

SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.

<120> Multispecific Antigen-Binding Molecules for Cell Targeting and Uses Thereof

<130> 10606W001

<150> 62/887,411

<151> 2019-08-15

<150> 62/924,435

<151> 2019-10-22

<150> 62/978,584

<151> 2020-02-19

<150> 63/057,824

<151> 2020-07-28

<160> 170

<170> PatentIn version 3.5

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cctggtaaag gattggaatg ggtagcggg atatcatgga actcaggaag caagggatac 180

gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaatacggc 300

agtggttatg gcaagtttta tcattatgga ctggacgtgt ggggacaagg gacaacagtg 360

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1 5 10 15

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

Ser 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 Lys 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 Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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Gly Phe Thr Phe Asp Asp Tyr Ser
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Ile Ser Trp Asn Ser Gly Ser Lys
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ccaggaaaag	gactcgaatg	ggtgtcagga	ataagttgga	actccggaag	cattgggtac	180
gcagattcag	tcaaagggcg	attcaccata	tcccgagata	acgctaagaa	ctcactttac	240
cttcaaata	actctcttcg	agcagaggac	actgcacttt	attattgcgc	taaggacggc	300
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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 Asp Gly Ser Gly Tyr Gly Tyr Phe Tyr Tyr Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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Gly Phe Thr Phe Asp Asp Tyr Ala
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Ala Lys Asp Gly Ser Gly Tyr Gly Tyr Phe Tyr Tyr Tyr Gly Met Asp

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Val

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cccggaagaaag ggctggaatg ggtgtcagga attagttgga actcaggaag tattggatac 180
gctgattcag tcaaaggacg cttcacaatc tcaagggaca acgctaaaaa ctcactttat 240
ttgcaaatga actctctccg cgctgaagat accgctctct attattgcgc caaagatggg 300
tctggttacg gttattttta ctactatgga atggacgttt ggggcccaagg aacaactgtc 360
acagtatcat cc 372

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

Ser 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 Asp Gly Ser Gly Tyr Gly Tyr Phe Tyr Tyr Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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<400> 20

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1 5

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<400> 22

Ile Ser Trp Asn Ser Gly Ser Ile
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Ala Lys Asp Gly Ser Gly Tyr Gly Tyr Phe Tyr Tyr Tyr Gly Met Asp
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Val

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ccaggaaaag gactggagtg ggtgagcggg atttcatgga acagcggcag tatcggttat 180

gcagactcag ttaaaggaag attcaccatc agtagagaca acgcaaaaaa ttccctttat 240

ctccaaatga actctcttag ggccgaagat acagcattgt actactgcgc aaaagacgga 300
tcaggttacg gaaaatttta ctactatggt atggatgtat ggggtcaggg aaccacagta 360
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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 Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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24

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Gly Phe Thr Phe Asp Asp Tyr Ala

1 5

<210> 29

<211> 24

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24

<210> 30

<211> 8

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Ile Ser Trp Asn Ser Gly Ser Ile

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Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
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Val

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<212> DNA

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ccaggtaaag gactcgaatg ggtaagcggc atatcttgga actcaggcag tattggctac 180

gcagattcag taaaaggaag attcactatt tcaagggata atgctaagaa cagtctctac 240

ttgcaaatga atagcttgcg cgcagaagat acagcacttt attattgtgc aaaagatgga 300

agcggttatg ggaaatttta ttattatggt atggatgtat ggggtcaagg tacaacagtt 360

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

Ser 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 Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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<400> 36

Gly Phe Thr Phe Asp Asp Tyr Ser
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24

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Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
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Val

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cctggtaaag gattggaatg ggtagcggg atatcatgga actcaggaag catcggatac 180
gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240
cttcaaataa actctcttag ggcagaagac acagcattgt attattgcgc aaaatacggc 300
agtggttatg gcaagtttta tcattatgga ctggacgtgt ggggacaagg gacaacagtg 360
acagtgagta gc 372

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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

Ser 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 Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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<400> 44

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 45
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24

<210> 46

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51

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Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp

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Val

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cctggtaaag gattggaatg ggtagcggg atatcatgga actcaggaag caagggatac 180
gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240
cttcaaatac actctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300
agtggttatg gcaagtttta tcattatgga ctggacgtgt ggggacaagg gacaacagtg 360
acagtgagta gc 372

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

Ser 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 Lys 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 Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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24

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<211> 8
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<220>
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<400> 52

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 53
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24

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Ile Ser Trp Asn Ser Gly Ser Lys
1 5

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<400> 56

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp
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Val

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<212> DNA

<213> Artificial Sequence

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<400> 57

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cctggtaaag gattggaatg ggtagcggg atatcatgga actcaggaag caagggatac 180

gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaatacggc 300

agtggttatg gcaagtttta ttattatgga ctggacgtgt ggggacaagg gacaacagtg 360
acagtgagta gc 372

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<400> 58

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1 5 10 15

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

Ser 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 Lys 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 Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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24

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<400> 60

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

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24

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Val

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gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240
cttcaaata actctcttag ggcagaagac acagcattgt attattgcgc aaaatacggc 300
agtggttatg gcaagtttta tcattatgga atggacgtgt ggggacaagg gacaacagtg 360
acagtgagta gc 372

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1 5 10 15

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

Ser 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 Lys 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 Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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24

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<400> 68

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1 5

<210> 69

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<212> DNA

<213> Artificial Sequence

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<223> synthetic

<400> 69

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24

<210> 70

<211> 8

<212> PRT

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<220>

<223> synthetic

<400> 70

Ile Ser Trp Asn Ser Gly Ser Lys
1 5

<210> 71

<211> 51

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic

<400> 71

gcaaaatacg gcagtgggta tggcaagttt tatcattatg gaatggacgt g

51

<210> 72

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 72

Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
1 5 10 15

Val

<210> 73
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
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<400> 73
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agttgcgcag ctagtggggtt tacattcgac gattacagca tgcattgggt gaggcaagct 120
cctggtaaag gattggaatg ggtagcggg atatcatgga actcaggaag catcggatac 180
gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240
cttcaaataa actctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300
agtggttatg gcaagtttta tcattatgga ctggacgtgt ggggacaagg gacaacagtg 360
acagtgagta gc 372

<210> 74
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
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<400> 74

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

Ser 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 Asp Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 75
<211> 24
<212> DNA
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<220>
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<400> 75
gggtttacat tcgacgatta cagc

24

<210> 76
<211> 8
<212> PRT
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<220>
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<400> 76

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 77
<211> 24
<212> DNA
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<220>
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<400> 77
atatcatgga actcaggaag catc

24

<210> 78
<211> 8
<212> PRT
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<220>
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<400> 78

Ile Ser Trp Asn Ser Gly Ser Ile
1 5

<210> 79
<211> 51
<212> DNA
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<220>
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<400> 79
gcaaaagacg gcagtgggta tggcaagttt tatcattatg gactggacgt g

51

<210> 80
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<220>
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<400> 80

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp
1 5 10 15

Val

<210> 81
<211> 372
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic

<400> 81

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agttgcgcag ctagtggggtt tacattcgac gattacagca tgcattgggt gaggcaagct    120
cctggtaaag gattggaatg ggttagcggg atatcatgga actcaggaag catcggatac    180
gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac    240
cttcaaataa actctcttag ggcagaagac acagcattgt attattgcgc aaaatacggc    300
agtggttatg gcaagtttta ttattatgga ctggacgtgt ggggacaagg gacaacagtg    360
acagtgagta gc                                                           372
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<210> 82

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 82

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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
```

```
Ser 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 Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
100              105              110
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Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 83
<211> 24
<212> DNA
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<220>
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<400> 83
gggtttacat tcgacgatta cagc

24

<210> 84
<211> 8
<212> PRT
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<220>
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<400> 84

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

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

<220>
<223> synthetic

<400> 85
atatcatgga actcaggaag catc

24

<210> 86
<211> 8
<212> PRT
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<220>
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<400> 86

Ile Ser Trp Asn Ser Gly Ser Ile
1 5

<210> 87
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
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<400> 87
gcaaaatacg gcagtgggta tggcaagttt tattattatg gactggacgt g 51

<210> 88
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
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<400> 88

Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
1 5 10 15

Val

<210> 89
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
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<400> 89
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agttgcgcag ctagtggggt tacattcgac gattacagca tgcattgggt gaggcaagct 120
cctggtaaag gattggaatg ggtagcggg atatcatgga actcaggaag catcggatac 180
gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240
cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaatacggc 300
agtggttatg gcaagtttta tcattatgga atggacgtgt ggggacaagg gacaacagtg 360

<210> 90
 <211> 124
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 90

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

Ser 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 Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
 100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 91
 <211> 24
 <212> DNA
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<220>
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<400> 91
gggtttacat tcgacgatta cagc

24

<210> 92
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
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<400> 92

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 93
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 93
atatcatgga actcaggaag catc

24

<210> 94
<211> 8
<212> PRT
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<220>
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<400> 94

Ile Ser Trp Asn Ser Gly Ser Ile
1 5

<210> 95
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
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<400> 95
gcaaaatacg gcagtgggta tggcaagttt tatcattatg gaatggacgt g

51

<210> 96
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 96

Ala	Lys	Tyr	Gly	Ser	Gly	Tyr	Gly	Lys	Phe	Tyr	His	Tyr	Gly	Met	Asp
1				5					10					15	

Val

<210> 97
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
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<400> 97
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cctggtaaag gattggaatg ggtagcggg atatcatgga actcaggaag caagggatac 180
gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240
cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300
agtggttatg gcaagtttta ttattatgga ctggacgtgt ggggacaagg gacaacagtg 360
acagtgagta gc 372

<210> 98
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 98

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

Ser 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 Lys 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 Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 99
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 99
gggtttacat tcgacgatta cagc

24

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

<220>
<223> synthetic

<400> 100

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 101
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 101
atatcatgga actcaggaag caag 24

<210> 102
<211> 8
<212> PRT
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<220>
<223> synthetic

<400> 102

Ile Ser Trp Asn Ser Gly Ser Lys
1 5

<210> 103
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 103
gcaaaagacg gcagtgggta tggcaagttt tattattatg gactggacgt g 51

<210> 104
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 104

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
1 5 10 15

Val

<210> 105
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 105
gaagtacagc ttgtagaatc cggcggagga ctggtacaac ctggaagaag tcttagactg 60
agttgcgcag ctagtgggtt tacattcgac gattacagca tgcattgggt gaggcaagct 120
cctggtaaag gattggaatg ggtagcggg atatcatgga actcaggaag caagggatac 180
gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240
cttcaaata gaactctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300
agtggttatg gcaagtttta tcattatgga atggacgtgt ggggacaagg gacaacagtg 360
acagtga gta gc 372

<210> 106
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
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<400> 106

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

Ser 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 Lys 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 Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 107
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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<400> 107
gggtttacat tcgacgatta cagc

24

<210> 108
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
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<400> 108

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 109
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 109
atatcatgga actcaggaag caag

24

<210> 110
<211> 8
<212> PRT
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<220>
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<400> 110

Ile Ser Trp Asn Ser Gly Ser Lys
1 5

<210> 111
<211> 51
<212> DNA
<213> Artificial Sequence

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<400> 111
gcaaaagacg gcagtgggta tggcaagttt taccattatg gaatggacgt g 51

<210> 112
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
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<400> 112

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
1 5 10 15

Val

<210> 113
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
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<400> 113
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 cctggtaaag gattggaatg ggtagcggg atatcatgga actcaggaag caagggatac 180
 gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240
 cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaatacggc 300
 agtggttatg gcaagtttta ttattatgga atggacgtgt ggggacaagg gacaacagtg 360
 acagtgagta gc 372

<210> 114
 <211> 124
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 114

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

Ser 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 Lys 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 Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
 100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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

<220>
<223> synthetic

<400> 115
gggtttacat tcgacgatta cagc

24

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

<220>
<223> synthetic

<400> 116

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 117
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 117
atatcatgga actcaggaag caag

24

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

<220>
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<400> 118

Ile Ser Trp Asn Ser Gly Ser Lys
1 5

<210> 119
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
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<400> 119
gcaaaatacg gcagtgggta tggcaagttt tattattatg gaatggacgt g 51

<210> 120
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
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<400> 120
Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
1 5 10 15

Val

<210> 121
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
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<400> 121
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cctggtaaag gattggaatg ggtagcggg atatcatgga actcaggaag catcggatac 180
gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240
cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300
agtggttatg gcaagtttta ttattatgga ctggacgtgt ggggacaagg gacaacagtg 360
acagtgagta gc 372

<210> 122
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 122

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

Ser 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 Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 123
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 123

gggtttacat tcgacgatta cagc

<210> 124
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 124

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 125
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 125
atatcatgga actcaggaag catc

24

<210> 126
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 126

Ile Ser Trp Asn Ser Gly Ser Ile
1 5

<210> 127
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 127
gcaaaagacg gcagtgggta tggcaagttt tattattatg gactggacgt g

51

<210> 128
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
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<400> 128

Ala	Lys	Asp	Gly	Ser	Gly	Tyr	Gly	Lys	Phe	Tyr	Tyr	Tyr	Gly	Leu	Asp
1				5					10					15	

Val

<210> 129
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 129

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agttgcgcag	ctagtggggt	tacattcgac	gattacagca	tg cattgggt	gaggcaagct	120
cctggtaaag	gattggaatg	ggttagcggg	atatcatgga	actcaggaag	catcggatac	180
gccgacagcg	tgaaaggccg	atttacaata	tctagggaca	acgcaaaaaa	ctctctctac	240
cttcaaatga	actctcttag	ggcagaagac	acagcattgt	attattgcgc	aaaagacggc	300
agtggttatg	gcaagtttta	tcattatgga	atggacgtgt	ggggacaagg	gacaacagtg	360
acagtgagta	gc					372

<210> 130
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 130

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

Ser 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 Asp Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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

<220>
<223> synthetic

<400> 131
gggtttacat tgcacgatta cagc

24

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

<220>
<223> synthetic

<400> 132

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 133
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 133
atatcatgga actcaggaag catc

24

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

<220>
<223> synthetic

<400> 134

Ile Ser Trp Asn Ser Gly Ser Ile
1 5

<210> 135
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 135
gcaaaagacg gcagtggta tggcaagttt taccattatg gaatggacgt g

51

<210> 136
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 136

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
1 5 10 15

Val

<210> 137
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
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<400> 137
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cctggtaaag gattggaatg ggtagcggg atatcatgga actcaggaag catcggatac 180
gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240
cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaatacggc 300
agtggttatg gcaagtttta ttattatgga atggacgtgt ggggacaagg gacaacagtg 360
acagtgagta gc 372

<210> 138
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 138

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

Ser 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 Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 139
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 139
gggtttacat tcgacgatta cagc

24

<210> 140
<211> 8
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<220>
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<400> 140

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 141
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 141
atatcatgga actcaggaag catc

24

<210> 142
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 142

Ile Ser Trp Asn Ser Gly Ser Ile
1 5

<210> 143
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
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<400> 143
gcaaaatacg gcagtggtta tggcaagttt tattattatg gaatggacgt g 51

<210> 144
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 144

Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
1 5 10 15

Val

<210> 145
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
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<400> 145
gaagtacagc ttgtagaatc cggcggagga ctggtacaac ctggaagaag tcttagactg 60

agttgcgag ctagtgggtt tacattcgac gattacagca tgcattgggt gaggcaagct 120
 cctggtaaag gattggaatg ggtagcggg atatcatgga actcaggaag caagggatac 180
 gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240
 cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300
 agtggttatg gcaagtttta ttattatgga atggacgtgt ggggacaagg gacaacagtg 360
 acagtgagta gc 372

<210> 146
 <211> 124
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 146

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

Ser 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 Lys 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 Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
 100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

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

<220>
<223> synthetic

<400> 147
gggtttacat tcgacgatta cagc

24

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

<220>
<223> synthetic

<400> 148

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 149
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 149
atatcatgga actcaggaag caag

24

<210> 150
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 150

Ile Ser Trp Asn Ser Gly Ser Lys
1 5

<210> 151
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 151
gcaaaagacg gcagtgggta tggcaagttt tattattatg gaatggacgt g 51

<210> 152
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
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<400> 152
Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
1 5 10 15

Val

<210> 153
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
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<400> 153
gaagtgcagc tgggtggaaag cggcggcggc ctggtgcagc cgggccgcag cctgcgcctg 60
agctgcgcgg cgagcggcctt tacctttgcg gattatacca tgcattgggt gcgccaggcg 120
ccgggcaaag gcctggaatg ggtgagcgat attagctgga acagcggcag cattgcgtat 180
gcggatagcg tgaaaggccg ctttaccatt agccgcgata acgcgaaaaa cagcctgtat 240
ctgcagatga acagcctgcg caccgaagat accgcgtttt attattgcgc gaaagatagc 300
cgcggctatg gccattataa atatctgggc ctggatgtgt ggggccaggg caccaccgtg 360
accgtgagca gc 372

<210> 154
 <211> 124
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 154

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

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

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

Ser Asp Ile Ser Trp Asn Ser Gly Ser Ile Ala 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 Thr Glu Asp Thr Ala Phe Tyr Tyr Cys
 85 90 95

Ala Lys Asp Ser Arg Gly Tyr Gly His Tyr Lys Tyr Leu Gly Leu Asp
 100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 155
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic

<400> 155

ggctttacct ttgcgatta tacc

<210> 156
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 156

Gly Phe Thr Phe Ala Asp Tyr Thr
1 5

<210> 157
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 157
attagctgga acagcggcag catt

24

<210> 158
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 158

Ile Ser Trp Asn Ser Gly Ser Ile
1 5

<210> 159
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 159
gcgaaagata gccgcggcta tggccattat aaatatctgg gcctggatgt g

51

<210> 160
<211> 17

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 160

Ala Lys Asp Ser Arg Gly Tyr Gly His Tyr Lys Tyr Leu Gly Leu Asp
1 5 10 15

Val

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

<220>
<223> synthetic

<400> 161
gacatccaga tgaccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcattagc agctatttaa attggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccgtca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaacag agttacagta cccctccgat caccttcggc 300
caagggacac gactggagat taaa 324

<210> 162
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 162

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

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

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

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

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

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

Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

<210> 163
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 163
cagagcatta gcagctat

18

<210> 164
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 164

Gln Ser Ile Ser Ser Tyr
1 5

<210> 165
<211> 9
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic

<400> 165
gctgcatcc

9

<210> 166
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 166

Ala Ala Ser
1

<210> 167
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 167
caacagagtt acagtacccc tccgatcacc

30

<210> 168
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 168

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

<210> 169
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 169

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

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

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

Ser Asp Ile Ser Trp Asn Ser Gly Ser Ile Ala 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 Thr Glu Asp Thr Ala Phe Tyr Tyr Cys
85 90 95

Ala Lys Asp Ser Arg Gly Tyr Gly His Tyr Lys Tyr Leu Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 170

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic

<400> 170

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

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

Ser Gly Ile Ser Trp Asn Ser Gly Ser Lys 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 Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120