SUPPLEMENTARY MATERIAL

FOLDNA, a web server for self-assembled DNA nanostructure auto-scaffolds and auto-staples

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Web Server results for Figure 2:

The scaffold DNA used by us is M13mp18. The selected shapes for wet-lab experiment validation are a hexagon, a rabbit and a panda (Figure 2A).Scaffold and staple DNA pathways (formed structures) as well as the corresponding staple DNA sequences are shown in the following materials.

Figure S1: The scaffold pathway of the hexagon in Figure 2B

Figure S2: The staple pathway of the hexagon in Figure 2B

Figure S3: The scaffold pathway of the rabbit in Figure 2C

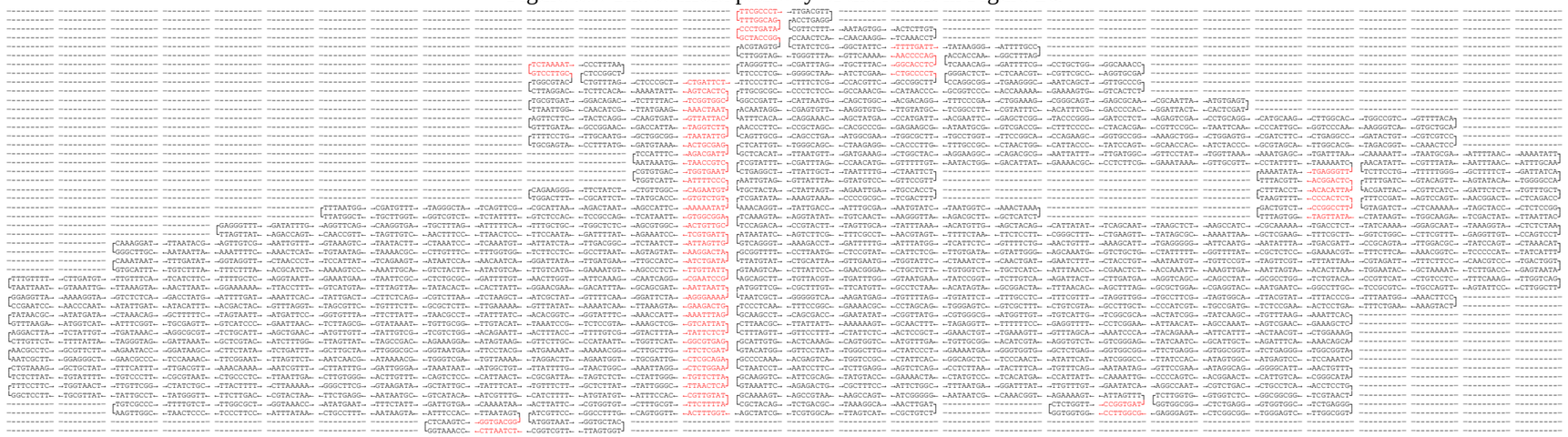

Figure S4: The staple pathway of the rabbit in Figure 2C

Figure S5: The scaffold DNA pathway of the panda in Figure 2D

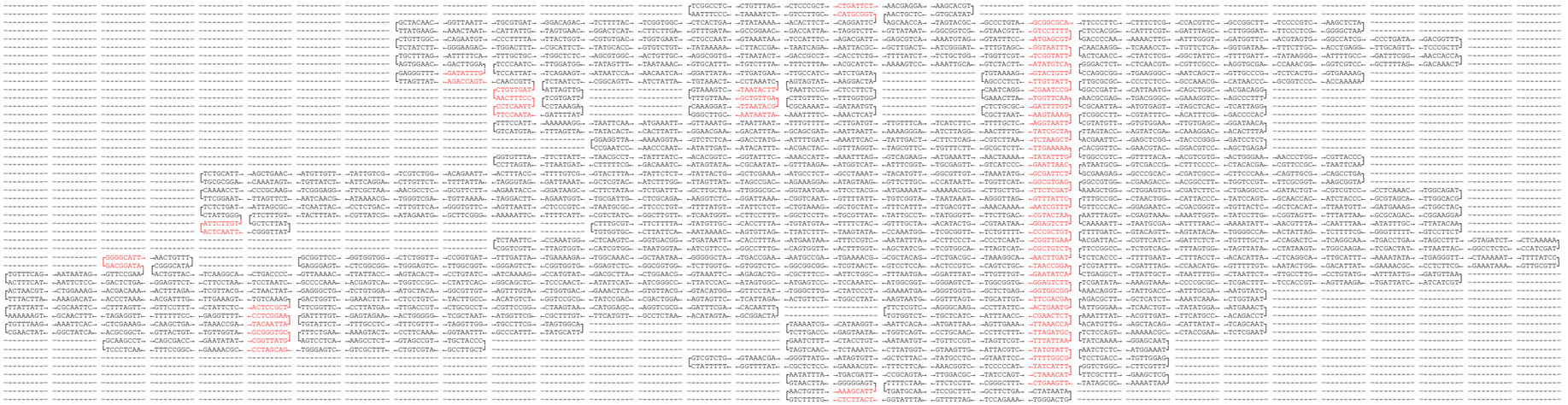

Figure S6: The staple DNA pathway of the panda in Figure 2D

Staple DNA sequences for the hexagon in Figure 2B

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[1] TTGGGTTATACCTTTTTAACCTCC
[2] TTTAAAAGTTTGAGTAACATTATC
[3] ATTTTGCGAAAGAAATTGCGTAGATTTTCAGG
[4] TTTAACGTATTAATTACATTTAACAATTTCAT
[5] TTGAATTACATAGGTCTGAGAGACTATAACTA
[6] TATGTAAAGAAAAAGCCTGTTTAGTAAAGCCA
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[11] AATTGAGGGTTGGCAAATCAACAGCCAGCAGA
[12] AAACCACCCCCGAACGTTATTAATTTGAAAGG
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[223] AAAGCGGATTGCATCATATTATAGTCAGAAGC

Staple DNA sequences for the rabbit in Figure 2C
[0] CCGAGGAAACGCAATAAGTTACCAGAAGGAAAAGAGAATA
[1] CATTTAACACATCAAGAAAACAAA
[2] TTGGGTTATACCTTTTTAACCTCCATTAATTA
[3] TACCAGTATATCATATGCGTTATAGGCTTAGG
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[11] TATGTAAAGAAAAAGCCTGTTTAGTAAAGCCA
[12] ACGCTCAAACGCGCCTGTTTATCAATCCCATC
[13] CTAATTTAGCTTATCCGGTATTCTCTTGCGGG
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[154] CTTTTGCGGGAGAAGCGCCATCAAAAATAATTGTAATGGG
[155] GGTAATAAGTTTTAACCTATTATTCTGAAACATATAAGTA
[156] AACCAGAGTCTTTTCATAATCAAAAGAACCAC
[157] CCACCACCGGAACCGCCTCCCTCAGAGCCGCC
[158] TCCACGCTGGTTTGCCCCAGCAGG
[159] CAGTGAGACGGGCAACAGCTGATTGCAAGCGG
[160] CTGGGGTGTTGCGCTCACTGCCCGCTTTTCAC
[161] GATGTGCTAGAGGATCCCCGGGTATGTAAAGC
[162] ATAGGTCACCGGCACCGCTTCTGGGAAAGGGG
[163] GACTTCAAATTGCTGAATATAATG
[164] CAGACGACAATGCTTTAAACAGTTGCCCGAAA
[165] GCTTGAGAACAGGTAGAAAGATTCTCGTTTAC
[166] TCGAAATCTCATCAAGAGTAATCTTAAATTGG
[167] CGGAACGACCAACCTAAAACGAAAAAATTGTG
[168] GGAGCCTTTGCGCCGACAATGACAGACAGCAT
[169] CAGCCCTCTGGGATTTTGCTAAACCTCCAAAA
[170] TAGCCCGGCCGCCACCCTCAGAGCTCCACAGA
[171] ACTCACATTAATTGCGCCTAATGA
[172] GTGAGCTACCTGCAGGTCGACTCTGCAAGGCG
[173] ATTAAGTTCACTCCAGCCAGCTTTCGTTGGTG
[174] TAGATGGGTTTAACCAATAGGAACCTTTATTTCAACGCAA
[175] GATGGCTTAGAGCTTAATATCGCG
[176] TTTTAATTCATTGAATCCCCCTCAGATAAAAA
[177] CCAAAATAACGGAACAACATTATTTGGTTTAA
[178] TTTCAACTATAGGCTGGCTGACCTCGCGACCT
[179] GCTCCATGTGCCACTACGAAGGCAGGGTAGCA
[180] ACGGCTACGCTTGATACCGATAGTTAATTGTA
[181] TCGGTTTAAAATGAATTTTCTGTAATAGTTAG
[182] CGTAACGAACCGCCACCCTCAGAAAATAGGTG
[183] TATCACCGCTGCCTATTTCGGAACGGGGTCAGTGCCTTGA
[184] GTCAGACGATTGGCCTTGATATTCACAAACAA
[185] CACCAGAGCCTCAGAGCCGCCACCATCACCGG
[186] CGCATCGTAACCGTGCGGCCTCAGGAAGATCGGGGTAACG
[187] TATATTTTGGATAAAAATTTTTAGTTGTATAA
[188] AGGTAAAGAAATGCAATGCCTGAGAAAACTAG
[189] AGACAGTCATTCAAAAGGGTGAGAAAAGGCTA
[190] AAATCACCATCAATATGATATTCAACCGTTCT
[191] ACCCTCAGAACCGCCACCCTCAGAGCCACCACCCGCCGCC
[192] CCAGGGTTGTGCCAAGCTTGCATG

[193] AAAGCGAAAGAGGTCATTTTTGCG
[194] CTTTTGCAAATCGTCATAAATATTCGAGCTTC
[195] TGTGAATTTTAATAAAACGAACTAGCGAGAGG
[196] CCGGAACGTGTACAGACCAGGCGCTTAATCAT
[197] TGAGGACTCGGGTAAAATACGTAATTACTTAG
[198] CTTTCGAGGTGAATTTCTTAAACAAGAGGCTT
[199] TTTGTCGTCTTTCCAGACGTTAGTTCAGCTTG
[200] AGGTTTAGTACCGCCACCCTCAGATCTAAAGT
[201] GCCCGTATAAACAGTTAATGCCCCTACTCAGG
[202] AGCATTGACAGGAGGTTGAGGCAGGTAACAGT
[203] TGTAAAACGACGGCCATTCCCAGT
[204] CACGACGTGGACGACGACAGTATCATCTGCCAGTTTGAGG
[205] TCGCATTAAATTTTTGTTAAATCAGCTCATTT
[206] GCAAATATCCCAAAAACAGGAAGAAACCCTCA
[207] CATGTCAAGATGAACGGTAATCGTTAATGTGT
[208] TCAGGTCATTTTTGAGAGATCTACAAGGCCGG
[209] ATTGCTCCTTTTGATACCAGACCG
[210] GAAGCAAAGCGTCCAATACTGCGGAAAGAAGT
[211] TTTGCCAGGGAAGAAAAATCTACGACCTTATG
[212] CGATTTTAGAGGACAGATGAACGGAGGCGCAG
[213] ACGGTCAAGGAAGTTTCCATTAAAAAAGACTTTTTCATGA
[214] TCATAAGGGAACCGAACTGACCAACTTTGAAAAGAACTGG
[215] TAAACGTTAATATTTTGTTAAAAT
[216] ACCCCGGTTGATAATCAGAAAAGCTTAAATTG
[217] GAGTCTGGAGCAAACAAGAGAATCTCATATGT
[218] AATTAATGCCGGAGAGGGTAGCTATTGCCTGA
[219] GGTCAGGATTAGAGAGTACCTTTAAGCTGATA
[220] ATAGTAAAATGTTTAGACTGGATACTCCAACA
[221] CTCATTATACCAGTCAGGACGTTGAGGGGGTA

Staple DNA sequences for the panda in Figure 2D
[0] GCTTGATACCGATAGTGTGAATTTCTTAAACATTTTTTCA
[1] TTAAGAGGCTATTATTCTGAAACA
[2] TTTCTGTACTTTCCAGACGTTAGTTGAAAGTA
[3] CGTTGAAAGAATTGCGAATAATAAAAATGAAT
[4] AAACAGTTAATGCCCCCTGCCTAT
[5] GCCCGTATGTAACAGTTTCGGAACCTGAGACT
[6] CCTCAAGATCTAAAGTTTTGTCGTTGGGATTT
[7] TGCTAAACAAAGGAACAACTAAAGATCTCCAA
[8] AAAAAAGGTCAGCTTGCTTTCGAGTGCGCCGA
[9] CAATGACAGGTCGCTGAGGCTTGCAGGGAGTTAAAGGCCG
[10] TGAGTTAAGCCCAATAATAAGAGCACAAGAATGATAACCC

[11] GAAGGATTAGGATTAGGGGGTCAGTGCCTTGA
[12] GAGAATAGAACTTTCAACAGTTTCCTGACCAA
[13] TCGGTTTACTCCAAAAGGAGCCTTCTAAAACA
[14] ATATATTCACAACCATCGCCCACGAAAGACTT
[15] CTTTTGCGGGATCGTCACCCTCAGCAGCGAAA
[16] GTTTATCAGTTCAGCTAATGCAGA
[17] AATCAAGACTTGCGGGAGGTTTTGACGCGCCT
[18] AAGAAACAGCGCTAATATCAGAGAAAGCCTTA
[19] CGACAATAAACAACATACAATAGA
[20] TAAGTCCTTTAGCGAACCTCCCGATTAGTTGC
[21] TATTTTGCGTCAGAGGGTAATTGAATGAAATAGCAATAGC
[22] CCACCACCGGAACCGCCTCCCTCA
[23] GAGCCGCCGGTAATAAGTTTTAACCGGGGTTTTGCTCAGT
[24] TCCACAGACAGCCCTCATAGTTAGCGTAACGA
[25] CTTTGAAATCATAAGGGAACCGAAAGCGGAGT
[26] CTCATCTTGAGGCAAAAGAATACATAATTGTA
[27] TTTCATGAAGAGGCTTTGAGGACTCATAACCG
[28] AGATAGAACCCTTCTGACATTCTGGCCAACAGAATACTTC
[29] AAACCCTCTCACCTTGCTGAACCTAGGGTTAG
[30] AATCAATATCTGGTCAGTTGGCAAAGATTAGA
[31] TATCTTACCGAAGCCCGAACACCCTGAACAAAACCCAGCT
[32] GACAGCATCGGAACGAGGGTAGCAACGGCTACGGAAGTTT
[33] TTTGATTAAATTAACCGTTGTAGC
[34] AAAATAATAATTCTGTCCAGACGA
[35] ACAATTTTAAGAACGCGAGGCGTTGAACAAGA
[36] AACCGCCAATCACCGGAACCAGAG
[37] GATAAGTGGATACAGGAGTGTACTACCCTCAG
[38] ATGAACGGACAACGCCTGTAGCATACCAGGCG
[39] AGCGATTAAGGCGCAGACGGTCAAGAGGACAG
[40] CCATTAAACCAACCTAAAACGAAATGACCCCC
[41] GTCTGTCCATCACGCAGTAATAAC
[42] ATCACTTGACCAGTAATAAAAGGGACCTGAAAGCGTAAGA
[43] GAGAGCCAGCAGCAAATGAAAAATCTAAAGCA
[44] AACCTACCACTTCTGAATAATGGACAAATATC
[45] CAACTAATATCAACAGTTGAAAGG
[46] AGCACTAATCTTTAGGAATTGAGGAAGGTTAT
[47] CTAAAATACCTTTTTTAATGGAAACAGTACATAAATCAAT
[48] AATAAGAATAAACACCGGAATCAT
[49] AATTACTACGACAAAAGGTAAAGTATCCCATC
[50] CTAATTTAGCTTATCCGGTATTCTATCCTGAA
[51] TCTTACCAGACGGGAGAATTAACTTTTTTAAGAAAAGTAA
[52] CCATTTGGGAATTAGAGCCAGCAA

[53] AATCACCATCTTTTCATAATCAAACCCTCAGA
[54] GCCACCACATACATGGCTTTTGATCCGTCGAG
[55] AGGGTTGAGTCACCAGTACAAACTTGTACAGA
[56] CCAGGCGCTTACTTAGCCGGAACGTACCAAGC
[57] GCGAAACATGCCACTACGAAGGCACGGGTAAAATACGTAA
[58] GCCGTCAATAGATAATTGATTGTTTGGATTATATATCAAA
[59] AAGTACAACGGAGATTCGCGACCTGCTCCATGATAGGCTG
[60] GAAGAACTGCCACCGAGTAAAAGA
[61] CACAGACAATTCACCAGTCACACGCCTGAGTA
[62] ATTATTTGGCAACAGTGCCACGCTATACGTGG
[63] GTGAATAAAATTTCATTTGAATTA
[64] TTGGGTTATACCTTTTTAACCTCCATATGTGA
[65] CTGTTTAGGATAAATAAGGCGTTAGGCTTAGG
[66] TAGAAACCAGAGAATATAAAGTACGAAAAAGC
[67] GAGCGTCTAAATCAGATATAGAAGCGAGCATG
[68] CCGAACAAACAGGGAAGCGCATTAACGCTAAC
[69] GAATAAGTTAAAAGAAACGCAAAGGCAGATAG
[70] ATTACCATCCGTCACCGACTTGAGACACCACG
[71] CCGCCACCTTATTAGCGTTTGCCAGTAGCACC
[72] TAGCCCGGCGTTCCAGTAAGCGTCCCTCAGAG
[73] GCTGACCTCGTAACACTGAGTTTCTATAAGTA
[74] CTAAACAGGAGGCCGATTAAAGGG
[75] ATTTTAGATTTTATAATCAGTGAGCAAACTAT
[76] CGGCCTTGTTATTTACATTGGCAGATATTTTT
[77] GAATGGCTAGTATTAACACCGCCTCACGTAAA
[78] ACAGAAATTTCATCAATATAATCCACATTTGA
[79] GGATTTAGAAGTATTAGACTTTACAAACAATT
[80] CGACAACTCGTATTAAATCCTTTGCCCGAACG
[81] TTATTAATATTAATTACATTTAACCCTTGCTT
[82] CTGTAAATCATAGGTCTGAGAGACTATAACTA
[83] TATGTAAAGAAATACCGACCGTGTTATCATAT
[84] GCGTTATATTTCGAGCCAGTAATAAATCAATA
[85] ATCGGCTGGCGCCCAATAGCAAGCTTCCAGAG
[86] CCTAATTTAGAGAATAACATAAAAAGTTACCA
[87] GAAGGAAATAAAGGTGGCAACATATTATTTTG
[88] TCACAATCTAAAGGTGAATTATCATAGCAAGG
[89] CCGGAAACTTCGGTCATAGCCCCCAGAACCAC
[90] CACCAGAGCAGTCTCTGAATTTACAATAGGTG
[91] TATCACCGATAGGAACCCATGTACTCATCAAG
[92] AGTAATCTAAATTGTGTCGAAATCTGTATCATCGCCTGAT
[93] TCGTTTACCAGACGACGATAAAAACCAAAATA
[94] AGAAGTGTCAGGAACGGTACGCCATTGACGAG

[95] CTGGTAATATCCAGAACAATATTACCGCCAGC
[96] TGACAAGAACCGGATAAGGGATAGCAAGCCCATACTCAGG
[97] GCGAGAGGCTTTTGCAAACACTATCATAACCCATCAGTTG
[98] AAACAGTTCATTGAATCCCCCTCAAAAAGATT
[99] CAGAAAACGAGAATGACCATAAATCAAAAATC
[100] TTAATGCGAATCGTCTGAAATGGA
[101] TGCGTAGACAGAGGTGAGGCGGTCATTAGTCT
[102] TTCCTGATTATCAGATGATGGCAAAAAGAAAT
[103] AAACCACCAGAAGGAGCGGAATTATCATCATA
[104] TTTGAGTAACATTATCATTTTGCGGAACAAAG
[105] TTAATTAAACATCAAGAAAACAAATTTAAAAG
[106] CAAATCCAGTGAATTTATCAAAATCGTCGCTA
[107] TACCAGTACTAAATTTAATGGTTTTGCTGATG
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[110] ACGCAATAATAGCAGCCTTTACAGGCCAGTTA
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[123] ACAAAGAAAATTTCATCTTCTGACTAAAGCCA
[124] ACGCTCAAACAACGCCAACATGTACAAGAACG
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[127] ATACCCAACAGTATGTTAGCAAACGGTTTACC
[128] AGCGCCAAAGGGAAGGTAAATATTTCGATAGC
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[130] TGAGGCAGATAAATCCTCATTAAATACCGCCA
[131] CCCTCAGACACCACCCTCATTTTCTTCATTAC
[132] CCAAATCACTTGCCCTGACGAGAAACACCAGA
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[135] CATTCAACGAGGCATAGTAAGAGCAAAGAAGTTTTGCCAG
[136] GCGTCCAATACTGCGGAATCGTCATAAATATT

[137] AAGAGGAAAAAGCGGATTGCATCAAATGCTTT
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[140] CTTTTACACAGATGAATATACAGTCCCTGAGA
[141] CCTGATTGTCGGGAGAAACAATAAAACGCGCG
[142] GCGCAGAGCTTTGAATACCAAGTTTTGCGCTC
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[146] CATATTTACAGTAGGGCTTAATTGTATTACGC
[147] CAAGCAAGACCAAGTACCGCACTCCCGGCACC
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[150] ATTGAGGGAGACAAAAGGGCGACAAAAACTAG
[151] TGCCTTTAAATCAGTAGCGACAGAAAGGCCGG
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[153] CTCAGAGCACCGCCACCCTCAGAAAGCTATAT
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[157] GGAATTACTAATGCAGATACATAATTAGAGAG
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[159] GCCCGAAAGACTTCAAATATCGCGTTTTAATT
[160] AGGTCTTTACCCTGACTATTATAGTCAGAAGC
[161] CGAGAAAGGAAGGGAATGCGCCGCTACAGGGC
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[163] AGTTTGGACGAGATAGGGTTGAGTAATACCGA
[164] GAGTTGCAGCCCTTCACCGCCTGGAACAGTAC
[165] GGGAGAGGCATTAATGAATCGGCCCGGATTCG
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[167] GCATAAAGTTCCACACAACATACGAATTACCT
[168] TCATAGCTCCGAGCTCGAATTCGTAGCTTAGA
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[175] AGACAGTCATTCAAAAGGGTGAGAATCAAGTT
[176] GCTAAATCAGCAATAAAGCCTCAGTGATATTC
[177] TTTCATTTGGTCAATAACCTGTTTCCGCCACC
[178] CGAGTAGAACAGTTGATTCCCAATCATTCAGT

[179] TGCAACTACTGTAGCTCAACATGTTGGTTTAA
[180] TTTTTGCGATTGCTCCTTTTGATATTAATAAA
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[182] GAAGCAAACGAGCTTCAAAGCGAAATGTTTAG
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[208] TTCGCCATGGACGACGACAGTATCCGTTGGTG
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[210] AAATAATTTTAAATTGTAAACGTTTGATAATC
[211] AGAAAAGCTTGCCTGAGAGTCTGGGATATTCA
[212] ACCGTTCTAAATGCAATGCCTGAGTTATGACC
[213] CTGTAATACATACAGGCAAGGCAAAGGTGGCATCAATTCT
[214] CGAAAATCCTGTTTGATGGTGGTTCCGAAATCAACGTCAA
[215] ACTAATAGTAGTAGCATTAACATCCAATAAATCTTTTGCG
[216] AGGGCGAAAAACCGTCTATCAGGG
[217] AACCGTGCATCTGCCAGTTTGAGG
[218] GCCTTCCTGTAGCCAGCTTTCATCCGCATCGT
[219] CAGGAAGATTGTATAAGCAAATATCGCGTCTG
[220] AATTAATGAAAGGCTATCAGGTCACCCAAAAA

[221] GGAGAAGCAACCCTCATATATTTTAGCTGATA
[222] TTTTTGAGAGATCTACCCGGAGAG
[223] GGTAGCTAGGATAAAAATTTTTAGCTTTATTTCAACGCAA