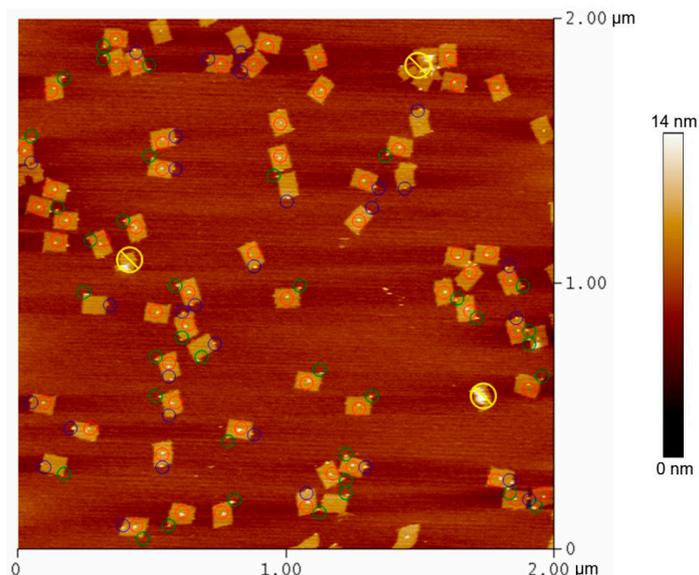


# Supplementary Materials

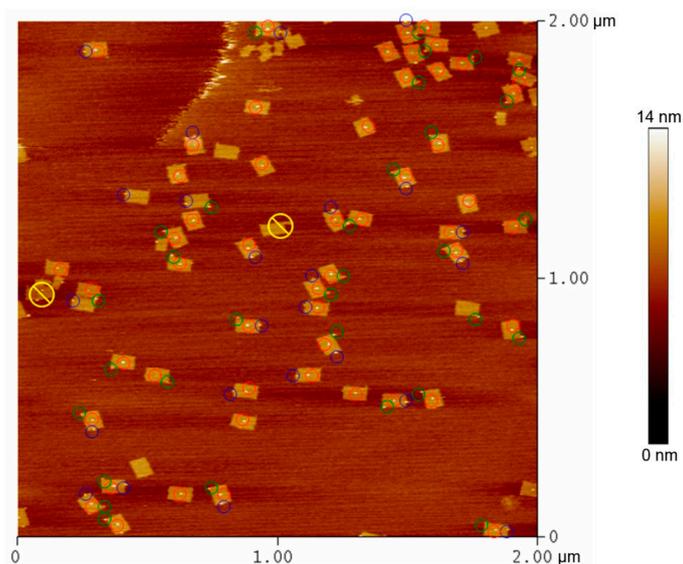
## 1. AFM Micrographs

Fully formed structures wholly within each micrograph were counted. Structures not fully formed were not counted and are marked with a yellow cross. Center located streptavidin is marked with a red circle, side located with a blue circle and corner located with a green circle.

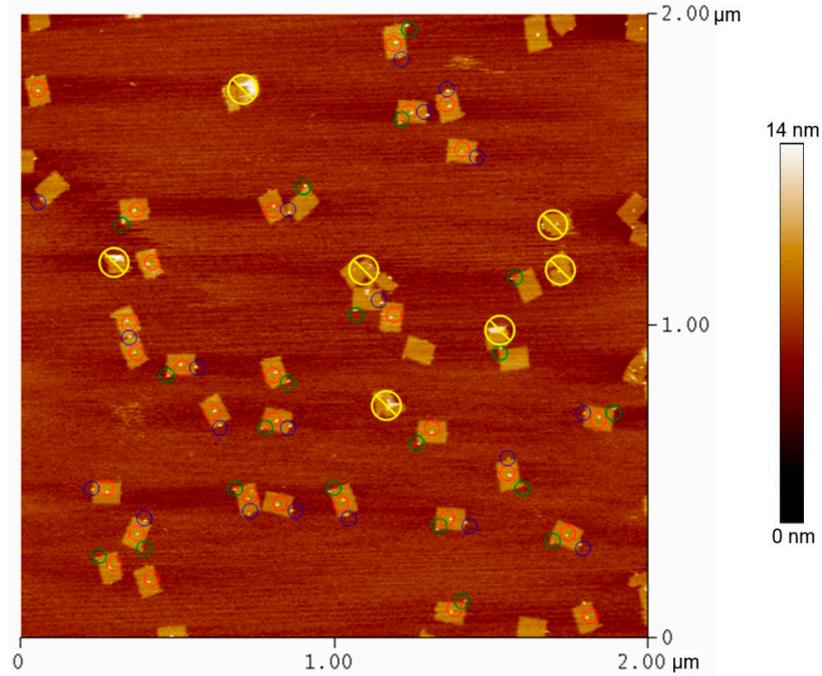
bPNA3K Incorporated in Origami (Figures S1–S10).



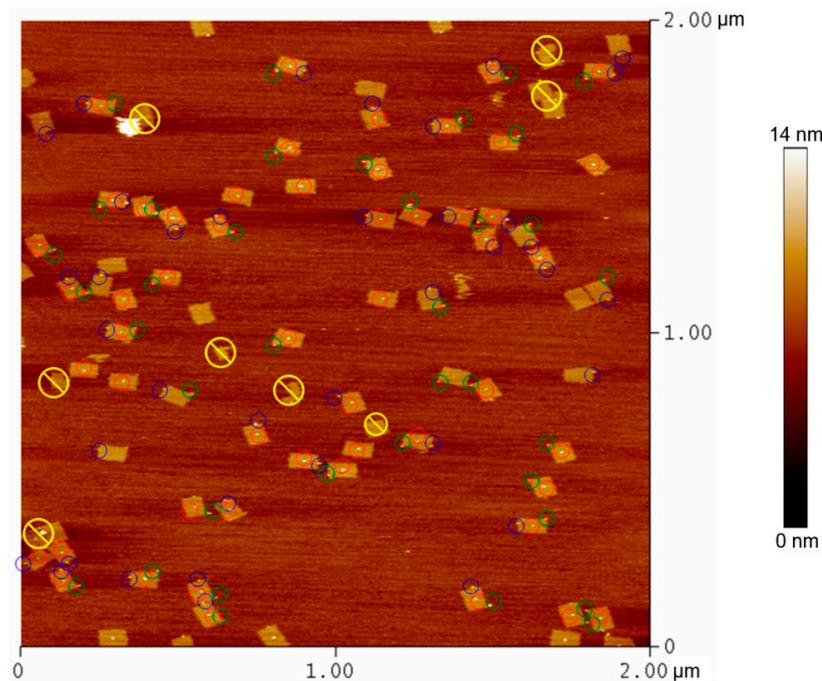
**Figure S1.** AFM image #1 of DNA origami with incorporated bPNA3K. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



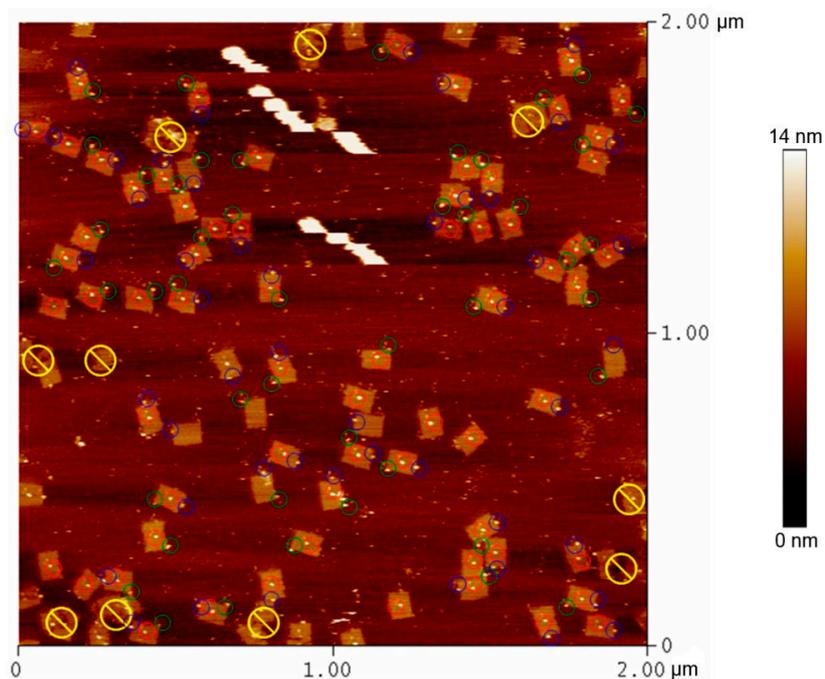
**Figure S2.** AFM image #2 of DNA origami with incorporated bPNA3K. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



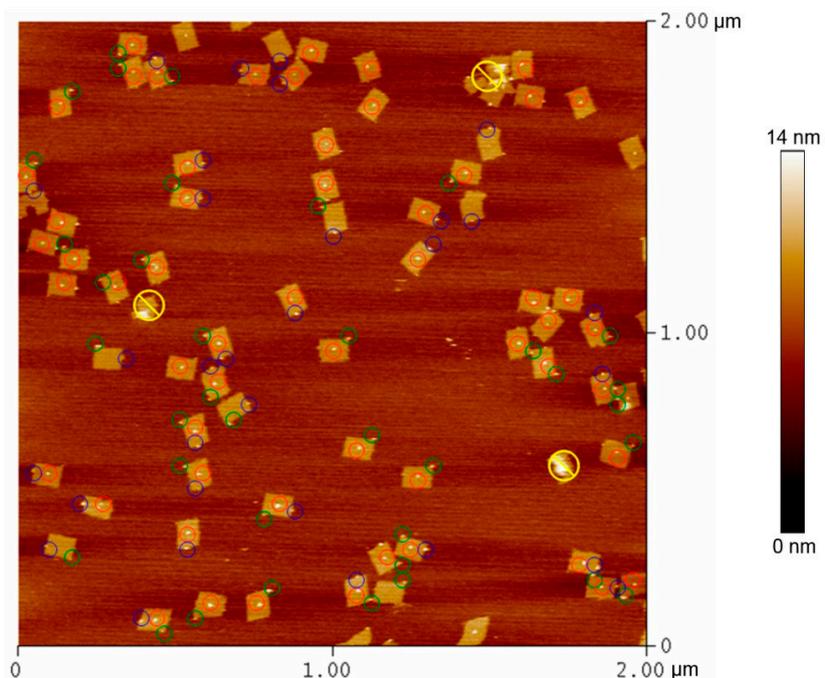
**Figure S3.** AFM image #3 of DNA origami with incorporated bPNA3K. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



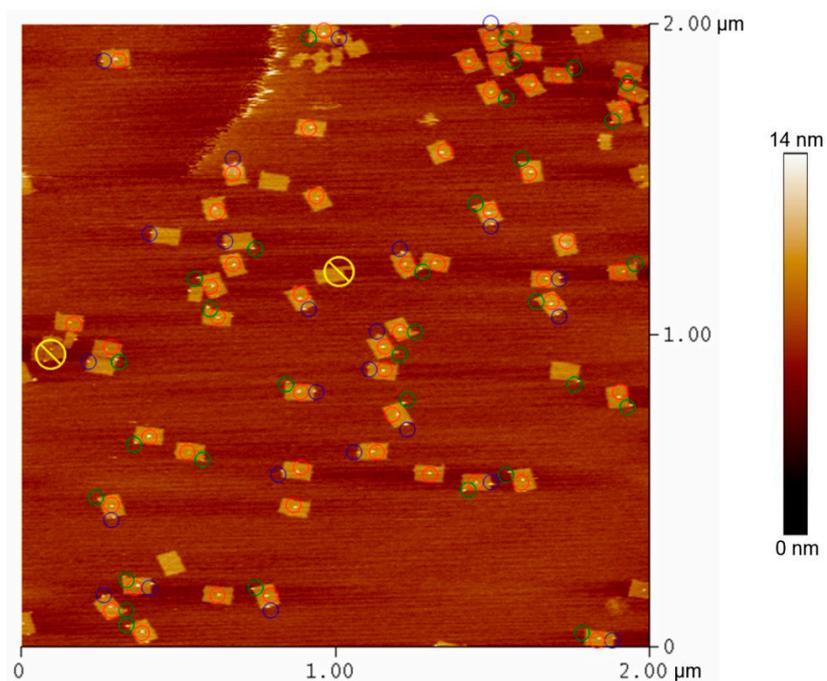
**Figure S4.** AFM image #4 of DNA origami with incorporated bPNA3K. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



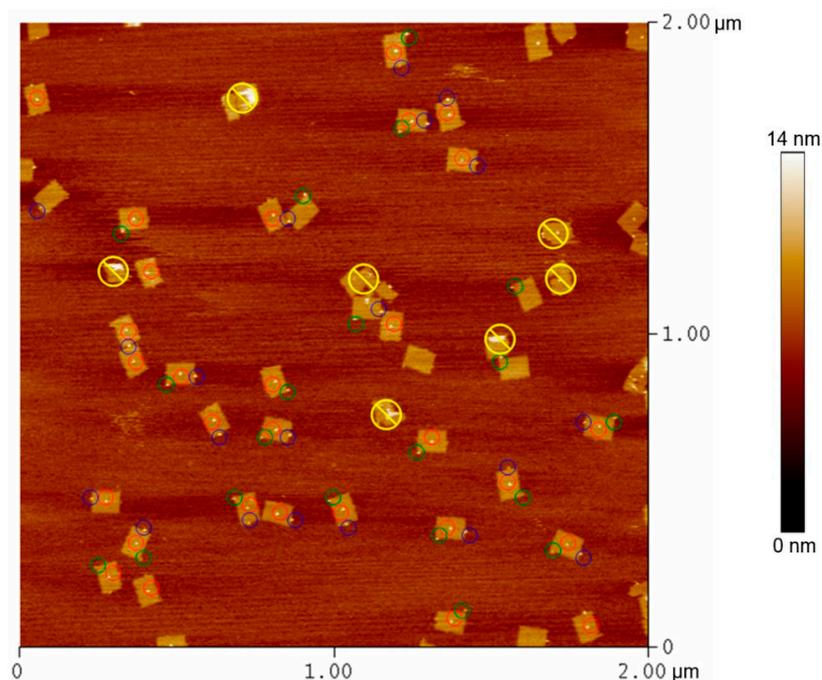
**Figure S5.** AFM image #5 of DNA origami with incorporated bPNA3K. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



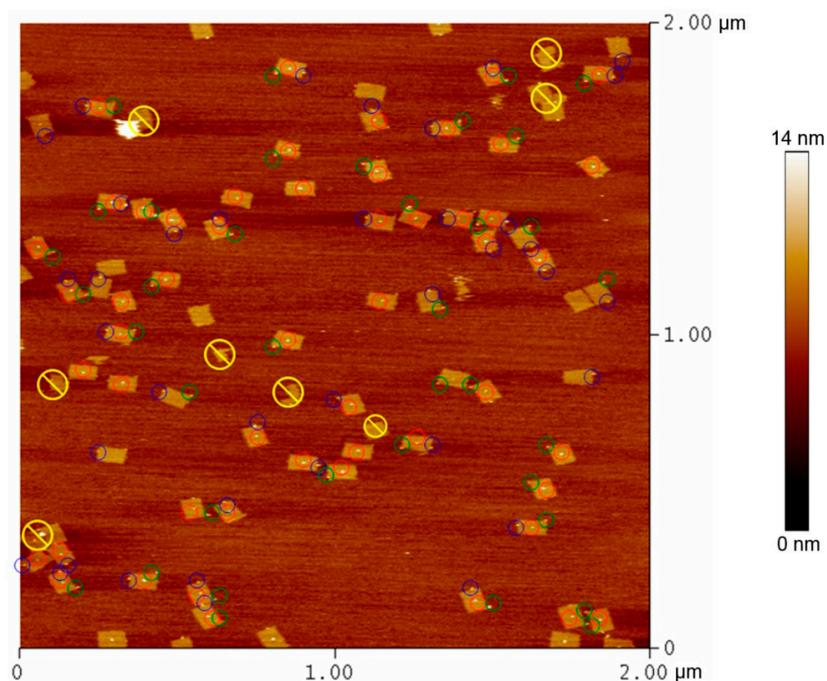
**Figure S6.** AFM image #6 of DNA origami with incorporated bPNA3K. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



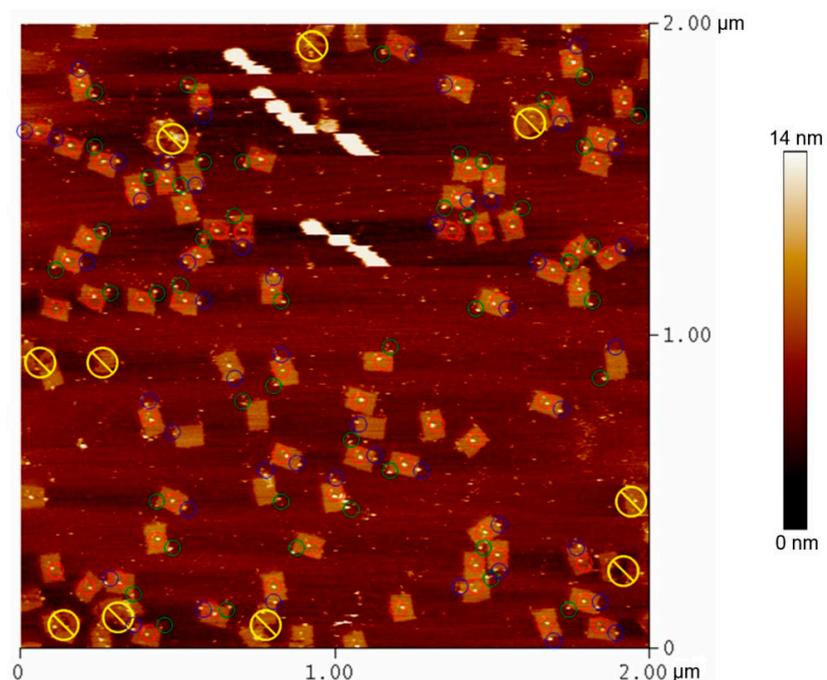
**Figure S7.** AFM image #7 of DNA origami with incorporated bPNA3K. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



**Figure S8.** AFM image #8 of DNA origami with incorporated bPNA3K. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.

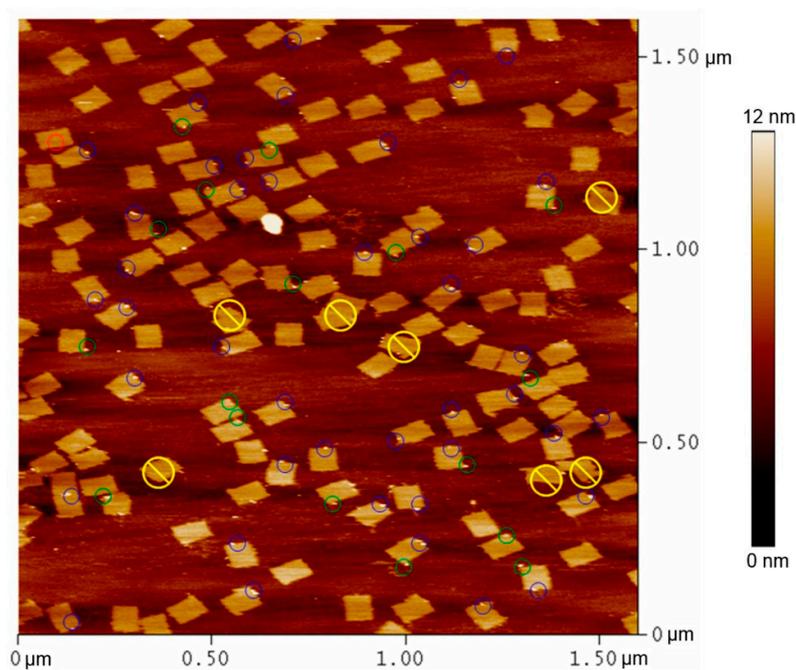


**Figure S9.** AFM image #9 of DNA origami with incorporated bPNA3K. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.

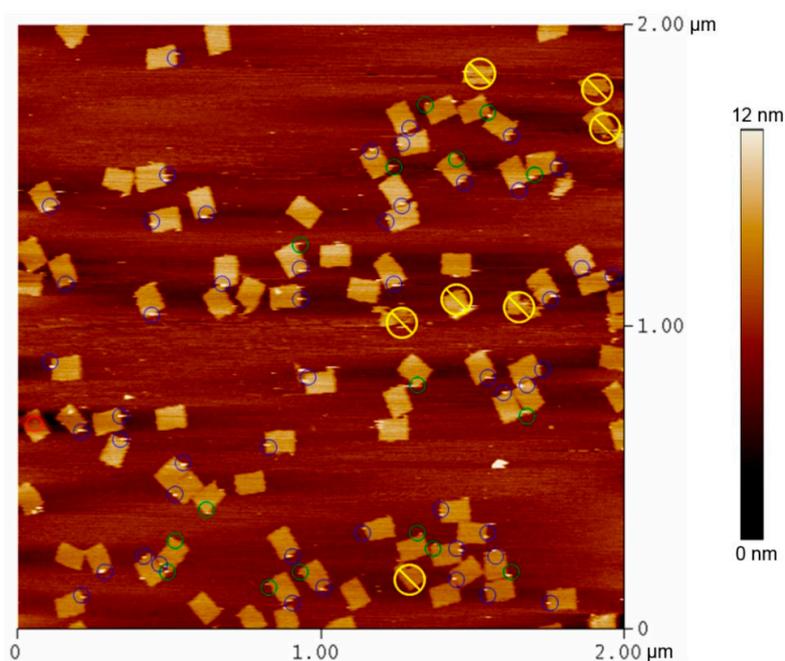


**Figure S10.** AFM image #10 of DNA origami with incorporated bPNA3K. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.

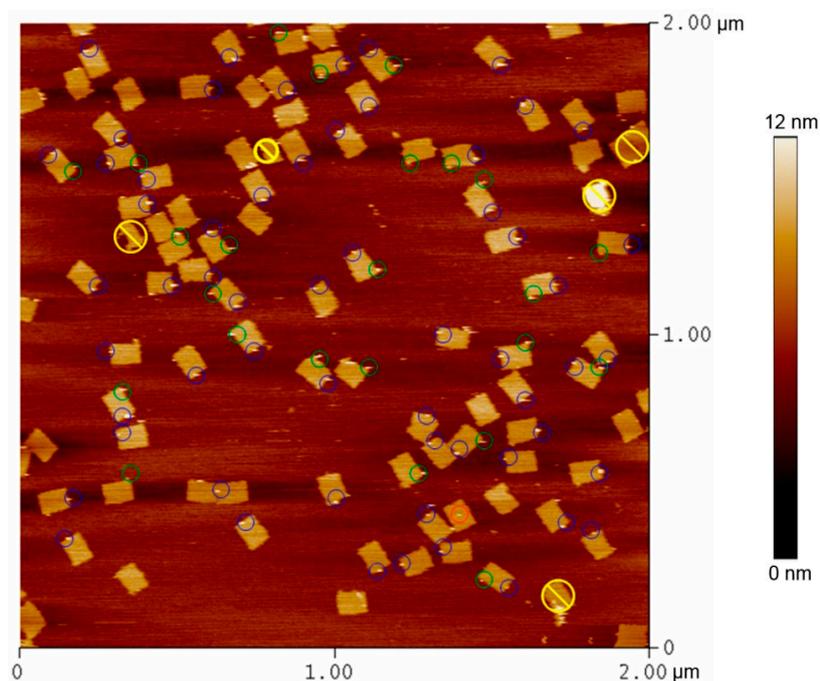
## Biotinylated DNA (bDNA) Control Incorporated in Origami (Figures S11–S20)



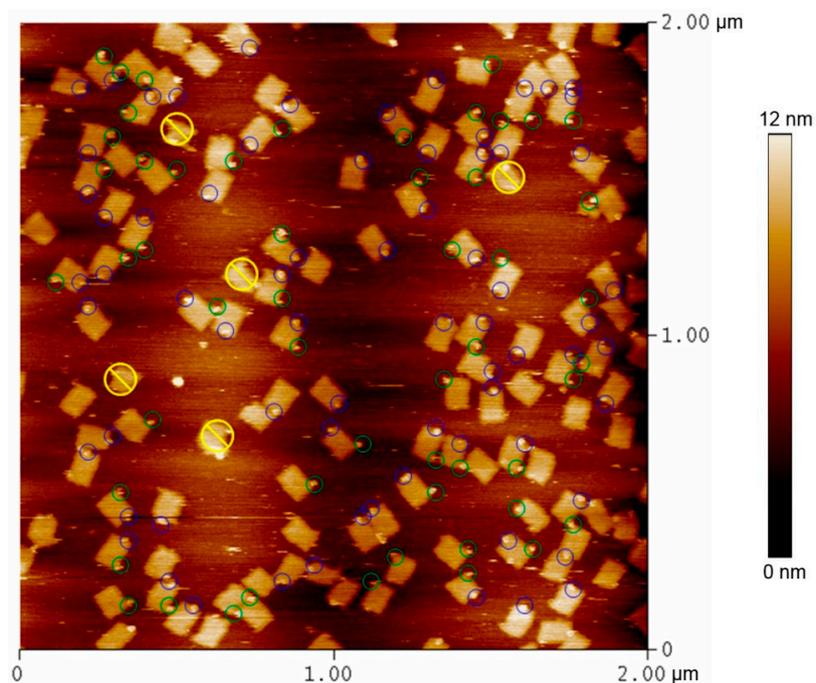
**Figure S11.** AFM image #1 of DNA origami with incorporated bDNA. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



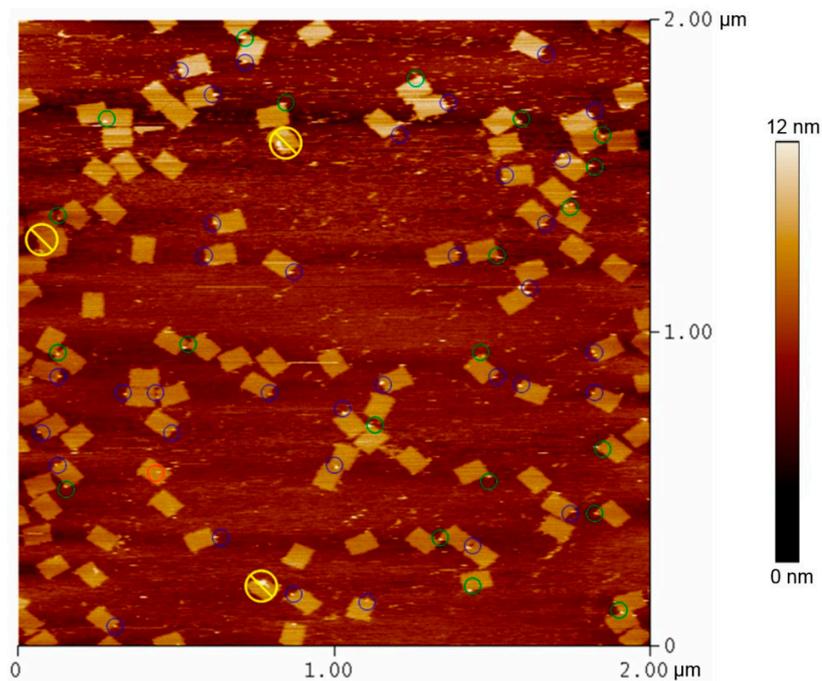
**Figure S12.** AFM image #2 of DNA origami with incorporated bDNA. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



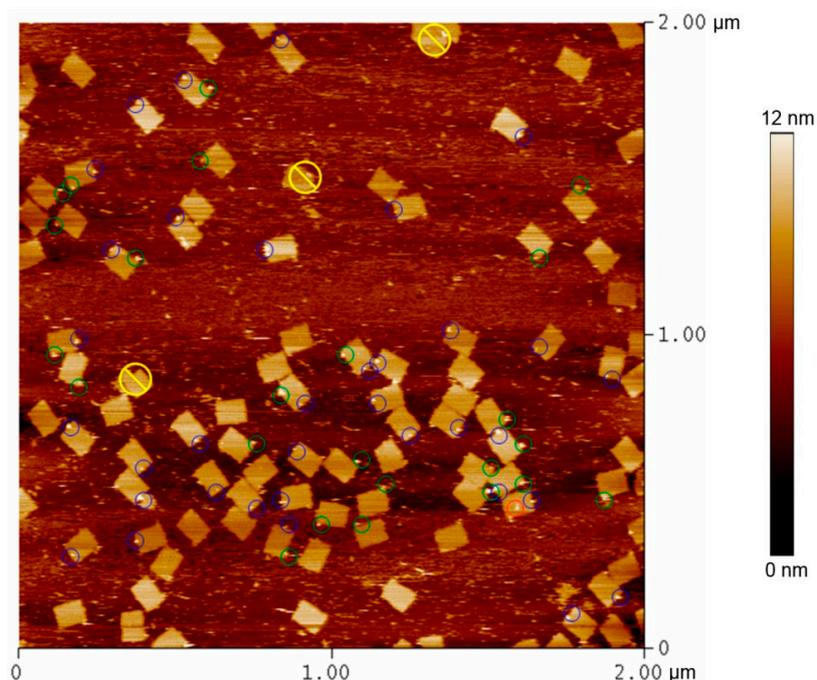
**Figure S13.** AFM image #3 of DNA origami with incorporated bDNA. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



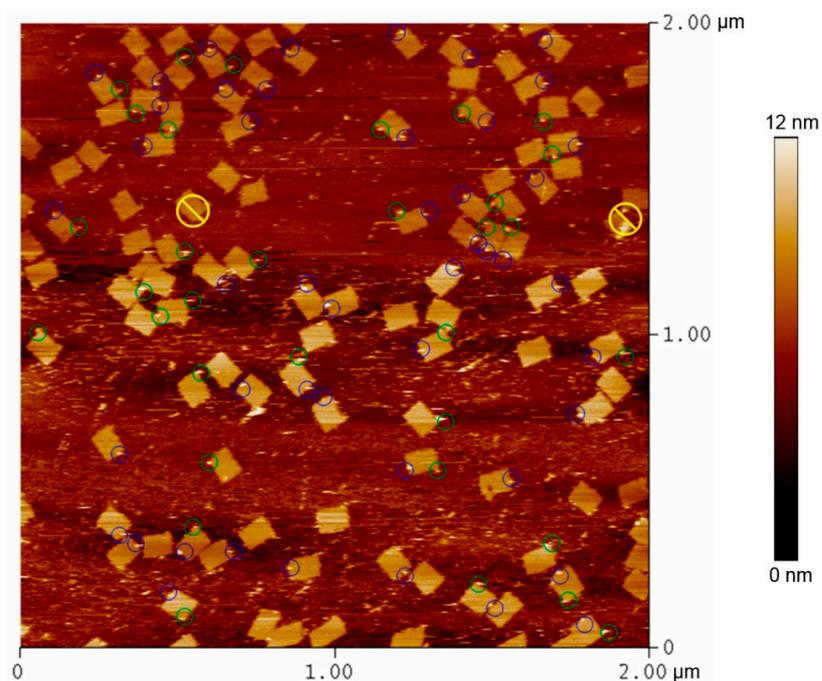
**Figure S14.** AFM image #4 of DNA origami with incorporated bDNA. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



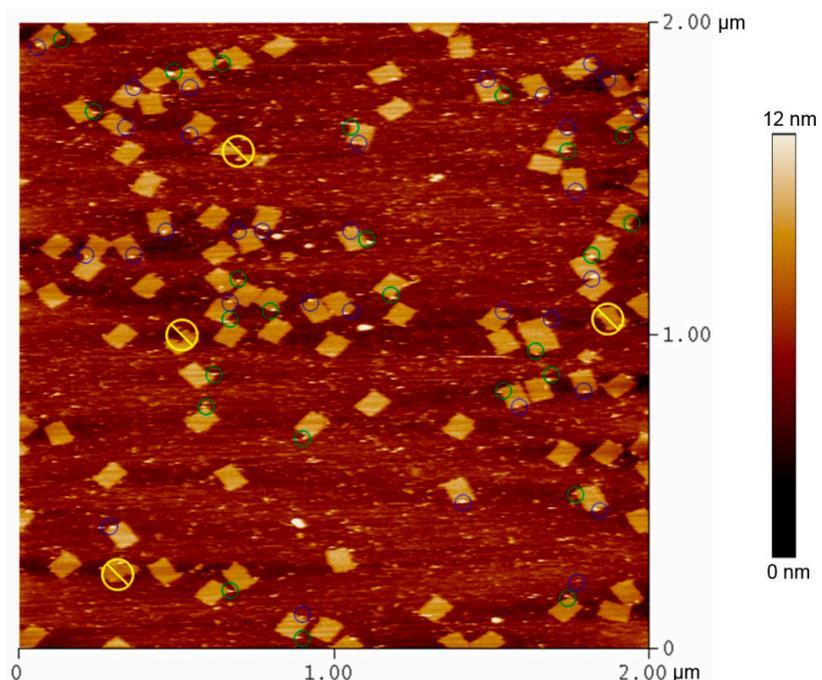
**Figure S15.** AFM image #5 of DNA origami with incorporated bDNA. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



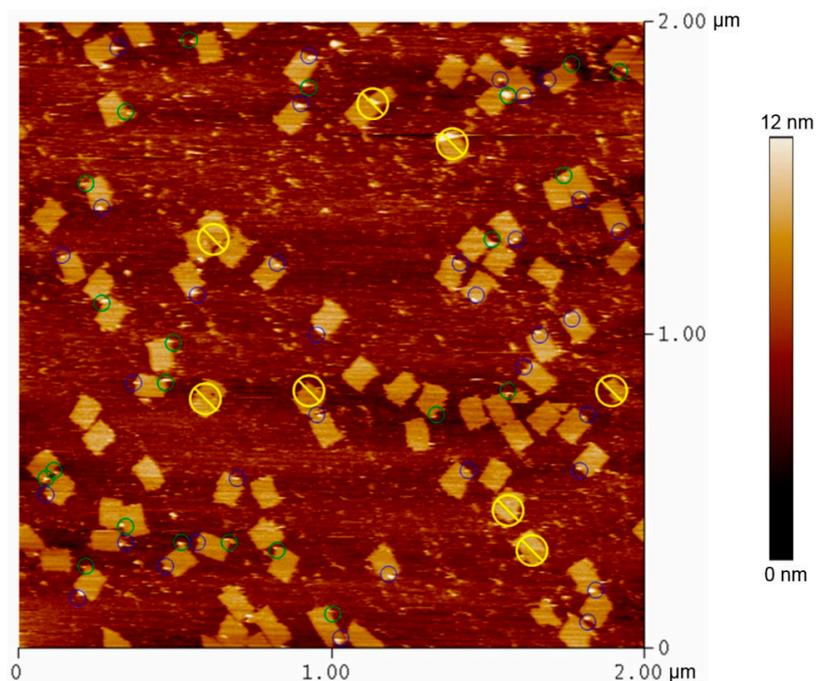
**Figure S16.** AFM image #6 of DNA origami with incorporated bDNA. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



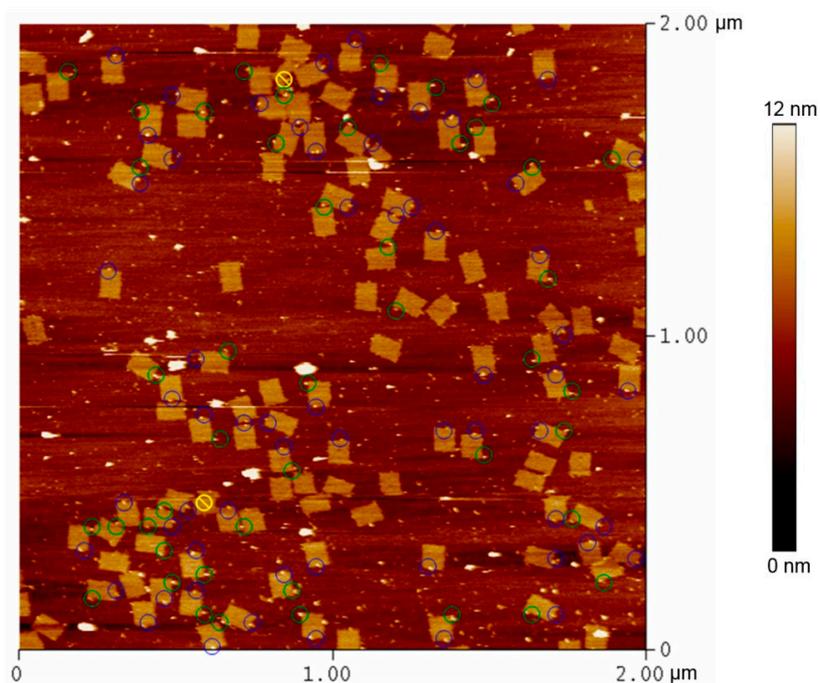
**Figure S17.** AFM image #7 of DNA origami with incorporated bDNA. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



**Figure S18.** AFM image #8 of DNA origami with incorporated bDNA. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



**Figure S19.** AFM image #9 of DNA origami with incorporated bDNA. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.



**Figure S20.** AFM image #10 of DNA origami with incorporated bDNA. Structures not fully formed were not counted and are marked with a yellow slash. Streptavidin located at center sites are marked with a red circle, located at side sites with a blue circle, and corner sites with a green circle.

## 2. DNA Sequences (5'–3')

### 2.1. Center Strands

t-1r16e and t1r16f were substituted with:

PNA\_E\_CR\_V: TCAACCCT-TT CCC AAT ATT TAG GC-AGA GGC ATA CAA CGC C

PNA\_I\_CR\_V: AA CAT GTA TCT GCG AA-CGA GTA GAA CAG TTG A TACTTATA

### 2.2. Corner Strand

t7r29f was substituted with:

PNA\_7: CTA CAT TTT GAC GCT CAC GCT CAT GGA AAT AC TTT TACTTATATCAACCCT

### 2.3. Side

For the side position on the M13 scaffold the staple strand; t1r0g was left out.

### 2.4. Fluorescence Strands

Cy5-TAC TTA TAT CAA CCC T

AGG GTT GAT ATA AGT A-3IAbRQSp