

SEQUENCE LISTING

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<120> Automated T Cell Culture

<130> 132777-255015-P001-PCT

<150> 62/858,736

<151> 2019-06-07

<160> 23

<170> PatentIn version 3.5

<210> 1

<211> 159

<212> PRT

<213> Streptomyces avidinii

<400> 1

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

Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe Ile Val Thr
20 25 30

Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Glu Ser Ala Val Gly
35 40 45

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

Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr Val Ala Trp Lys
65 70 75 80

Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser Gly Gln Tyr
85 90 95

Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu Leu Thr Ser
100 105 110

Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val Gly His Asp
115 120 125

Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser Ile Asp Ala Ala Lys
130 135 140

Lys Ala Gly Val Asn Asn Gly Asn Pro Leu Asp Ala Val Gln Gln
145 150 155

<210> 2
<211> 126
<212> PRT
<213> Streptomyces avidinii

<400> 2

Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe
1 5 10 15

Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Glu Ser
20 25 30

Ala Val Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr Asp
35 40 45

Ser Ala Pro Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr Val
50 55 60

Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser
65 70 75 80

Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu
85 90 95

Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val
100 105 110

Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
115 120 125

<210> 3
<211> 4
<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Streptavidin-binding peptide

<400> 3

His Pro Gln Phe

1

<210> 4

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic streptavadin-binding peptide

<220>

<221> MISC_FEATURE

<222> (1)..(1)

<223> W, K or R

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> Any amino acid

<220>

<221> MISC_FEATURE

<222> (7)..(7)

<223> G or E

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> G, K or R

<400> 4

Xaa Xaa His Pro Gln Phe Xaa Xaa

1

5

<210> 5

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Streptavidin-binding peptide

<220>
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<222> (2)..(2)
<223> Any amino acid

<220>
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<222> (7)..(7)
<223> G or E

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> G, K or R

<400> 5

Trp Xaa His Pro Gln Phe Xaa Xaa
1 5

<210> 6
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Streptavidin-binding peptide, Strep-tag

<400> 6

Trp Arg His Pro Gln Phe Gly Gly
1 5

<210> 7
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Strep-tag II

<400> 7

Trp Ser His Pro Gln Phe Glu Lys
1 5

<210> 8
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Sequential modules of streptavidin-binding peptide

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Any amino acid

<220>
<221> REPEAT
<222> (9)..(9)
<223> Repeated 8 or 12 times

<400> 8

Trp Ser His Pro Gln Phe Glu Lys Xaa Trp Ser His Pro Gln Phe Glu
1 5 10 15

Lys

<210> 9
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Sequential modules of streptavidin-binding peptide

<220>
<221> REPEAT
<222> (9)..(12)
<223> Repeated two or three times

<400> 9

Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Trp Ser His Pro
1 5 10 15

Gln Phe Glu Lys
20

<210> 10
<211> 28
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic Twin-Strep-peptide tag

<400> 10

Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Gly Gly Gly Ser
1 5 10 15

Gly Gly Gly Ser Trp Ser His Pro Gln Phe Glu Lys
20 25

<210> 11

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Twin-Strep-peptide tag

<400> 11

Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Gly Gly Gly Ser
1 5 10 15

Trp Ser His Pro Gln Phe Glu Lys
20

<210> 12

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Twin-Strep-peptide tag

<400> 12

Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Gly Gly Gly Ser
1 5 10 15

Gly Gly Ser Ala Trp Ser His Pro Gln Phe Glu Lys
20 25

<210> 13

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Twin-Strep-peptide tag

<400> 13

Ser Ala Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Gly Gly
1 5 10 15

Gly Ser Gly Gly Gly Ser Trp Ser His Pro Gln Phe Glu Lys
20 25 30

<210> 14

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Twin-Strep-peptide tag

<400> 14

Ser Ala Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Gly Gly
1 5 10 15

Gly Ser Gly Gly Ser Ala Trp Ser His Pro Gln Phe Glu Lys
20 25 30

<210> 15

<211> 159

<212> PRT

<213> Streptomyces avidinii

<400> 15

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

Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe Ile Val Thr
20 25 30

Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Glu Ser Ala Val Gly
35 40 45

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

Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr Val Ala Trp Lys
65 70 75 80

Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser Gly Gln Tyr
85 90 95

Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu Leu Thr Ser
100 105 110

Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val Gly His Asp
115 120 125

Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser Ile Asp Ala Ala Lys
130 135 140

Lys Ala Gly Val Asn Asn Gly Asn Pro Leu Asp Ala Val Gln Gln
145 150 155

<210> 16
<211> 126
<212> PRT
<213> Streptomyces avidinii

<220>
<221> MUTAGEN
<222> (31)..(34)

<400> 16

Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe
1 5 10 15

Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Val Thr
20 25 30

Ala Arg Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr Asp
35 40 45

Ser Ala Pro Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr Val
50 55 60

Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser
65 70 75 80

Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu
85 90 95

Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val
100 105 110

Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
115 120 125

<210> 17
<211> 127
<212> PRT
<213> Streptomyces avidinii

<220>
<221> MUTAGEN
<222> (32)..(35)

<400> 17

Met Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr
1 5 10 15

Phe Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Val
20 25 30

Thr Ala Arg Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr
35 40 45

Asp Ser Ala Pro Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr
50 55 60

Val Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp
65 70 75 80

Ser Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp
85 90 95

Leu Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu
100 105 110

Val Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
115 120 125

<210> 18
<211> 159
<212> PRT
<213> Streptomyces avidinii

<220>
<221> MUTAGEN
<222> (44)..(47)

<400> 18

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

Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe Ile Val Thr
20 25 30

Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Ile Gly Ala Arg Gly
35 40 45

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

Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr Val Ala Trp Lys
65 70 75 80

Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser Gly Gln Tyr
85 90 95

Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu Leu Thr Ser
100 105 110

Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val Gly His Asp
115 120 125

Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser Ile Asp Ala Ala Lys
130 135 140

Lys Ala Gly Val Asn Asn Gly Asn Pro Leu Asp Ala Val Gln Gln
145 150 155

<210> 19
<211> 126
<212> PRT
<213> Streptomyces avidinii

<220>
<221> MUTAGEN
<222> (34)..(37)

<400> 19

Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe
1 5 10 15

Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Ile Gly
20 25 30

Ala Arg Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr Asp
35 40 45

Ser Ala Pro Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr Val
50 55 60

Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser
65 70 75 80

Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu
85 90 95

Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val
100 105 110

Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
115 120 125

<210> 20
<211> 127
<212> PRT
<213> Streptomyces avidinii

<220>
<221> MUTAGEN

<222> (32)..(35)

<400> 20

Met Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr
1 5 10 15

Phe Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Ile
20 25 30

Gly Ala Arg Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr
35 40 45

Asp Ser Ala Pro Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr
50 55 60

Val Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp
65 70 75 80

Ser Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp
85 90 95

Leu Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu
100 105 110

Val Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
115 120 125

<210> 21

<211> 126

<212> PRT

<213> Streptomyces avidinii

<220>

<221> MUTAGEN

<222> (31)..(34)

<400> 21

Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe
1 5 10 15

Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Val Thr
20 25 30

Ala Arg Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr Asp
35 40 45

Ser Ala Pro Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr Val
50 55 60

Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser
65 70 75 80

Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu
85 90 95

Leu Thr Ser Gly Thr Thr Glu Glu Asn Ala Gly Tyr Ser Thr Leu Val
100 105 110

Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
115 120 125

<210> 22
<211> 139
<212> PRT
<213> Streptomyces avidinii

<220>
<221> MUTAGEN
<222> (44)..(47)

<400> 22

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

Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe Ile Val Thr
20 25 30

Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Val Thr Ala Arg Gly
35 40 45

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

Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr Val Ala Trp Lys
65 70 75 80

Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser Gly Gln Tyr
85 90 95

Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu Leu Thr Ser
100 105 110

Gly Thr Thr Glu Glu Asn Ala Gly Tyr Ser Thr Leu Val Gly His Asp
115 120 125

Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
130 135

<210> 23
<211> 127
<212> PRT
<213> Streptomyces avidinii

<400> 23

Met Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr
1 5 10 15

Phe Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Glu
20 25 30

Ser Ala Val Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr
35 40 45

Asp Ser Ala Pro Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr
50 55 60

Val Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp
65 70 75 80

Ser Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp
85 90 95

Leu Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu
100 105 110

Val	Gly	His	Asp	Thr	Phe	Thr	Lys	Val	Lys	Pro	Ser	Ala	Ala	Ser
		115					120					125		