SEQUENCE LISTING

<110> Juno Therapeutics, Inc.
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BONYHADI, Mark
CHEN, Calvin
BEAUCHESNE, Pascal

<120> METHODS FOR ISOLATING, CULTURING, AND GENETICALLY ENGINEERING IMMUNE CELL POPULATIONS FOR ADOPTIVE
THERAPY

<130> 735042000240

<140> Not Yet Assigned
<141> Concurrently Herewith

<150> US 61/983,415
<151> 2014-04-23

<160> 19

<170> FastSEQ for Windows Version 4.0

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<220>
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<220>
<223> Streptavidin-binding peptide

<220>
<221> VARIANT
<222> 3
<223> Xaa is selected from glutamine, asparagine and
methionine

<400> 1
His Pro Xaa
1

<210> 2
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<220>
<223> Streptavidin-binding peptide

<400> 2
His Pro Gln Phe
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<210> 3
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<220>
<223> Streptavidin-binding peptide

<220>
<221> VARIANT
<222> 1
<223> Xaa = Trp, Lys or Arg

<220>
<221> VARIANT
<222> 2
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 7
<223> Xaa = Gly or Glu

<220>
<221> VARIANT
<222> 8
<223> Xaa = Gly, Lys or Arg

<400> 3
Xaa Xaa His Pro Gln Phe Xaa Xaa
 1   5

<210> 4
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<220>
<221> VARIANT
<222> 2
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 7
<223> Xaa = Gly or Glu

<220>
<221> VARIANT
<222> 8
<223> Xaa = Gly, Lys or Arg

<400> 4
Trp Xaa His Pro Gln Phe Xaa Xaa
 1   5

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<223> Streptavidin-binding peptide

<400> 5
Trp Arg His Pro Gln Phe Gly Gly
 1   5

<210> 6
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<220>
<223> Strep-tag (registered trademark) II

<400> 6
Trp Ser His Pro Gln Phe Glu Lys
 1   5

<210> 7
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<220>
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<220>
<223> Sequential modules of streptavidin-binding peptide

<220>
<221> VARIANT
<222> (9)...(20)
<223> Xaa at positions 9-20 may be any amino acid and 4
      of them may be absent

<400> 7
Trp Ser His Pro Gln Phe Glu Lys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15
Xaa Xaa Xaa Xaa Trp Ser His Pro Gln Phe Glu Lys
            20   25

<210> 8
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<212> PRT
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<220>
<223> Sequential modules of streptavidin-binding peptide

<220>
<221> VARIANT
<222> (9)...(12)
<223> These amino acids may be absent

<400> 8
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> 9
<211> 30
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<213> Artificial Sequence

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<223> Synthetic

<220>
<223> Twin-Strep-Tag

<400> 9
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> 10
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<213> Artificial Sequence

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<223> Synthetic

<220>
<223> Twin-Strep-Tag

<400> 10
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> 11
<211> 159
<212> PRT
<213> Streptomyces Avidinii

<220>
<223> Streptavidin

<400> 11
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> 12
<211> 159

<212> PRT
<213> Streptomyces Avidinii

<220>
<223> Mutein Streptavidin Val44-Thr45-Ala46-Arg47

<400> 12
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 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> 13
<211> 159
<212> PRT
<213> Streptomyces Avidinii

<220>
<223> Mutein Streptavidin Ile44-Gly45-Ala-46-Arg47

<400> 13
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> 14
<211> 126
<212> PRT
<213> Streptomyces Avidinii

<220>
<223> Minimal streptavidin

<400> 14
Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe

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 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> 15
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<212> PRT
<213> Streptomyces Avidinii

<220>
<223> Mutein Streptavidin Val44-Thr45-Ala46-Arg47

<400> 15
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> 16
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<212> PRT
<213> Streptomyces Avidinii

<220>
<223> Mutein Streptavidin Ile44-Gly45-Ala-46-Arg47

<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 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
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<210> 17
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<223> Synthetic

<220>
<223> Twin Strep-tag

<400> 17
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> 18
<211> 24
<212> PRT
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<220>
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<220>
<223> Twin Strep-tag

<400> 18
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> 19
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<212> PRT
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<400> 19
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