Supporting information for:

Construction of One- and Two-dimensional Nanostructures by the Sequential Assembly of Quadruplex DNA Scaffolds

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Table S1. Sequences of oligodeoxynucleotides studied here.

DNAs	Sequence
$C_4T_3C_4$	5'-CCCCTTTCCCC-3'
C_6TC_6	5'-CCCCCCTCCCCCC-3'
$G_4T_4G_4$	5'-GGGGTTTTGGGG-3'
S1	5'-CGACATCGCTCAGCCAGAC**TCCCCCCTCCCCCCT**CAGACCGACTCGCTACAGC**TTTTGGGGTTTTGGGG**-3'
S2	5'-GCTGTAGCGAGTCGGTCTG**TTCCCCTTTCCCCTT**GTCTGGCTGAGCGATGTCG**TTTTGGGGTTTTGGGG**-3'
MS1	5'-**GGGGTTTTGGGGTTTT**GCTGTAGCGAGTCGGTCTGT-TEG-Biotin-3'
S1-1	5'-**GGGGTTTTGGGGTTTT**GCTGTAGCGAGTCGGTCTGT-3'
MS2	5'-Biotin-TEG-TGTCTGGCTGAGCGATGTCG**TTTTGGGGTTTTGGGG**-3'
S2-1	5'-TGTCTGGCTGAGCGATGTCG**TTTTGGGGTTTTGGGG**-3'
S3	5'-CGACATCGCTCAGCCAGACA**TTCCCCCCTCCCCCCTT**ACAGACCGACTCGCTACAGC-3'
MS3	5'-GCTGTAGCGAGTCGGTCTGT-TEG-Biotin-3'

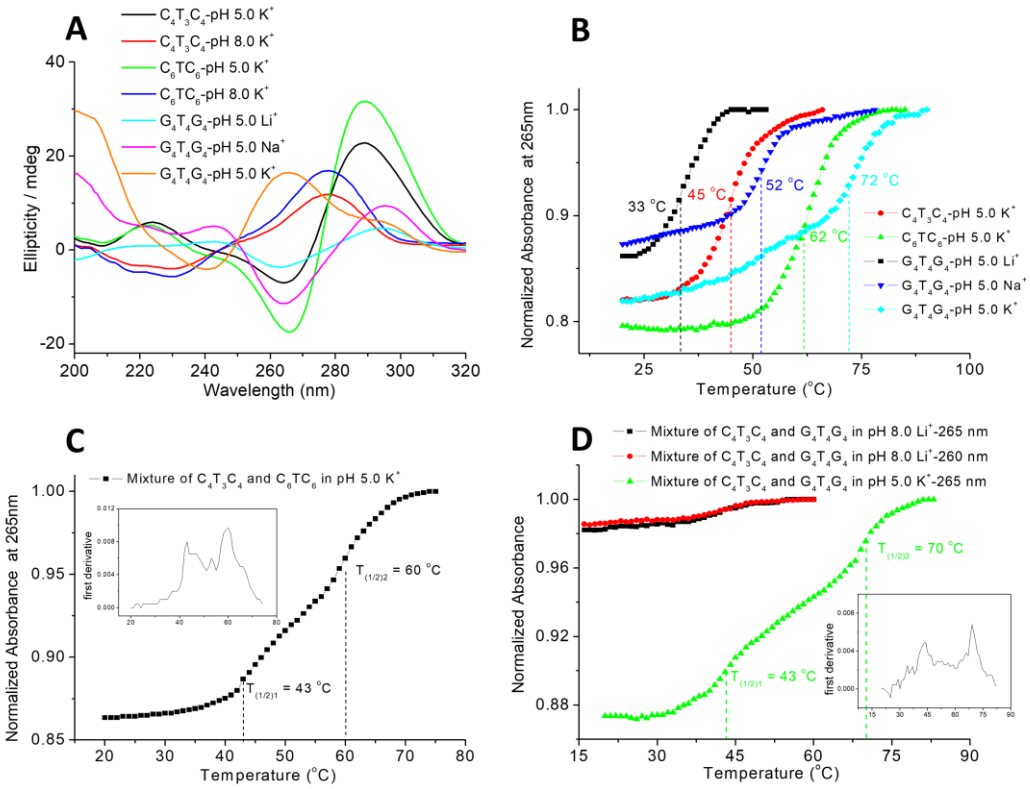

Figure S1. (A) CD spectra of the sequences d($C_4T_3C_4$), d(C_6TC_6) and d($G_4T_4G_4$) in various buffer solutions; (B) UV melting curves of the three strands in pH 5 buffer solutions supplemented with potassium, lithium or sodium ions; (C) the UV melting curve of the mixture of d($C_4T_3C_4$) and d(C_6TC_6) in pH 5 KCl buffer solution, inset: first derivative of the UV melting curve; (D) the UV melting curve of the mixture of d($C_4T_3C_4$) and d($G_4T_4G_4$) in pH 8 LiCl and pH 5 KCl buffer solutions inset: first derivative of the UV melting curve of the mixture of d($C_4T_3C_4$) and d($G_4T_4G_4$) in pH 5 KCl buffer solution.

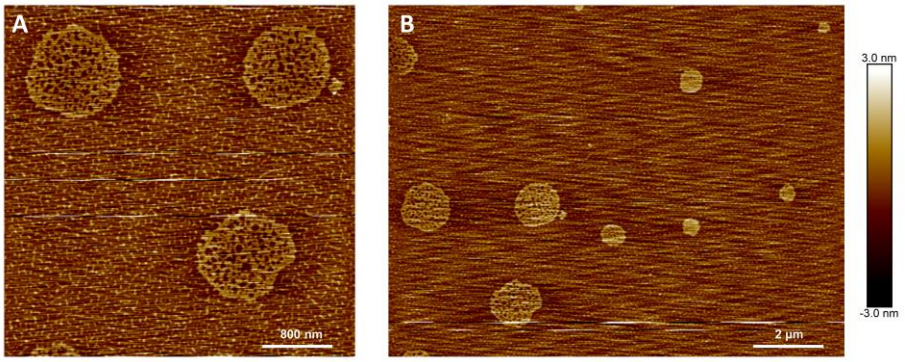

Figure S2. AFM images of the 1:1 mixture of S1 and S2 in pH 5 KCl buffer solution with the scale bar of (A) 800 nm and (B) 2 µm.

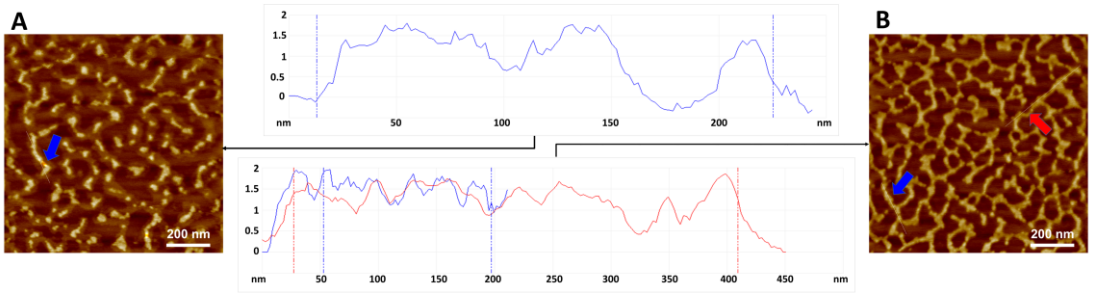

Figure S3. AFM images of the 1:1 mixture of S1 and S2 in pH 5 KCl buffer solution with the scale bar of 800 nm: (A) after titration with TBE buffer; (B) after the addition of 18-Crown-6.

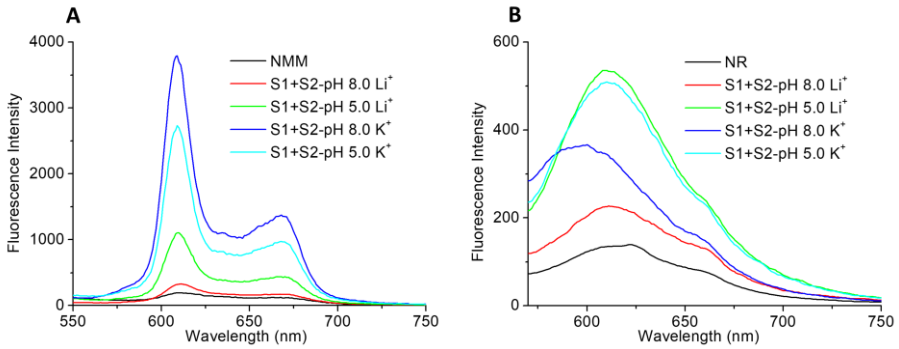

Figure S4. Fluorescence spectra of the 1:1 mixture of S1 and S2 (1 μM of each oligomer) in 10 mM LiCl or KCl buffer solutions at pH 8 or 5 after annealed with (A) 1.5 μM N-methyl mesoporphyrin IX and (B) 2 μM neutral red.

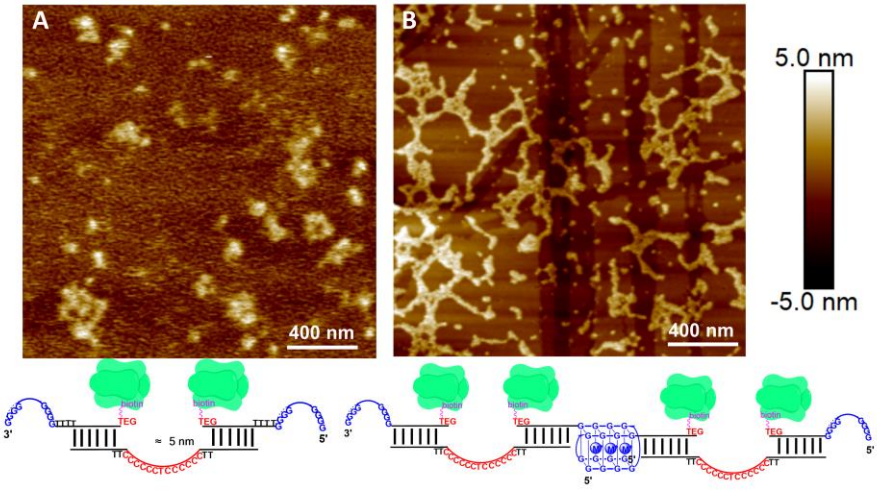

Figure S5. AFM images with the scale bar of 400 nm of the 1:1:1 mixture of MS1, MS2 and S3 (A) in pH 8 LiCl buffer solution and （B) in pH 8 KCl buffer solution after titration with STV proteins.

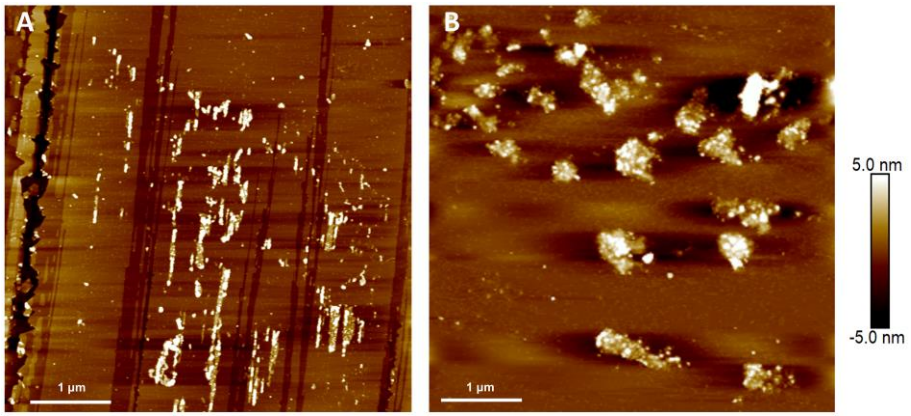

Figure S6. AFM images with the scale bar of 1 µm of the 1:1 mixture of MS1, MS2 and S3: (A) in pH 5 LiCl buffer solution after titration with STV proteins (B) in pH 5 LiCl buffer solution after successive addition of STV proteins and K^+.

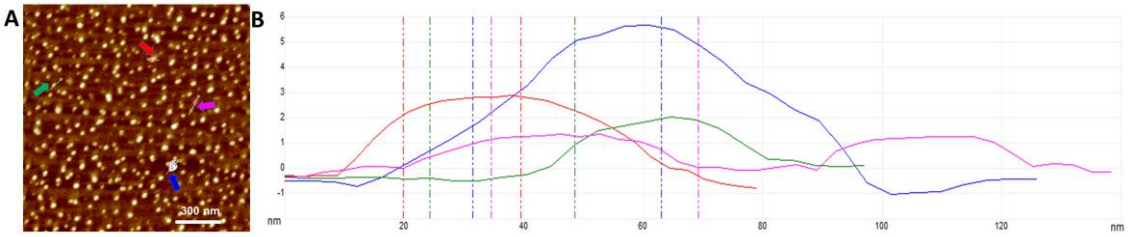

Figure S7. (A) AFM image with the scale bar of 300 nm of the 1:1:1 mixture of S1-1, S2-1 and S3 in pH 5 LiCl buffer solution after titration with STV proteins and (B) the corresponding height and length profiles recorded at the locations indicated by arrows of different colors in Figure S7A.

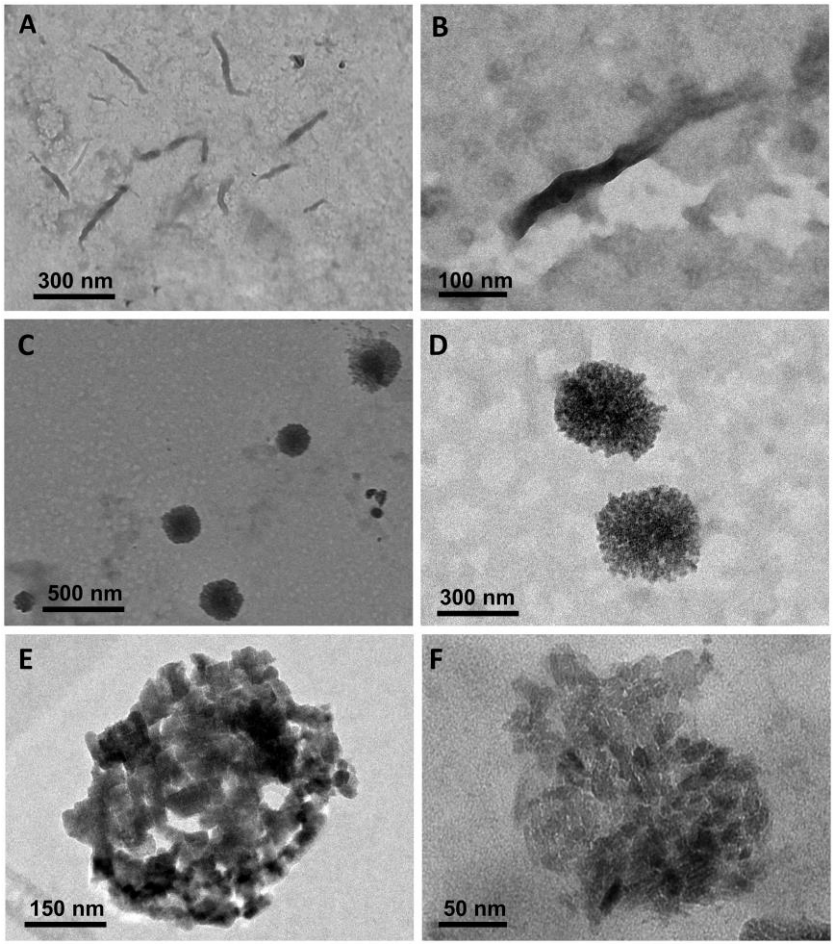

Figure S8. TEM images with the scale bar ranging from 50 to 500 nm of the 1:1 mixture of MS1, MS2 and S3 in pH 5 LiCl buffer solution: (A) and (B) after titration with STV proteins; (C)-(F) after successive addition of STV proteins and K^+.

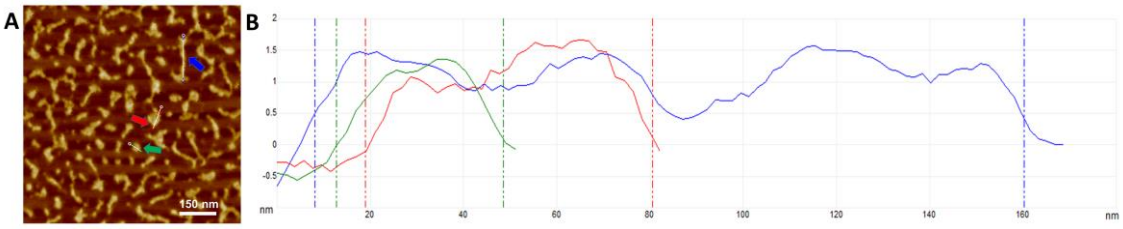

Figure S9. (A) AFM image with the scale bar of 150 nm of the 1:1:1 mixture of MS3, MS2 and S3 in pH 5 KCl buffer solution and (B) the corresponding height and length profiles recorded at the locations indicated by arrows of different colors in Figure S9A.

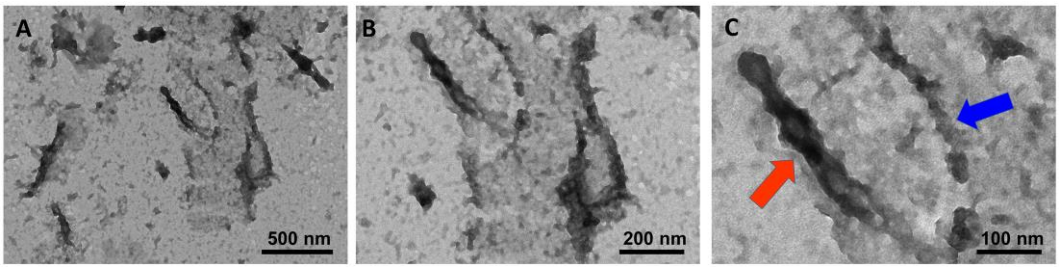

Figure S10. TEM images with the scale bar of 500 nm (A), 200 nm (B) and 100 nm (C) of the 1:1:1 mixture of MS3, MS2 and S3 in pH 5 KCl buffer solution after titration with STV proteins.

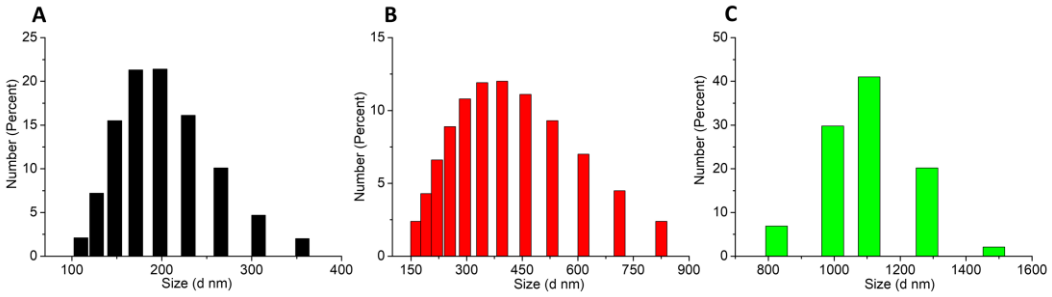

Figure S11. DLS measurements for three types of nanohybrids: (A) 1D 'DNA-protein' nanostructures, (B) two-lined 'DNA-protein' nanostructures and (C) 2D 'DNA-protein' nanostructures.