Supplementary Information

for

Reversible Switches of DNA Nanostructures between "Close" and "Open" and Its Biosensing Applications

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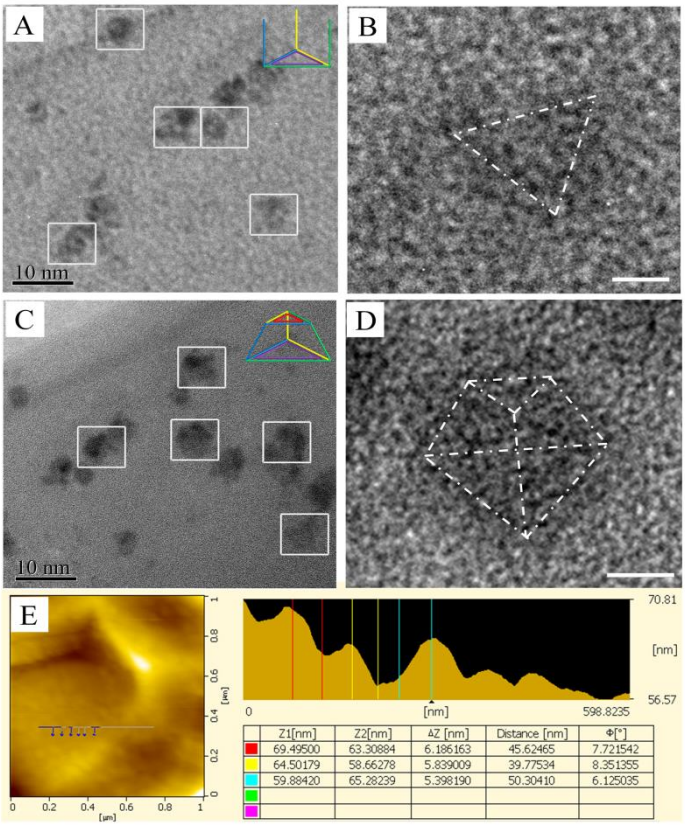

Fig. S-1. TEM images with low and high magnification of the (A and B) ET_{DNA} and (C and D) TPF_{DNA} nanostructures. The scale bars in B and D represent 3 nm. (E) AFM image and data analyzing of the TPF_{DNA} assembled on Au electrode.

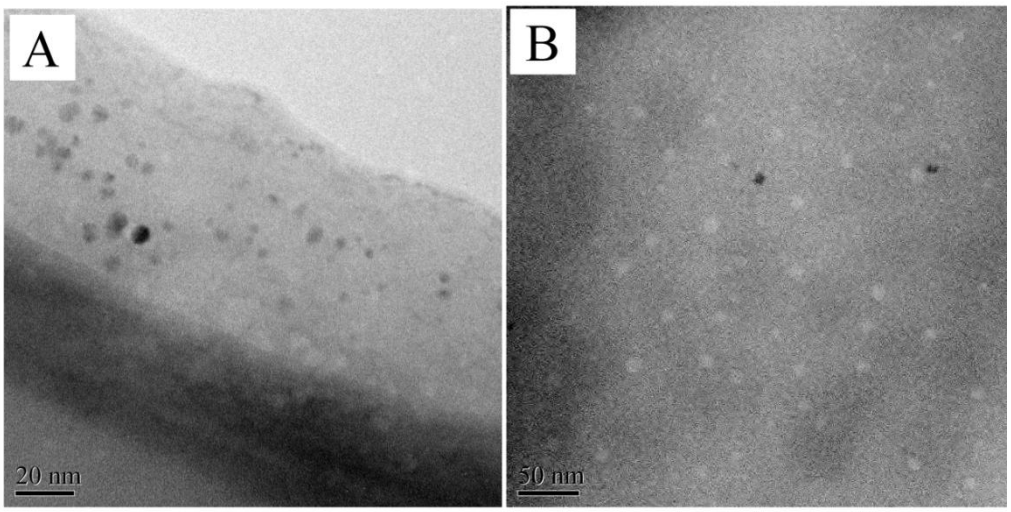

Fig. S-2. High-resolution TEM images of the (A) ET_{DNA} and (B) TPF_{DNA} nanostructures under an accelerating voltage of 200 kV.

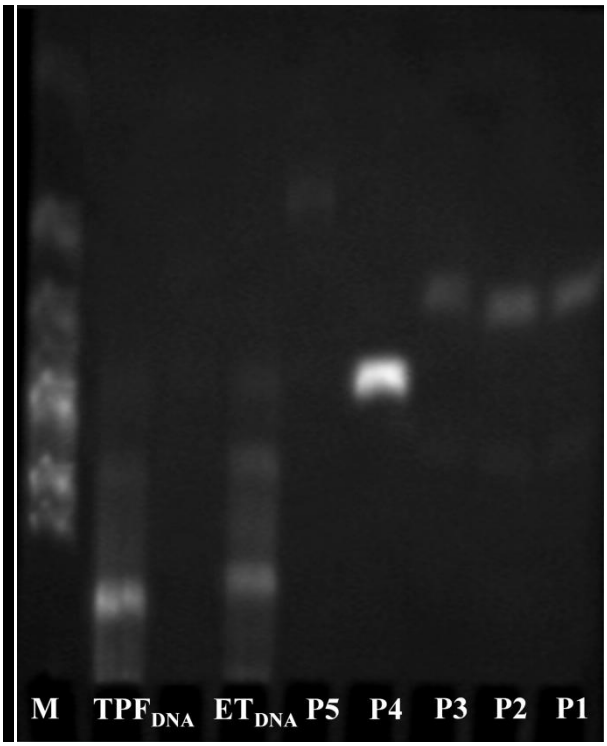

Fig. S-3. Native PAGE (12%) analysis of the formation of ET_{DNA} and TPF_{DNA} nanostructures. Lane M, 20 bp ladder. Studies showed that the TPF_{DNA} moved slight slowly than either ET_{DNA} or any other signal strands (P1, P2, P3, P4 and P5), confirming the successful assembly of the DNA nanostructures.

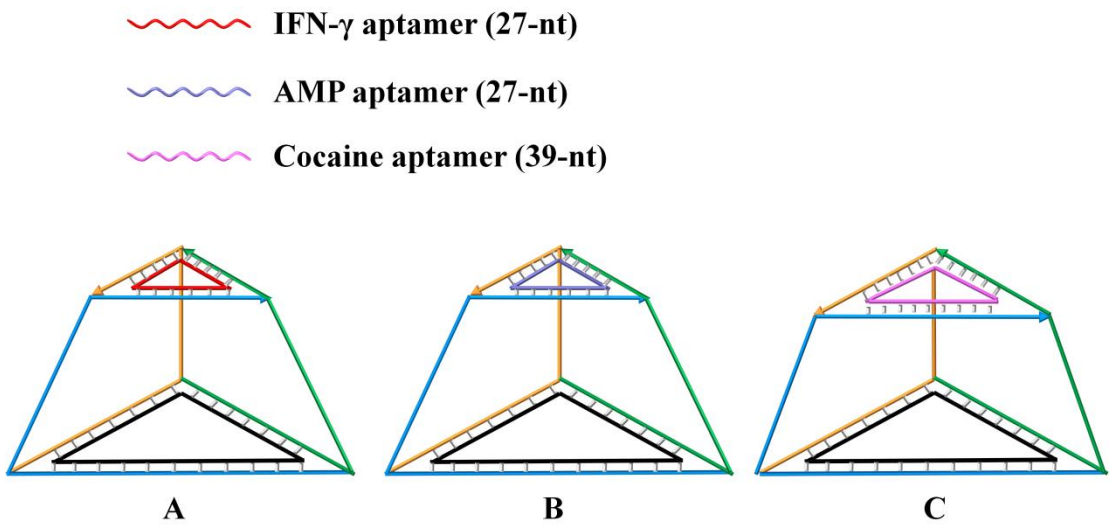

Fig. S-4. Schematic illustration of the TPF_{DNA} nanostructures composed of (A) IFN-γ aptamer, (B) AMP aptamer, and (C) cocaine aptamer.

Table S-1. The interfacial electron resistance (R_{et}) responses and electron transfer rate constant (k_s) obtained at the TPF_{DNA} modified electrode corresponding to IFN-γ aptamer, AMP aptamer, and cocaine aptamer.

Target Aptamer	R_{et} (kΩ)	k_s (s^{-1})
IFN-γ aptamer	101.55	0.551±0.048
AMP aptamer	107.71	0.535±0.026
cocaine aptamer	89.82	0.835±0.072