

## Supplementary Material for

### **Polyhedra Self-Assembled from DNA Tripods and Characterized with 3D DNA-PAINT**

Ryosuke Iinuma, Yonggang Ke, Ralf Jungmann, Thomas Schlichthaerle, Johannes B. Woehrstein, Peng Yin\*

\*Corresponding author. E-mail: py@hms.harvard.edu

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**This PDF file includes:**

Materials and Methods

Figs. S1 to S22

Tables S1 to S7

**Other Supplementary Material for this manuscript includes the following:**  
(available at [www.sciencemag.org/content/science.1250944/DC1](http://www.sciencemag.org/content/science.1250944/DC1))

Movies S1 and S2

# Supplementary Material I

## Polyhedra Self-Assembled from DNA Tripods and Characterized with 3D DNA-PAINT

Ryosuke Iinuma<sup>1††</sup> Yonggang Ke<sup>1,3,4†○</sup> Ralf Jungmann<sup>1,2†</sup> Thomas Schlichthaerle<sup>1</sup> Johannes B. Woehrstein<sup>1,2</sup> Peng Yin<sup>1,2\*</sup>

Wyss Institute for Biologically Inspired Engineering, Harvard University, Boston, Massachusetts 02115, USA<sup>1</sup>

Department of Systems Biology, Harvard Medical School, Boston, Massachusetts 02115, USA<sup>2</sup>

Department of Cancer Biology, Dana-Farber Cancer Institute, Harvard Medical School, Boston, Massachusetts 02115, USA<sup>3</sup>

Department of Biological Chemistry and Molecular Pharmacology, Harvard Medical School, Boston, Massachusetts 02115, USA<sup>4</sup>

† Equal contribution authors: Iinuma, Ke, Jungmann

○ Present address: JSR Life Sciences Corporation, Ibaraki, Japan

◇ Present address: Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University, Atlanta, Georgia 30322, USA

\*Corresponding email address: py@hms.harvard.edu

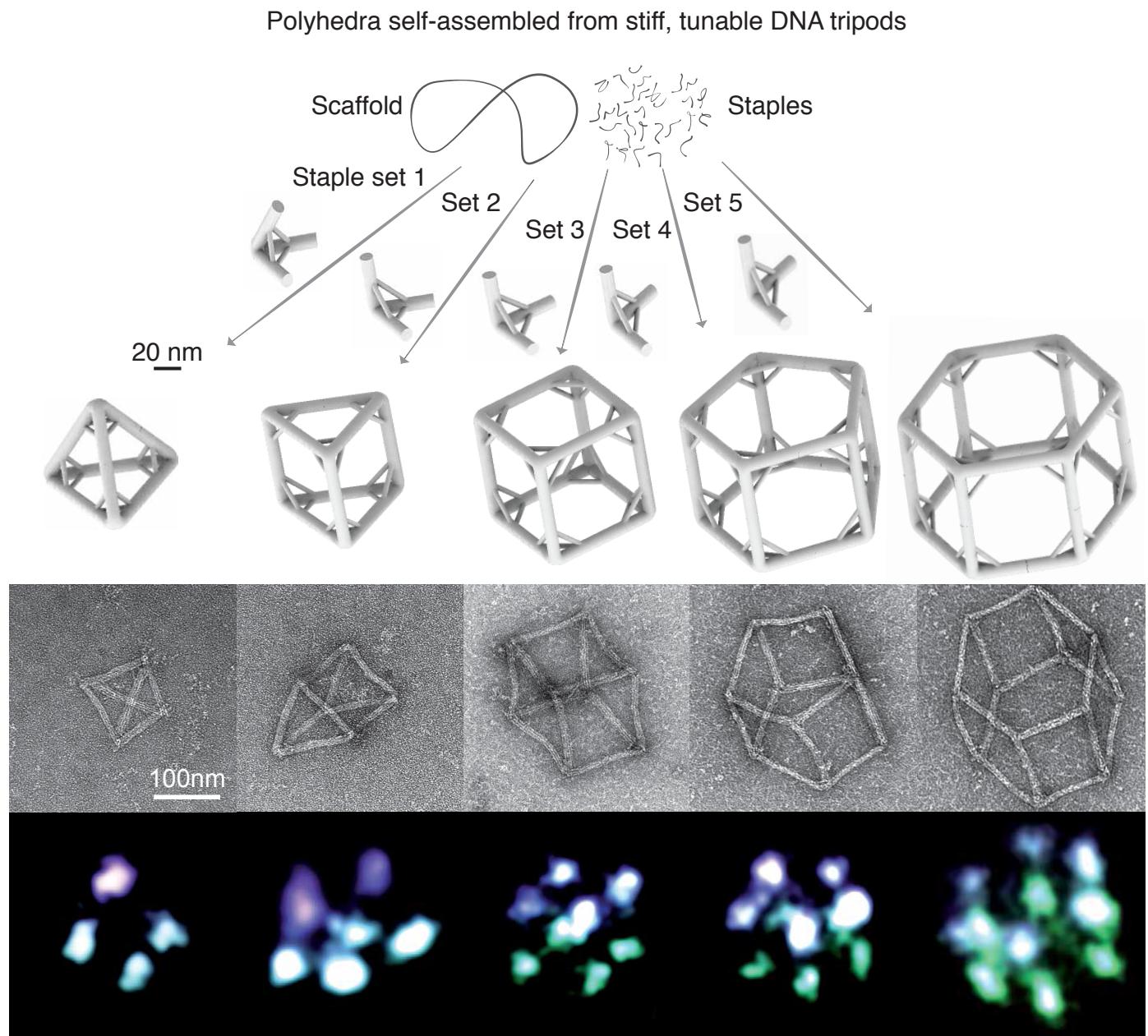
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## S1 Summary figure



**Fig. S1. 20–60 megadalton DNA polyhedra.** 20–60 megadalton DNA wireframe polyhedra assembled from tunable DNA-origami tripods. Top, schematics showing the assembly process of tripod monomers and the polyhedra; middle, TEM images of polyhedra; bottom, super-resolution fluorescence images of polyhedra. These polyhedra are significantly larger than previous DNA polyhedra in Fig. 1A, including (1) a cube<sup>1</sup>, a truncated octahedron<sup>11</sup>, a tetrahedron<sup>13</sup>, an octahedron<sup>12</sup>, (2) a tetrahedron, a dodecahedron, and a buckyball assembled from three-arm DNA tiles<sup>16</sup>, (3) a DNA-origami tetrahedron<sup>24</sup>, and (4) an icosahedron assembled from three DNA-origami monomers<sup>5</sup>.

## S2 Materials and methods

**Materials and sample preparation.** DNA strands were synthesized by Integrated DNA Technology, Inc. ([www.idtdna.com](http://www.idtdna.com)) or Bioneer Corporation ([us.bioneer.com](http://us.bioneer.com)). To assemble the structures, unpurified 100  $\mu$ M DNA strands were mixed with p8064 scaffold in a molar stoichiometric ratio of 10:1 in 0.5  $\times$  TE buffer (5 mM Tris, pH 7.9, 1 mM EDTA) supplemented with 12 mM MgCl<sub>2</sub>. The final concentration of p8064 scaffold was adjusted to 10 nM. Cy3b-modified DNA oligonucleotides were purchased from Biosynthesis (Lewisville, TX). Streptavidin was purchased from Invitrogen (S-888, Carlsbad, CA). Bovine serum albumin (BSA), and BSA-Biotin was obtained from Sigma Aldrich (A8549, St. Louis, MO). Glass slides and coverslips were purchased from VWR (Radnor, PA). Two buffers were used for sample preparation and imaging for super-resolution DNA-PAINT imaging: Buffer A (10 mM Tris-HCl, 100 mM NaCl, 0.05% Tween-20, pH 7.5), buffer B (5 mM Tris-HCl, 10 mM MgCl<sub>2</sub>, 1 mM EDTA, 0.05% Tween-20, pH 8)

**Annealing ramps.** The strand mixture was then annealed in a PCR thermo cycler using a fast linear cooling step from 80°C to 65°C over 1 hour, then a 42 hours linear cooling ramp from 64°C to 24°C.

**Agarose gel electrophoresis.** Annealed samples were subjected to gel electrophoresis in 0.5% TBE buffer that includes 10 mM of MgCl<sub>2</sub>, at 90V for 3 hours in a ice-water bath. Gels were stained with Syber®Safe before imaging

**TEM imaging.** For imaging, 2.5  $\mu$ L of annealed sample were adsorbed for 2 minutes onto glow-discharged, carbon-coated TEM grids. The grids were then stained for 10 seconds using a 2% aqueous uranyl formate solution containing 25 mM NaOH. Imaging was performed using a JEOL JEM-1400 TEM operated at 80 kV.

**Super-resolution imaging.** Fluorescence imaging was carried out on an inverted Nikon Eclipse Ti microscope (Nikon Instruments, Melville, NY) with the Perfect Focus System, applying an objective-type TIRF configuration using a Nikon TIRF illuminator with an oil-immersion objective (CFI Apo TIRF 100 $\times$ , NA 1.49, Oil). For Cy3b excitation a 561 nm laser (200 mW nominal, Coherent Sapphire) was used. The laser beam was passed through cleanup filters (ZET561/10, Chroma Technology, Bellows Falls, VT) and coupled into the microscope objective using a multi-band beam splitter (ZT488rdc/ZT561rdc/ZT640rdc, Chroma Technology). Fluorescence light was spectrally filtered with an emission filter (ET600/50m, Chroma Technology) and imaged on an EMCCD camera (iXon X3 DU-897, Andor Technologies, North Ireland). Imaging was performed without additional magnification in the detection path, yielding 160 nm pixel size.

*Sample preparation and imaging.* For sample preparation, a piece of coverslip (No. 1.5, 18  $\times$  18 mm<sup>2</sup>, 0.17 mm thick) and a glass slide (3  $\times$  1 inch<sup>2</sup>, 1 mm thick) were sandwiched together by two strips of double-sided tape to form a flow chamber with inner volume of  $\approx$ 20  $\mu$ L. First, 20  $\mu$ L of biotin-labeled bovine albumin (1 mg/mL, dissolved in buffer A) was flown into the chamber and incubated for 2 min. The chamber was then washed using 40  $\mu$ L of buffer A. 20  $\mu$ L of streptavidin (0.5 mg/mL, dissolved in buffer A) was then flown through the chamber and allowed to bind for 2 min. After washing with 40  $\mu$ L of buffer A and subsequently with 40  $\mu$ L of buffer B, 20  $\mu$ L of biotin-labeled microtubule-like DNA structures ( $\approx$ 300 pM monomer concentration) and DNA origami drift markers ( $\approx$ 100 pM) in buffer B were finally flown into the chamber and incubated for 5 min. The chamber was washed using 40  $\mu$ L of buffer B. The final imaging buffer solution contained 3 nM Cy3b-labeled imager strands in buffer B. The chamber was sealed with epoxy before subsequent imaging. The CCD readout bandwidth was set to 3 MHz at 14 bit and 5.1 pre-amp gain. No EM gain was used. Imaging was performed using inclined illumination with an excitation intensity of  $\sim$ 200 W/cm<sup>2</sup> at 561 nm. 3D images were acquired with a cylindrical lens in the detection path (Nikon). All images were reconstructed from 5000 frame long time-lapsed movies acquired with 200 ms integration time, resulting in  $\approx$ 17 min imaging time.

*Image processing and drift correction.* Super-resolution DNA-PAINT images were reconstructed using spot-finding and 2D-Gaussian fitting algorithms programmed in LabVIEW (Jungmann, R., et al. *Nature methods*, advance online publication, 2014). A simplified version of this software is available for download at <http://dna-paint.net> or <http://molecular-systems.net/software>. The N-STORM analysis package for NIS Elements (Nikon) was used for data processing. 3D calibration was carried out according to the manufacturer's instructions. DNA origami drift markers (Lin, C., et al. *Nature chemistry* **4**, 832–839, 2012) were used as fiducial markers. The high binding site density increases the probability to observe one bound imager strand per structure in each image frame. Furthermore, the fluorescence intensity of the origami drift markers is similar to single imager strand binding events and the markers never "bleach". These properties render DNA origami structures as ideal drift markers. Drift correction was performed by tracking the position of each origami drift marker structure throughout the duration of each movie. The trajectories of all detected drift markers were then averaged and used to correct the drift in the final super-resolution reconstruction.

*Determination of localization accuracy.* Fitting a 1D-Gaussian function to the distribution of z localizations from DNA origami drift markers and calculating the standard deviation was used to determine the localization accuracy in z. As origami drift markers are 2D structures, all binding events occur in a 2D plane on the surface, and thus at the same z location. Localization accuracy in x and y was determined by calculating the average separation of single-molecule localizations in neighboring frames, which can be attributed to an imager strand binding to a single docking strand. As multiple docking strands are used in each vertex of the polyhedral ( $\sim$ 18 strands per vertex), one cannot fit the distribution of binding events per vertex, as this would result in an overestimation of the localization accuracy; The measured value per vertex would represent a convolution of the actual localization

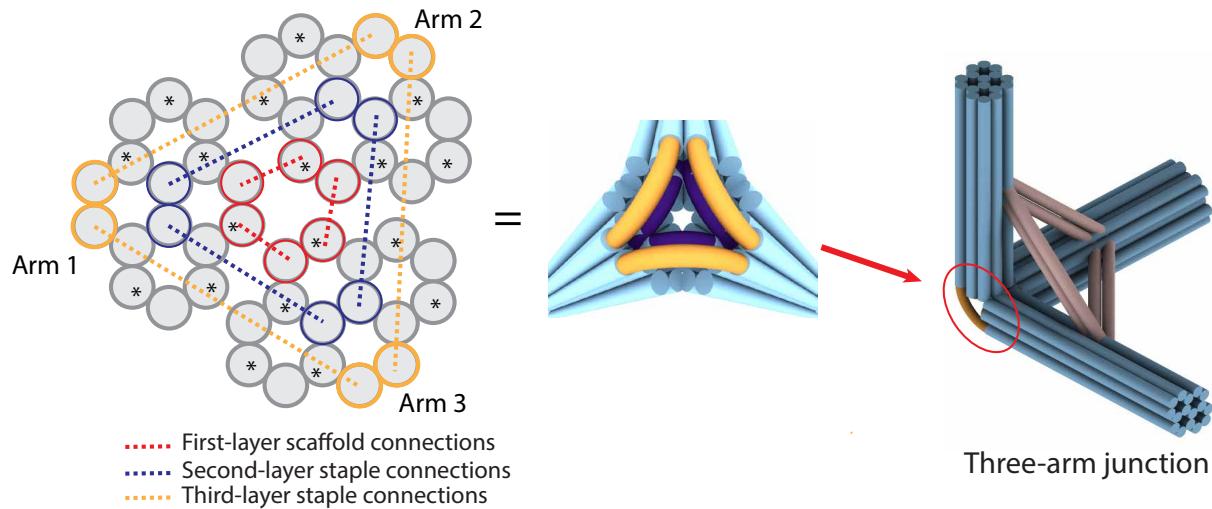
accuracy with the spatial extent of the binding sites in this vertex.

*Spatial vs. temporal imaging resolution.* In stochastic super-resolution microscopy such as DNA-PAINT, one can generally make the statement, that there is a tradeoff between spatial and temporal resolution. Higher spatial resolution can be obtained by collecting a larger amount of photons per binding or photoswitching event. This can be achieved by increasing fluorescence ON times and matching the camera integration time to these ON times. In DNA-PAINT imaging, this can be accomplished by increasing the binding stability of the imager/docking complex (i.e. going from a 9 to a 10-nt interaction region) and increasing the camera integration time to match the longer binding time, which in turn results in a longer image acquisition time.

Higher temporal resolution can be obtained by reducing the binding stability of the imager/docking complex (i.e. going from a 9 to a 8-nt interaction region) and decreasing the camera integration time to match the shorter binding time.

## S3 Design details

### S3.1 Connections at the vertex

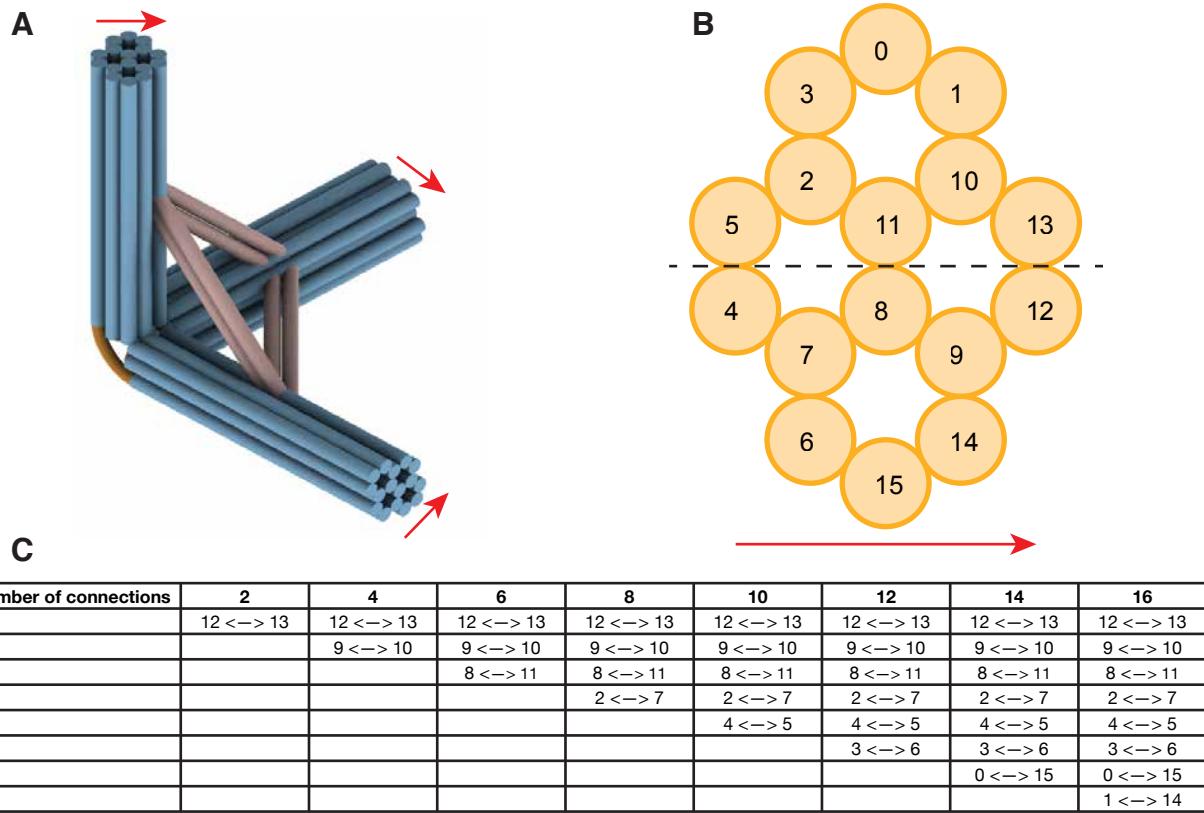


**Fig. S2. Connections at the vertex the three-arm monomer.** Three layers of connections at the vertex: (1) the first-layer (innermost) connections (red) are formed by the scaffold strand only. There are no extra bases between the duplexes. (2) the second-layer (middle) connections and (3) the third-layer (outmost) connections are DNA duplexes (i.e. the vertex helices) formed by staple strands and their complementary strands. Each polyhedron used different number of vertex helices with different lengths (see table below), which were estimated on the distances between the ends of the 16-helix arms at the vertexes. For detailed design and sequence information, please refer to Fig. S17 to Fig. S22. The “\*”s denote the helices where DNA handles were placed for DNA-PAINT.

	Number of 1st-layer helices	length of 1st-layer helices	Number of 1st-layer helices	length of 2nd-layer helices
Tetrahedron	0	n/a	0	n/a
Triangular prism	3	15bp, 15bp, 18bp	0	n/a
Cube	3	15bp, 15bp, 15bp	3	15bp, 15bp, 15bp
Pentagonal prism	3	15bp, 15bp, 12bp	0	n/a
Hexagonal prism	3	24bp, 24bp, 12bp	3	19bp, 19bp, 15bp

## S4 Connection pattern

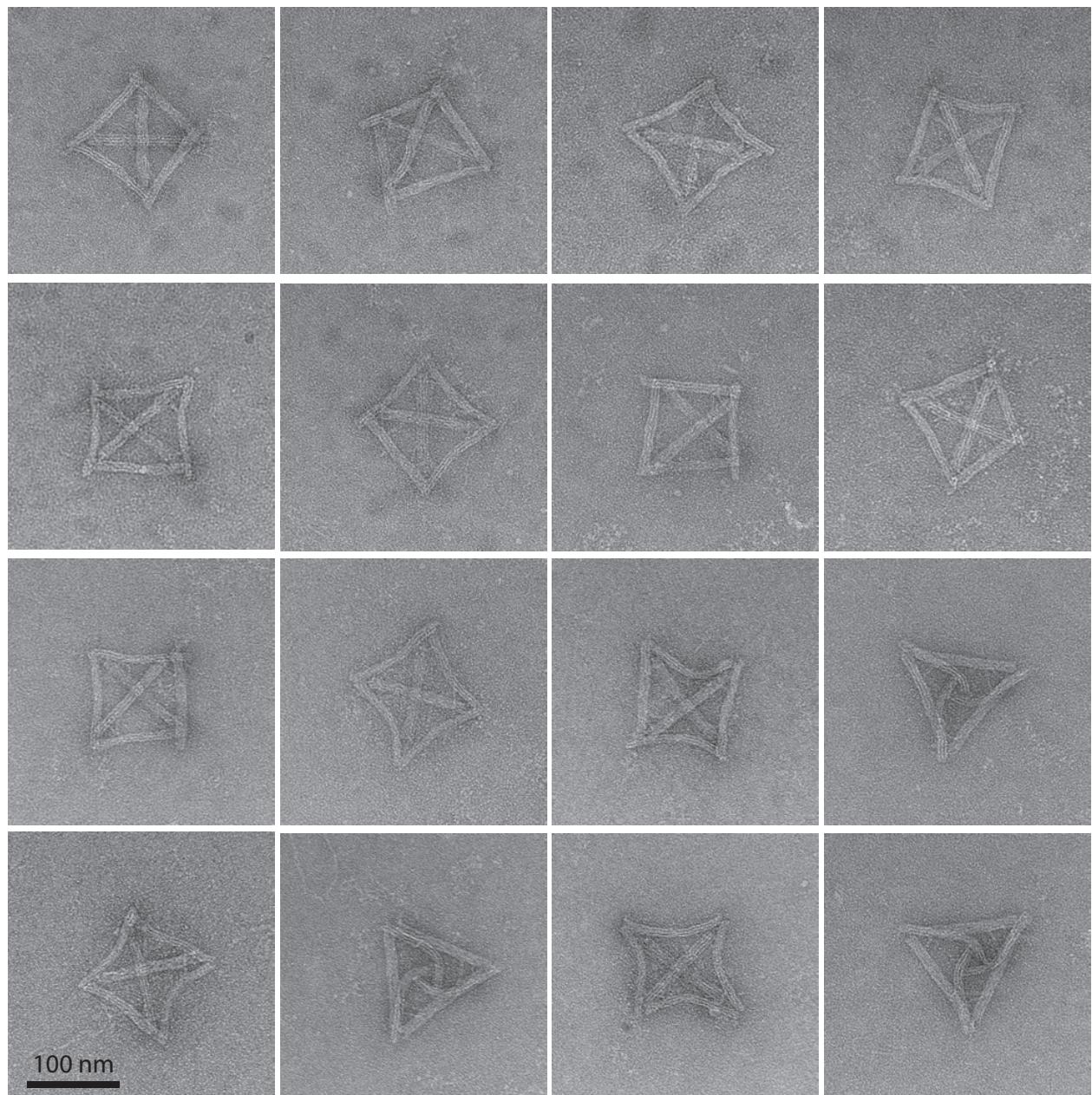
### S4.1 Connection pattern of three-arm monomers



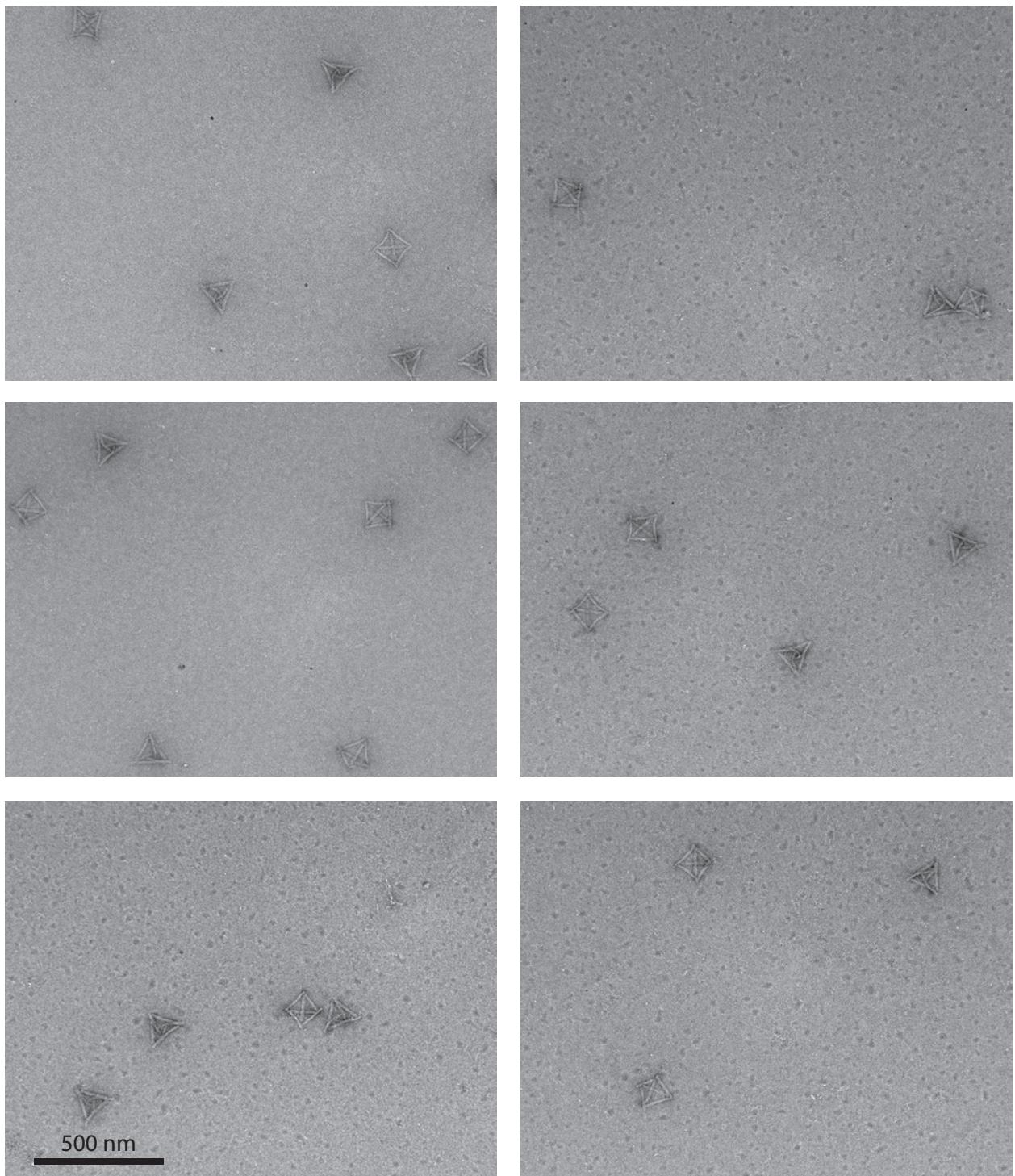
**Fig. S3. Connection pattern.** (A) A three-arm tripod monomer. (B) The cross-section of an arm of the three-arm monomer. The red arrows in A and B indicate the same direction. The dotted line indicates the line of reflection symmetry. (C) The connection patterns that were implemented in Fig. 2B to Fig 2E. See Fig. S17 to Fig. S22 for design and sequence details.

## S5 TEM images of the polyhedra

### S5.1 TEM images of the tetrahedron

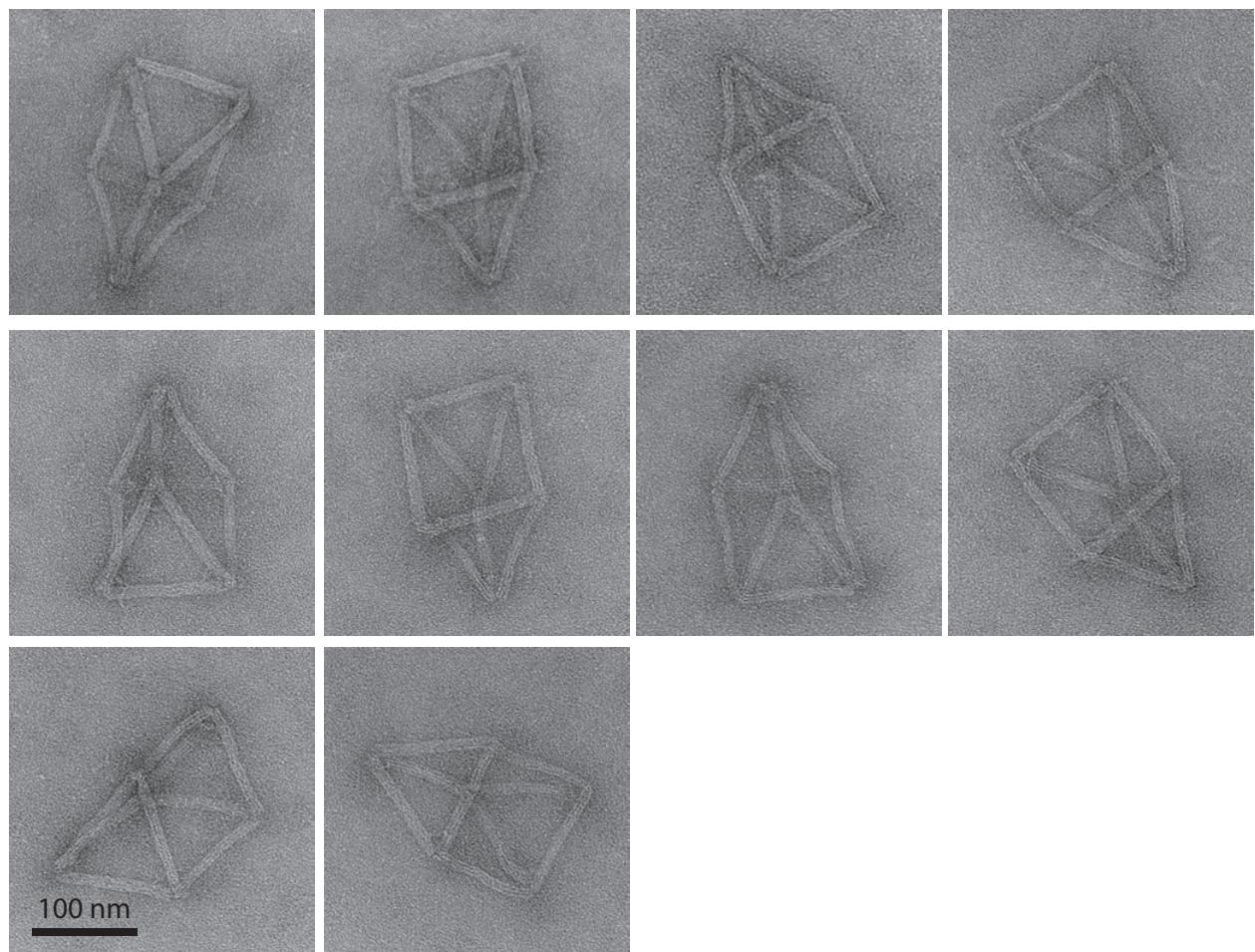


**Fig. S4.** Zoomed-in TEM images of the tetrahedron.

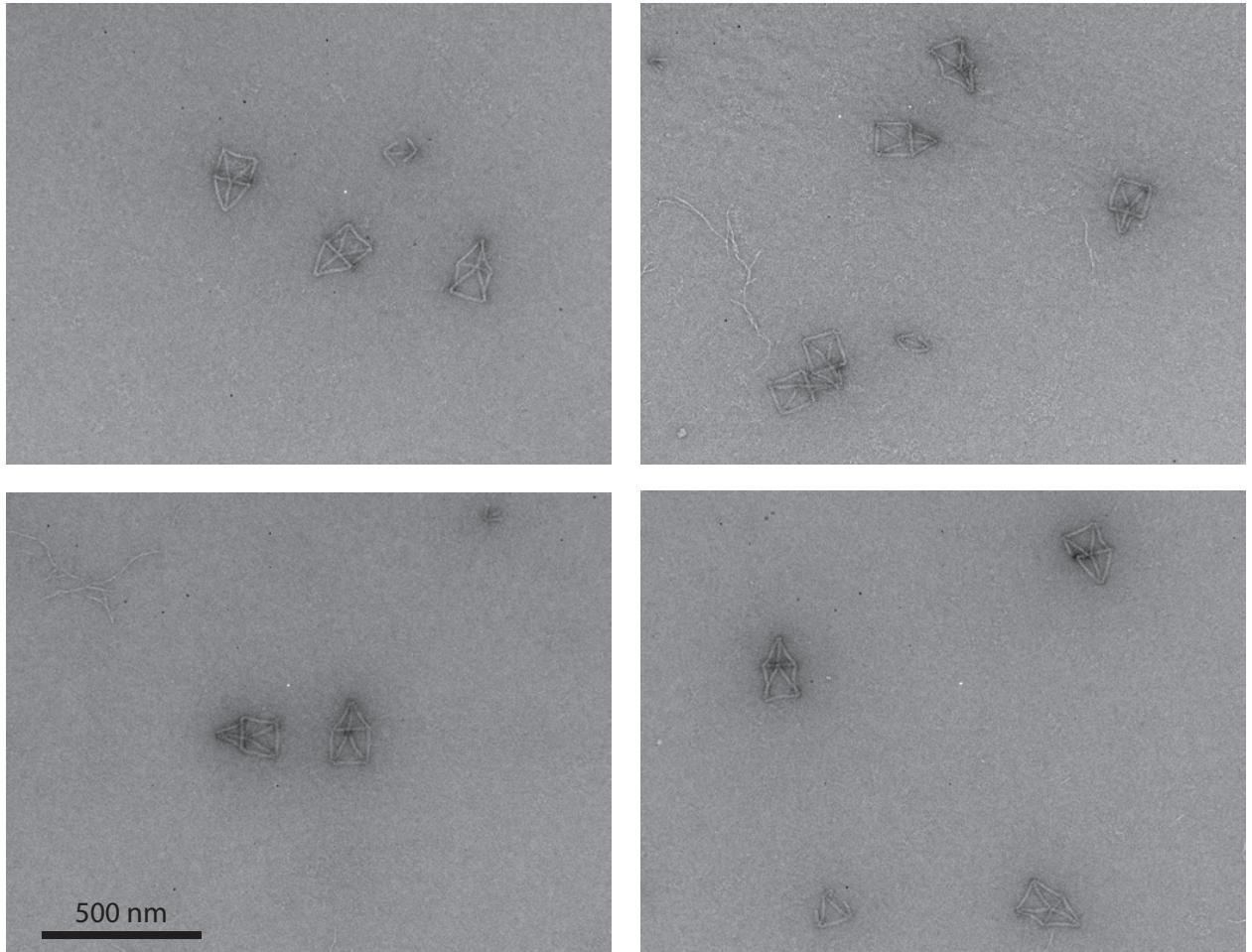


**Fig. S5. Zoomed-out TEM images of the tetrahedron.**

## S5.2 TEM images of the triangular prism

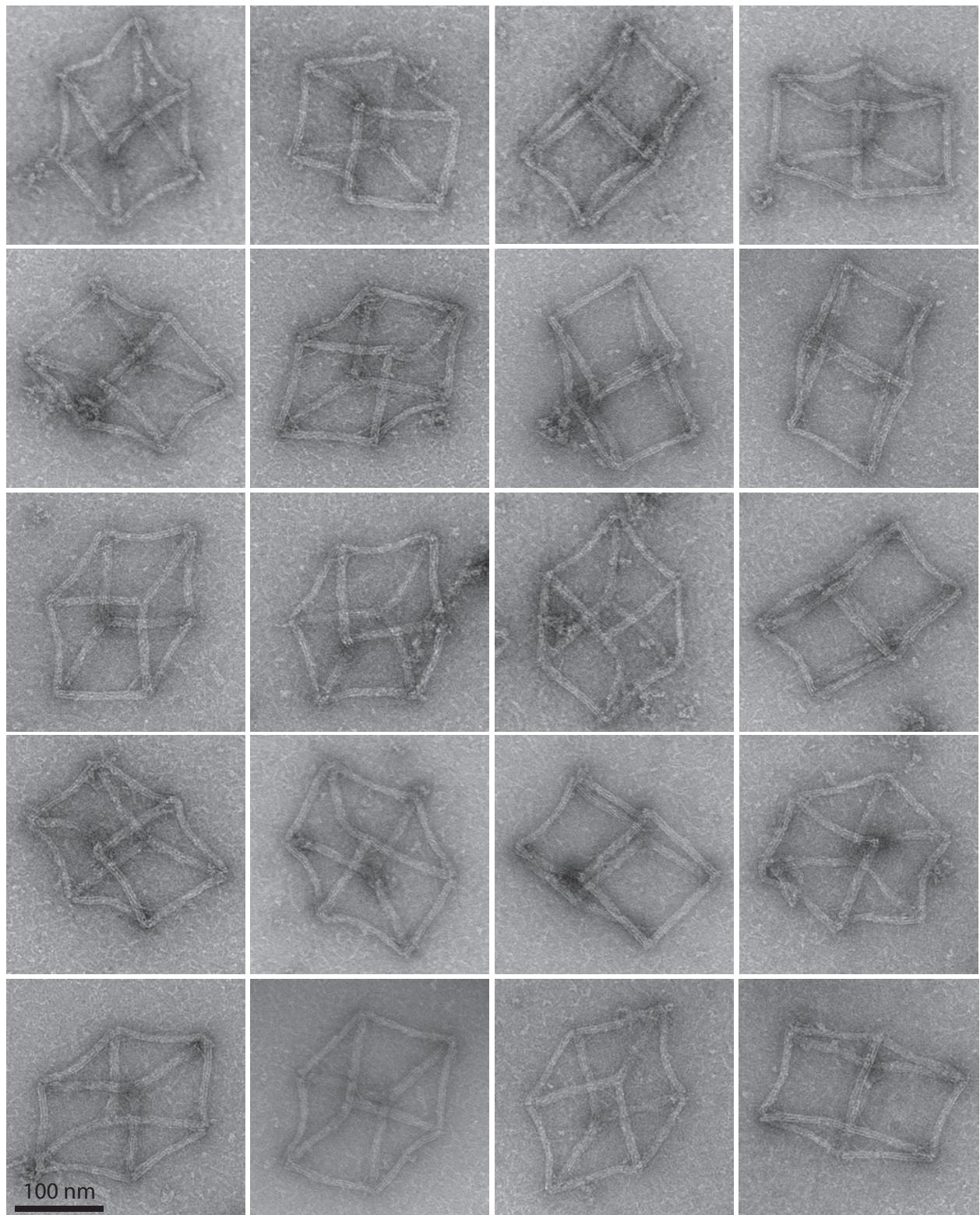


**Fig. S6.** Zoomed-in TEM images of the triangular prism.

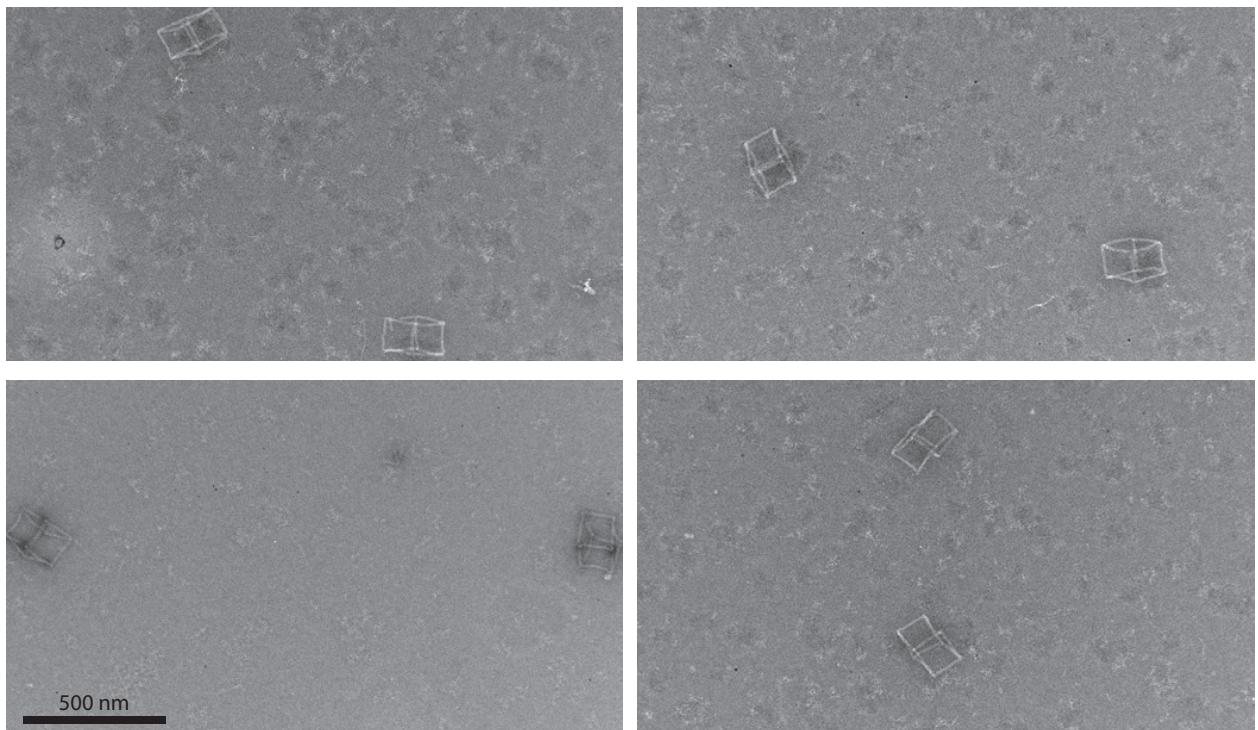


**Fig. S7. Zoomed-out TEM images of the triangular prism.**

### S5.3 TEM images of the cube

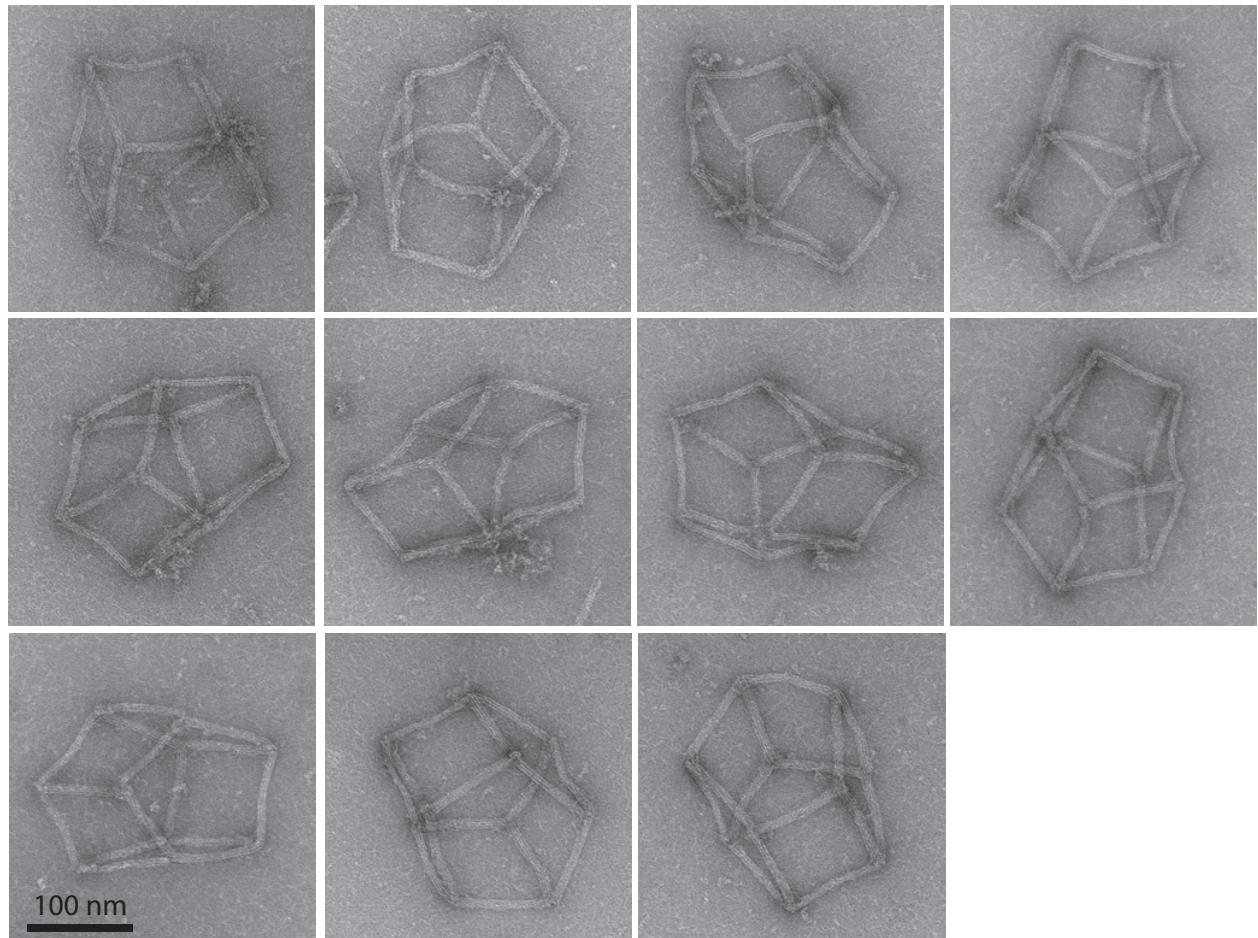


**Fig. S8. Zoomed-in TEM images of the cube.**

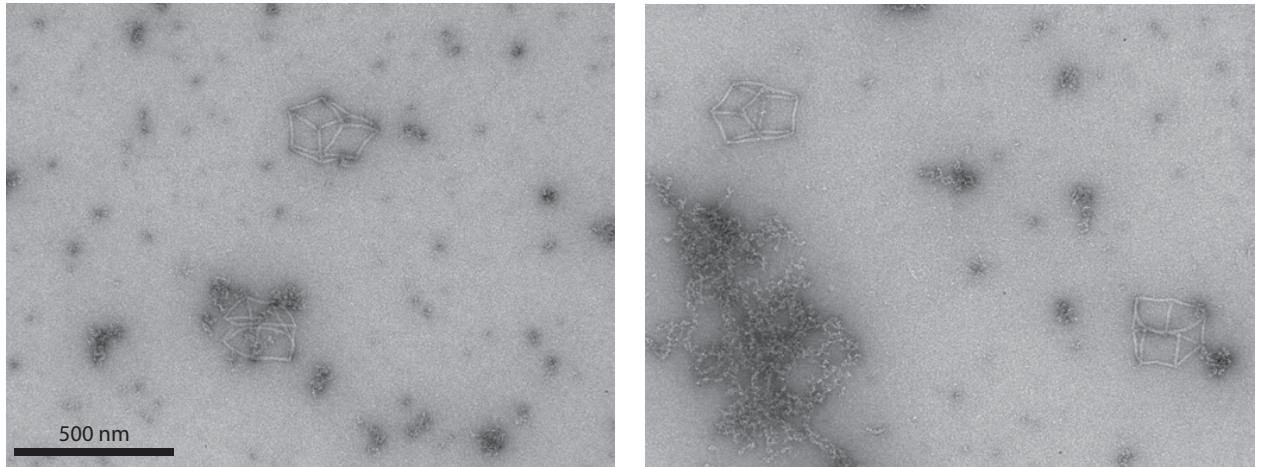


**Fig. S9. Zoomed-out images of the cube.**

#### S5.4 TEM images of the pentagonal prism

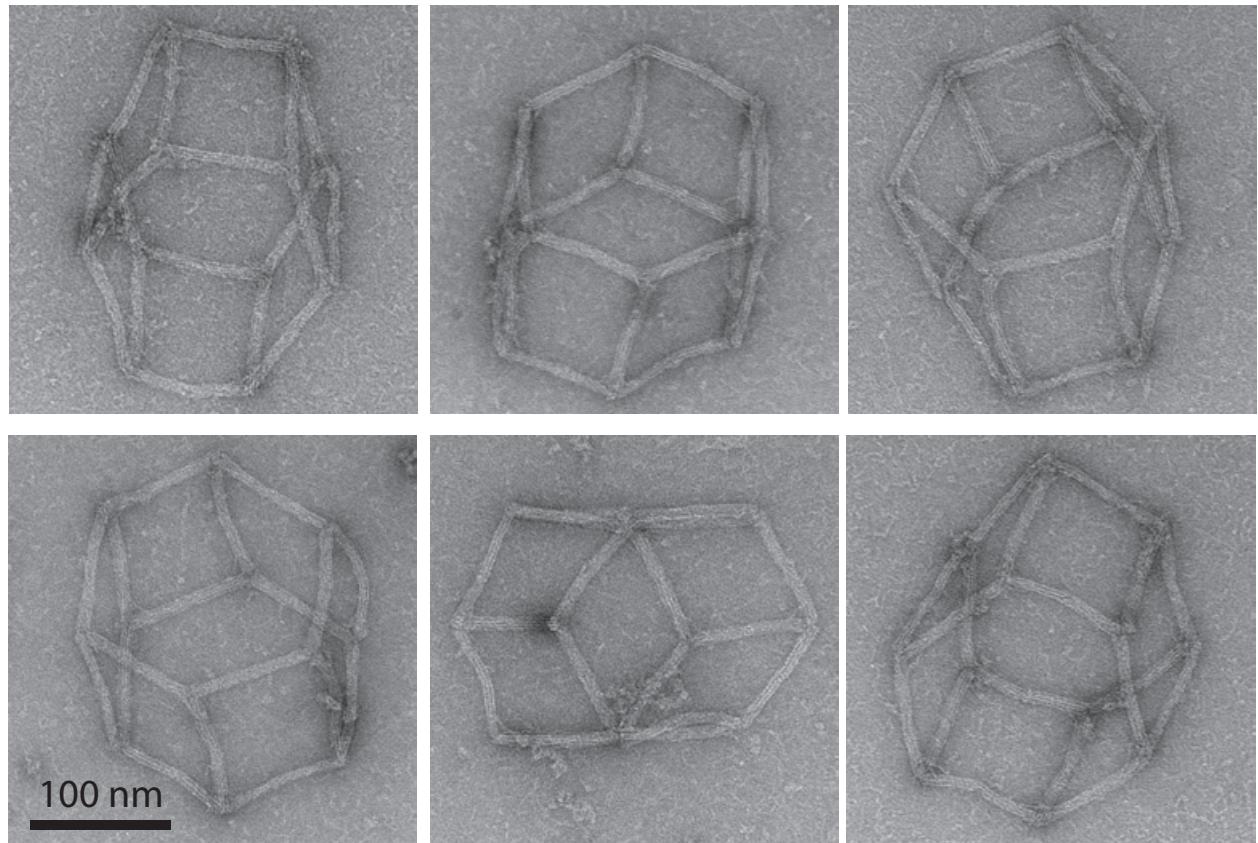


**Fig. S10.** Zoomed-in TEM images of the pentagonal prism.

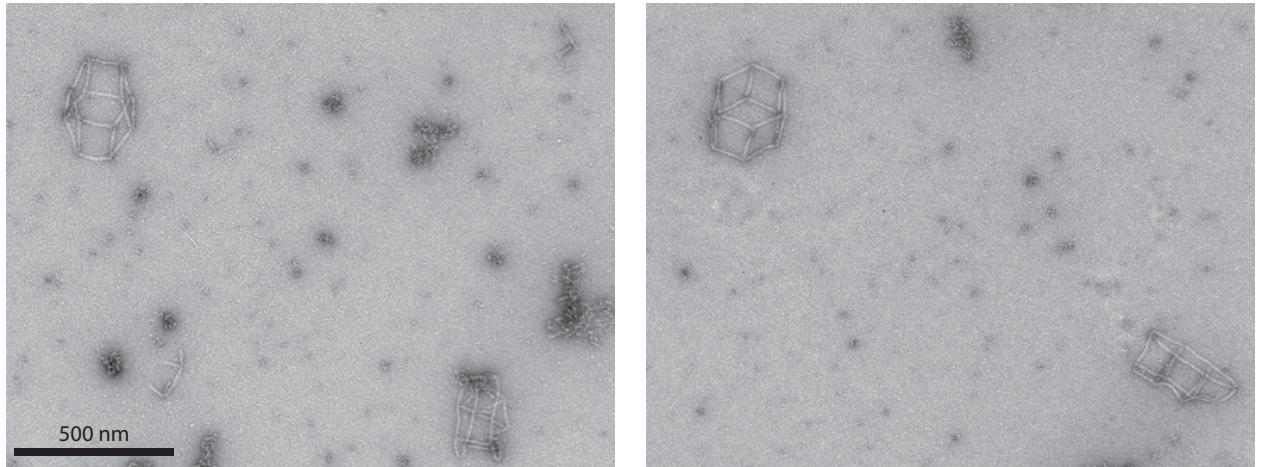


**Fig. S11. Zoomed-out images of pentagonal prism.**

## S5.5 TEM images of the hexagonal prism

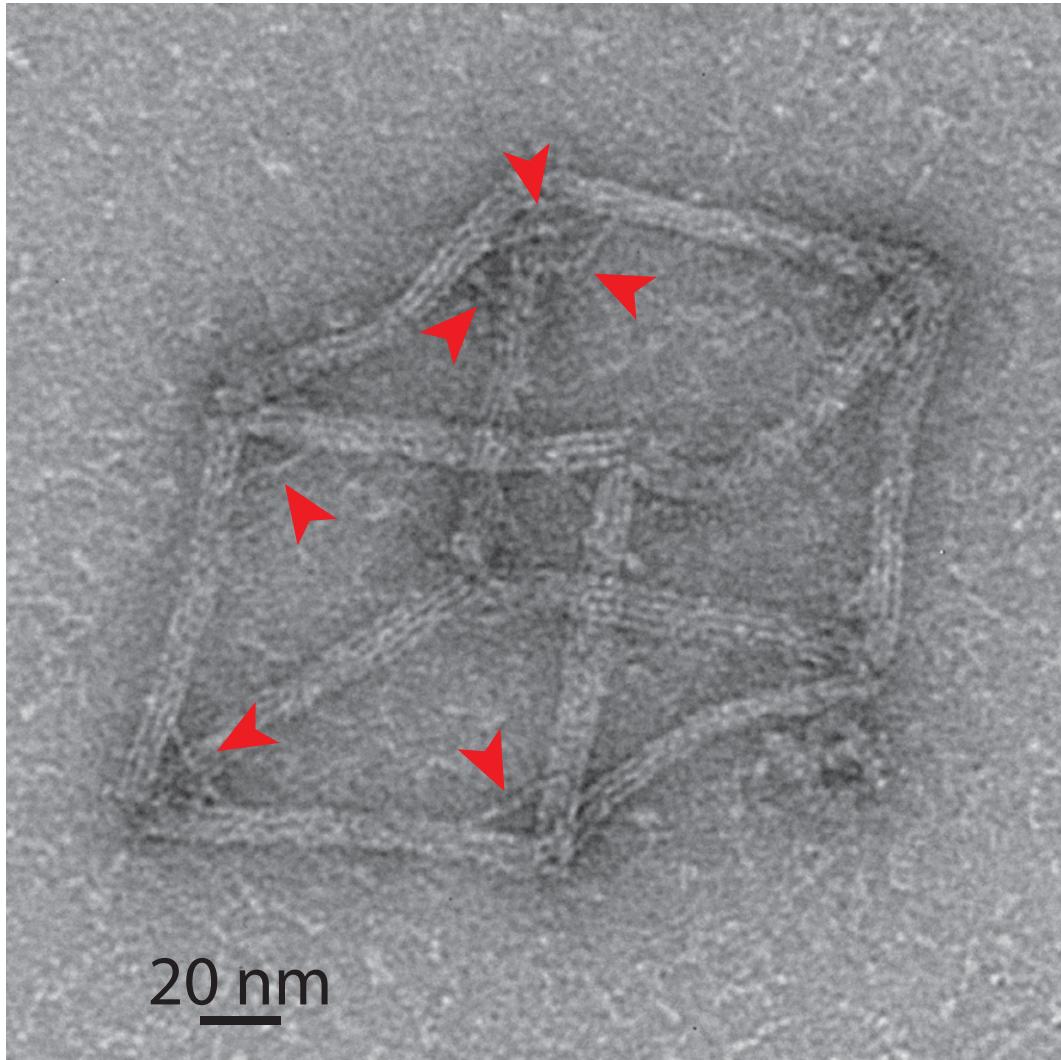


**Fig. S12.** Zoomed-in TEM images of the hexagonal prism.



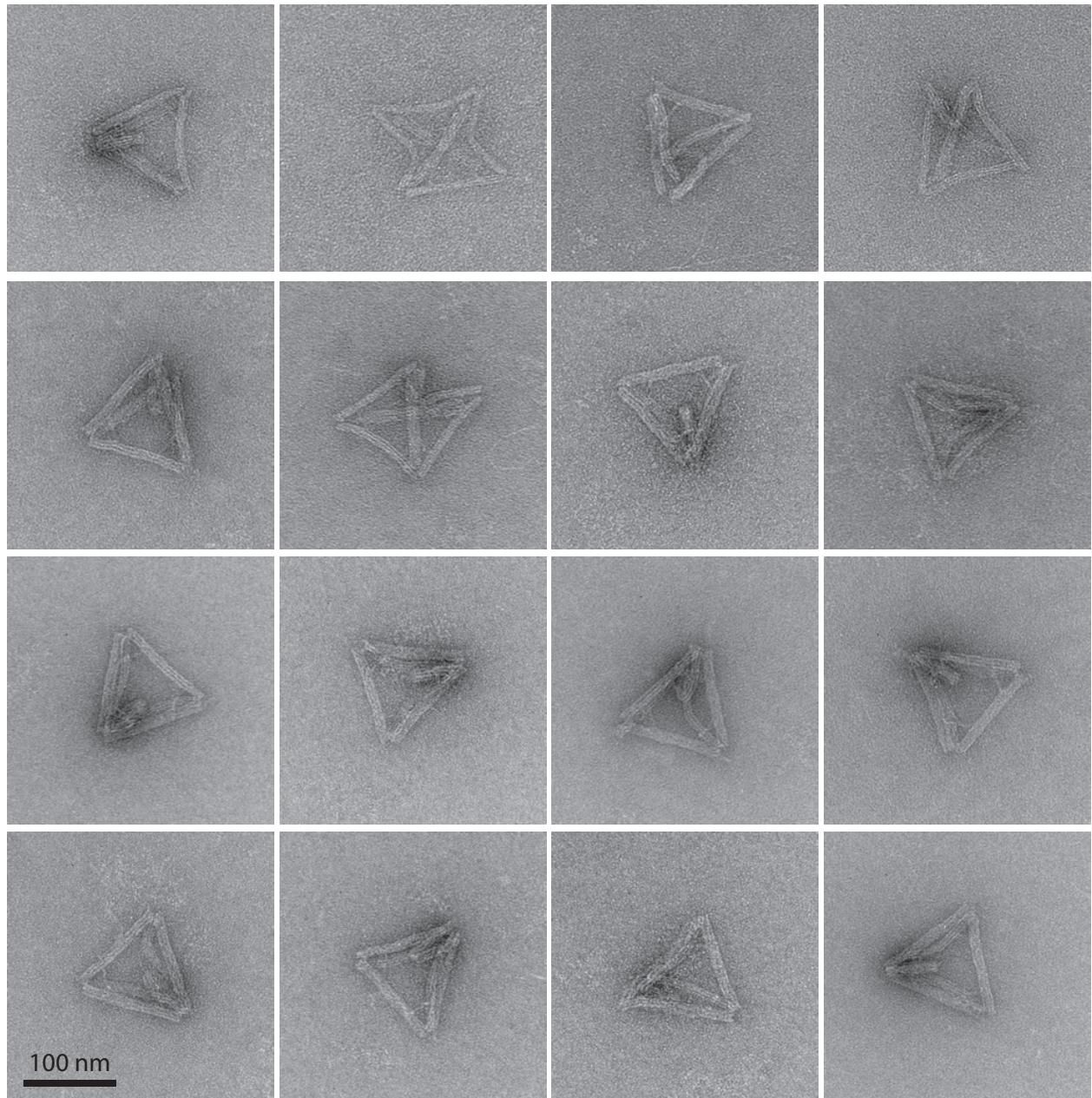
**Fig. S13. Zoomed-out TEM images of the hexagonal prism.**

## S5.6 Struts on the cube



**Fig. S14. A zoomed-in TEM image of the cube.** The two-duplex struts are labeled with arrows and are clearly visible at multiple positions.

## S5.7 Broken tetrahedron



**Fig. S15. Zoomed-in TEM images of the broken tetrahedron.**

## S6 DNA-PAINT image

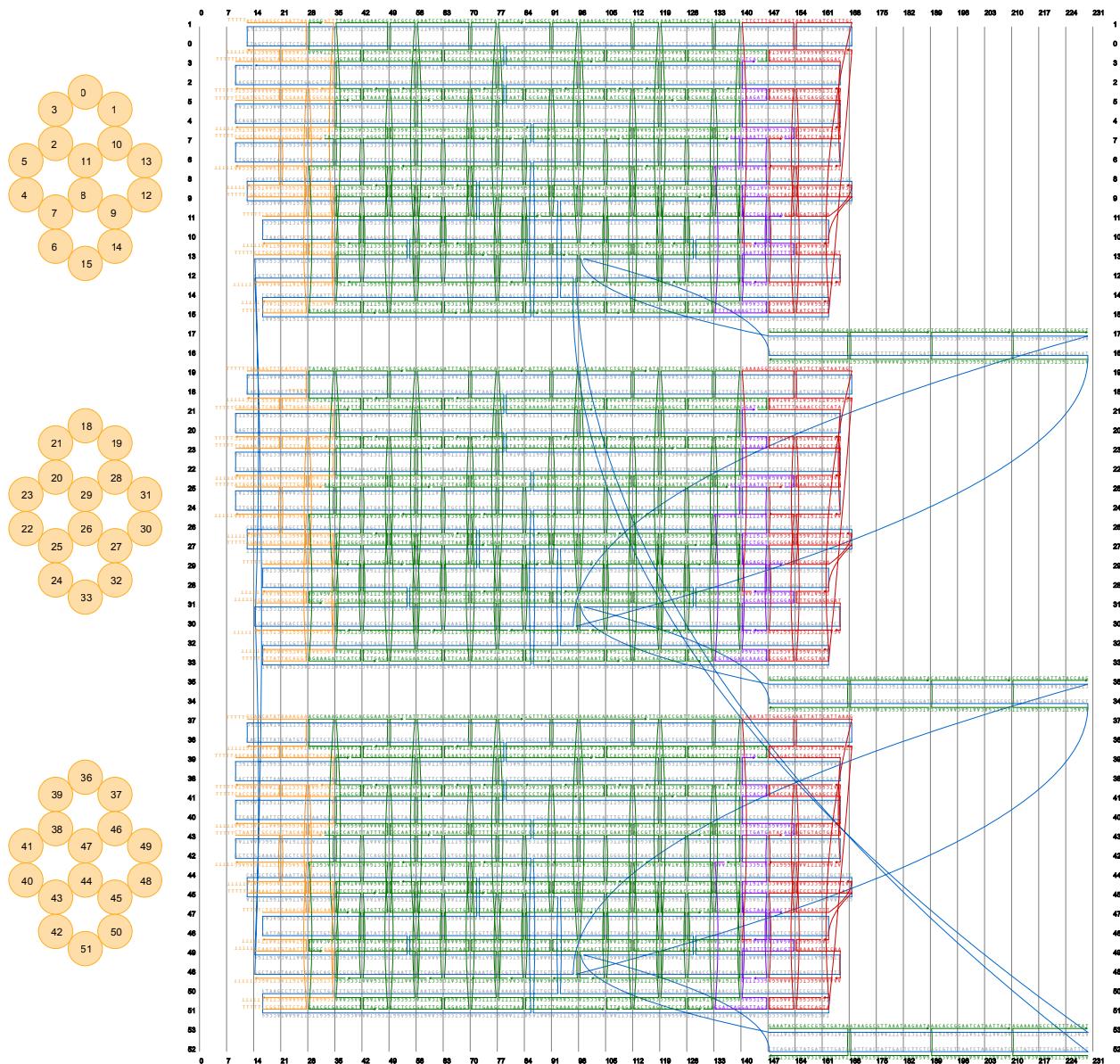
### S6.1 DNA-PAINT image of the tetrahedron



**Fig. S16.** A zoomed-out DNA-PAINT image of the tetrahedron. Zoom in to see details.

## S7 Strand diagrams of the polyhedra

### S7.1 Strand diagrams of the tetrahedron



**Fig. S17.** Strand diagrams of the tetrahedron.

## S7.2 Strand diagrams of the triangular prism

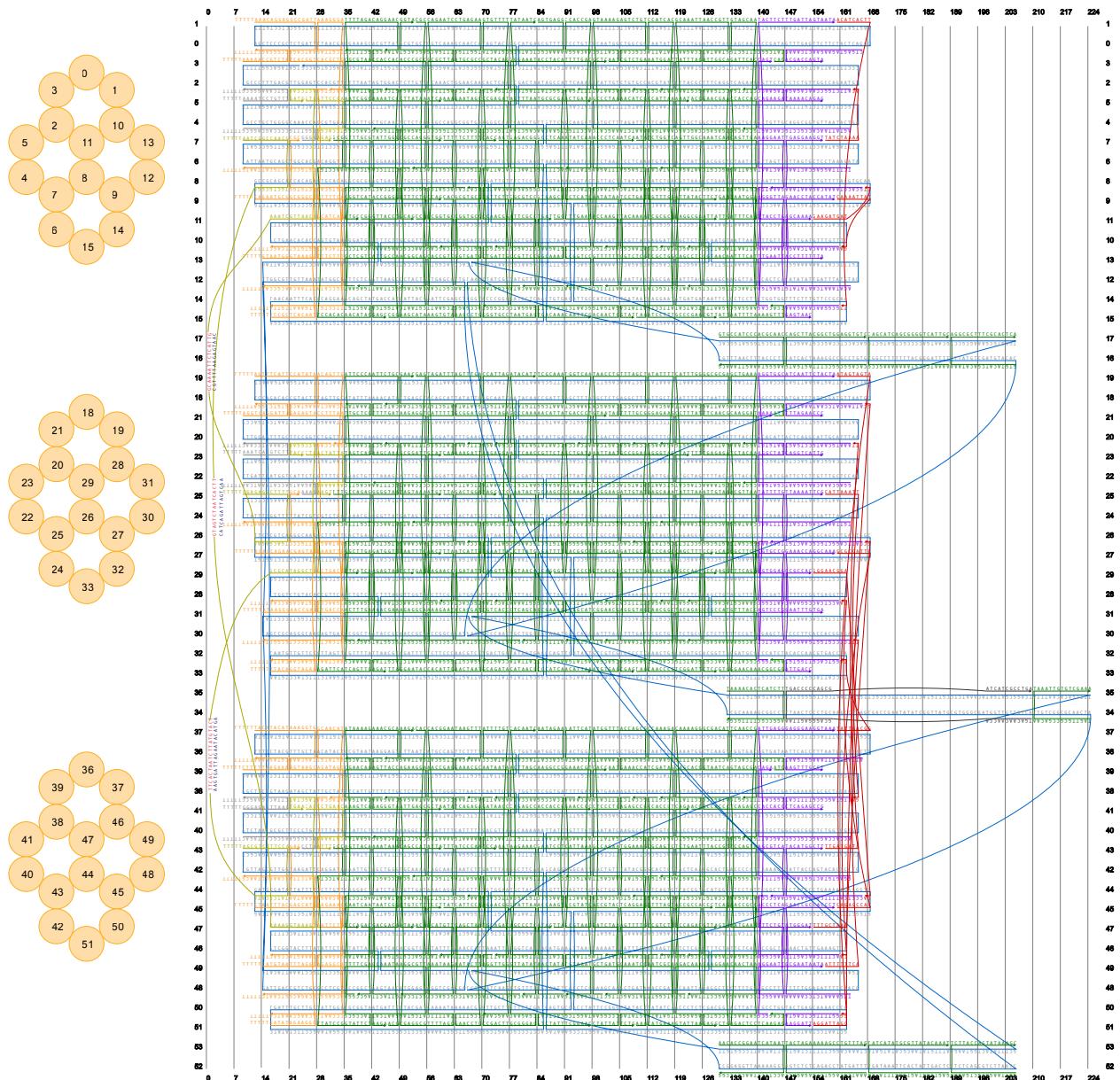
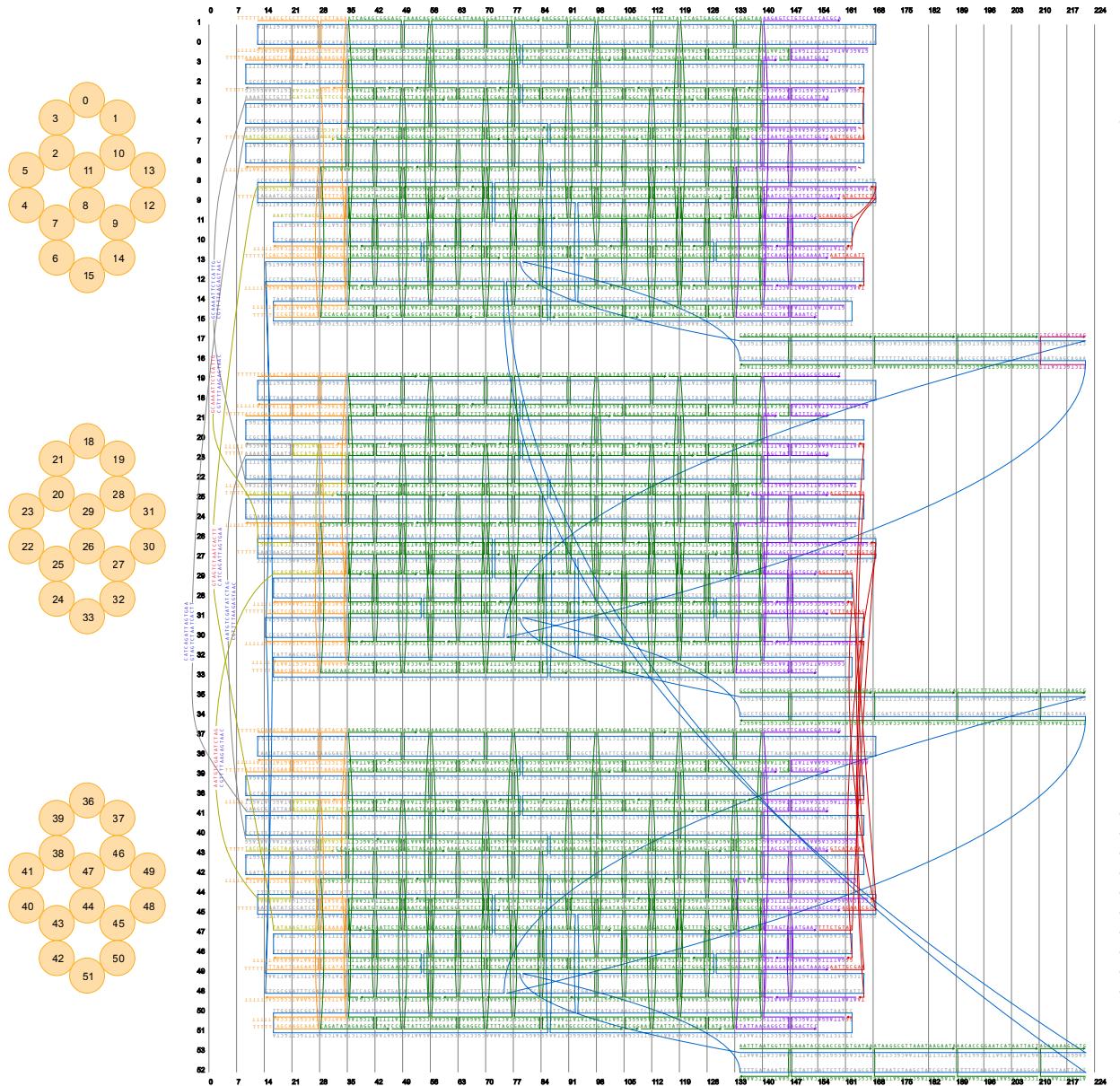


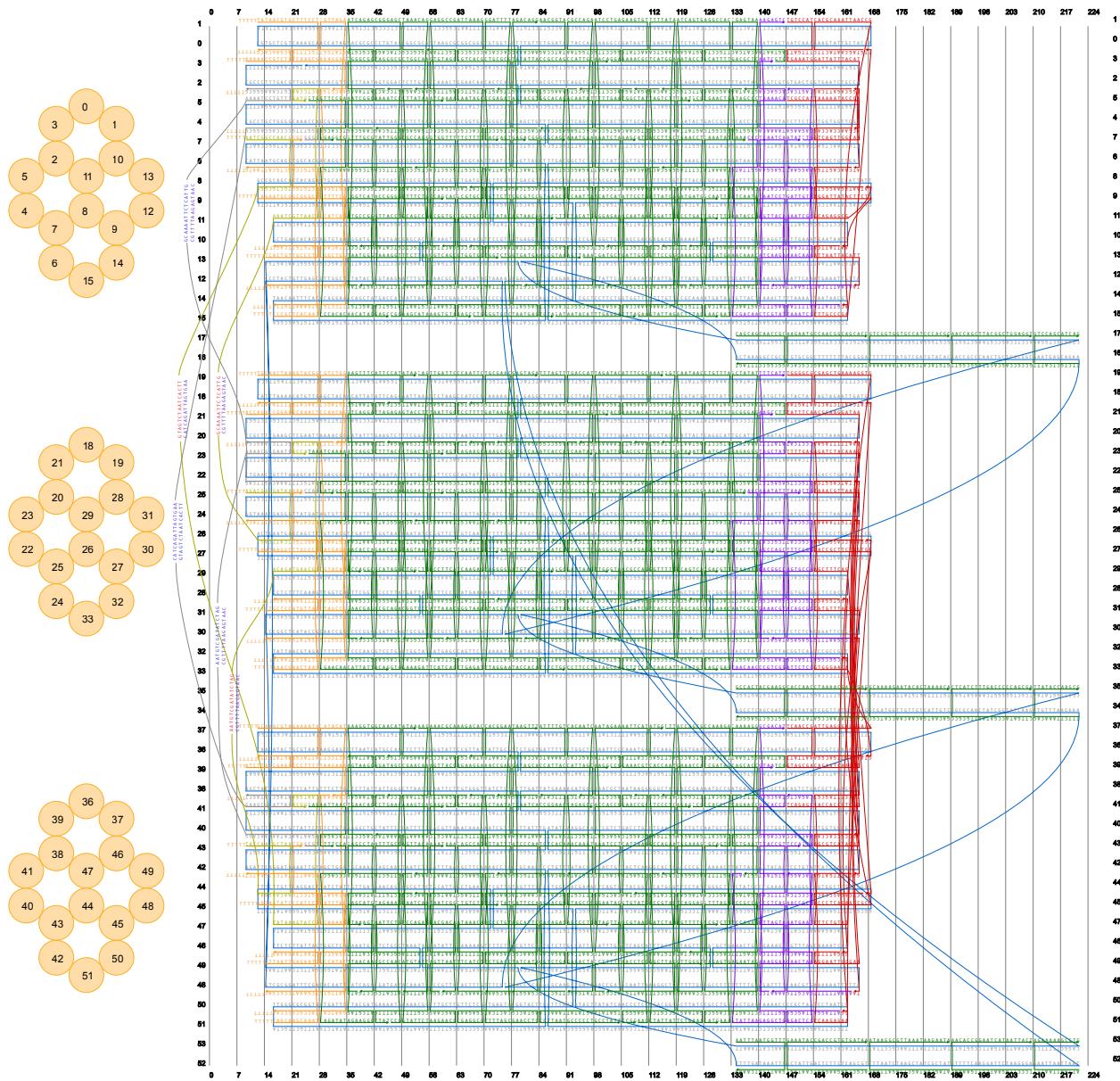
Fig. S18. Strand diagrams of the triangular prism.

### S7.3 Strand diagrams of the cube (short connectors)



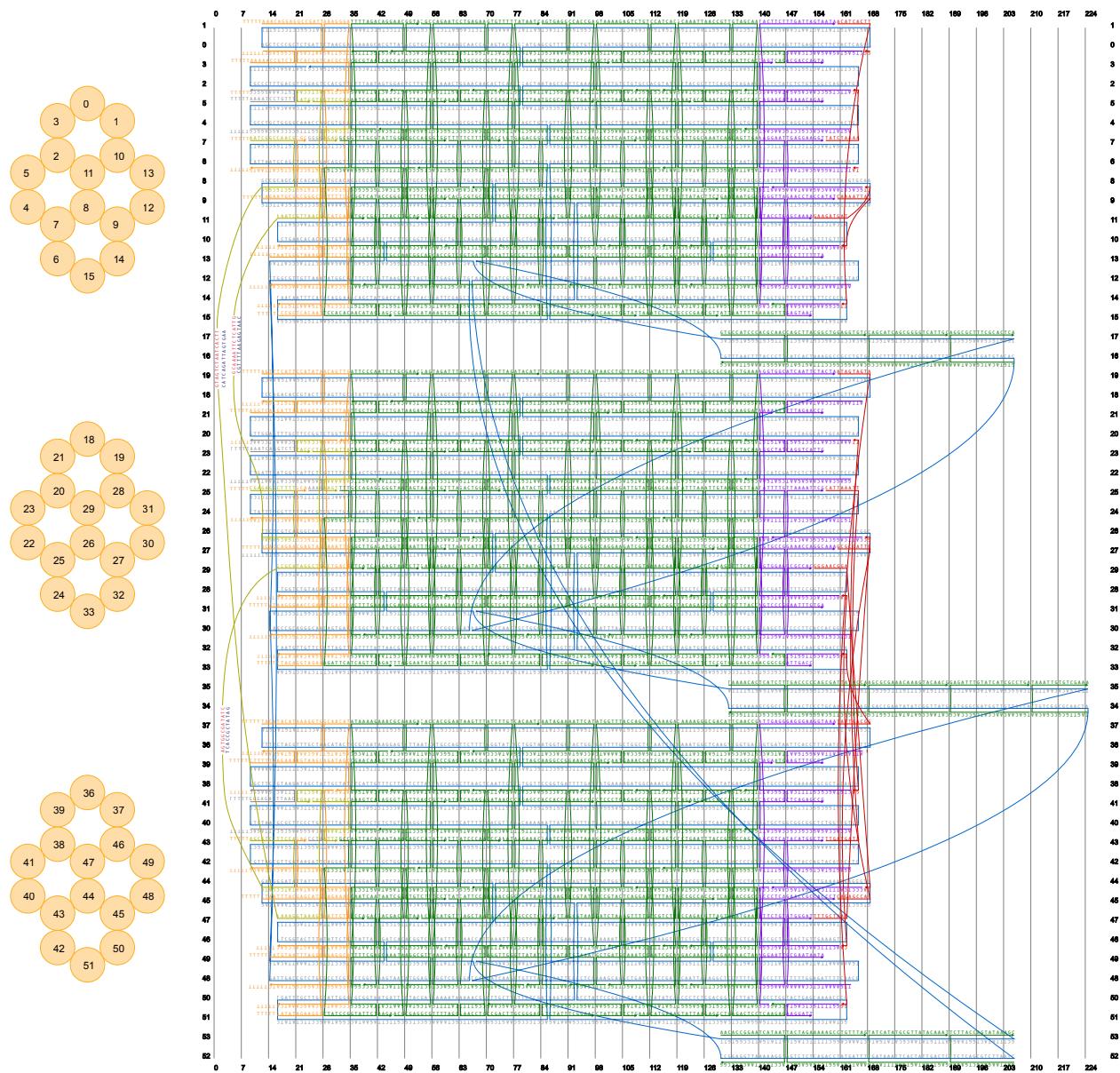
**Fig. S19.** Strand diagrams of the cube (short connectors).

## S7.4 Strand diagrams of the cube (long connectors)



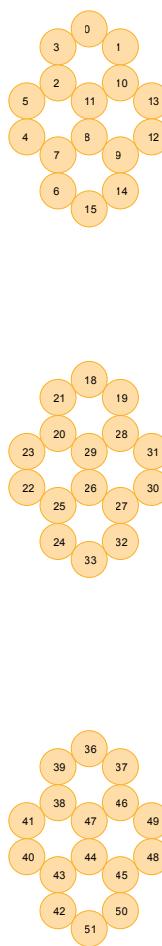
**Fig. S20. Strand diagrams of the cube (long connectors).**

## S7.5 Strand diagrams of the pentagonal prism



**Fig. S21.** Strand diagrams of the pentagonal prism.

## S7.6 Strand diagrams of the hexagonal prism



**Fig. S22. Strand diagrams of the hexagonal prism.**

## S8 3D DNA-PAINT Movies

### Movie S1

3D DNA-PAINT movie of the wireframe polyhedra (tetrahedron, triangular prism, cube, pentagonal prism, hexagonal prism). The polyhedra vertices are labeled with DNA-PAINT docking sites. Color indicates height. Vertex-to-vertex distances are 100 nm.

### Movie S2

3D DNA-PAINT overview of wireframe tetrahedra on a surface. Tetrahedron vertices are labeled with DNA-PAINT docking sites. Bright spots on the surface are DNA origami fiducials. Color indicates height. Vertex-to-vertex distances are 100 nm. The shown area is  $41 \mu\text{m} \times 41\mu\text{m}$  in size.

**Table S1.** Sequences for super-resolution DNA-PAINT imaging.

Description	Sequence
Cy3b imager strand	5'-TATGTAGATC-Cy3b
9nt docking site for Cy3b imager strand	Staple-TTATCTACATA-3'
Biotinylated surface strand for structure immobilization	Biotin-GAATCGGTACACAGTACAACCG-3'
Handle strands on the DNA structure for surface immobilization; 7 staples (5' ends are 48[69], 43[130], 27[129], 11[88], 9[130], 26[65]) are modified. See table S2 for sequence details.	Staple-TTCGGTTGACTGTGACCGATT-3'

**Table S2.** Sequences of the tetrahedron.

5' – end	Sequence	Note
1[84]	TGAGGCCAACGCTCATGGACGTACTATGGTTTACAGCCTCGGA	Core staple
0[54]	ACGTATTAGGCCACCAAAACATCCCTAGCCAGCGAAAG	Core staple
3[102]	TCGATTGCAACAGGAAAACCGAGTGTGTTGGT	Core staple
3[144]	CACTCGGCCCTTGCTGTAGCAATAATTACATTATGTATT	Core staple
2[44]	AACATAAATCAAAGAACGAGCAAGTTTTCTCCA	Core staple
2[51]	ATTGTGCCGCACTGGGCACGCCGGTCATAGCTGTTCCATA	Core staple
2[72]	AGTACGGGATTGCGCTGCGCTGGTAATCAG	Core staple
2[93]	ATGTGAATAACACCTTTGATCAATAATTCTTC	Core staple
2[107]	GACCATGCCATTAAAATGAAAATGGTCAGTACA	Core staple
2[114]	TGGGCCAGAAGATGAATTGGATTCTGATTATCAGAATT	Core staple
2[135]	ACCTTCAATTAGTATTGGAAAGGGAGCAGGAAATTCTT	Core staple
5[39]	CTTGTGACTCGTAACCTTCTCGTTAGAAAGGG	Core staple
5[60]	CCGAAAGACTCGTTAATTGACGAGC	Core staple
5[123]	CGAGTAAAATACATAGAACATAATTACCATCACGCCGT	Core staple
4[83]	CCCTCAGTTAACGGCTTGCAGAACCTACATTGACGCTG	Core staple
7[32]	TATGCCAGCTACAGAGCCGAAGCTGTGTTGGGGGTTAAT	Core staple
7[74]	GCACGTGCGTAGTGAGCTAACGGTACCGAGCTCCAAA	Core staple
7[81]	CTGGAGAACAAACAGTCCGAGCTGAATTGCTG	Core staple
7[91]	ATCAAACATTAGTACCTTACATTAATTGACAG	Core staple
7[109]	ATCATCTAAAGCATCACCTAAAAAATTCTCAA	Core staple
6[51]	GTCTGAAAGCCTGGGAATCATGTGCC	Core staple
6[114]	TTTCTTGGCCGAACGATCATATTACTAAAT	Core staple
8[44]	TGTCAGGGTGGCGGTACCGCTGGATCC	Core staple
8[65]	AGCCAGTGGCCCTGAGAGAGTTAGC	Core staple
9[60]	TGTCCAACGCATAACGGAACGTGCCGGC	Core staple
9[130]	ATATCAGTTAACAAAGAGCCAGCAGCAAATC	Core staple
11[88]	CTTGCTATTACCGAACACTGATAGCCTGCTGAACCTT	Core staple
11[130]	CATTGAAAGCACGAACCACAGCACACGCTGGTTG	Core staple
10[37]	GGTTAGACAGGAACGGAACGTGACCCACCCGCCACT	Core staple
10[58]	CATGAATCTGAGAACGTTGCTTGCGCCCTACAGGGTCC	Core staple
10[65]	CAGTGCATATTGGAACAGATAGGGTTAGTCCCGCTGACGG	Core staple
10[100]	TCCAAAAGAGTCTGCCAGCCTCTGAATGGATTATACG	Core staple
10[114]	TCCGGGTAACGCTATTAAATTACCTGATTGATACAGCAAT	Core staple
10[121]	TTGAAATTACCGTTGTAATATCCTGGCAGATTACCATCTG	Core staple
13[74]	CTTTTACCACTATAAGTCTCGCATCC	Core staple
13[95]	GCTTCATATCGTTATACACGTACATCGGATCAAAT	Core staple
12[37]	TGAAGGGTTCTTGCTCGTCATTCTAACAGTAGGGCTTGCCACGCC	Core staple
12[79]	TTCTGAGAACGTCAGCGCGCTCGATTG	Core staple
12[100]	CCTGCTTTAGTGTAGAAGGCAAACAAAATCCACA	Core staple
12[121]	CGTGTAAAAGAACATTCTATTAAACCTGCTCTGCTGA	Core staple
15[46]	AAGGGAAACCTGCTGGGGCGCGACTCACCTGACACT	Core staple
15[67]	TAACTCACTGCCGCTTTTACGCAGTGTGCCCCAGCA	Core staple
15[88]	ACAATTGACAACTCGTTGATGCCATTACAGTCAAGTTAGCG	Core staple
15[109]	AATGAGGATTAGAACGCTCAATTACAGTCAAGTTAGCG	Core staple
15[130]	TAACCGTCAATGATAATTGGCAATAACGTGGCGAATCTGA	Core staple
17[147]	GTCTGGTCAGCAGCACCGCAAAAAAAAGCCGCACAGGCC	Core staple
16[188]	ATCGACATAAAAAAATCCGTTAGAATGCCAACGGCAGCCG	Core staple
16[209]	AGCAGTGGCGCGTTGTACTCGGTGGCCATCCCACGCA	Core staple
16[229]	ATTCTGCTCATTTGCCGCCAACAGCTACGGCTGGAGGT	Core staple
19[53]	GAAC TGACCAACTTGAATCAAGATAAT	Core staple
19[84]	CATTTGAGCTAAATCGCTGAGCTTAATTGACCAAGAG	Core staple
19[116]	ATAAGCAGGCCGCTTAAACAGCGGGATCGGAAGATTATT	Core staple
18[44]	CATCTCCTTTGATAAGCGCGTTGTAA	Core staple
18[65]	GAATTTGCCGATGCCAGGCC	Core staple
21[39]	TTGGTTTAAATATGCTATACACAGATGAACGG	Core staple
21[102]	GTAGCCTCAGAGCATAACAAATGGAAACG	Core staple
21[144]	AAATCATACAGGCAAGGGCAGCTCGCGAACGTAGTCAGT	Core staple
20[44]	TCGTCAGAACGAAAGGCCCTCGTAATAGGCAA	Core staple
20[65]	CTTCAAAAAGATTAAAGCGCTATGGATAGGAAT	Core staple
20[72]	CGATAATTAAGTGGGTGGCTACTTAGATA	Core staple
20[93]	ATCGGGTTTGCAGAACGTTGATCGGCCAAAC	Core staple
20[107]	CCGTAATGCCGGAGAGGGCATGCGTATAAGAAAA	Core staple
20[114]	AGATGTAATTCGCGCACTCTCTGCCAGTTGAGTGAG	Core staple
20[135]	AGGAAGCTTGAAGGGCGCACCGCTGGCGCATCGTAAGATT	Core staple
23[60]	GCACAAATATAGGTCTTAAATGCTGAGCTGC	Core staple
23[123]	CTATCAAAGGAAGCCTTGTAGCAAATTAAGAGCT	Core staple
22[97]	CGGTGATAATCTGCCGAAAGTATTCAACCGTTAGCT	Core staple
25[32]	AAGTTACCAAGAACGATTCTCATTAATAATTGGCGTTG	Core staple

25[60]	ATGCAAATCATGACAAGCTAAAGACGAGTAGATTAGTTGCT	Core staple
24[51]	CACTTTAGGAATACCACCGTTGGGTTTCAACGCA	Core staple
24[72]	TACTAATGCAGATACATGGCTCATATTACCTGGGG	Core staple
24[90]	GCCAGCGCCAAAAGCGTCCAATGCTGCAAGGCGTTATTG	Core staple
24[114]	TAAGTAACAACCCGTCGCCGTGACAGCCAGGAGA	Core staple
26[44]	CTGAGAGGGGAAATGTTAAACAATTATAGAGCTTCATTAA	Core staple
26[65]	ACCTTAGACAATTCTATTGAATGATT	Core staple
26[86]	ATGTAAGAAAAGCCCCATCCCTGTA	Core staple
26[107]	ACGGAAGATAATCATATGTACCCGATAAATGAGACAGCCCT	Core staple
27[74]	TGATATACCGTCAGGAATTCAACGAGGCATAGTAAGATAAA	Core staple
27[129]	TCCGGATCGGTTAACCTTAATCGTAAAGTAGTAG	Core staple
29[39]	TTCAGAGGGAGTTATTCCAATTCAA	Core staple
29[53]	TCTACGTAACGGTTAAAGAAAAATCTACGGTTG	Core staple
29[88]	CCAACCATCAATATGGATATGTACCAAAAACATTGATCAA	Core staple
29[102]	GTCGCATCGGCTAACCTGTTCAATAAAACTTTGCGGGAGGTG	Core staple
29[130]	GCCTAAAGTTTTGAGAGATCTTGAGGAAACGGGAA	Core staple
28[72]	GCTTCCATTATTGCAAGGCTTTCTTAATCCATT	Core staple
28[93]	AGGGTAATCGAGTCAGCAGCATCAGCTATGCGAGGGG	Core staple
28[121]	CTCTTTCATTGGGGCAAAAGAATTATTCACGCAAGTGT	Core staple
30[37]	CGGATCATAAGGGAAACGAACTTATCCGCCGGCGCGTTGAGATAAG	Core staple
30[59]	CTCATTATGAGGAAGTTTGAGGAAACCGGAAAGA	Core staple
30[79]	TCAAAACGGGAAAATACGTAGCAAAACG	Core staple
30[100]	TTACAGGGAGTTAAAGGAAAGACAACGAGCTAAGG	Core staple
30[121]	CGCTGCGGGATTCAGCGCCATGTTCTCACGGAAAAACTT	Core staple
33[46]	AGATATCATAACCCCTCGTTTGCCTCATCGACC	Core staple
33[91]	ATCAACATTAAATGGGGACGACGACATTAAGAAACTAACTTC	Core staple
33[109]	CGATTCGCGTCTGGCTAAACAGCCAGCTGCCA	Core staple
33[130]	CTCTAGGAACGCCATCACAAATATGCGGGCCGACGCCACC	Core staple
35[147]	ACTACGAAGGCACCAACCTAATTCGGTCGCTGAGGCTTGC	Core staple
34[188]	ATCGCCCACGCATAACCGATAAACGAAAGAGGCAAAGAATA	Core staple
34[209]	GCGCCGACAATGACAACAAACCCACTAAAACACTCATTTGA	Core staple
34[229]	ACAGCTTGTACCGATAGTCCCCCAGCGATTACCAAG	Core staple
37[53]	TATAATAAGAGAAATATAATGTTCAAGCA	Core staple
37[84]	GGTTTACCAAGGCCGGAACTG	Core staple
37[116]	TTCTAACTATAACCTCCGCTTCGAGGTGAAACGCCACCAACT	Core staple
36[44]	TTACCGAGGAACGCAAATGAAATGCTAATGTCCT	Core staple
36[65]	GACGGAAATACCCAAAAGCAAT	Core staple
36[75]	GCATGATAGAAAAAGAACGCTTCACTAGATTG	Core staple
39[39]	AAAGCAAACCGTAGAAAAACCGAAAGACAAAAGGC	Core staple
39[102]	GCAACCATTACCATTAAGCAGCGCCGAAATCAATGGTTACCGGAA	Core staple
39[144]	CGCTTGAGGCCATTGGGGGAAGGACAACAAAGGATGTCTG	Core staple
38[44]	ATATAATATCAGAGAGAAATAACACCCAATCAATT	Core staple
38[65]	GCACAGAAATGAGTTAAATAGCATTTTGTGCT	Core staple
38[72]	AATTTTAGCTAACGAAAGACAATTCTAT	Core staple
38[83]	GGAACCCAACGTCACCAATGAAACCATCCAG	Core staple
38[93]	AGCTTTGCTAGCATTACGAGGTTAGTACTTC	Core staple
38[107]	ATCGAACGCCACCCCTTATTACACCGTCCAGT	Core staple
38[114]	AATTAGTAAACAGTACACTCAGAACGGAATAGGTATATTA	Core staple
38[135]	TAGGGGATTTCGTAACAAACGCCAACGGTTGATATAAGAAGA	Core staple
41[60]	CCAAGAAACATAATTAACTCTTATTACGAGAGTT	Core staple
41[123]	CCACATCTTAGCGCAGCCAGCAAATCACGACA	Core staple
40[97]	TCATTTAACGCCCCAAATGAAAGCGCTCCCTCAGAGGCC	Core staple
43[32]	ACAAACGCTAGAACCGAGGGCGTTAACGAAAGTCTTCCG	Core staple
43[60]	TAAGATAAGCAGAACGCTTTCTTGTCACAATCAATTAA	Core staple
43[130]	ATAACGATTGGCCTTGAAGAG	Core staple
42[51]	TTAACCTCCCGACTTGCATCATTAAACGGGTGCCT	Core staple
42[72]	ATTTTGAAGCCTTAAAGCTTTACGCACTCACAA	Core staple
42[90]	CCTATAAGATTGTTAACCGAGCCCTCATAGATCAAG	Core staple
42[114]	TAAGGCTGAGACTCTCTATAGCCCCGCCACTCAGCTGGCTTAG	Core staple
44[51]	GAATTCCAAGCCGCCAAATAGCTTAG	Core staple
44[107]	ACATGAATTAAACAAATAATCCACCCCTAACCGGAAGATA	Core staple
45[46]	TCACAAGAAATTTAAAAACAGGGGAAGTGAGCGCGCTATCTAAGG	Core staple
45[74]	TACTTTCATCGTAGGAGGGAGGTTGCACCCAGTACCAAA	Core staple
47[39]	AACAAGTACCGACACCACCGGAATATATG	Core staple
47[102]	TTCTGCTGATAAGACAAAGGGCAGTAGCGCAGCGTAAATCAGTCAT	Core staple
47[130]	TATCGTTGCCACCCCTCAGAGCCAGGTAGCATGGCTGAGT	Core staple
46[121]	ATAAACCGATTGAGGGAAATTAGAGAATCAAGTTGCCTTAT	Core staple
49[126]	GTATTGCGAATAATATTGATCGGTTACCTCAGACTGAGTCGTC	Core staple
48[37]	CGAGGCATTTCGAGCCAGTAAATAAATTGTCGAAACTTA	Core staple
48[58]	GATATTTTGTAAATGAGAAAACGCCGTAGAAG	Core staple
48[69]	TATCATCATTAAACAAATGAAACGAGGCCCTTACAGAGAGTAAC	Core staple
48[79]	CGGTCTGACCTAACCTAACGCTCTAACGACCCACC	Core staple

48[90]	ACAAAGTATCGAGACCACAGATCGAATGGAAGCGTCGGAA	Core staple
48[100]	TTATAGACTACCTTTTATGTAAACAGACGCTCAA	Core staple
50[104]	CACCGTACTCAGAACGCAAGCCTCTATTCTGAAACATGAAAGT	Core staple
51[46]	CGATCTGAACTTACCGCCATATAATAATAAAAAC	Core staple
51[109]	AGATGCCCTGCCTATCATGCTCACGCCCTGGTCT	Core staple
51[130]	GAAAGTCCCGTATAAACAGTAAGTCGTCACTGAATTGGTT	Core staple
53[147]	GAAATACCGACCGTGTGATAATATCAAATCATAGGCTGAG	Core staple
52[188]	GAGAAGAGTCATAGTGAATTATAAGGCGTTAAATAAGAATA	Core staple
52[209]	GATAGCTTAGATTAAGACGCTAACACCCGGAATCATATAATTACT	Core staple
52[229]	AGAACCTTAAACATAGCAGAAAAAGCCTGTTAGTAT	Core staple
7[137]	AAAATTAGTTAAAGTTGAACCAGAAAGGTTAGAAGTG	Core staple
7[151]	AGGGCCCTGCAACAGTGCAGAAGATAGAACCCGTCA	Core staple
6[146]	CTAATAGGGATTGAAATTGCGACCTGAGACAA	Core staple
12[142]	AATGAATTACCTTTTCAAGAAACAAA	Core staple
25[137]	ACGTAACCAACGTGGAACAAACGGTGTAGATTCTGGGGAA	Core staple
25[151]	TTAACACAAGAGAATCGAACAAAGGGAGTAATGGAT	Core staple
24[146]	CATTTTTAATATCTGTTGGCAGAGGTAAC	Core staple
30[142]	TAGTACCGTCCCAGAACCTACCGGGGAG	Core staple
43[151]	AGGCAGGAGGTTGAGGCCACCAAGCCCCCTTA	Core staple
42[135]	AAACGGATTAGGATTAGCGCTGAGCCCTCAGGCCT	Core staple
42[146]	GTGCCCTTTGATGCGATGACTGCTAAAGAAA	Core staple
48[142]	TTAAATTTCACGTTGAGAAATCACAC	Core staple
0[166]	GAGTAGAAAGACTAATAACATCACTTGC	Connector staple
2[163]	TCTGGCCAACAGATGATGAGC	Connector staple
4[163]	TATTAACACCTTATCTAAAATAAT	Connector staple
6[163]	TTTAGGAGCATATCATTTCT	Connector staple
8[166]	ACGTAAAACAGAAATATCAAATTATTTAA	Connector staple
11[151]	AGAAGAGATAAAACAGAGGTGAGGCGGTAG	Connector staple
10[142]	ATATCTTCTGATTAGTCAACTAGACCGATAATAAAAGGGACTC	Connector staple
10[160]	CAAACATAATGGAAACAGTAC	Connector staple
12[163]	ATAAAATCAATATGTGACCTACCATAAAGAAGGA	Connector staple
14[160]	GGAACAAAGAACCGTAAACATCTAACAA	Connector staple
18[166]	TAGCATTAAACATCAATTCTACTAATAGTGG	Connector staple
20[163]	TTTAAATGCCACGGAAAT	Connector staple
22[163]	GTCTGGAGCAAATTGCGATTATA	Connector staple
24[163]	TTTTGTTAACCGTAAATAG	Connector staple
26[166]	TCGCCATTAGGCACCAGGCAAAGCGCCCG	Connector staple
29[151]	CGGAATGCCCTATCAGGTCTATTGCCCTGAGA	Connector staple
28[142]	AATAAAAGTGGCATCAAATAAAATTAGAACCCCTCATAAA	Connector staple
28[160]	GATAACCTTGTGAGAGATAG	Connector staple
30[163]	ACTTCTCCGTGTGAAGCGGAATGCGCAATTG	Connector staple
32[160]	GATAGGTACGTTGGGGATTATCAGCT	Connector staple
36[166]	GAATTATCACCGTAATTATTCTATTAAAGCC	Connector staple
38[163]	TCGGCATTTAACAGTTGA	Connector staple
40[163]	CCAGCATTGAAAGTGTACTGGTACA	Connector staple
42[163]	AAGTTTAACTGCTCAGTAGT	Connector staple
44[166]	TAGCAAGCCAATACCCCTATTTCAGGCA	Connector staple
47[151]	TTTGGTCATGAACCACCAGAGCCGCC	Connector staple
46[142]	GGATAAATATTGACGGACCGGACTCAGACTGTAGCGCTTTAT	Connector staple
46[160]	GGCGAGTAAAATCTCCAAA	Connector staple
48[163]	AAAAGGCTCCAAAAGGAAGGCCACCGAACATAC	Connector staple
50[160]	AGGCAGATAATGCGGGTTGGGTCA	Connector staple
1[12]	ACAGGAGGCCGATTAATCAGAGCGCGTCACGCTGCCAA	Vertex staple
1[32]	ATTGTGTTATGGGTAAAGAATGCCATATTAACAACG	Vertex staple
3[9]	TATCAAAGTGTAGGGAGCTAA	Vertex staple
2[30]	CGTCGGGGTTGGTGTCTCATACCAAATTGTTATCCGCTCACA	Vertex staple
5[9]	TTGATGGTGGTTCGAAAACCGTC	Vertex staple
7[9]	CGCGCGGGGAGAAGAATCGGG	Vertex staple
9[12]	CGGGCGCTTTCACGGTGCAGCGGGCGGTACGAGGGAAATCCGT	Vertex staple
11[16]	CGGCATCAGATGCAAAGGGCGAAATCGCAGAAATTGCCCTGCG	Vertex staple
13[14]	CCTGCGGCTGGTAAGCAAATCGTTAA	Vertex staple
15[16]	ATTCCACACAAACGCTTAAATGAATCGGCCAA	Vertex staple
19[12]	TGGAAAGTTTACCTTCAACTAAAGATTAGAGAGTACCTAAG	Vertex staple
21[9]	CAACAGGTCAAGGTACGGTGT	Vertex staple
20[31]	CGAAGCTGGCTAGTGAATGTAGTAAACGAACTAACGAAACAC	Vertex staple
23[9]	TCAAAAATAGGGGAAGCAAACCT	Vertex staple
25[9]	ATAGCGAGAGGCCCTGACG	Vertex staple
27[12]	AGAAACACAGAACGAAAGGTTTTGCAAACGAGAACATGACCATAAA	Vertex staple
29[16]	CCAGGGCGTAGGCCAGACCTTACCCCTGACTGTTAGAAAAG	Vertex staple
31[14]	GGAACGAGGCCAGACGCGTGTACAGA	Vertex staple
31[32]	TCATATGAGCGGGTCACTGTTGC	Vertex staple
33[16]	ATTATTACAGGTGACGAGCATAAAAACCAA	Vertex staple

37[12]	GCAACATATAAAAAGAATACATACAACAAAGTTACCAGTACC	Vertex staple
39[9]	AGCAGATAGCCGATAAAGGTG	Vertex staple
38[30]	GAACGACAATTCCCCATCATCGGCTTCAGATATAGAAGGCTTAT	Vertex staple
41[9]	CACCCCTGAACAATTAAAGAAAAAGTA	Vertex staple
43[9]	CTAATTGCCAGACGAGCATG	Vertex staple
45[12]	TAGAAACCAATCAACTAATTACCAAAAGACGGGAGAACCTGAA	Vertex staple
47[16]	CTGTCCAGACGAGCCCTTAGTCAGAGGGTAATCGCATTAAATAA	Vertex staple
49[14]	CCAACATGTAACTTGGTAAAGTAATT	Vertex staple
49[32]	AGACCTGCTCCATGTTACTTAGCC	Vertex staple
51[16]	CCGGTATTCTAAACGAGCGTCTTCCAGAGC	Vertex staple

**Table S3.** Sequences of the triangular prism.

5' – end	Sequence	Note
1[53]	CGCCAACCGCAAGAAAAGTTACCTGTCC	Core staple
1[84]	AGTGAGGAAAACGCTCATGCGCGTACTAGTGTGTTGGT	Core staple
0[44]	CGTCCACCACACCGCAACAAGAGCAG	Core staple
3[102]	AATCCATTGCAACAGGACACCGACGGACTGCGGTCCCTAGAA	Core staple
3[144]	CACTATCGGCCCTGCTGGTAGCAAATTAAATTACATTGCAATTA	Core staple
2[44]	ACTAAAATCCCTATAATGAGAGACGCCAGGCTGC	Core staple
2[65]	TCCGAATAGCCCGAGATTGCCCTCACCC	Core staple
2[72]	GTGCCAACGGATTGCCGTAGCGTATAATC	Core staple
2[93]	GAATTGAAATGACCTTCTCATCAATATAAATT	Core staple
2[107]	CAGAACATCGCATTAAAAATGAATCTGGTCATAA	Core staple
2[114]	CGTTCCGCATCAGATGTTGGATTCTGATTATCAGTAT	Core staple
2[135]	TGAATTTCACGCTAGATTAATGAAAGGAGCGGAATTACGTT	Core staple
5[60]	AAAAGTTGGCGCTTATTGACGAGCACGTGGT	Core staple
5[123]	ACCGCGTAAGTATTACCCAGAACAAATTACCATCACCAC	Core staple
4[41]	CAAGCGGAATCGCATTAAAGCCGTAAGCTTCC	Core staple
4[97]	ACCTTGCAGAACACAGCTGAAGTTAATGCGCAGACTGATA	Core staple
4[135]	CGCCAGTTGAAGATTAGAATTAAAAGTTCCAC	Core staple
7[32]	GCGAACCTGTTCCACACAACATACTAGCTGCGGTATTGAG	Core staple
7[60]	TTTACGATCCCGGGTCTCAG	Core staple
7[74]	AGTACATTAAGGGTGCCTAATGAGGAGGATCCGCGTCCAAAC	Core staple
7[109]	ATAAAATCTAACAGCATGCCCTAACAAATATGCTC	Core staple
6[51]	CCGAAGCATAAAAGTGTATCGAACATTCCAG	Core staple
6[90]	ACTTTAGCTAACTCGAGACGGGGGAGAACAAATCTGTTCTCCGGGT	Core staple
6[114]	CATATCCTTGCCTGAATCATATTATACTGAA	Core staple
8[65]	CAGTTCTTTTACCGCCTGGCCCATCA	Core staple
9[60]	CACCGCTAACACCGTGGTATGGGTCTGGCGGTGCCTTGT	Core staple
9[130]	GAATTTCAGGAAATCAATGAGAGCAGCAGCAAAT	Core staple
11[39]	CGGACATCCCTTTAGACAGGAACATAA	Core staple
11[53]	CCAAGCGCAGGTTCTCGCTAACATGGTCAGAGC	Core staple
11[88]	TGCTGGCTATTAGCTGGGGAAATACCTACATTTGACTTT	Core staple
11[130]	TCCCCTGAAAGAACGAACCACCCAGGCCA	Core staple
10[58]	CAGCAGAACTCTGAGAATGGTGCATGCCGCTACAGTTGA	Core staple
10[72]	GCTCTGATTGCCCTCCGCAAACGTAGAACTGAT	Core staple
10[100]	TGCGTAAAGAGTCTGTCGCCAGCGTCTGAAATGGATAATA	Core staple
10[114]	CTCTCGCTGGTCGCTATTAAATTATCCTGATAATACATCA	Core staple
10[121]	GCAGCAAAATAACCGTTGAAATATATTGGCAGATTACCTTC	Core staple
12[37]	AAATGCTCGTATTGCCAACGGCAGCAGTAGG	Core staple
12[48]	GCTTAATACCGGGGTGCACTTATTGGGGTTGCAG	Core staple
12[79]	ATAGCGATAGCTTACAAGCGTGCCGCAT	Core staple
12[90]	TCCTTGAGTGGACCTTACATGCCCTCAAATATCAAGTATTAG	Core staple
12[100]	TCCGTTTTTCGCTCGATAACGGTACAAAAGGCA	Core staple
12[121]	ATCCAGCCTCGTAACAAATTCTATATAACCTTGCTTCTTCT	Core staple
14[69]	ACCGAGCAAGCCTGTTGCGTTGCGCTCAGTGG	Core staple
15[46]	CGGTTTCCAGTCGGGAGTTGCGGCGGCCATGC	Core staple
15[98]	ACAACCTGATGATGGCAATCTCACAGTTGACAACAAATTG	Core staple
15[109]	TAATTGAGGATTAGAAACCCCTAAGTAACAACCAAGTAACG	Core staple
15[130]	ATTAGCCGTAATAGATAGTTGGCTAACGGAGGCGACAGA	Core staple
17[130]	GTGCCATCCCCACGCAACAGGGTAAAGTTAACG	Core staple
16[167]	CACAGCGGCCCTTACTGATGAGCTACGGCTGGAGGTGTC	Core staple
16[188]	AAAATCCGTTAAAAAAGCCGAGCATCAGCGGGGTCTTGC	Core staple
16[205]	GTGTACATCGACATAAAAGCGCTTGCACCTCA	Core staple
19[53]	GAGCACCAACCTAAAGAAGAGTAATCGA	Core staple
19[84]	TCGCAAAAATCGTTGTTAAATTGCTCATTAGTACG	Core staple
18[44]	TTTTTTGATAAGGGTTTTAATTCTT	Core staple
21[102]	TACCAAGCAGATAAGCTGGTCAAGTTCCAACAGCATTCTGCTC	Core staple
21[144]	ATTACAGGCAAGGCAAAGCTGAAGAACCGTACAGCTTGCCTA	Core staple
20[44]	GCTAAGCAGCGGATTCTCAAATTAGTAAACACT	Core staple
20[65]	AAAAAAAGATTAAGGAGAATAATATAGC	Core staple
20[72]	AGACAAGTGGTAAACGGGTTAAACATT	Core staple
20[93]	CCATTCCCAAAGGGGGAACGGCCTCAGGAATTAA	Core staple
20[107]	AGAGCCGGAGAGGGTAGGTCAATCAAGCAAATAA	Core staple

20[114]	AGGAAACGACCGCTATTCTCCAGCCCAGTTGAGGGGACGAG	Core staple
20[135]	AAATTCAGAGGCATCGCCTCTCGCATCGTAACCGTCTCC	Core staple
23[60]	CAATATCGCGCATTTTATGCTGTAGCTAAGAAC	Core staple
23[123]	TTAAGGGTGCCTTATCAAATTAAAGCAATATATTTAAA	Core staple
22[41]	ACAGTTCTAGTCAGTCAAAGCTTGCTCTAAATAT	Core staple
22[97]	TGATAATCAGAAGGAATCGTCAGTCACCCGTTAGCTGATA	Core staple
22[135]	AATACGTTAACATAGGGAAACAAACGGCGGAGAT	Core staple
25[32]	TTCCAGACGAGATTATCAGTTGTAACGGCTTGAGAGC	Core staple
25[60]	TTATCAACGTAAGAACCGA	Core staple
25[74]	GTCTACAGGGCAGATACATAACGCATTACCTTATGCCA	Core staple
24[51]	ATCGGAATACCACATTGGGAAGAAACT	Core staple
24[90]	GCTTAAAGGAATCAATACTGCAAGGGATTATTGAATTACAGTC	Core staple
24[114]	TCGCAACCGTGGATTGCATCTGCAGCTTCGCA	Core staple
26[65]	AAAGACTGGATTCAATTGAATCCCCGAT	Core staple
26[107]	CAGATTGATATATGTAACCCGTAATTAAATCAGTCAGTAA	Core staple
27[60]	TTACGCCGGGAAAAGAATACACGATTGCCACTGGATATTCTC	Core staple
27[129]	GCACGGTGGGATTGTAACGTTAAACTAGCATCTAT	Core staple
29[39]	TCAGGACAGAATTCCAATTCTGCCATG	Core staple
29[53]	GACAACAAAGTAATTCAAATCTACGTTAAAGAT	Core staple
29[88]	GGTTCAATATGATATCCGCCAAAACATTATGACCCATCA	Core staple
29[130]	AGCGATTCAATGAGAGATCTAACACGGT	Core staple
28[58]	AGGTAGATTGTTGAGAAATAGCGGATGGCTTAGACGAA	Core staple
28[72]	TAACGTACCCCTCAGCAGCGAAAGTTAACGCCAG	Core staple
28[100]	GAATAACCTGTTAGCTAAAGCCTTTGCGGGAGAAGAGAA	Core staple
28[114]	GACCAACGGCACAGCGATCAAACGATCGCAACGC	Core staple
28[121]	GACCATTGGGGCGCGAGAAATTAGTTCAACGCAAGGATAGGT	Core staple
30[37]	CGGACTTGAACAAAGGAGGACCGGGTT	Core staple
30[48]	GCGGTATGATGGTTCTGCTCAGGGGTAAGCTTAA	Core staple
30[79]	GCAGTTGGCGGGTTATCATCATTGACCC	Core staple
30[90]	ATTGCCCATTATGTCGCAAGCCCCAAAAGTAGCCA	Core staple
30[100]	ATTGGAACGAGGGTAGTTTACGTTACCGG	Core staple
30[121]	GAATACAGAGGCATGTTACCCACGGAAAAAGAGACCG	Core staple
32[69]	GGACGTTAACTAATCATAGTAAGAGCAAATGT	Core staple
33[46]	TTAATAACCTCGTTAGCCAGAGTTAGTCA	Core staple
33[98]	ATGTGAGCGACAGTATGAACTGGCTCCATCACATTAA	Core staple
33[109]	TAACGTCTGGCCTCTCAGGAAGCTGGCAGTCACGATGAG	Core staple
33[130]	GTGAACGCCATAAAAATTTAACGCTTGGCAGTTGAG	Core staple
35[132]	AAAAACACTCATCTAGGCCGTTTGC	Core staple
34[224]	TAGTTGCCGACAATAATTGTGTCGAAA	Core staple
37[53]	CACCGACCGTGTGATCAGACGACACAAG	Core staple
37[84]	AATAAGAACCAATTACCGAGAACCCATTGGTAAAT	Core staple
36[44]	CTTAGTTACAGAAGGAATAAGAGATAA	Core staple
36[65]	GAAGAAACGCAATAATAAGAA	Core staple
39[102]	AATCAAAATCACCAGTAAATTATGTTAAATCGAGGTG	Core staple
39[144]	ATCTATCACCGTCACCGTCAACCCGGTAGAAATAGAAACGTTA	Core staple
38[44]	AAAGAGGGTAATTGAGCCAGCCTTCAGCCATT	Core staple
38[65]	AAGTCAGAGAGATAACCTAACGTC	Core staple
38[72]	TTGTGAGACGCCCTCTGACCTCACAAATC	Core staple
38[93]	AAAGCGTAACCAAACCTAACGTTACCGTACTTGC	Core staple
38[107]	TCTAGAGCCGCCACCTAGACGATCGCAGTCACAG	Core staple
38[114]	TTTCGTCCTCACTGAGGTTAGTTGATATAAGTATAGTCTG	Core staple
38[135]	GTCAATGAATATAGAAAACGCCGATACTGCCGTCGGAGG	Core staple
41[60]	ATACCCAATAAACCGAGCTGGCATGATAGAAGAAGA	Core staple
41[123]	ACCCCTTATTTCAGCACCCATTGGAAATTACAAAGAAACT	Core staple
40[41]	AGAATAAAAAGTCACAATGAACGAACAAATTACGC	Core staple
40[97]	ACAAACAAATAATTGGTTCAGAGGCCACCGGAACCGC	Core staple
40[135]	GGATCCAGTAACGGGGTAGACTCCTCAAGAGCCAG	Core staple
43[32]	GCCTATCCTGTTACCGGTATTCTTACCGCGCAATCAAAGCC	Core staple
43[60]	TTTCCGTGTTACATGTTGAA	Core staple
43[74]	AATTAAATCCGACTTGGGGAGCGAGAACGTATTAATAAA	Core staple
42[51]	GCACGAGCGTTAGCTATTCTCCT	Core staple
42[90]	CCTGCTTGAAGCCAAGAAACTGAGCATTCACAGAAGCAAG	Core staple
42[114]	TGCCATGAAAGTATTAAGAGGGTACCGCCATAAT	Core staple
44[65]	GCGATCCAAAAAAATGAAATAGGCTA	Core staple

44[107]	GTCTGGAAAGTGGCCTTGATATTCCCTCCCTTCATAACACC	Core staple
45[60]	TATGCGACCTAATAAGAATACCTATGGTTTAGCTAAAGTT	Core staple
45[129]	TCAGGCCATGTTACCGTGGTTGAGGCAGGTCCAGA	Core staple
47[39]	GACGTAAATAAAGAAAAGAACGCAACTC	Core staple
47[53]	ACAATCACACTGTCTTATCGTAGGAATCATAAGA	Core staple
47[88]	TTATCACCGAACACAACCTAGCAAGGGGGAAACGTATCA	Core staple
47[130]	GTAATAGCCGCCACCCCTCAGAGCGACA	Core staple
46[58]	TACCACGGAATAAGTTAAA	Core staple
46[72]	TTAAGGTTGGTTATATAACTATATCATCTTATAG	Core staple
46[100]	TTAATGGTTTACCGGGAGCCAGGAAACCATCGATAGAGCC	Core staple
46[114]	TTAATCGCAATCGGTTATCAGCTCAGGAGTTTC	Core staple
46[121]	GAACAAAAGGGCGACATACTTGAGGTAATCAGTACGCGATTG	Core staple
48[37]	GGATTTCGAGCAAATAAGGCGTTGCTCCAT	Core staple
48[48]	TTTACTTAAATCGGATAGATAAAAATAACAGAG	Core staple
48[79]	CAGCTTGATACCGATCCCCATTCCAGAAC	Core staple
48[90]	AATTCTACCAAGTCACCGCGAATCCTCATTAAAAATGCC	Core staple
48[100]	TTGCTGTGCAAATCCTCAAATAAGTTGGCCA	Core staple
48[121]	TGTAGACAAAAGGAAGAACACTAACCAAAAGGAGCCTCCC	Core staple
50[69]	CCGTTTGAACCTCAAGATTAGTTGCTAATTA	Core staple
51[46]	ACGCCAGCTACAATTAGTTACAAGTCTGTCCA	Core staple
51[98]	CTATTATCCCGGAATAGGTGCACTCATGCTATTTGGAAC	Core staple
51[109]	AAACCGTATAAACAGTGGCAGAAACCAAGTAGATCTAATT	Core staple
51[130]	CTGCAGTGCCTGAGTATCTGAATACCGTAATCCAGACCGA	Core staple
53[130]	AACACCGGAATCATAAACCTTTAACCTCCGG	Core staple
52[167]	AAATCATAGGTCTGAGGAGACTTACTAGAAAAGCCTGTTAG	Core staple
52[188]	GAGTCATAGTGAATTATCATATCATGCGTTACAAAT	Core staple
52[205]	GATTAAGCCTGAGAACTTACCAAGTATAAACAG	Core staple
34[209]	TGACACAAACAGCAGGGAGTTAATGACCCCCAGCGATCATGCC	Core staple
5[25]	GTTGTTCCGATCCACGCGAG	Core staple
23[25]	CTGACTATTAAGAAAACAAGT	Core staple
41[25]	CACCTGAAACATAAAAATT	Core staple
0[166]	CTGAGTAGAAGAACTCAAACACGACCAGTA	Core staple
2[163]	ATTCTGGCCAACAGAGATAAAACAGAG	Core staple
4[163]	AGTATTAACACCGCTGCAACAGTCAGAAAGATAGAACCCAGT	Core staple
6[163]	TCTTTAGGAGCACTAACACTAATAAGGAATGAAA	Core staple
8[142]	TTGTTACCTGAAACAAATCTCTTGATTAGTA	Core staple
8[166]	GCACGTAACAGAGATAATGAGGAAGGT	Core staple
10[160]	AACAAACATCAAGAAGCAAAA	Core staple
12[163]	ACATAAATCAATATGGAACCTACCATAT	Core staple
14[142]	CAGAGGGTTAGTGTGATTGAATTACCTTTTTA	Core staple
14[160]	GCGGAACAAAGAAAGAGTAAC	Core staple
18[166]	ATTAACATCAAAATCATTTAGAACCC	Core staple
20[163]	AAATGCAATGCCTGAGTCAGGTATTG	Core staple
22[163]	GGAGCAACAAAGGAATCGATGAAAGGCATAATGTGAAAA	Core staple
24[163]	TGTTAAATCAGCTATTAACTATTTGTGGG	Core staple
26[142]	AAGGGTGAGAACTGGCAGGTGGCATCAATTCTACTA	Core staple
26[166]	CATTCAAGCTGCGCAACTGTTAAAATTG	Core staple
28[160]	ACCTCACCGGAAACCCGCCAC	Core staple
30[163]	TCTCGTGGTAGAGGGAGAAACCAAGGCAAA	Core staple
32[142]	GGGGGTGCCGTAGCTAGTCCCGAATTGTGA	Core staple
32[160]	GGTCACGTGGTGTATTGACC	Core staple
36[166]	ATTATTCAAAAGGTGAATAAGTTGCC	Core staple
38[163]	CTGTAGCGCGTTTCATCTCAGAGCCG	Core staple
40[163]	ACCACCAAGCCGCCGCCAGCATTCAACCAACCGGCATTAGA	Core staple
42[163]	GGAGTGTACTGTAATAAGTTAACGCTAAAGC	Core staple
44[142]	CCATTCTGTCAAGCGGAATTGAGGGAGGGAAAGGTAAA	Core staple
44[166]	CCCTCATTTCAAGGGTAGCTACATGGCTT	Core staple
46[160]	ACTTCAACAGTTATGGGAT	Core staple
48[163]	TTGAAAATCCTAAAAAGAACCGCCACCC	Core staple
50[142]	GCGACCCCTAAAGGCTAGGAATTGCGATAATA	Core staple
50[160]	GGTTTGCTAGTAAAGGATT	Core staple
9[160]	CAAAATTATGA	Connector staple
27[160]	GCGCCATTCCA	Connector staple
45[160]	CAGAGCCACTA	Connector staple

11[154]	GAAGATGATT	Connector staple
29[154]	GGAACGGACA	Connector staple
47[154]	TTTGCTAAAGC	Connector staple
7[157]	TATCTAAAAAC	Connector staple
25[157]	CATTAATTGA	Connector staple
43[157]	TTGATGATATT	Connector staple
1[160]	ACATCACTTT	Connector staple
19[160]	ATAGTAGTAGG	Connector staple
37[160]	TATTGACGGTA	Connector staple
3[157]	ATAAAAGGTA	Connector staple (excluded for folding in figs.2&3)
5[157]	GTGAGGCGTC	Connector staple (excluded for folding in figs.2&3)
13[157]	ATGGAAACAGT	Connector staple (excluded for folding in figs.2&3)
15[154]	ATTATCATTGC	Connector staple (excluded for folding in figs.2&3)
21[157]	TCATATATTCA	Connector staple (excluded for folding in figs.2&3)
23[157]	CCTGAGAGTCC	Connector staple (excluded for folding in figs.2&3)
31[157]	GAGATAGACCG	Connector staple (excluded for folding in figs.2&3)
33[154]	GTAATGGAAA	Connector staple (excluded for folding in figs.2&3)
39[157]	TTAGCGTCATT	Connector staple (excluded for folding in figs.2&3)
41[157]	CCACCAAGACT	Connector staple (excluded for folding in figs.2&3)
49[157]	ATTTTTTCATT	Connector staple (excluded for folding in figs.2&3)
51[154]	AGGATTAGCGC	Connector staple (excluded for folding in figs.2&3)
1[12]	TTTTAAACAGGAGGCCGATTAATCAGATCACGGTCACGCTGAACG	Vertex staple
0[34]	TCGTTAGAAAGGATTACACTTTCTTCGCCATTTAACACGCCAATTTT	Vertex staple
3[9]	TTTTAAACCGTCACTGGGGAGCTTTT	Vertex staple
2[30]	TGGGCATCAGTGTGCACTGGCTTCTGTGTGAAATTGTATTTT	Vertex staple
9[12]	TTTTCAGAATGCCGGGGCTCTGTGGCGC	Vertex staple
13[14]	TTTTGTAATGGTAAAGGGGTGTGTTCAGCTTTT	Vertex staple
15[16]	TTTTCCGCTCACAATCGGCCAGCTGCATTAATGT	Vertex staple
19[12]	TTTTAGTTTCATTCCATATAAAGTACGGAGAGTACCTTAAGAA	Vertex staple
18[34]	GCAACTAACAGTGTGAACGGCTGACCAAGTCACTGTCCTGCGGCTGTTT	Vertex staple
21[9]	TTTTAGGTAGGATTAGTGTCTGGATTTT	Vertex staple
20[31]	CCAGGCTGACCAATAAGTAAATTGAACTAACGGAACAACATTATTTT	Vertex staple
27[12]	TTTTTACACCGAACGAGTAGCTTGCCCCA	Vertex staple
31[14]	TTTTATAAGGGAACCGAATGTACAGACCAAGTTT	Vertex staple
33[16]	TTTTTACAGGTAGAAACGATAAAAACCAAAATAGTTT	Vertex staple
37[12]	TTTTTACATACATAAAGGTGTAGCAAAGTAAGCAGATAGCATAG	Vertex staple
36[34]	AGTATGTGCAACATGAGAATAAGAGGCAACGAGGCGCAGACGGTCATCTTTT	Vertex staple
39[9]	TTTTCTTTAAGAACGTTAGAAAATTTT	Vertex staple
38[30]	CAAAATTCTGAACAAGATAGAAAACCCAAATAGCAAGCAAATCTTTT	Vertex staple
45[12]	TTTTCTAATTACAGGATGAAATAAGAG	Vertex staple
49[14]	TTTTCATGTAATTAGCTAACGTAACCGACTTTT	Vertex staple
51[16]	TTTTGATATAGAAGGCAATCTTACCAACGCTAACGTTT	Vertex staple
5[9]	TTTTAAAATCTGTTCTGCAAAGGGCTTTT	Vertex staple
7[24]	GGGGTGGTTGCCAGCGAGCGTTTT	Vertex staple
23[9]	TTTTAAATCAGGTCTGCAAACCTCAACTTTT	Vertex staple
25[24]	AAAGGAGAAATGACCATAATCAATT	Vertex staple
41[9]	TTTTGGGAGAATTAAACCTTACCGAAGGCTTTT	Vertex staple
43[24]	CCTAACAGGGAAAGCGCATTAGACTTTT	Vertex staple
7[9]	TTTTAATCGGCCAACGTGCTGCGCTTCAATCTGATGAAAAGGTAAGTTAGCTATTGAA	Vertex bundle strand
25[9]	TTTTCGAGAGGCTTTGACGAGAAGCAAATCTCATTGAAATCGTTAACGACTCCAAGATG TTTTAGCGCTTCCATATCCCAT TTCAGTATCTTATGACT	Vertex bundle strand
43[9]	GCGCATAGGCTGACCGGAATACC	Vertex bundle strand
	CATCAGATTAGTGAA	Vertex bundle strand (complementary)
	CAATGAGAATTTGC	Vertex bundle strand (complementary)
	AGTACATAAGATTAGTGAA	Vertex bundle strand (complementary)

**Table S4.** Sequences of the cube with long connector staples.

5' — end	Sequence	Note
1[84]	AACGGTATATCCAGAACAAACCACCAAGGATTAAACCGGAATGGT	Core staple
0[54]	GCGCCGTAAACAGAGTGTCTGTATAAGTTACCTGTCC	Core staple
3[102]	GGAGGCCTGCTGTAACGCCAGACCGGCCAGTT	Core staple
3[144]	GTCAGTAATAACATCACCGAGTAAGCAAAGAAGATTCTGCT	Core staple
2[44]	ACTAAAATCCCTTATAATGAGAGACGCCAGGCTGC	Core staple
2[51]	AGAGCAGCCAAGGCCAGGTTCTGCGTAATCATGGTCAGAGC	Core staple
2[72]	GTGCCCTACAGTAACATCCCTCATAGACAGG	Core staple
2[93]	CTGTTACATCGATTCTCAATTATCATATTGAA	Core staple
2[107]	AGATGGCTATTAGTCTACACCGCACCCTTGCAGGC	Core staple
2[114]	CAGCGGATTCCAGAAATATTCAAACAAAGAAACCACTTA	Core staple
2[135]	TAAAATACCAAAATTATAAATAAGTAACATTATCATAAAC	Core staple
5[25]	GTGGTCCGATCCACGCAGAG	Core staple
5[60]	AAAAGTTGGGTAGCCGCTTAAT	Core staple
5[123]	GCGATTCTGGAATACCTAGTAGAAGAACTCATTTATATCGT	Core staple
4[41]	CAAGCGGAATCGGCATTAAGCGGGCGCGCGTA	Core staple
4[83]	CAGCTGAAGTACGTAAGAAGGTATATTACCGCCAGCCATTGCTGAC	Core staple
7[32]	GCGAACCTGTTCCACACAACATACTAGCTGCGTCAGTA	Core staple
7[74]	AGTACATTAAGGGTGCCTAATGAGGAGGATCGCGTCATCG	Core staple
7[81]	CGGACGTCAGATGAACTTGTCTCCGGGTACCGAGAACG	Core staple
7[91]	AAATGAATAGAGCCGTCAGCTAAGCTGAGAGCAGAAG	Core staple
7[109]	ATCCCTGCAACAGTGCCTATTGAAACCCCTCAACA	Core staple
6[51]	CCGAAGCATAAAAGTGTATCGAATTCCAG	Core staple
6[114]	ACTGTATTAGACTTACTTGCAGGATGATGACAT	Core staple
8[65]	CAAGTCTTTTACCGCCTGGCCCATCA	Core staple
9[60]	CACTGCTTACGTCAGCGTGGTGCCGTG	Core staple
9[130]	TTCATTTGCACAAATATGGCGGTCACTATTATAAT	Core staple
11[88]	CTTAAAGCGTGGCACAGACAATATCGCTGAGAGCAGAA	Core staple
11[130]	TTGAAGGGGACCGAACTGATAGCCCCGAGGTGACAA	Core staple
10[37]	CCCATCAGAGCGGGAGCCTACAGGTAGGGCGCTGGCAAACAA	Core staple
10[58]	TGTGAGGGCGATTAAAGCCGCCGGTCACTGCGCGTGTGA	Core staple
10[65]	CCGCGGTGCTTGTCCGAATAGCCCGAGATTGCCCTCAC	Core staple
10[100]	CCTATCTGAGAACTGTAATCAAAACGCTATGGACCAA	Core staple
10[114]	CTCGTCCGGTCAATATATGTGAGATTCTGAAAGAAAAAGC	Core staple
10[121]	TTTATCAGTGGGCCACTGCTGACATTGACGCTCGTAA	Core staple
13[74]	CTGGTGTAGAAGGGTAAGAGCACAGTAC	Core staple
13[95]	AAACCTGCTCTGTAAGTGTAGGCCAGGTTAGCGCAGC	Core staple
12[37]	TAATAATGGGTAAGGTTCTTAATACAAAT	Core staple
12[48]	TCTTACCAACGGGGGTGTCATTATTGGGGTTGCG	Core staple
12[79]	TCGCTTTAGTATCATAGCGTGCCGAT	Core staple
12[100]	TAACGATGCTGATTGCCGTGCTGACAATAAAGAT	Core staple
12[121]	AAACAAACCGGGGATGAAACAAACTTAATGGAAACAGTGCAA	Core staple
15[46]	CGGCTTCCAGTCGGGAGTTGCGGCCATGCCGGACAT	Core staple
15[67]	CTGTTGCGTTGCGCTAGTGGTTACGATCCGCGGTGCGACT	Core staple
15[88]	GATAATACTTGGAGGACAGAAGGAGCGGCTCACAGTTGTA	Core staple
15[109]	GAAAACAACATAATGATAATCTATTGCTAGGGAGAACGAG	Core staple
15[130]	AATTAAAATCTTGTGAACTCTGTAAGGCTGATCGTT	Core staple
17[134]	CAGCAGCAACCGCGGCCCTTAGT	Core staple
16[167]	TCCCGTAAAAAAAGCCGACAAAGAATGCCAACGGCAGCACC	Core staple
16[188]	GTGTACATCGACATAAAAAGTCGGTGGTGCCTACCGCTGGAGGT	Core staple
16[209]	GCCGCCAGCGATTGGGGTTAACAGCTACGGCTGGAGGT	Core staple
16[221]	TTCTGCTCATTTGTCAGCATCG	Core staple
19[53]	CAGTTAACATCAAGGGAGCATAGGAGAC	Core staple
19[84]	TTTAGTTAACAGCCTCATCATTGTCAGAACAGA	Core staple
19[116]	GGTCGGAACTCACCTTCTACGGAAAAAGCGACGACATCG	Core staple
18[44]	AATTAGAGAGTACCTTGCCTGAACTGG	Core staple
18[65]	TGGTCCTTTGATAAGACATC	Core staple
21[102]	ACCTAGCAAATTAAAGCTGACCATCTAC	Core staple
21[144]	CTTCTAGCATTAACATCCGCTATATATAACCTCACCGAACGAC	Core staple
20[44]	TTCCTTACCTGACTAGTCATAAAAGAAGTAATT	Core staple
20[65]	TTACAGAAGCAGCGGGAGCGTCTAATAGTCAGA	Core staple
20[72]	AAATAGGGGATGTGCTAGGACTAGAGTGA	Core staple

20[93]	GAAGATTAAGCTCGTTAGTTGAGGGGAAGAC	Core staple
20[107]	ATTAACCGTTAGCTGGAACGGTGCCCCAAACC	Core staple
20[114]	GGTGGTTTCAAGGGCGAGTATCGGGGCGATCGAACGCTT	Core staple
20[135]	GCAGTAAAACTCAGGCTGCACTCCATAGGTACACGGTGGGAGC	Core staple
23[25]	TAAATCAAACCCCTCAAATA	Core staple
23[60]	AGTAGAGGAATAATTGCCCTAGAGCTTAATTATAA	Core staple
23[123]	ATTAGTAATGCCCTGTAACATACAGGAAGGCAAAT	Core staple
22[41]	TTGAATCATCAGGTTAAATATCGTCAGGAATAATGC	Core staple
22[97]	CATGTCATAGACTGGATATGTCAAATCACCATCAAAT	Core staple
25[32]	GCGAACACTGGAACAACTATTGTTGGGAAACACCGAGCG	Core staple
25[60]	CCAAGAACCGACCTTCAAGGAAGTTGATTCCAATTCCGGA	Core staple
24[51]	ACGAAAGATTATCAGGCTCATTTGGGCTAGG	Core staple
24[72]	TACTTAGGAATACCACTTATGCTTCAACTAACT	Core staple
24[90]	TCCGCGCAACTAATGAAAATGTCAGCTGGCGAAAATGTTT	Core staple
24[114]	AATTCAACATTTAAATGTTGAGATGCCCTAGGGAT	Core staple
26[65]	ACAGAGGGGAAACTGCGGAATCTTAT	Core staple
26[86]	CGCTTATGTAACCCCGGTTAAATAAT	Core staple
26[107]	GTGCAGAAAAAAATCGTAAACTAGGATATTCCAAAGGTTGT	Core staple
27[74]	AATGATTTAAGAACTGTTGAGATATAACGCCAAAGGTTG	Core staple
27[129]	GATCGCGCAACAAGATTGACAAGAGAAATCGATATAA	Core staple
29[39]	GGCACCGAACAGTTTATTCCATGCTG	Core staple
29[53]	CTGGATATTCTAGTAAATACCACTGAGGACACAG	Core staple
29[88]	GGCAGGCCGGAGACATGGGGAGCATAAAGCTAAATCGGGTGA	Core staple
29[102]	GTAGCAACGGTAGATACTTCGCAAAGAATAAAACATTATGACTGTA	Core staple
29[130]	GTTATGCTGAAATGCGGGAGAGGGGAGCAATATA	Core staple
28[72]	CTTATACGTAATTGCGGGAGTTAGGCTTGGCA	Core staple
28[93]	AGAAAGCCGGAAACACGGGATCATTAATCAATT	Core staple
28[121]	GCACAATAACCTGTTAAATAAAATTACTTTGGGAGAAAT	Core staple
30[37]	GGCGAACGGAGGGCAGACGGTCCCTCGCAC	Core staple
30[48]	TCAATCGAACAGGATTACCCCTTGCAAATATTCA	Core staple
30[59]	CGCTATTAACGGGTAATTTCATGTCAGAGAAGA	Core staple
30[79]	TAATCGGGGTATTGCTGAGATGCTTG	Core staple
30[100]	GCACTTTGGGATCGGAGGGTAACGCCAGAAAG	Core staple
30[121]	AGCCAGCAGCGAGAACATCGGCTCCCGTGGTAAGGAA	Core staple
33[46]	GTAAGGCATAGTAAGAGAGAGGGCTAAATCAAACCA	Core staple
33[91]	CCTTCCTGTAGGCCACGTGCTGGAATTACTTCG	Core staple
33[109]	TCAAGGAACGCCATCAATGATAATCGGGCTTGG	Core staple
33[130]	GAGTCAGCTATTAAACAGGTGTTGGGCCAGTCAGACA	Core staple
35[134]	GCCACTACGAAGGGTCGCTGAGGCT	Core staple
34[167]	CCACGCATAACCGATATTCACCAACCTAAACGAAAGAG	Core staple
34[188]	GACAATGACAACACCATCGCGAAAGAATACACTAAACAA	Core staple
34[209]	CTTGATACCGTAGTTGCGCCCTCATTTGACCCCCAGCGA	Core staple
34[221]	TTCTTAAACAGTTATACCAAGCG	Core staple
37[53]	AAAGTTTTAGGCAGAGAATTCTGCCA	Core staple
37[84]	ATTTTGTCAAAATCACCAGAAC	Core staple
37[116]	TTTATGTAAGGCTTAGGGAGCCTTAATTGTTGTTACCG	Core staple
36[44]	CATAGATAGCCGAAACAAGTTAACGACGAC	Core staple
36[65]	CGGAGAAGGAAACCGAGAGAG	Core staple
36[75]	GCAATACCGGAAGAGAAAATCTGACCTATCATA	Core staple
39[102]	CCGGAAATTAGAGCCAGCACAATCCAATCGCGAGACTATATCAGC	Core staple
39[144]	TCACATTAAGGTGAATCAAAGGACAGTTTCAGCGTATCGT	Core staple
38[44]	ATACCTGAACAAAGTCAAATGAGTTACAAAGA	Core staple
38[65]	ACAATTGAGCGCTAATAAACGATTATTGGAGG	Core staple
38[72]	ATAACCTGTAGCATTAGCAGCTAAAGCTT	Core staple
38[83]	ATCAAAGGATAGCACCATTACCATAGGCCA	Core staple
38[93]	TCTAGCCCTCTTCGCGTAGCCCGGAATAGATCG	Core staple
38[107]	ATTGAACCGCCTCCCTCGGTTGAGGCCAGAACAGT	Core staple
38[114]	CCCGATCTAACCCATGTACCGTACGCCGTGAGAGGGTCGG	Core staple
38[135]	CATTCCAGACGGTAGACCGCCACTCACTGACCGCGCATG	Core staple
41[25]	GAGAATTAACACAGGCTT	Core staple
41[60]	GTAAGAATTGAGTTACCAATACCCAAAAGAAATAA	Core staple
41[123]	CCGTTCGTCGAACCACTGACCGGACTTGAGATGG	Core staple
40[41]	CAGCCTTGAACACATAAGAGAGTAAGCGATTAAG	Core staple
40[97]	TGGCCTTGATCAAAATAGATCAATCAGCGAACAGAGCC	Core staple

43[32]	CCACCCAGCTAGATATAGAAGGCATCGTAGGAGCATGCCGT	Core staple
43[60]	AAATAATGCAGACGACAAAATATAAAACGCAAAGACACATAA	Core staple
43[130]	GTCCAGCATTGACAGGAAGAG	Core staple
42[51]	TTAGTATTCTAAGAACGAAGCAAGTAATCGGCAAC	Core staple
42[72]	TTTTTTAGCGAACCTCAGTACCGCATTCCACGAGGTGAACGAAA	Core staple
42[90]	AACAGGACTTGGGATCCAAACAAACTACAACGATTCCT	Core staple
42[114]	GCCCTATTCTGAAGATAAGTCAGGAGGCCAAAGGTTGGGT	Core staple
44[51]	GCGCAATCACCGTTTATTTCTTAT	Core staple
44[107]	TAACCTAACGAGGTGAGCAGATACCACCGAGCGTTAAGG	Core staple
45[74]	TATCACTCATCGAGAACCGGAGCGTGAAGCCTAAATCAAAT	Core staple
47[39]	AGTGCATTAAAGGTGGCAACATCTGG	Core staple
47[102]	TTAGCAATCAATAGAAAATTCTACCAATTGGAAACGTACCAATATAG	Core staple
47[130]	CTTCGGCATTCCACCTCAGAACCCC CGCTCTGAATGGTA	Core staple
46[121]	TATACACAGCGCAAAGATATCACCTCGATAGCAGCACCTTT	Core staple
49[84]	GGCTGAAAGACAACACAGACTTCATA	Core staple
49[126]	TAGAGTGAGAATAGCCAAAAAAAAGGCTTTAGTAAGGCCACGCA	Core staple
48[37]	ATATTAACACGCCAACATGTATTGATTGTT	Core staple
48[48]	ATCATCGTAGAACCCCTGTTATTGCCAAAATAG	Core staple
48[58]	GGAAGTTAATTCTCATCTTTCTAAACACACCC	Core staple
48[69]	CAAAGTACTGTCTTGTCAAGCCAGCATTGTTAACGTCGAGG	Core staple
48[90]	TTGTTTAGAACGGGACCAAGTATCTCACAAACAAATCCGTATA	Core staple
48[100]	GTTCCTTTAACCTCCTGCTGATGCGTAACCCCT	Core staple
50[104]	TGATATAAGTATTTAACCCACCTTAATGCCCTGCCTATT	Core staple
51[46]	CCGGTTGCTATTTCAGAGCTTAATCAACAGTAA	Core staple
51[109]	AACTTGAGTAACAGTCAAATCCTACTGAGATAG	Core staple
51[130]	AAAAGTTAACGGGGTTGAAAGATAGGAAAGTTGTAAC	Core staple
53[134]	AATTAAATGGTTGAATTATCAAAA	Core staple
52[167]	ACGCTGAGAAGAGTCATAGTGAATACCGACCGTGTGATAA	Core staple
52[188]	ATAGCGATAGCTTAGATTAAGATAAGGGCTTAATAAGAATA	Core staple
52[209]	TCCCTTAGAATCCTGAAACAACACCGGAATCATATTACT	Core staple
52[221]	ATTAATTAAATTAGAAAAAGCCTG	Core staple
7[137]	CCCGGTTACTCGACAACCTGATAAGTTGTAATCCTACCT	Core staple
7[151]	CTGCAGAAAGATAAAACATAAAACACGCCAACATC	Core staple
6[146]	TGAGGAATCAATCAACCATATAGTTACATACCTGAAAGAGTC	Core staple
12[142]	TTTATCAAGAAAACAATTCAATAATCGCCAGTCAC	Core staple
12[163]	ACAATTTCATTGAATTGATTGTTAGAACCTTAT	Core staple
14[160]	GTTATTAAATTAAATAATCCAAGGAAT	Core staple
25[137]	AGCTGTTAAAACAACCCGTCGGAATGGGAGGCCAGCTAGA	Core staple
25[151]	TTGTTGCCGTGAGAGTCTAGCTATATTTAACG	Core staple
24[146]	AAATTTAAATTCGCCATGACGGCCGGAACGGTTTCTATT	Core staple
30[142]	CTTGAAACGTACAGCGCCGCCACGAGTGCACCCCTCAT	Core staple
30[163]	CCGGATTGGTGGAGAGATTCCGGGCGCATTAAA	Core staple
32[160]	CGCGGGATTGACCGATTCTCCCTCGCATT	Core staple
43[151]	GTAAACCCACCCAGAGGCCACCCTAGCGCGGTAA	Core staple
42[135]	ATAGTATTAAAGAGGCTGGGTTTGCCTCAGAAAA	Core staple
42[146]	GTGTACTTTACCGTTTTCAGGTTAGTAACCTTCAGCGACAT	Core staple
48[142]	TCTAAAGGAAACAACTAACAAACAAATGAATCAGACTG	Core staple
48[163]	ATAATTTCACGTTGAACCGCCACCCCTCATCCA	Core staple
50[160]	ATTAGGATTAGCGGAGACTCCTACAGGA	Core staple
10[160]	TTATTCAATTAAATTACATTA	Connector staple
28[160]	GTGGAGCCATGTTTACAGTA	Connector staple
46[160]	GATTTTGAGGAATTGCGAATC	Connector staple
8[166]	TAATGGAGGGTTGGATTATACTCTGAA	Connector staple
26[166]	GAAACCAGGCAAACACCGCTCTGGTGGCG	Connector staple
44[166]	CCTCAGAGCCACCACCCCTCAGAACCGCCAG	Connector staple
2[163]	GCAGATTACCGCAGAGGGCAA	Connector staple
20[163]	ATTTTAGAAAAGCTTCAGAC	Connector staple
38[163]	CCTTAGCGTTTCTGTATCG	Connector staple
4[163]	GAACCACCAAGGTCAAGTGGCAATG	Connector staple
22[163]	TATCAGGTATCAAACGTTAATATG	Connector staple
40[163]	CCGCCACCAAGAGCGTCATACATAA	Connector staple
5[147]	TCGGCATTAAAATACCGAAC	Connector staple
23[147]	TTTGAGAGATCTACAAAGAG	Connector staple
41[147]	TCAGAGGCCACCCCTCAGGC	Connector staple

1[147]	TGTCCATTGATTGAAATGGATTATTCATAT	Connector staple
19[147]	TGGGGCGATAGTAGTATTCAACGCAAGGATAAGG	Connector staple
37[147]	TCAACCGAATTATTGTAGCGACAGAACAGTTT	Connector staple
6[163]	CAACAGTTGATTGCCGATT	Connector staple
24[163]	TTGTTAAAATGTGGGAACAGT	Connector staple
42[163]	CTTTGATGATCAAGAGAACG	Connector staple
0[166]	GTAGCAATACTTCCACGCAAATTAAACCGAC	Connector staple
18[166]	ATCAATTCTACTACGAGCTGAAAAGGTGGG	Connector staple
36[166]	AAATATTGACGGAATTGGGGAGGGAGAA	Connector staple
9[12]	TTTTCAGAAATGCCGGGGCTCTGTGGCG	Vertex staple
15[16]	TTTTTCCGCTCACAACTCGGCCAGCTGCATTAATGTTTT	Vertex staple
38[30]	AAAACAAAAGATAGATAAATTACGAATATTACCGGCCAATTTT	Vertex staple
36[34]	ACTCCTCATACATCGAGGCCAGCCATATAATTGTGTCGAAATCCGCGACTTTT	Vertex staple
49[14]	TTTTCTTAATTGAGAATCGTAATAAGAGAATT	Vertex staple
45[12]	TTTTAATAATATCCCACCTAGCTCTCGA	Vertex staple
51[16]	TTTTTACGAAAGCAAATACAATTCTCTGAATCTTTT	Vertex staple
37[12]	TTTTGCAACCGTAGAAAAATAATTACGCCCTTTAAGAAAACAAG	Vertex staple
39[9]	TTTTTATCTTACCGAAGAGTATGTTATT	Vertex staple
20[31]	TTTTGTACAGCGTAACAGACGAGAAGAAAAATCTACGTTAATTTT	Vertex staple
18[34]	TGTAGCTTGTCTGGTGACCAATTAGCCGGCGTTGCGGTATGAGCCGGTTTT	Vertex staple
31[14]	TTTTCTGCTCATGTTACCTTGAAAGAGGTTT	Vertex staple
27[12]	TTTTGAATAAGGCTGCCCTAACGCTGCAA	Vertex staple
33[16]	TTTTAAACGAACTAACATCATAACCCCTCGTTACCTTT	Vertex staple
19[12]	TTTTTGCACACTAAAGTACGGCAACATGCCAACTCCAACAGGCG	Vertex staple
1[12]	TTTTTATAACCGTCTTCTTGCTTGCAAGCGAAAGGAGAACG	Vertex staple
21[9]	TTTTTACCGACCGGAATTAAATATT	Vertex staple
2[30]	TGGGCATCAGTGTGCACGTTTCACTCTGTGAAATTGTTATT	Vertex staple
0[34]	CTATGGCTTAGATTACACTCGGCTGGAGCCAACGCTAACAGTAGGGTTTT	Vertex staple
13[14]	TTTTTCACTGTTGCCCTGGGTGTGTTCACTTT	Vertex staple
3[9]	TTTTAAAAACCGCTAACGAGCACGTTT	Vertex staple
7[24]	GGGGTGGTTGCCCAAGCAGCGTTCACTAATGTGATGGAAGCGCATTAGATAGCAATAGCTTTT	Vertex bundle strand
25[24]	CCAAAATGTTAACAGTTCACTGGCAAATTCATTGAAAATCCTGTTGTCAGGGCGTTT	Vertex bundle strand
43[24]	GCGTAGAAATAACAAAAACAGGAATGCGATATCTAGAAAACGAGAACGTTAACCGGATTTT	Vertex bundle strand
7[9]	TTTTAATCGGCCAACGCTGCTCGGGCTTCACTAATCTGATGTATAAAAGTACCGCAATGAAACGG	Vertex bundle strand
25[9]	TTTTAGACGACGATAATCATTCACTGCAAATTCTATTGAAATCGTTAACGACTCCAAGATG	Vertex bundle strand
43[9]	TTTTTACCAACGCTAAAACAAGAAAATGTCGATATCTAGACAGATGAACGGAATTGAAACCA CATCAGATTAGTGA CAATGAGAAATTG CTAGATATCGACATT	Vertex bundle strand (complementary) Vertex bundle strand (complementary) Vertex bundle strand (complementary)

**Table S5.** Sequences of the cube with short connector staples.

5' – end	Sequence	Note
1[84]	AACGGTATATCCAGAACAAACCACACAGGATTTAACGGAATGGT	Core staple
0[54]	GCGCCGTAACAGAGTGCCTGTCATAAGTTACCTGTCC	Core staple
3[102]	GGAGGCCCTGCTGGTAACGCCAGCGGCCAAGTT	Core staple
3[144]	GTCAGTAATAACATCACCGAGTAAGCAAAGAAGATTCTGCT	Core staple
2[44]	ACTAAAATCCTTATAATGAGAGACGCCAGGCTGC	Core staple
2[51]	AGAGCAGCCAAGCGCAGGTTCTCGTAATCATGGTCAGAGC	Core staple
2[72]	GTGCTTACAGTAACATCCTCATAGACAGG	Core staple
2[93]	CTGTTACATCGATTCTCAATTATCATCATTGAA	Core staple
2[107]	AGATGGCTTACCGCACCCTTGCAGC	Core staple
2[114]	CAGCGGATTCCAGAAATTATCAAACAAAGAAACACTTTA	Core staple
2[135]	TAAAATACCAAAATTATCAAAGTAACATTATCATAAAC	Core staple
5[25]	GTGGTCCGATCCACGCCAGAG	Core staple
5[60]	AAAAGTTGGGTGAGCCGCTTAAT	Core staple
5[123]	GCGATTCTGGAATCCTAGTAGAAGAACTCATTATATCGT	Core staple
4[41]	CAAGCGGAATCGGCATTAAAGCGGGCGCCGCGTA	Core staple
4[83]	CAGCTGAAGTACGTAAGAAGGTATTACCGCAGCCATTGCTGAC	Core staple
7[32]	GCGAACCTGTTCCACACAACATACTAGCTGCGGTAGTA	Core staple
7[74]	AGTACATTAAGGGTGCCTAATGAGGAGGATCCGCGTCATCG	Core staple
7[81]	CGGACGTAGATGAACTTGTTCTCCGGGTACCGAGCAAGC	Core staple
7[91]	AAATGAATAGAGCGTCAAAGCTAACCTCGAGA	Core staple
7[109]	ATCCTGCAACAGTGCCATTGAAACCCCTCAACA	Core staple
6[51]	CCGAAGCATAAAAGTGTATCGAACATTCCAG	Core staple
6[114]	ACTGTATTAGACTTTACTTGCAGGATGATGACAT	Core staple
8[65]	CAGTTCTTTCACCGCCTGGCCATCA	Core staple
9[60]	CACTGCGTTACGTACGGTGGTGCCTG	Core staple
9[130]	TTCATTTGCAAAATATGGCGGTCACTATTATAAT	Core staple
11[88]	CTTAAAGCGTGGCACAGACAAATATCGTGAGAGCCAAA	Core staple
11[130]	TTGAAGGGACCGAACGTAGACCGGAGGTGACAAA	Core staple
10[37]	CCCATCAGAGCGGGAGCCTACAGGTAGGGCGCTGGCAAACA	Core staple
10[58]	TGTGAGGGCGATTAAGCCCCGGGTACGCTGCGCGTGTGA	Core staple
10[65]	CCCGGGTGCCTTGTCCGATAGCCCGAGATTGCGCTCACC	Core staple
10[100]	CCTATCTGAGAAGTGTAACTATCAAACCGCTATGGACCAA	Core staple
10[114]	CTCGTCCGGTCAATATATGTGAGATTCTGAAAGAAAAAGC	Core staple
10[121]	TTTATCAGTGGAGGCTACTTGCCTGACATTTGACGCTCGTAA	Core staple
13[74]	CTGGTGTAGAAGGGTAAGAGCACAGTAC	Core staple
13[95]	AAACCTTGCTCTGTAAGTAGCCAGGTTAGCGCAGC	Core staple
12[37]	TAATAATGGTAAAGGTTCTTAATACAAT	Core staple
12[48]	TCTTACCAACGGGTGTCACTTATTGGGGTTGCAG	Core staple
12[79]	TCGCTTTAGTATCATAGCGTGCCTG	Core staple
12[100]	TAACGATGCTGATTGCCGTCGCTGACAATAAGAT	Core staple
12[121]	AAACAAACGCCGGATGAAACAAACTTAATGGAACAGTCGA	Core staple
15[46]	CGGCTTCCAGTCGGGAGTTGCGGCCATGCCGACAT	Core staple
15[67]	CTGTTGCGTTGCGCTAGTGGTTACGATCCGGGTGCGACT	Core staple
15[88]	GATAATACATTGAGGACAGAAGGGAGCGGCTCACAGTTGTA	Core staple
15[109]	AAAACAACATAAGATAAACTATTGCGTAGGGAGAACGAG	Core staple
15[130]	AATTAAAATCTTAGTGAACCTCGAAAAGCCTGATCGTT	Core staple
17[134]	CAGCAGCAACCGCGCGCCCTTGT	Core staple
16[167]	TCCCCTAAAAAGCGCACAAGAACGCAACGGCAGCACC	Core staple
16[188]	GTGTACATCGACATAAAAGTCGGTGGTGCCTCCACGC	Core staple
16[209]	GCCGCCAGCAGTGGCGGTTAACAGCTACGGCTGGAGGT	Core staple
16[221]	TTCTGCTCATTTGTCAGCATCAG	Core staple
19[53]	CAGTTAATCATAGGGAGCATAGGAGAC	Core staple
19[84]	TTTAGTTAATAAAGGCTCATCTTGTGCGAACAGA	Core staple
19[116]	GGTTCGGAACCTACCCCTCTCACGGAAAAGCGACGACATCG	Core staple
18[44]	AATTAGAGAGTACCTTGCCCGACTG	Core staple
18[65]	TGGTCCCTTGTATAAGACATC	Core staple
21[102]	ACCTAGCAAATTAAAGCTGACCATCTAC	Core staple
21[144]	CTTACGATTAACATCGCTATATAACCTACCGAACGAC	Core staple
20[44]	TTCCCTTACCTGACTAGTCATAAAAGAAGTAATT	Core staple
20[65]	TTACAGAACGAAAGCGGAGCGCTCTAATAGTCAGA	Core staple
20[72]	AAATAGGGGGATGTGCTAGGACTAGAGTAGA	Core staple

20[93]	GAAGATTAAGCTCGCTTAGTTGAGGGGAAGAC	Core staple
20[107]	ATTAACCCTCTAGCTGGAACGGTGCCCCAAACCC	Core staple
20[114]	GGTGGTTTCAGGGCGAGTATCGGGGCCATCGAACGCTT	Core staple
20[135]	GCAGTAAACTCAGGCTGCACTCATAGGTACCGTGGGAGC	Core staple
23[25]	TAAATCAAACCCCTCAAATA	Core staple
23[60]	AGTAGAGGAATAATTGCCTTAGAGCTTAATTATAA	Core staple
23[123]	ATTAGTAATGCCTGAAACATACAGGCAAGGCAAAT	Core staple
22[41]	TTGATCATCAGGTAATATCGTCAGGAATAATGC	Core staple
22[97]	CATGTCATCATAGACTGGATATGTCAAATCACCCTCAATAT	Core staple
25[32]	GCGAACACTGGAACACATTATTGTTGGGAAACCCAGCCG	Core staple
25[60]	CCAAGAACGGACCTTCAGGAAGTTGATTCCTAACCTCGGA	Core staple
24[51]	ACGGAAAGATTCATCAGGCTCATTTGGGCTAGG	Core staple
24[72]	TACTTAGGAATACCAACACTTATGCTTCAACTAATC	Core staple
24[90]	TCCGCACAATATGAAAATGTCAGCTGGCGAAAATGTTT	Core staple
24[114]	AATTCAACATTAATGTTAGATGCCTCAGGGAT	Core staple
26[65]	ACAGAGGGGAATACTCGCGAATCTTAT	Core staple
26[86]	CGCTTATGTACCCCGTAAATAAT	Core staple
26[107]	GTGCAGAAAAACTGTAACACTAGGATATTCCAAAAGGTTG	Core staple
27[74]	AATGATTTAAGAACTGTTGAGATATAACGCCAAAGGTTG	Core staple
27[129]	GATCGCGCAACAAGATTGACAAGAGAAATCGATATAA	Core staple
29[39]	GGCACCGAACAAAGTTCATCCATGCTG	Core staple
29[53]	CTGGATTTCTAGTAAATACCAGTCAGGACACAG	Core staple
29[88]	GGCAGGCGGAGACATGGGGCATAAAAGCTAAATCGGGTGA	Core staple
29[102]	GTAGCAACGGTAGATACATTTCGCAAAAGAATAAAACATTATGACTGTA	Core staple
29[130]	GTTATGCCTGAATGCGGGAGAGGGGAGCAATATA	Core staple
28[72]	CTTATACGTAATTGCAAGGGAGTTAGGCTTGGCAA	Core staple
28[93]	AGAAAGGCGGAAACAGCGGATCATTAATCAATTA	Core staple
28[121]	GCACAATAACCTGTTAAATAAATTACTTTGCGGGAGAAAT	Core staple
30[37]	GGCGAACGAGGCCAGACGGTCCCTCGCAC	Core staple
30[48]	TCAATCCGAACGAGATTACCCCTTGCATATTCA	Core staple
30[59]	CGCTTAAACGGGTAATTTCATGTCAGAGAAGA	Core staple
30[79]	TAATCGGGGTATTGCTGAGATGCTTG	Core staple
30[100]	GCACCTTGGCGGATCGGGAGGTAACGCCAGAAAG	Core staple
30[121]	AGCCAGCAGCGAGAACATCGGCTCCGTGGTAAGGAA	Core staple
33[46]	GTAAGGCATAGTAAGAGAGAGGCTAAATCAAACCA	Core staple
33[91]	CCTTCCGTAGGCCACGTGCACTGCCGTGAATTACTTCTGG	Core staple
33[109]	TCAAGGAACGCCATCAATGATAATCGGGCTTGG	Core staple
33[130]	GAGTCAGCTATTAAACAGGTGTTGGCCAGTCAGACA	Core staple
35[134]	GCCACTACGAAGGGGTCGCTGAGGCT	Core staple
34[167]	CCACGCATAACCGATATATCCACCAACCTAAAAGCAAAGAG	Core staple
34[188]	GACAATGACAACAAACCATCGCGAAAAGAATAACTAAACAA	Core staple
34[209]	CTTGATACCGATAGTTGCGCCCTCATCTTGACCCCCAGCGA	Core staple
34[221]	TTTCTTAAACAGTTACCAAGCG	Core staple
37[53]	AAAGTTTTAGGAGAGAATTCTGCCA	Core staple
37[84]	ATTTTGTCAAATCAGCAAC	Core staple
37[116]	TTTATGTAAGGCTTAGGAGGCCCTTAATTGTTGTTACCG	Core staple
36[44]	CATAGATAGCCGAACAAAGTTAAGTCCAGCGAAC	Core staple
36[65]	CGGAGAAGGAACCCAGAGAG	Core staple
36[75]	GCAATACCGGAAGAGAAAATCTGACCTATCATA	Core staple
39[102]	CCGGGAATTAGAGCCAGCACAACTCAATCGCGAGACTATATCAGC	Core staple
39[144]	TCACATTAAGGTAATCAAAGGAGCAGTTCACTCGTATCGT	Core staple
38[44]	ATACCTGAACAAAGTCAAAAATGAGTTCAAAGA	Core staple
38[65]	ACAATTGAGCGCTAATAACGATTATTGAGG	Core staple
38[72]	ATAACCCCTGTAGCATTGAGACGCTAAGTT	Core staple
38[83]	ATCAAAGGATAGCACCATTACCATAGCGCCA	Core staple
38[93]	TCTAGCCCTTTCGCGTAGCCCGGAATAGATCG	Core staple
38[107]	ATTGAACCGCCCTCCCTCGGGTAGGCCAGAACAGT	Core staple
38[114]	CCCGATCTAACCATGTCACCGTACGCCGTCAGAGGGGTCGG	Core staple
38[135]	CATTCCAGACGGATAGCACCCTACTCAGTACCAAGGCGCATG	Core staple
41[25]	GAGAATTAACACTACAGAGCTT	Core staple
41[60]	GTAAGAATTGAGTTACCAATACCCAAAAGAAATAA	Core staple
41[123]	CCGTTCGGTCGAACCAAGTCACCGACTTGGAGATGG	Core staple
40[41]	CAGCCTTGAACACATAAGGAGAGTAAGCGATTAAG	Core staple
40[97]	TGGCCTTGATCAAATAAGATCAATCAGCGAACAGAGCC	Core staple

43[32]	CCACCCAGCTCAGATATAGAAGGCATCGTAGGAGCATGCCG	Core staple
43[60]	AAATAATGCAGACGACAAAATATAAAACGCAAAGCACATAA	Core staple
43[130]	GTCCAGCATTGACAGGAAGAG	Core staple
42[51]	TTAGTATTCTAAGAACGAAGCAAGTAATCGGCAAC	Core staple
42[72]	TTTTTTAGGGAACCTCAGTACCGCATTCCACGGAGGTGAACGAAA	Core staple
42[90]	AACAGGACTTGGGATCCCAACAAACTACAACGATTCCCT	Core staple
42[114]	GCCCTATTCTGAAGATAAGTTCAAGGAGCCAAAGGTTGGGT	Core staple
44[51]	GCGCAATCAACCGTTTATTTCCTTAT	Core staple
44[107]	TAACATTAAGCAGGTACAGCATAACCCGAGCGTTAAGG	Core staple
45[74]	TATCACTCATCGAGAACCGAGGGCTGAAGCCTTAAATCAAAT	Core staple
47[39]	AGTCATTTAAAGGTCGAAACATCTGG	Core staple
47[102]	TTAGCAAATCAATAGAAAATTCACTCATTTGGAAACGTCACCAATATAG	Core staple
47[130]	CTTCGGCATTCACCCCTCAGAACCCGCCGCTCTGAATGGTA	Core staple
46[121]	TATACAGCGCAAAGATATCACCTCGATAGCAGCACCTTT	Core staple
49[84]	GGCTGAAAGACAACACAGACTTCATA	Core staple
49[126]	TAGAGTGAGAAATGCCAAAAAAAGGCTTTAGTAAGCCACGCA	Core staple
48[37]	ATATTAACACGCCAACATGATTGATTGTT	Core staple
48[48]	ATCATCGTAGAACCCCTGTTTATTGCGAAATAG	Core staple
48[58]	GGAAAGTTAATTCTCTTTCTAAACAAACCC	Core staple
48[69]	CAAAGTACTGCTTGTTCAGCCAGCCATTGGTTAACGTCGAGG	Core staple
48[90]	TTGCTTGTAGAACGGACCAGTATCTCACAAACAAATCCGTATA	Core staple
48[100]	GTTCCTTTAACCTCTGCTGATGCGTAAACCCCT	Core staple
50[104]	TGATATAAGTATTTAACCCACCTTAATGCCCTGCGCTATT	Core staple
51[46]	CCGGTTGCTATTTCAGAGCCTAATCAACAGTAA	Core staple
51[109]	AACTTGAGTAACAGTCGAAATCCTCACTGAGATAG	Core staple
51[130]	AAAAGTTTAAACGGGGTTGAAAGATAGGAAAGTTTGTAAC	Core staple
53[134]	AATTAAATGTTGAATTATCAAAA	Core staple
52[167]	ACGCTGAGAAGAGTCAATAGTGAATACCGACCGTGTGATAA	Core staple
52[188]	ATAGCGATAGCTTAGATAAGATAAGGCGTTAATAAGAATA	Core staple
52[209]	TCCCCTTAGAACCTTGAACAAACACCGGAATCATAATTACT	Core staple
52[221]	ATTAATTAAATTAGAAAAACCGCTG	Core staple
0[166]	GTAGCAATACTCTTGATTGAAATGGAT	Core staple
2[163]	GCAGATTCCACCGACTCGCCATTAA	Core staple
4[163]	GAACCCACCGAGAGATAAAACATAAAACACGACCAAATC	Core staple
7[137]	CCCGGTTATCTCGACAACTCGTATAAGTTGTAATCCTACCT	Core staple
6[163]	CAACAGTTGAAAGGAATTGAGGAATCAATCAACCATATAGTTACACC	Core staple
8[166]	TAATGGAAGGGTTAGAACCTTATCTGGTC	Core staple
10[142]	TGAAAGAGTCTGTCATCACGCA	Core staple
10[160]	TTATTCAATTCAATAAAATCGC	Core staple
12[142]	TTTATCAAGAAAACAAAATT	Core staple
12[163]	ACAATTTCATTGTAATTGATTGTTGGATT	Core staple
14[160]	GTTATTAAATTAAATAAAATCC	Core staple
18[166]	ATCAATTCTACTAATAGTAGTATTCAACG	Core staple
20[163]	TTTTTAGAACCCCTATTGGAGAGA	Core staple
22[163]	TATCAGGTCTTGCCTGAGAGTCTTAGCTATATATTAAAGC	Core staple
25[137]	AGCTGTTAAATAACAAACCCCGCGTAATGGGAGCCAGCTAGA	Core staple
24[163]	TTGTTAAAATTGCGCTTAATTTAAATATTGCGCATGACGGCCGGAA	Core staple
26[166]	GAACCCAGCGAAAGCGCCATTAAATTGTA	Core staple
28[142]	CGGTTTCATTGGGGCGCGAGCT	Core staple
28[160]	GTGGAGCCACGAGTGC	Core staple
30[142]	CTTGAACGTACAGCGCCAT	Core staple
30[163]	CCGGAATTGTGAGAGATTCCGGCACCG	Core staple
32[160]	CGCGGGATTGACCGATTCTCC	Core staple
36[166]	AAATATTGACGGAAATTATTGAGCAG	Core staple
38[163]	CCTTAGCGTCAGACTGTCAAGGCCAC	Core staple
40[163]	CCGCCACCAAGAACACCACCGAGGCCACCCCTAGCGCGGTA	Core staple
42[135]	ATAGTATTAAGAGGGCTGGGTTGCCCTAGAAAA	Core staple
42[163]	CTTTGATGATCAGGAGTGTACTTACCGTTTCAGGTTAGTAACCT	Core staple
44[166]	CCTCAGGCCACCCCTCATCCAGTAAGC	Core staple
46[142]	TCAGCGACATTCAACCGATTGAG	Core staple
46[160]	GATTTGCTAAACAAATGAAT	Core staple
48[142]	TCTAAAGGAACAACTAAAGG	Core staple
48[163]	ATAATTTCACGTTGAACCGCCACCCCTC	Core staple
50[160]	ATTAGGATTAGCGGAGACTCC	Core staple

13[157]	AATTACATTTA	
31[157]	GTTTACCAAGTA	Connector staple
49[157]	AATTGCGAATC	Connector staple
9[160]	ATACTTCTGAA	Connector staple
27[160]	TTCTGGTGCAGG	Connector staple
45[160]	AGAACCGCCAG	Connector staple
11[154]	GCAGAGGCCAA	Connector staple
29[154]	AGCTTTCAGAC	Connector staple
47[154]	TTTCTGTATCG	Connector staple
7[157]	AGTTGGCAATG	Connector staple
25[157]	ACGTTAATATG	Connector staple
43[157]	GTCATACTAA	Connector staple
5[157]	AAATACCGAAC	Connector staple (excluded for folding in figs.2&3)
23[157]	TCTACAAAGAG	Connector staple (excluded for folding in figs.2&3)
41[157]	CACCCCTCAGGC	Connector staple (excluded for folding in figs.2&3)
3[157]	TATTTACATAT	Connector staple (excluded for folding in figs.2&3)
21[157]	CAAGGATAAGG	Connector staple (excluded for folding in figs.2&3)
39[157]	AATCAAGTTT	Connector staple (excluded for folding in figs.2&3)
15[154]	TTTGCCCCATT	Connector staple (excluded for folding in figs.2&3)
33[154]	GTGGGAACAGT	Connector staple (excluded for folding in figs.2&3)
51[154]	TCAAGAGAAAGC	Connector staple (excluded for folding in figs.2&3)
1[160]	AATTAAACCGAC	Connector staple (excluded for folding in figs.2&3)
19[160]	AAAAAGGTGGG	Connector staple (excluded for folding in figs.2&3)
37[160]	GGAGGGAAGAA	Connector staple (excluded for folding in figs.2&3)
9[12]	TTTTTCAGAATGCGGCGGGCCCTGTGGCGC	Vertex staple
15[16]	TTTTTCCCGCTACAATCGTGCAGCTGCATTAAATGTTTTT	Vertex staple
38[30]	AAAACAAAAGATAGATAAATTACGAATCATTACCGGCCCAATT	Vertex staple
36[34]	ACTCCTTCATACATCGAGGCCAGCATATAATTGTGTCGAATCCGCGACTTTTT	Vertex staple
49[14]	TTTTCTTAATTGAGAACATGTAATAAGAGAATT	Vertex staple
45[12]	TTTTAATAATATCCCCTCTAGTCCTGCGA	Vertex staple
51[16]	TTTTTAGCAAGCAAATACAATTATCTGAAATCTTTTT	Vertex staple
37[12]	TTTTGCAAACGTAGAAAATAATTACGCCCTTTAAGAAACAAG	Vertex staple
39[9]	TTTTATCTACCGAAGAGTATGTTTTTT	Vertex staple
20[31]	TTTTTGTACAGCGTAACAGACGAGAAGAAAAATCTACGTTAATATTTT	Vertex staple
18[34]	TGTAGCTTGTCTGGTGACCAATTAGCGGGGGTGCCTATGAGCGGGTTTTT	Vertex staple
31[14]	TTTTCTGCTTCAATGTTACCTTTGAAAGAGGTTTT	Vertex staple
27[12]	TTTTGAATAAGGCTGCCCTAAGCTGCAA	Vertex staple
33[16]	TTTTAAACCGAACTAACATCATAACCCCTGTTACCTTTT	Vertex staple
19[12]	TTTTTGCAACTAACAGTACGGCAACATGGCAAACCTCCAACAGGCC	Vertex staple
1[12]	TTTTTATAACGTGCTTCTGCTTGTCAAGCGAAAGGAGAACG	Vertex staple
21[9]	TTTTTACCGACCGGAATTAAATATTTT	Vertex staple
2[30]	TGGGCATCAGTGTGACGTTTCATTCTGTGTGAAATTGTTATTTT	Vertex staple
0[34]	CTATGGTCGTAGATTACACTCGGCTGGAGCCAACGCTAACAGTAGGGTTTT	Vertex staple
13[14]	TTTTTCACTGTTGCCCTGGGTGTTCAGCTTTT	Vertex staple
3[9]	TTTTAAAACCGCTAACAGAGCACGTTTT	Vertex staple
7[24]	GGGGTGGTTGCCCGAGCAGCGCTACTAATCTGATGGAAGCGCATTAGATAGCAATAGCTTTTT	Vertex bundle strand
25[24]	CCAAAATGCTTAAACAGTTCAGGCAAATTCTCATGAAATCCTGTTGTCAAAGGGCGTTTT	Vertex bundle strand
43[24]	GCGTAGAAATACATAAAACAGGAATGCGATATCTGAAACGAGAAATGGCTCAAAGCGATTTT	Vertex bundle strand
7[9]	TTTTAATCGGCAACGTGCTGCGGCTTCACTAATCTGATGTAAAGTACCGCAATGAAACGG	Vertex bundle strand
25[9]	TTTTAGACGACGATAATCATTAGTGCACAAATTCTCATGAAATCGTAAACGACTCCAAGATG	Vertex bundle strand
43[9]	TTTTTACCAACGCTAAAAGAAAAATGCGATATCTAGACAGATGAACGGAATTGCAACCA	Vertex bundle strand
	CATCAGATTAGTGA	Vertex bundle strand (complementary)
	CAATGAGAAATTGCA	Vertex bundle strand (complementary)
	CTAGATATCGACATT	Vertex bundle strand (complementary)

**Table S6.** Sequences of the pentagonal prism.

5' – end	Sequence	Note
1[53]	CGCCAACCGCAAGAAAAGTTACCTGTCC	Core staple
1[84]	AGTGAGGAAAACGCTATGCGCGTACTAGTGTGTTGGT	Core staple
0[44]	CGTCACCAACACCCGCCAACAGAGCAG	Core staple
3[102]	AATCCATTGCAACAGGACCACCGACGGACTTGCCTTAGAA	Core staple
3[144]	CACTATCGCCCTGCTGGTAGCAAATTAAATTACATTGCTTA	Core staple
2[44]	ACTAAAATCCCTATAATGAGAGACGCCAGGCTGC	Core staple
2[65]	TCCGAATAGCCCGAGATTGCCCTCAC	Core staple
2[72]	GTGCCAACGGATTGCCGTACCGTATAATC	Core staple
2[93]	GAATTGAAATGACCTTCTCATCAATATAAATT	Core staple
2[107]	CAGAACATGCCATTAAAAATGAATCTGGCAATA	Core staple
2[114]	CGTTCGGCATCAGATGTTGGATTCTGATTACAGTAT	Core staple
2[135]	TGAATTCAACGTAGATTAATGGAAAGGAGCGGAATTACGTT	Core staple
5[25]	GTGGTCCGATCCACGAG	Core staple
5[60]	AAAAGTTGGCGCTTATTGACGAGCACGTGGTA	Core staple
5[123]	ACCGCTAAGTATTACCAAGAACATATTACCATCACCATC	Core staple
4[41]	CAAGCGGAAATCGGCATTAAGCGCGTAAGCTTCC	Core staple
4[97]	ACCTGCTAACACAAGCTGAAGTTAACGCGGAACGTGATA	Core staple
4[135]	CGCCAGTTGAAGATTAGAATTAAAAGTTCCAC	Core staple
7[32]	CGAACCTGTTCCACACACATACTAGCTGCGGTATTGAG	Core staple
7[60]	TTTACGATCCCGCGTGCTCAG	Core staple
7[74]	AGTACATTAAGGGTGCCTAATGAGGGGATCCGCGTCCAAAC	Core staple
7[109]	ATAAAATCTAAAGCATGCCCTAACAAATATGCTC	Core staple
6[51]	CCGAAGCATAAAAGTGTATCGAATTCCAG	Core staple
6[90]	ACTTTAGCTAACTCGAGACGGGGGAGAAACAATCTGTTCTCCGGGT	Core staple
6[114]	CATATCCTTGGCCGAATCATCATATTACGTAA	Core staple
8[65]	CAGTTCTTTTACCGCCTGGCCCATCA	Core staple
9[60]	CACCGCTAACACCGTCGGTATGGGCTGGCGGTGCCTTG	Core staple
9[130]	GAATTTCAGGAAATCAATGAGAGCAGCAGCAAAT	Core staple
11[39]	CGGACATCCCTTTAGACAGGAACATAA	Core staple
11[53]	CCAAGCGCAGGTTCTCGCTAACATGGTCAGAGC	Core staple
11[88]	TGCTGGCTATTAGTCGGGGAAATACCTACATTTGACTTT	Core staple
11[130]	TTCCCTGAAGAACGAAACCCAGGCCA	Core staple
10[58]	CAGCAGAACCTCGAGAATGGTTGCATGCCCGCTACAGTTGA	Core staple
10[72]	GCTCTGATTGGCTTCCCGCAAACGTAGAACTGAT	Core staple
10[100]	TGCGAAAAGAGTCGTCGGCCAGCGCTGAAATGGATAATA	Core staple
10[114]	CTCTCGTGGTCGTATTAAATTCTGATAATACATCA	Core staple
10[121]	GCAGCAAATTAAACCGTTGAATATATTGGCAGATTACCTC	Core staple
12[37]	AATGCTCGTATTGCCAACCGCAGCAGTAGG	Core staple
12[48]	GCTTAATACGGGGTGTCACTTATGGGGTGCAG	Core staple
12[79]	ATAGCGATAGCTTACAACGGTGCCGCAT	Core staple
12[90]	TCCTTGAGTGGCCCTACATCGCTCAAATATCAAGTATTAG	Core staple
12[100]	TCCGTTTTTCGCTCGATAACCGTACAAAGGCA	Core staple
12[121]	ATCCAGCCTCGTAACAATTCTACATAACCTGCTTCTTCT	Core staple
14[69]	ACCGAGCAAGCCTGTCGGCTCAGTGG	Core staple
15[46]	CGGTTTCCAGTCGGAGTTGCAGCTACGGCTGGAGGTGTC	Core staple
15[98]	ACAACCTCGATGCGAACATCTCACAGTTGACAAACAATTG	Core staple
15[109]	TAATTGAGGATTAGAAACCCCTCAAGTAACAACCAAGTAACG	Core staple
15[130]	ATTAGCCGTAATAGATAGTTGGCTAACGGAGGCGACAGA	Core staple
17[130]	GTGCCATCCACGAAACAGGTAAGTTAAACG	Core staple
16[167]	CACAGGCCCTTGTGATGCGCTACGGCTGGAGGTGTC	Core staple
16[188]	AAAATCCGAAAAAGCCGAGCATCAGCGGGGTATTG	Core staple
16[205]	GTGTACATCGACATAAAAGGCGCTTCGACTCA	Core staple
19[53]	GAGCACCAACCTAAAGAACGAGTAATCGA	Core staple
19[84]	TCGAAAAAAATCGGTTGATTAAATTGCTCATTAGTACG	Core staple
18[44]	TTTTTTGATAAGAGGTTTTAATTCTT	Core staple
21[102]	TACCAAGCATAAAAGCTGGTCAAGTTCCAACAGCATTGCTC	Core staple
21[144]	ATTACAGGCAAGGCAAGCTGAAAGAACGTCAGCTGCCA	Core staple
20[44]	GCTAACGAAAGCGGATTCTCAAATTAGTAACACT	Core staple
20[65]	AAAAAAAGATTAAGGAGAATAAAATAGC	Core staple
20[72]	AGACAAGTGGTAACGGGTTAAACATTACATT	Core staple
20[93]	CCATTCCCCAAAGGGGGAAACGGCTCAGGAATTAA	Core staple

20[107]	AGAGCCGGAGAGGGTAGGTCAATCAAGCAAATAAT	Core staple
20[114]	AGGAAACGACCCTATTCTCAGGCCAGTTGAGGGGACGAG	Core staple
20[135]	AAATTCAGAGGCATCCGCTTCTGCATCGTAACCGTCTCC	Core staple
23[25]	CTGACTATTAAAGAAAACAAGT	Core staple
23[60]	CAATATCGCGCATTTTATGCTGTAGCTCAAGAAC	Core staple
23[123]	TTAACAGGGCCTTATCAAATAAGCAATATATTTTAA	Core staple
22[41]	ACAGTTCTAGTCAGTCAAAGCTTGCTCCTAAATAT	Core staple
22[97]	TGATAATCAGAAGGAATCGTCAGTCACCGTTAGCTGATA	Core staple
22[135]	AATACGTTAACATAGGGAAACAAACGGCGGAGAT	Core staple
25[32]	TTTCAGACGGAGATTATCAGTTGAAACCGGGCTTGAGAGC	Core staple
25[60]	TTATCAACGTAAGAACACAGA	Core staple
25[74]	GTCTACGAGGGCAGATACATAACGCATTATACCTTATGCCA	Core staple
24[51]	ATCGGAATACACATCGGAAAGAAACT	Core staple
24[90]	GCTTTAAAAGGAATCAATACTGCAAGGGGATTATTGAAATTACAGTC	Core staple
24[114]	TCGCAACCCGTCGGATTGCATCTGCAGCTTCGCA	Core staple
26[65]	AAAGACTGGATTCTTGAATCCCCGAT	Core staple
26[107]	CAGATTGTATATGTACCCCGTAATTAAATCAGTCAGTAA	Core staple
27[60]	TTACGCCGGAAAGAATACACGATTGCCACTGGATATTCTC	Core staple
27[129]	GCACGGTCCGGATTGTAACGTAAGGAACTAGCATCTAT	Core staple
29[39]	TCAGGACAGAATTCCAATTCTGCCATG	Core staple
29[53]	GACAACAAAGTAATTCAAATCTACGTTAAAGAT	Core staple
29[88]	GGTTCAATATGATATCCGCCAAAACATTATGACCCATATCA	Core staple
29[130]	AGCGATTCAATGAGAGATACACCGT	Core staple
28[58]	AGGTAGATTAGTTGAGAAATAGCGGATGGCTTAGCGAA	Core staple
28[72]	TAACGTCACCCCTCAGCAGCGAAAGTTAACGCCAG	Core staple
28[100]	GAATAACCTTTAGCTAAAGCCTTTGCGGGAGAAGAGAA	Core staple
28[114]	GACCAACGGCACAGCGATCAACGATGCCAACCG	Core staple
28[121]	GACCATTGGGGCGAGAATTAGTTCAACGCAAGGATAGGT	Core staple
30[37]	CGGACTTTGAAAAGGAAAGAGGACACGGTT	Core staple
30[48]	CGGGTATGATGTTCTGCTCAGGGGTAAGCTTAA	Core staple
30[79]	GCAGTTGGCGTTATCATATTGACCC	Core staple
30[90]	ATTTGCCGATTATGTGCTGAAGCCCCAAAAGTAGCCA	Core staple
30[100]	ATTCGGAACGAGGGTAGTTTACGTTGACCGG	Core staple
30[121]	GAATACAGAGGCCATGTTACCCACGGAAAAAGAGACCG	Core staple
32[69]	GGACGTTAACTAATCATAGTAAGAGCAAATGT	Core staple
33[46]	TTAATAACCTCTGTTAGCCAGAGTTCACTGTTCA	Core staple
33[98]	ATGTGAGCGACGACAGTATGAACTGGCTCCATCAACATTAA	Core staple
33[109]	TAACGTCGGCTTCTCAGGAAGCTGGCAGTCACGATGAG	Core staple
33[130]	GTGAACGCCATAAAAATTAAAGCCTTGGCCAGTTGAG	Core staple
35[132]	AAAAACACTCATCTAGGCCGTTTGC	Core staple
34[224]	TAGTTGCGCGACAATAATTGTGTCGAAA	Core staple
37[53]	CACCGACCGTGTGATCAGACGACACAAG	Core staple
37[84]	ATAGAACGACCATTAACAGGAATACCCATTGTAAT	Core staple
36[44]	CTTAGTTACCGAAGGAATAAGAGATAA	Core staple
36[65]	GAAGAAACGCAATAATAAGAA	Core staple
39[102]	AATACAAATCACCAGTAATTATGTTAATTGAAATCGAGGTG	Core staple
39[144]	ATCTATCACCCTCACCGTCAACCGGTGAGAATAGAAACGTTA	Core staple
38[44]	AAAGAGGGATTAGGCCAGCTTCAACGCTTCA	Core staple
38[65]	AAAGTCAGAGAGATAACCTAACGTC	Core staple
38[72]	TTGTGAGACGCCCTCTGACCTCACAATC	Core staple
38[93]	AAAGCGTAACCAAACGTTACCGTACCTG	Core staple
38[107]	TCTAGAGCGCCACCCCTAGACGATCGCAGTCACAG	Core staple
38[114]	TTTCGTTCTCACTGAGGTTAGTTGATATAAGTATAGTCG	Core staple
38[135]	GTCAATGAATATAGAAAACGCCGATAAGTGCCTGGAGG	Core staple
41[25]	CACCCCTGAACCATAAAAATT	Core staple
41[60]	ATACCCAATAAACCGAGCTGGCATGATTAAGAAGA	Core staple
41[123]	ACCCCTTATTCACTGAGCTGGCATGATTAAGAAGA	Core staple
40[41]	AGAATAAAAAGTCACAATGAACGAACAAATTACGC	Core staple
40[97]	ACAAACAAATAATTGTTGTCAGAGCCACCCGGAACCGC	Core staple
40[135]	GGATCCAGTAACGGGGTAGACTCCTCAAGAGCCAG	Core staple
43[32]	GCCTATCCTTATCCGTATTCTACCGCGCAATCAAAGCC	Core staple
43[60]	TTTCTGTGTTACATGTTGAAA	Core staple
43[74]	AATTAAATCCCACCTGCGGGAGCGAGAACGTATTAATAAA	Core staple
42[51]	GCACGAGCGTTAGCTTTCTCCT	Core staple

42[90]	CCTGCTTGAAGCCAAGAAAATGTAGCATTCCACAAGAACCGGAAGCAAG	Core staple
42[114]	TGCCATGAAAGTATTAAAGAGGGTACCGCCATAAT	Core staple
44[65]	GCGATCCAAAAAAATGAAAATAGGCTA	Core staple
44[107]	GTCTGAAAGTGGCCTGATATTCCCTCCCTTTCATACACC	Core staple
45[60]	TATCGCACCTAAATAAGAATACTTATGGTTTCAGCTAAAGTT	Core staple
45[129]	TCAGCCCATTTCACCGTGGTGGAGGCAGGTCCAGA	Core staple
47[39]	GACGTAATAAATAAAAAGAACGCAACTC	Core staple
47[53]	ACAATCAACACTGTCTTATCGTAGGAATCATATAAGA	Core staple
47[88]	TTATCACCGGAAACCAACACTAGCAAGGGCGGAAACGTATCA	Core staple
47[130]	GTAAATAGCCCCCACCTCAGAGCGACA	Core staple
46[58]	TACACGGAATAAGTTAAAA	Core staple
46[72]	TTAAGGTTGGTTATATAAATATCATCTTATAG	Core staple
46[100]	TTAATGGTTTACAGCGGAGCCAGGAACCATCGATAGAGCG	Core staple
46[114]	TTAATCGCAATCGTTTATCGCTCAGGAGTTTC	Core staple
46[121]	GAACAAAAGGGCGACATACTTGAGGTAATCAGTAGCGATTG	Core staple
48[37]	GGATTTCGAGCAAATAAGGCAGTGTGCTCAT	Core staple
48[48]	GTTACTTTAACCGGATAGATAAAAATAACAGAG	Core staple
48[79]	CAGCTTGATACCGATCCCATTCCAGAAC	Core staple
48[90]	AATTCTACCAAGTCAACGCCGAATCCTCATTTAAATGCC	Core staple
48[100]	TTTGCTGATGCAAATCCTCAAATAAGTTGGCCA	Core staple
48[121]	TGTAGACAAAAGGAAGAACACTAACCAAAAGGAGCCTTCCC	Core staple
50[69]	CCGTTTGAACCTCAAGATTAGTTGCTAATTA	Core staple
51[46]	ACGCCAGCTACAATTAGTTACAAGTCCTGTCA	Core staple
51[98]	CTATTATCCCGAATAGGTCGCACTCATGCTTATTCGGAAC	Core staple
51[109]	AAACCGTATAAACAGTTGCCAGAAACCACTAGATCTAATATT	Core staple
51[130]	CTGCACTGCTTGGTGTATCTGAATACCGTAATCCAGACCGA	Core staple
53[130]	AACACGGGAATCATAACCTTTAACCTCCGG	Core staple
52[167]	AAATCATAGGCTGAGAGACTTACTAGAAAAGCCTGTTAG	Core staple
52[188]	GAGTCATAGTGAATTATCATATCATATGCGTTATACAAAT	Core staple
52[205]	GATTAAGACGCTGAGAATCTTACCACTAGTAAAGC	Core staple
34[167]	CTGAGGCTTGAGGGAGTTAATGACCCCCAGCGATTATACCA	Core staple
34[188]	CATAACCGATATTCGCTGAGCGCGAAACAAAGTACAACG	Core staple
34[209]	TGACAAACACCATTGGCCACGGAGATTGTATCATGCCTGA	Core staple
5[25]	GTGGTCCGATCCACCGCAGAG	Core staple
23[25]	CTGACTATTAAAGAAAACAAGT	Core staple
41[25]	CACCCCTGAACCATAAAAATT	Core staple
0[166]	CTGAGTAGAAGAACTCAAACACGACCAGTA	Core staple
2[163]	ATTCTGGCCAACAGAGATAAAACAGAG	Core staple
4[163]	AGTATTAACACCGCTGCAACAGTCAGAAGATAGAACCGAGT	Core staple
6[163]	TCTTCTAGGAGCACTAACACTAATAAGGAATGAAA	Core staple
8[142]	TTGTTACCTGAAACAAATACTTCTTGATTAGTAATA	Core staple
8[166]	GCACGTAAAACAGAAATAATGAGGAAGGT	Core staple
10[160]	AACAAACATCAAGAAGCAAA	Core staple
12[163]	ACATAAATCAATATATGGAACCTACCATAT	Core staple
14[142]	CAGAGGGTTATGAGTGATTGAAATTACCTTTTTA	Core staple
14[160]	GCGGAACAAAGAAAGAGTAAC	Core staple
18[166]	ATTAACATCCAATAATCATTAGAACCC	Core staple
20[163]	AAATGCAATGCTGAGTCAGGTCTT	Core staple
22[163]	GGAGCAAACAAGAGAATCGATGAAAGGCTATAATGTGAAAA	Core staple
24[163]	TGTTAAATCAGCTATTTAACTATTTGTGG	Core staple
26[142]	AAGGGTGGAGAACCGCAGGTGGCATCAATTCTACTA	Core staple
26[166]	CATTCAAGGTGCGCAACTGTTAAAATTG	Core staple
28[160]	ACCTCACCGGAAACCCGCCAC	Core staple
30[163]	TCTCCGTGGTAAGGGAGAAACCGAGGCAA	Core staple
32[142]	GGGGGTGGCGTAGCTCTAGTCCCGGAATTGTGA	Core staple
32[160]	GGTCACGTTGGTGTATTGACC	Core staple
36[166]	ATTATTCACTAAAGGTGAATAAGTTGCCT	Core staple
38[163]	CTGTAGCGCGTTTCTCATCTCAGAGCCG	Core staple
40[163]	ACCACCAAGCGCCGCCAGCATTCAACCCGGCATTCAAGA	Core staple
42[163]	GGAGTGACTGTAATAAGTTAACGCTAAAGC	Core staple
44[142]	CCATTCTGTCAGCGGAATTGAGGGAGGGAAAGGTAAA	Core staple
44[166]	CCCTCATTTCAAGGAGATACTACATGGCTT	Core staple
46[160]	ACTTCAACAGTTATGGGAT	Core staple
48[163]	TTGAAAATCTCCAAAAGAACCGCCACCCCT	Core staple

50[142]	GCGACCCTAAAAGGCTAGGAATTGCGAATAATA	Core staple
50[160]	GGTTTGCTCAGTAAAGGATT	Core staple
9[160]	CAAAATTATGA	Connector staple
27[160]	GCGCCATTCCA	Connector staple
45[160]	CAGAGCCACTA	Connector staple
11[154]	GAAGATGATT	Connector staple
29[154]	GGGAACGGACA	Connector staple
47[154]	TTTGCTAAAGC	Connector staple
7[157]	TATCTAAAAAC	Connector staple
25[157]	CATTAATTGA	Connector staple
43[157]	TTGATGATATT	Connector staple
1[160]	ACATCACTTTT	Connector staple
19[160]	ATAGTAGTAGG	Connector staple
37[160]	TATTGACGGTA	Connector staple
13[157]	ATGGAACAGT	Connector staple (excluded for folding in figs.2&3)
31[157]	GAGATAGACCG	Connector staple (excluded for folding in figs.2&3)
49[157]	ATTTTTTCATT	Connector staple (excluded for folding in figs.2&3)
3[157]	ATAAAAGGGTA	Connector staple (excluded for folding in figs.2&3)
5[157]	GTGAGGCGGTC	Connector staple (excluded for folding in figs.2&3)
15[154]	ATTATCATTGC	Connector staple (excluded for folding in figs.2&3)
21[157]	TCATATATTCA	Connector staple (excluded for folding in figs.2&3)
23[157]	CCTGAGAGTCC	Connector staple (excluded for folding in figs.2&3)
33[154]	GTAATGGGAAA	Connector staple (excluded for folding in figs.2&3)
39[157]	TTAGCGTCATT	Connector staple (excluded for folding in figs.2&3)
41[157]	CCACCGAACT	Connector staple (excluded for folding in figs.2&3)
51[154]	AGGATTAGCGC	Connector staple (excluded for folding in figs.2&3)
1[12]	TTTTTAAACAGGAGGCCGATTAATCAGATCACGGTCACGGCTGAACG	Vertex staple
0[34]	TCGTTAGAAAGGGATTACACTTTCTTCGCCATATTAAACAACGCCAATT	Vertex staple
3[9]	TTTTTAAAACCGTCTAGCGGGAGCTTTT	Vertex staple
2[30]	GGGCATCAGTGTGCAGCTTCTTCCGTGTGAAATTGTTATT	Vertex staple
9[12]	TTTTTCAGAAATGCCGGGGCTCTGTGGC	Vertex staple
13[14]	TTTTTGTAAATGGGAAAGGGGTGTGTTCAAGCTTTT	Vertex staple
15[16]	TTTTTCCGCTCACAACTGTGCAGCTGCAATTAAAGTTT	Vertex staple
19[12]	TTTTTAGTTCATCCATATAAAAGTACGGAGAGTACCTTAAGAA	Vertex staple
18[34]	GCAACTAACAGTTGTGAACGGCTGACCAGTCAGTGTGCCCTGCGGCTG	Vertex staple
21[9]	TTTTTAGGTAGGATTAGTGTCTGGATT	Vertex staple
20[31]	CCAGGCTGACCAATAAGGTTAAATTGAACTAACGGAACAACTT	Vertex staple
27[12]	TTTTTACACCCAGAACGAGTAGCTTGC	Vertex staple
31[14]	TTTTTATAAGGGAACCGAATGTACAGACCAAGT	Vertex staple
33[16]	TTTTTTACAGGTAGAAACGATAAAAACCAAATAGTTT	Vertex staple
37[12]	TTTTTACATACATAAAAGGTGTAGCAAAGTAAGCAGATAGCATAG	Vertex staple
36[34]	AGTATGTGACACATGAGAATAAGGGCAACGAGGCGCAGACGGTCAAT	Vertex staple
39[9]	TTTTTCTTTAAGAACGTAGAAAATT	Vertex staple
38[30]	CAAAATTCTGAACAAGATAGAAAACCCAAATAGCAAGCAAATC	Vertex staple
45[12]	TTTTTCTAAATTACGAGCATGAAATAAGAG	Vertex staple
49[14]	TTTTTCATGTAATTAGGCTAAAGTACCGACT	Vertex staple
51[16]	TTTTGATATAGAACGGCAATTACCAACGCTAACG	Vertex staple
5[9]	TTTTAAATCTGTCTGCAAAGGGCGT	Vertex staple
7[24]	GGGGTGGTTGCCCCAGCAGCGT	Vertex staple
23[9]	TTTTAAATCAGGTCTGCAAACCTCAACTT	Vertex staple
25[24]	AAAGGAGAATGACCATAAATCAATT	Vertex staple
41[9]	TTTTGGGAGAATTAACTTACCGAAGCC	Vertex staple
43[24]	CCTAACAGGGAAGCGCATTAGACT	Vertex staple
7[9]	TTTTAATCGGCAACGTGCTGCGCTTCACTAATCTGATGAAAAGGTAAGTTAGCTATTGAA	Vertex bundle strand
25[9]	TTTTCGAGAGGCTTTGACGAGAAGCAAATTCTATTGAAATCGTTAACGACTCCAAGATG	Vertex bundle strand
43[9]	TTTTAGCGCTTCCATATCCCATAGTGGCGATATCGCGCATAGGCTGACCGGAATACC CATCAGATTAGTGAA CAATGAGAATTTC GATATGCCACT	Vertex bundle strand (complementary) Vertex bundle strand (complementary) Vertex bundle strand (complementary)

**Table S7.** Sequences of the hexagonal prism.

5' – end	Sequence	Note
1[53]	CCGAGCGTGGTGCTGAAGTTACCTGTCC	Core staple
1[84]	GTACTATTCCATCACGCAAGACGGGGAACCGCTACGTGC	Core staple
0[44]	AGGAATCGGAACCCCTAAACACAAGAGCAG	Core staple
3[102]	TTTAGAAAAGAGTCGGGGTCTAGCACATGATGCTGAAACATC	Core staple
3[144]	AACCCAGAATCCTGAGAATCAGAGCTTACATCGTTAAAT	Core staple
2[44]	ACTAAAATCCCTTATAATGAGAGACGCCAGGCTGC	Core staple
2[65]	TCCGAATAGCCCAGATTGCCCTCAC	Core staple
2[72]	GTGCCGAATAATGGAAGACGGAACAGGGCGC	Core staple
2[93]	AATACCTACCCTGATCGACAACCTCGTATATGA	Core staple
2[107]	ACATCACAGCACCAGTATCTTAACCAGCAGTTGC	Core staple
2[114]	AATTGCACTTGTGATGGCTTGGCGAAGTTAGACTTCAA	Core staple
2[135]	AACGAAATTGATCATTTAAAAGGATAATACATTGAGGAA	Core staple
5[25]	GTGGTCCGATCACGCGAGGGCAACCTGTTCCACACACACTAG	Core staple
5[39]	GCGATTAAGAGACTAGAAGAAAGCAGAAAGGTACGCTTAC	Core staple
5[60]	AAAAGTTGGAGGGACGCACTGGCGAGAACAC	Core staple
5[123]	AAGACGCTCATCTTGTATAATCAGTGAGTAACGTGTCGC	Core staple
4[97]	GCCCTAAACATAACAGCTGAAGATTATTACATTGGCAGAT	Core staple
4[135]	TTTGTGAGGCTGAAAAATATCTAAAATCTGTCA	Core staple
7[60]	TTTACGATCCGGTGCAGAC	Core staple
7[74]	AGTACATTAAGGGTGCCTAATGAGGAGGATCCCGTCCAAA	Core staple
7[109]	CCATGCGCGAAGTGATATCACCAGTTTGACCTTC	Core staple
6[51]	CCGAAGCATAAAAGTGTATCGAATTCCAG	Core staple
6[90]	ATCAAAGCTAACTCGAGACGGGATTATACTCTCTGTTCCGGGT	Core staple
6[114]	TGATTGAAAGGAATTGAGGATTAGAACGTTTAC	Core staple
8[65]	CAGTTCTTTACCGCCTGGCCATCA	Core staple
9[60]	CACTGATAAAGCACCGCAAGTAGACTGTACGGTGCCTTGT	Core staple
9[130]	ATTTCTGATAACAGAGTGAATGGCTTAAAGATAA	Core staple
11[39]	CGGACATCCCTGCGCGTAACCACAGGA	Core staple
11[53]	CCAAGCGCAAGGTTCTGCGTAATCATGGTCAGAGC	Core staple
11[88]	AGACGCTGAAATGGGGTTATAACCGTTAGCAATAGCTC	Core staple
11[130]	AAAAGGAAAAGGACATTCTGGCCAATAT	Core staple
10[58]	GTCCCCGGCTTAATCGCAGCCGGCCCCGATTAGAGCTTGA	Core staple
10[72]	CGGTGATGAAGGGTAAAGTTAACCCCTCATAGTT	Core staple
10[100]	CAGTTGACGAGCACGTAGCCACCGGATTAGTAATAACATGG	Core staple
10[114]	TGGAACACGCGAGAAAAGAGATGTAATCCAATTCTCGAA	Core staple
10[121]	TCGCTTCTGTTAGAAGTGTCTGAGTAGAAAGAATTGC	Core staple
12[48]	TTAATAACCGGGGTGTCACTTATTGGGTTGCAGCAAGCGGAATC	Core staple
12[79]	TTAATTACATTAGTGGCGTGCCT	Core staple
12[90]	AAGAAAAGTGAGCCTGTTGGCGCCATTAAAAACCCCTCA	Core staple
12[100]	AAACATTGCCCTCCGGGCCAGCCTCAATTATTACCT	Core staple
12[121]	CTGGTCCGGTTGAGAAACAATAATTATTCTCAAATTA	Core staple
14[38]	CTGTCGGTCATAAGATAAGCTGTCATGTCAGCATAAGGCG	Core staple
14[69]	ACCGAGCAAGCCTGTCGCGCTAGTGG	Core staple
15[46]	CGGTTTCCAGTCGGGAGTTGCGCGCCATGC	Core staple
15[98]	TGGCAAATCAAACAATTCCACAGTTGATCTGGTCACT	Core staple
15[109]	CAGACCTAAATATCAATACCGAACATAATATCAACGGC	Core staple
15[130]	GGTTCTAAAGCATCACCAGATAATATCAGAAAAACAGCGTC	Core staple
17[91]	AATGCCAACGGCAGGCACAGCGGGCTT	Core staple
17[105]	CACCGTCGGTACCTCCAAAATCCCGTAAAGCC	Core staple
17[126]	ACGCAACCAAGCTTACGGCTGGCGGGTGTACATCGACATAA	Core staple
17[147]	AGGTGTCAGCGGGGCTTGGCGCGCTTGG	Core staple
16[181]	CTTAAATTCTGCTTATTGCGAGCGCT	Core staple
19[53]	GTCTTGTAGGACTAACGGTACTAAG	Core staple
19[84]	TCTGCGAATTAGCAAATTCCTTTGAAGTTGATGGGT	Core staple
18[44]	TAGCTCCAACAGGTCAAGAAAGATAGAC	Core staple
21[102]	AAGAGGCAAGGCAAAGAACGAGTACGAAAGAATATTGGAAAA	Core staple
21[144]	CTTATTCTACTAATAGTCAATAGCCACGGGACAGGG	Core staple
20[44]	AGGAATCAAAATCAGCCAATACCGAGAGGACAT	Core staple
20[65]	GATCCCTGACTTATAATGTTGTTT	Core staple
20[72]	CAATGACGCCAGCTGGCGGAACGATCCCA	Core staple
20[93]	AGAGGATGTGCGATCGGATTAACCGTGCATCGCTC	Core staple

20[107]	TAACATCAATATGATATAAACAGGTTGATAAATC	Core staple
20[114]	GCCAGTTGGGCTGCGCATTGAGGGTCACGTTGGTAGGGCC	Core staple
20[135]	CTCTCCCACTAAGCGCCGCCCTGATTGACCGTAATGCATC	Core staple
23[25]	AAAACGAGAAAAATATTGACGATCGAGGCAAATAAACGAACTATTA	Core staple
23[39]	CATAAGCCGAAGCAAAGCTTAATTGCTGATGCAACTCATTA	Core staple
23[60]	TTATGCATCAGATTAGATCATTTTGCAGATGGAA	Core staple
23[123]	CCGTTAAATGCCAAAATTAACATCCAATAAATTAGATCGGG	Core staple
22[97]	GTAATCGTAAAATAATAGTAGAAGGAGCCGAGACAGTC	Core staple
22[135]	GCCAAAAAACATTGCAATTAAATGTGAGCGAACG	Core staple
25[60]	TGCAAGAGTAGGCCATAACAG	Core staple
25[74]	TGCCACATTTCATCAGTTGAGAACATCTTGAGACAGA	Core staple
24[51]	AACAACATTATTACAGGGCAGTTTCAAG	Core staple
24[90]	CGCCATTAGGAATACAGAGGGCTTCGCTTACAAATTGGGTGAATT	Core staple
24[114]	AGCCTGTAGCCAGCTTGGATAGGGACGACGTTTC	Core staple
26[65]	ATCAAAAAGAAAGACTGGATAGCGTGTCT	Core staple
26[107]	TTGTACCCCGAGAACATCGATGAACGAAACTCTGTGAGCATA	Core staple
27[60]	ACGGCACTCATGAGGAAGTTACAAACGGCTGGCTGGCAGCG	Core staple
27[129]	GTATATTGCCAAGCCCCTGAGAGTCTGGAGCTCAA	Core staple
29[39]	AACGGTCAAAAGTACGGGTCTGGCT	Core staple
29[53]	CAGATCTGAGAACACTAAGAAACTGGCTAACCG	Core staple
29[88]	GGGTTCAAAAGGGTGCAGCAAGCAATAAACGCTCAGAGGTA	Core staple
29[130]	TTTATATATTCTAGCTGATAAACATT	Core staple
28[58]	AGGTCAATCCATATAACTAAGAGGGAGTACCTTAATTGAAG	Core staple
28[72]	AGCACCATGCCAACGATAACCGCAGCATCGAAA	Core staple
28[100]	CAGGATTAGTTGGACATCATACTAAATCGGTTGACAAT	Core staple
28[114]	ATCTGCAGGGTGTGAGGGATATGCCAGTACTG	Core staple
28[121]	TTGACATTTGCAAATGAGTACGACATTATGACCTGTAAACC	Core staple
30[48]	GGGCGCGTACGACAAGAACAAATAGTCGGAATCGTATTGAC	Core staple
30[79]	AACAGCGGATCAAATTCTAGTAGTACTTC	Core staple
30[90]	AGAGACGTGTTTATGCGGGGGCTAGCATGTCAAATAGGAA	Core staple
30[100]	TCACGGTCGCTGAGGCTGTCAACCGCGATTATGAG	Core staple
30[121]	TCCAGTTAAGGACGGATAACCTCTGTGAGAGATAGACACA	Core staple
32[38]	TACCGCTTGGCGTTGCGGGAGGCGCAGAACACTTTCAATCCGCC	Core staple
32[69]	ACCTTATTAGAACGAACTAATGCAGATCTT	Core staple
33[46]	AACGCCAAAAGGAATTAAAAACCCGGATATGATG	Core staple
33[98]	CGCGTCTATGGGCGATCGTCACCTTATTCAAAAATAATT	Core staple
33[109]	TTCTCATTTTAAACCATCATATGGGAAGGGCTGCAAGTCAG	Core staple
33[130]	AACTTAAATTGTTAATCAGAAATTCACTGTCACGCCCTT	Core staple
35[131]	CCATTAAACGGGTAATGCCGCAATGACA	Core staple
35[147]	ATACGTAATGCCACTACGAAGAACAGCTGATACCGATAGT	Core staple
35[168]	GCACCAACCTAAACGAAAAGAACATACACTAAAC	Core staple
34[209]	AATTGATCGGTTATCTTCGAGGTGAATTCTT	Core staple
34[230]	AAGGCTCCAAAAGGAGCCTTACTCATTTGACCCCCAGCG	Core staple
34[246]	GAAAATCTCAAAAAAATTATACCAAGCGCGA	Core staple
37[53]	AGATATATAACTATATAACAAACGAAT	Core staple
37[84]	CAGTATGGAAGGTAATATATAGCAATAGACTCCTAACCC	Core staple
36[44]	GAATGAGTTAACGCCAACGAGGGAGGCC	Core staple
36[65]	TCTAGCAAGAACAAATGAAA	Core staple
39[102]	TGACCGATTGGGAGGTTAGCAAGGTCTGATGAAAACAAAGGAA	Core staple
39[144]	GCCCATATGTTAACCAAAAGAACGCTAACGATCAGAGTT	Core staple
38[44]	TAATCAAAATGAAAATAGAGCCTTAGTTCTAGA	Core staple
38[65]	AAGTTTACAGAGAGAACGCTACTAC	Core staple
38[72]	AACAGACCCCTATTCCTTTTATTACCG	Core staple
38[93]	GAAGCAAGCCTCAGAACATCTCAAGAGAAAACA	Core staple
38[107]	AATATCGCATTTCGGCTCAGAACGCCCTCTC	Core staple
38[114]	GCAGTACCGTCCACCCCTGATTAGCACATGAAAGTATTAGAGT	Core staple
38[135]	CCATCACCGTACTCAGTACCGAGGTCGGAACCTATTATAAC	Core staple
41[25]	CGATTTTGAAAATAATTGAGAAGAACCAAGTACCGCACTCGCT	Core staple
41[39]	ACGCTGAACACAAGAACGAGATAGACGCAATAAG	Core staple
41[60]	GCCCGCATTATAATAAGTACCGAAGGCCCTTCAAA	Core staple
41[123]	AGCCATCGACTTGAGACAAAAGGGGATACATAAGTG	Core staple
40[97]	GCCACCACTCAATCTACCAATTAGCGTCAGACTGTAGCG	Core staple
40[135]	CCCGAGGTTGAAGCCAGGTCACTGCCTTGAGTGCC	Core staple
43[60]	TTGAGCCAGTTGTAATTGTTG	Core staple

43[74]	AATCAATAGCTCATCGTAGGAATCCCCATCCAAGTCCTTAAT	Core staple
42[51]	AGGACAAGCAAGGCCGTGAGAAAGCCT	Core staple
42[90]	CATACTACCGCGCCTTATCCCTCAGAGCCACCGCAATAGATTAATTAA	Core staple
42[114]	TGACTGGTATAAAGTTTTCTGAAGGGGTTAGCG	Core staple
44[65]	TCGCACCCAGACGAGCGTCTTCAGCA	Core staple
44[107]	ACCCCACCAAGCCGCCACCCCTCAGACGTTTCCAGTAGCAAGG	Core staple
45[60]	GTAAAAGTACTGCAAATCCAATAAGGCTTAGTAGGCAGAGGG	Core staple
45[129]	TCAGGAGGGTTTGACGTCAGAGCCGCCACCTCAT	Core staple
47[39]	ATTCAGTATAATAACGGAATACCTTAA	Core staple
47[53]	ACAAATAAGAAGAACGCCCAATCAATAATCGATCG	Core staple
47[88]	ATATCAAGTTGCCCTCAAATGACGGAATTATTCTTACAGACA	Core staple
47[130]	TCGATGAAACCCCTTATTAGCGTGCCT	Core staple
46[58]	GGTACTGGCATGATTAAGCTA	Core staple
46[72]	TCCCTAATTTCCTTAGAATCTGAGACTAAGGG	Core staple
46[100]	ATAACGTAGAAAATACACATTCAAATTATCACCGTCACAGCA	Core staple
46[114]	AATGATTAAGT GAGAATAGAAAAGGGGATTAGCAGA	Core staple
46[121]	AATAGGTGCGCAACATATGCGCCAAGGCCATTGGGAATGTCA	Core staple
48[48]	ATTTGACTAATGCGAATATATCAAGATAATTGCCAGTTACTTTA	Core staple
48[79]	AATTTTTCACTGTTAACTATAACATT	Core staple
48[90]	TTGCGAAGAACAGCGCCACCTGAGAGGCCACCTAACCGT	Core staple
48[100]	ACTATAGCGATAGCTTATTACAAAACCCATCCGT	Core staple
48[121]	GAGACGCTGAGATAAAGTTTGCCCTTCAACAGTTCTGC	Core staple
50[38]	GTCTGTTCACTGTCAGCACAATTCTGTAATGCTGAAACGGAG	Core staple
50[69]	CGAGCATTTTAAAGCAAATCAGATATATT	Core staple
51[46]	AGACTTATCCGGTATCCCTTAAAAAGTACCCCAT	Core staple
51[98]	GATACAGAGGGCTGAGACAATAATATATGGCTTTGAT	Core staple
51[109]	GTAATTACCGTCCAGAGAACCCAGCACCCAAATAGGAATC	Core staple
51[130]	GGGAATGGAAAGCGCAGGGCAGCAAGTACCGAACACTGAGTC	Core staple
53[91]	TCGCAAGACAAGATAATCGTCGCTAT	Core staple
53[105]	ACCGGAGAAAATTCAAAGAGTGAATAACCTCTG	Core staple
53[126]	TATATTTAGTTAATTTCATCAGTACATAAAATCAATATATGT	Core staple
53[147]	TTCTGACCTAAATGGTATTACCTTTGGAAAC	Core staple
52[181]	ACAATTTCATTGATTGAATACCGACC	Core staple
0[166]	TTTAGACAGGAACGGTACGTATCGGCCTT	Core staple
2[163]	CCAGAACATAATTACCGTAGAACCCCTT	Core staple
4[163]	GCGTAAGAACATCGTGGCACAGACAACAGAGACCGCCACTCA	Core staple
6[163]	GCCACGCTGAGAGCCAGCAGCAAAGGTCAATT	Core staple
8[142]	ATCCGTAGATACAGTACCGGGAGCTAACAGGGAGGCC	Core staple
8[166]	GAAACCACCGAGAAGGAGCGGATTAACACCG	Core staple
10[160]	ATGAATATACAGTATTCAGG	Core staple
12[163]	AGTTACAAATCGCGCAAACATTATCATTT	Core staple
14[142]	ATATTGAGTGGGCGACGGATTGCCCTGATTGC	Core staple
14[160]	AATAGATTAGAGCCTTAGGAG	Core staple
18[166]	GAGCTGAAAGGTGGCATATTGGGGAGA	Core staple
20[163]	CAACGCAAGGATAAAAACGGAGAGGGT	Core staple
22[163]	AGAGATCTAACAGGCTATCAGGTTAATGCTTTTGAATA	Core staple
24[163]	TGAAACGTTAATTTGTTAAAGGAAGATCCAG	Core staple
26[142]	GCACACGACGGAGGTGGAACCTGTTAGCTATTTTC	Core staple
26[166]	ACCGCTTCTGGTGCCGAAATGTATAAGCA	Core staple
28[160]	TGCCAAGCTTCAGTTGAA	Core staple
30[163]	GCCATGTTACAGTCCTCGCACTCCAGCC	Core staple
32[142]	GCGAGGAAGACGGAATTACCGGAAACAATCGGCG	Core staple
32[160]	TCTCCGTGGGAACAAGTAACA	Core staple
36[166]	GTCACAATCAATAGAAAATTAGCAAATCA	Core staple
38[163]	ATTACCATTAGAAGGCCTTCTATAA	Core staple
40[163]	GGAACCAGAGCCACCCACCGAACCTTGCCATCGGAAACTAGA	Core staple
42[163]	TCACAAACAATAATCCTCATTAAGGCAGGATCA	Core staple
44[142]	CCGTACAACCATAGTTACGCAAAGACACCCACCGGAAT	Core staple
44[166]	GTATAGCCCGAATAGGTGTTAGCAGACGATT	Core staple
46[160]	CCACAGACGCCCTTACAACG	Core staple
48[163]	TCTGTATGGGATTTCGCGCCTCGAGAG	Core staple
50[142]	TATCGGATAATAACAAAGTCTTCAGACGTTAG	Core staple
50[160]	CAGTTAATGCCCTAACAGT	Core staple
13[157]	TTTGAATACCA	Connector staple

31[157]	AAACGTACATT	Connector staple
49[157]	TAAATGAATGC	Connector staple
9[160]	TGCGGAACAAG	Connector staple
27[160]	AGCTTCCGTT	Connector staple
45[160]	GGTTGATATAG	Connector staple
11[154]	TTTAACGTCAA	Connector staple
29[154]	ACGACGGCAA	Connector staple
47[154]	CCTGTAGCAGC	Connector staple
1[160]	GATTAAAGGCT	Connector staple (excluded for folding in figs.2&3)
3[157]	GCTGGTAATGT	Connector staple (excluded for folding in figs.2&3)
5[157]	CTGACCTGAAA	Connector staple (excluded for folding in figs.2&3)
7[157]	CCTGCAACAT	Connector staple (excluded for folding in figs.2&3)
15[154]	CACTAACAGA	Connector staple (excluded for folding in figs.2&3)
19[160]	ATTTGGGCAA	Connector staple (excluded for folding in figs.2&3)
21[157]	AGCCTTTATAT	Connector staple (excluded for folding in figs.2&3)
23[157]	AGCTATTTCC	Connector staple (excluded for folding in figs.2&3)
25[157]	AATATTTAAC	Connector staple (excluded for folding in figs.2&3)
33[154]	ACCCGTCGGTT	Connector staple (excluded for folding in figs.2&3)
37[160]	AAGTTTATTAT	Connector staple (excluded for folding in figs.2&3)
39[157]	CCAGTAGCAAT	Connector staple (excluded for folding in figs.2&3)
41[157]	TCAAAATCATG	Connector staple (excluded for folding in figs.2&3)
43[157]	GGCCTTGATT	Connector staple (excluded for folding in figs.2&3)
51[154]	GCCCGTATAGC	Connector staple (excluded for folding in figs.2&3)
1[12]	TTTTGCTGCAAGTGTAGCGGAGCGGGTCAAGGTGCCGAAAACG	Vertex staple
3[9]	TTTTTAAACACCGTCTACGCTAGGGCTTTT	Vertex staple
2[30]	TGGGCATCAGTGTGACGTTTCATTCTGTGTGAAATTGTTTTTT	Vertex staple
9[12]	TTTTTCAGAATGCCGGGGCTCTGTGGCCC	Vertex staple
10[30]	ACTTTTCTTACACCGGAATCATAATTACTAGAAAATTTTT	Vertex staple
13[9]	TTTTTGGCTGGTAATGGTAAAGGGGGTGTGTTAGCTTTTT	Vertex staple
15[16]	TTTTTCCGCTCACAACTGTCAGCTGCATTAAATGTTTTT	Vertex staple
19[12]	TTTTTCAACATGTTAAATAATATAATGCCAACAGACGGAAA	Vertex staple
21[9]	TTTTTCGAGCTTCAAGCTGTAGCTTTTT	Vertex staple
20[31]	GACTGAGGACATATTAGAATAAGAGTCAGGACGTTGGGAAGATTTT	Vertex staple
27[12]	TTTTTAAGCTGTCATTAGCTCAAATCTAC	Vertex staple
28[30]	AGGCCGGAACTATGAGCCGGTCACTGTTGCCCTGTTTTT	Vertex staple
31[9]	TTTTTCCTGCTCATGTTACTTAGGAACCGAACTGATTTTT	Vertex staple
33[16]	TTTTTAAATCTACGTTAGTAAGAGCAACACTATCTTTTT	Vertex staple
37[12]	TTTTTGAAGGAAACCGAGGAACCGAACAAAGAGAGATAACCCACCC	Vertex staple
39[9]	TTTTTAGCGCTAATATCAAGTTACCATTTTT	Vertex staple
38[30]	GAAAAGATCGGACAAAAAACACATTCTTATCATTCCAAGAATTTT	Vertex staple
45[12]	TTTTTCCAGACGACGACAATAGGTAAGGGG	Vertex staple
46[30]	CCAGCGTTACTGATAATTGTCGAAATCCGCGATTTTT	Vertex staple
49[9]	TTTTTACGCTTGTAGTACATACGCTAACAGTTTTT	Vertex staple
51[16]	TTTTTCCGGTATTAACCGAGGCGTTTACGGAACCTTTT	Vertex staple
7[24]	GGGGTGGTTGCCAGCGAGCGACAGTTAAAATTCTCATGCAATCCAATAAGAGGGTAATTGTTTT	Vertex bundle strand
25[24]	CAGACATTGAATCCCCCTAAATAATAGTAGCTAATCTATGAAAATCCTGTTCGTCAAAGGGCTTTT	Vertex bundle strand
43[24]	AGGTACAGCCATATTATCTCCACTAATCTTATGCTTAAACAGTCGCGTTAATTGCAAAGTCGAA	Vertex bundle strand
7[9]	TTTTTAATCGGCCAACGTGCGGCCACA AGT AAAGAT TCGTC ATTGAAGGGCTTAAAGTCGAAAGTCGAA	Vertex bundle strand
25[9]	TTTTATAACCCCTGTTAACGTAACAGTAA TAGT AGTCTA CATCT ATGGCAAATCGTAAACGACTCCAAGATG	Vertex bundle strand
43[9]	TTTTCTCCCGACTTGCTTAATTGTTAA TCT TAT GTACCAACTTGAATCAAATATCAG	Vertex bundle strand
	CAATGAGAAATTAACTGT	Vertex bundle strand (complementary)
	CATAGATTAGACTACTATT	Vertex bundle strand (complementary)
	TACATAAGATTAGTG	Vertex bundle strand (complementary)
	TCAAT GACGA ATCTTT AACT TGTC	Vertex bundle strand (complementary)
	GCCAT AGATG TAGACT ACTA TTAC	Vertex bundle strand (complementary)
	TAC ATA AGA TTA	Vertex bundle strand (complementary)