

## DNA Triangles and Self-Assembled Hexagonal Tilings

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### Supporting Information

#### DNA Sequences

Type-a triangular complex

black: ttcgtccagtgagcatcctgtagttgCGgattcgtccagtgagcatcctgtagttgCGgattcgtccagtgagcatcctgtagttgCGga

red: ggatagcgccatgctcactggacgaatccgcaactacaggaacgaacactcc

purple: tgttcgTTggcgct

Type-b triangular complex

black is the same as in type-a triangular complex

green: gactgagccccatgctcactggacgaatccgcaactacaggaactactcatcc

orange: atccggatgagtagttgggctcagtcggag

Purple and orange sequences were derived from those found in Yan, H.; Park, S.H.; Finkelstein, G.; Reif, J. H.; LaBean T. H. *Science* **2003**, 301, 1882-1884.

#### Materials and Methods

DNA strands were synthesized and PAGE purified by Integrated DNA Technologies (IDT). Type-a triangular complexes were created in a solution consisting of 0.2  $\mu\text{M}$  black strand, 0.6  $\mu\text{M}$  red strand, and 0.6  $\mu\text{M}$  purple strand in TAE/Mg<sup>2+</sup> buffer (40 mM Tris-Acetate, pH 8.0; 1 mM EDTA; 12.5 mM Mg(OAc)<sub>2</sub>). The solution was heated to 90°C for 2 minutes, then cooled to 40°C at 2°C/min, then to 25°C at 1°C/min. Type-b complexes were created similarly.

#### AFM Sample Preparation and Imaging

Equal volumes of solutions containing type-a and type-b triangular complexes were combined and incubated at room temperature for several hours. A 5  $\mu\text{l}$  aliquot was spotted onto freshly cleaved mica (Ted Pella), left for 30 seconds and then topped with 25  $\mu\text{l}$  of TAE/Mg<sup>2+</sup> buffer. Imaging was performed on a Multimode Nanoscope IIIa atomic force microscope (Digital Instruments) in tapping mode, using a fluid cell, J scanner and 200  $\mu\text{m}$  cantilevers with Si<sub>3</sub>N<sub>4</sub> tips.