

1
SEQUENCE LISTING

<110> TWIST BIOSCIENCE CORPORATION

<120> DE NOVO SYNTHESIZED COMBINATORIAL NUCLEIC ACID LIBRARIES

<130> 44854-729.601

<140>

<141>

<150> 62/578,326

<151> 2017-10-27

<150> 62/471,723

<151> 2017-03-15

<160> 55

<170> PatentIn version 3.5

<210> 1

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
primer

<400> 1

atggtgagca agggcgagga gctgttcacc ggggtggtgc ccat

44

<210> 2

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 2

atgttagca agggcgagga gctgttcacc ggggtggtgc ccat

44

<210> 3

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

oligonucleotide

<400> 3
atgttaagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 4
<211> 44
<212> DNA
<213> Artificial Sequence

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

<400> 4
atgattagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 5
<211> 44
<212> DNA
<213> Artificial Sequence

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

<400> 5
atgtctagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 6
<211> 44
<212> DNA
<213> Artificial Sequence

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

<400> 6
atgcctagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 7
<211> 44
<212> DNA
<213> Artificial Sequence

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

<400> 7
atgactagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 8
<211> 44
<212> DNA
<213> Artificial Sequence

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

<400> 8
atggctagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 9
<211> 44
<212> DNA
<213> Artificial Sequence

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

<400> 9
atgtatagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 10
<211> 44
<212> DNA
<213> Artificial Sequence

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

<400> 10
atgcatagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 11
<211> 44
<212> DNA
<213> Artificial Sequence

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

<400> 11
atgcaaagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 12
 <211> 44
 <212> DNA
 <213> Artificial Sequence

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

 <400> 12
 atgaatagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 13
 <211> 44
 <212> DNA
 <213> Artificial Sequence

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

 <400> 13
 atgaaaagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 14
 <211> 44
 <212> DNA
 <213> Artificial Sequence

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

 <400> 14
 atggatagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 15
 <211> 44
 <212> DNA
 <213> Artificial Sequence

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

 <400> 15
 atggaaagca agggcgagga gctgttcacc ggggtggtgc ccat 44

<210> 16
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 16
 atgtgtagca agggcgagga gctgttcacc ggggtggtgc ccat

44

<210> 17
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 17
 atgtggagca agggcgagga gctgttcacc ggggtggtgc ccat

44

<210> 18
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 18
 atgcgtagca agggcgagga gctgttcacc ggggtggtgc ccat

44

<210> 19
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 19
 atgggtagca agggcgagga gctgttcacc ggggtggtgc ccat

44

<210> 20
 <211> 62

<212> DNA
 <213> Artificial Sequence

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

 <400> 20
 agacaatcaa ccatttgggg tggacagcct tgacctctag acttcggcat tttttttttt 60
 tt 62

 <210> 21
 <211> 112
 <212> DNA
 <213> Artificial Sequence

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

 <400> 21
 cgggatacctt atcgatcatcg tcgtacagat cccgacccat ttgctgtcca ccagtcatgc 60
 tagccataacc atgatgatga tgatgatgag aaccccgcat tttttttttt tt 112

 <210> 22
 <211> 19
 <212> DNA
 <213> Artificial Sequence

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

 <400> 22
 atgcgggggtt ctcatcatc 19

 <210> 23
 <211> 20
 <212> DNA
 <213> Artificial Sequence

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

 <400> 23
 cgggatacctt atcgatcatcg 20

<210> 24
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 24
 Ala Trp Ile Lys Arg Glu Gln
 1 5

<210> 25
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>
 <221> MOD_RES
 <222> (1)..(1)
 <223> Any amino acid

<400> 25
 Xaa Trp Ile Lys Arg Glu Gln
 1 5

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

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>
 <221> MOD_RES
 <222> (2)..(2)
 <223> Any amino acid

<400> 26
 Ala Xaa Ile Lys Arg Glu Gln
 1 5

<210> 27
 <211> 7
 <212> PRT
 <213> Artificial Sequence

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

<220>
 <221> MOD_RES
 <222> (3)..(3)
 <223> Any amino acid

<400> 27
 Ala Trp Xaa Lys Arg Glu Gln
 1 5

<210> 28
 <211> 7
 <212> PRT
 <213> Artificial Sequence

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

<220>
 <221> MOD_RES
 <222> (4)..(4)
 <223> Any amino acid

<400> 28
 Ala Trp Ile Xaa Arg Glu Gln
 1 5

<210> 29
 <211> 7
 <212> PRT
 <213> Artificial Sequence

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

<220>
 <221> MOD_RES
 <222> (5)..(5)
 <223> Any amino acid

<400> 29

Ala Trp Ile Lys Xaa Glu Gln
1 5

<210> 30

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<221> MOD_RES

<222> (6)..(6)

<223> Any amino acid

<400> 30

Ala Trp Ile Lys Arg Xaa Gln
1 5

<210> 31

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<221> MOD_RES

<222> (7)..(7)

<223> Any amino acid

<400> 31

Ala Trp Ile Lys Arg Glu Xaa
1 5

<210> 32

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic 6xHis tag

<400> 32

His His His His His His
1 5

<210> 33

<211> 261

<212> PRT

<213> Homo sapiens

<400> 33

Met Phe Cys Gln Leu Ala Lys Thr Cys Pro Val Gln Leu Trp Val Asp
1 5 10 15

Ser Thr Pro Pro Pro Gly Thr Arg Val Arg Ala Met Ala Ile Tyr Lys
20 25 30

Gln Ser Gln His Met Thr Glu Val Val Arg Arg Cys Pro His His Glu
35 40 45

Arg Cys Ser Asp Ser Asp Gly Leu Ala Pro Pro Gln His Leu Ile Arg
50 55 60

Val Glu Gly Asn Leu Arg Val Glu Tyr Leu Asp Asp Arg Asn Thr Phe
65 70 75 80

Arg His Ser Val Val Val Pro Tyr Glu Pro Pro Glu Val Gly Ser Asp
85 90 95

Cys Thr Thr Ile His Tyr Asn Tyr Met Cys Asn Ser Ser Cys Met Gly
100 105 110

Gly Met Asn Arg Arg Pro Ile Leu Thr Ile Ile Thr Leu Glu Asp Ser
115 120 125

Ser Gly Asn Leu Leu Gly Arg Asn Ser Phe Glu Val Arg Val Cys Ala
130 135 140

Cys Pro Gly Arg Asp Arg Arg Thr Glu Glu Glu Asn Leu Arg Lys Lys
145 150 155 160

Gly Glu Pro His His Glu Leu Pro Pro Gly Ser Thr Lys Arg Ala Leu
165 170 175

Pro Asn Asn Thr Ser Ser Ser Pro Gln Pro Lys Lys Lys Pro Leu Asp
 180 185 190

Gly Glu Tyr Phe Thr Leu Gln Ile Arg Gly Arg Glu Arg Phe Glu Met
 195 200 205

Phe Arg Glu Leu Asn Glu Ala Leu Glu Leu Lys Asp Ala Gln Ala Gly
 210 215 220

Lys Glu Pro Gly Gly Ser Arg Ala His Ser Ser His Leu Lys Ser Lys
 225 230 235 240

Lys Gly Gln Ser Thr Ser Arg His Lys Lys Leu Met Phe Lys Thr Glu
 245 250 255

Gly Pro Asp Ser Asp
 260

<210> 34

<211> 2271

<212> DNA

<213> Homo sapiens

<400> 34

tgaggccagg agatggaggc tgcagtgagc tgtgatcaca ccactgtgct ccagcctgag	60
tgacagagca agaccctatc tcaaaaaaaaa aaaaaaaaaa gaaaagctcc tgaggtgtag	120
acgccaaactc tctctagctc gctagtgggt tgcaggaggt gcttacgcat gtttgtttct	180
ttgctgccgt cttccagttg ctttatctgt tcacttgtgc cctgactttc aactctgtct	240
ccttcctctt cctacagtac tcccctgccc tcaacaagat gttttgccaa ctggccaaga	300
cctgccctgt gcagctgtgg gttgattcca caccctcgcc cggcacccgc gtccgcgcca	360
tggccatcta caagcagtca cagcacatga cggaggttgt gaggcgctgc cccaccatg	420
agcgctgctc agatagcgat ggtctggccc ctctcagca tcttatccga gtggaaggaa	480
atttgctgtg ggagtatttg gatgacagaa acacttttcg acatagtgtg gtggtgcct	540
atgagccgcc tgaggttggc tctgactgta ccaccatcca ctacaactac atgtgtaaca	600
gttcctgcat gggcggcatg aaccggaggc ccacctcac catcatcaca ctggaagact	660

ccagtggtaa tctactggga cggaacagct ttgaggtgcg tgtttgtgcc tgtcctggga	720
gagaccggcg cacagaggaa gagaatctcc gcaagaaagg ggagcctcac cagagctgc	780
ccccagggag cactaagcga gactgccc acaacaccag ctctctctcc cagccaaaga	840
agaaaccact ggatggagaa tatttcaccc ttcatatccg tgggcgtgag cgcttcgaga	900
tgttccgaga gctgaatgag gccttggaac tcaaggatgc ccaggctggg aaggagccag	960
gggggagcag ggctcactcc agccaccta agtccaaaaa gggtcagtct acctcccgcc	1020
ataaaaaact catgttcaag acagaagggc ctgactcaga ctgacattct ccacttcttg	1080
ttccccactg acagcctccc acccccatct ctccctcccc tgccattttg ggttttgggt	1140
ctttgaaccc ttgcttgcaa taggtgtgcg tcagaagcac ccaggacttc catttgcttt	1200
gtcccggggc tccactgaac aagttggcct gactgggtgt tttgttgtgg ggaggaggat	1260
ggggagtagg acataccagc ttagatttta aggtttttac tgtgagggat gtttgggaga	1320
tgtaagaaat gttcttgag ttaagggta gtttacaatc agccacattc taggtagggg	1380
cccacttcac cgtactaacc aggaagctg tccctcactg ttgaattttc tctaacttca	1440
aggcccatat ctgtgaaatg ctggcatttg cacctacctc acagagtga ttgtgagggt	1500
taatgaaata atgtacatct ggccttgaaa ccacctttta ttacatgggg tctagaactt	1560
gacccccttg aggggtgctg ttccctctcc ctgttggtcg gtgggttggt agtttctaca	1620
gttgggcagc tggtaggta gagggagttg tcaagtctct gctggcccag ccaaaccctg	1680
tctgacaacc tcttggtgaa ccttagtacc taaaaggaaa tctcaccca tccacaccc	1740
tggaggattt catctcttgt atatgatgat ctggatccac caagacttgt tttatgtca	1800
gggtcaattt ctttttctt tttttttttt ttttttctt ttctttgaga ctgggtctcg	1860
ctttgttgcc caggctggag tggagtggcg tgatcttggc ttactgcagc ctttgcctcc	1920
ccggctcgag cagtcctgcc tcagcctccg gagtagctgg gaccacaggt tcatgccacc	1980
atggccagcc aacttttgca tgtttttag agatggggtc tcacagtgtt gccaggctg	2040
gtctcaaaact cctgggctca ggcgatccac ctgtctcagc ctcccagagt gctgggatta	2100
caattgtgag ccaccacgtc cagctggaag ggtcaacatc ttttacattc tgcaagcaca	2160
tctgcathtt caccacccc ttcccctcct tctccctttt tatatcccat ttttatatcg	2220
atctcttatt ttacaataaa actttgctgc cacctgtgtg tctgagggt g	2271

<210> 35
 <211> 37
 <212> DNA
 <213> Artificial Sequence

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

 <400> 35
 cccctgccct caacaagatg gcttgccaac tggccaa 37

 <210> 36
 <211> 37
 <212> DNA
 <213> Artificial Sequence

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

 <400> 36
 cccctgccct caacaagatg tgctgccaac tggccaa 37

 <210> 37
 <211> 37
 <212> DNA
 <213> Artificial Sequence

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

 <400> 37
 cccctgccct caacaagatg gattgccaac tggccaa 37

 <210> 38
 <211> 37
 <212> DNA
 <213> Artificial Sequence

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

 <400> 38
 cccctgccct caacaagatg gagtgccaac tggccaa 37

 <210> 39

<211> 37
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 39
 cccctgccct caacaagatg ttctgccaac tggccaa 37

<210> 40
 <211> 37
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 40
 cccctgccct caacaagatg ggttgccaac tggccaa 37

<210> 41
 <211> 37
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 41
 cccctgccct caacaagatg cactgccaac tggccaa 37

<210> 42
 <211> 37
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 42
 cccctgccct caacaagatg atctgccaac tggccaa 37

<210> 43
 <211> 37
 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 43

cccctgccct caacaagatg aagtgccaac tggccaa

37

<210> 44

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 44

cccctgccct caacaagatg ctgtgccaac tggccaa

37

<210> 45

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 45

cccctgccct caacaagatg atgtgccaac tggccaa

37

<210> 46

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 46

cccctgccct caacaagatg aactgccaac tggccaa

37

<210> 47

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 47

cccctgccct caacaagatg ccttgccaac tggccaa

37

<210> 48

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 48

cccctgccct caacaagatg cagtgccaac tggccaa

37

<210> 49

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 49

cccctgccct caacaagatg agatgccaac tggccaa

37

<210> 50

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 50

cccctgccct caacaagatg agctgccaac tggccaa

37

<210> 51

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

oligonucleotide

<400> 51
 cccctgccct caacaagatg acctgccaac tggccaa 37

<210> 52
 <211> 37
 <212> DNA
 <213> Artificial Sequence

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

<400> 52
 cccctgccct caacaagatg gtgtgccaac tggccaa 37

<210> 53
 <211> 37
 <212> DNA
 <213> Artificial Sequence

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

<400> 53
 cccctgccct caacaagatg tggtgccaac tggccaa 37

<210> 54
 <211> 37
 <212> DNA
 <213> Artificial Sequence

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

<400> 54
 cccctgccct caacaagatg tactgccaac tggccaa 37

<210> 55
 <211> 10
 <212> PRT
 <213> Artificial Sequence

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

<400> 55

His His His Cys Cys His His Cys His His
1 5 10