SEQUENCE LISTING

<110> ADURO BIOTECH, INC.

<120> SIGNAL PEPTIDE FUSION PARTNERS FACILITATING LISTERIAL EXPRESSION OF ANTIGENIC SEQUENCES AND METHODS OF PREPARATION AND USE THEREOF

<130> ANZ-9000-PCT

<140> PCT/US2013/078119
<141> 2013-12-27

<150> 61/780,744
<151> 2013-03-13

<150> 61/746,237
<151> 2012-12-27

<160> 51

<170> PatentIn version 3.5

<210> 1
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<220>
<223> Description of Artificial Sequence: Synthetic peptide

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1 5 10

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<400> 2
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<210> 3
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<220>
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<400> 3
Lys Ala Ser Val Thr Asp Thr Ser Glu Gly Asp Leu Asp Ser Ser Met
1 5 10 15

Gln Ser Ala Asp Glu Ser Thr Pro Gln Pro Leu Lys
20 25

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

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

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Glu Glu Leu Arg
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<210> 5
<211> 34
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<213> Artificial Sequence

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

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Asp Phe Thr Asp Asp Glu Asn Ser Glu Thr Thr Glu Glu Glu Glu Ile
20 25 30

Asp Arg

<210> 6
<211> 19
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<213> Artificial Sequence

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

<400> 6
Lys Glu Asn Ser Ile Ser Ser Met Ala Pro Pro Ala Ser Pro Pro Ala
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Ser Pro Lys

<210> 7
<211> 26
<212> PRT
<213> Artificial Sequence

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

<400> 7
Asn Ser Ile Ser Ser Met Ala Pro Pro Ala Ser Pro Pro Ala Ser Pro
1 5 10 15

Lys Thr Pro Ile Glu Lys Lys His Ala Asp
20 25

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

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

<400> 8
Leu Ile Ala Met Leu
1 5

<210> 9
<211> 5
<212> PRT
<213> Artificial Sequence

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

<400> 9
Gln Asp Asn Lys Arg
1 5

<210> 10
<211> 29
<212> PRT
<213> Artificial Sequence

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

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Met Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala
20 25

<210> 11
<211> 23
<212> PRT
<213> Artificial Sequence

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

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1 5 10 15

Pro Ile Ala Gln Gln Thr Glu
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<210> 12
<211> 100
<212> PRT
<213> Artificial Sequence

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

<400> 12
Val Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Lys Thr
35 40 45

Glu Glu Gln Pro Ser Glu Val Asn Thr Gly Pro Arg Tyr Glu Thr Ala
50 55 60

Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser Asn Lys
65 70 75 80

Val Lys Asn Thr Asn Lys Ala Asp Leu Ile Ala Met Leu Lys Ala Lys
85 90 95

Ala Glu Lys Gly
100

<210> 13
<211> 100
<212> PRT
<213> Artificial Sequence

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

<400> 13
Met Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Lys Thr
35 40 45

Glu Glu Gln Pro Ser Glu Val Asn Thr Gly Pro Arg Tyr Glu Thr Ala
50 55 60

Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser Asn Lys
65 70 75 80

Val Lys Asn Thr Asn Lys Ala Asp Leu Ile Ala Met Leu Lys Ala Lys
85 90 95

Ala Glu Lys Gly
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<210> 14
<211> 102
<212> PRT
<213> Artificial Sequence

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

<400> 14
Val Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Lys Thr
35 40 45

Glu Glu Gln Pro Ser Glu Val Asn Thr Gly Pro Arg Tyr Glu Thr Ala
50 55 60

Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser Asn Lys
65 70 75 80

Val Lys Asn Thr Asn Lys Ala Asp Leu Ile Ala Met Leu Lys Ala Lys
85 90 95

Ala Glu Lys Gly Gly Ser
100

<210> 15
<211> 102
<212> PRT
<213> Artificial Sequence

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

<400> 15
Met Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Lys Thr
35 40 45

Glu Glu Gln Pro Ser Glu Val Asn Thr Gly Pro Arg Tyr Glu Thr Ala
50 55 60

Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser Asn Lys
65 70 75 80

Val Lys Asn Thr Asn Lys Ala Asp Leu Ile Ala Met Leu Lys Ala Lys
85 90 95

Ala Glu Lys Gly Gly Ser
100

<210> 16
<211> 86
<212> PRT
<213> Artificial Sequence

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

<400> 16
Val Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Tyr Glu
35 40 45

Thr Ala Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser
50 55 60

Asn Lys Val Lys Asn Thr Asn Lys Ala Asp Gln Asp Asn Lys Arg Lys
65 70 75 80

Ala Lys Ala Glu Lys Gly
85

<210> 17
<211> 86
<212> PRT
<213> Artificial Sequence

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

<400> 17
Met Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1               5                   10                  15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
            20                  25                  30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Tyr Glu
        35                  40                  45

Thr Ala Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser
    50                  55                  60

Asn Lys Val Lys Asn Thr Asn Lys Ala Asp Gln Asp Asn Lys Arg Lys
65                  70                  75                  80

Ala Lys Ala Glu Lys Gly
                85

<210> 18
<211> 25
<212> PRT
<213> Artificial Sequence

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

<400> 18
Met Lys Lys Ile Met Leu Val Phe Ile Thr Leu Ile Leu Val Ser Leu
1               5                   10                  15

Pro Ile Ala Gln Gln Thr Glu Ala Lys
            20                  25

<210> 19
<211> 441
<212> PRT
<213> Artificial Sequence

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

<400> 19
Met Lys Lys Ile Met Leu Val Phe Ile Thr Leu Ile Leu Val Ser Leu
1               5                   10                  15

Pro Ile Ala Gln Gln Thr Glu Ala Lys Asp Ala Ser Ala Phe Asn Lys
            20                  25                  30

Glu Asn Ser Ile Ser Ser Met Ala Pro Pro Ala Ser Pro Pro Ala Ser
        35                  40                  45

Pro Lys Thr Pro Ile Glu Lys Lys His Ala Asp Glu Ile Asp Lys Tyr

50 55 60

Ile Gln Gly Leu Asp Tyr Asn Lys Asn Asn Val Leu Val Tyr His Gly
65 70 75 80

Asp Ala Val Thr Asn Val Pro Pro Arg Lys Gly Tyr Lys Asp Gly Asn
85 90 95

Glu Tyr Ile Val Val Glu Lys Lys Lys Lys Ser Ile Asn Gln Asn Asn
100 105 110

Ala Asp Ile Gln Val Val Asn Ala Ile Ser Ser Leu Thr Tyr Pro Gly
115 120 125

Ala Leu Val Lys Ala Asn Ser Glu Leu Val Glu Asn Gln Pro Asp Val
130 135 140

Leu Pro Val Lys Arg Asp Ser Leu Thr Leu Ser Ile Asp Leu Pro Gly
145 150 155 160

Met Thr Asn Gln Asp Asn Lys Ile Val Val Lys Asn Ala Thr Lys Ser
165 170 175

Asn Val Asn Asn Ala Val Asn Thr Leu Val Glu Arg Trp Asn Glu Lys
180 185 190

Tyr Ala Gln Ala Tyr Pro Asn Val Ser Ala Lys Ile Asp Tyr Asp Asp
195 200 205

Glu Met Ala Tyr Ser Glu Ser Gln Leu Ile Ala Lys Phe Gly Thr Ala
210 215 220

Phe Lys Ala Val Asn Asn Ser Leu Asn Val Asn Phe Gly Ala Ile Ser
225 230 235 240

Glu Gly Lys Met Gln Glu Glu Val Ile Ser Phe Lys Gln Ile Tyr Tyr
245 250 255

Asn Val Asn Val Asn Glu Pro Thr Arg Pro Ser Arg Phe Phe Gly Lys
260 265 270

Ala Val Thr Lys Glu Gln Leu Gln Ala Leu Gly Val Asn Ala Glu Asn
275 280 285

Pro Pro Ala Tyr Ile Ser Ser Val Ala Tyr Gly Arg Gln Val Tyr Leu
290 295 300

Lys Leu Ser Thr Asn Ser His Ser Thr Lys Val Lys Ala Ala Phe Asp
305 310 315 320

Ala Ala Val Ser Gly Lys Ser Val Ser Gly Asp Val Glu Leu Thr Asn
325 330 335

Ile Ile Lys Asn Ser Ser Phe Lys Ala Val Ile Tyr Gly Gly Ser Ala
340 345 350

Lys Asp Glu Val Gln Ile Ile Asp Gly Asn Leu Gly Asp Leu Arg Asp
355 360 365

Ile Leu Lys Lys Gly Ala Thr Phe Asn Arg Glu Thr Pro Gly Val Pro
370 375 380

Ile Ala Tyr Thr Thr Asn Phe Leu Lys Asp Asn Glu Leu Ala Val Ile
385 390 395 400

Lys Asn Asn Ser Glu Tyr Ile Glu Thr Thr Ser Lys Ala Tyr Thr Asp
405 410 415

Gly Lys Ile Asn Ile Asp His Ser Gly Gly Tyr Val Ala Gln Phe Asn
420 425 430

Ile Ser Trp Asp Glu Val Asn Tyr Asp
435 440

<210> 20
<211> 8
<212> PRT
<213> Artificial Sequence

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

<400> 20
Ser Ile Ile Asn Phe Glu Lys Leu
1 5

<210> 21
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 21
Ala Met Gln Met Leu Lys Glu Thr Ile
1 5

<210> 22
<211> 101
<212> PRT
<213> Artificial Sequence

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

polypeptide

<400> 22
Met Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Lys Thr
35 40 45

Glu Gln Pro Ser Glu Val Asn Thr Gly Pro Arg Tyr Glu Thr Ala Arg
50 55 60

Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser Asn Lys Val
65 70 75 80

Lys Asn Thr Asn Lys Ala Asp Leu Ile Ala Met Leu Lys Ala Lys Ala
85 90 95

Glu Lys Gly Gly Ser
100

<210> 23
<211> 87
<212> PRT
<213> Artificial Sequence

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

<400> 23
Met Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Tyr Glu
35 40 45

Thr Ala Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser
50 55 60

Asn Lys Val Lys Asn Thr Asn Lys Ala Asp Gln Asp Asn Lys Arg Lys
65 70 75 80

Ala Lys Ala Glu Lys Gly Leu
85

<210> 24
<211> 1490

<212> DNA
<213> Artificial Sequence

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

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aagtgatatt cttaaaataa ttcatgaata ttttttctta tattagctaa ttaagaagat 120

aattaactgc taatccaatt tttaacggaa taaattagtg aaaatgaagg ccgaattttc 180

cttgttctaa aaaggttgta ttagcgtatc acgaggaggg agtataagtg ggattaaata 240

gatttatgcg tgcgatgatg gtagttttca ttactgccaa ctgcattacg attaaccccg 300

acataatatt tgcagcgaca gatagcgaag attccagtct aaacacagat gaatgggaag 360

aagaatacga aactgcacgt gaagtaagtt cacgtgatat tgaggaacta gaaaaatcga 420

ataaagtgaa aaatacgaac aaagcagacc aagataataa acgtaaagca aaagcagaga 480

aaggtggatc cgcaagcaaa gtattgccag ctagtcgtgc attagaggag aaaaagggga 540

attacgtggt gacggatcat ggatcgtgtg ccgatggctc agtaaagact agtgcgagca 600

aagtggcccc tgcatcacga gcacttgaag agaaaaaagg aaactatgtt gtgaccgatc 660

atggtagctg cggagatggt tcaattaaat tatcaaaagt cttaccagca tctagagctt 720

tagaggaaaa gaagggtaac tatgtcgtaa cagatcatgg aagttgtgct gacggaagtg 780

ttaaagcgtc gaaagtagct ccagcttctc gcgcattaga agaaaagaaa ggcaattatg 840

ttgtaacaga ccatggtagt tgtggtgatg gctcgatcaa attgtcaaaa gttctaccgg 900

cttctcgtgc gctagaagag aagaaaggaa attacgtagt tacagaccac ggctcttgcg 960

cggatggttc cgttaaacaa ttgatgcaag ctgaaggaag aggaactggg ggtagtacag 1020

gagatgcaga tggccctggc ggaccgggta ttcctgatgg accaggggggt aatgcgggtg 1080

ggccaggcga agcaggtgct acaggcggta gagggccacg aggggcagga gcagcgagag 1140

cttctggacc aggtggtggc gctccacgcg gtccgcatgg tggtgcagcg tccggcttaa 1200

acggttgctg tcgctgtgga gctagaggac cagaatcacg tcttttagag ttctatttgg 1260

ccatgccgtt tgctacgcct atggaagcag aactagcacg tcgtagctta gcgcaagatg 1320

cacctccatt accagttcca ggcgtgttgt taaaggagtt cacggtcagt ggtaacatat 1380

tgacaattcg ccttactgcg gctgaccacc gtcaattaca gcttagcatt tcatcttgtt 1440

tacaacaact ttcgttactt atgtggatca cccaatgcta aggcggccgc 1490

<210> 25
<211> 417
<212> PRT
<213> Artificial Sequence

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

<400> 25
Met Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
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Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
            20                  25                  30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Tyr Glu
        35                  40                  45

Thr Ala Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser
    50                  55                  60

Asn Lys Val Lys Asn Thr Asn Lys Ala Asp Gln Asp Asn Lys Arg Lys
65                  70                  75                  80

Ala Lys Ala Glu Lys Gly Gly Ser Ala Ser Lys Val Leu Pro Ala Ser
                85                  90                  95

Arg Ala Leu Glu Glu Lys Lys Gly Asn Tyr Val Val Thr Asp His Gly
            100                 105                 110

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

Ala Ser Arg Ala Leu Glu Glu Lys Lys Gly Asn Tyr Val Val Thr Asp
    130                 135                 140

His Gly Ser Cys Gly Asp Gly Ser Ile Lys Leu Ser Lys Val Leu Pro
145                 150                 155                 160

Ala Ser Arg Ala Leu Glu Glu Lys Lys Gly Asn Tyr Val Val Thr Asp
                165                 170                 175

His Gly Ser Cys Ala Asp Gly Ser Val Lys Ala Ser Lys Val Ala Pro
            180                 185                 190

Ala Ser Arg Ala Leu Glu Glu Lys Lys Gly Asn Tyr Val Val Thr Asp
        195                 200                 205

His Gly Ser Cys Gly Asp Gly Ser Ile Lys Leu Ser Lys Val Leu Pro
    210                 215                 220

Ala Ser Arg Ala Leu Glu Glu Lys Lys Gly Asn Tyr Val Val Thr Asp
225                 230                 235                 240

His Gly Ser Cys Ala Asp Gly Ser Val Lys Gln Leu Met Gln Ala Glu
                245                 250                 255

Gly Arg Gly Thr Gly Gly Ser Thr Gly Asp Ala Asp Gly Pro Gly Gly

260 265 270

Pro Gly Ile Pro Asp Gly Pro Gly Gly Asn Ala Gly Gly Pro Gly Glu
275 280 285

Ala Gly Ala Thr Gly Gly Arg Gly Pro Arg Gly Ala Gly Ala Ala Arg
290 295 300

Ala Ser Gly Pro Gly Gly Gly Ala Pro Arg Gly Pro His Gly Gly Ala
305 310 315 320

Ala Ser Gly Leu Asn Gly Cys Cys Arg Cys Gly Ala Arg Gly Pro Glu
325 330 335

Ser Arg Leu Leu Glu Phe Tyr Leu Ala Met Pro Phe Ala Thr Pro Met
340 345 350

Glu Ala Glu Leu Ala Arg Arg Ser Leu Ala Gln Asp Ala Pro Pro Leu
355 360 365

Pro Val Pro Gly Val Leu Leu Lys Glu Phe Thr Val Ser Gly Asn Ile
370 375 380

Leu Thr Ile Arg Leu Thr Ala Ala Asp His Arg Gln Leu Gln Leu Ser
385 390 395 400

Ile Ser Ser Cys Leu Gln Gln Leu Ser Leu Leu Met Trp Ile Thr Gln
405 410 415

Cys

<210> 26
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 26
Ala Arg Gly Pro Glu Ser Arg Leu Leu
1 5

<210> 27
<211> 20
<212> PRT
<213> Artificial Sequence

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

<400> 27

Ser Ile Ser Ser Met Ala Pro Pro Ala Ser Pro Pro Ala Ser Pro Lys
1 5 10 15

Thr Pro Ile Glu
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<210> 28
<211> 25
<212> PRT
<213> Artificial Sequence

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

<400> 28
Ser Ile Ser Ser Met Ala Pro Pro Ala Ser Pro Pro Ala Ser Pro Lys
1 5 10 15

Thr Pro Ile Glu Lys Lys His Ala Asp
20 25

<210> 29
<211> 102
<212> PRT
<213> Listeria monocytogenes

<400> 29
Val Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Lys Thr
35 40 45

Glu Glu Gln Pro Ser Glu Val Asn Thr Gly Pro Arg Tyr Glu Thr Ala
50 55 60

Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser Asn Lys
65 70 75 80

Val Lys Asn Thr Asn Lys Ala Asp Leu Ile Ala Met Leu Lys Ala Lys
85 90 95

Ala Glu Lys Gly Gly Ser
100

<210> 30
<211> 89
<212> PRT
<213> Artificial Sequence

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

polypeptide

<400> 30
Val Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Arg Tyr
35 40 45

Glu Thr Ala Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys
50 55 60

Ser Asn Lys Val Lys Asn Thr Asn Lys Ala Asp Leu Ile Ala Met Leu
65 70 75 80

Lys Ala Lys Ala Glu Lys Gly Gly Ser
85

<210> 31
<211> 88
<212> PRT
<213> Artificial Sequence

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

<400> 31
Val Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Tyr Glu
35 40 45

Thr Ala Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser
50 55 60

Asn Lys Val Lys Asn Thr Asn Lys Ala Asp Gln Asp Asn Lys Arg Lys
65 70 75 80

Ala Lys Ala Glu Lys Gly Gly Ser
85

<210> 32
<211> 102
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 32

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Val Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1               5                   10                  15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
            20                  25                  30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Lys Thr
        35                  40                  45

Glu Glu Gln Pro Ser Glu Val Asn Thr Gly Pro Arg Tyr Glu Thr Ala
    50                  55                  60

Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser Asn Lys
65                  70                  75                  80

Val Lys Asn Thr Asn Lys Ala Asp Gln Asp Asn Lys Arg Lys Ala Lys
                85                  90                  95

Ala Glu Lys Gly Gly Ser
            100
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<210> 33
<211> 102
<212> PRT
<213> Artificial Sequence

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

<400> 33

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Val Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1               5                   10                  15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
            20                  25                  30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Lys Thr
        35                  40                  45

Glu Glu Gln Pro Ser Glu Val Asn Thr Gly Pro Arg Tyr Glu Thr Ala
    50                  55                  60

Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser Asn Lys
65                  70                  75                  80

Val Lys Asn Thr Asn Lys Ala Asp Leu Ile Ala Met Leu Lys Ala Lys
                85                  90                  95

Ala Glu Lys Gly Gly Ser
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100

<210> 34
<211> 89
<212> PRT
<213> Artificial Sequence

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

<400> 34
Val Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Arg Tyr
35 40 45

Glu Thr Ala Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys
50 55 60

Ser Asn Lys Val Lys Asn Thr Asn Lys Ala Asp Leu Ile Ala Met Leu
65 70 75 80

Lys Ala Lys Ala Glu Lys Gly Gly Ser
85

<210> 35
<211> 88
<212> PRT
<213> Artificial Sequence

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

<400> 35
Val Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Tyr Glu
35 40 45

Thr Ala Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser
50 55 60

Asn Lys Val Lys Asn Thr Asn Lys Ala Asp Gln Asp Asn Lys Arg Lys
65 70 75 80

Ala Lys Ala Glu Lys Gly Gly Ser
85

<210> 36
<211> 102
<212> PRT
<213> Artificial Sequence

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

<400> 36
Val Gly Leu Asn Arg Phe Met Arg Ala Met Met Val Val Phe Ile Thr
1 5 10 15

Ala Asn Cys Ile Thr Ile Asn Pro Asp Ile Ile Phe Ala Ala Thr Asp
20 25 30

Ser Glu Asp Ser Ser Leu Asn Thr Asp Glu Trp Glu Glu Glu Lys Thr
35 40 45

Glu Glu Gln Pro Ser Glu Val Asn Thr Gly Pro Arg Tyr Glu Thr Ala
50 55 60

Arg Glu Val Ser Ser Arg Asp Ile Glu Glu Leu Glu Lys Ser Asn Lys
65 70 75 80

Val Lys Asn Thr Asn Lys Ala Asp Gln Asp Asn Lys Arg Lys Ala Lys
85 90 95

Ala Glu Lys Gly Gly Ser
100

<210> 37
<211> 100
<212> PRT
<213> Listeria monocytogenes

<400> 37
Met Lys Lys Ile Met Leu Val Phe Ile Thr Leu Ile Leu Val Ser Leu
1 5 10 15

Pro Ile Ala Gln Gln Thr Glu Ala Lys Asp Ala Ser Ala Phe Asn Lys
20 25 30

Glu Asn Ser Ile Ser Ser Met Ala Pro Pro Ala Ser Pro Pro Ala Ser
35 40 45

Pro Lys Thr Pro Ile Glu Lys Lys His Ala Asp Glu Ile Asp Lys Tyr
50 55 60

Ile Gln Gly Leu Asp Tyr Asn Lys Asn Asn Val Leu Val Tyr His Gly
65 70 75 80

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Asp Ala Val Thr Asn Val Pro Pro Arg Lys Gly Tyr Lys Asp Gly Asn
                85                  90                  95


Glu Tyr Ile Val
            100


<210> 38
<211> 74
<212> PRT
<213> Artificial Sequence

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

<400> 38
Met Lys Lys Ile Met Leu Val Phe Ile Thr Leu Ile Leu Val Ser Leu
1               5                   10                  15


Pro Ile Ala Gln Gln Thr Glu Ala Lys Asp Ala Ser Ala Phe Asn Lys
            20                  25                  30


Glu Glu Ile Asp Lys Tyr Ile Gln Gly Leu Asp Tyr Asn Lys Asn Asn
        35                  40                  45


Val Leu Val Tyr His Gly Asp Ala Val Thr Asn Val Pro Pro Arg Lys
    50                  55                  60


Gly Tyr Lys Asp Gly Asn Glu Tyr Ile Val
65                  70


<210> 39
<211> 81
<212> PRT
<213> Artificial Sequence

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

<400> 39
Met Lys Lys Ile Met Leu Val Phe Ile Thr Leu Ile Leu Val Ser Leu
1               5                   10                  15


Pro Ile Ala Gln Gln Thr Glu Ala Lys Asp Ala Ser Ala Phe Asn Thr
            20                  25                  30


Pro Ile Glu Lys Lys His Ala Asp Glu Ile Asp Lys Tyr Ile Gln Gly
        35                  40                  45


Leu Asp Tyr Asn Lys Asn Asn Val Leu Val Tyr His Gly Asp Ala Val
    50                  55                  60


Thr Asn Val Pro Pro Arg Lys Gly Tyr Lys Asp Gly Asn Glu Tyr Ile
65                  70                  75                  80
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Val

<210> 40
<211> 100
<212> PRT
<213> Artificial Sequence

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

<400> 40
Met Lys Lys Ile Met Leu Val Phe Ile Thr Leu Ile Leu Val Ser Leu
1 5 10 15

Pro Ile Ala Gln Gln Thr Glu Ala Lys Asp Ala Ser Ala Phe Asn Lys
20 25 30

Glu Asn Ser Ile Ser Ser Met Ala Pro Pro Ala Ser Pro Pro Ala Ser
35 40 45

Pro Lys Thr Pro Ile Glu Lys Lys His Ala Asp Glu Ile Asp Lys Tyr
50 55 60

Ile Gln Gly Leu Asp Tyr Asn Lys Asn Asn Val Leu Val Tyr His Gly
65 70 75 80

Asp Ala Val Thr Asn Val Pro Pro Arg Lys Gly Tyr Lys Asp Gly Asn
85 90 95

Glu Tyr Ile Val
100

<210> 41
<211> 100
<212> PRT
<213> Artificial Sequence

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

<400> 41
Met Lys Lys Ile Met Leu Val Phe Ile Thr Leu Ile Leu Val Ser Leu
1 5 10 15

Pro Ile Ala Gln Gln Thr Glu Ala Lys Asp Ala Ser Ala Phe Asn Lys
20 25 30

Glu Asn Ser Ile Ser Ser Met Ala Pro Pro Ala Ser Pro Pro Ala Ser
35 40 45

Pro Lys Thr Pro Ile Glu Lys Lys His Ala Asp Glu Ile Asp Lys Tyr

50 55 60

Ile Gln Gly Leu Asp Tyr Asn Lys Asn Asn Val Leu Val Tyr His Gly
65 70 75 80

Asp Ala Val Thr Asn Val Pro Pro Arg Lys Gly Tyr Lys Asp Gly Asn
85 90 95

Glu Tyr Ile Val
100

<210> 42
<211> 74
<212> PRT
<213> Artificial Sequence

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

<400> 42
Met Lys Lys Ile Met Leu Val Phe Ile Thr Leu Ile Leu Val Ser Leu
1 5 10 15

Pro Ile Ala Gln Gln Thr Glu Ala Lys Asp Ala Ser Ala Phe Asn Lys
20 25 30

Glu Glu Ile Asp Lys Tyr Ile Gln Gly Leu Asp Tyr Asn Lys Asn Asn
35 40 45

Val Leu Val Tyr His Gly Asp Ala Val Thr Asn Val Pro Pro Arg Lys
50 55 60

Gly Tyr Lys Asp Gly Asn Glu Tyr Ile Val
65 70

<210> 43
<211> 81
<212> PRT
<213> Artificial Sequence

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

<400> 43
Met Lys Lys Ile Met Leu Val Phe Ile Thr Leu Ile Leu Val Ser Leu
1 5 10 15

Pro Ile Ala Gln Gln Thr Glu Ala Lys Asp Ala Ser Ala Phe Asn Thr
20 25 30

Pro Ile Glu Lys Lys His Ala Asp Glu Ile Asp Lys Tyr Ile Gln Gly
35 40 45

Leu Asp Tyr Asn Lys Asn Asn Val Leu Val Tyr His Gly Asp Ala Val
50 55 60

Thr Asn Val Pro Pro Arg Lys Gly Tyr Lys Asp Gly Asn Glu Tyr Ile
65 70 75 80

Val

<210> 44
<211> 100
<212> PRT
<213> Artificial Sequence

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

<400> 44
Met Lys Lys Ile Met Leu Val Phe Ile Thr Leu Ile Leu Val Ser Leu
1 5 10 15

Pro Ile Ala Gln Gln Thr Glu Ala Lys Asp Ala Ser Ala Phe Asn Lys
20 25 30

Glu Asn Ser Ile Ser Ser Met Ala Pro Pro Ala Ser Pro Pro Ala Ser
35 40 45

Pro Lys Thr Pro Ile Glu Lys Lys His Ala Asp Glu Ile Asp Lys Tyr
50 55 60

Ile Gln Gly Leu Asp Tyr Asn Lys Asn Asn Val Leu Val Tyr His Gly
65 70 75 80

Asp Ala Val Thr Asn Val Pro Pro Arg Lys Gly Tyr Lys Asp Gly Asn
85 90 95

Glu Tyr Ile Val
100

<210> 45
<211> 11
<212> PRT
<213> Artificial Sequence

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

<400> 45
Glu Glu Glu Lys Thr Glu Glu Gln Pro Ser Glu
1 5 10

<210> 46
<211> 11
<212> PRT

<213> Artificial Sequence

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

<400> 46
Ala Ala Ala Ala Thr Ala Ala Gln Pro Ser Ala
1 5 10

<210> 47
<211> 33
<212> PRT
<213> Artificial Sequence

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

<400> 47
Leu Asn Thr Asp Glu Trp Glu Glu Glu Lys Thr Glu Glu Gln Pro Ser
1 5 10 15

Glu Val Asn Thr Gly Pro Arg Tyr Glu Thr Ala Arg Glu Val Ser Ser
20 25 30

Arg

<210> 48
<211> 33
<212> PRT
<213> Artificial Sequence

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

<400> 48
Leu Asn Thr Asp Glu Trp Ala Ala Ala Ala Thr Ala Ala Gln Pro Ser
1 5 10 15

Ala Val Asn Thr Gly Pro Arg Tyr Glu Thr Ala Arg Glu Val Ser Ser
20 25 30

Arg

<210> 49
<211> 19
<212> PRT
<213> Artificial Sequence

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

<400> 49
Leu Asn Thr Asp Glu Trp Glu Glu Glu Tyr Glu Thr Ala Arg Glu Val
1 5 10 15

Ser Ser Arg

<210> 50
<211> 33
<212> PRT
<213> Artificial Sequence

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

<400> 50
Leu Asn Thr Asp Glu Trp Glu Glu Glu Lys Arg Lys Arg Gln Arg Lys
1 5 10 15

Arg Val Asn Arg Gly Lys Arg Tyr Glu Thr Ala Arg Glu Val Ser Ser
20 25 30

Arg

<210> 51
<211> 33
<212> PRT
<213> Artificial Sequence

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

<400> 51
Leu Asn Thr Asp Glu Trp Glu Glu Glu Lys Lys Arg Lys Gln Lys Arg
1 5 10 15

Lys Val Asn Lys Gly Arg Arg Tyr Glu Thr Ala Arg Glu Val Ser Ser
20 25 30

Arg