  
225 230 235 240

Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His  
245 250 255

His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
260 265 270

<210> 623  
<211> 816  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 623  
caggctgtgc tgactcagcc gccctcaacg tctgggaccc ccgggcagag ggtcaccatc 60  
tcttgttctg gaagcagctc caacatcggg agaaatggtg taaactggta ccagcagctc 120  
ccaggagcgg cccccaaagt cctcatctat aatgataatc agcgaccctc aggggttcct 180  
gaccgagtct ctggctccca gtctggctcc tcaggcaccc tggccatcga tgggcttcgg 240  
tctgaggatg aggctgatta ttactgtgcg gcatgggatg acagcctgca tgggtgtggtg 300  
ttcggcggag ggaccaagct gaccgtccta gggttctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggcccagg tccagctggt acagtctggg 420  
gctgaggatga agaagcctgg ggcctcagtg aaggtctcct gcaaggtttc cggatacacc 480  
ctcaatgaat tatccatgca ctgggtgcca caggctcctg gaaaagggtc tgagtggatg 540  
ggagggtttt atcctgaaga tgggtgaaaca atctacgcac agaagttcca gggcagagtc 600  
accatgaccg aggacacatc tacagacaca gcctacatgg agctgagcag cctgagatct 660  
gaggacactg ccgtgtatta ctgtgcgcgc ggtggttacg gtgattcttg gggtaagggt 720  
actctggtga ccgtctcctc aactagtggc caggccggcc agcaccatca ccatcacat 780  
ggcgcatacc cgtacgacgt tccggactac gcttct 816

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<210> 624  
 <211> 272  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 624  
 Gln Ala Val Leu Thr Gln Pro Pro Ser Thr Ser Gly Thr Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Arg Asn  
 20 25 30  
 Gly Val Asn Trp Tyr Gln Gln Leu Pro Gly Ala Ala Pro Lys Val Leu  
 35 40 45  
 Ile Tyr Asn Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Val Ser  
 50 55 60  
 Gly Ser Gln Ser Gly Ser Ser Gly Thr Leu Ala Ile Asp Gly Leu Arg  
 65 70 75 80  
 Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 85 90 95  
 His Gly Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
 100 105 110  
 Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140  
 Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Val Ser Gly Tyr Thr  
 145 150 155 160  
 Leu Asn Glu Leu Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly  
 165 170 175  
 Leu Glu Trp Met Gly Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr  
 180 185 190  
 Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Glu Asp Thr Ser Thr  
 195 200 205  
 Asp Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 210 215 220  
 Val Tyr Tyr Cys Ala Arg Gly Gly Tyr Gly Asp Ser Trp Gly Gln Gly

225 230 4329191\_1 235 240

Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His

245 250 255

His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
260 265 270

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<210> 625
<211> 870
<212> DNA
<213> Artificial Sequence
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<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

|             |            |            |            |             |            |     |
|-------------|------------|------------|------------|-------------|------------|-----|
| <400> 625   |            |            |            |             |            |     |
| aatttttatgc | tgactcagcc | ccactctgtg | tcggagtctc | cggggaagac  | ggtaaccatc | 60  |
| tcctgcaccc  | gcagcagtgg | cagcattgcc | agcaactatg | tgcagtggta  | ccagcagcgc | 120 |
| ccgggcagtg  | ccccaccac  | tgtgatctat | gaggataacc | aaagaccctc  | tggggtcctt | 180 |
| gatcggttct  | ctggctccat | cgacagctcc | tccaactctg | cctccctcac  | catctctgga | 240 |
| ctgaagactg  | aggacgaggc | tgactactac | tgtcagtctt | atgatagcag  | caattcttgg | 300 |
| gtgttcggcg  | gagggaccaa | gctgaccgtc | ctaggttcta | gaggtggtgg  | tggtagcggc | 360 |
| ggcggcggct  | ctggtggttg | tggatccctc | gagatggccc | aggtgcagct  | ggtgcaatct | 420 |
| ggggctgagg  | tgaagaggcc | tgggtcctcg | gtgaagggtc | cctgcacggc  | ttctggaggc | 480 |
| accttcagca  | gcgatgctat | cagctgggtg | cgacaggccc | ctggacaagg  | gcttgagtgg | 540 |
| atgggaggaa  | tcatccctat | gtttggtaca | gcaaactacg | cacagaagtt  | ccagggcaga | 600 |
| gtcacgatta  | ccgcggacga | atccacgagc | acagcctaca | tggagctgag  | cagcctgaga | 660 |
| tctgaggaca  | cggccgtgta | ttactgtgcg | cgcgaaaggt | actactaccc  | gtctgcttac | 720 |
| ctgggttctg  | ttctgaacga | catctcttct | gtttacgatg | aatgggggtca | aggtactctg | 780 |
| gtgaccgtct  | cctcaactag | tggccaggcc | ggccagcacc | atcaccatca  | ccatggcgca | 840 |
| tacccgtacg  | acgttccgga | ctacqcttct |            |             |            | 870 |

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<210> 626
<211> 290
<212> PRT
<213> Artificial Sequence
```

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 626  
Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
20 25 30

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Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
 35 40 45  
 Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80  
 Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
 85 90 95  
 Ser Asn Ser Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110  
 Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125  
 Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140  
 Lys Arg Pro Gly Ser Ser Val Lys Val Ser Cys Thr Ala Ser Gly Gly  
 145 150 155 160  
 Thr Phe Ser Ser Asp Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175  
 Gly Leu Glu Trp Met Gly Gly Ile Ile Pro Met Phe Gly Thr Ala Asn  
 180 185 190  
 Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser  
 195 200 205  
 Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
 210 215 220  
 Ala Val Tyr Tyr Cys Ala Arg Glu Gly Tyr Tyr Tyr Pro Ser Ala Tyr  
 225 230 235 240  
 Leu Gly Ser Val Leu Asn Asp Ile Ser Ser Val Tyr Asp Glu Trp Gly  
 245 250 255  
 Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
 260 265 270  
 His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
 275 280 285  
 Ala Ser  
 290



## 4329191\_1

<210> 627  
 <211> 822  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 627  
 cagtctgtcg tgacgcagcc gccctcagtg tctgcgggccc caggacagaa ggtcaccatc 60  
 tcctgctctg gaagcacctc caacattgga aataatgatg tatcctggta ccagcagctc 120  
 ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180  
 gaccgattct ctgggtccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 240  
 actgggggacg aggccgatta ttactgcgga acatgggata gcagcgtgag tgctttcttg 300  
 gtcttcggca gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcgggcggct ctggtggtgg tggatccctc gagatggccc aggtgcagct ggtgcagtct 420  
 ggagctgagg tgaagaagcc tggggcctca gtgaaggctt cctgcaaggc ttctgggttac 480  
 acctttacca gctatggtat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg 540  
 atgggatgga tcagcgctta caatggtaac acaaactatc cacagaagct ccagggcaga 600  
 gtcaccatga ccacagacct atccacgagc acagcctaca tggagctgag gagcctgaga 660  
 tctgacgaca cggccgtgta ttactgtgcg cgctctatga cttctttcga ttactggggg 720  
 caagg tactc tggtgaccgt ctctcaact agtggccagg ccggccagca ccatcaccat 780  
 caccatggcg catacccgta cgacgttccg gactacgctt ct 822

<210> 628  
 <211> 274  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 628  
 Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
 1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Thr Ser Asn Ile Gly Asn Asn  
 20 25 30

Asp Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln  
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ccaggacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct      180
gaccgattct ctggctccag gtctggcacg tcagccaccc tgggcatcac cggactccag      240
actggggacg aggccgatta ttactgcgga acatggaata ccactgtgac tcctggctat      300
gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc      360
ggcggcggct ctggtggtgg tggatccctc gagatggccg aagtgcagct ggtgcagtct      420
ggagctgagg tgaagaagcc tggggcctca gtgaaggtct cctgcaaggc ttctggttac      480
acctttacca gctatggtat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg      540
atgggatgga tcagcgctta caatggtaac acaaactatg cacagaagct ccagggcaga      600
gtcaccatga ccacagacac atccacgagc acagcctaca tggagctgag gagcctgaga      660
tctgacgaca ccgcatgta ttactgtgcg cgctctgttt acgacctgga tacttggggg      720
caaggctactc tggtgaccgt ctcctcaact agtggccagg cgggccagca ccatcaccat      780
caccatggcg catacccgta cgacgttccg gactacgctt ct                        822

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&lt;210&gt; 630

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 630

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
 1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Asn Ser Asn Ile Gly Asn Asn  
 20 25 30

Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Arg Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln  
 65 70 75 80

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asn Thr Thr Val  
 85 90 95

Thr Pro Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

## 4329191\_1

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val  
130 135 140

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr  
145 150 155 160

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
165 170 175

Gly Leu Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn  
180 185 190

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser  
195 200 205

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr  
210 215 220

Ala Met Tyr Tyr Cys Ala Arg Ser Val Tyr Asp Leu Asp Thr Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 631

<211> 831

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 631

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagtctgtcg tgacgcagcc gccctcagtg tctgcggccc caggacagaa ggtcaccatc  | 60  |
| tcctgctctg gaagcagctc caacattggg aataattatg tatcctggta ccagcagctc  | 120 |
| ccaggaacag ccccaaaact cctcatttat gacaataata agcgaccctc agggattcct  | 180 |
| gaccgattct ctggctccaa gtctggcacg tcagccaccc tgggcatcac cggactccag  | 240 |
| actggggacg aggccgatta ttactgcgga acatgggata gcagcctggg ggccccttat  | 300 |
| gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc  | 360 |
| ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtgcagct ggtgcagtct  | 420 |
| tggggaggct cggaacagcc tggcaggtcc ctgagactct cctgtgcagc ctctggattc  | 480 |
| acctttgatg attatgccat gcactgggtc cggcaagctc caggggaaggg cctggagtgg | 540 |

## 4329191\_1

gtctcaggta ttagttggaa tagcggtagc ataggctatg cggactctgt gaagggccga 600  
 ttcaccatct ccagagacaa cgccaagaat tccctgtatc tgcaaatgaa cagtctgaga 660  
 gctgaggaca ccgcatgta ttactgtgcg cgctaccgtc aggttggttc tgcttacgat 720  
 tcttgggggtc aaggtactct ggtgaccgtc tcctcaacta gtggccaggc cggccagcac 780  
 catcaccatc accatggcgc ataccgtac gacgttccgg actacgcttc t 831

&lt;210&gt; 632

&lt;211&gt; 277

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 632

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
 1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn  
 20 25 30

Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln  
 65 70 75 80

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu  
 85 90 95

Gly Ala Pro Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Trp Gly Gly Ser  
 130 135 140

Glu Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe  
 145 150 155 160

Thr Phe Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys  
 165 170 175

Gly Leu Glu Trp Val Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly  
 180 185 190

## 4329191\_1

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala  
 195 200 205

Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr  
 210 215 220

Ala Met Tyr Tyr Cys Ala Arg Tyr Arg Gln Val Gly Ser Ala Tyr Asp  
 225 230 235 240

Ser Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln  
 245 250 255

Ala Gly Gln His His His His His Gly Ala Tyr Pro Tyr Asp Val  
 260 265 270

Pro Asp Tyr Ala Ser  
 275

<210> 633  
 <211> 822  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 633  
 ctgcctgtgc tgactcagcc accctcggtg tcagtggccc caggaaagac ggccaggatt 60  
 acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtatcagca gaagccaggc 120  
 caggcccctg tgctggtcgt ctatgctgat agcgaccggc cctcagggat ccctgagcga 180  
 ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
 gatgaggccg actattactg tcagggtgtgg gatagtagta gttatcataa ttatgtcttc 300  
 ggaactggga ccaaggtcac cgtcctaggt tctagagggt gtggtggtag cggcggcggc 360  
 ggctctggtg gtggtggatc cctcgagatg gccgaggatg agctggtgca gtctggagct 420  
 gaggtgaaga agcctggggc ctcagtgaag gtctcctgca aggcttctgg ttacaccttt 480  
 accagctatg gtatcagctg ggtgcgacag gccctggac aagggttga gtggatggga 540  
 tggatcagcg cttacaatgg taacacaaac tatgcacaga agctccaggg cagagtcacc 600  
 atgaccacag acacatccac gagcacagcc tacatggagc tgagcagcct gagatctgag 660  
 gacaccgcca tgtattactg tgcgcgctac tggggtttcg gtgtttctga tcgttgggg 720  
 caaggactc tggtgaccgt ctctcaact agtggccagg ccggccagca ccatcaccat 780  
 caccatggcg catacccgta cgacgttccg gactacgctt ct 822

<210> 634  
 <211> 274  
 <212> PRT  
 <213> Artificial Sequence

4329191\_1

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 634

```

Leu Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1      5      10      15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val
      20      25      30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
      35      40      45

Ala Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
      50      55      60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65      70      75      80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Tyr His
      85      90      95

Asn Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg
      100      105      110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu
      115      120      125

Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
      130      135      140

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
145      150      155      160

Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
      165      170      175

Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala
      180      185      190

Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser
      195      200      205

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Met
      210      215      220

Tyr Tyr Cys Ala Arg Tyr Trp Gly Phe Gly Val Ser Asp Arg Trp Gly
225      230      235      240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln
      245      250      255

```

4329191\_1

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 635  
<211> 825  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 635  
aatattatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
tcctgcaccg gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120  
ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tgggggtcccc 180  
gatcggttct ctgggtccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgacagcag caatctttgg 300  
gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctgggtggtgg tggatccctc gagatggccc agatgcagct ggtgcagtct 420  
ggggctgagg tgaagaagcc tgggtcctcg gtgaaggtct cctgcaaggc ttctggaggc 480  
accttcagca gctatgctat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg 540  
atgggagggg tcatccctat ctttggtaca gcaaactacg cacagaagtt ccagggcaga 600  
gtcacgatta ccgcgacga atccacgagc acagcctaca tggagctgag cagcctgaga 660  
tctgaggaca ctgccgtgta ttactgtgcg cgctacaact actactacta cgattcttgg 720  
ggatcaaggta ctctggtgac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

<210> 636  
<211> 275  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 636  
Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

Thr Val Thr Ile Ser Cys Thr Gly Ser Ser Gly Ser Ile Ala Ser Asn  
20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
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35

40

45

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80  
 Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
 85 90 95  
 Ser Asn Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110  
 Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125  
 Ser Leu Glu Met Ala Gln Met Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140  
 Lys Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly  
 145 150 155 160  
 Thr Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175  
 Gly Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn  
 180 185 190  
 Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser  
 195 200 205  
 Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
 210 215 220  
 Ala Val Tyr Tyr Cys Ala Arg Tyr Asn Tyr Tyr Tyr Tyr Asp Ser Trp  
 225 230 235 240  
 Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
 245 250 255  
 Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
 260 265 270  
 Tyr Ala Ser  
 275

&lt;210&gt; 637

&lt;211&gt; 816

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

## 4329191\_1

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 637

```

gacatccaga tgaccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc      60
atcacttgcc gggcaagtca gagcattagc agctatttaa attggtatca gcagaaacca      120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca      180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct      240
gaagattttg caacttacta ctgtcaacag agttacagta cccattcac tttcggccct      300
gggaccaaag tggatatcaa acgttctaga ggtggtggtg gtagcggcgg cggcggctct      360
ggtggtggtg gatccctcga gatggccgag gtgcagctgg tgcagtctgg ggctgaggtg      420
aagaagcctg ggtcctcggg gaaggctctc tgcaaggctt ctggaggcac cttcagcagc      480
tatgctatca gctgggtgcg acaggcccct ggacaagggc ttgagtggat gggagggatc      540
atccctatct ttggtacagc aaactacgca cagaagttcc agggcagagt cacgattacc      600
gcggacgaat ccacgagcac agcctacatg gagctgagca gcctgagatc tgaggacacc      660
gccatgtatt actgtgcgcg ctactggggt tacgactctt acgatgaatg gggtaaggt      720
actctggtga ccgtctcctc aactagtggc caggccggcc agcaccatca ccatcaccat      780
ggcgcatacc cgtacgacgt tccggactac gcttct      816

```

&lt;210&gt; 638

&lt;211&gt; 272

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 638

```

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 Phe
          85          90          95

```

## 4329191\_1

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg Ser Arg Gly Gly  
100 105 110

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met  
115 120 125

Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly  
130 135 140

Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Ser  
145 150 155 160

Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp  
165 170 175

Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr Ala Gln Lys  
180 185 190

Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala  
195 200 205

Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr  
210 215 220

Cys Ala Arg Tyr Trp Gly Tyr Asp Ser Tyr Asp Glu Trp Gly Gln Gly  
225 230 235 240

Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His  
245 250 255

His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
260 265 270

<210> 639

<211> 822

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 639

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc | 60  |
| tcctgcaccg gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc | 120 |
| ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt | 180 |
| gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga | 240 |
| ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caattgggtg | 300 |
| ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggccgagg tccagctggt gcagtctggg | 420 |

## 4329191\_1

gctgaggtga agaagcctgg gtcctcggtg aaggtctcct gcaaggcttc tggaggcacc 480  
 ttcagcagct atgctatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg 540  
 ggagggatca tccctatctt tggtagcaga aactacgcac agaagttcca gggcagagtc 600  
 acgattaccg cggacgaatc cagcagcaca gcctacatgg agctgagcag cctgagatct 660  
 gaggacacgg ccgtgtatta ctgtgcgcgc aacaaccatt actacaacga ttactggggg 720  
 caaggtactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat 780  
 caccatggcg catacccgta cgacgttccg gactacgctt ct 822

&lt;210&gt; 640

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 640

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15

Thr Val Thr Ile Ser Cys Thr Gly Ser Ser Gly Ser Ile Ala Ser Asn  
 20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
 35 40 45

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
 85 90 95

Ser Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
 145 150 155 160

Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175

## 4329191\_1

Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
 180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
 195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Arg Asn Asn His Tyr Tyr Asn Asp Tyr Trp Gly  
 225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
 245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
 260 265 270

Ala Ser

<210> 641

<211> 852

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 641

```
cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcaggg ggtcaccatc      60
ccctgcactg ggagcagctc caacatcggg gcaggttatg atgtacactg gtaccagcag      120
cttccaggga cagcccccaa actcctcatc tatggtaaca acaatcggcc ctcaggggctc      180
cctgaccgct tctctggctc caggtctggc tcctcagcct ccctggccat cactgggctc      240
caggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtgatgtg      300
gtattcggcg gagggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc      360
ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtccagct ggtgcagtct      420
ggggctgagg tgaagaagcc tggggctaca gtgaaaatct cctgcaaggt ttctggatac      480
accttcaccg actactacat gcactgggtg caacaggccc ctggaaaagg gcttgagtgg      540
atgggacttg ttgatcctga agatggtgaa acaatatacg cagagaagtt ccagggcaga      600
gtcaccataa ccgcggacac gtctacagac acagcctaca tggagctgag cagcctgaga      660
tctgaggaca cggccgtgta ttactgtgcg cgctactggt cttactcttt cgactacctg      720
tacatgccgg aaggtaacga ttggtggggg caaggtactc tggtgaccgt ctcctcaact      780
agtggccagg ccggccagca ccatcaccat caccatggcg catacccgta cgacgttccg      840
gactacgctt ct                                                                852
```

4329191\_1

<210> 642  
 <211> 284  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 642  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
 1 5 10 15  
 Gly Val Thr Ile Pro Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly  
 20 25 30  
 Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu  
 35 40 45  
 Leu Ile Tyr Gly Asn Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Phe  
 50 55 60  
 Ser Gly Ser Arg Ser Gly Ser Ser Ala Ser Leu Ala Ile Thr Gly Leu  
 65 70 75 80  
 Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser  
 85 90 95  
 Leu Ser Asp Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110  
 Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125  
 Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140  
 Lys Lys Pro Gly Ala Thr Val Lys Ile Ser Cys Lys Val Ser Gly Tyr  
 145 150 155 160  
 Thr Phe Thr Asp Tyr Tyr Met His Trp Val Gln Gln Ala Pro Gly Lys  
 165 170 175  
 Gly Leu Glu Trp Met Gly Leu Val Asp Pro Glu Asp Gly Glu Thr Ile  
 180 185 190  
 Tyr Ala Glu Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser  
 195 200 205  
 Thr Asp Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
 210 215 220

## 4329191\_1

Ala Val Tyr Tyr Cys Ala Arg Tyr Trp Ser Tyr Ser Phe Asp Tyr Leu  
 225 230 235 240

Tyr Met Pro Glu Gly Asn Asp Trp Trp Gly Gln Gly Thr Leu Val Thr  
 245 250 255

Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His His His  
 260 265 270

Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

<210> 643

<211> 828

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 643

```
cagtctgtgt tgactcagcc accgcgacg tctgggaccc ccggacagag agtcaccatc      60
tcttgttctg ggggcgtctc caacatcggg agtggtgctc taaattggta ccagcaactc      120
ccaggaacgg cccccaaact cctcatctat agttacaatc agcggccctc aggggtctct      180
gaccgattct ctggctccag gtctgccacc tcagcctccc tggccatcag tgggctccag      240
tctgaggatg aggctgatta ttactgtgca acctgggatg atagtgtgaa tggttgggtg      300
ttcggcgagg ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc      360
ggcggctctg gtggtggtgg atccctcgag atggcccagg tccagctggt acagtctgga      420
gctgagggtga agaagcctgg ggattcagtg aaggtctcct gcaagccttc tggttacaat      480
tttctcaact atggtatcaa ctgggtgcga caggcccctg gacaagggtc tgagtggatg      540
ggatggatta gcacttacac cggtaacaca aactatgcac agaagctgca gggcagagtc      600
acattcacca cagacacatc cagagcaca gcctacatgg agatgaggag cctgagatct      660
gacgacacgg ccgtgtatta ctgtgcgcgc gacctgtact actacgaagg tgttgattac      720
tggggtaag gtactctggt gaccgtctcc tcaactagtg gccaggccgg ccagcaccat      780
caccatcacc atggcgcata cccgtacgac gttccggact acgcttct      828
```

<210> 644

<211> 276

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 644

Gln Ser Val Leu Thr Gln Pro Pro Ala Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

4329191\_1

Arg Val Thr Ile Ser Cys Ser Gly Gly Val Ser Asn Ile Gly Ser Gly  
20 25 30

Ala Leu Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Ser Tyr Asn Gln Arg Pro Ser Gly Val Ser Asp Arg Phe Ser  
50 55 60

Gly Ser Arg Ser Ala Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Ser Val  
85 90 95

Asn Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Asp Ser Val Lys Val Ser Cys Lys Pro Ser Gly Tyr Asn  
145 150 155 160

Phe Leu Asn Tyr Gly Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Trp Ile Ser Thr Tyr Thr Gly Asn Thr Asn Tyr  
180 185 190

Ala Gln Lys Leu Gln Gly Arg Val Thr Phe Thr Thr Asp Thr Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Met Arg Ser Leu Arg Ser Asp Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Asp Leu Tyr Tyr Tyr Glu Gly Val Asp Tyr  
225 230 235 240

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala  
245 250 255

Gly Gln His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro  
260 265 270

Asp Tyr Ala Ser  
275



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<210> 645  
 <211> 822  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 645  
 caggctgtgc tgactcagcc accctcagtg tcagtggccc caggaaagac ggccagggtt 60  
 acctgtgggg gaaacaacat tggaagtga agtgtgcact ggtaccagca gaagccaggc 120  
 cagggccctg tgttgggtcat ctattatgat accgaccggc cctcagggat ccctgagcga 180  
 ttctctggct cccactctgg gaccacggcc accctgacca tcagcagggt cgaagccggg 240  
 gatgaggccg actattactg tcagggtgtg gatagtagta gggatcatgt ggtattcggc 300  
 ggagggacca agctgaccgt cctaggttct agaggtggtg gtggtagcgg cggcggcggc 360  
 tctggtggtg gtggatccct cgagatggcc cagggtgcagc tgggtgcagtc tgggggaggc 420  
 gtggtccagc ctgggaggtc cctgagactc tcctgtgcgg cctctggatt caccttcagt 480  
 agctatgcta tgcactgggt cgcaccaggc ccaggcaagg gactggagtg ggtggcagtt 540  
 atatcatatg atggaagcaa taaatactac gcagactccg tgaagggcct attcaccatc 600  
 tccagagaca attccaagaa cacgctgtat ctgcaaatga acagcctgag agctgaggac 660  
 acggccgtgt attactgtgc gcgctcttac ttcacttctg gtttctacga ttactggggt 720  
 caaggtactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat 780  
 caccatggcg catacccgta cgacgttccg gactacgctt ct 822

<210> 646  
 <211> 274  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 646  
 Gln Ala Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15  
 Thr Ala Arg Val Thr Cys Gly Gly Asn Asn Ile Gly Ser Glu Ser Val  
 20 25 30  
 His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
 35 40 45  
 Tyr Asp Thr Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60  
 His Ser Gly Thr Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80

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Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Arg Asp His  
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly  
100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
115 120 125

Met Ala Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro  
130 135 140

Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser  
145 150 155 160

Ser Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu  
165 170 175

Trp Val Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp  
180 185 190

Ser Val Lys Gly Leu Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr  
195 200 205

Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr  
210 215 220

Tyr Cys Ala Arg Ser Tyr Phe Thr Ser Gly Phe Tyr Asp Tyr Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 647

<211> 825

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 647

cagtctgtcg tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60

tcctgcactg ggagcagttc caacatcggg gcaggttatg atgtaaattg gtatcagcag 120

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tttccaggaa cagccccaa actcctcatc tatggtaaca gcaatcggcc ctcaggggtc 180
cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc 240
caggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtggctct 300
tatgtcttcg gaactgggac caaggtcacc gtcctagggt ctagagggtg tggtggtagc 360
ggcggcggcg gctctggtgg tggtggtatc ctcgagatgg cccagatgca gctggtgcag 420
tctggggctg aggtgaagaa gcctggggcc tcagtgaagg tctcctgcaa ggcttccgga 480
tacaccctca ctgaattatc catgcactgg gtgcgacagg ctcctggaaa agggcttgag 540
tggatgggag gttttgatcc tgaagatggt gaaacaatct acgcacagaa gttccagggc 600
agagtcacca tgaccgagga cacatctaca gacacagcct acatggagct gagcagcctg 660
agatctgagg aactgccgt gtattactgt gcgcgcatgt cttctatgta ctacgattgg 720
ggtcaaggta ctctggtgac cgtctcctca actagtggcc aggccggcca gcaccatcac 780
catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

```

&lt;210&gt; 648

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 648

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly  
20 25 30

Tyr Asp Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu  
35 40 45

Leu Ile Tyr Gly Asn Ser Asn Arg Pro Ser Gly Val Pro Asp Arg Phe  
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu  
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser  
85 90 95

Leu Ser Gly Ser Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu  
100 105 110

Gly Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly  
115 120 125

Gly Ser Leu Glu Met Ala Gln Met Gln Leu Val Gln Ser Gly Ala Glu  
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135

Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly  
145 150 155 160

Tyr Thr Leu Thr Glu Leu Ser Met His Trp Val Arg Gln Ala Pro Gly  
165 170 175

Lys Gly Leu Glu Trp Met Gly Gly Phe Asp Pro Glu Asp Gly Glu Thr  
180 185 190

Ile Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Glu Asp Thr  
195 200 205

Ser Thr Asp Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp  
210 215 220

Thr Ala Val Tyr Tyr Cys Ala Arg Met Ser Ser Met Tyr Tyr Asp Trp  
225 230 235 240

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
245 250 255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
260 265 270

Tyr Ala Ser  
275

<210> 649  
<211> 807  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 649  
tcctatgtgc tgactcagcc accctcagtg tcagtggccc caggaaagac ggccaggatt 60  
acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120  
caggcccctg tgctggatcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180  
ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
gatgaggccg actattactg tcagggtgtgg gatagtagta gtgattatgt cttcggaact 300  
gggaccaagg tcaccgtcct aggttctaga ggtggtggtg gtagcggcgg cggcggctct 360  
ggtggtggtg gatccctcga gatggccgag gtgcagctgg tggagactgg gggaggcttg 420  
gtcaagcctg gagggtcctt gagactctcc tgtgcagcct ctggattcac cgtcagtgac 480  
tactacatga gctggatccg ccaggctcca gggaagggcc tggagtggat ttcatacatt 540  
agtggtagtg gtaatagcat atactacgca gactctgtga agggccgatt caccatctcc 600

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agggacaacg ccaagaactc actggatctg caaatgacca gcctgagagc cgaggacacg 660  
gccgtatatt actgtgcgcg ctctactaaa ttcgattact ggggtcaagg tactctggtg 720  
accgtctcct caactagtgg ccaggccggc cagcaccatc accatcacca tggcgcatatc 780  
ccgtacgacg ttccggacta cgcttct 807

<210> 650

<211> 269

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 650

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
35 40 45

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp Tyr  
85 90 95

Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg Gly Gly  
100 105 110

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met  
115 120 125

Ala Glu Val Gln Leu Val Glu Thr Gly Gly Gly Leu Val Lys Pro Gly  
130 135 140

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Val Ser Asp  
145 150 155 160

Tyr Tyr Met Ser Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp  
165 170 175

Ile Ser Tyr Ile Ser Gly Ser Gly Asn Ser Ile Tyr Tyr Ala Asp Ser  
180 185 190

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Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu  
 195 200 205

Asp Leu Gln Met Thr Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr  
 210 215 220

Cys Ala Arg Ser Thr Lys Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val  
 225 230 235 240

Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His His  
 245 250 255

His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 260 265

<210> 651

<211> 828

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 651

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ctgcctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc  | 60  |
| tcttgttctg gaagcagctc caacgtcggg agttacactg taaactggta ccggcaactc  | 120 |
| ccaggaacgg cccccacact cctcatctat aataataatc agcggccctc aggggtccct  | 180 |
| gaccgattct ctgactccaa gtctggcacc tcggcctccc tgaccattag tgggctccag  | 240 |
| cctgaggatg aggctgatta ttattgtgca gcatgggatg acaggctggg tggttatgtc  | 300 |
| ttcgggaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt gcagtctgga  | 420 |
| gcagaggtga aaaagccggg ggagtctctg aagatctcct gtaagggttc tggatacagc  | 480 |
| tttaccaact actggatcgg ctgggtgctg cagatgcccc ggaaaggcct ggagtggatg  | 540 |
| gggatcatct atcctggtga ctctgatacc agatacagcc cgtccttcca aggccaggtc  | 600 |
| accatctcag ccgacaagtc catcagcacc gcctacctac agtggagcag cctgaaggcc  | 660 |
| tcggacaccg ccatgtatta ctgtgctgct tctactgggt cttctcatat gtctgatgaa  | 720 |
| tggggtaag gtactctggt gaccgtctcc tcaactagtg gccaggccgg ccagcaccat   | 780 |
| caccatcacc atggcgcata cccgtacgac gttccggact acgcttct               | 828 |

<210> 652

<211> 276

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

## 4329191\_1

&lt;400&gt; 652

Leu Pro Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Val Gly Ser Tyr  
 20 25 30  
 Thr Val Asn Trp Tyr Arg Gln Leu Pro Gly Thr Ala Pro Thr Leu Leu  
 35 40 45  
 Ile Tyr Asn Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Asp Ser Lys Ser Gly Thr Ser Ala Ser Leu Thr Ile Ser Gly Leu Gln  
 65 70 75 80  
 Pro Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Arg Leu  
 85 90 95  
 Gly Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110  
 Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140  
 Lys Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser  
 145 150 155 160  
 Phe Thr Asn Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly  
 165 170 175  
 Leu Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr  
 180 185 190  
 Ser Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile  
 195 200 205  
 Ser Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala  
 210 215 220  
 Met Tyr Tyr Cys Ala Arg Ser Thr Gly Ser Ser His Met Ser Asp Glu  
 225 230 235 240  
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala  
 245 250 255  
 Gly Gln His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro  
 260 265 270

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Asp Tyr Ala Ser  
275

<210> 653  
<211> 819  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 653  
aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
tcctgcaccg gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120  
ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt 180  
gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caatcattgg 300  
gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctgggtggtg tggatccctc gagatggccc aagtgcagct acagcagtgg 420  
ggcgcaggac tgttgaagcc ttcggagacc ctgtccctca cctgcgctgt ctatggtggg 480  
tccttcagtg gttactactg gagctggatc cgccagcccc caggggaaggg gctggagtgg 540  
attggggaga tcactcatag tggaaggtcc aactacaacc cgtccctcaa gagtcgagtc 600  
accatatcag tagacacgtc caagaaccag ttctccctga agctgagctc tgtgaccgcc 660  
gcggacacgg ccgtgtatta ctgtgcgcgc tcttctatca tgtctgatta ctgggggtcaa 720  
ggtagctctg tgaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac 780  
catggcgcat acccgtagca cgttccggac tacgcttct 819

<210> 654  
<211> 273  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 654  
Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15  
Thr Val Thr Ile Ser Cys Thr Gly Ser Ser Gly Ser Ile Ala Ser Asn  
20 25 30  
Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
35 40 45  
Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60



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Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

Ser Asn His Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu  
130 135 140

Leu Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly  
145 150 155 160

Ser Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln ProPro Gly Lys  
165 170 175

Gly Leu Glu Trp Ile Gly Glu Ile Thr His Ser Gly Arg Ser Asn Tyr  
180 185 190

Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys  
195 200 205

Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Ser Ser Ile Met Ser Asp Tyr Trp Gly Gln  
225 230 235 240

Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
260 265 270

Ser

<210> 655

<211> 828

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 655

## 4329191\_1

cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60  
 tcctgcactg ggagcacctc caacatcggg gcaggttatg atgtacactg gtaccagcag 120  
 cttccaggaa cagcccccaa actcctcatc aacaataaca ggaatcggcc ctcaggggctc 180  
 cctgaccgat tctctggctc caagtctggc acgtcagcca ccctgggcat caccggactc 240  
 cagactgggg acgaggccga ttattactgc ggaacatggg atggcagcct gactggtgca 300  
 gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtccagct ggtgcagtct 420  
 ggggctgagg tgaagaagcc tgggtcctcg gtgaaggtct catgcaaggc ttctggaggc 480  
 accttcagca gctatgctat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg 540  
 atgggagggg tcatccctat ctttgggtaca gcaaactacg cacagaagtt ccagggcaga 600  
 gtcacgatta ccgcggacga atccacgagc acagcctaca tggagctgag cagcctgaga 660  
 tctgaggaca cggccgtgta ttactgtgcg cgcggttctg ctctggacca ttacgatcgt 720  
 tggggtaag gtactctggt gaccgtctcc tcaactagtg gccaggccgg ccagcaccat 780  
 caccatcacc atggcgcata cccgtacgac gttccggact acgcttct 828

&lt;210&gt; 656

&lt;211&gt; 276

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 656

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
 1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Thr Ser Asn Ile Gly Ala Gly  
 20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu  
 35 40 45

Leu Ile Asn Asn Asn Arg Asn Arg Pro Ser Gly Val Pro Asp Arg Phe  
 50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu  
 65 70 75 80

Gln Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Gly Ser  
 85 90 95

Leu Thr Gly Ala Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
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115

120

125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140

Lys Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly  
 145 150 155 160

Thr Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175

Gly Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn  
 180 185 190

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser  
 195 200 205

Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Ala Leu Asp His Tyr Asp Arg  
 225 230 235 240

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala  
 245 250 255

Gly Gln His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro  
 260 265 270

Asp Tyr Ala Ser  
 275

&lt;210&gt; 657

&lt;211&gt; 822

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 657

aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60

tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120

ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctc 180

gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240

ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcac caattgggtg 300

ttcggcggag ggaccaagct gaccgtccta gggtctagag gtgggtgggtg tagcggcggc 360

ggcggctctg gtgggtgggtg atccctcgag atggcccagg tgcagctggt gcagtctggg 420

gctgaggtga agaagcctgg gtcctcggtg aaggtctcct gcaaggcttc tggaggcacc 480

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ttcagcagct atgctatcag ctgggtgcga caggcccctg gacaagggct tgagtggatg 540  
ggaggggatca tccctatctt tggtagacga aactacgcac agaagttcca gggcagagtc 600  
acgattaccg cggacgaatc cagcagcaca gcctacatgg agctgagcag cctgagatct 660  
gaggacactg ccgtgtatta ctgtgcgcgc tacaactact acttcaacga ttactggggt 720  
caaggtactc tggtgaccgt ctcctcaact agtggccagg cgggccagca ccatcaccat 780  
caccatggcg catacccgta cgacgttccg gactacgctt ct 822

<210> 658

<211> 274

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 658

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
35 40 45

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

Thr Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
145 150 155 160

Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

## 4329191\_1

Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
 180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
 195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Arg Tyr Asn Tyr Tyr Phe Asn Asp Tyr Trp Gly  
 225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
 245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
 260 265 270

Ala Ser

<210> 659

<211> 819

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 659

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| tcctatgtgc tgactcagcc accctcagtg tcagtggccc caggaaagac ggccaggatt   | 60  |
| acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc   | 120 |
| caggcccctg tgctggatcat ctattatgat agcgaccggc cctcagggat ccctgagcga  | 180 |
| ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg   | 240 |
| gatgaggccg actattactg tcagggtgtgg gatagtagta gtgatcatcc ttatgtcttc  | 300 |
| ggaactggga ccaaggtcac cgtcctaggt tctagagggt gtggtggtag cggcggcggc   | 360 |
| ggctctggtg gtggtggatc cctcgagatg gccagatgc agctggtgca gtctggagct    | 420 |
| gaggtgaaga agcctggggc ctcaagtgaag gtctcctgca aggcttctgg ttacaccttt  | 480 |
| accagctatg gtatcagctg ggtgacgacag gccctggac aagggttga gtggatggga    | 540 |
| tggatcagcg cttacaatgg taacacaaac tatgcacaga agctccaggg cagagtcacc   | 600 |
| atgaccacag acacatccac gagcacagcc tacatggagc tgaggagcct gagatctgac   | 660 |
| gacactgccg tgtattactg tgcgcgctct atgttcggtg ctcattgattc ttgggggtcaa | 720 |
| ggactacttg tgaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac   | 780 |
| catggcgcac acccgtagca cgttccggac tacgcttct                          | 819 |

<210> 660

## 4329191\_1

&lt;211&gt; 273

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 660

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
1 5 10 15Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
20 25 30His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
35 40 45Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
65 70 75 80Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
85 90 95Pro Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg  
100 105 110Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu  
115 120 125Glu Met Ala Gln Met Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
130 135 140Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
145 150 155 160Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu  
165 170 175Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala  
180 185 190Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser  
195 200 205Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val  
210 215 220Tyr Tyr Cys Ala Arg Ser Met Phe Gly Ala His Asp Ser Trp Gly Gln  
225 230 235 240

4329191\_1

Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
260 265 270

Ser

<210> 661  
<211> 828  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 661  
cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60  
tcctgcactg ggagcagctc caacatcggg gcaggttttg atgtacactg gtaccagcta 120  
cttccaggaa cagcccccaa actcctcatc tatgctaaca gcaatcggcc ctcaggggctc 180  
cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc 240  
ctggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtgggtgtg 300  
gtattcggcg gagggacaa gctgaccgtc ctaggttcta gaggtgggtg tggtagcggc 360  
ggcggcggct ctggtgggtg tggatccctc gagatggccc aggtgcagct ggtgcaatct 420  
ggggctgagg tgaagaagcc tgggtcctcg gtgaaggctt cctgcaaggc ttctggaggc 480  
accttcagca gctatgctat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg 540  
atgggagggg tcatccctat ctttggtaca gcaaactacg cacagaagtt ccagggcaga 600  
gtcacgatta ccgcggacga atccacgagc acagcctaca tggagctgag cagcctgaga 660  
tctgaggaca ctgccgtgta ttactgtgcg cgcggtgctt ctttcgaccg tcatgataac 720  
tggggtaag gtactctggt gaccgtctcc tcaactagtg gccaggccgg ccagcaccat 780  
caccatcacc atggcgcata cccgtacgac gttccggact acgcttct 828

<210> 662  
<211> 276  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 662  
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly  
20 25 30

4329191\_1

Phe Asp Val<sub>35</sub> His Trp Tyr Gln<sub>40</sub> Leu<sub>40</sub> Leu Pro Gly Thr Ala<sub>45</sub> Pro Lys Leu

Leu Ile<sub>50</sub> Tyr Ala Asn Ser<sub>55</sub> Asn Arg Pro Ser Gly Val<sub>60</sub> Pro Asp Arg Phe

Ser Gly Ser Lys Ser Gly<sub>70</sub> Thr Ser Ala Ser Leu<sub>75</sub> Ala Ile Thr Gly Leu<sub>80</sub>

Leu Ala Glu Asp Glu<sub>85</sub> Ala Asp Tyr Tyr Cys<sub>90</sub> Gln Ser Tyr Asp Ser<sub>95</sub> Ser

Leu Ser Gly Val<sub>100</sub> Val Phe Gly Gly Gly<sub>105</sub> Thr Lys Leu Thr Val<sub>110</sub> Leu Gly

Ser Arg Gly<sub>115</sub> Gly Gly Gly Ser Gly<sub>120</sub> Gly Gly Gly Ser Gly<sub>125</sub> Gly Gly Gly

Ser Leu<sub>130</sub> Glu Met Ala Gln Val<sub>135</sub> Gln Leu Val Gln Ser Gly Ala Glu Val

Lys<sub>145</sub> Lys Pro Gly Ser Ser<sub>150</sub> Val Lys Val Ser Cys<sub>155</sub> Lys Ala Ser Gly Gly<sub>160</sub>

Thr Phe Ser Ser Tyr<sub>165</sub> Ala Ile Ser Trp Val<sub>170</sub> Arg Gln Ala Pro Gly<sub>175</sub> Gln

Gly Leu Glu Trp<sub>180</sub> Met Gly Gly Ile Ile<sub>185</sub> Pro Ile Phe Gly Thr Ala Asn

Tyr Ala Gln<sub>195</sub> Lys Phe Gln Gly Arg Val<sub>200</sub> Thr Ile Thr Ala<sub>205</sub> Asp Glu Ser

Thr Ser<sub>210</sub> Thr Ala Tyr Met Glu<sub>215</sub> Leu Ser Ser Leu Arg<sub>220</sub> Ser Glu Asp Thr

Ala Val Tyr Tyr Cys Ala<sub>230</sub> Arg Gly Ala Ser Phe<sub>235</sub> Asp Arg His Asp Asn<sub>240</sub>

Trp Gly Gln Gly Thr<sub>245</sub> Leu Val Thr Val Ser<sub>250</sub> Ser Thr Ser Gly Gln<sub>255</sub> Ala

Gly Gln His His<sub>260</sub> His His His His Gly<sub>265</sub> Ala Tyr Pro Tyr Asp<sub>270</sub> Val Pro

Asp Tyr Ala Ser<sub>275</sub>

<210> 663

<211> 822



## 4329191\_1

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 663

```

aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc      60
tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc      120
ccgggcagtt cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt      180
gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga      240
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caattgggtg      300
ttcggcgagg ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc      360
ggcggctctg gtggtggtgg atccctcgag atggccgagg tccagctggt gcagtctggg      420
gctgaggtga agaagcctgg gtcctcggtg aaggtctcct gcaaggcttc tggaggcacc      480
ttcagcagct atgctatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg      540
ggaggggatca tccctatctt tggtagcga aactacgcac agaagttcca gggcagagtc      600
acgattaccg cggacgaatc cacgagcaca gcctacatgg agctgagcag cctgagatct      660
gaggacacgg ccgtgtatta ctgtgcgcgc tctaactact actacaacga ttactggggg      720
caaggtactc tggtgaccgt ctctcaact agtggccagg cgggccagca ccatcaccat      780
caccatggcg catacccgta cgacgttccg gactacgctt ct                        822

```

&lt;210&gt; 664

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 664

```

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys
1           5           10           15

```

```

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn
          20          25          30

```

```

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ser Pro Thr Thr Val
          35          40          45

```

```

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
          50          55          60

```

```

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly
65          70          75          80

```

```

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser

```

Ser Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
145 150 155 160

Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Ser Asn Tyr Tyr Tyr Asn Asp Tyr Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 665

<211> 822

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 665

cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60

tcctgcactg ggagcagctc caacatcggg gcagggttatg atgtacactg gtaccagcag 120

cttccaggaa cagcccccaa actcctcatc tatggtaaca gcaatcggcc ctcaggggtc 180

cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc 240

## 4329191\_1

caggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtgggttat 300  
 gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtgcagct ggtgcagtct 420  
 ggggctgagg tgaagaagcc tggggcctca gtgaaggtct cctgcaaggt ttccggatac 480  
 accctcactg aattatccat gcactgggtg cgacaggctc ctggaaaagg gcttgagtgg 540  
 atgggaggtt ttgatcctga agatggtgaa acaatctacg cacagaagtt ccagggcaga 600  
 gtcacatga ccgaggacac atctacagac acagcctaca tggagctgag cagcctgaga 660  
 tctgaggaca ctgccgtgta ttactgtgcg cgctactctg gtgtttacta cgattggggg 720  
 caaggtactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat 780  
 caccatggcg catacccgta cgacgttccg gactacgctt ct 822

&lt;210&gt; 666

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 666

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
 1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly  
 20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu  
 35 40 45

Leu Ile Tyr Gly Asn Ser Asn Arg Pro Ser Gly Val Pro Asp Arg Phe  
 50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu  
 65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser  
 85 90 95

Leu Ser Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140

## 4329191\_1

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Val Ser Gly Tyr  
145 150 155 160

Thr Leu Thr Glu Leu Ser Met His Trp Val Arg Gln Ala Pro Gly Lys  
165 170 175

Gly Leu Glu Trp Met Gly Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile  
180 185 190

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Glu Asp Thr Ser  
195 200 205

Thr Asp Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
210 215 220

Ala Val Tyr Tyr Cys Ala Arg Tyr Ser Gly Val Tyr Tyr Asp Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 667

<211> 822

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 667

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| aattttatgc tgactcagcc ccactctgtg tcggggtctc cggggaagac ggtaaccatc | 60  |
| tcctgcaccg gcagcagtgg cagcattgcc gacaactttg tgcagtggta ccagcagcgc | 120 |
| ccgggcggtg tccccaccac tgtgatcttt aatgatgacg aaagaccctc tggcgtcctc | 180 |
| gatcggttct ctggctccat cgacacctcc tccaattctg cctccctcac catctctgga | 240 |
| ctgaagactg aggacgaggc tgactactac tgtcagtctt atgataataa taatcgaggg | 300 |
| gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc | 360 |
| ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtccagct ggtgcagtct | 420 |
| ggggctgagg tgaagaagcc tgggtcctcg gtgaaggctt cctgcaaggc ttctggaggc | 480 |
| accttcagca gctatgctat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg | 540 |
| atgggatgga tgaaccctaa cagtggtaac acaggctatg cacagaagtt ccagggcaga | 600 |
| gtcaccatga ccaggaacac ctccataagc acagcctaca tggagctgag caacctgaga | 660 |

## 4329191\_1

tctgaggaca cggccgtgta ttactgtgcg cgctactact cttacgggta cgattgggggt 720  
 caaggtactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat 780  
 caccatggcg catacccga cgacgttccg gactacgctt ct 822

<210> 668  
 <211> 274  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 668  
 Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Gly Ser Pro Gly Lys  
 1 5 10 15

Thr Val Thr Ile Ser Cys Thr Gly Ser Ser Gly Ser Ile Ala Asp Asn  
 20 25 30

Phe Val Gln Trp Tyr Gln Gln Arg Pro Gly Gly Val Pro Thr Thr Val  
 35 40 45

Ile Phe Asn Asp Asp Glu Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Ile Asp Thr Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Asn  
 85 90 95

Asn Asn Arg Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140

Lys Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly  
 145 150 155 160

Thr Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175

Gly Leu Glu Trp Met Gly Trp Met Asn Pro Asn Ser Gly Asn Thr Gly  
 180 185 190

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Arg Asn Thr Ser  
 195 200 205

## 4329191\_1

Ile Ser Thr Ala Tyr Met Glu Leu Ser Asn Leu Arg Ser Glu Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Ala Arg Tyr Tyr Ser Tyr Gly Tyr Asp Trp Gly  
 225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
 245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
 260 265 270

Ala Ser

<210> 669

<211> 840

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 669

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagtctgtcg tgacgcagcc gccctcagtg tctggggccc cagggcagac ggtcaccatc  | 60  |
| tcctgcactg ggggcagctc caacatcggg acaggttatt ttgtaaattg gtaccagcag  | 120 |
| gttccaggaa aagccccaa actcctcatc ctgggtaaca ataatcggcc ctcgggggtc   | 180 |
| cctgaccgac tctccggctc cacgtccggc acctcagcct ccctggccat cactgggctc  | 240 |
| caggctgagg atgagggtac ttattactgc cagtcctatg acagcagcct gagtggttat  | 300 |
| gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc  | 360 |
| ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtacagct gcagcagtca  | 420 |
| ggtcaggac tggatgaagc ctcgcagacc ctctactca cctgtggcat ctccggggac    | 480 |
| agtgtctcta ccaacagtgt tgcttggcac tggatcaggc agtccccatc gagaggcctt  | 540 |
| gagtggctgg gaaggacata ctacaggtcc aagtgggtcta atgactatgg agtatctgtg | 600 |
| aaaagtcgaa tcaccatcat ccagacaca tccaagaacc agttctccct gcagctgaac   | 660 |
| tctgtgactc ccgaggacac ggctgtgtat tactgtgcgc gctcttcttc ttggtaccag  | 720 |
| atcttcgatt actgggggtca aggtactctg gtgaccgtct cctcaactag tggccaggcc | 780 |
| ggccagcacc atcaccatca ccatggcgca taccgtacg acgttccgga ctacgcttct   | 840 |

<210> 670

<211> 280

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

## 4329191\_1

&lt;400&gt; 670

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
 1 5 10 15  
 Thr Val Thr Ile Ser Cys Thr Gly Gly Ser Ser Asn Ile Gly Thr Gly  
 20 25 30  
 Tyr Phe Val Asn Trp Tyr Gln Gln Val Pro Gly Lys Ala Pro Lys Leu  
 35 40 45  
 Leu Ile Leu Gly Asn Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Leu  
 50 55 60  
 Ser Gly Ser Thr Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu  
 65 70 75 80  
 Gln Ala Glu Asp Glu Gly Thr Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser  
 85 90 95  
 Leu Ser Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110  
 Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125  
 Ser Leu Glu Met Ala Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu  
 130 135 140  
 Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Gly Ile Ser Gly Asp  
 145 150 155 160  
 Ser Val Ser Thr Asn Ser Val Ala Trp His Trp Ile Arg Gln Ser Pro  
 165 170 175  
 Ser Arg Gly Leu Glu Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp  
 180 185 190  
 Ser Asn Asp Tyr Gly Val Ser Val Lys Ser Arg Ile Thr Ile Ile Pro  
 195 200 205  
 Asp Thr Ser Lys Asn Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro  
 210 215 220  
 Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Ser Ser Trp Tyr Gln  
 225 230 235 240  
 Ile Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr  
 245 250 255  
 Ser Gly Gln Ala Gly Gln His His His His His His Gly Ala Tyr Pro  
 260 265 270

4329191\_1

Tyr Asp Val Pro Asp Tyr Ala Ser  
275 280

<210> 671  
<211> 837  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 671  
aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
tcctgcaccg gcagcagcga cagcatagcc aacaactatg ttcagtggta ccagcagcgc 120  
ccgggacagt ccccccacaa tgtgatctac gaagatgtcc aaagaccctc tggggtcctt 180  
gatcggttct ctgggtccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
ctgaagactg aggacgaggc tgtctactat tgtcagtctt atcatagcga caatcgttgg 300  
gtgttcggcg gcgggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctgggtggtg tggatccctc gagatggccc aggtgcagct ggtggagtct 420  
gggggaggct tggtagcggc tggggggtcc ctgagactct cctgtgcagc ctctggattc 480  
accttttagc gctatgccat gagctgggtc cgccaggctc caggggaagg gctggagtgg 540  
gtctcagcta ttagtggtag tgggtggtagc acatactacg cagactccgt gaagggccgg 600  
ttcaccatct ccagagacaa ttccaagaac acgctgtatc tgcaaatgaa cagcctgaga 660  
gccgaggaca cggccgtata ttactgtgcg cgctctggtg cttactggga ctactctggt 720  
tacgatgaat ggggtcaagg tactctggtg accgtctcct caactagtgg ccaggccggc 780  
cagcaccatc accatcacca tggcgcatat ccgtacgacg ttccggacta cgcttct 837

<210> 672  
<211> 279  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 672  
Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

Thr Val Thr Ile Ser Cys Thr Gly Ser Ser Asp Ser Ile Ala Asn Asn  
20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Asn Val  
35 40 45

Ile Tyr Glu Asp Val Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
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4329191\_1  
60

50

55

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Val Tyr Tyr Cys Gln Ser Tyr His Ser  
85 90 95

Asp Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu  
130 135 140

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe  
145 150 155 160

Thr Phe Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys  
165 170 175

Gly Leu Glu Trp Val Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr  
180 185 190

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser  
195 200 205

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr  
210 215 220

Ala Val Tyr Tyr Cys Ala Arg Ser Gly Ala Tyr Trp Asp Tyr Ser Val  
225 230 235 240

Tyr Asp Glu Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser  
245 250 255

Gly Gln Ala Gly Gln His His His His His Gly Ala Tyr Pro Tyr  
260 265 270

Asp Val Pro Asp Tyr Ala Ser  
275

<210> 673

<211> 819

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

## 4329191\_1

<400> 673  
cagtctgtgt tgactcagcc accctcagtg tccgtgtccc caggacagac agccaccatc 60  
gcctgttctg gacataaatt gggggataaa tatgcttcct ggtatcagca gaagtcgggc 120  
cagtcacctg tgttgatcat ctatcaggat aataagcggc cctcagggat tcctgagcga 180  
ttctctggct ccaactctgg gaacacagcc actctgacca tcagcgggac ccaggctctg 240  
gatgaggctg actattattg tcaggcgtgg gacagtagta cttatgtggc attcggcgga 300  
gggaccaagc tgaccgtcct aggttctaga ggtggtggtg gtagcggcgg cggcggctct 360  
ggtggtggtg gatccctcga gatggcccag gtgcagctgc aggagtccgg ccaggactg 420  
gtgaagcctt cggagaccct gtccctcacc tgcgttgctt ctggtggctc catcagcagt 480  
agtaactggt ggagctgggt ccgccagccc ccagggaagg ggctggagtg gattggggaa 540  
atctatcata gtgggagccc caactacaac ccatccctca agagtcgagt caccatatca 600  
gtagacaagt ccaagaacca gttctccctg aagctgagct ctgtgaccgc cgcggacacg 660  
gccgtgtatt actgtgctgc catgactact catactttcg gttacgatgc ttgggggtcaa 720  
ggtactctgg tgaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac 780  
catggcgcat acccgtaga cgttccggac tacgcttct 819

<210> 674  
<211> 273  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 674  
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
1 5 10 15  
  
Thr Ala Thr Ile Ala Cys Ser Gly His Lys Leu Gly Asp Lys Tyr Ala  
20 25 30  
  
Ser Trp Tyr Gln Gln Lys Ser Gly Gln Ser Pro Val Leu Ile Ile Tyr  
35 40 45  
  
Gln Asp Asn Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60  
  
Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Leu  
65 70 75 80  
  
Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Ser Ser Thr Tyr Val  
85 90 95  
  
Ala Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly Gly  
100 105 110

## 4329191\_1

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met  
 115 120 125

Ala Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser  
 130 135 140

Glu Thr Leu Ser Leu Thr Cys Val Val Ser Gly Gly Ser Ile Ser Ser  
 145 150 155 160

Ser Asn Trp Trp Ser Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu  
 165 170 175

Trp Ile Gly Glu Ile Tyr His Ser Gly Ser Pro Asn Tyr Asn Pro Ser  
 180 185 190

Leu Lys Ser Arg Val Thr Ile Ser Val Asp Lys Ser Lys Asn Gln Phe  
 195 200 205

Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr  
 210 215 220

Cys Ala Arg Met Thr Thr His Thr Phe Gly Tyr Asp Ala Trp Gly Gln  
 225 230 235 240

Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
 245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
 260 265 270

Ser

<210> 675

<211> 810

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 675

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagcctgtgc tgactcagcc accctcagtgc tcagtggccc caggaaagac ggccacgatt | 60  |
| acttgtgggg gaaacaacat tggaagtga agtgtgcact ggtaccacca gaagccaggc   | 120 |
| caggcccctg tgttggtcat ctatgatgat gccggccggc cctcagggat ccctgagcga  | 180 |
| ttcactggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg  | 240 |
| gatgaggccg actattactg tcaggtgtgg gacagaaata gtgctcagtt tgtcttcgga  | 300 |
| cctgggacca aggtcacctg cctaggttct agaggtggtg gtggtagcgg cggcggcggc  | 360 |
| tctggtggtg gtggatccct cgagatggcc gaggtccagc tgggtgcagtc tggagctgag | 420 |

## 4329191\_1

```

gtgaagaagc ctggggcctc agtgaaggtc tcctgcaagg cttctgggta cacctttacc      480
agctatggta tcagctgggt gcgacaggcc cctggacaag ggcttgagtg gatgggatgg      540
atcagcgctt acaatggtaa cacaaactat gcacagaagc tccagggcag agtcaccatg      600
accacagaca catccacgag cacagcctac atggagctga ggagcctgag atctgacgac      660
acggccgtgt attactgtgc gcgcggtggt catctggatt ggtgggggtca aggtactctg      720
gtgaccgtct cctcaactag tggccaggcc ggccagcacc atcaccatca ccatggcgca      780
taccctgacg acgttccgga ctacgcttct      810

```

&lt;210&gt; 676

&lt;211&gt; 270

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 676

Gln Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15

Thr Ala Thr Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Glu Ser Val  
 20 25 30

His Trp Tyr His Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
 35 40 45

Asp Asp Ala Gly Arg Pro Ser Gly Ile Pro Glu Arg Phe Thr Gly Ser  
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Arg Asn Ser Ala Gln  
 85 90 95

Phe Val Phe Gly Pro Gly Thr Lys Val Thr Val Leu Gly Ser Arg Gly  
 100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
 115 120 125

Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro  
 130 135 140

Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr  
 145 150 155 160

Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu  
 165 170 175

## 4329191\_1

Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln  
 180 185 190

Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr  
 195 200 205

Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr  
 210 215 220

Tyr Cys Ala Arg Gly Val His Leu Asp Trp Trp Gly Gln Gly Thr Leu  
 225 230 235 240

Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His  
 245 250 255

His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 260 265 270

<210> 677  
 <211> 846  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 677  
 cagtctgtcg tgacgcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
 tcttgttctg gaagcagctc caacatcgga agtaattatg tatactggta ccagcagctc 120  
 ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtcctt 180  
 gaccgattct ctgggtccaa gtctggcacc tcagcctccc tggccatcag tgggctccgg 240  
 tccgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgag tggttatgtc 300  
 ttcggaactg ggaccaagct gaccgtccta gggtctagag gtggtggtgg tagcggcggc 360  
 ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctaca gcagtggggc 420  
 gcaggactgt tgaagccttc ggagaccctg tccctcacct gcgctgtcta tgggtgggtcc 480  
 ttcagtgggt actactggag ctggatccgc cagccccag ggaaggggct ggagtggatt 540  
 ggggaaatca atcatagtgg aagcaccaac tacaaccgt cctcaagag tcgagtcacc 600  
 atatcagtag acacgtccaa gaaccagttc tccctgaagc tgagctctgt gaccgccgcg 660  
 gacacggccg tgtattactg tgcgcgcctg tacgaagggt gttaccatgg ttggggttct 720  
 tggctgtctt ctgattcttg gggcaaggt actctggtga ccgtctctc aactagtggc 780  
 caggccggcc agcaccatca ccataccat ggcgcatacc cgtacgacgt tccggactac 840  
 gcttct 846

<210> 678  
 <211> 282

## 4329191\_1

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 678

Gln Ser Val Val Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
 20 25 30

Tyr Val Tyr Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg  
 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 85 90 95

Ser Gly Tyr Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu  
 130 135 140

Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser  
 145 150 155 160

Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly  
 165 170 175

Leu Glu Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn  
 180 185 190

Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn  
 195 200 205

Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val  
 210 215 220

Tyr Tyr Cys Ala Arg Leu Tyr Glu Gly Gly Tyr His Gly Trp Gly Ser  
 225 230 235 240

4329191\_1

Trp Leu Ser Ser Asp Ser Trp Gly Gln Gly Thr Leu Val Thr Val Ser  
                                   245                                  250                                  255

Ser Thr Ser Gly Gln Ala Gly Gln His His His His His His Gly Ala  
                                   260                                  265                                  270

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
                                   275                                  280

<210> 679  
 <211> 825  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 679  
 cagtctgtgt tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
 tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120  
 ccaggaacgg cccccaact cctcatctat agtaataatc agcggccctc aggggtccct 180  
 gaccgattct ctgggtccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
 tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttattgg 300  
 gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtgcagct acagcagtgg 420  
 ggcgcaggac tgttgaagcc ttcggagacc ctgtccctca cctgcgctgt ctatggtggg 480  
 tccttcagtg gttactactg gagctggatc cgccagcccc caggggaagg gctggagtgg 540  
 attggggaaa tcaatcatag tggaagcacc aactacaacc cgtccctcaa gagtcgagtc 600  
 accatatcag tagacacgtc caagaaccag ttctccctga agctgagctc tgtgaccgcc 660  
 gcggacacgg ctgtgtatta ctgtgcgcgc gaaggggcat ttgatgcttt tgatatctgg 720  
 ggccaaggga caatggtcac cgtctcttca actagtggcc aggccggcca gcaccatcac 780  
 catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

<210> 680  
 <211> 275  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 680  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1                                  5                                  10                                  15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
                                   20                                  25                                  30

4329191\_1

Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
85 90 95

Asn Gly Tyr Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu  
130 135 140

Leu Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly  
145 150 155 160

Ser Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys  
165 170 175

Gly Leu Glu Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr  
180 185 190

Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys  
195 200 205

Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Glu Gly Ala Phe Asp Ala Phe Asp Ile Trp  
225 230 235 240

Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
245 250 255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
260 265 270

Tyr Ala Ser  
275

<210> 681

<211> 831

<212> DNA



<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 681

```

tcctatgagc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc      60
tcttgttctg gaagcagctc caacatcgga agtaattatg tatactggta ccagcagctc      120
ccaggaacgg cccccaaact cttcatctat aggaataatc agcggccctc aggggtccct      180
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccgg      240
tccgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgag tggttatctc      300
ttcggaaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc      360
ggcggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt ggagtctggg      420
ggaggcttgg tacagcctgg caggtccctg agactctcct gtgcagcctc tggattcacc      480
tttgatgatt atgcatgca ctgggtccgg caagctccag ggaagggcct ggagtgggtc      540
tcaggtatta gttggaatag tggtagcata ggctatgcgg actctgtgaa gggccgattc      600
accatctcca gagacaacgc caagaactcc ctgtatctgc aaatgaacag tctgagagct      660
gaggacacgg cttgtatta ctgtgcaaat ggcgactcca actactacta cggtatggac      720
gtctggggcc aagggaccac ggtcaccgtc tcctcaacta gtggccaggc cggccagcac      780
catcaccatc accatggcgc ataccgtac gacgttcagg actacgcttc t                831

```

<210> 682

<211> 277

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 682

```

Ser Tyr Glu Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln
1          5          10          15

```

```

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
          20          25          30

```

```

Tyr Val Tyr Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Phe
          35          40          45

```

```

Ile Tyr Arg Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
          50          55          60

```

```

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg
65          70          75          80

```

```

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
          85          90          95

```

## 4329191\_1

Ser Gly Tyr Leu Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val  
130 135 140

Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr  
145 150 155 160

Phe Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly  
165 170 175

Leu Glu Trp Val Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr  
180 185 190

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys  
195 200 205

Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala  
210 215 220

Leu Tyr Tyr Cys Ala Asn Gly Asp Ser Asn Tyr Tyr Tyr Gly Met Asp  
225 230 235 240

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Thr Ser Gly Gln  
245 250 255

Ala Gly Gln His His His His His Gly Ala Tyr Pro Tyr Asp Val  
260 265 270

Pro Asp Tyr Ala Ser  
275

<210> 683

<211> 843

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 683

cagtctgccc tgactcagcc tgcctccgtg tccgggtctc ctggacagtc gatcaccatc 60

tcctgcactg gaaccagcag tgacattggt gggtataact atgtctcctg gtaccaacaa 120

caccaggca aagccccaa actcatgatt tatgatgtca gtaatcggcc ctcaggggtt 180

tctaatacgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240

## 4329191\_1

caggctgagg acgaggctga ttattactgc atctcatata cacgcacctg gaacccttat 300  
gtcttcggga gtgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtgcagct ggtgcagtct 420  
gggggaggcg tggtagacc tgggggggtcc ctgagactct cctgtgcagc ctctggattc 480  
acctttgatg attatgccat gcactgggtc cgtcaagctc caggggaaggg tctggagtgg 540  
gtctctctta ttagtgggga tgggtgtagc acatactatg cagactctgt gaagggccga 600  
ttcaccatct ccagagacaa cagcaaaaac tccctgtatc tgcaaatgaa cagtctgaga 660  
actgaggaca ccgccttgta ttactgtgca aaagatcggg cagcagctgg ctactactac 720  
tacggtatgg acgtctgggg ccaagggacc acggtcaccg tctcctcaac tagtggccag 780  
gccggccagc accatcacca tcaccatggc gcatacccg acgacgttcc ggactacgct 840  
tct 843

&lt;210&gt; 684

&lt;211&gt; 281

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 684

Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln  
1 5 10 15

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Ile Gly Gly Tyr  
20 25 30

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu  
35 40 45

Met Ile Tyr Asp Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe  
50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu  
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ile Ser Tyr Thr Arg Thr  
85 90 95

Trp Asn Pro Tyr Val Phe Gly Ser Gly Thr Lys Val Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Gly Gly Val  
130 135 140

## 4329191\_1

Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe  
145 150 155 160

Thr Phe Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys  
165 170 175

Gly Leu Glu Trp Val Ser Leu Ile Ser Gly Asp Gly Gly Ser Thr Tyr  
180 185 190

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser  
195 200 205

Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr  
210 215 220

Ala Leu Tyr Tyr Cys Ala Lys Asp Arg Ala Ala Ala Gly Tyr Tyr Tyr  
225 230 235 240

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
245 250 255

Thr Ser Gly Gln Ala Gly Gln His His His His His Gly Ala Tyr  
260 265 270

Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
275 280

<210> 685

<211> 825

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 685

ctgcctgtgc tgactcagcc accctcagtg tccgtgtccc caggacagac agccatcatc 60

acctgctctg gagataaatt gggggaaaaa tatgtttcct ggtatcagca gaagccaggc 120

cagtcccctg tactggtcat cgatcaagat accaggaggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaccacagcc actctgacca tcagcgggac ccaggctatg 240

gatgaggctg actattactg tcaggcgtgg gacaggggtg tggatttcgg cggagggacc 300

aagctgaccg tcctaggttc tagaggtggt ggtggtagcg gcggcggcgg ctctggtggt 360

ggtggatccc tcgagatggc cgaggtgcag ctggtggagt ctgggggaga cttggtacag 420

cctggcaggc ccctgagact ctctgtgca gcctctggat tcacctttaa tgattatgcc 480

atgcactggg tccggcaagc tccagggaag ggcctggagt gggctctcagg tattagttgg 540

agtggtaata acataggcta tgcggactct gtgaagggcc gattcaccat ctccagagac 600

aacgccaaga actccctgta tctgcaaagt aacagtctga gagctgagga cacggccttg 660

## 4329191\_1

tattactgtg caaaagatag tatacgggtat ggcatacacct ggggaggttt tgactactgg 720  
 ggccagggaa ccctgggtcac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
 catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

<210> 686  
 <211> 275  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 686  
 Leu Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
 1 5 10 15

Thr Ala Ile Ile Thr Cys Ser Gly Asp Lys Leu Gly Glu Lys Tyr Val  
 20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Asp  
 35 40 45

Gln Asp Thr Arg Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60

Asn Ser Gly Thr Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Arg Gly Val Val Phe  
 85 90 95

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly Gly Gly Gly  
 100 105 110

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met Ala Glu  
 115 120 125

Val Gln Leu Val Glu Ser Gly Gly Asp Leu Val Gln Pro Gly Arg Ser  
 130 135 140

Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Asp Tyr Ala  
 145 150 155 160

Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser  
 165 170 175

Gly Ile Ser Trp Ser Gly Asn Asn Ile Gly Tyr Ala Asp Ser Val Lys  
 180 185 190

Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr Leu  
 195 200 205

## 4329191\_1

Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr Tyr Cys Ala  
 210 215 220

Lys Asp Ser Ile Arg Tyr Gly Ile Thr Trp Gly Gly Phe Asp Tyr Trp  
 225 230 235 240

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
 245 250 255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
 260 265 270

Tyr Ala Ser  
 275

<210> 687

<211> 825

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 687

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| cagcctgtgc tgactcagcc accctcggtg tccaagggct tgagacagac cgccacactc | 60  |
| acctgcactg ggaacagcaa caatgttggc aacctaggag tagcttggct gcagcagcac | 120 |
| cagggccacc ctcccaaact cctatcctac aggaataaca accggccctc agggatctca | 180 |
| gagagattat ctgcatccag gtcaggaaac acagcctccc tgaccattac tggactccag | 240 |
| cctgaggacg aggctgacta ttactgctca gcatgggaca gtagcctcag tgcttgggtg | 300 |
| ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt ggagtctggg | 420 |
| ggagtcgtgg tacagcctgg ggggtccctg agactctcct gtgcagcctc tggattcacc | 480 |
| tttgatgatt atgcatgca ctgggtccgt caagctccgg ggaaggggtct ggagtgggtc | 540 |
| tctcttatta attgggatgg tggtagcacc tactatgcag actctgtgaa gggtcgattc | 600 |
| accatctcca gagacaacag caaaaactcc ctgtatctgc aaatgaacag tctgagagct | 660 |
| gaggacaccg cttgtatta ctgtgcaaaa gggatgggcc tgagggcggt tgactactgg  | 720 |
| ggccagggaa ccctggtcac cgtctcctca actagtggcc aggccggcca gcaccatcac | 780 |
| catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct                 | 825 |

<210> 688

<211> 275

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

## 4329191\_1

## polypeptide

&lt;400&gt; 688

Gln Pro Val Leu Thr Gln Pro Pro Ser Val Ser Lys Gly Leu Arg Gln  
 1 5 10 15  
 Thr Ala Thr Leu Thr Cys Thr Gly Asn Ser Asn Asn Val Gly Asn Leu  
 20 25 30  
 Gly Val Ala Trp Leu Gln Gln His Gln Gly His Pro Pro Lys Leu Leu  
 35 40 45  
 Ser Tyr Arg Asn Asn Asn Arg Pro Ser Gly Ile Ser Glu Arg Leu Ser  
 50 55 60  
 Ala Ser Arg Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Leu Gln  
 65 70 75 80  
 Pro Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ala Trp Asp Ser Ser Leu  
 85 90 95  
 Ser Ala Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
 100 105 110  
 Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Gly Val Val Val  
 130 135 140  
 Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr  
 145 150 155 160  
 Phe Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly  
 165 170 175  
 Leu Glu Trp Val Ser Leu Ile Asn Trp Asp Gly Gly Ser Thr Tyr Tyr  
 180 185 190  
 Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys  
 195 200 205  
 Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala  
 210 215 220  
 Leu Tyr Tyr Cys Ala Lys Gly Met Gly Leu Arg Ala Phe Asp Tyr Trp  
 225 230 235 240  
 Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
 245 250 255  
 Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp

Tyr Ala Ser  
275

<210> 689  
<211> 840  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 689  
cagtctgtgt tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
tcctgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120  
ccaggaacgg cccccaaact cctcatctat agtaatgac agcgccctc aggggtccct 180  
gaccgattct ctgggtccaa gtccggcacc tcagcctccc tggccatcag tgggtccag 240  
tctgaggatg aggctgatta ttactgtgct tcatgggatg acagcctgaa tggccgttat 300  
gtcttcggaa ctgggacaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtccagct ggtacagtct 420  
ggggctgagg tgaggaagcc tggggcctca gtgaaggttt cctgcaagac ttctggatac 480  
accttcagtt ggtatgctat acattgggtg cgccaggccc ccggacaaag gcttgagtgg 540  
atgggatgga tcaacgctgg caatggaaac acaaaatatt cacagaaatt tcagggcaga 600  
gtcagtctta ccaggacac atccgcgagc acagcctaca tggagctgag cagcctgaga 660  
tctgatgaca cggctgtgta ttactgtgcg agaccgata attatggttc ggggtggggat 720  
gtttttgata tctggggcca agggacaatg gtcaccgtct cttcaactag tggccaggcc 780  
ggccagcacc atcaccatca ccatggcgca taccgtagc acgttccgga ctacgcttct 840

<210> 690  
<211> 280  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 690  
Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
20 25 30

Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45



## 4329191\_1

Ile Tyr Ser Asn Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ser Trp Asp Asp Ser Leu  
 85 90 95

Asn Gly Arg Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140

Arg Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Thr Ser Gly Tyr  
 145 150 155 160

Thr Phe Ser Trp Tyr Ala Ile His Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175

Arg Leu Glu Trp Met Gly Trp Ile Asn Ala Gly Asn Gly Asn Thr Lys  
 180 185 190

Tyr Ser Gln Lys Phe Gln Gly Arg Val Ser Leu Thr Arg Asp Thr Ser  
 195 200 205

Ala Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Ala Arg Pro Asp Asn Tyr Gly Ser Gly Gly Asp  
 225 230 235 240

Val Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr  
 245 250 255

Ser Gly Gln Ala Gly Gln His His His His His Gly Ala Tyr Pro  
 260 265 270

Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

<210> 691

<211> 819

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

## 4329191\_1

<400> 691  
aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
tcctgcaccc gcagcagtgg cagcattgcc agcaactttg tgcagtggta ccagcagcgc 120  
ccgggcagtg cccccacccc tatgatctat gaggataaca acagaccccc tggggtcctt 180  
gatcggttct ctgcctccgt cgacagctcc tccaactctg cctccctcac catctctgga 240  
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgataccag caatgtggta 300  
ttcggcgggg ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt ggagtctggg 420  
ggaggcttgg tacagcctgg agggtcctg agactctcct gtgcagcctc tggattcacc 480  
ttcagtagtt atgaaatgaa ctgggtccgc caggctccag ggaaggggct ggagtgggtt 540  
tcatacatta gtagtagtgg tagtaccata tactacgcag actctgtgaa gggccgattc 600  
accatctcca gagacaacgc caagaactca ctgtatctgc aaatgaacag cctgagagcc 660  
gaggacacgg ctgtttatta ctgtgcacgc tgggactacg gtatggacgt ctggggccaa 720  
gggaccacgg tcaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac 780  
catggcgcac acccgtacga cgttccggac tacgcttct 819

<210> 692  
<211> 273  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 692  
Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15  
Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
20 25 30  
Phe Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Pro Met  
35 40 45  
Ile Tyr Glu Asp Asn Asn Arg Pro Pro Gly Val Pro Asp Arg Phe Ser  
50 55 60  
Ala Ser Val Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80  
Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Thr  
85 90 95  
Ser Asn Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

## 4329191\_1

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val  
 130 135 140

Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr  
 145 150 155 160

Phe Ser Ser Tyr Glu Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly  
 165 170 175

Leu Glu Trp Val Ser Tyr Ile Ser Ser Ser Gly Ser Thr Ile Tyr Tyr  
 180 185 190

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys  
 195 200 205

Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Arg Trp Asp Tyr Gly Met Asp Val Trp Gly Gln  
 225 230 235 240

Gly Thr Thr Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
 245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
 260 265 270

Ser

<210> 693

<211> 837

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 693

caggctgtgc tgactcagcc accctcagcg tctggggccc cgggcagag ggtcaccgtc 60

tcttgttctg gaagcaactc caacatcgga agtaactacg ttaactggta ccagcagttc 120

ccaggaacgg cccccaaact cctcatgtat agtagtagtc agcggccctc aggggtccct 180

gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccac 240

tctgaggatg aggctgatta ttactgtgct acatgggatg acagcctgaa tgcttggggtg 300

ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc 360

ggcggctctg gtggtggtgg atccctcgag atggccgagg tccagctggt gcagtctggg 420

## 4329191\_1

gctgaggtga ggaagcctgg ggcctcagtg aaggtttcct gcaagacttc tggatacacc 480  
 ttcacttgggt atgctataca ttgggtgctg caggcccccg gacaaaggct tgagtggatg 540  
 ggatggatca acgctggcag tggaacaca aaatattcac agaaatttca gggcagagtc 600  
 acccttacca gggacacatc cgcgagcaca gcgtacatgg agctgagcag cctgagatct 660  
 gatgacacgg ctgtgtatta ctgtgcgaga cccaataact atgggttcggg tggggatggt 720  
 tttgatatct ggggcccaagg gacaatggtc accgtctctt caactagtgg ccaggccggc 780  
 cagcaccatc accatcacca tggcgcatac ccgtacgacg ttccggacta cgcttct 837

&lt;210&gt; 694

&lt;211&gt; 279

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 694

Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Ala Pro Gly Gln  
 1 5 10 15

Arg Val Thr Val Ser Cys Ser Gly Ser Asn Ser Asn Ile Gly Ser Asn  
 20 25 30

Tyr Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Met Tyr Ser Ser Ser Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu His  
 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Ser Leu  
 85 90 95

Asn Ala Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Arg  
 130 135 140

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Thr Ser Gly Tyr Thr  
 145 150 155 160

Phe Thr Trp Tyr Ala Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg  
 165 170 175

## 4329191\_1

Leu Glu Trp Met Gly Trp Ile Asn Ala Gly Ser Gly Asn Thr Lys Tyr  
 180 185 190

Ser Gln Lys Phe Gln Gly Arg Val Thr Leu Thr Arg Asp Thr Ser Ala  
 195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Arg Pro Asn Asn Tyr Gly Ser Gly Gly Asp Val  
 225 230 235 240

Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser  
 245 250 255

Gly Gln Ala Gly Gln His His His His His His Gly Ala Tyr Pro Tyr  
 260 265 270

Asp Val Pro Asp Tyr Ala Ser  
 275

<210> 695

<211> 834

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 695

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagtcgtgctg tgacgcagcc gccctcagtg tctgcgcccc caggacagaa ggtcaccatc | 60  |
| tcctgctctg gaagcagctc caacattggg aataattatg tatcctggta ccagcagctc  | 120 |
| ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct  | 180 |
| gaccgattct ctgggtccaa gtctggcacg tcagccaccc tgggcatcac cggactccag  | 240 |
| actggggacg aggccgatta ttactgcgga acatgggata gcagcctgag tgcttatgtc  | 300 |
| ttcggaaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc | 360 |
| ggcgggtctg gtggtggtgg atccctcgag atggcccagg tccagctggt gcagtctggg  | 420 |
| gctgaggtga agaagcctgg gccctcagtg aaagtttcct gcaaggcttc tggatacacc  | 480 |
| ttcacgaact atgctctgca ttgggtgctg caggcccccg gacaagggtc tgagtggatg  | 540 |
| gcatggatca acggtggcaa tggtaacaca aaatattcac agaacttcca gggcagagtc  | 600 |
| accattacca gggacacatc cgcgagcaca gcctatatgg agctgagcag cctgagatct  | 660 |
| gaagacacgg ctgtgtatta ctgtgcgaaa ccggaggaaa cagctggaac aatccacttt  | 720 |
| gactactggg gccaggaac cccggtcacc gtctcctcaa ctagtggcca ggccggccag   | 780 |
| caccatcacc atcaccatgg cgcatacccg tacgacgttc cgactacgc ttct         | 834 |

## 4329191\_1

<210> 696  
 <211> 278  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 696  
 Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
 1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn  
 20 25 30

Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln  
 65 70 75 80

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu  
 85 90 95

Ser Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
 145 150 155 160

Phe Thr Asn Tyr Ala Leu His Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175

Leu Glu Trp Met Ala Trp Ile Asn Gly Gly Asn Gly Asn Thr Lys Tyr  
 180 185 190

Ser Gln Asn Phe Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Ala  
 195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Lys Pro Glu Glu Thr Ala Gly Thr Ile His Phe  
 Page 294

225 230 235 240

Asp Tyr Trp Gly Gln Gly Thr Pro Val Thr Val Ser Ser Thr Ser Gly  
245 250 255

Gln Ala Gly Gln His His His His His Gly Ala Tyr Pro Tyr Asp  
260 265 270

Val Pro Asp Tyr Ala Ser  
275

```
<210> 697
<211> 849
<212> DNA
<213> Artificial Sequence
```

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| <400> 697  |            |            |            |            |            |     |
| caggctgtgc | tgactcagcc | ccactctgtg | tcggagtctc | cggggaagac | ggtaaccatc | 60  |
| tcctgcaccc | gcagcagtg  | cagcattgcc | agcaactatg | tgcagtggta | ccagcagcgc | 120 |
| ccgggcagtg | ccccaccac  | tgtgatctat | gaggataacc | aaagaccctc | tggggtcctt | 180 |
| gatcggttct | ctggctccat | cgacagctcc | tccaactctg | cctccctcac | catctctgga | 240 |
| ctgaagactg | aggacgaggc | tgactactac | tgtcagtctt | atgatagcac | catcacggtg | 300 |
| ttcggcggag | ggaccaagct | gaccgtccta | ggttctagag | gtggtggtgg | tagcggcggc | 360 |
| ggcggctctg | gtggtggtgg | atccctcgag | atggcccagg | tccagctggt | acagtctggg | 420 |
| gctgaggtga | agaagcctgg | gtcctcggtg | aaggcttcct | gcaaggcttc | tggaggcacc | 480 |
| ttcagcagct | atgctatcag | ctgggtgcga | caggcccctg | gacaagggct | tgagtggatg | 540 |
| ggagggatca | tccctatctt | tggtacagca | aactacgcac | agaagttcca | gggcagagtc | 600 |
| acgattaccg | cggacgaatc | cacgagcaca | gcctacatgg | agctgagcag | cctgagatct | 660 |
| gaggacacgg | ccgtgtatta | ctgtgcgggg | gagggttact | atgatagtag | tggttattcc | 720 |
| aacggtgatg | cttttgatat | ctggggccaa | gggacaatgg | tcaccgtctc | ttcaactagt | 780 |
| ggccaggccg | gccagcacca | tcaccatcac | catggcgcat | acccgtacga | cgttccggac | 840 |
| tacgcttct  |            |            |            |            |            | 849 |

```
<210> 698
<211> 283
<212> PRT
<213> Artificial Sequence
```

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 698  
Gln Ala Val Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

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Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
35 40 45

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

Thr Ile Thr Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
145 150 155 160

Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Gly Glu Gly Tyr Tyr Asp Ser Ser Gly Tyr Ser  
225 230 235 240

Asn Gly Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val  
245 250 255

Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His His His Gly  
260 265 270

Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
275 280



## 4329191\_1

<210> 699  
 <211> 819  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 699  
 aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
 tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120  
 ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt 180  
 gatcggttct ctgggtccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
 ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caatgtggta 300  
 ttcggcggag ggaccaaggt caccgtccta gggtctagag gtggtggtgg tagcggcggc 360  
 ggcggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt ggagtctggg 420  
 ggaggcttgg tacagcctgg agggtcctg agactctcct gtgcagcctc tggattcacc 480  
 ttcagtagtt atgaaatgaa ctgggtccgc caggctccag ggaaggggct ggagtgggtt 540  
 tcatacatta gtagtagtgg tagtaccata tactacgcag actctgtgaa gggccgattc 600  
 accatctcca gagacaacgc caagaactca ctgtatctgc aaatgaacag cctgagagcc 660  
 gaggacacgg ctgtttatta ctgtgcacgc tgggactacg gtatggacgt ctggggccaa 720  
 gggaccacgg tcaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac 780  
 catggcgcac acccgtagca cgttcgggac tacgcttct 819

<210> 700  
 <211> 273  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 700  
 Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
 20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
 35 40 45

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
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4329191\_1  
75

Ser

<210> 701  
<211> 828  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

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<400> 701
tcctatgtgc tgactcagcc accctcagtg tccgtgtccc caggacagac agccagcatc      60
acctgctctg gagatagatt gacgaataaa tatgtttcct ggtatcaaca gaagccaggc      120

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4329191\_1

cagtcccctg tgttggtcat ctatgaggat gccaaagcggc cctcagggat ccctgcgcga 180  
 ttctctggct ccaactctgg gaacacagcc actctgacca tcagcgggac ccaggctatg 240  
 gatgagtctg aatattactg tcaggcgtgg gacagcagtg tgggtggtttt tggcggaggg 300  
 accaagctga ccgtcctagg ttctagaggt ggtggtggta gcggcggcgg cggctctggt 360  
 ggtggtggat ccctcgagat ggccgaggtg cagctggtgg agtctggggg aggcttggt 420  
 cagcctggca ggtccctgag actctcctgt gcagcctctg gatttacctt tgatgattat 480  
 gccatgcact ggggtccggca agctccaggg aagggcctgg agtggtctc aggtattagt 540  
 tggaatagtg gtagtatagg ctatgcggac tctgtgaagg gccgattcac catctccaga 600  
 gacaacgcca agaactccct gtatctgcaa atgaacagtc tgagagatga ggacacggcc 660  
 ttgtattact gtgcaaaaga ccgagggggg ggagttatcg ttaaggatgc ttttgatatc 720  
 tggggccaag ggacaatggt caccgtctct tcaactagt gccaggccgg ccagcaccat 780  
 caccatcacc atggcgcata cccgtacgac gttccggact acgcttct 828

<210> 702

<211> 276

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 702

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
 1 5 10 15

Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Thr Asn Lys Tyr Val  
 20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Tyr  
 35 40 45

Glu Asp Ala Lys Arg Pro Ser Gly Ile Pro Ala Arg Phe Ser Gly Ser  
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met  
 65 70 75 80

Asp Glu Ser Glu Tyr Tyr Cys Gln Ala Trp Asp Ser Ser Val Val Val  
 85 90 95

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly Gly Gly  
 100 105 110

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met Ala  
 115 120 125

## 4329191\_1

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg  
130 135 140

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr  
145 150 155 160

Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
165 170 175

Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val  
180 185 190

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr  
195 200 205

Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Leu Tyr Tyr Cys  
210 215 220

Ala Lys Asp Arg Gly Gly Gly Val Ile Val Lys Asp Ala Phe Asp Ile  
225 230 235 240

Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly Gln Ala  
245 250 255

Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro  
260 265 270

Asp Tyr Ala Ser  
275

<210> 703

<211> 825

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 703

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| tcctatgagc tgactcagcc accgcagcg tctgggaccc ccggacagag agtcaccatc  | 60  |
| tcttgttctg ggggcgtctc caacatcggg agtggtgctc taaattggta ccagcaactc | 120 |
| ccaggaacgg ccccaaact cctcatctat agttacaatc agcggccctc aggggtctct  | 180 |
| gaccgattct ctggctccag gtctgccacc tcagcctccc tggccatcag tgggctccag | 240 |
| tctgaggatg aggctgatta ttactgtgca acctgggatg atagtgtgaa tggttgggtg | 300 |
| ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc | 360 |
| ggcggctctg gtggtggtgg atccctcag atggccgagg tgcagctggt ggagtctgga  | 420 |
| gctgaggtga agaagcctgg ggattcagtg aaggtctcct gcaagccttc tggttacaat | 480 |
| tttctcaact atggtatcaa ctgggtgcga caggcccctg gacaagggtc tgagtggatg | 540 |

## 4329191\_1

ggatggatta gcacttacac cggtaacaca aactatgcac agaagctgca gggcagagtc 600  
accttcacca cagacacatc cactgagcaca gcctacatgg agatgaggag cctgagatct 660  
gacgacacgg ccgtgtatta ctgtgcgcgc cagcagggtg gtggttggtta cgatgtttgg 720  
ggatcaaggta ctctgggtcac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
catcaccatg gcgcataccc gtacgacggt ccggactacg cttct 825

&lt;210&gt; 704

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 704

Ser Tyr Glu Leu Thr Gln Pro Pro Ala Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Gly Val Ser Asn Ile Gly Ser Gly  
20 25 30

Ala Leu Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Ser Tyr Asn Gln Arg Pro Ser Gly Val Ser Asp Arg Phe Ser  
50 55 60

Gly Ser Arg Ser Ala Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Ser Val  
85 90 95

Asn Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Asp Ser Val Lys Val Ser Cys Lys Pro Ser Gly Tyr Asn  
145 150 155 160

Phe Leu Asn Tyr Gly Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Trp Ile Ser Thr Tyr Thr Gly Asn Thr Asn Tyr  
180 185 190

## 4329191\_1

Ala Gln Lys Leu Gln Gly Arg Val Thr Phe Thr Thr Asp Thr Ser Thr  
 195 200 205

Ser Thr Ala Tyr Met Glu Met Arg Ser Leu Arg Ser Asp Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Arg Gln Gln Gly Gly Trp Tyr Asp Val Trp  
 225 230 235 240

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
 245 250 255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
 260 265 270

Tyr Ala Ser  
 275

<210> 705  
 <211> 843  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 705  
 cagtctgtcg tgacgcagcc gccctcagtg tctgcggccc caggagagaa ggtcaccatc 60  
 tcctgctctg gaagcaactt caatgttgga aataatgatg tatcctggta tcagcaactc 120  
 ccaggtgcag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180  
 gaccgattct ctgggtccaa gtctggcacg tcagccaccc tggacatcac cgggctccac 240  
 agtgacgacg aggccgatta ttactgcgga acatgggata gcagcctgaa tactgggggg 300  
 gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtccagct ggtgcagtct 420  
 ggagctgagg tgaagaagcc tggggcctca gtgaaggctt cctgcaaggc ttctggttac 480  
 acctttacca gctatactat cagctgggta cgacaggccc ctggacaagg gcttgagtgg 540  
 atgggatgga tcagcactta caatggtctc acaaactatg cacagaacct ccagggcaga 600  
 gtcaccatga ctacagacac attcacgacc acagcctaca tggagctgag gaggctcaga 660  
 tctgacgaca cggccgtgta ttactgtgtg agagaggggt ccccgacta cggtgacttc 720  
 gcgtcctttg actactgggg ccaggaacc ctggtcaccg tctcctcaac tagtggccag 780  
 gccggccagc accatcacca tcaccatggc gcataccgtt acgacgttcc ggactacgct 840  
 tct 843

<210> 706  
 <211> 281

## 4329191\_1

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 706

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Glu  
 1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Asn Phe Asn Val Gly Asn Asn  
 20 25 30

Asp Val Ser Trp Tyr Gln Gln Leu Pro Gly Ala Ala Pro Lys Leu Leu  
 35 40 45

Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Asp Ile Thr Gly Leu His  
 65 70 75 80

Ser Asp Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu  
 85 90 95

Asn Thr Gly Gly Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr  
 145 150 155 160

Thr Phe Thr Ser Tyr Thr Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175

Gly Leu Glu Trp Met Gly Trp Ile Ser Thr Tyr Asn Gly Leu Thr Asn  
 180 185 190

Tyr Ala Gln Asn Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Phe  
 195 200 205

Thr Thr Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Val Arg Glu Gly Ser Pro Asp Tyr Gly Asp Phe  
 225 230 235 240

## 4329191\_1

Ala Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 245 250 255

Thr Ser Gly Gln Ala Gly Gln His His His His His His Gly Ala Tyr  
 260 265 270

Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

<210> 707  
 <211> 843  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 707  
 cagtctgtgt tgacgcagcc gccctcagtg tctgcgcccc cgggacagaa ggtcaccatc 60  
 tcctgctctg gaagcagctc caacattggg aataattatg tctcctggta ccagcagttc 120  
 ccaggaacag cccccaact cctcatttat gacaataata agcgaccctc agggattttct 180  
 gaccgattct ctgggtccaa gtctggcacg tcagccaccc tgggcatcgc cggactccag 240  
 actggggacg aggccgatta ttactgcgga acatgggata ccagcctgag tggtttttat 300  
 gtcttcggaa gtgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtccagct ggtacagtct 420  
 ggagctgagg tgaagaagcc tggggcctca gtgaaggtct cctgcaaggc ttctggttac 480  
 acctttacca gctatactat cagctgggta cgacaggccc ctggacaagg gcttgagtgg 540  
 atgggatgga tcagcactta caatggtctc acaactatg cacagaacct ccagggcaga 600  
 gtcaccatga ctacagacac attcacgacc acagcctaca tggagctgag gagcctcaga 660  
 tctgacgaca cggccgtgta ttactgtgtg agagaggggt ccccgacta cggtgacttc 720  
 gcgtcctttg actactgggg ccagggaaacc ctggtcaccg tctcctcaac tagtggccag 780  
 gccggccagc accatcacca tcaccatggc gcatacccg acgacgttcc ggactacgct 840  
 tct 843

<210> 708  
 <211> 281  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 708  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Pro Pro Gly Gln  
 1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn  
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20

25

30

Tyr Val Ser Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Ser Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Ala Gly Leu Gln  
 65 70 75 80  
 Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Thr Ser Leu  
 85 90 95  
 Ser Gly Phe Tyr Val Phe Gly Ser Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110  
 Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125  
 Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140  
 Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr  
 145 150 155 160  
 Thr Phe Thr Ser Tyr Thr Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175  
 Gly Leu Glu Trp Met Gly Trp Ile Ser Thr Tyr Asn Gly Leu Thr Asn  
 180 185 190  
 Tyr Ala Gln Asn Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Phe  
 195 200 205  
 Thr Thr Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr  
 210 215 220  
 Ala Val Tyr Tyr Cys Val Arg Glu Gly Ser Pro Asp Tyr Gly Asp Phe  
 225 230 235 240  
 Ala Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 245 250 255  
 Thr Ser Gly Gln Ala Gly Gln His His His His His Gly Ala Tyr  
 260 265 270  
 Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

&lt;210&gt; 709

## 4329191\_1

<211> 840  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 709  
 ctgcctgtgc tgactcagcc accctcagcg tctgcgaccc ccgggcagag ggtcaccatc 60  
 tcttgtttctg gaaccacctc caacatcgga agtaatactg tacactggta ccagcagctc 120  
 ccaggggacgg cccccaact cctcatctat aataataatc agcggccctc aggggtccct 180  
 gaccgattct ctgggtccaa gtctggcacc tcagcctccc tggccatcag tgggctccgg 240  
 tccgagggatg aggctacata ttcctgtgca acatgggatg acagcctgag tgggtgtggtc 300  
 ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
 ggcggctctg gtggtggtgg atccctcgag atggccgagg tccagctggt gcagtctggg 420  
 gctgagggtga agaagcctgg gtcctcggtg aaggtctcct gcaaggcttc tggaggcacc 480  
 ttcagcagct atgctatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg 540  
 ggaggggatca tccctatctt tggtagcga aactacgcac agaagttcca gggcagagtc 600  
 acgattaccg cggacgaatc cagcagcaca gcctacatgg agctgagcag cctgagatct 660  
 gaggacacgg ccgtgtatta ctgtgcgaga gatccgcct acggtgacta cgagtatgat 720  
 gcttttgata tctggggcca agggacaatg gtcaccgtct cttcaactag tggccaggcc 780  
 ggccagcacc atcaccatca ccatggcgca taccgtacg acgttcgga ctacgcttct 840

<210> 710  
 <211> 280  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 710  
 Leu Pro Val Leu Thr Gln Pro Pro Ser Ala Ser Ala Thr Pro Gly Gln 1 5 10 15  
 Arg Val Thr Ile Ser Cys Ser Gly Thr Thr Ser Asn Ile Gly Ser Asn 20 25 30  
 Thr Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu 35 40 45  
 Ile Tyr Asn Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser 50 55 60  
 Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg 65 70 75 80

## 4329191\_1

Ser Glu Asp Glu Ala Thr Tyr Ser Cys Ala Thr Trp Asp Asp Ser Leu  
85 90 95

Ser Gly Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
145 150 155 160

Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Asp Pro Ala Tyr Gly Asp Tyr Glu Tyr Asp  
225 230 235 240

Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr  
245 250 255

Ser Gly Gln Ala Gly Gln His His His His His Gly Ala Tyr Pro  
260 265 270

Tyr Asp Val Pro Asp Tyr Ala Ser  
275 280

<210> 711

<211> 825

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 711

cagtctgtgt tgacgcagcc gccctcagcg tctgggaccc ccgggcagag gggtcaccatc 60

tcttgttctg gaagcagctc caacatcgga actaatggtg taaactgggt ccagcagttc 120

ccaggaacgg ccccaaact cctcatctat actaatgatc agcggccctc aggggtccct 180

## 4329191\_1

gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
tctgcggatg aggctgatta ttactgtgca gtgtgggacc acagcctgaa tgggtccggtg 300  
ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctggt gcagtctggg 420  
gctgaggtga agaagcctgg gtcctcggtg aaggtctcct gcaaggcttc tggaggcacc 480  
ttcagcagct atgctatcag ctgggtgcga caggcccctg gacaagggct tgagtggatg 540  
ggagggatca tccctatctt tggtagcga aactacgcac agaagttcca gggcagagtc 600  
acgattaccg cggacgaatc cacgagcaca gcctacatgg agctgagcag cctgagatct 660  
gaggacacgg ccgtgtatta ctgtgcgaga ggggccggtt ttgatgcttt tgatatctgg 720  
ggccaagggg caatggtcac cgtctcttca actagtggcc aggccggcca gcaccatcac 780  
catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

&lt;210&gt; 712

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 712

Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Thr Asn  
20 25 30

Gly Val Asn Trp Phe Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Thr Asn Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80

Ser Ala Asp Glu Ala Asp Tyr Tyr Cys Ala Val Trp Asp His Ser Leu  
85 90 95

Asn Gly Pro Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

## 4329191\_1

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
145 150 155 160

Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Gly Ala Gly Phe Asp Ala Phe Asp Ile Trp  
225 230 235 240

Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
245 250 255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
260 265 270

Tyr Ala Ser  
275

<210> 713  
<211> 819  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 713  
caggctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120  
ccaggaacgg ccccaaaact cctcatctat agtaataatc agcggccctc aggggtccct 180  
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
tctgaggatg agactgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc 300  
ttcggaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctaca gcagtggggc 420  
gcaggactgt tgaagccttc ggagaccctg tccctcacct gcgctgtcta tgggtgggtcc 480  
ttcagtgggt actactggag ctggatccgc cagccccag ggaaggggct ggagtggatt 540  
ggggaaatca atcatagtgg aagcaccaac tacaaccgt ccctcaagag tcgagtcacc 600  
atatcagtag acacgtccaa gaaccagttc tccctgaagc tgagctctgt gaccgccgcg 660

## 4329191\_1

gacacggctg tgtattactg tgcgagagag gggctagatg cttttgatat ctggggccaa 720  
 gggacaatgg tcaccgtctc ttcaactagt ggccaggccg gccagcacca tcaccatcac 780  
 catggcgcac acccgtacga cgttccggac tacgcttct 819

<210> 714  
 <211> 273  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 714  
 Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
 20 25 30  
 Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
 65 70 75 80  
 Ser Glu Asp Glu Thr Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 85 90 95  
 Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110  
 Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Leu Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu  
 130 135 140  
 Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser  
 145 150 155 160  
 Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly  
 165 170 175  
 Leu Glu Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn  
 180 185 190  
 Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn  
 195 200 205

4329191\_1

Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val  
210 215 220

Tyr Tyr Cys Ala Arg Glu Gly Leu Asp Ala Phe Asp Ile Trp Gly Gln  
225 230 235 240

Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
260 265 270

Ser

<210> 715  
<211> 819  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 715  
caggctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120  
ccaggaacgg cccccaaact cctcatgtat agtaatgata agcggccctc aggggtccct 180  
gaccgattct ctgggtccaa gtctggcacc tcagcctccc tggccatcag tgggtccag 240  
tctgaggatg aggctgatta ttattgtgca gcatgggatg acagcctgaa tggttatgtc 300  
ttcgagctg ggaccagct caccgtttta agttctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctaca gcagtggggc 420  
gcaggactgt tgaagccttc ggagaccctg tccctcacct gcgctgtcta tgggtgggtcc 480  
ttcagtgggt actactggag ctggatccgc cagccccag ggaaggggct ggagtggatt 540  
ggggaaatca atcatagtgg aagaccaac tacaaccgt ccctcaagag tcgagtcacc 600  
atatcagtag acacgtccaa gaaccagttc tccctgaagc tgagctctgt gaccgccgcg 660  
gacacggctg tgtattactg tgcgagagag gggctagatg cttttgatat ctggggccaa 720  
gggacaatgg tcaccgtctc ttcaactagt ggccaggccg gccagcacca tcaccatcac 780  
catggcgcac accgtacga cgttccggac tacgcttct 819

<210> 716  
<211> 273  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
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## polypeptide

&lt;400&gt; 716

Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
20 25 30

Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Met Tyr Ser Asn Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
85 90 95

Asn Gly Tyr Val Phe Ala Ala Gly Thr Gln Leu Thr Val Leu Ser Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu  
130 135 140

Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser  
145 150 155 160

Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly  
165 170 175

Leu Glu Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn  
180 185 190

Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn  
195 200 205

Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val  
210 215 220

Tyr Tyr Cys Ala Arg Glu Gly Leu Asp Ala Phe Asp Ile Trp Gly Gln  
225 230 235 240

Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
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Ser

<210> 717  
 <211> 843  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 717  
 cagtctgtcg tgacgcagcc gccctcagtg tctgcgcccc caggacagaa ggtcaccatc 60  
 tcctgctctg gaagcagctc caacattggg aataattatg tctcctggta ccagcagctc 120  
 ccaggaacag cccccaact cctcatttat gacaataata agcgaccctc agggattcct 180  
 gaccgattct ctgggtccaa gtctggcacg tcagccaccc tgggcatcac tggactccag 240  
 actggggacg aggccgatta ttactgcgga acatgggata gcagcctgag tgctgcttat 300  
 gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtccagct ggtacagtct 420  
 ggagctgagg tgaagaagcc tggggcctca gtgaaggctt cctgcaaggc ttctggttac 480  
 agctttacca gctatactat cagctgggtt cgacaggccc ctggacaagg ccttgagtgg 540  
 atgggatggg tcagcactta caatggtctc agaaactatg cacagaacct ccagggcaga 600  
 gtcaccatga ctacagacac actcacgacc acagcctaca tggagctgag gagcctcaga 660  
 tctgacgaca cggccgtgta ttattgtgtg agagaggggt ccccgacta cggtgacttc 720  
 gcggcctttg actactgggg ccagggcacc ctggtcaccg tctcctcaac tagtggccag 780  
 gccggccagc accatcacca tcaccatggc gcatacccg acgacgttcc ggactacgct 840  
 tct 843

<210> 718  
 <211> 281  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 718  
 Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
 1 5 10 15  
 Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn  
 20 25 30  
 Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

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Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln  
65 70 75 80

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu  
85 90 95

Ser Ala Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
130 135 140

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr  
145 150 155 160

Ser Phe Thr Ser Tyr Thr Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
165 170 175

Gly Leu Glu Trp Met Gly Trp Val Ser Thr Tyr Asn Gly Leu Arg Asn  
180 185 190

Tyr Ala Gln Asn Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Leu  
195 200 205

Thr Thr Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr  
210 215 220

Ala Val Tyr Tyr Cys Val Arg Glu Gly Ser Pro Asp Tyr Gly Asp Phe  
225 230 235 240

Ala Ala Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
245 250 255

Thr Ser Gly Gln Ala Gly Gln His His His His His His Gly Ala Tyr  
260 265 270

Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
275 280

<210> 719  
<211> 816  
<212> DNA  
<213> Artificial Sequence

<220>

## 4329191\_1

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 719

```

caggctgtgc tgactcagcc accctcagcg tctgagaccc ccgggcagag ggtcaccatc      60
tcttgttctg gaagcaggtc caacatcgga actaatattg tacactggta ccagcagcgc      120
ccaggaatgg cccccaaact cctcacttat ggtagtcggc ggccctcagg ggtcccggac      180
cgattctctg gtcceaagtt tggcacctca gcctccctgg ccatcagtgg gctccagtct      240
gaggatgagg ctgattatta ttgtgcagca tgggatgaca gtctgaatgg tccggctttc      300
ggcggaggga ccaagctgac cgtcctaggt tctagagggt gtggtggtag cggcggcggc      360
ggctctggtg gtggtggatc cctcgagatg gcccagggtg agctacagca gtggggcgca      420
ggactgttga agccttcgga gaccctgtcc ctcacctgcg ctgtctatgg tgggtccttc      480
agtggttact actggagctg gatccgccag ccccaggga aggggctgga gtggattggg      540
gaaatcaatc atagtgaag caccaactac aaccggtccc tcaagagtcg agtcaccata      600
tcagtagaca cgtccaagaa ccagttctcc ctgaagctga gctctgtgac cgccgcggac      660
acggctgtgt attactgtgc gagagacggg gggggctact ttgactactg gggccaggga      720
accctggtca ccgtctcctc aactagtggc caggccggcc agcaccatca ccatcaccat      780
ggcgcatacc cgtacgacgt tccggactac gcttct      816

```

<210> 720

<211> 272

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 720

```

Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Glu Thr Pro Gly Gln
1           5           10           15

```

```

Arg Val Thr Ile Ser Cys Ser Gly Ser Arg Ser Asn Ile Gly Thr Asn
           20           25           30

```

```

Ile Val His Trp Tyr Gln Gln Arg Pro Gly Met Ala Pro Lys Leu Leu
35           40           45

```

```

Thr Tyr Gly Ser Arg Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly
50           55           60

```

```

Ser Lys Phe Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln Ser
65           70           75           80

```

```

Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu Asn
85           90           95

```

```

Gly Pro Ala Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg

```

## 4329191\_1

100

105

110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu  
 115 120 125

Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu Lys  
 130 135 140

Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser Phe  
 145 150 155 160

Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu  
 165 170 175

Glu Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn Pro  
 180 185 190

Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln  
 195 200 205

Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr  
 210 215 220

Tyr Cys Ala Arg Asp Gly Gly Gly Tyr Phe Asp Tyr Trp Gly Gln Gly  
 225 230 235 240

Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His  
 245 250 255

His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 260 265 270

&lt;210&gt; 721

&lt;211&gt; 837

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 721

cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60

tcctgcactg ggagcagctc caatatcggg gcacgttatg atgtacactg gtaccagcaa 120

ctcccaggaa cagccccccg actcctcatc tctgctaact acgatcggcc ctcaggggtc 180

cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc 240

caggctgagg atgaggctga ttattactgc cagtcctatg acagcagtgt gagtgccttg 300

gtgttcggcg gagggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360

ggcggcggct ctggtggtgg tggatccctc gagatggccg aagtgcagct ggtgcagtct 420

ggggctgaag tgaaggagcc tggggcctca gtgaggatct cctgccaggc atctggatac 480

## 4329191\_1

aacttcatca gttattatat gcactgggtg cggcaggccc ctgggcaagg tcttgagtgg 540  
atgggcacca tcaaccagg cagtgggtgag acagactact cacagaagtt gcagggcaga 600  
gtcaccatga ccagggaccc gtccacgggt acattcgaca tggggctgag cagcctgaca 660  
tctggggaca cggccgtcta ttattgtgcg acaggtctca tcagaggagc tagcgatgct 720  
tttaatatct ggggccgggg gacaatggtc accgtctctt caactagtgg ccaggccggc 780  
cagcaccatc accatcacca tggcgcatac ccgtacgacg ttccggacta cgcttct 837

&lt;210&gt; 722

&lt;211&gt; 279

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 722

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Arg  
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Arg Leu  
35 40 45

Leu Ile Ser Ala Asn Tyr Asp Arg Pro Ser Gly Val Pro Asp Arg Phe  
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu  
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser  
85 90 95

Val Ser Ala Trp Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val  
130 135 140

Lys Glu Pro Gly Ala Ser Val Arg Ile Ser Cys Gln Ala Ser Gly Tyr  
145 150 155 160

Asn Phe Ile Ser Tyr Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln  
165 170 175

## 4329191\_1

Gly Leu Glu Trp Met Gly Thr Ile Asn Pro Gly Ser Gly Glu Thr Asp  
 180 185 190

Tyr Ser Gln Lys Leu Gln Gly Arg Val Thr Met Thr Arg Asp Pro Ser  
 195 200 205

Thr Gly Thr Phe Asp Met Gly Leu Ser Ser Leu Thr Ser Gly Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Ala Thr Gly Leu Ile Arg Gly Ala Ser Asp Ala  
 225 230 235 240

Phe Asn Ile Trp Gly Arg Gly Thr Met Val Thr Val Ser Ser Thr Ser  
 245 250 255

Gly Gln Ala Gly Gln His His His His His Gly Ala Tyr Pro Tyr  
 260 265 270

Asp Val Pro Asp Tyr Ala Ser  
 275

<210> 723

<211> 825

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 723

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagcctgtgc tgactcagcc accctcagtg tccgtgtccc caggacagac ggccgccatc  | 60  |
| ccctgtttctg gagataagtt gggggataaa tttgcttcct ggtatcagca gaagccaggc | 120 |
| cagtcccctg tgctggatcat ctatcaagat actaagcggc cctcagggat ccctgagcga | 180 |
| ttctctgggt ccaactctgg gaacacagcc actctgacca tcagcgggac ccaggctatg  | 240 |
| gatgaggctg actattactg tcagacgtgg gccagcggca ttgtggtggt cggcggaggg  | 300 |
| accaagctga ccgtcctagg ttctagaggt ggtggtggta gcggcggcgg cggctctggt  | 360 |
| ggtggtggat ccctcagat ggcccaggta cagctgcagc agtcagggtcc aggactggtg  | 420 |
| aagccctcgc agaccctctc actcacctgt gccatctccg gggacagtgt ctctagcaac  | 480 |
| agtgtctgctt ggaactggat caggcagtcc ccatcgagag gccttgagtg gctgggaagg | 540 |
| acatactaca ggtccaagtg gtataatgat tatgcagtat ctgtgaaaag tcgaataacc  | 600 |
| atcaaccag acacatcaa gaaccagttc tccctgcagc tgaactctgt gactcccag     | 660 |
| gacacggctg tgtattactg tgcaagagag cgcagtggct ggaagggatt tgactactgg  | 720 |
| ggccagggaa ccctggtcac cgtctcctca actagtggcc aggccggcca gcaccatcac  | 780 |
| catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct                  | 825 |

<210> 724

## 4329191\_1

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 724

Gln Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
 1 5 10 15

Thr Ala Ala Ile Pro Cys Ser Gly Asp Lys Leu Gly Asp Lys Phe Ala  
 20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Tyr  
 35 40 45

Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Thr Trp Ala Ser Gly Ile Val Val  
 85 90 95

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly Gly Gly  
 100 105 110

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met Ala  
 115 120 125

Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
 130 135 140

Thr Leu Ser Leu Thr Cys Ala Ile Ser Gly Asp Ser Val Ser Ser Asn  
 145 150 155 160

Ser Ala Ala Trp Asn Trp Ile Arg Gln Ser Pro Ser Arg Gly Leu Glu  
 165 170 175

Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr Asn Asp Tyr Ala  
 180 185 190

Val Ser Val Lys Ser Arg Ile Thr Ile Asn Pro Asp Thr Ser Lys Asn  
 195 200 205

Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val  
 210 215 220

Tyr Tyr Cys Ala Arg Glu Arg Ser Gly Trp Lys Gly Phe Asp Tyr Trp  
 225 230 235 240

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Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
245 250 255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
260 265 270

Tyr Ala Ser  
275

<210> 725  
<211> 834  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 725  
gatgttgtga tgactcagtc tccaccctcc ctgtccgtca cccctggaga gccggcctcc 60  
atcacctgca ggtctagtca gagcctcctg gaaagaaatg catacaacta cttggattgg 120  
tacctgcaga ggccaggaca gtctccacag ctctgatct acttgggttc taatcggggc 180  
gccgggggtcc ctgacagggtt cagtggcagt ggatcaggca gagattttac actgaaaatc 240  
agcagagtgg agcctgagga tgttgggggtt tattactgca tgcaagctct acaagctccg 300  
ttcactttcg gcggaggac caaggtggag atcaaactgt ctagagggtg tggtggtagc 360  
ggcggcggcg gctctggtgg tggtggatcc ctcgagatgg ccgaagtgc gctggtgcag 420  
tctgggggag gcttgggtaca gcctgggggg tccctgagac tctcctgtgc agcctctgga 480  
ttcaccttta gcagctatgc catgagctgg gtccgccagg ctccagggaa ggggctggag 540  
tgggtctcag ctattagtgg tagtggtggt agcacatact acgcagactc cgtgaagggc 600  
cggttcacca tctccagaga caattccaag aacacgtgt atctgcaa atgaacagcctg 660  
agagccgagg acacggccgt atattactgt gcgaaatggg gcccgtttca ggatgctttt 720  
gatatctggg gccaaaggac aatggtcacc gtctcttcaa ctagtgcca ggccggccag 780  
caccatcacc atcaccatgg cgcataccg tacgacgttc cggactacgc ttct 834

<210> 726  
<211> 278  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 726  
Asp Val Val Met Thr Gln Ser Pro Pro Ser Leu Ser Val Thr Pro Gly  
1 5 10 15

Glu Pro Ala Ser Ile Thr Cys Arg Ser Ser Gln Ser Leu Leu Glu Arg  
20 25 30



4329191\_1

Asn Ala Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Arg Pro Gly Gln Ser  
 35 40 45  
 Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ala Gly Val Pro  
 50 55 60  
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Phe Thr Leu Lys Ile  
 65 70 75 80  
 Ser Arg Val Glu Pro Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Ala  
 85 90 95  
 Leu Gln Ala Pro Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys  
 100 105 110  
 Arg Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly  
 115 120 125  
 Gly Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Gly Gly  
 130 135 140  
 Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly  
 145 150 155 160  
 Phe Thr Phe Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly  
 165 170 175  
 Lys Gly Leu Glu Trp Val Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr  
 180 185 190  
 Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn  
 195 200 205  
 Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp  
 210 215 220  
 Thr Ala Val Tyr Tyr Cys Ala Lys Trp Gly Pro Phe Gln Asp Ala Phe  
 225 230 235 240  
 Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly  
 245 250 255  
 Gln Ala Gly Gln His His His His His Gly Ala Tyr Pro Tyr Asp  
 260 265 270  
 Val Pro Asp Tyr Ala Ser  
 275

<210> 727

<211> 843

## 4329191\_1

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 727

```

caggctgtgc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc      60
tcctgcactg gaaccagcag tgacgttggt gggtataact atgtctcctg gtaccaacag      120
caccggggca aagcccccaa actcatgatt tatgaggtca gtaatcggcc ctcagggggtt      180
tctaatacgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc      240
caggctgagg acgaggctga ttattactgc agctcatata caagcagcag cacccttat      300
gtcttcggag cagggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc      360
ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtgcagct ggtggagtct      420
gggggaggct tggtagagcc tggcaggtcc ctgagactct cctgtgcagc ctctggattc      480
acctttgatg attatgcat gcactgggtc cggcaagctc caggggaagg cctggagtgg      540
gtctcaggta ttagttggaa tagtggtagc ataggctatg cggactctgt gaagggccga      600
ttcacatct ccagagacaa cgccaagaac tccctgtatc tgcaaatgaa cagtctgaga      660
gctgaggaca cggccttgta ttactgtgca aaagccaggt ggacagcagt ggcacagac      720
caccactttg actactgggg ccagggaacg ctggtcaccg tctcctcaac tagtggccag      780
gccggccagc accatcacca tcacatggc gcatacccg acgacgttcc ggactacgct      840
tct                                                                 843

```

&lt;210&gt; 728

&lt;211&gt; 281

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 728

```

Gln Ala Val Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1          5          10          15

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
          20          25          30

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
          35          40          45

Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
          50          55          60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65          70          75          80

```

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Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser  
85 90 95

Ser Thr Pro Tyr Val Phe Gly Ala Gly Thr Lys Val Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu  
130 135 140

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe  
145 150 155 160

Thr Phe Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys  
165 170 175

Gly Leu Glu Trp Val Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly  
180 185 190

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala  
195 200 205

Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr  
210 215 220

Ala Leu Tyr Tyr Cys Ala Lys Ala Arg Trp Thr Ala Val Ala Ser Asp  
225 230 235 240

His His Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
245 250 255

Thr Ser Gly Gln Ala Gly Gln His His His His His His Gly Ala Tyr  
260 265 270

Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
275 280

<210> 729

<211> 819

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 729

caggctgtgc ttactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60

tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120

ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtcctc 180

4329191\_1

gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc 300  
ttcggaaactg ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt gcagtctggg 420  
gctgaggatga agaagcctgg gtcctcggtg aaggtctcct gcaaggcttc tggaggcacc 480  
ttcagcagct atgctatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg 540  
ggagggatca tccctatctt tggtagcga aactacgcac agaagttcca gggcagagtc 600  
acgattaccg cggacgaatc cagagcaca gcctacatgg agctgagcag cctgagatct 660  
gaggacacgg ccgtgtatta ctgtgcgaga gattgggact acatggacgt ctggggcaaa 720  
gggaccacgg tcaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac 780  
catggcgcat acccgtaga cgttccggac tacgcttct 819

<210> 730

<211> 273

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 730

Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
20 25 30

Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
85 90 95

Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

## 4329191\_1

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
145 150 155 160

Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Asp Trp Asp Tyr Met Asp Val Trp Gly Lys  
225 230 235 240

Gly Thr Thr Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
260 265 270

Ser

<210> 731

<211> 852

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 731

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| tcctatgagc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc  | 60  |
| tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc  | 120 |
| ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct  | 180 |
| gaccgattct ctggctcaa gtctggcacc tcagcctccc tggccatcag tgggctccag   | 240 |
| tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc  | 300 |
| ttcggaaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt ggagtctgga  | 420 |
| gctgaggatga agaagcctgg ggcctcagtg aaggtctcct gcaaggcttc tggttacacc | 480 |
| tttaccagct atggtatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg  | 540 |
| ggatggatca gcgcttaca tggtaacaca aactatgcac agaagctcca gggcagagtc   | 600 |

## 4329191\_1

accatgacca cagacacatc cacgagcaca gcctacatgg agctgaggag cctgagatct 660  
gacgacacgg ccgtgtatta ctgtgcgaga gacctatctc ggggagctaa cccgcattac 720  
tactactact acggtatgga cgtctggggc caagggacca cggtcaccgt ctcttcaact 780  
agtggccagg ccggccagca ccatcaccat caccatggcg catacccgta cgacgttccg 840  
gactacgctt ct 852

&lt;210&gt; 732

&lt;211&gt; 284

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 732

Ser Tyr Glu Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
20 25 30

Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
85 90 95

Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
145 150 155 160

Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr  
180 185 190

## 4329191\_1

Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr  
 195 200 205

Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Arg Asp Leu Ser Arg Gly Ala Asn Pro His Tyr  
 225 230 235 240

Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr  
 245 250 255

Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His His His  
 260 265 270

Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

<210> 733

<211> 855

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 733

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccgtc  | 60  |
| tcctgcactg ggagcagatc caacatcggg gcaggatatg atgtacactg gtaccagcaa  | 120 |
| cttccaggaa cagccccaa actcctcatc tatggaaata gtaatcggcc tccaggggtc   | 180 |
| cctgaccgat tctctgggtc taagtctggc acctcagcct ccctgggtcat cactgggctc | 240 |
| caggctgagg atgccgctga ttattactgc cagtcctatg acaacactgt gcgtgaatca  | 300 |
| ccttatgtct tcggaactgg gaccaaggtc accgtcctag gttctagagg tggtggtggt  | 360 |
| agcggcggcg gcggctctgg tggtggtgga tccctcgaga tggccgaggt ccagctggta  | 420 |
| cagtctgggg ctgaggtgaa gaagcctggg gcctcagtga aggtctcctg caaggtttcc  | 480 |
| ggatacacc tcactgaatt atccatgcac tgggtgcgac aggtccttg aaaagggctt    | 540 |
| gagtggatgg gaggttttga tcctgaagat ggtgaaacaa tctacgcaca gaagttccag  | 600 |
| ggcagagtca ccatgaccga ggacacatct acagacacag cctacatgga gctgagcagc  | 660 |
| ctgagatctg aggacacggc cgtgtattac tgtgcaacag agagtaattt agtgtcccgg  | 720 |
| cactactact actacggtat ggacgtctgg ggccaagga ccacggtcac cgtctcctca   | 780 |
| actagtggcc aggccggcca gcaccatcac catcaccatg gcgcataccc gtacgacgtt  | 840 |
| ccggactacg cttct                                                   | 855 |

<210> 734

<211> 285

## 4329191\_1

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 734

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
 1 5 10 15

Arg Val Thr Val Ser Cys Thr Gly Ser Arg Ser Asn Ile Gly Ala Gly  
 20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu  
 35 40 45

Leu Ile Tyr Gly Asn Ser Asn Arg Pro Pro Gly Val Pro Asp Arg Phe  
 50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Val Ile Thr Gly Leu  
 65 70 75 80

Gln Ala Glu Asp Ala Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Asn Thr  
 85 90 95

Val Arg Glu Ser Pro Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val  
 100 105 110

Leu Gly Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 115 120 125

Gly Gly Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala  
 130 135 140

Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Val Ser  
 145 150 155 160

Gly Tyr Thr Leu Thr Glu Leu Ser Met His Trp Val Arg Gln Ala Pro  
 165 170 175

Gly Lys Gly Leu Glu Trp Met Gly Gly Phe Asp Pro Glu Asp Gly Glu  
 180 185 190

Thr Ile Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Glu Asp  
 195 200 205

Thr Ser Thr Asp Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu  
 210 215 220

Asp Thr Ala Val Tyr Tyr Cys Ala Thr Glu Ser Asn Leu Val Ser Arg  
 225 230 235 240



## 4329191\_1

His Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val  
 245 250 255

Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His His  
 260 265 270

His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280 285

<210> 735

<211> 867

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 735

```

ctgcctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc      60
tcttgttctg gaaccagctc caacatcgga agtaattctg tagactggta ccagcagctc      120
ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct      180
gaccgaatct ctgggtccaa gtctggcacc tcagcctccc tggccatcag tgggctccag      240
tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc      300
ttcggaaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc      360
ggcgggtctg gtggtggtgg atccctcgag atggccgaag tgcagctggt gcagtctggg      420
gctgaggatga agaagcctgg ggcctcagtg aaggtctcct gcaaggcttc tggatacacc      480
ttcaccgggct actatatgca ctgggtgcca caggcccctg gacaagggtc tgagtggatg      540
ggatggatca accctaacag tgggtggcaca aactatgcac agaagtttca gggcagggtc      600
accatgacca gggacacgtc catcagcaca gcctacatgg agctgagcag gctgagatct      660
gacgacacgg ccgtgtatta ctgtgcgaga gattacggat actatggttc ggggagttat      720
tcgagcggcc ccctttacta ctactacggt atggacgtct ggggccaagg gaccacggtc      780
accgtctcct caactagtgg ccaggccggc cagcaccatc accatcacca tggcgcatatc      840
ccgtacgacg ttccggacta cgcttct                                     867
  
```

<210> 736

<211> 289

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 736

Leu Pro Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Thr Ser Ser Asn Ile Gly Ser Asn  
 Page 329

20

25

30

Ser Val Asp Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
           35                                  40                                  45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Ile Ser  
       50                                  55                                  60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
   65                                  70                                  75                                  80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
                   85                                  90                                  95

Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
                   100                                  105                                  110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser  
           115                                  120                                  125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
       130                                  135                                  140

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
   145                                  150                                  155                                  160

Phe Thr Gly Tyr Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly  
                   165                                  170                                  175

Leu Glu Trp Met Gly Trp Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr  
                   180                                  185                                  190

Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile  
           195                                  200                                  205

Ser Thr Ala Tyr Met Glu Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala  
       210                                  215                                  220

Val Tyr Tyr Cys Ala Arg Asp Tyr Gly Tyr Tyr Gly Ser Gly Ser Tyr  
   225                                  230                                  235                                  240

Ser Ser Gly Pro Leu Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln  
           245                                  250                                  255

Gly Thr Thr Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
                   260                                  265                                  270

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
           275                                  280                                  285

Ser

4329191\_1

<210> 737  
 <211> 852  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 737  
 caggctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
 tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120  
 ccaggaacgg cccccaaact cctcatgtat aataatgatc agcggccctc aggggtccct 180  
 gaccgattct ctggctcaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
 tctgaggatg aggtctgatta ttactgtgca gcatgggatg acagcctcaa tggttatgtc 300  
 ttcggacctg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
 ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctggt ggagtctgga 420  
 gctgaggatg agaagcctgg ggcctcagtg aaggtctcct gcaaggcttc tggttacacc 480  
 tttaccagct atggtatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg 540  
 ggatggatca gcgcttaca tggtaacaca aactatgcac agaagctcca gggcagagtc 600  
 accatgacca cagacacatc cagagcaca gcctacatgg agctgaggag cctgagatct 660  
 gacgacacgg ccgtgtatta ctgtgcgaga gacctatctc ggggagctaa cccgcattac 720  
 tactactact acggtatgga cgtctggggc caagggacca cggtcaccgt ctcctcaact 780  
 agtggccagg ccggccagca ccatcaccat caccatggcg catacccgta cgacgttccg 840  
 gactacgctt ct 852

<210> 738  
 <211> 284  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 738  
 Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
 20 25 30  
 Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Met Tyr Asn Asn Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

4329191\_1

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
 65 70 75 80  
 Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 85 90 95  
 Asn Gly Tyr Val Phe Gly Pro Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110  
 Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Leu Glu Met Ala Gln Val Gln Leu Val Glu Ser Gly Ala Glu Val Lys  
 130 135 140  
 Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
 145 150 155 160  
 Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175  
 Leu Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr  
 180 185 190  
 Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr  
 195 200 205  
 Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala  
 210 215 220  
 Val Tyr Tyr Cys Ala Arg Asp Leu Ser Arg Gly Ala Asn Pro His Tyr  
 225 230 235 240  
 Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr  
 245 250 255  
 Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His His His  
 260 265 270  
 Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

<210> 739

<211> 831

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 739

## 4329191\_1

aattttatgc tgactcagcc ccacgctgtg tcggagtctc cggggaagac ggtaaccatc 60  
tcctgcaccc gcagcagtg gtagtattgcc agcaactatg tgcagtggta ccagcagcgc 120  
ccgggcagtt ccccccgcac tgtgatttat gaggataatc aaagaccctc tggggtcctt 180  
ggtcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgattccac cagtgtgctt 300  
ttcggcggag ggaccaagct gaccgtccta gggtctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggccgagg tccagctggt gcagtctggg 420  
gctgaggtga agaagccagg gtcctcggtg aaggctctct gcaaggcctc gggaggcacc 480  
ttcagcagca attctctcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg 540  
ggaaggatct tccctatcct ggggtataaca aactatgcac agaagttcca gggcagagtc 600  
acgattaccg cggacaaatc cacgagcaca gcctacatgg agctgagcag cctgagatct 660  
gaggacacgg ccgtctatta ctgtgcgaga ggaaactacc aatggtatga tgcttttgat 720  
atctggggcc aagggacaat ggtcaccgtc tcttcaacta gtggccaggc cggccagcac 780  
catcaccatc accatggcgc ataccgtac gacgttcgg actacgcttc t 831

&lt;210&gt; 740

&lt;211&gt; 277

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 740

Asn Phe Met Leu Thr Gln Pro His Ala Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ser Pro Arg Thr Val  
35 40 45

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Gly Arg Phe Ser  
50 55 60

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

Thr Ser Val Leu Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser

## 4329191\_1

115

120

125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
 145 150 155 160

Phe Ser Ser Asn Ser Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175

Leu Glu Trp Met Gly Arg Ile Phe Pro Ile Leu Gly Ile Thr Asn Tyr  
 180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr  
 195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Arg Gly Asn Tyr Gln Trp Tyr Asp Ala Phe Asp  
 225 230 235 240

Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly Gln  
 245 250 255

Ala Gly Gln His His His His His Gly Ala Tyr Pro Tyr Asp Val  
 260 265 270

Pro Asp Tyr Ala Ser  
 275

<210> 741

<211> 819

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 741

cagcctgtgc tgactcagcc accctcagtgc tcagtgggtcc caggaaagac ggccaggatt 60

acctgtgggg gaaaaaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120

caggcccctg tggtgggtcat ccattatgat agtgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240

gatgaggccg actattactg tcagggtgtgg gatagtagta gtgatcatcc ttatgtcttc 300

ggaactggga ccaaggtcac cgtcctaggt tctagagggtg gtggtggttag cggcggcggc 360

ggctctggtg gtggtggatc cctcgagatg gccaggtgc agctggtgca gtctggagct 420

gaggtgaaga agcctggggc ctcagtgaag gtctcctgca aggcttctgg ttacaccttt 480

4329191\_1

accaactatg gtatcagctg ggtgcgacag gcccttgac aagggttga gtggatggga 540  
 tggatcagcg cttacaatgg taacacaaac tatgcacata agctccaggg cagagtcacc 600  
 atgaccacag acacatccac gagcacagcc aacatggagc tgaggagcct gagacctgac 660  
 gacactgccg tgtattactg tgcgcgctct tacttcggtt ctcattgatta ctgggggtcaa 720  
 ggtactctgg tgaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac 780  
 catggcgcat acccgtagca cgttccggac tacgcttct 819

<210> 742  
 <211> 273  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 742  
 Gln Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Val Pro Gly Lys  
 1 5 10 15  
 Thr Ala Arg Ile Thr Cys Gly Gly Lys Asn Ile Gly Ser Lys Ser Val  
 20 25 30  
 His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Val Val Ile His  
 35 40 45  
 Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60  
 Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80  
 Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
 85 90 95  
 Pro Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg  
 100 105 110  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu  
 115 120 125  
 Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
 130 135 140  
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
 145 150 155 160  
 Thr Asn Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu  
 165 170 175

## 4329191\_1

Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala  
 180 185 190

His Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser  
 195 200 205

Thr Ala Asn Met Glu Leu Arg Ser Leu Arg Pro Asp Asp Thr Ala Val  
 210 215 220

Tyr Tyr Cys Ala Arg Ser Tyr Phe Gly Ser His Asp Tyr Trp Gly Gln  
 225 230 235 240

Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
 245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
 260 265 270

Ser

<210> 743

<211> 834

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 743

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| tcctatgtgc tgactcagcc accctcggtg tcagtggccc caggaaagac ggccaggatt   | 60  |
| tcctgtgggg gaaacgacat tggaagtaaa agtgttttct ggtatcagca gaggccaggc   | 120 |
| caggcccctg tgttggtcgt ctatgatgat agcgaccggc cctcagggtt ccctgagcga   | 180 |
| ttctctgggt tcaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg   | 240 |
| gatgaggccg actattactg tcaagtgtgg gatagtagta gtgatcatta tgtcttcgga   | 300 |
| actgggacca aggtcaccgt cctaggttct agaggtggtg gtggtagcgg cggcggcggc   | 360 |
| tctggtggtg gtggatccct cgagatggcc cagggtgcagc tgggtggagtc tgggggaggc | 420 |
| ttggtacagc ctggcagggt cctgagactc tcctgtgcag cctctggatt cacctttgat   | 480 |
| gattatgcca tgactgggt ccggcaagct ccagggaagg gcctggagtg ggtctcaggt    | 540 |
| attagttgga atagtggtag cataggctat gcggactctg tgaagggccg attcaccatc   | 600 |
| tccagagaca acgccaagaa ctccctgtat ctgcaaatga acagtctgag agctgaggac   | 660 |
| acggccttgt attactgtgc aaaagatata acctatggtt cggggagtta tgggtgctttt  | 720 |
| gatatctggg gccaaaggac aatggtcacc gtctcttcaa ctagtggcca ggccggccag   | 780 |
| caccatcacc atcaccatgg cgcatacccg tacgacgttc cggactacgc ttct         | 834 |

<210> 744



## 4329191\_1

&lt;211&gt; 278

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 744

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
1 5 10 15Thr Ala Arg Ile Ser Cys Gly Gly Asn Asp Ile Gly Ser Lys Ser Val  
20 25 30Phe Trp Tyr Gln Gln Arg Pro Gly Gln Ala Pro Val Leu Val Val Tyr  
35 40 45Asp Asp Ser Asp Arg Pro Ser Gly Leu Pro Glu Arg Phe Ser Gly Phe  
50 55 60Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
65 70 75 80Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
85 90 95Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg Gly  
100 105 110Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
115 120 125Met Ala Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro  
130 135 140Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp  
145 150 155 160Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu  
165 170 175Trp Val Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp  
180 185 190Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser  
195 200 205Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr  
210 215 220Tyr Cys Ala Lys Asp Ile Thr Tyr Gly Ser Gly Ser Tyr Gly Ala Phe  
225 230 235 240

## 4329191\_1

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly  
                   245                                  250                                  255

Gln Ala Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp  
                   260                                  265                                  270

Val Pro Asp Tyr Ala Ser  
                   275

<210> 745

<211> 822

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 745

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagtctgtgt tgacgcagcc accctcagcg tctgggaccc cggggcagag ggtcaccatc  | 60  |
| tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc  | 120 |
| ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct  | 180 |
| gaccgattct ctgggtccaa gtctggcacc tcagcctccc tggccatcag tgggtccag   | 240 |
| tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc  | 300 |
| ttcggaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc  | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctaca gcagtggggc  | 420 |
| gcaggactgt tgaagccttc ggagaccctg tccctcacct gcgctgtgta tgggtgggtcc | 480 |
| ttcagtgggt actactggag ctggatccgc cagccccag ggaaggggct ggagtggatt   | 540 |
| ggggaaatca atcatagtgg aagcaccaac tacaaccgt ccctcaagag tcgagtcacc   | 600 |
| atatcagtag acacgtccaa gaaccagttc tccctgaagc tgagctctgt gaccgccgcg  | 660 |
| gacacggccg tgtattactg tgcgcgcgaa ggtccgtacg acggtttcga ttcttggggg  | 720 |
| caagg tactc tggtgaccgt ctctcaact agtggccagg ccggccagca ccatcaccat  | 780 |
| caccatggcg catacccgta cgacgttccg gactacgctt ct                     | 822 |

<210> 746

<211> 274

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 746

Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
   1                  5                                  10                                  15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
                   20                                  25                                  30

4329191\_1

Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
85 90 95

Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu  
130 135 140

Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser  
145 150 155 160

Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly  
165 170 175

Leu Glu Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn  
180 185 190

Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn  
195 200 205

Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val  
210 215 220

Tyr Tyr Cys Ala Arg Glu Gly Pro Tyr Asp Gly Phe Asp Ser Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 747

<211> 822

## 4329191\_1

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 747

```

aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc      60
tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc      120
ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt      180
gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga      240
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caattctgtg      300
gtattcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc      360
ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtccagct ggtacagtct      420
ggcactgagg tgaagaagcc tggggcctca gtgagggtcg cctgcaaggc ttctggttac      480
ccctttaaca aatatgacat caactgggtg cgacaggccc ctggacaagg gcttgagtgg      540
atgggaggga tcatccctat ctttcgtaca acaaactacg cacagaagtt ccagggcaga      600
gtcacgatta ccgcgacga atccacgagc acagcctaca tggagctgag cagcctgaga      660
tctgaggaca cggccgtata ttactgtgcg cgcgatggt tctactggga tatctggggt      720
caaggtactc tggtgaccgt ctctcaact agtggccagg cgggccagca ccatcaccat      780
caccatggcg catacccgta cgacgttccg gactacgctt ct                        822

```

&lt;210&gt; 748

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 748

```

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys
1           5           10          15

```

```

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn
          20          25          30

```

```

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val
          35          40          45

```

```

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
          50          55          60

```

```

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly
65          70          75          80

```

```

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser

```

Ser Asn Ser Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Thr Glu Val  
130 135 140

Lys Lys Pro Gly Ala Ser Val Arg Val Ala Cys Lys Ala Ser Gly Tyr  
145 150 155 160

Pro Phe Asn Lys Tyr Asp Ile Asn Trp Val Arg Gln Ala Pro Gly Gln  
165 170 175

Gly Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Arg Thr Thr Asn  
180 185 190

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser  
195 200 205

Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
210 215 220

Ala Val Tyr Tyr Cys Ala Arg Glu Trp Phe Tyr Trp Asp Ile Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 749

<211> 825

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 749

cagtctgtgt tgactcagcc accctcagtg tccgtgtccc caggacagac agccagcatc 60

tcctgctctg gaaataaatt ggggactaag tatgtttact ggtatcagaa gaggccaggc 120

cagtcccctg tgttggtcat gtatgaagat aatcagcggc cctcagggat cccggagcgg 180

ttctctggct ccaactctgg gaacacagcc actctgacca tcagagggac ccagactgtg 240

## 4329191\_1

gatgaggctg actattactg tcaggcgtgg gactccgaca ctttcgtggt cttcggcgga 300  
 gggaccaagg tcaccgtcct aggttctaga ggtggtggtg gtagcggcgg cggcggctct 360  
 ggtggtggtg gatccctcga gatggccgag gtgcagctgg tggagaccgg gggaggcgtg 420  
 gtccagcctg ggaggtccct gagactctcc tgtgcagcct ctggattcac cttcagtagt 480  
 tatggcatgc actgggtccg ccaggctcca ggcaaggggc tggagtgggt ggcagttata 540  
 tcacatgatg gaagtaataa atactacgca gactccgtga agggccgatt caccatctcc 600  
 agagacaatt ccaaggacac gctgtatctg caaatgaaca gcctgagagg tgaggacacg 660  
 gccgtatatt actgtgcgcg ctctaaccag tggctctggtt acttctcttt cgattactgg 720  
 ggtcaaggta ctctggtgac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
 catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

&lt;210&gt; 750

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 750

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
 1 5 10 15

Thr Ala Ser Ile Ser Cys Ser Gly Asn Lys Leu Gly Thr Lys Tyr Val  
 20 25 30

Tyr Trp Tyr Gln Lys Arg Pro Gly Gln Ser Pro Val Leu Val Met Tyr  
 35 40 45

Glu Asp Asn Gln Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Arg Gly Thr Gln Thr Val  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Ser Asp Thr Phe Val  
 85 90 95

Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly Ser Arg Gly Gly  
 100 105 110

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met  
 115 120 125

Ala Glu Val Gln Leu Val Glu Thr Gly Gly Gly Val Val Gln Pro Gly  
 130 135 140

## 4329191\_1

Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser  
145 150 155 160

Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp  
165 170 175

Val Ala Val Ile Ser His Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser  
180 185 190

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asp Thr Leu  
195 200 205

Tyr Leu Gln Met Asn Ser Leu Arg Gly Glu Asp Thr Ala Val Tyr Tyr  
210 215 220

Cys Ala Arg Ser Asn Gln Trp Ser Gly Tyr Phe Ser Phe Asp Tyr Trp  
225 230 235 240

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
245 250 255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
260 265 270

Tyr Ala Ser  
275

<210> 751

<211> 819

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 751

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| tcctatgtgc tgactcagcc accctcagtg tcagtggccc caggaaagac ggccaggatt   | 60  |
| acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc   | 120 |
| caggcccctg tgggtggcat ccattatgat agcgaccggc cctcagggat ccctgagcga   | 180 |
| ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg   | 240 |
| gatgaggccg actattactg tcagggtgtg gatagtagta gtgatcatcc ttatgtcttc   | 300 |
| ggaactggga ccaaggtcac cgtcctaggt tctagagggt gtggtggtag cggcggcggc   | 360 |
| ggctctggtg gtggtggatc cctcgagatg gccgaggtgc agctggtgca gtctggagct   | 420 |
| gaggatgaaga agcctggggc ctcaagtgaag gtctcctgca aggcttctgg ttacaccttt | 480 |
| accacctatg gtatcagctg ggtgacgacag gccctggac aagggttga gtggatggga    | 540 |
| tggatcaaca cttacaatgg tcacacaaac tatgcacaga agctccaggg cagagccaca   | 600 |
| atgaccgcag acacatccac gaacacagcc tacatggagc tgaggagcct gagatctgac   | 660 |

## 4329191\_1

gacactgccg tgtattactg tgcgcgcgtt atctacggtt ctggtgatta ctgggggtcaa 720  
 ggtactctgg tgaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac 780  
 catggcgcac acccgtagca cgttccggac tacgcttct 819

&lt;210&gt; 752

&lt;211&gt; 273

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 752

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
 20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Val Val Ile His  
 35 40 45

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
 85 90 95

Pro Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg  
 100 105 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu  
 115 120 125

Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
 130 135 140

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
 145 150 155 160

Thr Thr Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu  
 165 170 175

Glu Trp Met Gly Trp Ile Asn Thr Tyr Asn Gly His Thr Asn Tyr Ala  
 180 185 190

Gln Lys Leu Gln Gly Arg Ala Thr Met Thr Ala Asp Thr Ser Thr Asn  
 195 200 205



## 4329191\_1

Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val  
 210 215 220

Tyr Tyr Cys Ala Arg Val Ile Tyr Gly Ser Gly Asp Tyr Trp Gly Gln  
 225 230 235 240

Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
 245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
 260 265 270

Ser

<210> 753  
 <211> 813  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 753  
 tcctatgtgc tgactcagcc actctcagtgc tcagtggccc caggaaagac ggccaggatt 60  
 acctgtgggg gaaacaacat tggaagtaaa actgtgcact ggtaccagca gaagccaggc 120  
 caggccccctg tgctgggtcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180  
 ttctctgggt ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
 gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatcatcg ggtgttcggc 300  
 ggagggacca agctgaccgt cctaggttct agaggtggtg gtggtagcgg cggcggcggc 360  
 tctggtggtg gtggatccct cgagatggcc caggtgcagc tgcaggagtc gggcccagga 420  
 ctggtgaagc cttcgagac cctgtccctc acctgcaatg tctctggtta ctccatcagc 480  
 agtggttact tttggggctg gatccggcag ccccagggg aggggctgga gtggattggg 540  
 agtatctatc atagtaggag cacctactac aaccggtccc tcaagagtcg agtcaccata 600  
 tcagtagaca cgtccaagaa ccagttctcc ctgaagctga actctgtgac cgccgcagac 660  
 acggccgtgt attactgtgc gcgcggttac gggtacttcg attactgggg tcaaggtact 720  
 ctggtgaccg tctcctcaac tagtggccag gccggccagc accatcacca tcaccatggc 780  
 gcatacccgt acgacgttcc ggactacgct tct 813

<210> 754  
 <211> 271  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

## 4329191\_1

&lt;400&gt; 754

Ser Tyr Val Leu Thr Gln Pro Leu Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15  
 Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Thr Val  
 20 25 30  
 His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
 35 40 45  
 Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60  
 Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80  
 Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
 85 90 95  
 Arg Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly  
 100 105 110  
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
 115 120 125  
 Met Ala Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro  
 130 135 140  
 Ser Glu Thr Leu Ser Leu Thr Cys Asn Val Ser Gly Tyr Ser Ile Ser  
 145 150 155 160  
 Ser Gly Tyr Phe Trp Gly Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu  
 165 170 175  
 Glu Trp Ile Gly Ser Ile Tyr His Ser Arg Ser Thr Tyr Tyr Asn Pro  
 180 185 190  
 Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln  
 195 200 205  
 Phe Ser Leu Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr  
 210 215 220  
 Tyr Cys Ala Arg Gly Tyr Gly Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
 225 230 235 240  
 Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His  
 245 250 255  
 His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 260 265 270

4329191\_1

<210> 755  
 <211> 834  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 755  
 caatctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60  
 tcctgcactg gaaccagcag tgacgttggt gggtataact atgtctcctg gtaccaacaa 120  
 caccaggca aagccccaa actcatgatt tatgatgtca gtaatcggcc ctgaggggtt 180  
 tctaatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240  
 caggctgagg acgaggctga ttattactgc agctcatata caagcagcag cacttcgaag 300  
 gtgttcggcg gagggacaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcgggggct ctggtggtgg tggatccctc gagatggccg aggtgcagct ggtggagtct 420  
 gggggagggtg tggtagcggc tgggggggtcc ctgagactct cctgtgcagc ctctggattc 480  
 acctttggtg attatggcat gagctgggtc cgccaagctc caggggaagg gctggagtgg 540  
 gtctctggta ttaattggaa tggtagtagc acaggttatg cagactctgt gaagggccga 600  
 ttcaccatct ccagagacaa cgccaagaac tcctgtatc tgcaaataaa cagtctgaga 660  
 gccgaggaca cggccgtata ttactgtgcg cgctctaaat acaacttcca tgtttactac 720  
 gattactggg gtcaaggtac tctggtgacc gtctcctcaa ctagtggcca ggccggccag 780  
 caccatcacc atcaccatgg cgcataccg tacgacgttc cggactacgc ttct 834

<210> 756  
 <211> 278  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 756  
 Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln 15  
 1 5 10  
 Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr 30  
 20 25 30  
 Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu 45  
 35 40 45  
 Met Ile Tyr Asp Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe 60  
 50 55 60  
 Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu

| 4329191_1          |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 65                 |                    |                    |                    | 70                 |                    |                    |                    | 75                 |                    |                    |                    | 80                 |                    |                    |                    |
| Gln                | Ala                | Glu                | Asp                | Glu <sub>85</sub>  | Ala                | Asp                | Tyr                | Tyr                | Cys <sub>90</sub>  | Ser                | Ser                | Tyr                | Thr                | Ser <sub>95</sub>  | Ser                |
| Ser                | Thr                | Ser                | Lys <sub>100</sub> | Val                | Phe                | Gly                | Gly                | Gly <sub>105</sub> | Thr                | Lys                | Leu                | Thr                | Val <sub>110</sub> | Leu                | Gly                |
| Ser                | Arg                | Gly <sub>115</sub> | Gly                | Gly                | Gly                | Ser                | Gly <sub>120</sub> | Gly                | Gly                | Gly                | Ser                | Gly <sub>125</sub> | Gly                | Gly                | Gly                |
| Ser                | Leu <sub>130</sub> | Glu                | Met                | Ala                | Glu                | Val <sub>135</sub> | Gln                | Leu                | Val                | Glu                | Ser <sub>140</sub> | Gly                | Gly                | Gly                | Val                |
| Val <sub>145</sub> | Arg                | Pro                | Gly                | Gly                | Ser <sub>150</sub> | Leu                | Arg                | Leu                | Ser                | Cys <sub>155</sub> | Ala                | Ala                | Ser                | Gly                | Phe <sub>160</sub> |
| Thr                | Phe                | Gly                | Asp                | Tyr <sub>165</sub> | Gly                | Met                | Ser                | Trp                | Val <sub>170</sub> | Arg                | Gln                | Ala                | Pro                | Gly <sub>175</sub> | Lys                |
| Gly                | Leu                | Glu                | Trp <sub>180</sub> | Val                | Ser                | Gly                | Ile                | Asn <sub>185</sub> | Trp                | Asn                | Gly                | Gly                | Ser <sub>190</sub> | Thr                | Gly                |
| Tyr                | Ala                | Asp <sub>195</sub> | Ser                | Val                | Lys                | Gly                | Arg <sub>200</sub> | Phe                | Thr                | Ile                | Ser                | Arg <sub>205</sub> | Asp                | Asn                | Ala                |
| Lys                | Asn <sub>210</sub> | Ser                | Leu                | Tyr                | Leu                | Gln <sub>215</sub> | Met                | Asn                | Ser                | Leu                | Arg <sub>220</sub> | Ala                | Glu                | Asp                | Thr                |
| Ala <sub>225</sub> | Val                | Tyr                | Tyr                | Cys                | Ala <sub>230</sub> | Arg                | Ser                | Lys                | Tyr                | Asn <sub>235</sub> | Phe                | His                | Val                | Tyr                | Tyr <sub>240</sub> |
| Asp                | Tyr                | Trp                | Gly                | Gln <sub>245</sub> | Gly                | Thr                | Leu                | Val                | Thr <sub>250</sub> | Val                | Ser                | Ser                | Thr                | Ser <sub>255</sub> | Gly                |
| Gln                | Ala                | Gly                | Gln <sub>260</sub> | His                | His                | His                | His                | His <sub>265</sub> | His                | Gly                | Ala                | Tyr                | Pro <sub>270</sub> | Tyr                | Asp                |
| Val                | Pro                | Asp <sub>275</sub> | Tyr                | Ala                | Ser                |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |

60

## 4329191\_1

```

ccaggaacgg cccccaaact cctcatctat aggaataatc agcggccctc aggggtccct      180
gaccgattct caggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccgc      240
tccgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgag tgcttatgtc      300
ttcggaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc      360
ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctggt gcagtctgga      420
gctgaggatga agaagcctgg ggcctcagtg aaggctctcct gcaaggcttc tggttacacc      480
tttaccagct atggtatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg      540
ggatggatca gcgcttaca tggtaacaca aactatgcac agaagctcca gggcagagtc      600
accatgacca cagacacatc cagagcaca gcctacatgg agctgaggag cctgagatct      660
gacgacactg ccgtgtatta ctgtgcgcgc tcttctggta acatggtttc ttgaaagat      720
atgtgggggtc aagggtactct ggtgaccgtc tcctcaacta gtggccaggc cggccagcac      780
catcaccatc accatggcgc ataccgtac gacgttccgg actacgcttc t                831

```

&lt;210&gt; 758

&lt;211&gt; 277

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 758

Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15

Thr Val Thr Ile Ser Cys Ser Gly Ser Asn Ser Asn Ile Gly Ser Asn  
20 25 30

Tyr Val Tyr Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Arg Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg  
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
85 90 95

Ser Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

## 4329191\_1

Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
 145 150 155 160

Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175

Leu Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr  
 180 185 190

Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr  
 195 200 205

Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Arg Ser Ser Gly Asn Met Val Ser Trp Lys Asp  
 225 230 235 240

Met Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln  
 245 250 255

Ala Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val  
 260 265 270

Pro Asp Tyr Ala Ser  
 275

<210> 759

<211> 822

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 759

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| caatctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc | 60  |
| tcctgcactg gaaccagcag tgacgttggt gggtataact ctgtctcctg gtaccaacaa | 120 |
| caccaggca aagccccag actcatgatt tatgatgtca gtaatcggcc ctgaggggtt   | 180 |
| tctaatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc | 240 |
| caggctgagg acgaggctga ttattactgc agtcatata caagcagcag cacccttta   | 300 |
| gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc | 360 |
| ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtgcagct ggtgcagtct | 420 |
| ggggctgagg tgaagaagcc tggggcctca gtgaaggtct cctgcaaggc ttctggttac | 480 |
| acctttacca gctatggtat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg | 540 |

## 4329191\_1

atgggatgga tcagcgctta caatggtaac acaaactatg cacagaagct ccagggcaga 600  
 gtcacatga ccacagacac atccacgagc acagcctaca tggagctgag gagcctgaga 660  
 tctgacgaca cggccgtgta ttactgtgcg cgcggtgctg ttgcttacca tgattggggg 720  
 caaggtactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat 780  
 caccatggcg catacccgta cgacgttccg gactacgctt ct 822

&lt;210&gt; 760

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 760

Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln  
 1 5 10 15

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr  
 20 25 30

Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Arg Leu  
 35 40 45

Met Ile Tyr Asp Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe  
 50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu  
 65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser  
 85 90 95

Ser Thr Pro Leu Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr  
 145 150 155 160

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175

Gly Leu Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn  
 180 185 190

## 4329191\_1

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser  
 195 200 205

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Ala Arg Gly Ala Val Ala Tyr His Asp Trp Gly  
 225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
 245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
 260 265 270

Ala Ser

<210> 761  
 <211> 825  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 761  
 cagtctgtcg tgacgcagcc gccctcagtg tctgcggccc caggacagag ggtcaccatc 60  
 tcctgctctg gaagcagctc caacatttcg atttatgatg taccctggta tcagcagctc 120  
 ccaggaacag cccccaaact cctcatttat ggcaataata agcgaccctc ggggattgct 180  
 gaccgattct ctggctccac gtctggcacg tcagccaccc tgggcatcac cggactccag 240  
 actggggacg aggccgatta ttactgcgga acatgggatg acagtctgag tgggggggtg 300  
 ttcggcggag ggaccaagct gaccgtccta gggtctagag gtggtggtgg tagcggcggc 360  
 ggcggctctg gtggtggtgg atccctcgag atggcccaga tgcagctggt gcaatctggg 420  
 gctgaggtga agaagcctgg gtcctcggtg aaggtctcct gcgaggcttc tggaggcacc 480  
 ctcagcagct atgctatcaa ctgggtgcga caggcccctg gacaagggtc tgagtggatg 540  
 ggagggatca tccctatggt tggtacagca cactacgcac agaagttcca gggcagagtc 600  
 acgattaccg cggacgaatc cacgaaaaca gcctacatgg agctgagcag cctgagatct 660  
 gaggacactg ccgtgtatta ctgtgcgcgc ggtgttcatt acgcttcttt cgatcattgg 720  
 ggtcaaggta ctctggtgac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
 catcaccatg gcgcataccc gtacgacggt ccggactacg cttct 825

<210> 762  
 <211> 275  
 <212> PRT  
 <213> Artificial Sequence



4329191\_1

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 762

```

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1          5          10          15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Ser Ile Tyr
          20          25          30

Asp Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
          35          40          45

Ile Tyr Gly Asn Asn Lys Arg Pro Ser Gly Ile Ala Asp Arg Phe Ser
 50          55          60

Gly Ser Thr Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65          70          75          80

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Asp Ser Leu
          85          90          95

Ser Gly Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser
          100          105          110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
          115          120          125

Leu Glu Met Ala Gln Met Gln Leu Val Gln Ser Gly Ala Glu Val Lys
          130          135          140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Glu Ala Ser Gly Gly Thr
          145          150          155          160

Leu Ser Ser Tyr Ala Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly
          165          170          175

Leu Glu Trp Met Gly Gly Ile Ile Pro Met Phe Gly Thr Ala His Tyr
          180          185          190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr
          195          200          205

Lys Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala
          210          215          220

Val Tyr Tyr Cys Ala Arg Gly Val His Tyr Ala Ser Phe Asp His Trp
          225          230          235          240

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly
          245          250          255

```

4329191\_1

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
260 265 270

Tyr Ala Ser  
275

<210> 763  
<211> 822  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 763  
cagtctgtgt tgacgcagcc gccctcagtg tctgcggccg caggacagaa ggtcaccatc 60  
tcctgctctg gaagcgactc caacattggg aataattatg tgtcctggta tcaacacctc 120  
ccagggacag cccccaact cctcatttat gacgttaaaa atcgaccctc agggattcct 180  
gaccggttct ccggctccaa gtctggctcg tcagccaccc taggcatcgc cggactccag 240  
cctggggacg aggccgatta ttactgcgga acatgggaca gtcggctgga tgcctatgtc 300  
ttcggaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggcccaga tgcagctggt gcaatctgga 420  
gctgaggtga agaagcctgg ggcctcagtg aaggtctcct gcaagacttc tggtttcccc 480  
tttaatatct ttggaatcac ctgggtgcga caggcccctg gacaagggtc tgagtggatg 540  
ggatggatca gcggttacaa cggtaacaca gactaccac agaagttcca gggcagagtc 600  
accatgtcca cagacacatc cagagtaca gcctacatgg agctgaggaa cctgaaatct 660  
gacgacacgg ccgtgtatta ctgtgcgcgc ggtgcttacg gtggtatgga tacttgggg 720  
caaggtactc tggtgaccgt ctctcaact agtggccagg ccggccagca ccatcaccat 780  
caccatggcg catacccgta cgacgttccg gactacgctt ct 822

<210> 764  
<211> 274  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 764  
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Ala Gly Gln  
1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Asp Ser Asn Ile Gly Asn Asn  
20 25 30

Tyr Val Ser Trp Tyr Gln His Leu Pro Gly Thr Ala Pro Lys Leu Leu  
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## 4329191\_1

35

40

45

Ile Tyr Asp Val Lys Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Ser Ser Ala Thr Leu Gly Ile Ala Gly Leu Gln  
 65 70 75 80

Pro Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Arg Leu  
 85 90 95

Asp Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Gln Met Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Thr Ser Gly Phe Pro  
 145 150 155 160

Phe Asn Ile Phe Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175

Leu Glu Trp Met Gly Trp Ile Ser Gly Tyr Asn Gly Asn Thr Asp Tyr  
 180 185 190

Pro Gln Lys Phe Gln Gly Arg Val Thr Met Ser Thr Asp Thr Ser Thr  
 195 200 205

Ser Thr Ala Tyr Met Glu Leu Arg Asn Leu Lys Ser Asp Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Arg Gly Ala Tyr Gly Gly Met Asp Thr Trp Gly  
 225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
 245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
 260 265 270

Ala Ser

<210> 765

<211> 828

<212> DNA

<213> Artificial Sequence

## 4329191\_1

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 765

```

cagtctgtcg tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc      60
tcctgcactg ggagcacctc caacatcggg gcaggttatg atgtacactg gtatcagcag      120
cttccaggaa cagcccccaa actcctcatc tatactaaca actttcggcc ctcagggggtc      180
cctgaccgat tctctgcctc caagtctggc acttcagctt ccctggccat cactgggtctc      240
caggctgagg atgaggctga ttattactgc ggaacatggg atagcagcct gagtgccgtt      300
gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc      360
ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtgcagct ggtggagtct      420
ggaactgagg tgaagaagcc tggggcctca gtgaaagtct cctgcaaggc ttctggttac      480
atgtttacca gttatggtct caactgggtg cgacaggccc ctggacaagg gcttgagtgg      540
atgggatgga tcagcgctaa caatggtaag acaaattatg ctaagaaatt ccaggacaga      600
gtcaccatga ccagagacac ttccacgagc acaggctaca tggaactgag gagcctgaga      660
tctgacgaca cggccgtata ttactgtgcg cgccatatcg gtggttctta cttcgatcgt      720
tggggtcaag gtactctggt gaccgtctcc tcaactagtg gccaggccgg ccagcaccat      780
caccatcacc atggcgcata cccgtacgac gttccggact acgcttct      828

```

&lt;210&gt; 766

&lt;211&gt; 276

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 766

```

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
1           5           10          15

```

```

Arg Val Thr Ile Ser Cys Thr Gly Ser Thr Ser Asn Ile Gly Ala Gly
          20          25          30

```

```

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
          35          40          45

```

```

Leu Ile Tyr Thr Asn Asn Phe Arg Pro Ser Gly Val Pro Asp Arg Phe
50          55          60

```

```

Ser Ala Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65          70          75          80

```

```

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser
          85          90          95

```

## 4329191\_1

Leu Ser Ala Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Thr Glu Val  
 130 135 140

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr  
 145 150 155 160

Met Phe Thr Ser Tyr Gly Leu Asn Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175

Gly Leu Glu Trp Met Gly Trp Ile Ser Ala Asn Asn Gly Lys Thr Asn  
 180 185 190

Tyr Ala Lys Lys Phe Gln Asp Arg Val Thr Met Thr Arg Asp Thr Ser  
 195 200 205

Thr Ser Thr Gly Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Ala Arg His Ile Gly Gly Ser Tyr Phe Asp Arg  
 225 230 235 240

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala  
 245 250 255

Gly Gln His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro  
 260 265 270

Asp Tyr Ala Ser  
 275

<210> 767

<211> 822

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 767

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| tcctatgtgc tgactcagcc accctcagtg tcagtggccc caggaaagac ggccaggatt  | 60  |
| acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc  | 120 |
| cagggccctg tgctggatcat ctattatgat agcgaccggc cctcagggat ccctgagcga | 180 |
| ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg  | 240 |
| gatgaggccg actattactg tcagggtgtgg gatagtagta gtgatcatta tgtcttcgga | 300 |

## 4329191\_1

actgggacca aggtcaccgt cctaggttct agaggtggtg gtggtagcgg cggcggcggc 360  
tctggtggtg gtggatccct cgagatggcc gaggtgcagc tgggtgagac tgggggaggc 420  
ttggtacagc ctgggggggtc cctgagactc tcctgtgcag cctctggatt cacctttagc 480  
agctatgcca tgagctgggt cgcgcaggct ccaggggaagg ggctggagtg ggtctcagct 540  
attagtggta gtgatggtag cacatactac gcagactccg tgaagggccg gttcaccatc 600  
tccagagaca attccaagaa cacgctgtat ctgcaaatga acagcctgag agacgaggac 660  
acggccgtat attactgtgc gcgctctcat gaagctaacc tggttggtga ttggtggggc 720  
caaggtactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat 780  
caccatggcg catacccgta cgacgttccg gactacgctt ct 822

&lt;210&gt; 768

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 768

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
35 40 45

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
85 90 95

Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg Gly  
100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
115 120 125

Met Ala Glu Val Gln Leu Val Glu Thr Gly Gly Gly Leu Val Gln Pro  
130 135 140

Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser  
145 150 155 160

## 4329191\_1

Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu  
165 170 175

Trp Val Ser Ala Ile Ser Gly Ser Asp Gly Ser Thr Tyr Tyr Ala Asp  
180 185 190

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr  
195 200 205

Leu Tyr Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr  
210 215 220

Tyr Cys Ala Arg Ser His Glu Ala Asn Leu Val Gly Asp Trp Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 769

<211> 816

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 769

cagtctgtgg tgactcagcc accctcagtg tcagtggccc caggaaagac ggccaggatt 60

acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120

caggcccctg tgctggatcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240

gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatgtggt attcggcgga 300

gggaccaagc tgaccgtcct aggttctaga ggtggtggtg gtagcggcgg cggcggctct 360

ggtggtggtg gatccctcga gatggccgag gtccagctgg tacagtctgg agctgagggtg 420

aagaagcctg gggcctcagt gaaggtctcc tgcaaggctt ctggttacac ctttaccagc 480

tacggtatca gctgggtgcg acaggcccct ggacaagggc ttgagtggat gggatggatc 540

agcgcttaca atggtaacac aaactatgca cagaagctcc agggcagagt caccatgacc 600

acagacacat ccacgagcac agcctacatg gagctgagga gcctgagatc tgacgacacg 660

gccgtgtatt actgtgctcg ctggggtggt ttcggtgctg ttgatcattg gggtaagggt 720

actctggtga ccgtctcctc aactagtggc caggccggcc agcaccatca ccataccat 780

ggcgcatacc cgtacgacgt tccggactac gcttct

<210> 770

<211> 272

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 770

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
35 40 45

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp Val  
85 90 95

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly Gly  
100 105 110

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met  
115 120 125

Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly  
130 135 140

Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser  
145 150 155 160

Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp  
165 170 175

Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys  
180 185 190

Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala  
195 200 205

Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr  
210 215 220



## 4329191\_1

Cys Ala Arg Trp Gly Gly Phe Gly Ala Val Asp His Trp Gly Gln Gly  
225 230 235 240

Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His  
245 250 255

His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
260 265 270

<210> 771  
<211> 810  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 771  
tcttctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaagatc 60  
acgtgccaag gagacagcct cacagactac catgcaacct ggtaccagca gaagccagga 120  
caggccccctg tcgctgtcat ctatgctaca aacaaccggc ccactgggat cccagaccga 180  
ttctctgggt ccagttccgg aaacacagct tctttgacca tctactggggc tcaggcggaa 240  
gatgaggctg actattactg taattcccgg gacagcggca cggacgaagt gttattcggc 300  
ggagggacca agctgaccgt cctaggttct agaggtggtg gtggtagcgg cggcggcggc 360  
tctggtggtg gtggatccct cgagatggcc gaggtgcagc tgggtggagac tgggggaggc 420  
ctggtcaagc ctgggggggtc cctgagactc tcctgtgcag cctctggatt caccttcagt 480  
agctatagca tgaactgggt cgcagggt ccagggaagg ggctggagtg ggtctcatcc 540  
attagtagta gtagtagtta catatactac gcagactcag tgaagggccg attcaccatc 600  
tccagagaca acgccaagaa ctactgtat ctgcaaatga acagcctgag agccgaggac 660  
acggccgtgt attactgtgc gcgcggtcag ggttacgatt actgggggtca aggtactctg 720  
gtgaccgtct cctcaactag tggccaggcc ggccagcacc atcaccatca ccatggcgca 780  
taccgtagc acgttccgga ctacgcttct 810

<210> 772  
<211> 270  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 772  
Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln  
1 5 10 15

Thr Val Lys Ile Thr Cys Gln Gly Asp Ser Leu Thr Asp Tyr His Ala  
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Thr Trp Tyr<sub>35</sub> Gln Gln Lys Pro Gly<sub>40</sub> Gln Ala Pro Val Ala<sub>45</sub> Val Ile Tyr  
 Ala Thr<sub>50</sub> Asn Asn Arg Pro Thr<sub>55</sub> Gly Ile Pro Asp Arg<sub>60</sub> Phe Ser Gly Ser  
 Ser<sub>65</sub> Ser Gly Asn Thr Ala<sub>70</sub> Ser Leu Thr Ile Thr<sub>75</sub> Gly Ala Gln Ala Glu<sub>80</sub>  
 Asp Glu Ala Asp<sub>85</sub> Tyr Tyr Cys Asn Ser Arg<sub>90</sub> Asp Ser Gly Thr Asp<sub>95</sub> Glu  
 Val Leu Phe Gly<sub>100</sub> Gly Gly Thr Lys Leu<sub>105</sub> Thr Val Leu Gly Ser<sub>110</sub> Arg Gly  
 Gly Gly Gly<sub>115</sub> Ser Gly Gly Gly Gly<sub>120</sub> Ser Gly Gly Gly<sub>125</sub> Ser Leu Glu  
 Met Ala<sub>130</sub> Glu Val Gln Leu Val<sub>135</sub> Glu Thr Gly Gly Gly<sub>140</sub> Leu Val Lys Pro  
 Gly<sub>145</sub> Gly Ser Leu Arg Leu<sub>150</sub> Ser Cys Ala Ala Ser<sub>155</sub> Gly Phe Thr Phe Ser<sub>160</sub>  
 Ser Tyr Ser Met<sub>165</sub> Asn Trp Val Arg Gln Ala<sub>170</sub> Pro Gly Lys Gly<sub>175</sub> Leu Glu  
 Trp Val Ser<sub>180</sub> Ser Ile Ser Ser Ser<sub>185</sub> Ser Tyr Ile Tyr Tyr<sub>190</sub> Ala Asp  
 Ser Val Lys<sub>195</sub> Gly Arg Phe Thr Ile<sub>200</sub> Ser Arg Asp Asn Ala<sub>205</sub> Lys Asn Ser  
 Leu Tyr<sub>210</sub> Leu Gln Met Asn<sub>215</sub> Ser Leu Arg Ala Glu Asp<sub>220</sub> Thr Ala Val Tyr  
 Tyr<sub>225</sub> Cys Ala Arg Gly Gln<sub>230</sub> Gly Tyr Asp Tyr Trp<sub>235</sub> Gly Gln Gly Thr Leu<sub>240</sub>  
 Val Thr Val Ser<sub>245</sub> Ser Thr Ser Gly Gln Ala<sub>250</sub> Gly Gln His His His<sub>255</sub> His  
 His His Gly<sub>260</sub> Ala Tyr Pro Tyr Asp Val<sub>265</sub> Pro Asp Tyr Ala Ser<sub>270</sub>

&lt;210&gt; 773

&lt;211&gt; 810

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

## 4329191\_1

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 773

```

tcctatgtgc tgactcagcc accctcgggtg tcagtggccc caggaaagac ggccaggatt      60
acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc      120
caggccccctg tgctggctgt ctatgatgat agcgaccggc cctcagggat ccctgagcga      180
ttctctgggt ccaactctgg gaacacggcc accctgagca tcagcagggt cgaagccggg      240
gatgaggccg actattactg tcagggtgtgg gatagtagta gtgatcatac tgtcttcgga      300
actgggacca aggtcaccgt cctaggttct agaggtgggtg gtggtagcgg cggcggcggc      360
tctgggtgtg gtggatccct cgagatggcc cagggtgcagc tacagcagtg gggcgcagga      420
ctgttgaagc cttcggagac cctgtccctc acctgcgctg tctatggtgg gtccttcagt      480
ggttactact ggagctggat ccgccagccc ccagggaagg ggctggagtg gattggggaa      540
atcaatcata gtggaagcac caactacaac ccgtccctca agagtcgagt caccatatca      600
gtagacacgt ccaagaacca gttctccctg aagctgagct ctgtgaccgc cgcggacacg      660
gccgtgtatt actgtgacgc ctactacccg ggtatggata tgtgggggtca aggtactctg      720
gtgaccgtct cctcaactag tggccaggcc ggccagcacc atcaccatca ccatggcgca      780
taccctgtacg acgttccgga ctacgcttct      810

```

&lt;210&gt; 774

&lt;211&gt; 270

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 774

```

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1           5           10           15

```

```

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val
           20           25           30

```

```

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
           35           40           45

```

```

Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
           50           55           60

```

```

Asn Ser Gly Asn Thr Ala Thr Leu Ser Ile Ser Arg Val Glu Ala Gly
65           70           75           80

```

```

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His
           85           90           95

```

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Thr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg Gly  
100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
115 120 125

Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu Lys Pro  
130 135 140

Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser Phe Ser  
145 150 155 160

Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu  
165 170 175

Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn Pro Ser  
180 185 190

Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe  
195 200 205

Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr  
210 215 220

Cys Ala Arg Tyr Tyr Pro Gly Met Asp Met Trp Gly Gln Gly Thr Leu  
225 230 235 240

Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His  
245 250 255

His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
260 265 270

<210> 775

<211> 816

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 775

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| caggctgtgc tgactcagcc gccctcaacg tctgggaccc ccgggcagag ggtcaccatc | 60  |
| tcttgttctg gaagcagctc caacatcggg agaaatggtg taaactggta ccagcagctc | 120 |
| ccaggagcgg cccccaaagt cctcatctat aatgataatc agcgaccctc aggggttcct | 180 |
| gaccgagtct ctggctccca gtctggctcc tcaggcaccc tggccatcga tgggcttcgg | 240 |
| tctgaggatg aggctgatta ttactgtgcg gcatgggatg acagcctgca tgggtgtgga | 300 |
| ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggcccagg tccagctggt acagtctggg | 420 |

## 4329191\_1

gctgaggtga agaagcctgg ggcctcagtg aaggtctcct gcaaggtttc cggatacacc 480  
 ctcaatgaat tatccatgca ctgggtgcga caggctcctg gaaaagggct tgagtggatg 540  
 ggaggttttg atcctgaaga tgggtgaaaca atctacgcac agaagttcca gggcagagtc 600  
 accatgaccg aggacacatc tacagacaca gcctacatgg agctgagcag cctgagatct 660  
 gaggacactg ccgtgtatta ctgtgcgcgc ggtgggttacg gtgattcttg gggtaaggt 720  
 actctgggtga ccgtctcctc aactagtggc caggccggcc agcaccatca ccataccat 780  
 ggcgcatacc cgtacgacgt tccggactac gcttct 816

&lt;210&gt; 776

&lt;211&gt; 272

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 776

Gln Ala Val Leu Thr Gln Pro Pro Ser Thr Ser Gly Thr Pro Gly Gln  
 1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Arg Asn  
 20 25 30

Gly Val Asn Trp Tyr Gln Gln Leu Pro Gly Ala Ala Pro Lys Val Leu  
 35 40 45

Ile Tyr Asn Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Val Ser  
 50 55 60

Gly Ser Gln Ser Gly Ser Ser Gly Thr Leu Ala Ile Asp Gly Leu Arg  
 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 85 90 95

His Gly Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Val Ser Gly Tyr Thr  
 145 150 155 160

Leu Asn Glu Leu Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly  
 165 170 175

## 4329191\_1

Leu Glu Trp Met Gly Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr  
 180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Glu Asp Thr Ser Thr  
 195 200 205

Asp Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Arg Gly Gly Tyr Gly Asp Ser Trp Gly Gln Gly  
 225 230 235 240

Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His  
 245 250 255

His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 260 265 270

<210> 777

<211> 870

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 777

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc  | 60  |
| tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc  | 120 |
| ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt  | 180 |
| gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga  | 240 |
| ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caattcttgg  | 300 |
| gtgttcggcg gagggacaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc   | 360 |
| ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtgcagct ggtgcaatct  | 420 |
| ggggctgagg tgaagaggcc tgggtcctcg gtgaaggtct cctgcacggc ttctggaggc  | 480 |
| accttcagca gcgatgctat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg  | 540 |
| atgggaggaa tcatccctat gtttggtaga gcaaactacg cacagaagtt ccagggcaga  | 600 |
| gtcacgatta ccgcggacga atccacgagc acagcctaca tggagctgag cagcctgaga  | 660 |
| tctgaggaca cggccgtgta ttactgtgcg cgcaaggtt actactaccg gtctgcttac   | 720 |
| ctgggttctg ttctgaacga catctcttct gtttacgatg aatgggggtca aggtactctg | 780 |
| gtgaccgtct cctcaactag tggccaggcc ggccagcacc atcaccatca ccatggcgca  | 840 |
| taccgtacg acgttccgga ctacgcttct                                    | 870 |

<210> 778

<211> 290

## 4329191\_1

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 778

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
 20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
 35 40 45

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
 85 90 95

Ser Asn Ser Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140

Lys Arg Pro Gly Ser Ser Val Lys Val Ser Cys Thr Ala Ser Gly Gly  
 145 150 155 160

Thr Phe Ser Ser Asp Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175

Gly Leu Glu Trp Met Gly Gly Ile Ile Pro Met Phe Gly Thr Ala Asn  
 180 185 190

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser  
 195 200 205

Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Ala Arg Glu Gly Tyr Tyr Tyr Pro Ser Ala Tyr  
 225 230 235 240

## 4329191\_1

Leu Gly Ser Val Leu Asn Asp Ile Ser Ser Val Tyr Asp Glu Trp Gly  
 245 250 255

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
 260 265 270

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
 275 280 285

Ala Ser  
 290

<210> 779

<211> 822

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 779

```

cagtctgtcg tgacgcagcc gccctcagtg tctgcggccc caggacagaa ggtcaccatc      60
tcctgctctg gaagcacctc caacattgga aataatgatg tatcctggta ccagcagctc      120
ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct      180
gaccgattct ctgggtccaa gtctggcacg tcagccaccc tgggcatcac cggactccag      240
actggggacg aggccgatta ttactgcgga acatgggata gcagcgtgag tgcttcttgg      300
gtcttcggca gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc      360
ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtgcagct ggtgcagtct      420
ggagctgagg tgaagaagcc tggggcctca gtgaaggtct cctgcaaggc ttctggttac      480
acctttacca gctatggtat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg      540
atgggatgga tcagcgctta caatggtaac acaactatc cacagaagct ccagggcaga      600
gtcaccatga ccacagaccc atccacgagc acagcctaca tggagctgag gagcctgaga      660
tctgacgaca cggccgtgta ttactgtgcg cgctctatga cttctttcga ttactggggg      720
caaggtactc tggtgaccgt ctctcaact agtggccagg cgggccagca ccatcaccat      780
caccatggcg catacccgta cgacgttccg gactacgctt ct                        822

```

<210> 780

<211> 274

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 780

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
 1 5 10 15



## 4329191\_1

Lys Val Thr Ile Ser Cys Ser Gly Ser Thr Ser Asn Ile Gly Asn Asn  
 20 25 30  
 Asp Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln  
 65 70 75 80  
 Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Val  
 85 90 95  
 Ser Ala Ser Trp Val Phe Gly Arg Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110  
 Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125  
 Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140  
 Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr  
 145 150 155 160  
 Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175  
 Gly Leu Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn  
 180 185 190  
 Tyr Pro Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Pro Ser  
 195 200 205  
 Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr  
 210 215 220  
 Ala Val Tyr Tyr Cys Ala Arg Ser Met Thr Ser Phe Asp Tyr Trp Gly  
 225 230 235 240  
 Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
 245 250 255  
 His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
 260 265 270  
 Ala Ser

## 4329191\_1

<210> 781  
 <211> 822  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 781  
 cagtctgtgt tgacgcagcc gccctcagtg tctgcggccc caggacagaa ggtcaccatc 60  
 tcctgctctg gaagcaactc caacattggg aataattatg tctcctggta tcagcaactc 120  
 ccagggacag ccccccact cctcatttat gacaataata agcgaccctc agggattcct 180  
 gaccgattct ctggctccag gtctggcacg tcagccaccc tgggcatcac cggactccag 240  
 actggggacg aggccgatta ttactgcgga acatggaata ccactgtgac tcctggctat 300  
 gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcggcggct ctggtggtgg tggatccctc gagatggccg aagtgcagct ggtgcagtct 420  
 ggagctgagg tgaagaagcc tggggcctca gtgaaggctt cctgcaaggc ttctggttac 480  
 acctttacca gctatggtat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg 540  
 atgggatgga tcagcgctta caatggtaac acaaactatg cacagaagct ccagggcaga 600  
 gtcaccatga ccacagacac atccacgagc acagcctaca tggagctgag gagcctgaga 660  
 tctgacgaca ccgccatgta ttactgtgcg cgctctgttt acgacctgga tacttggggg 720  
 caagg tactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat 780  
 caccatggcg catacccgta cgacgttccg gactacgctt ct 822

<210> 782  
 <211> 274  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 782  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
 1 5 10 15  
 Lys Val Thr Ile Ser Cys Ser Gly Ser Asn Ser Asn Ile Gly Asn Asn  
 20 25 30  
 Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Arg Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln  
 65 70 75 80

4329191\_1

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asn Thr Thr Val  
85 90 95

Thr Pro Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val  
130 135 140

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr  
145 150 155 160

Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
165 170 175

Gly Leu Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn  
180 185 190

Tyr Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser  
195 200 205

Thr Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr  
210 215 220

Ala Met Tyr Tyr Cys Ala Arg Ser Val Tyr Asp Leu Asp Thr Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 783

<211> 831

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 783

cagtctgtcg tgacgcagcc gccctcagtg tctgcggccc caggacagaa ggtcaccatc 60

tcctgctctg gaagcagctc caacattggg aataattatg tctcctggta ccagcagctc 120

## 4329191\_1

ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180  
gaccgattct ctgggtccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 240  
actggggacg aggccgatta ttactgcgga acatgggata gcagcctggg ggccccttat 300  
gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtgcagct ggtgcagtct 420  
tggggaggct cggaacagcc tggcaggtcc ctgagactct cctgtgcagc ctctggattc 480  
acctttgatg attatgccat gcactgggtc cggcaagctc caggggaaggg cctggagtgg 540  
gtctcaggta ttagttggaa tagcggtagc ataggctatg cggactctgt gaagggccga 600  
ttcaccatct ccagagacaa cgccaagaat tccctgtatc tgcaaatgaa cagtctgaga 660  
gctgaggaca ccgccatgta ttactgtgcg cgctaccgtc aggttggttc tgcttacgat 720  
tcttggggtc aagggtactct ggtgaccgtc tcctcaacta gtggccaggc cggccagcac 780  
catcaccatc accatggcgc ataccgtac gacgttccgg actacgcttc t 831

&lt;210&gt; 784

&lt;211&gt; 277

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 784

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn  
20 25 30

Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln  
65 70 75 80

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu  
85 90 95

Gly Ala Pro Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Trp Gly Gly Ser  
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135

Glu Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe  
145 150 155 160

Thr Phe Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys  
165 170 175

Gly Leu Glu Trp Val Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly  
180 185 190

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala  
195 200 205

Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr  
210 215 220

Ala Met Tyr Tyr Cys Ala Arg Tyr Arg Gln Val Gly Ser Ala Tyr Asp  
225 230 235 240

Ser Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln  
245 250 255

Ala Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val  
260 265 270

Pro Asp Tyr Ala Ser  
275

<210> 785  
<211> 822  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 785  
ctgcctgtgc tgactcagcc accctcgggtg tcagtggccc caggaaagac ggccaggatt 60  
acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtatcagca gaagccaggc 120  
caggcccctg tgctggtcgt ctatgctgat agcgaccggc cctcagggat ccctgagcga 180  
ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
gatgaggccg actattactg tcagggtgtgg gatagtagta gttatcataa ttatgtcttc 300  
ggaactggga ccaaggtcac cgtcctaggt tctagagggt gtggtggtag cggcggcggc 360  
ggctctgggtg gtggtggatc cctcgagatg gccgagggtc agctgggtgca gtctggagct 420  
gagggtgaaga agcctggggc ctcagtgaag gtctcctgca aggcttctgg ttacaccttt 480  
accagctatg gtatcagctg ggtgcgacag gccctggac aagggttga gtggatggga 540  
tggatcagcg cttacaatgg taacacaaac tatgcacaga agctccaggg cagagtcacc 600

## 4329191\_1

atgaccacag acacatccac gagcacagcc tacatggagc tgagcagcct gagatctgag 660  
gacaccgccca tgtattactg tgcgcgctac tgggggtttcg gtgtttctga tcgttgggggt 720  
caaggtactc tggtgaccgt ctcctcaact agtggccagg cgggccagca ccatcaccat 780  
caccatggcg catacccgta cgacgttccg gactacgctt ct 822

<210> 786

<211> 274

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 786

Leu Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr  
35 40 45

Ala Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Tyr His  
85 90 95

Asn Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg  
100 105 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu  
115 120 125

Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
130 135 140

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
145 150 155 160

Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu  
165 170 175

Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala  
180 185 190

## 4329191\_1

Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser  
 195 200 205

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Met  
 210 215 220

Tyr Tyr Cys Ala Arg Tyr Trp Gly Phe Gly Val Ser Asp Arg Trp Gly  
 225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
 245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
 260 265 270

Ala Ser

<210> 787  
 <211> 825  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 787  
 aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
 tcctgcaccg gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120  
 ccgggacagt cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcccc 180  
 gatcggttct ctgggtccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
 ctgaagactg aggacgaggc tgactactac tgtcagtctt atgacagcag caatctttgg 300  
 gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcggcggct ctggtggtgg tggatccctc gagatggccc agatgcagct ggtgcagtct 420  
 ggggctgagg tgaagaagcc tgggtcctcg gtgaaggtct cctgcaaggc ttctggaggc 480  
 accttcagca gctatgctat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg 540  
 atgggagggg tcatccctat ctttggtaca gcaaactacg cacagaagtt ccagggcaga 600  
 gtcacgatta ccgcggacga atccacgagc acagcctaca tggagctgag cagcctgaga 660  
 tctgaggaca ctgccgtgta ttactgtgcg cgctacaact actactacta cgattcttgg 720  
 ggtcaaggta ctctggtgac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
 catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

<210> 788  
 <211> 275  
 <212> PRT  
 <213> Artificial Sequence

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&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 788

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15

Thr Val Thr Ile Ser Cys Thr Gly Ser Ser Gly Ser Ile Ala Ser Asn  
 20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
 35 40 45

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
 85 90 95

Ser Asn Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Gln Met Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140

Lys Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly  
 145 150 155 160

Thr Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175

Gly Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn  
 180 185 190

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser  
 195 200 205

Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Ala Arg Tyr Asn Tyr Tyr Tyr Tyr Asp Ser Trp  
 225 230 235 240

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
 245 250 255



## 4329191\_1

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
 260 265 270

Tyr Ala Ser  
 275

<210> 789  
 <211> 816  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 789  
 gacatccaga tgaccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60  
 atcacttgcc gggcaagtca gagcattagc agctatttaa attggtatca gcagaaacca 120  
 gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180  
 aggttcagtg gcagtggatc tgggacagat ttactctca ccatcagcag tctgcaacct 240  
 gaagattttg caacttacta ctgtcaacag agttacagta cccattcac tttcggccct 300  
 gggaccaaag tggatatcaa acgttctaga ggtggtggtg gtagcggcgg cggcggctct 360  
 ggtggtggtg gatccctcga gatggccgag gtgcagctgg tgcagtctgg ggctgaggtg 420  
 aagaagcctg ggtcctcggt gaaggtctcc tgcaaggctt ctggaggcac cttcagcagc 480  
 tatgctatca gctgggtgcg acaggcccct ggacaagggc ttgagtggat gggagggatc 540  
 atccctatct ttggtacagc aaactacgca cagaagttcc agggcagagt cacgattacc 600  
 gcggacgaat ccacgagcac agcctacatg gagctgagca gcctgagatc tgaggacacc 660  
 gccatgtatt actgtgctcg ctactggggt tacgactctt acgatgaatg gggatcaagg 720  
 actctggtga ccgtctcctc aactagtggc caggccggcc agcaccatca ccatcaccat 780  
 ggcgcatacc cgtacgacgt tccggactac gcttct 816

<210> 790  
 <211> 272  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 790  
 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

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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 Phe  
 85 90 95  
 Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg Ser Arg Gly Gly  
 100 105 110  
 Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met  
 115 120 125  
 Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly  
 130 135 140  
 Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Ser  
 145 150 155 160  
 Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp  
 165 170 175  
 Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr Ala Gln Lys  
 180 185 190  
 Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala  
 195 200 205  
 Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr  
 210 215 220  
 Cys Ala Arg Tyr Trp Gly Tyr Asp Ser Tyr Asp Glu Trp Gly Gln Gly  
 225 230 235 240  
 Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His  
 245 250 255  
 His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 260 265 270

<210> 791

<211> 822

<212> DNA

<213> Artificial sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 791

## 4329191\_1

aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
tcctgcaccg gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120  
ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggctcct 180  
gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caattgggtg 300  
ttcggcggag ggaccaagct gaccgtccta gggtctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggccgagg tccagctggt gcagtctggg 420  
gctgaggtga agaagcctgg gtcctcgggtg aaggctctct gcaaggcttc tggaggcacc 480  
ttcagcagct atgctatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg 540  
ggagggatca tccctatctt tggtagcga aactacgcac agaagttcca gggcagagtc 600  
acgattaccg cggacgaatc cacgagcaca gcctacatgg agctgagcag cctgagatct 660  
gaggacacgg ccgtgtatta ctgtgcgcgc aacaaccatt actacaacga ttactggggt 720  
caagg tactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat 780  
caccatggcg catacccgta cgacgttcg gactacgctt ct 822

&lt;210&gt; 792

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 792

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

Thr Val Thr Ile Ser Cys Thr Gly Ser Ser Gly Ser Ile Ala Ser Asn  
20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
35 40 45

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

Ser Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser

## 4329191\_1

115

120

125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
 145 150 155 160

Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175

Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
 180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
 195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Arg Asn Asn His Tyr Tyr Asn Asp Tyr Trp Gly  
 225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
 245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
 260 265 270

Ala Ser

<210> 793

<211> 852

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 793

cagtctgtgt tgacgcagcc gccctcagt tctggggccc cagggcaggg ggtcaccatc 60

ccctgcactg ggagcagctc caacatcggg gcagggttatg atgtacactg gtaccagcag 120

cttccagga cagccccaa actcctcatc tatggtaaca acaatcggcc ctcaggggctc 180

cctgaccgct tctctggctc caggtctggc tcctcagcct ccctggccat cactgggctc 240

caggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtgatgtg 300

gtattcggcg gagggacaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360

ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtccagct ggtgcagtct 420

ggggctgagg tgaagaagcc tggggctaca gtgaaatct cctgcaaggt ttctggatac 480

## 4329191\_1

accttcaccg actactacat gcactgggtg caacaggccc ctggaaaagg gcttgagtgg 540  
atgggacttg ttgatcctga agatggtgaa acaatatacg cagagaagtt ccagggcaga 600  
gtcaccataa ccgcggacac gtctacagac acagcctaca tggagctgag cagcctgaga 660  
tctgaggaca cggccgtgta ttactgtgcg cgctactggt cttactcttt cgactacctg 720  
tacatgccgg aaggtaacga ttggtgggggt caaggtactc tggtgaccgt ctcctcaact 780  
agtggccagg ccggccagca ccatcaccat caccatggcg catacccgta cgacgttccg 840  
gactacgctt ct 852

&lt;210&gt; 794

&lt;211&gt; 284

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 794

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
1 5 10 15

Gly Val Thr Ile Pro Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly  
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu  
35 40 45

Leu Ile Tyr Gly Asn Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Phe  
50 55 60

Ser Gly Ser Arg Ser Gly Ser Ser Ala Ser Leu Ala Ile Thr Gly Leu  
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser  
85 90 95

Leu Ser Asp Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val  
130 135 140

Lys Lys Pro Gly Ala Thr Val Lys Ile Ser Cys Lys Val Ser Gly Tyr  
145 150 155 160

Thr Phe Thr Asp Tyr Tyr Met His Trp Val Gln Gln Ala Pro Gly Lys  
165 170 175

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Gly Leu Glu Trp Met Gly Leu Val Asp Pro Glu Asp Gly Glu Thr Ile  
 180 185 190

Tyr Ala Glu Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser  
 195 200 205

Thr Asp Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Ala Arg Tyr Trp Ser Tyr Ser Phe Asp Tyr Leu  
 225 230 235 240

Tyr Met Pro Glu Gly Asn Asp Trp Trp Gly Gln Gly Thr Leu Val Thr  
 245 250 255

Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His His His  
 260 265 270

Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

<210> 795

<211> 828

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 795

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagtctgtgt tgactcagcc accgcagcg tctgggaccc ccggacagag agtcaccatc   | 60  |
| tcttgttctg ggggcgtctc caacatcggg agtggtgctc taaattggta ccagcaactc  | 120 |
| ccaggaacgg cccccaaact cctcatctat agttacaatc agcggccctc aggggtctct  | 180 |
| gaccgattct ctggctccag gtctgccacc tcagcctccc tggccatcag tgggctccag  | 240 |
| tctgaggatg aggctgatta ttactgtgca acctgggatg atagtgtgaa tggttgggtg  | 300 |
| ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc  | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggcccagg tccagctggt acagtctgga  | 420 |
| gctgaggatga agaagcctgg ggattcagtg aaggctctct gcaagccttc tggttacaat | 480 |
| tttctcaact atggtatcaa ctgggtgcca caggcccctg gacaagggtc tgagtggatg  | 540 |
| ggatggatta gcattacac cggtaacaca aactatgcac agaagctgca gggcagagtc   | 600 |
| accttcacca cagacacatc cagagcaca gcctacatgg agatgaggag cctgagatct   | 660 |
| gacgacacgg ccgtgtatta ctgtgcgcgc gacctgtact actacgaagg tgttgattac  | 720 |
| tgggggtcaag gtactctggt gaccgtctcc tcaactagtg gccaggccgg ccagcaccat | 780 |
| caccatcacc atggcgcata cccgtacgac gttccggact acgcttct               | 828 |

4329191\_1

<210> 796  
 <211> 276  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 796  
 Gln Ser Val Leu Thr Gln Pro Pro Ala Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Ile Ser Cys Ser Gly Gly Val Ser Asn Ile Gly Ser Gly  
 20 25 30  
 Ala Leu Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Ile Tyr Ser Tyr Asn Gln Arg Pro Ser Gly Val Ser Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Arg Ser Ala Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
 65 70 75 80  
 Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Ser Val  
 85 90 95  
 Asn Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
 100 105 110  
 Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140  
 Lys Pro Gly Asp Ser Val Lys Val Ser Cys Lys Pro Ser Gly Tyr Asn  
 145 150 155 160  
 Phe Leu Asn Tyr Gly Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175  
 Leu Glu Trp Met Gly Trp Ile Ser Thr Tyr Thr Gly Asn Thr Asn Tyr  
 180 185 190  
 Ala Gln Lys Leu Gln Gly Arg Val Thr Phe Thr Thr Asp Thr Ser Thr  
 195 200 205  
 Ser Thr Ala Tyr Met Glu Met Arg Ser Leu Arg Ser Asp Asp Thr Ala  
 210 215 220  
 Val Tyr Tyr Cys Ala Arg Asp Leu Tyr Tyr Tyr Glu Gly Val Asp Tyr  
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Thr Ala Arg Val Thr Cys Gly Gly Asn Asn Ile Gly Ser Glu Ser Val  
 20 25 30  
 His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
 35 40 45  
 Tyr Asp Thr Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60  
 His Ser Gly Thr Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80  
 Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Arg Asp His  
 85 90 95  
 Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly  
 100 105 110  
 Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
 115 120 125  
 Met Ala Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro  
 130 135 140  
 Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser  
 145 150 155 160  
 Ser Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu  
 165 170 175  
 Trp Val Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp  
 180 185 190  
 Ser Val Lys Gly Leu Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr  
 195 200 205  
 Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr  
 210 215 220  
 Tyr Cys Ala Arg Ser Tyr Phe Thr Ser Gly Phe Tyr Asp Tyr Trp Gly  
 225 230 235 240  
 Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
 245 250 255  
 His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
 260 265 270  
 Ala Ser

## 4329191\_1

<210> 799  
 <211> 825  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 799  
 cagtctgtcg tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60  
 tcctgcactg ggagcagttc caacatcggg gcaggttatg atgtaaattg gtatcagcag 120  
 tttccaggaa cagcccccaa actcctcatc tatggtaaca gcaatcggcc ctacaggggtc 180  
 cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc 240  
 caggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtggctct 300  
 tatgtcttcg gaactgggac caaggtcacc gtcctaggtt ctagagggtg tgggtggtagc 360  
 ggcggcggcg gctctggtgg tgggtgatcc ctcgagatgg cccagatgca gctggtgcag 420  
 tctggggctg aggtgaagaa gcctggggcc tcagtgaagg tctcctgcaa ggcttccgga 480  
 tacaccctca ctgaattatc catgcactgg gtgcgacagg ctcttggaag agggcttgag 540  
 tggatgggag gttttgatcc tgaagatggt gaaacaatct acgcacagaa gttccagggc 600  
 agagtcacca tgaccgagga cacatctaca gacacagcct acatggagct gagcagcctg 660  
 agatctgagg aactgccgt gtattactgt gcgcatgt cttctatgta ctacgattgg 720  
 ggtcaaggta ctctggtgac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
 catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

<210> 800  
 <211> 275  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 800  
 Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly  
 20 25 30  
 Tyr Asp Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu  
 35 40 45  
 Leu Ile Tyr Gly Asn Ser Asn Arg Pro Ser Gly Val Pro Asp Arg Phe  
 50 55 60  
 Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu  
 65 70 75 80

## 4329191\_1

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser  
85 90 95

Leu Ser Gly Ser Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu  
100 105 110

Gly Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly  
115 120 125

Gly Ser Leu Glu Met Ala Gln Met Gln Leu Val Gln Ser Gly Ala Glu  
130 135 140

Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly  
145 150 155 160

Tyr Thr Leu Thr Glu Leu Ser Met His Trp Val Arg Gln Ala Pro Gly  
165 170 175

Lys Gly Leu Glu Trp Met Gly Gly Phe Asp Pro Glu Asp Gly Glu Thr  
180 185 190

Ile Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Glu Asp Thr  
195 200 205

Ser Thr Asp Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp  
210 215 220

Thr Ala Val Tyr Tyr Cys Ala Arg Met Ser Ser Met Tyr Tyr Asp Trp  
225 230 235 240

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
245 250 255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
260 265 270

Tyr Ala Ser  
275

<210> 801

<211> 807

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 801

tcctatgtgc tgactcagcc accctcagtgc tcagtggccc caggaaagac ggccaggatt 60

acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120

caggcccctg tgctggtcat ctattatgat agcgaccggc cctcagggat ccctgagcga 180

## 4329191\_1

```

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggg cgaagccggg      240
gatgaggccg actattactg tcaggtgtgg gatagtagta gtgattatgt cttcggaact      300
gggaccaagg tcaccgtcct aggttctaga ggtggtggtg gtagcggcgg cggcggctct      360
ggtggtggtg gatccctcga gatggccgag gtgcagctgg tggagactgg gggaggcttg      420
gtcaagcctg gagggtcctt gagactctcc tgtgcagcct ctggattcac cgtcagtgc      480
tactacatga gctggatccg ccaggctcca gggaagggcc tggagtggat ttcatacatt      540
agtggtagtg gtaatagcat atactacgca gactctgtga agggccgatt caccatctcc      600
agggacaacg ccaagaactc actggatctg caaatgacca gcctgagagc cgaggacag      660
gccgtatatt actgtgcgcg ctctactaaa ttcgattact ggggtcaagg tactctggtg      720
accgtctcct caactagtgg ccaggccggc cagcaccatc accatcacca tggcgcatag      780
ccgtacgacg ttccggacta cgcttct      807

```

&lt;210&gt; 802

&lt;211&gt; 269

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 802

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
35 40 45

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp Tyr  
85 90 95

Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg Gly Gly  
100 105 110

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met  
115 120 125

Ala Glu Val Gln Leu Val Glu Thr Gly Gly Gly Leu Val Lys Pro Gly  
130 135 140

## 4329191\_1

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Val Ser Asp  
145 150 155 160

Tyr Tyr Met Ser Trp Ile Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp  
165 170 175

Ile Ser Tyr Ile Ser Gly Ser Gly Asn Ser Ile Tyr Tyr Ala Asp Ser  
180 185 190

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu  
195 200 205

Asp Leu Gln Met Thr Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr  
210 215 220

Cys Ala Arg Ser Thr Lys Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val  
225 230 235 240

Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His His  
245 250 255

His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
260 265

<210> 803

<211> 828

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 803

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ctgcctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc  | 60  |
| tcttgttctg gaagcagctc caacgtcgga agttacactg taaactggta ccggcaactc  | 120 |
| ccaggaacgg cccccacact cctcatctat aataataatc agcggccctc aggggtccct  | 180 |
| gaccgattct ctgactccaa gtctggcacc tcggcctccc tgaccattag tgggctccag  | 240 |
| cctgagggatg aggctgatta ttattgtgca gcatgggatg acaggctggg tggttatgtc | 300 |
| ttcggaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc  | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt gcagtctgga  | 420 |
| gcagaggtga aaaagccggg ggagtctctg aagatctcct gtaagggttc tggatacagc  | 480 |
| ttaccaact actggatcgg ctgggtgctg cagatgcccg ggaaaggcct ggagtggatg   | 540 |
| gggatcatct atcctggtga ctctgatacc agatacagcc cgtccttcca aggccaggtc  | 600 |
| accatctcag ccgacaagtc catcagcacc gcctacctac agtggagcag cctgaaggcc  | 660 |
| tcggacaccg ccatgtatta ctgtgcgcgc tctactgggtt cttctcatat gtctgatgaa | 720 |

## 4329191\_1

tggggtcaag gtactctggg gaccgtctcc tcaactagtg gccaggccgg ccagcaccat 780  
 caccatcacc atggcgcata cccgtacgac gttccggact acgcttct 828

<210> 804  
 <211> 276  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 804  
 Leu Pro Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Val Gly Ser Tyr  
 20 25 30

Thr Val Asn Trp Tyr Arg Gln Leu Pro Gly Thr Ala Pro Thr Leu Leu  
 35 40 45

Ile Tyr Asn Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Asp Ser Lys Ser Gly Thr Ser Ala Ser Leu Thr Ile Ser Gly Leu Gln  
 65 70 75 80

Pro Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Arg Leu  
 85 90 95

Gly Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140

Lys Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser  
 145 150 155 160

Phe Thr Asn Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly  
 165 170 175

Leu Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr  
 180 185 190

Ser Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile  
 195 200 205

Ser Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala  
 Page 390

210

215

Met Tyr Tyr Cys Ala Arg Ser Thr Gly Ser Ser His Met Ser Asp Glu  
225 230 235 240

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala  
245 250 255

Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro  
260 265 270

Asp Tyr Ala Ser  
275

&lt;210&gt; 805

&lt;211&gt; 819

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 805

aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
tcctgcaccg gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc 120  
ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tgggggtcct 180  
gatcggttct ctgggtccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caatcattgg 300  
gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctggtggtgg tggatccctc gagatggccc aagtgcagct acagcagtgg 420  
ggcgcaggac tgttgaagcc ttcggagacc ctgtccctca cctgcgctgt ctatggtggg 480  
tccttcagtg gttactactg gagctggatc cgccagcccc caggggaagg gctggagtgg 540  
attggggaga tcatcatag tggaaggtcc aactacaacc cgtccctcaa gagtcgagtc 600  
accatatcag tagacacgtc caagaaccag ttctccctga agctgagctc tgtgaccgcc 660  
gcggacacgg ccgtgtatta ctgtgcgcgc tcttctatca tgtctgatta ctgggggtcaa 720  
ggtactctgg tgaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac 780  
catggcgcac acccgtagca cgttccggac tacgcttct 819

&lt;210&gt; 806

&lt;211&gt; 273

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 806

## 4329191\_1

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15  
 Thr Val Thr Ile Ser Cys Thr Gly Ser Ser Gly Ser Ile Ala Ser Asn  
 20 25 30  
 Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
 35 40 45  
 Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80  
 Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
 85 90 95  
 Ser Asn His Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110  
 Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125  
 Ser Leu Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu  
 130 135 140  
 Leu Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly  
 145 150 155 160  
 Ser Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys  
 165 170 175  
 Gly Leu Glu Trp Ile Gly Glu Ile Thr His Ser Gly Arg Ser Asn Tyr  
 180 185 190  
 Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys  
 195 200 205  
 Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala  
 210 215 220  
 Val Tyr Tyr Cys Ala Arg Ser Ser Ile Met Ser Asp Tyr Trp Gly Gln  
 225 230 235 240  
 Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
 245 250 255  
 His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
 260 265 270



Ser

<210> 807  
 <211> 828  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 807  
 cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60  
 tcctgcactg ggagcacctc caacatcggg gcaggttatg atgtacactg gtaccagcag 120  
 cttccaggaa cagcccccaa actcctcatc aacaataaca ggaatcggcc ctcagggggtc 180  
 cctgaccgat tctctggctc caagtctggc acgtcagcca ccctgggcat caccggactc 240  
 cagactgggg acgaggccga ttattactgc ggaacatggg atggcagcct gactggtgca 300  
 gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtccagct ggtgcagtct 420  
 ggggctgagg tgaagaagcc tgggtcctcg gtgaaggtct catgcaaggc ttctggaggc 480  
 accttcagca gctatgctat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg 540  
 atgggagggg tcatccctat ctttggtaca gcaaactacg cacagaagtt ccagggcaga 600  
 gtcacgatta ccgcggacga atccacgagc acagcctaca tggagctgag cagcctgaga 660  
 tctgaggaca cggccgtgta ttactgtgcg cgcggttctg ctctggacca ttacgatcgt 720  
 tggggctcaag gtactctggt gaccgtctcc tcaactagtg gccaggccgg ccagcaccat 780  
 caccatcacc atggcgcata cccgtacgac gttccggact acgcttct 828

<210> 808  
 <211> 276  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 808  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Ile Ser Cys Thr Gly Ser Thr Ser Asn Ile Gly Ala Gly  
 20 25 30  
 Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu  
 35 40 45  
 Leu Ile Asn Asn Asn Arg Asn Arg Pro Ser Gly Val Pro Asp Arg Phe  
 50 55 60

## 4329191\_1

Ser Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu  
65 70 75 80

Gln Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Gly Ser  
85 90 95

Leu Thr Gly Ala Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val  
130 135 140

Lys Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly  
145 150 155 160

Thr Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
165 170 175

Gly Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn  
180 185 190

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser  
195 200 205

Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
210 215 220

Ala Val Tyr Tyr Cys Ala Arg Gly Ser Ala Leu Asp His Tyr Asp Arg  
225 230 235 240

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala  
245 250 255

Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro  
260 265 270

Asp Tyr Ala Ser  
275

<210> 809

<211> 822

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 809

aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc

60

## 4329191\_1

```

tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc      120
ccggggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tgggggtccct      180
gatcggtttct ctgggtccat cgacagctcc tccaactctg cctccctcac catctctgga      240
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcac caattgggtg      300
ttcggcgggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc      360
ggcgggtctg gtggtggtgg atccctcgag atggcccagg tgcagctggt gcagtctggg      420
gctgagggtga agaagcctgg gtcctcggtg aaggtctcct gcaaggcttc tggaggcacc      480
ttcagcagct atgctatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg      540
ggaggggatca tccctatctt tggtagcga aactacgcac agaagttcca gggcagagtc      600
acgattaccg cggacgaatc cagcagcaca gcctacatgg agctgagcag cctgagatct      660
gaggacactg ccgtgtatta ctgtgcgcgc tacaactact acttcaacga ttactggggt      720
caaggtactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat      780
caccatggcg catacccgta cgacgttccg gactacgctt ct                        822

```

&lt;210&gt; 810

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 810

```

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys
1           5           10          15

```

```

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn
          20          25          30

```

```

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val
          35          40          45

```

```

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
          50          55          60

```

```

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly
65          70          75          80

```

```

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser
          85          90          95

```

```

Thr Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser
          100          105          110

```

```

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
          115          120          125

```

## 4329191\_1

Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
145 150 155 160

Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Tyr Asn Tyr Tyr Phe Asn Asp Tyr Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 811

<211> 819

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 811

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| tcctatgtgc tgactcagcc accctcagtg tcagtggccc caggaaagac ggccaggatt  | 60  |
| acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc  | 120 |
| caggcccctg tgctggatcat ctattatgat agcgaccggc cctcagggat ccctgagcga | 180 |
| ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg  | 240 |
| gatgaggccg actattactg tcagggtgtg gatagtagta gtgatcatcc ttatgtcttc  | 300 |
| ggaactggga ccaaggtcac cgtcctaggt tctagaggtg gtggtggtag cggcggcggc  | 360 |
| ggctctggtg gtggtggatc cctcgagatg gccagatgc agctggtgca gtctggagct   | 420 |
| gaggtgaaga agcctggggc ctcagtgaag gtctcctgca aggcttctgg ttacaccttt  | 480 |

## 4329191\_1

accagctatg gtatcagctg ggtgcgacag gccctggac aagggttga gtggatggga 540  
 tggatcagcg cttacaatgg taacacaaac tatgcacaga agctccaggg cagagtcacc 600  
 atgaccacag acacatccac gagcacagcc tacatggagc tgaggagcct gagatctgac 660  
 gacactgccg tgtattactg tgcgcgctct atgttcggtg ctcattgattc ttgggggtcaa 720  
 ggtactctgg tgaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac 780  
 catggcgcat acccgtaga cgttcggac tacgcttct 819

&lt;210&gt; 812

&lt;211&gt; 273

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 812

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val  
 20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
 35 40 45

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
 85 90 95

Pro Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg  
 100 105 110

Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu  
 115 120 125

Glu Met Ala Gln Met Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
 130 135 140

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
 145 150 155 160

Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu  
 165 170 175

Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala  
 Page 397

180

185

190

Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser  
           195                                  200                                  205

Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val  
           210                                  215                                  220

Tyr Tyr Cys Ala Arg Ser Met Phe Gly Ala His Asp Ser Trp Gly Gln  
           225                                  230                                  235                                  240

Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
                                   245                                  250                                  255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
                                   260                                  265                                  270

Ser

<210> 813

<211> 828

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 813

```

cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc      60
tcctgcactg ggagcagctc caacatcggg gcagggttttg atgtacactg gtaccagcta      120
cttccaggaa cagcccccaa actcctcatc tatgctaaca gcaatcggcc ctcagggggtc      180
cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc      240
ctggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtgggtgtg      300
gtattcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc      360
ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtgcagct ggtgcaatct      420
ggggctgagg tgaagaagcc tgggtcctcg gtgaaggtct cctgcaaggc ttctggaggc      480
accttcagca gctatgctat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg      540
atgggaggga tcatccctat ctttggtaca gcaaactacg cacagaagtt ccagggcaga      600
gtcacgatta ccgcggacga atccacgagc acagcctaca tggagctgag cagcctgaga      660
tctgaggaca ctgccgtgta ttactgtgcg cgcggtgctt ctttcgaccg tcatgataac      720
tggggtcaag gtactctggt gaccgtctcc tcaactagtg gccaggccgg ccagcaccat      780
caccatcacc atggcgcata cccgtacgac gttccggact acgcttct      828

```

<210> 814

<211> 276

## 4329191\_1

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 814

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
 1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly  
 20 25 30

Phe Asp Val His Trp Tyr Gln Leu Leu Pro Gly Thr Ala Pro Lys Leu  
 35 40 45

Leu Ile Tyr Ala Asn Ser Asn Arg Pro Ser Gly Val Pro Asp Arg Phe  
 50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu  
 65 70 75 80

Leu Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser  
 85 90 95

Leu Ser Gly Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140

Lys Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly  
 145 150 155 160

Thr Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175

Gly Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn  
 180 185 190

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser  
 195 200 205

Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Ala Arg Gly Ala Ser Phe Asp Arg His Asp Asn  
 225 230 235 240

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Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala  
 245 250 255

Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro  
 260 265 270

Asp Tyr Ala Ser  
 275

<210> 815

<211> 822

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 815

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aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc      60
tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc      120
ccgggacagtt cccccaccac tgtgatctat gaggataacc aaagaccctc tgggggtccct      180
gatcggttct ctgggtccat cgacagctcc tccaactctg cctccctcac catctctgga      240
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caattgggtg      300
ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc      360
ggcggctctg gtggtggtgg atccctcgag atggccgagg tccagctggt gcagtctggg      420
gctgaggtga agaagcctgg gtcctcggtg aaggtctcct gcaaggcttc tggaggcacc      480
ttcagcagct atgctatcag ctgggtgcca caggcccctg gacaagggtc tgagtggatg      540
ggagggatca tccctatctt tggtagcaga aactacgcac agaagttcca gggcagagtc      600
acgattaccg cggacgaatc cagagcaca gcctacatgg agctgagcag cctgagatct      660
gaggacacgg ccgtgtatta ctgtgcgcgc tctaactact actacaacga ttactggggg      720
caaggtactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat      780
caccatggcg catacccgta cgacgttccg gactacgctt ct                        822
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<210> 816

<211> 274

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 816

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
 20 25 30



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Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ser Pro Thr Thr Val  
 35 40 45  
 Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80  
 Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
 85 90 95  
 Ser Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
 100 105 110  
 Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140  
 Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
 145 150 155 160  
 Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175  
 Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
 180 185 190  
 Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
 195 200 205  
 Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 210 215 220  
 Val Tyr Tyr Cys Ala Arg Ser Asn Tyr Tyr Tyr Asn Asp Tyr Trp Gly  
 225 230 235 240  
 Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
 245 250 255  
 His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
 260 265 270  
 Ala Ser

<210> 817  
 <211> 822  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 817

```

cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc      60
tcctgcactg ggagcagctc caacatcggg gcaggttatg atgtacactg gtaccagcag      120
cttccaggaa cagcccccaa actcctcatc tatggtaaca gcaatcggcc ctcaggggctc      180
cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc      240
caggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtggttat      300
gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc      360
ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtgcagct ggtgcagtct      420
ggggctgagg tgaagaagcc tggggcctca gtgaaggctt cctgcaaggt ttccggatac      480
accctcactg aattatccat gcactgggtg cgacaggctc ctggaaaagg gcttgagtgg      540
atgggaggtt ttgatcctga agatggtgaa acaatctacg cacagaagtt ccagggcaga      600
gtcaccatga ccgaggacac atctacagac acagcctaca tggagctgag cagcctgaga      660
tctgaggaca ctgccgtgta ttactgtgcg cgctactctg gtgtttacta cgattgggggt      720
caaggtactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat      780
caccatggcg catacccgtg cgacgttccg gactacgctt ct                        822

```

<210> 818

<211> 274

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 818

```

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
1      5      10     15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly
      20     25     30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
      35     40     45

Leu Ile Tyr Gly Asn Ser Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
      50     55     60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65     70     75     80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
      85     90     95

```

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Leu Ser Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
130 135 140

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Val Ser Gly Tyr  
145 150 155 160

Thr Leu Thr Glu Leu Ser Met His Trp Val Arg Gln Ala Pro Gly Lys  
165 170 175

Gly Leu Glu Trp Met Gly Gly Phe Asp Pro Glu Asp Gly Glu Thr Ile  
180 185 190

Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Glu Asp Thr Ser  
195 200 205

Thr Asp Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr  
210 215 220

Ala Val Tyr Tyr Cys Ala Arg Tyr Ser Gly Val Tyr Tyr Asp Trp Gly  
225 230 235 240

Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
245 250 255

His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
260 265 270

Ala Ser

<210> 819

<211> 822

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 819

aattttatgc tgactcagcc ccactctgtg tcggggtctc cggggaagac ggtaaccatc 60

tcctgcaccg gcagcagtgg cagcattgcc gacaactttg tgcagtggta ccagcagcgc 120

ccgggcggtg tccccaccac tgtgatcttt aatgatgacg aaagaccctc tggcgtcctt 180

gatcggttct ctggctccat cgacacctcc tccaattctg cctccctcac catctctgga 240

## 4329191\_1

ctgaagactg aggacgaggc tgactactac tgtcagtctt atgataataa taatcgaggg 300  
gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtccagct ggtgcagtct 420  
ggggctgagg tgaagaagcc tgggtcctcg gtgaaggtct cctgcaaggc ttctggaggc 480  
accttcagca gctatgctat cagctgggtg cgacaggccc ctggacaagg gcttgagtgg 540  
atgggatgga tgaaccctaa cagtggtaac acaggctatg cacagaagtt ccagggcaga 600  
gtcaccatga ccaggaacac ctccataagc acagcctaca tggagctgag caacctgaga 660  
tctgaggaca cggccgtgta ttactgtgcg cgctactact cttacggtta cgattggggg 720  
caaggtactc tggtgaccgt ctcctcaact agtggccagg ccggccagca ccatcaccat 780  
caccatggcg catacccgta cgacgttccg gactacgctt ct 822

&lt;210&gt; 820

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 820

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Gly Ser Pro Gly Lys  
1 5 10 15

Thr Val Thr Ile Ser Cys Thr Gly Ser Ser Gly Ser Ile Ala Asp Asn  
20 25 30

Phe Val Gln Trp Tyr Gln Gln Arg Pro Gly Gly Val Pro Thr Thr Val  
35 40 45

Ile Phe Asn Asp Asp Glu Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Ile Asp Thr Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Asn  
85 90 95

Asn Asn Arg Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
130 135 140

Lys Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly  
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145                      150                      155                      160  
 Thr Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
                                  165                      170                      175  
 Gly Leu Glu Trp Met Gly Trp Met Asn Pro Asn Ser Gly Asn Thr Gly  
                                  180                      185                      190  
 Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Arg Asn Thr Ser  
                                  195                      200                      205  
 Ile Ser Thr Ala Tyr Met Glu Leu Ser Asn Leu Arg Ser Glu Asp Thr  
                                  210                      215                      220  
 Ala Val Tyr Tyr Cys Ala Arg Tyr Tyr Ser Tyr Gly Tyr Asp Trp Gly  
                                  225                      230                      235                      240  
 Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln  
                                  245                      250                      255  
 His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr  
                                  260                      265                      270  
 Ala Ser

&lt;210&gt; 821

&lt;211&gt; 840

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 821

cagtctgtcg tgacgcagcc gccctcagtg tctggggccc cagggcagac ggtcaccatc 60

tcctgcactg ggggcagctc caacatcggg acagggttatt ttgtaaattg gtaccagcag 120

gttccaggaa aagcccccaa actcctcatc ctgggtaaca ataatcggcc ctcgggggctc 180

cctgaccgac tctccggctc cacgtccggc acctcagcct ccctggccat cactgggctc 240

caggctgagg atgagggtac ttattactgc cagtcctatg acagcagcct gagtggttat 300

gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360

ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtacagct gcagcagtca 420

gggccaggac tgggtgaagcc ctcgcagacc ctctcactca cctgtggcat ctccggggac 480

agtgtctcta ccaacagtgt tgcttggcac tggatcaggc agtccccatc gagaggcctt 540

gagtggctgg gaaggacata ctacaggtcc aagtgggtcta atgactatgg agtatctgtg 600

aaaagtcgaa tcaccatcat cccagacaca tccaagaacc agttctccct gcagctgaac 660

tctgtgactc ccgaggacac ggctgtgtat tactgtgcgc gctcttcttc ttggtaccag 720

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atcttcgatt actggggtca aggtactctg gtgaccgtct cctcaactag tggccaggcc 780  
ggccagcacc atcaccatca ccatggcgca taccggtacg acgttcgga ctacgcttct 840

<210> 822  
<211> 280  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 822  
Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
1 5 10 15  
Thr Val Thr Ile Ser Cys Thr Gly Gly Ser Ser Asn Ile Gly Thr Gly  
20 25 30  
Tyr Phe Val Asn Trp Tyr Gln Gln Val Pro Gly Lys Ala Pro Lys Leu  
35 40 45  
Leu Ile Leu Gly Asn Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Leu  
50 55 60  
Ser Gly Ser Thr Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu  
65 70 75 80  
Gln Ala Glu Asp Glu Gly Thr Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser  
85 90 95  
Leu Ser Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
100 105 110  
Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125  
Ser Leu Glu Met Ala Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu  
130 135 140  
Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Gly Ile Ser Gly Asp  
145 150 155 160  
Ser Val Ser Thr Asn Ser Val Ala Trp His Trp Ile Arg Gln Ser Pro  
165 170 175  
Ser Arg Gly Leu Glu Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp  
180 185 190  
Ser Asn Asp Tyr Gly Val Ser Val Lys Ser Arg Ile Thr Ile Ile Pro  
195 200 205

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Asp Thr Ser Lys Asn Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro  
 210 215 220

Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Ser Ser Trp Tyr Gln  
 225 230 235 240

Ile Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr  
 245 250 255

Ser Gly Gln Ala Gly Gln His His His His His Gly Ala Tyr Pro  
 260 265 270

Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

<210> 823

<211> 837

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 823

```
aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc      60
tcctgcaccg gcagcagcga cagcatagcc aacaactatg ttcagtggta ccagcagcgc      120
ccgggacgtg cccccacaa tgtgatctac gaagatgtcc aaagaccctc tggggtcctt      180
gatcggttct ctgggtccat cgacagctcc tccaactctg cctccctcac catctctgga      240
ctgaagactg aggacgaggc tgtctactat tgtcagtctt atcatagcga caatcgttgg      300
gtgttcggcg gcgggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc      360
ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtgcagct ggtggagtct      420
gggggaggct tggtagcggc tgggggggtcc ctgagactct cctgtgcagc ctctggattc      480
accttttagca gctatgcat gagctgggtc cgccaggctc cagggaaggg gctggagtgg      540
gtctcagcta ttagtggtag tggtagtagc acatactacg cagactccgt gaagggccgg      600
ttcaccatct ccagagacaa ttccaagaac acgctgtatc tgcaaatgaa cagcctgaga      660
gccgaggaca cggccgtata ttactgtgcg cgctctggtg cttactggga ctactctgtt      720
tacgatgaat ggggtcaagg tactctggtg accgtctcct caactagtgg ccaggccggc      780
cagcaccatc accatcacca tggcgcatac ccgtacgacg ttccggacta cgcttct      837
```

<210> 824

<211> 279

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

## 4329191\_1

&lt;400&gt; 824

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15  
 Thr Val Thr Ile Ser Cys Thr Gly Ser Ser Asp Ser Ile Ala Asn Asn  
 20 25 30  
 Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Asn Val  
 35 40 45  
 Ile Tyr Glu Asp Val Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80  
 Leu Lys Thr Glu Asp Glu Ala Val Tyr Tyr Cys Gln Ser Tyr His Ser  
 85 90 95  
 Asp Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 100 105 110  
 Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125  
 Ser Leu Glu Met Ala Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu  
 130 135 140  
 Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe  
 145 150 155 160  
 Thr Phe Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys  
 165 170 175  
 Gly Leu Glu Trp Val Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr  
 180 185 190  
 Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser  
 195 200 205  
 Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr  
 210 215 220  
 Ala Val Tyr Tyr Cys Ala Arg Ser Gly Ala Tyr Trp Asp Tyr Ser Val  
 225 230 235 240  
 Tyr Asp Glu Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser  
 245 250 255  
 Gly Gln Ala Gly Gln His His His His His Gly Ala Tyr Pro Tyr  
 260 265 270



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Asp Val Pro Asp Tyr Ala Ser  
275

<210> 825  
<211> 819  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 825  
cagtctgtgt tgactcagcc accctcagt tccgtgtccc caggacagac agccaccatc 60  
gcctgttctg gacataaatt gggggataaa tatgcttcct ggtatcagca gaagtcgggc 120  
cagtcccctg tgttgatcat ctatcaggat aataagcggc cctcagggat tcctgagcga 180  
ttctctgggt ccaactctgg gaacacagcc actctgacca tcagcgggac ccaggctctg 240  
gatgaggctg actattattg tcaggcgtgg gacagtagta cttatgtggc attcggcgga 300  
gggaccaagc tgaccgtcct aggttctaga ggtggtggtg gtagcggcgg cggcggctct 360  
ggtggtggtg gatccctcga gatggcccag gtgcagctgc aggagtccgg ccaggactg 420  
gtgaagcctt cggagaccct gtccctcacc tgcgttgtct ctggtggctc catcagcagt 480  
agtaactggt ggagctgggt ccgccagccc ccagggaagg ggctggagtg gattggggaa 540  
atctatcata gtgggagccc caactacaac ccatccctca agagtcgagt caccatatca 600  
gtagacaagt ccaagaacca gttctccctg aagctgagct ctgtgaccgc cgcggacacg 660  
gccgtgtatt actgtgcgcg catgactact catactttcg gttacgatgc ttgggggtcaa 720  
ggtactctgg tgaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac 780  
catggcgcgt acccgtacga cgttccggac tacgcttct 819

<210> 826  
<211> 273  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 826  
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
1 5 10 15  
Thr Ala Thr Ile Ala Cys Ser Gly His Lys Leu Gly Asp Lys Tyr Ala  
20 25 30  
Ser Trp Tyr Gln Gln Lys Ser Gly Gln Ser Pro Val Leu Ile Ile Tyr  
35 40 45  
Gln Asp Asn Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60

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Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Leu  
 65 70 75 80  
 Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Ser Ser Thr Tyr Val  
 85 90 95  
 Ala Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly Gly  
 100 105 110  
 Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met  
 115 120 125  
 Ala Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser  
 130 135 140  
 Glu Thr Leu Ser Leu Thr Cys Val Val Ser Gly Gly Ser Ile Ser Ser  
 145 150 155 160  
 Ser Asn Trp Trp Ser Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu  
 165 170 175  
 Trp Ile Gly Glu Ile Tyr His Ser Gly Ser Pro Asn Tyr Asn Pro Ser  
 180 185 190  
 Leu Lys Ser Arg Val Thr Ile Ser Val Asp Lys Ser Lys Asn Gln Phe  
 195 200 205  
 Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr  
 210 215 220  
 Cys Ala Arg Met Thr Thr His Thr Phe Gly Tyr Asp Ala Trp Gly Gln  
 225 230 235 240  
 Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
 245 250 255  
 His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
 260 265 270

Ser

<210> 827

<211> 810

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 827

## 4329191\_1

cagcctgtgc tgactcagcc accctcagtg tcagtggccc caggaaagac ggccacgatt 60  
 acttgtgggg gaaacaacat tggaagtga agtgtgcact ggtaccacca gaagccaggc 120  
 cagggccctg tgttggcat ctatgatgat gccggccggc cctcagggat ccctgagcga 180  
 ttactggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
 gatgaggccg actattactg tcagggtgtg gacagaaata gtgctcagtt tgtcttcgga 300  
 cctgggacca aggtcaccgt cctaggttct agaggtggtg gtggtagcgg cggcggcggc 360  
 tctggtggtg gtggatccct cgagatggcc gaggtccagc tgggtgcagtc tggagctgag 420  
 gtgaagaagc ctggggcctc agtgaaggtc tcctgcaagg cttctggtta cacctttacc 480  
 agctatggtg tcagctgggt gcgacaggcc cctggacaag ggcttgagtg gatgggatgg 540  
 atcagcgctt acaatggtaa cacaaactat gcacagaagc tccagggcag agtcaccatg 600  
 accacagaca catccacgag cacagcctac atggagctga ggagcctgag atctgacgac 660  
 acggccgtgt attactgtgc gcgcggtgtt catctggatt ggtgggggtca aggtactctg 720  
 gtgaccgtct cctcaactag tggccaggcc ggccagcacc atcaccatca ccatggcgca 780  
 tacccgtagc acgttccgga ctacgcttct 810

&lt;210&gt; 828

&lt;211&gt; 270

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 828

Gln Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15

Thr Ala Thr Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Glu Ser Val  
 20 25 30

His Trp Tyr His Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr  
 35 40 45

Asp Asp Ala Gly Arg Pro Ser Gly Ile Pro Glu Arg Phe Thr Gly Ser  
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Arg Asn Ser Ala Gln  
 85 90 95

Phe Val Phe Gly Pro Gly Thr Lys Val Thr Val Leu Gly Ser Arg Gly  
 100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
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115

120

125

Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro  
 130 135 140

Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr  
 145 150 155 160

Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu  
 165 170 175

Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln  
 180 185 190

Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr  
 195 200 205

Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr  
 210 215 220

Tyr Cys Ala Arg Gly Val His Leu Asp Trp Trp Gly Gln Gly Thr Leu  
 225 230 235 240

Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His  
 245 250 255

His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 260 265 270

&lt;210&gt; 829

&lt;211&gt; 846

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 829

cagtctgtcg tgacgcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60

tcttgttctg gaagcagctc caacatcgga agtaattatg tatactggta ccagcagctc 120

ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct 180

gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccgg 240

tccgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgag tggttatgtc 300

ttcggaactg ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc 360

ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctaca gcagtggggc 420

gcaggactgt tgaagccttc ggagaccctg tccctcacct gcgctgtcta tgggtgggtcc 480

ttcagtgggtt actactggag ctggatccgc cagccccag ggaaggggct ggagtggatt 540

ggggaaatca atcatagtgg aagcaccaac tacaaccgt ccctcaagag tcgagtcacc 600

## 4329191\_1

atatcagtag acacgtccaa gaaccagttc tccctgaagc tgagctctgt gaccgccgcg 660  
 gacacggccg tgtattactg tgcgcgcctg tacgaagggtg gttaccatgg ttgggggttct 720  
 tggctgtctt ctgattcttg gggtaaggt actctggtga ccgtctcctc aactagtggc 780  
 caggccggcc agcaccatca ccatcaccat ggcgcatacc cgtacgacgt tccggactac 840  
 gcttct 846

<210> 830

<211> 282

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 830

Gln Ser Val Val Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
 20 25 30

Tyr Val Tyr Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg  
 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 85 90 95

Ser Gly Tyr Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu  
 130 135 140

Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser  
 145 150 155 160

Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly  
 165 170 175

Leu Glu Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn  
 180 185 190

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Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn  
 195 200 205

Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val  
 210 215 220

Tyr Tyr Cys Ala Arg Leu Tyr Glu Gly Gly Tyr His Gly Trp Gly Ser  
 225 230 235 240

Trp Leu Ser Ser Asp Ser Trp Gly Gln Gly Thr Leu Val Thr Val Ser  
 245 250 255

Ser Thr Ser Gly Gln Ala Gly Gln His His His His His His Gly Ala  
 260 265 270

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

<210> 831

<211> 825

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 831

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| cagtctgtgt tgactcagcc accctcagcg tctgggaccc cgggagag ggtcaccatc   | 60  |
| tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc | 120 |
| ccaggaacgg ccccaaact cctcatctat agtaataatc agcgccctc aggggtccct   | 180 |
| gaccgattct ctggctcaa gtctggcacc tcagcctccc tggccatcag tgggctccag  | 240 |
| tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttattgg | 300 |
| gtgttcggcg gagggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc | 360 |
| ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtgcagct acagcagtgg | 420 |
| ggcgaggac tgttgaagcc ttcggagacc ctgtccctca cctgcgctgt ctatggtggg  | 480 |
| tccttcagtg gttactactg gagctggatc cgccagcccc caggaagg gctggagtgg   | 540 |
| attggggaaa tcaatcatag tggaagcacc aactacaacc cgtccctcaa gagtcgagtc | 600 |
| accatatcag tagacacgtc caagaaccag ttctccctga agctgagctc tgtgaccgcc | 660 |
| gcggacacgg ctgtgtatta ctgtgcgcgc gaaggggcat ttgatgcttt tgatatctgg | 720 |
| ggccaaggga caatggtcac cgtctcttca actagtggcc aggccggcca gcaccatcac | 780 |
| catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct                 | 825 |

<210> 832

<211> 275

<212> PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 832

Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
20 25 30Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
85 90 95Asn Gly Tyr Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
100 105 110Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125Ser Leu Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu  
130 135 140Leu Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly  
145 150 155 160Ser Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys  
165 170 175Gly Leu Glu Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr  
180 185 190Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys  
195 200 205Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala  
210 215 220Val Tyr Tyr Cys Ala Arg Glu Gly Ala Phe Asp Ala Phe Asp Ile Trp  
225 230 235 240Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
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Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
260 265 270

Tyr Ala Ser  
275

<210> 833  
<211> 831  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 833  
tcctatgagc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
tcttgttctg gaagcagctc caacatcgga agtaattatg tatactggta ccagcagctc 120  
ccaggaacgg cccccaaact cttcatctat aggaataatc agcggccctc aggggtccct 180  
gaccgattct ctgggtccaa gtctggcacc tcagcctccc tggccatcag tgggctccgg 240  
tccgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgag tggttatctc 300  
ttcggaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt ggagtctggg 420  
ggaggcttgg tacagcctgg cagggtccctg agactctcct gtgcagcctc tggattcacc 480  
tttgatgatt atgcatgca ctgggtccgg caagctccag ggaagggcct ggagtgggtc 540  
tcaggtatta gttggaatag tggtagcata ggctatgcgg actctgtgaa gggccgattc 600  
accatctcca gagacaacgc caagaactcc ctgtatctgc aaatgaacag tctgagagct 660  
gaggacacgg cttgtatta ctgtgcaa atggcactcca actactacta cggtatggac 720  
gtctggggcc aagggaccac ggtcaccgtc tcctcaacta gtggccaggc cggccagcac 780  
catcaccatc accatggcgc ataccgtac gacgttccgg actacgcttc t 831

<210> 834  
<211> 277  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 834  
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
20 25 30



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Tyr Val Tyr Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Phe  
 35 40 45  
 Ile Tyr Arg Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg  
 65 70 75 80  
 Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 85 90 95  
 Ser Gly Tyr Leu Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110  
 Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val  
 130 135 140  
 Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr  
 145 150 155 160  
 Phe Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly  
 165 170 175  
 Leu Glu Trp Val Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr  
 180 185 190  
 Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys  
 195 200 205  
 Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala  
 210 215 220  
 Leu Tyr Tyr Cys Ala Asn Gly Asp Ser Asn Tyr Tyr Tyr Gly Met Asp  
 225 230 235 240  
 Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Thr Ser Gly Gln  
 245 250 255  
 Ala Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val  
 260 265 270  
 Pro Asp Tyr Ala Ser  
 275

&lt;210&gt; 835

&lt;211&gt; 843

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

4329191\_1

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 835

```

cagtctgccc tgactcagcc tgcctccgtg tccgggtctc ctggacagtc gatcaccatc      60
tcctgcactg gaaccagcag tgacattggt ggttataact atgtctcctg gtaccaacaa      120
caccaggga aagcccccaa actcatgatt tatgatgtca gtaatcggcc ctgaggggtt      180
tctaatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc      240
caggctgagg acgaggctga ttattactgc atctcatata cacgcacctg gaacccttat      300
gtcttcggga gtgggacaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc      360
ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtgcagct ggtgcagtct      420
gggggaggcg tggtagagcc tgggggggtcc ctgagactct cctgtgcagc ctctggattc      480
acctttgatg attatgcat gcactgggtc cgtcaagctc caggggaaggg tctggagtgg      540
gtctctctta ttagtgggga tggtagtagc acatactatg cagactctgt gaagggccga      600
ttcaccatct ccagagacaa cagcaaaaac tcctgtatc tgcaaatgaa cagtctgaga      660
actgaggaca ccgccttgta ttactgtgca aaagatcggg cagcagctgg ctactactac      720
tacggtatgg acgtctgggg ccaagggacc acggtcaccg tctcctcaac tagtggccag      780
gccggccagc accatcacca tcaccatggc gcatacccg acgacgttcc ggactacgct      840
tct                                                                                   843

```

<210> 836

<211> 281

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 836

```

Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1           5           10          15

```

```

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Ile Gly Gly Tyr
          20          25          30

```

```

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
      35          40          45

```

```

Met Ile Tyr Asp Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
      50          55          60

```

```

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65          70          75          80

```

```

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ile Ser Tyr Thr Arg Thr

```

Trp Asn Pro Tyr Val Phe Gly Ser Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110  
 Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125  
 Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Gly Gly Val  
 130 135 140  
 Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe  
 145 150 155 160  
 Thr Phe Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys  
 165 170 175  
 Gly Leu Glu Trp Val Ser Leu Ile Ser Gly Asp Gly Gly Ser Thr Tyr  
 180 185 190  
 Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser  
 195 200 205  
 Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr  
 210 215 220  
 Ala Leu Tyr Tyr Cys Ala Lys Asp Arg Ala Ala Ala Gly Tyr Tyr Tyr  
 225 230 235 240  
 Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
 245 250 255  
 Thr Ser Gly Gln Ala Gly Gln His His His His His His Gly Ala Tyr  
 260 265 270  
 Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

&lt;210&gt; 837

&lt;211&gt; 825

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 837

ctgcctgtgc tgactcagcc accctcagtg tccgtgtccc caggacagac agccatcatc 60

acctgctctg gagataaatt gggggaaaaa tatgtttcct ggtatcagca gaagccaggc 120

cagtcccctg tactggtcat cgatcaagat accaggaggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaccacagcc actctgacca tcagcgggac ccaggctatg 240

## 4329191\_1

gatgaggctg actattactg tcaggcgtgg gacaggggtg tggatttcgg cggagggacc 300  
 aagctgaccg tcctaggttc tagaggtggt ggtggtagcg gcggcggcgg ctctggtggt 360  
 ggtggatccc tcgagatggc cgaggtgcag ctggtggagt ctgggggaga cttggtacag 420  
 cctggcaggt ccctgagact ctctgtgca gcctctggat tcacctttaa tgattatgcc 480  
 atgcactggg tccggcaagc tccaggggaag ggcctggagt gggctctcagg tattagttgg 540  
 agtggttaata acataggcta tgcggactct gtgaagggcc gattcaccat ctccagagac 600  
 aacgccaaga actccctgta tctgcaaatg aacagtctga gagctgagga cacggccttg 660  
 tattactgtg caaaagatag tatacgggtat ggcacacct ggggaggttt tgactactgg 720  
 ggccagggaa ccctggtcac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
 catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

&lt;210&gt; 838

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 838

Leu Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
 1 5 10 15

Thr Ala Ile Ile Thr Cys Ser Gly Asp Lys Leu Gly Glu Lys Tyr Val  
 20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Asp  
 35 40 45

Gln Asp Thr Arg Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60

Asn Ser Gly Thr Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Arg Gly Val Val Phe  
 85 90 95

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly Gly Gly Gly  
 100 105 110

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met Ala Glu  
 115 120 125

Val Gln Leu Val Glu Ser Gly Gly Asp Leu Val Gln Pro Gly Arg Ser  
 130 135 140

## 4329191\_1

Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Asp Tyr Ala  
145 150 155 160

Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser  
165 170 175

Gly Ile Ser Trp Ser Gly Asn Asn Ile Gly Tyr Ala Asp Ser Val Lys  
180 185 190

Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr Leu  
195 200 205

Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr Tyr Cys Ala  
210 215 220

Lys Asp Ser Ile Arg Tyr Gly Ile Thr Trp Gly Gly Phe Asp Tyr Trp  
225 230 235 240

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
245 250 255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
260 265 270

Tyr Ala Ser  
275

<210> 839

<211> 825

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 839

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagcctgtgc tgactcagcc accctcggtg tccaagggct tgagacagac cgccacactc  | 60  |
| acctgcactg ggaacagcaa caatgttggc aacctaggag tagcttggct gcagcagcac  | 120 |
| cagggccacc ctcccaaact cctatcctac aggaataaca accggccctc agggatctca  | 180 |
| gagagattat ctgcatccag gtcaggaaac acagcctccc tgaccattac tggactccag  | 240 |
| cctgaggacg aggctgacta ttactgctca gcatgggaca gtagcctcag tgcttgggtg  | 300 |
| ttcggcggag ggaccaagct gaccgtccta gggttctagag gtggtggtgg tagcggcggc | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt ggagtctggg  | 420 |
| ggagtcgtgg tacagcctgg ggggtccctg agactctcct gtgcagcctc tggattcacc  | 480 |
| tttgatgatt atgccatgca ctgggtccgt caagctccgg ggaaggggtct ggagtgggtc | 540 |
| tctcttatta attgggatgg tggtagcacc tactatgcag actctgtgaa gggtcgattc  | 600 |
| accatctcca gagacaacag caaaaactcc ctgtatctgc aaatgaacag tctgagagct  | 660 |

## 4329191\_1

gaggacaccg ccttgattta ctgtgcaaaa gggatgggcc tgagggcggt tgactactgg 720  
 ggccagggaa ccctgggtcac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
 catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

<210> 840  
 <211> 275  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 840  
 Gln Pro Val Leu Thr Gln Pro Pro Ser Val Ser Lys Gly Leu Arg Gln  
 1 5 10 15

Thr Ala Thr Leu Thr Cys Thr Gly Asn Ser Asn Asn Val Gly Asn Leu  
 20 25 30

Gly Val Ala Trp Leu Gln Gln His Gln Gly His Pro Pro Lys Leu Leu  
 35 40 45

Ser Tyr Arg Asn Asn Asn Arg Pro Ser Gly Ile Ser Glu Arg Leu Ser  
 50 55 60

Ala Ser Arg Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Leu Gln  
 65 70 75 80

Pro Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ala Trp Asp Ser Ser Leu  
 85 90 95

Ser Ala Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Gly Val Val Val  
 130 135 140

Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr  
 145 150 155 160

Phe Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly  
 165 170 175

Leu Glu Trp Val Ser Leu Ile Asn Trp Asp Gly Gly Ser Thr Tyr Tyr  
 180 185 190

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys  
 195 200 205

## 4329191\_1

Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala  
 210 215 220

Leu Tyr Tyr Cys Ala Lys Gly Met Gly Leu Arg Ala Phe Asp Tyr Trp  
 225 230 235 240

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
 245 250 255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
 260 265 270

Tyr Ala Ser  
 275

<210> 841  
 <211> 840  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 841  
 cagtctgtgt tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
 tcctgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120  
 ccaggaacgg cccccaaact cctcatctat agtaatgatc agcggccctc aggggtccct 180  
 gaccgattct ctgggtccaa gtccggcacc tcagcctccc tggccatcag tgggtccag 240  
 tctgaggatg aggctgatta ttactgtgct tcatgggatg acagcctgaa tggccgttat 300  
 gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtccagct ggtacagtct 420  
 ggggctgagg tgaggaagcc tggggcctca gtgaaggttt cctgcaagac ttctggatac 480  
 accttcagtt ggtatgctat acattgggtg cgccaggccc ccggacaaag gcttgagtgg 540  
 atgggatgga tcaacgctgg caatggaaac acaaaatatt cacagaaatt tcagggcaga 600  
 gtcagtctta ccaggacac atccgcgagc acagcctaca tggagctgag cagcctgaga 660  
 tctgatgaca cggctgtgta ttactgtgcg agaccgata attatggttc ggggtgggat 720  
 gtttttgata tctggggcca agggacaatg gtcaccgtct cttcaactag tggccaggcc 780  
 ggccagcacc atcaccatca ccatggcgca taccgtacg acgttccgga ctacgcttct 840

<210> 842  
 <211> 280  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

## 4329191\_1

&lt;400&gt; 842

Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
 20 25 30  
 Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Ile Tyr Ser Asn Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
 65 70 75 80  
 Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ser Trp Asp Asp Ser Leu  
 85 90 95  
 Asn Gly Arg Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110  
 Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125  
 Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140  
 Arg Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Thr Ser Gly Tyr  
 145 150 155 160  
 Thr Phe Ser Trp Tyr Ala Ile His Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175  
 Arg Leu Glu Trp Met Gly Trp Ile Asn Ala Gly Asn Gly Asn Thr Lys  
 180 185 190  
 Tyr Ser Gln Lys Phe Gln Gly Arg Val Ser Leu Thr Arg Asp Thr Ser  
 195 200 205  
 Ala Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr  
 210 215 220  
 Ala Val Tyr Tyr Cys Ala Arg Pro Asp Asn Tyr Gly Ser Gly Gly Asp  
 225 230 235 240  
 Val Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr  
 245 250 255  
 Ser Gly Gln Ala Gly Gln His His His His His His Gly Ala Tyr Pro  
 260 265 270



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Tyr Asp Val Pro Asp Tyr Ala Ser  
275 280

<210> 843  
<211> 819  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 843  
aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc 60  
tcctgcaccc gcagcagtgg cagcattgcc agcaactttg tgcagtggta ccagcagcgc 120  
ccgggcagtg cccccacccc tatgatctat gaggataaca acagaccccc tggggtcctt 180  
gatcggttct ctgcctccgt cgacagctcc tccaactctg cctccctcac catctctgga 240  
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgataccag caatgtggta 300  
ttcggcgggg ggaccaagct gaccgtccta ggttctagag gtgggtgggtg tagcggcggc 360  
ggcggctctg gtgggtgggtg atccctcgag atggccgagg tgcagctggg ggagtctggg 420  
ggaggcttgg tacagcctgg agggtcctg agactctcct gtgcagcctc tggattcacc 480  
ttcagtagtt atgaaatgaa ctgggtccgc caggctccag ggaaggggct ggagtgggtt 540  
tcatacatta gtagtagtgg tagtaccata tactacgcag actctgtgaa gggccgattc 600  
accatctcca gagacaacgc caagaactca ctgtatctgc aaatgaacag cctgagagcc 660  
gaggacacgg ctgtttatta ctgtgcacgc tgggactacg gtatggacgt ctggggccaa 720  
gggaccacgg tcaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac 780  
catggcgcat acccgtacga cgttcgggac tacgcttct 819

<210> 844  
<211> 273  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 844  
Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
20 25 30

Phe Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Pro Met  
35 40 45

Ile Tyr Glu Asp Asn Asn Arg Pro Pro Gly Val Pro Asp Arg Phe Ser  
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60

50

55

Ala Ser Val Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Thr  
85 90 95

Ser Asn Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val  
130 135 140

Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr  
145 150 155 160

Phe Ser Ser Tyr Glu Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly  
165 170 175

Leu Glu Trp Val Ser Tyr Ile Ser Ser Ser Gly Ser Thr Ile Tyr Tyr  
180 185 190

Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys  
195 200 205

Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Trp Asp Tyr Gly Met Asp Val Trp Gly Gln  
225 230 235 240

Gly Thr Thr Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
260 265 270

Ser

<210> 845  
<211> 837  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

## 4329191\_1

```

<400> 845
caggctgtgc tgactcagcc accctcagcg tctggggccc ccgggcagag ggtcaccgtc      60
tcttgttctg gaagcaactc caacatcgga agtaactacg ttaactggta ccagcagttc      120
ccaggaacgg cccccaaact cctcatgtat agtagtagtc agcggccctc aggggtccct      180
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccac      240
tctgaggatg aggctgatta ttactgtgct acatgggatg acagcctgaa tgcttgggtg      300
ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc      360
ggcggctctg gtggtggtgg atccctcgag atggccgagg tccagctggt gcagtctggg      420
gctgaggatga ggaagcctgg ggcctcagtg aaggtttcct gcaagacttc tggatacacc      480
ttcacttggt atgctataca ttgggtgctc caggcccccg gacaaaggct tgagtggatg      540
ggatggatca acgctggcag tggaacaca aaatattcac agaaatttca gggcagagtc      600
acccttacca gggacacatc cgcgagcaca gcgtacatgg agctgagcag cctgagatct      660
gatgacacgg ctgtgtatta ctgtgcgaga cccaataact atggttcggg tggggatggt      720
tttgatatct ggggccaagg gacaatggtc accgtctctt caactagtgg ccaggccggc      780
cagcaccatc accatcacca tggcgcatac ccgtacgacg ttccggacta cgcttct      837

```

&lt;210&gt; 846

&lt;211&gt; 279

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 846

```

Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Ala Pro Gly Gln
1           5           10          15

```

```

Arg Val Thr Val Ser Cys Ser Gly Ser Asn Ser Asn Ile Gly Ser Asn
          20          25          30

```

```

Tyr Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu
          35          40          45

```

```

Met Tyr Ser Ser Ser Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
          50          55          60

```

```

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu His
65          70          75          80

```

```

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Ser Leu
          85          90          95

```

```

Asn Ala Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser
          100          105          110

```

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Arg Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Arg  
130 135 140

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Thr Ser Gly Tyr Thr  
145 150 155 160

Phe Thr Trp Tyr Ala Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg  
165 170 175

Leu Glu Trp Met Gly Trp Ile Asn Ala Gly Ser Gly Asn Thr Lys Tyr  
180 185 190

Ser Gln Lys Phe Gln Gly Arg Val Thr Leu Thr Arg Asp Thr Ser Ala  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Pro Asn Asn Tyr Gly Ser Gly Gly Asp Val  
225 230 235 240

Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser  
245 250 255

Gly Gln Ala Gly Gln His His His His His Gly Ala Tyr Pro Tyr  
260 265 270

Asp Val Pro Asp Tyr Ala Ser  
275

<210> 847

<211> 834

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 847

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| cagtctgtcg tgacgcagcc gccctcagtg tctgcggccc caggacagaa ggtcaccatc  | 60  |
| tcctgctctg gaagcagctc caacattggg aataattatg tctctggta ccagcagctc   | 120 |
| ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct  | 180 |
| gaccgattct ctggctcaa gtctggcacg tcagccaccc tgggcatcac cggactccag   | 240 |
| actggggacg aggccgatta ttactgcgga acatgggata gcagcctgag tgcttatgtc  | 300 |
| ttcggaaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggcccagg tccagctggt gcagtctggg  | 420 |

## 4329191\_1

gctgaggtga agaagcctgg ggcctcagtg aaagtttcct gcaaggcttc tggatacacc 480  
 ttcacgaact atgctctgca ttgggtgctgc caggcccccg gacaagggtc tgagtggatg 540  
 gcatggatca acggtggcaa tggtaacaca aaatattcac agaacttcca gggcagagtc 600  
 accattacca gggacacatc cgcgagcaca gcctatatgg agctgagcag cctgagatct 660  
 gaagacacgg ctgtgtatta ctgtgcgaaa ccggaggaaa cagctggaac aatccacttt 720  
 gactactggg gccagggaa cccgggtcacc gtctcctcaa ctagtggcca ggccggccag 780  
 caccatcacc atcaccatgg cgcatacccg tacgacgttc cggactacgc ttct 834

&lt;210&gt; 848

&lt;211&gt; 278

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 848

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
 1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn  
 20 25 30

Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln  
 65 70 75 80

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu  
 85 90 95

Ser Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
 145 150 155 160

Phe Thr Asn Tyr Ala Leu His Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175

## 4329191\_1

Leu Glu Trp Met Ala Trp Ile Asn Gly Gly Asn Gly Asn Thr Lys Tyr  
 180 185 190

Ser Gln Asn Phe Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Ala  
 195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Lys Pro Glu Glu Thr Ala Gly Thr Ile His Phe  
 225 230 235 240

Asp Tyr Trp Gly Gln Gly Thr Pro Val Thr Val Ser Ser Thr Ser Gly  
 245 250 255

Gln Ala Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp  
 260 265 270

Val Pro Asp Tyr Ala Ser  
 275

<210> 849

<211> 849

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 849

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| caggctgtgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc  | 60  |
| tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc  | 120 |
| ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtccct  | 180 |
| gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga  | 240 |
| ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcac catcacggtg  | 300 |
| ttcggcggag ggaccaagct gaccgtccta ggttctagag gtgggtggtgg tagcggcggc | 360 |
| ggcggctctg gtgggtggtg atccctcgag atggcccagg tccagctggt acagtctggg  | 420 |
| gctgaggtga agaagcctgg gtcctcggtg aaggtctcct gcaaggcttc tggaggcacc  | 480 |
| ttcagcagct atgctatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg  | 540 |
| ggagggatca tccctatctt tggtagcga aactacgcac agaagttcca gggcagagtc   | 600 |
| acgattaccg cggacgaatc cagcagcaca gcctacatgg agctgagcag cctgagatct  | 660 |
| gaggacacgg ccgtgtatta ctgtgcgggg gaggggttact atgatagtag tggttattcc | 720 |
| aacggtgatg cttttgatat ctggggccaa gggacaatgg tcaccgtctc ttcaactagt  | 780 |
| ggccaggccg gccagcacca tcaccatcac catggcgcac acccgtagca cgttccggac  | 840 |
| tacgcttct                                                          | 849 |

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<210> 850  
 <211> 283  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 850  
 Gln Ala Val Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15  
 Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
 20 25 30  
 Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
 35 40 45  
 Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80  
 Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
 85 90 95  
 Thr Ile Thr Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
 100 105 110  
 Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140  
 Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
 145 150 155 160  
 Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175  
 Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
 180 185 190  
 Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
 195 200 205  
 Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
 210 215 220

## 4329191\_1

Val Tyr Tyr Cys Ala Gly Glu Gly Tyr Tyr Asp Ser Ser Gly Tyr Ser  
225 230 235 240

Asn Gly Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val  
245 250 255

Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His His His Gly  
260 265 270

Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
275 280

<210> 851

<211> 819

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 851

```
aattttatgc tgactcagcc ccactctgtg tcggagtctc cggggaagac ggtaaccatc      60
tcctgcaccc gcagcagtgg cagcattgcc agcaactatg tgcagtggta ccagcagcgc      120
ccgggcagtg cccccaccac tgtgatctat gaggataacc aaagaccctc tggggtcctt      180
gatcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga      240
ctgaagactg aggacgaggc tgactactac tgtcagtctt atgatagcag caatgtggta      300
ttcggcgagg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc      360
ggcgggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt ggagtctggg      420
ggaggcttgg tacagcctgg agggtccttg agactctcct gtgcagcctc tggattcacc      480
ttcagtagtt atgaaatgaa ctgggtccgc caggctccag ggaaggggct ggagtggggt      540
tcatacatta gtagtagtgg tagtaccata tactacgcag actctgtgaa gggccgattc      600
accatctcca gagacaacgc caagaactca ctgtatctgc aaatgaacag cctgagagcc      660
gaggacacgg ctgtttatta ctgtgcacgc tgggactacg gtatggacgt ctggggccaa      720
gggaccacgg tcaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac      780
catggcgcat acccgtagca cgttccggac tacgcttct      819
```

<210> 852

<211> 273

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 852

Asn Phe Met Leu Thr Gln Pro His Ser Val Ser Glu Ser Pro Gly Lys  
1 5 10 15



## 4329191\_1

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
 20 25 30  
 Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ala Pro Thr Thr Val  
 35 40 45  
 Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
 65 70 75 80  
 Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
 85 90 95  
 Ser Asn Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110  
 Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val  
 130 135 140  
 Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr  
 145 150 155 160  
 Phe Ser Ser Tyr Glu Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly  
 165 170 175  
 Leu Glu Trp Val Ser Tyr Ile Ser Ser Ser Gly Ser Thr Ile Tyr Tyr  
 180 185 190  
 Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys  
 195 200 205  
 Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala  
 210 215 220  
 Val Tyr Tyr Cys Ala Arg Trp Asp Tyr Gly Met Asp Val Trp Gly Gln  
 225 230 235 240  
 Gly Thr Thr Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
 245 250 255  
 His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
 260 265 270  
 Ser

## 4329191\_1

<210> 853  
 <211> 828  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 853  
 tcctatgtgc tgactcagcc accctcagtg tccgtgtccc caggacagac agccagcatc 60  
 acctgctctg gagatagatt gacgaataaa tatgtttcct ggtatcaaca gaagccaggc 120  
 cagtcccctg tgttggtcat ctatgaggat gccaaagcggc cctcagggat ccctgcgcga 180  
 ttctctggct ccaactctgg gaacacagcc actctgacca tcagcgggac ccaggctatg 240  
 gatgagtctg aatattactg tcaggcgtgg gacagcagtg tgggtggtttt tggcggaggg 300  
 accaagctga ccgtcctagg ttctagaggt ggtggtggtg gcggcggcg cggctctggt 360  
 ggtggtggat ccctcgagat ggccgaggtg cagctggtgg agtctggggg aggcttggtg 420  
 cagcctggca ggtccctgag actctcctgt gcagcctctg gatttacctt tgatgattat 480  
 gccatgcact ggggtccggca agctccaggg aagggcctgg agtgggtctc aggtattagt 540  
 tggaatagtg gtagtatagg ctatgcggac tctgtgaagg gccgattcac catctccaga 600  
 gacaacgcca agaactccct gtatctgcaa atgaacagtc tgagagatga ggacacggcc 660  
 ttgtattact gtgcaaaaga ccgagggggg ggagttatcg ttaaggatgc ttttgatata 720  
 tggggccaag ggacaatggt caccgtctct tcaactagtg gccaggccgg ccagcaccat 780  
 caccatcacc atggcgcata cccgtacgac gttccggact acgcttct 828

<210> 854  
 <211> 276  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 854  
 Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
 1 5 10 15  
 Thr Ala Ser Ile Thr Cys Ser Gly Asp Arg Leu Thr Asn Lys Tyr Val  
 20 25 30  
 Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Tyr  
 35 40 45  
 Glu Asp Ala Lys Arg Pro Ser Gly Ile Pro Ala Arg Phe Ser Gly Ser  
 50 55 60  
 Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met  
 65 70 75 80

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Asp Glu Ser Glu Tyr Tyr Cys Gln Ala Trp Asp Ser Ser Val Val Val  
85 90  
Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly Gly Gly  
100 105 110  
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met Ala  
115 120 125  
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg  
130 135 140  
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr  
145 150 155 160  
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
165 170 175  
Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val  
180 185 190  
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr  
195 200 205  
Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Leu Tyr Tyr Cys  
210 215 220  
Ala Lys Asp Arg Gly Gly Gly Val Ile Val Lys Asp Ala Phe Asp Ile  
225 230 235 240  
Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly Gln Ala  
245 250 255  
Gly Gln His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro  
260 265 270  
Asp Tyr Ala Ser  
275

<210> 855

<211> 825

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 855

tcctatgagc tgactcagcc accgcagcg tctgggaccc ccggacagag agtcaccatc 60

tcttgttctg ggggcgtctc caacatcggg agtggtgctc taaattggta ccagcaactc 120

## 4329191\_1

ccaggaacgg cccccaact cctcatctat agttacaatc agcggccctc aggggtctct 180  
gaccgattct ctggctccag gtctgccacc tcagcctccc tggccatcag tgggctccag 240  
tctgaggatg aggctgatta ttactgtgca acctgggatg atagtgtgaa tggttgggtg 300  
ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt ggagtctgga 420  
gctgagggtga agaagcctgg ggattcagtg aaggtctcct gcaagccttc tggttacaat 480  
tttctcaact atggtatcaa ctgggtgcca caggcccctg gacaagggtc tgagtggatg 540  
ggatggatta gcacttacac cggtaacaca aactatgcac agaagctgca gggcagagtc 600  
accttcacca cagacacatc cagagcaca gcctacatgg agatgaggag cctgagatct 660  
gacgacacgg ccgtgtatta ctgtgcgcgc cagcaggggtg gtggttggtg cgatgtttgg 720  
ggtcaaggta ctctggtcac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

&lt;210&gt; 856

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 856

Ser Tyr Glu Leu Thr Gln Pro Pro Ala Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Gly Val Ser Asn Ile Gly Ser Gly  
20 25 30

Ala Leu Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Ser Tyr Asn Gln Arg Pro Ser Gly Val Ser Asp Arg Phe Ser  
50 55 60

Gly Ser Arg Ser Ala Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Ser Val  
85 90 95

Asn Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Ala Glu Val Lys  
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130

135

Lys Pro Gly Asp Ser Val Lys Val Ser Cys Lys Pro Ser Gly Tyr Asn  
145 150 155 160

Phe Leu Asn Tyr Gly Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Trp Ile Ser Thr Tyr Thr Gly Asn Thr Asn Tyr  
180 185 190

Ala Gln Lys Leu Gln Gly Arg Val Thr Phe Thr Thr Asp Thr Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Met Arg Ser Leu Arg Ser Asp Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Gln Gln Gly Gly Gly Trp Tyr Asp Val Trp  
225 230 235 240

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
245 250 255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
260 265 270

Tyr Ala Ser  
275

<210> 857  
<211> 843  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 857  
cagtctgtcg tgacgcagcc gccctcagtg tctgcggccc caggagagaa ggtcaccatc 60  
tcctgctctg gaagcaactt caatgttgga aataatgatg tctcctggta tcagcaactc 120  
ccagggtgcag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180  
gaccgattct ctgggtccaa gtctggcacg tcagccaccc tggacatcac cgggctccac 240  
agtgcgcagc aggccgatta ttactgcgga acatgggata gcagcctgaa tactgggggg 300  
gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctgggtggtg tggatccctc gagatggccg aggtccagct ggtgcagtct 420  
ggagctgagg tgaagaagcc tggggcctca gtgaaggtct cctgcaaggc ttctggttac 480  
acctttacca gctatactat cagctgggta cgacaggccc ctggacaagg gcttgagtgg 540  
atgggatgga tcagcactta caatggtctc acaaactatg cacagaacct ccagggcaga 600

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gtcaccatga ctacagacac attcacgacc acagcctaca tggagctgag gaggctcaga 660  
tctgacgaca cggccgtgta ttactgtgtg agagaggggt ccccgacta cggtgacttc 720  
gcgtcctttg actactgggg ccaggggaacc ctggtcaccg tctcctcaac tagtggccag 780  
gccggccagc accatcacca tcaccatggc gcatacccg acgacgttcc ggactacgct 840  
tct 843

<210> 858

<211> 281

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 858

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Glu  
1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Asn Phe Asn Val Gly Asn Asn  
20 25 30

Asp Val Ser Trp Tyr Gln Gln Leu Pro Gly Ala Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Asp Ile Thr Gly Leu His  
65 70 75 80

Ser Asp Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu  
85 90 95

Asn Thr Gly Gly Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val  
130 135 140

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr  
145 150 155 160

Thr Phe Thr Ser Tyr Thr Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
165 170 175

Gly Leu Glu Trp Met Gly Trp Ile Ser Thr Tyr Asn Gly Leu Thr Asn  
180 185 190

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Tyr Ala Gln Asn Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Phe  
 195 200 205

Thr Thr Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Val Arg Glu Gly Ser Pro Asp Tyr Gly Asp Phe  
 225 230 235 240

Ala Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 245 250 255

Thr Ser Gly Gln Ala Gly Gln His His His His His His Gly Ala Tyr  
 260 265 270

Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

<210> 859

<211> 843

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 859

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| cagtctgtgt tgacgcagcc gccctcagtg tctgcgcccc cgggacagaa ggtcaccatc | 60  |
| tcctgctctg gaagcagctc caacattggg aataattatg tctcctggta ccagcagttc | 120 |
| ccaggaacag cccccaact cctcatttat gacaataata agcgaccctc agggatttct  | 180 |
| gaccgattct ctggctcaa gtctggcacg tcagccaccc tgggcatcgc cggactccag  | 240 |
| actggggacg aggccgatta ttactgcgga acatgggata ccagcctgag tggtttttat | 300 |
| gtcttcggaa gtgggaccaa ggtcacctgc ctaggttcta gaggtggtgg tggtagcggc | 360 |
| ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtccagct ggtacagtct | 420 |
| ggagctgagg tgaagaagcc tggggcctca gtgaaggtct cctgcaaggc ttctggttac | 480 |
| acctttacca gctatactat cagctgggta cgacaggccc ctggacaagg gcttgagtgg | 540 |
| atgggatgga tcagcactta caatggtctc acaaactatg cacagaacct ccagggcaga | 600 |
| gtcaccatga ctacagacac attcacgacc acagcctaca tggagctgag gaggctcaga | 660 |
| tctgacgaca cggccgtgta ttactgtgtg agagaggggt ccccgacta cggtgacttc  | 720 |
| gcgtcctttg actactgggg ccaggaacc ctggtcaccg tctcctcaac tagtggccag  | 780 |
| gccggccagc accatcacca tcaccatggc gcataccgt acgacgttcc ggactacgct  | 840 |
| tct                                                               | 843 |

<210> 860

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&lt;211&gt; 281

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 860

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Pro Pro Gly Gln  
 1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn  
 20 25 30

Tyr Val Ser Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Ser Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Ala Gly Leu Gln  
 65 70 75 80

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Thr Ser Leu  
 85 90 95

Ser Gly Phe Tyr Val Phe Gly Ser Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val  
 130 135 140

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr  
 145 150 155 160

Thr Phe Thr Ser Tyr Thr Ile Ser Trp Val Arg Gln Ala Pro Gly Gln  
 165 170 175

Gly Leu Glu Trp Met Gly Trp Ile Ser Thr Tyr Asn Gly Leu Thr Asn  
 180 185 190

Tyr Ala Gln Asn Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Phe  
 195 200 205

Thr Thr Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr  
 210 215 220

Ala Val Tyr Tyr Cys Val Arg Glu Gly Ser Pro Asp Tyr Gly Asp Phe  
 225 230 235 240



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Ala Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
                   245                  250                  255

Thr Ser Gly Gln Ala Gly Gln His His His His His His Gly Ala Tyr  
                   260                  265                  270

Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
                   275                  280

<210> 861

<211> 840

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 861

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ctgcctgtgc tgactcagcc accctcagcg tctgcgaccc cggggcagag ggtcaccatc  | 60  |
| tcttgttctg gaaccacctc caacatcgga agtaatactg tacactggta ccagcagctc  | 120 |
| ccagggacgg cccccaaact cctcatctat aataataatc agcggccctc aggggtccct  | 180 |
| gaccgattct ctgggtccaa gtctggcacc tcagcctccc tggccatcag tgggtcccg   | 240 |
| tccgaggatg aggctacata ttcctgtgca acatgggatg acagcctgag tgggtgtggtc | 300 |
| ttcggcggag ggaccaagct gaccgtccta gggttctagag gtggtggtgg tagcggcggc | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggccgagg tccagctggt gcagtctggg  | 420 |
| gctgaggatga agaagcctgg gtcctcggtg aagggtctct gcaaggcttc tggaggcacc | 480 |
| ttcagcagct atgctatcag ctgggtgcca caggcccctg gacaagggtc tgagtggatg  | 540 |
| ggagggatca tccctatctt tggtagcga aactacgcac agaagttcca gggcagagtc   | 600 |
| acgattaccg cggacgaatc cacgagcaca gcctacatgg agctgagcag cctgagatct  | 660 |
| gaggacacgg ccgtgtatta ctgtgcgaga gatcccgctt acggtgacta cgagtatgat  | 720 |
| gcttttgata tctggggcca agggacaatg gtcaccgtct cttcaactag tggccaggcc  | 780 |
| ggccagcacc atcaccatca ccatggcgca taccgtacg acgttcgga ctacgtttct    | 840 |

<210> 862

<211> 280

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 862

Leu Pro Val Leu Thr Gln Pro Pro Ser Ala Ser Ala Thr Pro Gly Gln  
   1                  5                  10                  15

Arg Val Thr Ile Ser Cys Ser Gly Thr Thr Ser Asn Ile Gly Ser Asn  
                   20                  25                  30

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Thr Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Asn Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg  
65 70 75 80

Ser Glu Asp Glu Ala Thr Tyr Ser Cys Ala Thr Trp Asp Asp Ser Leu  
85 90 95

Ser Gly Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
145 150 155 160

Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Asp Pro Ala Tyr Gly Asp Tyr Glu Tyr Asp  
225 230 235 240

Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr  
245 250 255

Ser Gly Gln Ala Gly Gln His His His His His Gly Ala Tyr Pro  
260 265 270

Tyr Asp Val Pro Asp Tyr Ala Ser  
275 280

<210> 863

<211> 825

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&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 863

```

cagtctgtgt tgacgcagcc gccctcagcg tctgggaccc ccgggcagag ggtcaccatc      60
tcttgttctg gaagcagctc caacatcgga actaatggtg taaactgggt ccagcagttc      120
ccaggaacgg cccccaaact cctcatctat actaatgatc agcggccctc aggggtccct      180
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag      240
tctgcggatg aggctgatta ttactgtgca gtgtgggacc acagcctgaa tgggtccggtg      300
ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc      360
ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctggt gcagtctggg      420
gctgaggtga agaagcctgg gtcctcggtg aaggtctcct gcaaggcttc tggaggcacc      480
ttcagcagct atgctatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg      540
ggaggggatca tccctatctt tggtagagca aactacgcac agaagttcca gggcagagtc      600
acgattaccg cggacgaatc cacgagcaca gcctacatgg agctgagcag cctgagatct      660
gaggacacgg ccgtgtatta ctgtgcgaga ggggccggtt ttgatgcttt tgatatctgg      720
ggccaaggga caatggtcac cgtctcttca actagtggcc aggccggcca gcaccatcac      780
catcaccatg gcgcataccc gtacgacgtt ccggactacg cttctt                      825

```

&lt;210&gt; 864

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 864

```

Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln
1           5           10          15

```

```

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Thr Asn
          20          25          30

```

```

Gly Val Asn Trp Phe Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu
          35          40          45

```

```

Ile Tyr Thr Asn Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
          50          55          60

```

```

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65          70          75          80

```

```

Ser Ala Asp Glu Ala Asp Tyr Tyr Cys Ala Val Trp Asp His Ser Leu

```

Asn Gly Pro Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
145 150 155 160

Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Gly Ala Gly Phe Asp Ala Phe Asp Ile Trp  
225 230 235 240

Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
245 250 255

Gln His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
260 265 270

Tyr Ala Ser  
275

<210> 865

<211> 819

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 865

caggctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60

tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120

ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtcctt 180

gaccgattct ctggctcaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240

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tctgaggatg agactgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc 300  
 ttcggaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
 ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctaca gcagtggggc 420  
 gcaggactgt tgaagccttc ggagaccctg tccctcacct gcgctgtcta tggtggtgcc 480  
 ttcagtgggtt actactggag ctggatccgc cagccccag ggaaggggct ggagtggatt 540  
 ggggaaatca atcatagtgg aagcaccaac tacaaccctg ccctcaagag tcgagtcacc 600  
 atatcagtag acacgtccaa gaaccagttc tccctgaagc tgagctctgt gaccgccgcg 660  
 gacacggctg tgtattactg tgcgagagag gggctagatg cttttgatat ctggggccaa 720  
 gggacaatgg tcaccgtctc ttcaactagt ggccaggccg gccagcacca tcaccatcac 780  
 catggcgcat acccgtagca cgttccggac tacgcttct 819

<210> 866

<211> 273

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 866

Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
 20 25 30

Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
 65 70 75 80

Ser Glu Asp Glu Thr Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 85 90 95

Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu  
 130 135 140

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Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser  
145 150 155 160

Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly  
165 170 175

Leu Glu Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn  
180 185 190

Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn  
195 200 205

Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val  
210 215 220

Tyr Tyr Cys Ala Arg Glu Gly Leu Asp Ala Phe Asp Ile Trp Gly Gln  
225 230 235 240

Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
260 265 270

Ser

<210> 867

<211> 819

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 867

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| caggctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc  | 60  |
| tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc  | 120 |
| ccaggaacgg cccccaaact cctcatgtat agtaatgata agcggccctc aggggtccct  | 180 |
| gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag  | 240 |
| tctgaggatg aggctgatta ttattgtgca gcatgggatg acagcctgaa tggttatgtc  | 300 |
| ttcgagctg ggaccagct caccgtttta agttctagag gtggtggtgg tagcggcggc    | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggcccagg tgcagctaca gcagtggggc  | 420 |
| gcaggactgt tgaagccttc ggagaccctg tccctcacct gcgctgtcta tgggtgggtcc | 480 |
| ttcagtgggt actactggag ctggatccgc cagccccag ggaaggggct ggagtggatt   | 540 |
| ggggaaatca atcatagtgg aagcaccaac tacaaccgt ccctcaagag tcgagtcacc   | 600 |
| atatcagtag acacgtccaa gaaccagttc tccctgaagc tgagctctgt gaccgccgcg  | 660 |

## 4329191\_1

gacacggctg tgtattactg tgcgagagag gggctagatg cttttgatat ctggggccaa 720  
 gggacaatgg tcaccgtctc ttcaactagt ggccaggccg gccagcacca tcaccatcac 780  
 catggcgcat acccgtagca cgttccggac tacgcttct 819

<210> 868  
 <211> 273  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 868  
 Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
 20 25 30

Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Met Tyr Ser Asn Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 85 90 95

Asn Gly Tyr Val Phe Ala Ala Gly Thr Gln Leu Thr Val Leu Ser Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu  
 130 135 140

Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser  
 145 150 155 160

Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly  
 165 170 175

Leu Glu Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn  
 180 185 190

Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn  
 195 200 205

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Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val  
210 215 220

Tyr Tyr Cys Ala Arg Glu Gly Leu Asp Ala Phe Asp Ile Trp Gly Gln  
225 230 235 240

Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
260 265 270

Ser

<210> 869  
<211> 843  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 869  
cagtctgtcg tgacgcagcc gccctcagtg tctgcgggcc caggacagaa ggtcaccatc 60  
tcctgctctg gaagcagctc caacattggg aataattatg tctcctggta ccagcagctc 120  
ccaggaacag cccccaact cctcatttat gacaataata agcgaccctc agggattcct 180  
gaccgattct ctgggtccaa gtctggcacg tcagccaccc tgggcatcac tggactccag 240  
actggggacg aggccgatta ttactgcgga acatgggata gcagcctgag tgctgcttat 300  
gtcttcggaa ctgggaccaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctggtggtgg tggatccctc gagatggccc aggtccagct ggtacagtct 420  
ggagctgagg tgaagaagcc tggggcctca gtgaaggtct cctgcaaggc ttctggttac 480  
agctttacca gctatactat cagctgggtt cgacaggccc ctggacaagg ccttgagtgg 540  
atgggatggg tcagcactta caatggtctc agaaactatg cacagaacct ccagggcaga 600  
gtcaccatga ctacagacac actcacgacc acagcctaca tggagctgag gaggcctcaga 660  
tctgacgaca cggccgtgta ttattgtgtg agagaggggt ccccgacta cggtgacttc 720  
gcggcctttg actactgggg ccagggcacc ctggtcaccg tctcctcaac tagtggccag 780  
gccggccagc accatcacca tcaccatggc gcatacccg acgacgttcc ggactacgct 840  
tct 843

<210> 870  
<211> 281  
<212> PRT  
<213> Artificial Sequence

<220>



<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 870

```

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
1      5      10     15

Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
      20     25     30

Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
      35     40     45

Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
      50     55     60

Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65      70     75     80

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
      85     90     95

Ser Ala Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
      100    105    110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
      115    120    125

Ser Leu Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val
      130    135    140

Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr
145    150    155    160

Ser Phe Thr Ser Tyr Thr Ile Ser Trp Val Arg Gln Ala Pro Gly Gln
      165    170    175

Gly Leu Glu Trp Met Gly Trp Val Ser Thr Tyr Asn Gly Leu Arg Asn
      180    185    190

Tyr Ala Gln Asn Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Leu
      195    200    205

Thr Thr Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr
      210    215    220

Ala Val Tyr Tyr Cys Val Arg Glu Gly Ser Pro Asp Tyr Gly Asp Phe
225    230    235    240

Ala Ala Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
      245    250    255

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## 4329191\_1

Thr Ser Gly Gln Ala Gly Gln His His His His His His Gly Ala Tyr  
 260 265 270

Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

<210> 871  
 <211> 816  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 871  
 caggctgtgc tgactcagcc accctcagcg tctgagaccc ccgggcagag ggtcaccatc 60  
 tcttgttctg gaagcaggtc caacatcgga actaatattg tacactggta ccagcagcgc 120  
 ccaggaatgg cccccaaact cctcacttat ggtagtcggc ggccctcagg ggtcccggac 180  
 cgattctctg gctccaagtt tggcacctca gcctccctgg ccatcagtgg gctccagtct 240  
 gaggatgagg ctgattatta ttgtgcagca tgggatgaca gtctgaatgg tccggctttc 300  
 ggcggaggga ccaagctgac cgtcctaggt tctagaggtg gtggtggtag cggcggcggc 360  
 ggctctggtg gtggtggatc cctcgagatg gcccaggtgc agctacagca gtggggcgca 420  
 ggactgttga agccttcgga gaccctgtcc ctcacctgcg ctgtctatgg tgggtccttc 480  
 agtggttact actggagctg gatccgccag cccccagga aggggctgga gtggattggg 540  
 gaaatcaatc atagtgaag caccaactac aaccgctccc tcaagagtcg agtcaccata 600  
 tcagtagaca cgtccaagaa ccagttctcc ctgaagctga gctctgtgac cgccgcggac 660  
 acggctgtgt attactgtgc gagagacggt gggggctact ttgactactg gggccagga 720  
 accctggtca ccgtctctc aactagtggc caggccggcc agcaccatca ccatcaccat 780  
 ggcgcatacc cgtacgacgt tccggactac gcttct 816

<210> 872  
 <211> 272  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 872  
 Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Glu Thr Pro Gly Gln  
 1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Arg Ser Asn Ile Gly Thr Asn  
 20 25 30

Ile Val His Trp Tyr Gln Gln Arg Pro Gly Met Ala Pro Lys Leu Leu  
 35 40 45

## 4329191\_1

Thr Tyr Gly Ser Arg Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly  
 50 55 60

Ser Lys Phe Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln Ser  
 65 70 75 80

Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu Asn  
 85 90 95

Gly Pro Ala Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg  
 100 105 110

Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu  
 115 120 125

Glu Met Ala Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu Lys  
 130 135 140

Pro Ser Glu Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser Phe  
 145 150 155 160

Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu  
 165 170 175

Glu Trp Ile Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn Pro  
 180 185 190

Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln  
 195 200 205

Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr  
 210 215 220

Tyr Cys Ala Arg Asp Gly Gly Gly Tyr Phe Asp Tyr Trp Gly Gln Gly  
 225 230 235 240

Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His  
 245 250 255

His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 260 265 270

<210> 873

<211> 837

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 873

cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc  
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tcctgcactg ggagcagctc caatatcggg gcacgttatg atgtacactg gtaccagcaa 120  
ctcccaggaa cagccccccg actcctcatc tctgctaact acgatcggcc ctcaggggctc 180  
cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc 240  
caggctgagg atgaggctga ttattactgc cagtcctatg acagcagtgt gagtgccttg 300  
gtgttcggcg gagggaccaa ggtcacctgc ctaggttcta gaggtggtgg tggtagcggc 360  
ggcggcggct ctggtggtgg tggatccctc gagatggccg aagtgcagct ggtgcagtct 420  
ggggctgaag tgaaggagcc tggggcctca gtgaggatct cctgccaggc atctggatac 480  
aacttcatca gttattatat gcactgggtg cggcaggccc ctgggcaagg tcttgagtgg 540  
atgggcacca tcaaccagg cagtgggtgag acagactact cacagaagtt gcagggcaga 600  
gtcaccatga ccagggaccc gtccacgggt acattcgaca tggggctgag cagcctgaca 660  
tctggggaca cggccgtcta ttattgtgcg acaggtctca tcagaggagc tagcgatgct 720  
tttaatatct ggggccgggg gacaatggtc accgtctctt caactagtgg ccaggccggc 780  
cagcaccatc accatcacca tggcgcatat ccgtacgacg ttccggacta cgcttct 837

<210> 874

<211> 279

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 874

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Arg  
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Arg Leu  
35 40 45

Leu Ile Ser Ala Asn Tyr Asp Arg Pro Ser Gly Val Pro Asp Arg Phe  
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu  
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser  
85 90 95

Val Ser Ala Trp Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu Gly  
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
115 120 125

4329191\_1

Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val  
130 135 140

Lys Glu Pro Gly Ala Ser Val Arg Ile Ser Cys Gln Ala Ser Gly Tyr  
145 150 155 160

Asn Phe Ile Ser Tyr Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln  
165 170 175

Gly Leu Glu Trp Met Gly Thr Ile Asn Pro Gly Ser Gly Glu Thr Asp  
180 185 190

Tyr Ser Gln Lys Leu Gln Gly Arg Val Thr Met Thr Arg Asp Pro Ser  
195 200 205

Thr Gly Thr Phe Asp Met Gly Leu Ser Ser Leu Thr Ser Gly Asp Thr  
210 215 220

Ala Val Tyr Tyr Cys Ala Thr Gly Leu Ile Arg Gly Ala Ser Asp Ala  
225 230 235 240

Phe Asn Ile Trp Gly Arg Gly Thr Met Val Thr Val Ser Ser Thr Ser  
245 250 255

Gly Gln Ala Gly Gln His His His His His His Gly Ala Tyr Pro Tyr  
260 265 270

Asp Val Pro Asp Tyr Ala Ser  
275

<210> 875  
<211> 825  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 875  
cagcctgtgc tgactcagcc accctcagtg tccgtgtccc caggacagac ggccgccatc 60  
ccctgttctg gagataagtt gggggataaa ttgcttcct ggtatcagca gaagccaggc 120  
cagtcctctg tgctggatcat ctatcaagat actaagcggc cctcagggat ccctgagcga 180  
ttctctggct ccaactctgg gaacacagcc actctgacca tcagcgggac ccaggctatg 240  
gatgaggctg actattactg tcagacgtgg gccagcggca ttgtggtgtt cggcggaggg 300  
accaagctga ccgtcctagg ttctagaggt ggtggtggta gcggcggcgg cggctctggt 360  
ggtggtggat ccctcgagat ggcccaggta cagctgcagc agtcagggtcc aggactggtg 420  
aagccctcgc agaccctctc actcacctgt gccatctccg gggacagtgt ctctagcaac 480

## 4329191\_1

agtgctgctt ggaactggat caggcagtcc ccatcgagag gccttgagtg gctgggaagg 540  
 acatactaca ggtccaagtg gtataatgat tatgcagtat ctgtgaaaag tcgaataacc 600  
 atcaaccag acacatccaa gaaccagttc tccctgcagc tgaactctgt gactcccag 660  
 gacacggctg tgtattactg tgcaagagag cgcagtggct ggaagggatt tgactactgg 720  
 ggccagggaa ccctggtcac cgtctcctca actagtggcc aggccggcca gcaccatcac 780  
 catcaccatg gcgcataccc gtacgacgtt ccggactacg cttct 825

&lt;210&gt; 876

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 876

Gln Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln  
 1 5 10 15

Thr Ala Ala Ile Pro Cys Ser Gly Asp Lys Leu Gly Asp Lys Phe Ala  
 20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Tyr  
 35 40 45

Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Thr Trp Ala Ser Gly Ile Val Val  
 85 90 95

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly Gly Gly  
 100 105 110

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met Ala  
 115 120 125

Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
 130 135 140

Thr Leu Ser Leu Thr Cys Ala Ile Ser Gly Asp Ser Val Ser Ser Asn  
 145 150 155 160

Ser Ala Ala Trp Asn Trp Ile Arg Gln Ser Pro Ser Arg Gly Leu Glu  
 165 170 175

Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr Asn Asp Tyr Ala  
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180

185

190

Val Ser Val Lys Ser Arg Ile Thr Ile Asn Pro Asp Thr Ser Lys Asn  
           195                                  200                                  205

Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val  
           210                                  215                                  220

Tyr Tyr Cys Ala Arg Glu Arg Ser Gly Trp Lys Gly Phe Asp Tyr Trp  
       225                                  230                                  235                                  240

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly  
                                   245                                  250                                  255

Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp  
                                   260                                  265                                  270

Tyr Ala Ser  
           275

&lt;210&gt; 877

&lt;211&gt; 834

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 877

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gatgttgtaga tgactcagtc tccaccctcc ctgtccgtca cccctggaga gccggcctcc      60
atcacctgca ggtctagtaga gagcctcctg gaaagaaatg catacaacta cttggattgg      120
tacctgcaga ggccaggaca gtctccacag ctctgatctt acttgggttc taatcggggc      180
gccgggggtcc ctgacagggtt cagtggcagt ggatcaggca gagattttac actgaaaatc      240
agcagagtgg agcctgagga tgttgggggtt tattactgca tgcaagctctt acaagctccg      300
ttcactttcg gcggagggac caaggtggag atcaaacgtt ctagagggtg tggtggtagc      360
ggcggcgggcg gctctggtgg tggtggatcc ctcgagatgg ccgaagtgca gctggtgcag      420
tctggggggag gcttggtaca gcctgggggg tccctgagac tctcctgtgc agcctctgga      480
ttcaccttta gcagctatgc catgagctgg gtccgccagg ctccagggaa ggggctggag      540
tgggtctcag ctattagtag tagtggtggt agcacatact acgcagactc cgtgaagggc      600
cggttcacca tctccagaga caattccaag aacacgctgt atctgcaa atgaacagcctg      660
agagccgagg acacggccgt atattactgt gcgaaatggg gcccgtttca ggatgctttt      720
gatatctggg gccaaaggac aatggtcacc gtctcttcaa ctagtggcca ggccggccag      780
caccatcacc atcaccatgg cgcatacccg tacgacgttc cggactacgc ttct          834

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&lt;210&gt; 878

&lt;211&gt; 278

## 4329191\_1

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 878

Asp Val Val Met Thr Gln Ser Pro Pro Ser Leu Ser Val Thr Pro Gly  
 1 5 10 15

Glu Pro Ala Ser Ile Thr Cys Arg Ser Ser Gln Ser Leu Leu Glu Arg  
 20 25 30

Asn Ala Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ala Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Phe Thr Leu Lys Ile  
 65 70 75 80

Ser Arg Val Glu Pro Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Ala  
 85 90 95

Leu Gln Ala Pro Phe Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys  
 100 105 110

Arg Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly  
 115 120 125

Gly Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Gly Gly  
 130 135 140

Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly  
 145 150 155 160

Phe Thr Phe Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly  
 165 170 175

Lys Gly Leu Glu Trp Val Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr  
 180 185 190

Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn  
 195 200 205

Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp  
 210 215 220

Thr Ala Val Tyr Tyr Cys Ala Lys Trp Gly Pro Phe Gln Asp Ala Phe  
 225 230 235 240



4329191\_1

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly  
                   245                  250                  255

Gln Ala Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp  
                   260                  265                  270

Val Pro Asp Tyr Ala Ser  
                   275

<210> 879  
 <211> 843  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 879  
 caggctgtgc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60  
 tcctgcactg gaaccagcag tgacgttggt gggtataact atgtctcctg gtaccaacag 120  
 caccggggca aagcccccaa actcatgatt tatgaggtca gtaatcggcc ctcagggggtt 180  
 tctaatacgt tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240  
 caggctgagg acgaggctga ttattactgc agctcatata caagcagcag cacccttat 300  
 gtcttcggag caggggacaa ggtcaccgtc ctaggttcta gaggtggtgg tggtagcggc 360  
 ggcggcggct ctggtggtgg tggatccctc gagatggccg aggtgcagct ggtggagtct 420  
 gggggaggct tggtagagcc tggcaggtcc ctgagactct cctgtgcagc ctctggattc 480  
 acctttgatg attatgccat gcactgggtc cggcaagctc caggggaaggg cctggagtgg 540  
 gtctcaggta ttagttggaa tagtggtagc ataggctatg cggactctgt gaagggccga 600  
 ttcaccatct ccagagacaa cgccaagaac tccctgtatc tgcaaatgaa cagtctgaga 660  
 gctgaggaca cggccttgta ttactgtgca aaagccaggt ggacagcagt ggcacagac 720  
 caccactttg actactgggg ccagggaaac ctggtcaccg tctcctcaac tagtggccag 780  
 gccggccagc accatcacca tcaccatggc gcatacccg acgacgttcc ggactacgct 840  
 tct 843

<210> 880  
 <211> 281  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 880  
 Gln Ala Val Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln  
 1                  5                  10                  15

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr  
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20

25

30

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu  
 35 40 45

Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe  
 50 55 60

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu  
 65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser  
 85 90 95

Ser Thr Pro Tyr Val Phe Gly Ala Gly Thr Lys Val Thr Val Leu Gly  
 100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu  
 130 135 140

Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe  
 145 150 155 160

Thr Phe Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys  
 165 170 175

Gly Leu Glu Trp Val Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly  
 180 185 190

Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala  
 195 200 205

Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr  
 210 215 220

Ala Leu Tyr Tyr Cys Ala Lys Ala Arg Trp Thr Ala Val Ala Ser Asp  
 225 230 235 240

His His Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 245 250 255

Thr Ser Gly Gln Ala Gly Gln His His His His His Gly Ala Tyr  
 260 265 270

Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

&lt;210&gt; 881

## 4329191\_1

&lt;211&gt; 819

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 881

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caggctgtgc ttactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc      60
tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc      120
ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct      180
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag      240
tctgagggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc      300
ttcggaaactg ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc      360
ggcgggtctg gtggtggtgg atccctcgag atggccgagg tgcagctggt gcagtctggg      420
gctgagggtga agaagcctgg gtcctcggtg aaggtctcct gcaaggcttc tggaggcacc      480
ttcagcagct atgctatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg      540
ggaggggatca tccctatctt tggtagcga aactacgcac agaagttcca gggcagagtc      600
acgattaccg cggacgaatc cacgagcaca gcctacatgg agctgagcag cctgagatct      660
gaggacacgg ccgtgtatta ctgtgcgaga gattgggact acatggacgt ctggggcaaa      720
gggaccacgg tcaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac      780
catggcgcac acccgtagca cgttcgggac tacgcttct      819

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&lt;210&gt; 882

&lt;211&gt; 273

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 882

```

Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln
1          5          10          15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
          20          25          30

Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
          35          40          45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
          50          55          60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65          70          75          80

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4329191\_1

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
85 90 95

Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
145 150 155 160

Phe Ser Ser Tyr Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr  
180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Asp Trp Asp Tyr Met Asp Val Trp Gly Lys  
225 230 235 240

Gly Thr Thr Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
260 265 270

Ser

<210> 883

<211> 852

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 883

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| tcctatgagc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc | 60  |
| tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc | 120 |
| ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtcctc | 180 |

## 4329191\_1

gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc 300  
ttcggaaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggccgagg tgcagctggt ggagtctgga 420  
gctgaggatga agaagcctgg ggcctcagtg aaggctctct gcaaggcttc tggttacacc 480  
tttaccagct atggtatcag ctgggtgcga caggcccctg gacaagggct tgagtggatg 540  
ggatggatca gcgcttataa tggtaacaca aactatgcac agaagctcca gggcagagtc 600  
accatgacca cagacacatc caccgagcaca gcctacatgg agctgaggag cctgagatct 660  
gacgacacgg ccgtgtatta ctgtgcgaga gacctatctc ggggagctaa cccgcattac 720  
tactactact acggtatgga cgtctggggc caagggacca cggtcaccgt ctcctcaact 780  
agtggccagg ccggccagca ccatcaccat caccatggcg catacccgta cgacgttccg 840  
gactacgctt ct 852

&lt;210&gt; 884

&lt;211&gt; 284

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 884

Ser Tyr Glu Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
20 25 30

Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
35 40 45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
85 90 95

Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Glu Ser Gly Ala Glu Val Lys

130

135

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
145 150 155 160

Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr  
180 185 190

Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Asp Leu Ser Arg Gly Ala Asn Pro His Tyr  
225 230 235 240

Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr  
245 250 255

Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His His His  
260 265 270

Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
275 280

&lt;210&gt; 885

&lt;211&gt; 855

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polynucleotide

&lt;400&gt; 885

cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccgtc 60

tcctgcactg ggagcagatc caacatcggg gcaggatatg atgtacactg gtaccagcaa 120

cttccaggaa cagcccccaa actcctcatc tatggaaata gtaatcggcc tccaggggtc 180

cctgaccgat tctctgggtc taagtctggc acctcagcct ccctgggtcat cactgggctc 240

caggctgagg atgccgctga ttattactgc cagtcctatg acaacactgt gcgtgaatca 300

ccttatgtct tcggaactgg gaccaaggtc accgtcctag gttctagagg tggtggtggt 360

agcggcgggc gcggtcttgg tggtggtgga tccctcgaga tggccgaggt ccagctggta 420

cagtctgggg ctgaggtgaa gaagcctggg gcctcagtga aggtctcctg caaggtttcc 480

ggatacacc tactgaatt atccatgcac tgggtgacac aggtccttg aaaagggctt 540

gagtggatgg gaggttttga tcctgaagat ggtgaaacaa tctacgcaca gaagttccag 600

## 4329191\_1

```

ggcagagtca ccatgaccga ggacacatct acagacacag cctacatgga gctgagcagc      660
ctgagatctg aggacacggc cgtgtattac tgtgcaacag agagtaattt agtgtcccgg      720
cactactact actacggtat ggacgtctgg ggccaaggga ccacggtcac cgtctcctca      780
actagtggcc aggccggcca gcaccatcac catcaccatg gcgcataccc gtacgacgtt      840
ccggactacg cttct                                                    855

```

&lt;210&gt; 886

&lt;211&gt; 285

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 886

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln  
1 5 10 15

Arg Val Thr Val Ser Cys Thr Gly Ser Arg Ser Asn Ile Gly Ala Gly  
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu  
35 40 45

Leu Ile Tyr Gly Asn Ser Asn Arg Pro Pro Gly Val Pro Asp Arg Phe  
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Val Ile Thr Gly Leu  
65 70 75 80

Gln Ala Glu Asp Ala Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Asn Thr  
85 90 95

Val Arg Glu Ser Pro Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val  
100 105 110

Leu Gly Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
115 120 125

Gly Gly Ser Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala  
130 135 140

Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Val Ser  
145 150 155 160

Gly Tyr Thr Leu Thr Glu Leu Ser Met His Trp Val Arg Gln Ala Pro  
165 170 175

Gly Lys Gly Leu Glu Trp Met Gly Gly Phe Asp Pro Glu Asp Gly Glu  
180 185 190

4329191\_1

Thr Ile Tyr Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Glu Asp  
195 200 205

Thr Ser Thr Asp Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu  
210 215 220

Asp Thr Ala Val Tyr Tyr Cys Ala Thr Glu Ser Asn Leu Val Ser Arg  
225 230 235 240

His Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val  
245 250 255

Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His His  
260 265 270

His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
275 280 285

<210> 887

<211> 867

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 887

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| ctgcctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc  | 60  |
| tcttgttctg gaaccagctc caacatcgga agtaattctg tagactggta ccagcagctc  | 120 |
| ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct  | 180 |
| gaccgaatct ctggctcaa gtctggcacc tcagcctccc tggccatcag tgggtccag    | 240 |
| tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa tggttatgtc  | 300 |
| ttcggaaactg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc | 360 |
| ggcggctctg gtggtggtgg atccctcgag atggccgaag tgcagctggt gcagtctggg  | 420 |
| gctgaggtga agaagcctgg ggcctcagtg aaggtctcct gcaaggcttc tggatacacc  | 480 |
| ttcaccggct actatatgca ctgggtgca caggcccctg gacaagggtc tgagtggatg   | 540 |
| ggatggatca accctaacag tgggtgcaca aactatgcac agaagtttca gggcagggtc  | 600 |
| accatgacca gggacacgtc catcagcaca gcctacatgg agctgagcag gctgagatct  | 660 |
| gacgacacgg ccgtgtatta ctgtgcgaga gattacggat actatggttc ggggagttat  | 720 |
| tcgagcggcc ccctttacta ctactacggg atggacgtct ggggccaagg gaccacggtc  | 780 |
| accgtctcct caactagtgg ccaggccggc cagcaccatc accatcacca tggcgcatatc | 840 |
| ccgtacgacg ttccggacta cgcttct                                      | 867 |

<210> 888



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&lt;211&gt; 289

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 888

Leu Pro Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Thr Ser Ser Asn Ile Gly Ser Asn  
 20 25 30

Ser Val Asp Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Ile Ser  
 50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 85 90 95

Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
 130 135 140

Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
 145 150 155 160

Phe Thr Gly Tyr Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175

Leu Glu Trp Met Gly Trp Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr  
 180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile  
 195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala  
 210 215 220

Val Tyr Tyr Cys Ala Arg Asp Tyr Gly Tyr Tyr Gly Ser Gly Ser Tyr  
 225 230 235 240

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Ser Ser Gly Pro Leu Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln  
245 250 255

Gly Thr Thr Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
260 265 270

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
275 280 285

Ser

<210> 889  
<211> 852  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 889  
caggctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60  
tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcagctc 120  
ccaggaacgg cccccaact cctcatgtat aataatgatc agcggccctc aggggtccct 180  
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240  
tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctcaa tggttatgtc 300  
ttcggacctg ggaccaaggt caccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
ggcggctctg gtggtggtgg atccctcgag atggcccagg tgagctggt ggagtctgga 420  
gctgaggatga agaagcctgg ggcctcagtg aaggtctcct gcaaggcttc tggttacacc 480  
tttaccagct atggtatcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg 540  
ggatggatca gcgcttacaa tggtaacaca aactatgcac agaagctcca gggcagagtc 600  
accatgacca cagacacatc cagagcaca gcctacatgg agctgaggag cctgagatct 660  
gacgacacgg ccgtgtatta ctgtgcgaga gacctatctc ggggagctaa cccgcattac 720  
tactactact acggtatgga cgtctggggc caagggacca cggtcaccgt ctctcaact 780  
agtggccagg ccggccagca ccatcaccat caccatggcg catacccgta cgacgttccg 840  
gactacgctt ct 852

<210> 890  
<211> 284  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 890

## 4329191\_1

Gln Ala Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln  
 1 5 10 15  
 Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn  
 20 25 30  
 Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 35 40 45  
 Met Tyr Asn Asn Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser  
 50 55 60  
 Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln  
 65 70 75 80  
 Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 85 90 95  
 Asn Gly Tyr Val Phe Gly Pro Gly Thr Lys Val Thr Val Leu Gly Ser  
 100 105 110  
 Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Leu Glu Met Ala Gln Val Gln Leu Val Glu Ser Gly Ala Glu Val Lys  
 130 135 140  
 Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr  
 145 150 155 160  
 Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
 165 170 175  
 Leu Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr  
 180 185 190  
 Ala Gln Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr  
 195 200 205  
 Ser Thr Ala Tyr Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala  
 210 215 220  
 Val Tyr Tyr Cys Ala Arg Asp Leu Ser Arg Gly Ala Asn Pro His Tyr  
 225 230 235 240  
 Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr  
 245 250 255  
 Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His His His His His His  
 260 265 270

## 4329191\_1

Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
 275 280

<210> 891  
 <211> 831  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 891  
 aattttatgc tgactcagcc ccacgctgtg tcggagtctc cggggaagac ggtaaccatc 60  
 tcctgcaccc gcagcagtgg cagtattgcc agcaactatg tgcagtggta ccagcagcgc 120  
 ccgggcagtt cccccgcac tgtgatttat gaggataatc aaagaccctc tggggtcctt 180  
 ggtcggttct ctggctccat cgacagctcc tccaactctg cctccctcac catctctgga 240  
 ctgaagactg aggacgaggc tgactactac tgtcagtctt atgattccac cagtgtgctt 300  
 ttcggcggag ggaccaagct gaccgtccta ggttctagag gtggtggtgg tagcggcggc 360  
 ggcggctctg gtggtggtgg atccctcgag atggccgagg tccagctggt gcagtctggg 420  
 gctgaggtga agaagccagg gtcctcggtg aaggtctcct gcaaggcctc gggaggcacc 480  
 ttcagcagca attctctcag ctgggtgcga caggcccctg gacaagggtc tgagtggatg 540  
 ggaaggatct tccctatcct ggggtataaca aactatgcac agaagttcca gggcagagtc 600  
 acgattaccg cggacaaatc cacgagcaca gcctacatgg agctgagcag cctgagatct 660  
 gaggacacgg ccgtctatta ctgtgcgaga ggaaactacc aatggtatga tgcttttgat 720  
 atctggggcc aagggacaat ggtcaccgtc tcttcaacta gtggccaggc cggccagcac 780  
 catcaccatc accatggcgc ataccgtac gacgttccgg actacgcttc t 831

<210> 892  
 <211> 277  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 892  
 Asn Phe Met Leu Thr Gln Pro His Ala Val Ser Glu Ser Pro Gly Lys  
 1 5 10 15

Thr Val Thr Ile Ser Cys Thr Arg Ser Ser Gly Ser Ile Ala Ser Asn  
 20 25 30

Tyr Val Gln Trp Tyr Gln Gln Arg Pro Gly Ser Ser Pro Arg Thr Val  
 35 40 45

Ile Tyr Glu Asp Asn Gln Arg Pro Ser Gly Val Pro Gly Arg Phe Ser  
 50 55 60

4329191\_1

Gly Ser Ile Asp Ser Ser Ser Asn Ser Ala Ser Leu Thr Ile Ser Gly  
65 70 75 80

Leu Lys Thr Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser  
85 90 95

Thr Ser Val Leu Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser  
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser  
115 120 125

Leu Glu Met Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys  
130 135 140

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr  
145 150 155 160

Phe Ser Ser Asn Ser Leu Ser Trp Val Arg Gln Ala Pro Gly Gln Gly  
165 170 175

Leu Glu Trp Met Gly Arg Ile Phe Pro Ile Leu Gly Ile Thr Asn Tyr  
180 185 190

Ala Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr  
195 200 205

Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala  
210 215 220

Val Tyr Tyr Cys Ala Arg Gly Asn Tyr Gln Trp Tyr Asp Ala Phe Asp  
225 230 235 240

Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly Gln  
245 250 255

Ala Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp Val  
260 265 270

Pro Asp Tyr Ala Ser  
275

<210> 893

<211> 819

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 893

cagcctgtgc tgactcagcc accctcagtg tcagtgggtcc caggaaagac ggccaggatt

60

4329191\_1

acctgtgggg gaaaaaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120  
cagggccctg tgggtggcat ccattatgat agtgaccggc cctcagggat ccctgagcga 180  
ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatcatcc ttatgtcttc 300  
ggaactggga ccaaggtcac cgtcctaggt tctagagggtg gtggtggtag cggcggcggc 360  
ggctctgggtg gtggtggatc cctcgagatg gcccagggtgc agctgggtgca gtctggagct 420  
gaggtgaaga agcctggggc ctcagtgaag gtctcctgca aggcttctgg ttacaccttt 480  
accaactatg gtatcagctg ggtgcgacag gccctggac aagggttga gtggatggga 540  
tggatcagcg cttacaatgg taacacaaac tatgcacata agctccaggg cagagtcacc 600  
atgaccacag acacatccac gagcacagcc aacatggagc tgaggagcct gagacctgac 660  
gacactgccg tgtattactg tgcgcgctct tacttcgggt ctcattgatta ctgggggtcaa 720  
ggtactctgg tgaccgtctc ctcaactagt ggccaggccg gccagcacca tcaccatcac 780  
catggcgcat acccgtacga cgttccggac tacgcttct 819

<210> 894

<211> 273

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 894

Gln Pro Val Leu Thr Gln Pro Pro Ser Val Ser Val Val Pro Gly Lys  
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Gly Lys Asn Ile Gly Ser Lys Ser Val  
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Val Val Ile His  
35 40 45

Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser  
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
85 90 95

Pro Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg  
100 105 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu  
115 120 125

4329191\_1

Glu Met Ala Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
130 135 140

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
145 150 155 160

Thr Asn Tyr Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu  
165 170 175

Glu Trp Met Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala  
180 185 190

His Lys Leu Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser  
195 200 205

Thr Ala Asn Met Glu Leu Arg Ser Leu Arg Pro Asp Asp Thr Ala Val  
210 215 220

Tyr Tyr Cys Ala Arg Ser Tyr Phe Gly Ser His Asp Tyr Trp Gly Gln  
225 230 235 240

Gly Thr Leu Val Thr Val Ser Ser Thr Ser Gly Gln Ala Gly Gln His  
245 250 255

His His His His His Gly Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala  
260 265 270

Ser

<210> 895  
<211> 834  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 895  
tcctatgtgc tgactcagcc accctcgggtg tcagtggccc caggaaagac ggccaggatt 60  
tcctgtgggg gaaacgacat tggaagtaaa agtgttttct ggtatcagca gaggccaggc 120  
cagggccctg tggtggtcgt ctatgatgat agcgaccggc cctcagggtt ccctgagcga 180  
ttctctggct tcaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240  
gatgaggccg actattactg tcaagtgtgg gatagtagta gtgatcatta tgtcttcgga 300  
actgggacca aggtcaccgt cctaggttct agaggtggtg gtggtagcgg cggcggcggc 360  
tctggtggtg gtggatccct cgagatggcc caggtgcagc tgggtggagtc tgggggaggc 420  
ttggtacagc ctggcagggtc cctgagactc tcctgtgcag cctctggatt cacctttgat 480

## 4329191\_1

gattatgccca tgcactgggt cgggcaagct ccaggggaagg gcctggagtg ggtctcaggt 540  
 attagttagga atagtggtag cataggctat gcggactctg tgaagggccg attcaccatc 600  
 tccagagaca acgccaagaa ctccctgtat ctgcaaatga acagtctgag agctgaggac 660  
 acggccttgt attactgtgc aaaagatata acctatggtt cggggagtta tgggtgctttt 720  
 gatattctggg gccaaaggac aatgggtcacc gtctcttcaa ctagtggcca ggccggccag 780  
 caccatcacc atcaccatgg cgcatacccg tacgacgttc cggactacgc ttct 834

&lt;210&gt; 896

&lt;211&gt; 278

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 896

Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys  
 1 5 10 15

Thr Ala Arg Ile Ser Cys Gly Gly Asn Asp Ile Gly Ser Lys Ser Val  
 20 25 30

Phe Trp Tyr Gln Gln Arg Pro Gly Gln Ala Pro Val Leu Val Val Tyr  
 35 40 45

Asp Asp Ser Asp Arg Pro Ser Gly Leu Pro Glu Arg Phe Ser Gly Phe  
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly  
 65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His  
 85 90 95

Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly Ser Arg Gly  
 100 105 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu  
 115 120 125

Met Ala Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro  
 130 135 140

Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp  
 145 150 155 160

Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu  
 165 170 175

Trp Val Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp  
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Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser  
 195 200 205

Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr  
 210 215 220

Tyr Cys Ala Lys Asp Ile Thr Tyr Gly Ser Gly Ser Tyr Gly Ala Phe  
 225 230 235 240

Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Thr Ser Gly  
 245 250 255

Gln Ala Gly Gln His His His His His His Gly Ala Tyr Pro Tyr Asp  
 260 265 270

Val Pro Asp Tyr Ala Ser  
 275

<210> 897  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 897  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 1 5 10 15

<210> 898  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 898  
 ggtggaggtg gatcaggtgg aggtggatct ggtggaggtg gatct

45

<210> 899  
 <211> 977  
 <212> PRT  
 <213> Homo sapiens

<400> 899  
 Met Leu Leu Trp Val Ile Leu Leu Val Leu Ala Pro Val Ser Gly Gln  
 1 5 10 15

Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro Trp Thr  
 20 25 30

## 4329191\_1

Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys Gly Phe Arg  
 35 40 45  
 Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg Tyr Leu Gly Lys  
 50 55 60  
 Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu Glu Val Gln Glu Ser  
 65 70 75 80  
 Gly Glu Tyr Arg Cys Gln Ala Gln Gly Ser Pro Leu Ser Ser Pro Val  
 85 90 95  
 His Leu Asp Phe Ser Ser Ala Ser Leu Ile Leu Gln Ala Pro Leu Ser  
 100 105 110  
 Val Phe Glu Gly Asp Ser Val Val Leu Arg Cys Arg Ala Lys Ala Glu  
 115 120 125  
 Val Thr Leu Asn Asn Thr Ile Tyr Lys Asn Asp Asn Val Leu Ala Phe  
 130 135 140  
 Leu Asn Lys Arg Thr Asp Phe His Ile Pro His Ala Cys Leu Lys Asp  
 145 150 155 160  
 Asn Gly Ala Tyr Arg Cys Thr Gly Tyr Lys Glu Ser Cys Cys Pro Val  
 165 170 175  
 Ser Ser Asn Thr Val Lys Ile Gln Val Gln Glu Pro Phe Thr Arg Pro  
 180 185 190  
 Val Leu Arg Ala Ser Ser Phe Gln Pro Ile Ser Gly Asn Pro Val Thr  
 195 200 205  
 Leu Thr Cys Glu Thr Gln Leu Ser Leu Glu Arg Ser Asp Val Pro Leu  
 210 215 220  
 Arg Phe Arg Phe Phe Arg Asp Asp Gln Thr Leu Gly Leu Gly Trp Ser  
 225 230 235 240  
 Leu Ser Pro Asn Phe Gln Ile Thr Ala Met Trp Ser Lys Asp Ser Gly  
 245 250 255  
 Phe Tyr Trp Cys Lys Ala Ala Thr Met Pro His Ser Ile Ile Ser Asp  
 260 265 270  
 Ser Pro Arg Ser Trp Ile Gln Val Gln Ile Pro Ala Ser His Pro Val  
 275 280 285  
 Leu Thr Leu Ser Pro Glu Lys Ala Leu Asn Phe Glu Gly Thr Lys Val  
 290 295 300

## 4329191\_1

Thr Leu His Cys Glu Thr Gln Glu Asp Ser Leu Arg Thr Leu Tyr Arg  
 305 310 315 320  
 Phe Tyr His Glu Gly Val Pro Leu Arg His Lys Ser Val Arg Cys Glu  
 325 330 335  
 Arg Gly Ala Ser Ile Ser Phe Ser Leu Thr Thr Glu Asn Ser Gly Asn  
 340 345 350  
 Tyr Tyr Cys Thr Ala Asp Asn Gly Leu Gly Ala Lys Pro Ser Lys Ala  
 355 360 365  
 Val Ser Leu Ser Val Thr Val Pro Val Ser His Pro Val Leu Asn Leu  
 370 375 380  
 Ser Ser Pro Glu Asp Leu Ile Phe Glu Gly Ala Lys Val Thr Leu His  
 385 390 395 400  
 Cys Glu Ala Gln Arg Gly Ser Leu Pro Ile Leu Tyr Gln Phe His His  
 405 410 415  
 Glu Asp Ala Ala Leu Glu Arg Arg Ser Ala Asn Ser Ala Gly Gly Val  
 420 425 430  
 Ala Ile Ser Phe Ser Leu Thr Ala Glu His Ser Gly Asn Tyr Tyr Cys  
 435 440 445  
 Thr Ala Asp Asn Gly Phe Gly Pro Gln Arg Ser Lys Ala Val Ser Leu  
 450 455 460  
 Ser Ile Thr Val Pro Val Ser His Pro Val Leu Thr Leu Ser Ser Ala  
 465 470 475 480  
 Glu Ala Leu Thr Phe Glu Gly Ala Thr Val Thr Leu His Cys Glu Val  
 485 490 495  
 Gln Arg Gly Ser Pro Gln Ile Leu Tyr Gln Phe Tyr His Glu Asp Met  
 500 505 510  
 Pro Leu Trp Ser Ser Ser Thr Pro Ser Val Gly Arg Val Ser Phe Ser  
 515 520 525  
 Phe Ser Leu Thr Glu Gly His Ser Gly Asn Tyr Tyr Cys Thr Ala Asp  
 530 535 540  
 Asn Gly Phe Gly Pro Gln Arg Ser Glu Val Val Ser Leu Phe Val Thr  
 545 550 555 560  
 Val Pro Val Ser Arg Pro Ile Leu Thr Leu Arg Val Pro Arg Ala Gln  
 565 570 575

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Ala Val Val Gly Asp Leu Leu Glu Leu His Cys Glu Ala Pro Arg Gly  
580 585 590

Ser Pro Pro Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly  
595 600 605

Ser Ser Ser Ala Pro Ser Gly Gly Glu Ala Ser Phe Asn Leu Ser Leu  
610 615 620

Thr Ala Glu His Ser Gly Asn Tyr Ser Cys Glu Ala Asn Asn Gly Leu  
625 630 635 640

Val Ala Gln His Ser Asp Thr Ile Ser Leu Ser Val Ile Val Pro Val  
645 650 655

Ser Arg Pro Ile Leu Thr Phe Arg Ala Pro Arg Ala Gln Ala Val Val  
660 665 670

Gly Asp Leu Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Ser Pro  
675 680 685

Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly Lys Ile Ser  
690 695 700

Ala Pro Ser Gly Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Thr Glu  
705 710 715 720

His Ser Gly Ile Tyr Ser Cys Glu Ala Asp Asn Gly Leu Glu Ala Gln  
725 730 735

Arg Ser Glu Met Val Thr Leu Lys Val Ala Val Pro Val Ser Arg Pro  
740 745 750

Val Leu Thr Leu Arg Ala Pro Gly Thr His Ala Ala Val Gly Asp Leu  
755 760 765

Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Pro Leu Ile Leu Tyr  
770 775 780

Arg Phe Phe His Glu Asp Val Thr Leu Gly Asn Arg Ser Ser Pro Ser  
785 790 795 800

Gly Gly Ala Ser Leu Asn Leu Ser Leu Thr Ala Glu His Ser Gly Asn  
805 810 815

Tyr Ser Cys Glu Ala Asp Asn Gly Leu Gly Ala Gln Arg Ser Glu Thr  
820 825 830

Val Thr Leu Tyr Ile Thr Gly Leu Thr Ala Asn Arg Ser Gly Pro Phe  
835 840 845

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Ala Thr Gly Val Ala Gly Gly Leu Leu Ser Ile Ala Gly Leu Ala Ala  
850 855 860

Gly Ala Leu Leu Leu Tyr Cys Trp Leu Ser Arg Lys Ala Gly Arg Lys  
865 870 875 880

Pro Ala Ser Asp Pro Ala Arg Ser Pro Ser Asp Ser Asp Ser Gln Glu  
885 890 895

Pro Thr Tyr His Asn Val Pro Ala Trp Glu Glu Leu Gln Pro Val Tyr  
900 905 910

Thr Asn Ala Asn Pro Arg Gly Glu Asn Val Val Tyr Ser Glu Val Arg  
915 920 925

Ile Ile Gln Glu Lys Lys Lys His Ala Val Ala Ser Asp Pro Arg His  
930 935 940

Leu Arg Asn Lys Gly Ser Pro Ile Ile Tyr Ser Glu Val Lys Val Ala  
945 950 955 960

Ser Thr Pro Val Ser Gly Ser Leu Phe Leu Ala Ser Ser Ala Pro His  
965 970 975

Arg

<210> 900

<211> 87

<212> PRT

<213> Homo sapiens

<400> 900

Arg Pro Val Leu Thr Leu Arg Ala Pro Gly Thr His Ala Ala Val Gly  
1 5 10 15

Asp Leu Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Pro Leu Ile  
20 25 30

Leu Tyr Arg Phe Phe His Glu Asp Val Thr Leu Gly Asn Arg Ser Ser  
35 40 45

Pro Ser Gly Gly Ala Ser Leu Asn Leu Ser Leu Thr Ala Glu His Ser  
50 55 60

Gly Asn Tyr Ser Cys Glu Ala Asp Asn Gly Leu Gly Ala Gln Arg Ser  
65 70 75 80

Glu Thr Val Thr Leu Tyr Ile  
85

<210> 901

<211> 5

<212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 901  
 Gly Gly Gly Gly Ser  
 1 5

<210> 902  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 902  
 Ser Gly Gly Ser Gly Gly Ser  
 1 5

<210> 903  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 903  
 Gly Gly Gly Gly Ser Gly Gly Gly Ser  
 1 5

<210> 904  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 904  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 1 5 10

<210> 905  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 905  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly Gly  
 1 5 10 15

Gly Ser

<210> 906  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 906  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
 1 5 10 15

Gly Gly Gly Ser  
 20

<210> 907  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 907  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
 1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 20 25

<210> 908  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 908  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
 1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 20 25 30

<210> 909  
 <211> 35  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 909

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Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly  
 1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 20 25 30

Gly Gly Ser  
 35

<210> 910  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 910  
 Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro  
 1 5 10 15

<210> 911  
 <211> 24  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 911  
 Gly Gly Gly Gly Ser Gly Gly Gly Ser Glu Pro Lys Ser Cys Asp Lys  
 1 5 10 15

Thr His Thr Cys Pro Pro Cys Pro  
 20

<210> 912  
 <211> 62  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 912  
 Glu Leu Lys Thr Pro Leu Gly Asp Thr Thr His Thr Cys Pro Arg Cys  
 1 5 10 15

Pro Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro  
 20 25 30

Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro Glu  
 35 40 45

Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro  
 50 55 60



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<210> 913  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 913  
 Gly Ser Gly Ser Gly Ser  
 1 5

<210> 914  
 <211> 3  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 914  
 Ala Ala Ala  
 1

<210> 915  
 <211> 12  
 <212> PRT  
 <213> Homo sapiens

<400> 915  
 Arg Ser Glu Thr Val Thr Leu Tyr Ile Thr Gly Leu  
 1 5 10

<210> 916  
 <211> 11  
 <212> PRT  
 <213> Homo sapiens

<400> 916  
 Ser Arg Pro Ile Leu Thr Phe Arg Ala Pro Arg  
 1 5 10

<210> 917  
 <211> 78  
 <212> PRT  
 <213> Homo sapiens

<400> 917  
 Gly Thr His Ala Ala Val Gly Asp Leu Leu Glu Leu His Cys Glu Ala  
 1 5 10 15

Leu Arg Gly Ser Pro Leu Ile Leu Tyr Arg Phe Phe His Glu Asp Val  
 20 25 30

Thr Leu Gly Asn Arg Ser Ser Pro Ser Gly Gly Ala Ser Leu Asn Leu  
 35 40 45

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Ser Leu Thr Ala Glu His Ser Gly Asn Tyr Ser Cys Glu Ala Asp Asn  
 50 55 60

Gly Leu Gly Ala Gln Arg Ser Glu Thr Val Thr Leu Tyr Ile  
 65 70 75

<210> 918  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 918  
 Cys Leu Ser Ser Glu Arg Glu Arg Val Glu Asp Leu Phe Glu Tyr Glu  
 1 5 10 15

Cys Glu Leu Leu Thr Ser Glu Pro Ile Phe His Cys Arg Gln Glu Asp  
 20 25 30

Cys

<210> 919  
 <211> 11  
 <212> PRT  
 <213> Homo sapiens

<400> 919  
 Leu Arg Gly Ser Pro Leu Ile Leu Tyr Arg Phe  
 1 5 10

<210> 920  
 <211> 11  
 <212> PRT  
 <213> Homo sapiens

<400> 920  
 Leu Arg Gly Ser Ser Pro Ile Leu Tyr Trp Phe  
 1 5 10

<210> 921  
 <211> 11  
 <212> PRT  
 <213> Homo sapiens

<400> 921  
 Ala Pro Arg Gly Ser Pro Pro Ile Leu Tyr Trp  
 1 5 10

<210> 922  
 <211> 907  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

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&lt;400&gt; 922

Met Leu Leu Trp Val Ile Leu Leu Val Leu Ala Pro Val Ser Gly Gln  
 1 5 10 15  
 Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro Trp Thr  
 20 25 30  
 Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys Gly Phe Arg  
 35 40 45  
 Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg Tyr Leu Gly Lys  
 50 55 60  
 Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu Glu Val Gln Glu Ser  
 65 70 75 80  
 Gly Glu Tyr Arg Cys Gln Ala Gln Gly Ser Pro Leu Ser Ser Pro Val  
 85 90 95  
 His Leu Asp Phe Ser Ser Ala Ser Leu Ile Leu Gln Ala Pro Leu Ser  
 100 105 110  
 Val Phe Glu Gly Asp Ser Val Val Leu Arg Cys Arg Ala Lys Ala Glu  
 115 120 125  
 Val Thr Leu Asn Asn Thr Ile Tyr Lys Asn Asp Asn Val Leu Ala Phe  
 130 135 140  
 Leu Asn Lys Arg Thr Asp Phe His Ile Pro His Ala Cys Leu Lys Asp  
 145 150 155 160  
 Asn Gly Ala Tyr Arg Cys Thr Gly Tyr Lys Glu Ser Cys Cys Pro Val  
 165 170 175  
 Ser Ser Asn Thr Val Lys Ile Gln Val Gln Glu Pro Phe Thr Arg Pro  
 180 185 190  
 Val Leu Arg Ala Ser Ser Phe Gln Pro Ile Ser Gly Asn Pro Val Thr  
 195 200 205  
 Leu Thr Cys Glu Thr Gln Leu Ser Leu Glu Arg Ser Asp Val Pro Leu  
 210 215 220  
 Arg Phe Arg Phe Phe Arg Asp Asp Gln Thr Leu Gly Leu Gly Trp Ser  
 225 230 235 240  
 Leu Ser Pro Asn Phe Gln Ile Thr Ala Met Trp Ser Lys Asp Ser Gly  
 245 250 255  
 Phe Tyr Trp Cys Lys Ala Ala Thr Met Pro His Ser Ile Ile Ser Asp  
 260 265 270

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Ser Pro Arg Ser Trp Ile Gln Val Gln Ile Pro Ala Ser His Pro Val  
 275 280 285  
 Leu Thr Leu Ser Pro Glu Lys Ala Leu Asn Phe Glu Gly Thr Lys Val  
 290 295 300  
 Thr Leu His Cys Glu Thr Gln Glu Asp Ser Leu Arg Thr Leu Tyr Arg  
 305 310 315 320  
 Phe Tyr His Glu Gly Val Pro Leu Arg His Lys Ser Val Arg Cys Glu  
 325 330 335  
 Arg Gly Ala Ser Ile Ser Phe Ser Leu Thr Thr Glu Asn Ser Gly Asn  
 340 345 350  
 Tyr Tyr Cys Thr Ala Asp Asn Gly Leu Gly Ala Lys Pro Ser Lys Ala  
 355 360 365  
 Val Ser Leu Ser Val Thr Val Pro Val Ser His Pro Val Leu Asn Leu  
 370 375 380  
 Ser Ser Pro Glu Asp Leu Ile Phe Glu Gly Ala Lys Val Thr Leu His  
 385 390 395 400  
 Cys Glu Ala Gln Arg Gly Ser Leu Pro Ile Leu Tyr Gln Phe His His  
 405 410 415  
 Glu Asp Ala Ala Leu Glu Arg Arg Ser Ala Asn Ser Ala Gly Gly Val  
 420 425 430  
 Ala Ile Ser Phe Ser Leu Thr Ala Glu His Ser Gly Asn Tyr Tyr Cys  
 435 440 445  
 Thr Ala Asp Asn Gly Phe Gly Pro Gln Arg Ser Lys Ala Val Ser Leu  
 450 455 460  
 Ser Ile Thr Val Pro Val Ser His Pro Val Leu Thr Leu Ser Ser Ala  
 465 470 475 480  
 Glu Ala Leu Thr Phe Glu Gly Ala Thr Val Thr Leu His Cys Glu Val  
 485 490 495  
 Gln Arg Gly Ser Pro Gln Ile Leu Tyr Gln Phe Tyr His Glu Asp Met  
 500 505 510  
 Pro Leu Trp Ser Ser Ser Thr Pro Ser Val Gly Arg Val Ser Phe Ser  
 515 520 525  
 Phe Ser Leu Thr Glu Gly His Ser Gly Asn Tyr Tyr Cys Thr Ala Asp  
 530 535 540

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Asn Gly Phe Gly Pro Gln Arg Ser Glu Val Val Ser Leu Phe Val Thr  
 545 550 555 560  
 Val Pro Val Ser Arg Pro Ile Leu Thr Leu Arg Val Pro Arg Ala Gln  
 565 570 575  
 Ala Val Val Gly Asp Leu Leu Glu Leu His Cys Glu Ala Pro Arg Gly  
 580 585 590  
 Ser Pro Pro Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly  
 595 600 605  
 Ser Ser Ser Ala Pro Ser Gly Gly Glu Ala Ser Phe Asn Leu Ser Leu  
 610 615 620  
 Thr Ala Glu His Ser Gly Asn Tyr Ser Cys Glu Ala Asn Asn Gly Leu  
 625 630 635 640  
 Val Ala Gln His Ser Asp Thr Ile Ser Leu Ser Val Ile Val Pro Val  
 645 650 655  
 Ser Arg Pro Ile Leu Thr Phe Arg Ala Pro Arg Ala Gln Ala Val Val  
 660 665 670  
 Gly Asp Leu Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Ser Pro  
 675 680 685  
 Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly Lys Ile Ser  
 690 695 700  
 Ala Pro Ser Gly Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Thr Glu  
 705 710 715 720  
 His Ser Gly Ile Tyr Ser Cys Glu Ala Asp Asn Gly Leu Glu Ala Gln  
 725 730 735  
 Arg Ser Glu Met Val Thr Leu Lys Val Ala Ala Ala Ala Glu Gln Lys  
 740 745 750  
 Leu Ile Ser Glu Glu Asp Leu Glu Gln Lys Leu Ile Ser Glu Glu Asp  
 755 760 765  
 Leu Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Thr Gly Val Ala Gly  
 770 775 780  
 Gly Leu Leu Ser Ile Ala Gly Leu Ala Ala Gly Ala Leu Leu Leu Tyr  
 785 790 795 800  
 Cys Trp Leu Ser Arg Lys Ala Gly Arg Lys Pro Ala Ser Asp Pro Ala  
 805 810 815

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Arg Ser Pro Ser<sub>820</sub> Asp Ser Asp Ser Gln<sub>825</sub> Glu Pro Thr Tyr His<sub>830</sub> Asn Val

Pro Ala Trp<sub>835</sub> Glu Glu Leu Gln<sub>840</sub> Val Tyr Thr Asn<sub>845</sub> Ala Asn Pro Arg

Gly Glu<sub>850</sub> Asn Val Val Tyr Ser<sub>855</sub> Glu Val Arg Ile Ile<sub>860</sub> Gln Glu Lys Lys

Lys<sub>865</sub> His Ala Val Ala Ser<sub>870</sub> Asp Pro Arg His Leu<sub>875</sub> Arg Asn Lys Gly Ser<sub>880</sub>

Pro Ile Ile Tyr Ser<sub>885</sub> Glu Val Lys Val Ala<sub>890</sub> Ser Thr Pro Val Ser<sub>895</sub> Gly

Ser Leu Phe Leu<sub>900</sub> Ala Ser Ser Ala Pro<sub>905</sub> His Arg

<210> 923  
<211> 977  
<212> PRT  
<213> Homo sapiens

<400> 923  
Met Leu Leu Trp Val<sub>5</sub> Ile Leu Leu Val Leu<sub>10</sub> Ala Pro Val Ser Gly<sub>15</sub> Gln

Phe Ala Arg Thr<sub>20</sub> Pro Arg Pro Ile Ile<sub>25</sub> Phe Leu Gln Pro Pro<sub>30</sub> Trp Thr

Thr Val Phe<sub>35</sub> Gln Gly Glu Arg Val<sub>40</sub> Thr Leu Thr Cys Lys<sub>45</sub> Gly Phe Arg

Phe Tyr<sub>50</sub> Ser Pro Gln Lys Thr<sub>55</sub> Lys Trp Tyr His Arg<sub>60</sub> Tyr Leu Gly Lys

Glu Ile Leu Arg Glu Thr<sub>70</sub> Pro Asp Asn Ile Leu<sub>75</sub> Glu Val Gln Glu Ser<sub>80</sub>

Gly Glu Tyr Arg Cys<sub>85</sub> Gln Ala Gln Gly Ser<sub>90</sub> Pro Leu Ser Ser Pro<sub>95</sub> Val

His Leu Asp Phe<sub>100</sub> Ser Ser Ala Ser Leu<sub>105</sub> Ile Leu Gln Ala Pro<sub>110</sub> Leu Ser

Val Phe Glu<sub>115</sub> Gly Asp Ser Val Val<sub>120</sub> Leu Arg Cys Arg Ala<sub>125</sub> Lys Ala Glu

Val Thr<sub>130</sub> Leu Asn Asn Thr Ile<sub>135</sub> Tyr Lys Asn Asp Asn<sub>140</sub> Val Leu Ala Phe

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Leu Asn Lys Arg Thr Asp Phe His Ile Pro His Ala Cys Leu Lys Asp  
 145 150 155 160  
 Asn Gly Ala Tyr Arg Cys Thr Gly Tyr Lys Glu Ser Cys Cys Pro Val  
 165 170 175  
 Ser Ser Asn Thr Val Lys Ile Gln Val Gln Glu Pro Phe Thr Arg Pro  
 180 185 190  
 Val Leu Arg Ala Ser Ser Phe Gln Pro Ile Ser Gly Asn Pro Val Thr  
 195 200 205  
 Leu Thr Cys Glu Thr Gln Leu Ser Leu Glu Arg Ser Asp Val Pro Leu  
 210 215 220  
 Arg Phe Arg Phe Phe Arg Asp Asp Gln Thr Leu Gly Leu Gly Trp Ser  
 225 230 235 240  
 Leu Ser Pro Asn Phe Gln Ile Thr Ala Met Trp Ser Lys Asp Ser Gly  
 245 250 255  
 Phe Tyr Trp Cys Lys Ala Ala Thr Met Pro His Ser Ile Ile Ser Asp  
 260 265 270  
 Ser Pro Arg Ser Trp Ile Gln Val Gln Ile Pro Ala Ser His Pro Val  
 275 280 285  
 Leu Thr Leu Ser Pro Glu Lys Ala Leu Asn Phe Glu Gly Thr Lys Val  
 290 295 300  
 Thr Leu His Cys Glu Thr Gln Glu Asp Ser Leu Arg Thr Leu Tyr Arg  
 305 310 315 320  
 Phe Tyr His Glu Gly Val Pro Leu Arg His Lys Ser Val Arg Cys Glu  
 325 330 335  
 Arg Gly Ala Ser Ile Ser Phe Ser Leu Thr Thr Glu Asn Ser Gly Asn  
 340 345 350  
 Tyr Tyr Cys Thr Ala Asp Asn Gly Leu Gly Ala Lys Pro Ser Lys Ala  
 355 360 365  
 Val Ser Leu Ser Val Thr Val Pro Val Ser His Pro Val Leu Asn Leu  
 370 375 380  
 Ser Ser Pro Glu Asp Leu Ile Phe Glu Gly Ala Lys Val Thr Leu His  
 385 390 395 400  
 Cys Glu Ala Gln Arg Gly Ser Leu Pro Ile Leu Tyr Gln Phe His His  
 405 410 415

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Glu Asp Ala Ala Leu Glu Arg Arg Ser Ala Asn Ser Ala Gly Gly Val  
 420 425 430  
 Ala Ile Ser Phe Ser Leu Thr Ala Glu His Ser Gly Asn Tyr Tyr Cys  
 435 440 445  
 Thr Ala Asp Asn Gly Phe Gly Pro Gln Arg Ser Lys Ala Val Ser Leu  
 450 455 460  
 Ser Ile Thr Val Pro Val Ser His Pro Val Leu Thr Leu Ser Ser Ala  
 465 470 475 480  
 Glu Ala Leu Thr Phe Glu Gly Ala Thr Val Thr Leu His Cys Glu Val  
 485 490 495  
 Gln Arg Gly Ser Pro Gln Ile Leu Tyr Gln Phe Tyr His Glu Asp Met  
 500 505 510  
 Pro Leu Trp Ser Ser Ser Thr Pro Ser Val Gly Arg Val Ser Phe Ser  
 515 520 525  
 Phe Ser Leu Thr Glu Gly His Ser Gly Asn Tyr Tyr Cys Thr Ala Asp  
 530 535 540  
 Asn Gly Phe Gly Pro Gln Arg Ser Glu Val Val Ser Leu Phe Val Thr  
 545 550 555 560  
 Val Pro Val Ser Arg Pro Ile Leu Thr Leu Arg Val Pro Arg Ala Gln  
 565 570 575  
 Ala Val Val Gly Asp Leu Leu Glu Leu His Cys Glu Ala Pro Arg Gly  
 580 585 590  
 Ser Pro Pro Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly  
 595 600 605  
 Ser Ser Ser Ala Pro Ser Gly Gly Glu Ala Ser Phe Asn Leu Ser Leu  
 610 615 620  
 Thr Ala Glu His Ser Gly Asn Tyr Ser Cys Glu Ala Asn Asn Gly Leu  
 625 630 635 640  
 Val Ala Gln His Ser Asp Thr Ile Ser Leu Ser Val Ile Val Pro Val  
 645 650 655  
 Ser Arg Pro Ile Leu Thr Phe Arg Ala Pro Arg Ala Gln Ala Val Val  
 660 665 670  
 Gly Asp Leu Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Ser Pro  
 675 680 685



Ile Leu Tyr Trp Phe Tyr His Glu Asp Val Thr Leu Gly Lys Ile Ser  
 690 695 700  
 Ala Pro Ser Gly Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Thr Glu  
 705 710 715 720  
 His Ser Gly Ile Tyr Ser Cys Glu Ala Asp Asn Gly Pro Glu Ala Gln  
 725 730 735  
 Arg Ser Glu Met Val Thr Leu Lys Val Ala Val Pro Val Ser Arg Pro  
 740 745 750  
 Val Leu Thr Leu Arg Ala Pro Gly Thr His Ala Ala Val Gly Asp Leu  
 755 760 765  
 Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Pro Leu Ile Leu Tyr  
 770 775 780  
 Arg Phe Phe His Glu Asp Val Thr Leu Gly Asn Arg Ser Ser Pro Ser  
 785 790 795 800  
 Gly Gly Ala Ser Leu Asn Leu Ser Leu Thr Ala Glu His Ser Gly Asn  
 805 810 815  
 Tyr Ser Cys Glu Ala Asp Asn Gly Leu Gly Ala Gln Arg Ser Glu Thr  
 820 825 830  
 Val Thr Leu Tyr Ile Thr Gly Leu Thr Ala Asn Arg Ser Gly Pro Phe  
 835 840 845  
 Ala Thr Gly Val Ala Gly Gly Leu Leu Ser Ile Ala Gly Leu Ala Ala  
 850 855 860  
 Gly Ala Leu Leu Leu Tyr Cys Trp Leu Ser Arg Lys Ala Gly Arg Lys  
 865 870 875 880  
 Pro Ala Ser Asp Pro Ala Arg Ser Pro Pro Asp Ser Asp Ser Gln Glu  
 885 890 895  
 Pro Thr Tyr His Asn Val Pro Ala Trp Glu Glu Leu Gln Pro Val Tyr  
 900 905 910  
 Thr Asn Ala Asn Pro Arg Gly Glu Asn Val Val Tyr Ser Glu Val Arg  
 915 920 925  
 Ile Ile Gln Glu Lys Lys Lys His Ala Val Ala Ser Asp Pro Arg His  
 930 935 940  
 Leu Arg Asn Lys Gly Ser Pro Ile Ile Tyr Ser Glu Val Lys Val Ala  
 945 950 955 960

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Ser Thr Pro Val Ser Gly Ser Leu Phe Leu Ala Ser Ser Ala Pro His  
 965 970 975

Arg

<210> 924  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 polypeptide

<400> 924  
 Cys Met Asp Tyr Asp Phe Lys Val Lys Leu Ser Ser Glu Arg Glu Arg  
 1 5 10 15

Cys Trp Ala Ile Gly Cys Ile Phe Ala Glu Leu Leu Thr Ser Glu Pro  
 20 25 30

Cys

<210> 925  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 polypeptide

<400> 925  
 Cys Met Asp Tyr Asp Phe Lys Val Lys Leu Ser Ser Glu Arg Glu Arg  
 1 5 10 15

Cys Cys Ile Phe Ala Glu Leu Leu Thr Ser Glu Pro Ile Phe His Cys  
 20 25 30

Cys

<210> 926  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 polypeptide

<400> 926  
 Cys Met Asp Tyr Asp Phe Lys Val Lys Leu Ser Ser Glu Arg Glu Arg  
 1 5 10 15

Cys Glu Leu Leu Thr Ser Glu Pro Ile Phe His Cys Arg Gln Glu Asp  
 20 25 30

Cys

<210> 927  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 927  
 Cys Met Asp Tyr Asp Phe Lys Val Lys Leu Ser Ser Glu Arg Glu Arg  
 1 5 10 15

Cys Ser Glu Pro Ile Phe His Cys Arg Gln Glu Asp Ile Lys Thr Ser  
 20 25 30

Cys

<210> 928  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 928  
 Cys Phe Lys Val Lys Leu Ser Ser Glu Arg Glu Arg Val Glu Asp Leu  
 1 5 10 15

Cys Trp Ala Ile Gly Cys Ile Phe Ala Glu Leu Leu Thr Ser Glu Pro  
 20 25 30

Cys

<210> 929  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 929  
 Cys Phe Lys Val Lys Leu Ser Ser Glu Arg Glu Arg Val Glu Asp Leu  
 1 5 10 15

Cys Cys Ile Phe Ala Glu Leu Leu Thr Ser Glu Pro Ile Phe His Cys  
 20 25 30

Cys

<210> 930  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 930  
 Cys Phe Lys Val Lys Leu Ser Ser Glu Arg Glu Arg Val Glu Asp Leu  
 1 5 10 15

Cys Glu Leu Leu Thr Ser Glu Pro Ile Phe His Cys Arg Gln Glu Asp  
 20 25 30

Cys

<210> 931  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 931  
 Cys Phe Lys Val Lys Leu Ser Ser Glu Arg Glu Arg Val Glu Asp Leu  
 1 5 10 15

Cys Ser Glu Pro Ile Phe His Cys Arg Gln Glu Asp Ile Lys Thr Ser  
 20 25 30

Cys

<210> 932  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 932  
 Cys Leu Ser Ser Glu Arg Glu Arg Val Glu Asp Leu Phe Glu Tyr Glu  
 1 5 10 15

Cys Trp Ala Ile Gly Cys Ile Phe Ala Glu Leu Leu Thr Ser Glu Pro  
 20 25 30

Cys

4329191\_1

<210> 933  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 933  
 Cys Leu Ser Ser Glu Arg Glu Arg Val Glu Asp Leu Phe Glu Tyr Glu  
 1 5 10 15

Cys Cys Ile Phe Ala Glu Leu Leu Thr Ser Glu Pro Ile Phe His Cys  
 20 25 30

Cys

<210> 934  
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<220>  
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<400> 934  
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Cys Ser Glu Pro Ile Phe His Cys Arg Gln Glu Asp Ile Lys Thr Ser  
 20 25 30

Cys

<210> 935  
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<220>  
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Cys Trp Ala Ile Gly Cys Ile Phe Ala Glu Leu Leu Thr Ser Glu Pro  
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Cys

4329191\_1

<210> 936  
 <211> 33  
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<220>  
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Cys Cys Ile Phe Ala Glu Leu Leu Thr Ser Glu Pro Ile Phe His Cys  
 20 25 30

Cys

<210> 937  
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<220>  
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<400> 937  
 Cys Arg Glu Arg Val Glu Asp Leu Phe Glu Tyr Glu Gly Cys Lys Val  
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Cys Glu Leu Leu Thr Ser Glu Pro Ile Phe His Cys Arg Gln Glu Asp  
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Cys

<210> 938  
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<220>  
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<400> 938  
 Cys Arg Glu Arg Val Glu Asp Leu Phe Glu Tyr Glu Gly Cys Lys Val  
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Cys Ser Glu Pro Ile Phe His Cys Arg Gln Glu Asp Ile Lys Thr Ser  
 20 25 30

Cys

<210> 939  
 <211> 15

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<212> PRT  
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<220>  
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<400> 939  
Met Asp Tyr Asp Phe Lys Val Lys Leu Ser Ser Glu Arg Glu Arg  
1 5 10 15

<210> 940  
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<212> PRT  
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<220>  
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<400> 940  
Phe Lys Val Lys Leu Ser Ser Glu Arg Glu Arg Val Glu Asp Leu  
1 5 10 15

<210> 941  
<211> 15  
<212> PRT  
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<220>  
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<400> 941  
Leu Ser Ser Glu Arg Glu Arg Val Glu Asp Leu Phe Glu Tyr Glu  
1 5 10 15

<210> 942  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
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<400> 942  
Arg Glu Arg Val Glu Asp Leu Phe Glu Tyr Glu Gly Cys Lys Val  
1 5 10 15

<210> 943  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic peptide

<400> 943  
Trp Ala Ile Gly Cys Ile Phe Ala Glu Leu Leu Thr Ser Glu Pro  
1 5 10 15

4329191\_1

<210> 944  
 <211> 15  
 <212> PRT  
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<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 944  
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<210> 945  
 <211> 15  
 <212> PRT  
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<220>  
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<400> 945  
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 1 5 10 15

<210> 946  
 <211> 15  
 <212> PRT  
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<220>  
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<400> 946  
 Ser Glu Pro Ile Phe His Cys Arg Gln Glu Asp Ile Lys Thr Ser  
 1 5 10 15

<210> 947  
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<220>  
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<400> 947  
 Ala Arg Asn Asn His Tyr Tyr Asn Asp Tyr  
 1 5 10