“Turn-on-off-on” Fluorescence switching of Quantum dots-cationic Porphyrin nanohybrid: A sensor for DNA

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Fig. S1. A) The UV-Vis absorption spectra of CdTe-TGA collected at different refluxing time. B) EDAX spectrum and C) The XRD profile for the synthesized CdTe-TGA quantum dots.
**Fig. S2.** FTIR spectra of positively charged CdTe-DEA quantum dots (red solid line) and DEA (broken line)

**Fig. S3.** Fluorescence intensity of CdTe-TGA at various pH ranging from 3-12
**Fig. S4.** Fluorescence decay of CdTe-TGA in the presence and absence of ZnTMPyP \(1 \times 10^{-5} \text{M}\): \(\lambda_{exi} = 500\) nm (blue colored prompt decay which is for instrument calibration)

**Fig. S5.** Plot between \(1/F_0 - F\) vs \(1/[Q]\) (Comparison of binding constant)
Fig. S6. Three dimensional spectra of a) CdTe-TGA (Red lines) b) CdTe-TGA+MnTMPyP (Green lines) c) CdTe-TGA+MnTMPyP+CtDNA (Blue lines), Concentration of CdTe-TGA= $1 \times 10^{-7}$M, MnTMPyP = $1 \times 10^{-6}$M, CtDNA = $31.6 \times 10^{-8}$M, pH = 7.5 and T = 298K.
**Fig. S7.** The overlaps of absorbance spectra of TMPyP (a) and emission spectra of CdTe-TGA (b). The concentration of quantum dots and the cationic porphyrins were $1 \times 10^{-6}$ M.

**Fig. S8.** Transient absorption spectrum of CdTe-TGA (Black), ZnTMPyP (Green) and mixture of CdTe-TGA+ ZnTMPyP (brown) recorded at 20 μs after the laser flash (500 nm).