Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Cyclodextrin induced controlled delivery of a biological photosensitizer from a nanocarrier to DNA

Pronab Kundu, Saptarshi Ghosh*, Sinjan Das, and Nitin Chattopadhyay*

Department of Chemistry, Jadavpur University, Kolkata - 700 032, India

*Corresponding authors: Fax: 91-33-2414-6584

E-mail: ghosh.saptarshi89@gmail.com (S.G.)

nitin.chattopadhyay@yahoo.com (N.C.)

Supporting Information

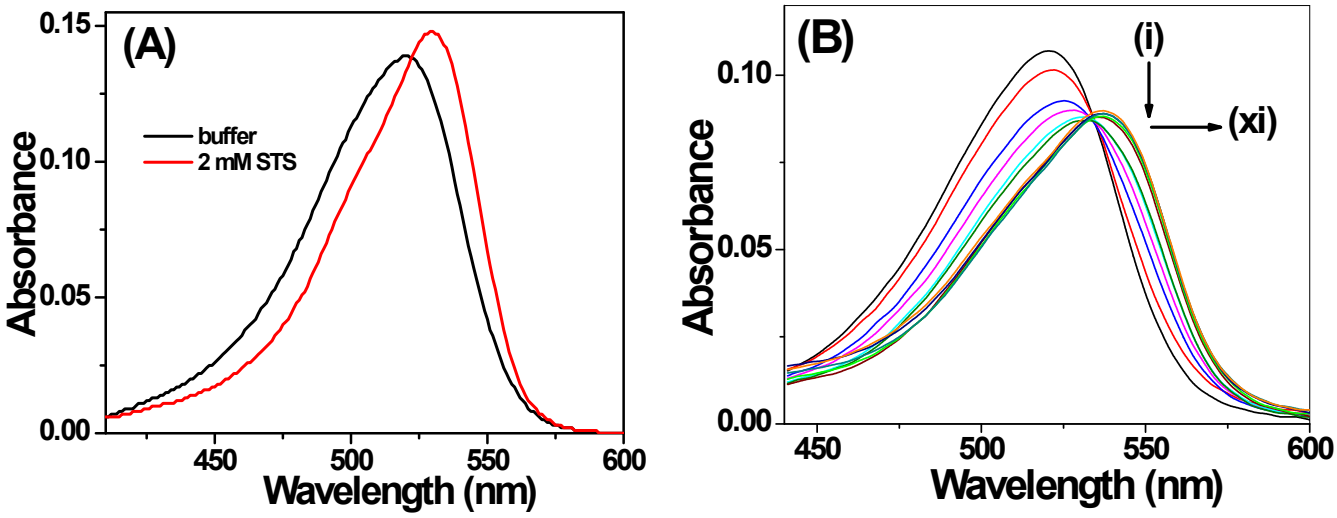

Fig. S1. (A) Absorption spectra of PSF in aqueous buffer and 2 mM STS medium. **(B)** Absorption spectra of PSF in the presence of different ctDNA concentrations. Curves (i) → (xi) correspond to 0, 5, 15, 20, 40, 50, 80, 100, 120, 130, 150 μM of ctDNA. [PSF] = 5 μM.

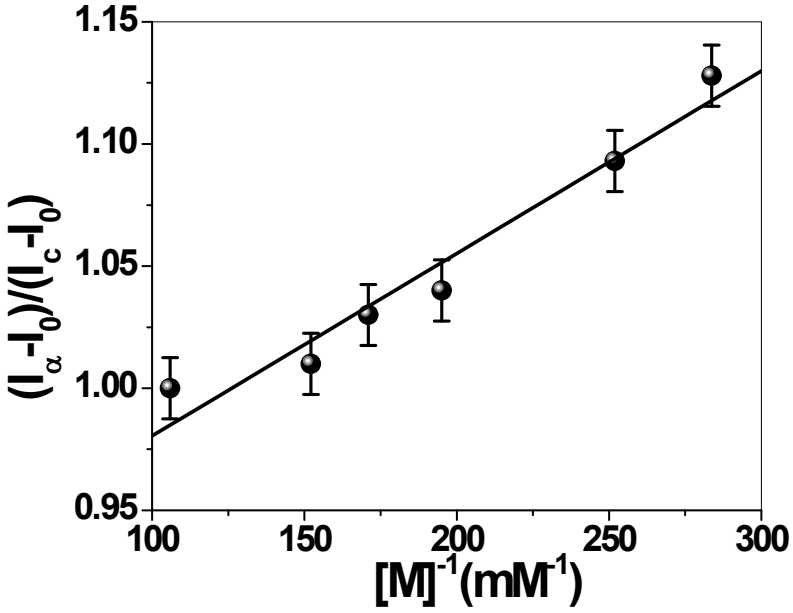

Fig. S2. Almgren plot for the determination of the binding constant of PSF with STS. I_0, I_c and I_α are the fluorescence intensities of PSF in the absence of STS, at an intermediate STS concentration and at a condition of complete interaction respectively. [M] is the micellar concentration.

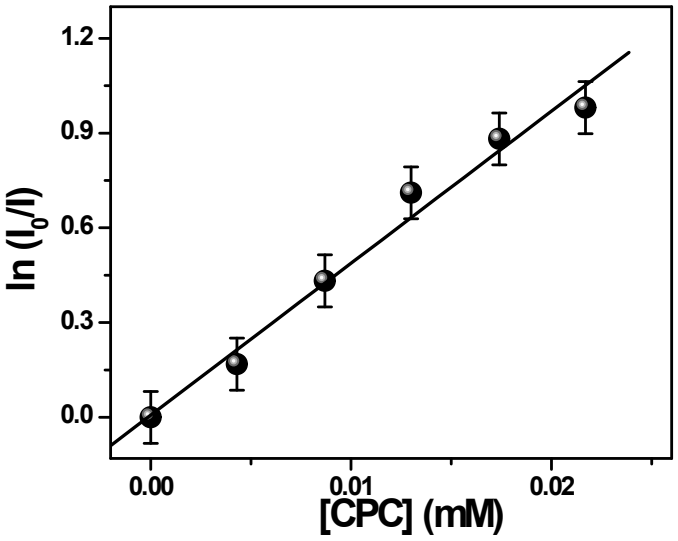

Fig. S3. Plot of ln (I_0/I) against [CPC] for the determination of the aggregation number of STS. I_0 and I are the fluorescence intensities of pyrene in the absence and presence of the quencher CPC respectively. [CPC] is the quencher concentration.

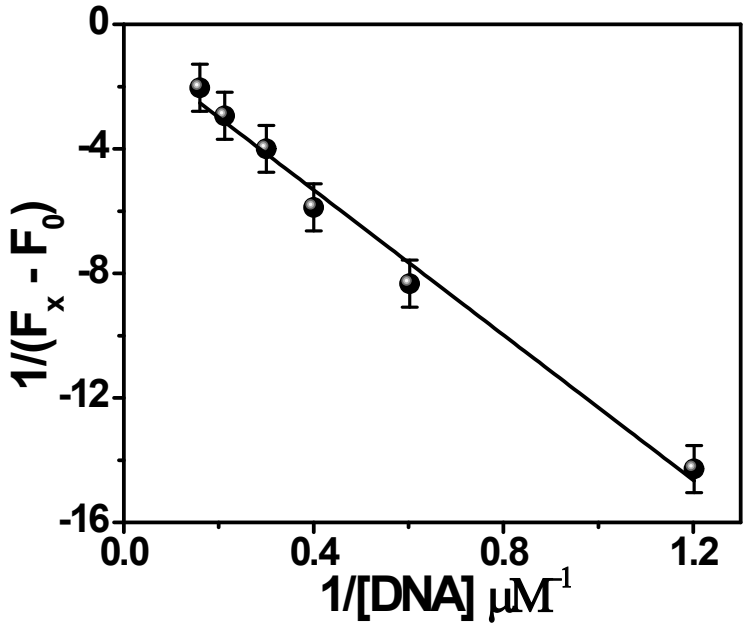

Fig. S4. Benesi-Hildebrand plot for the determination of the binding constant of PSF with ctDNA. F_0 and F_x and are the fluorescence intensities of PSF in the absence and at an intermediate ctDNA concentration respectively. [DNA] is the ctDNA concentration.

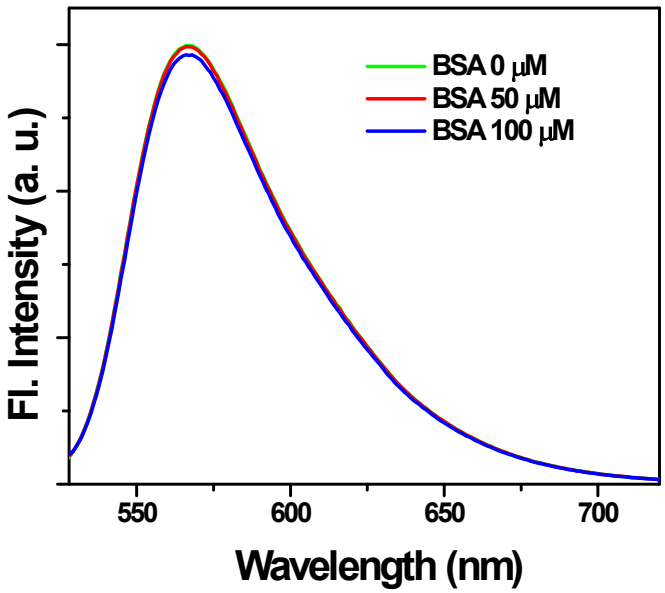

Fig. S5. Fluorescence spectra of STS micelle bound PSF in different BSA concentrations as mentioned in the legends. λ_{ex} = 520 nm. [STS] = 2 mM.

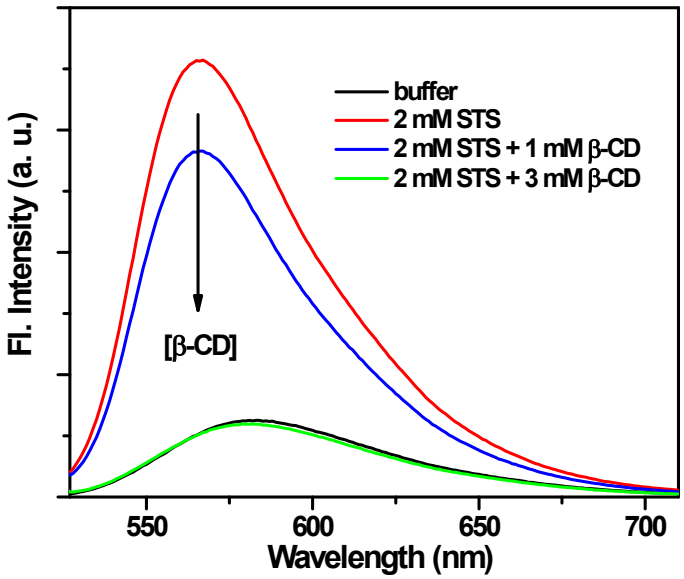

Fig. S6. Fluorescence spectra of PSF in different environments as mentioned in the legends. λ_{ex} = 520 nm.

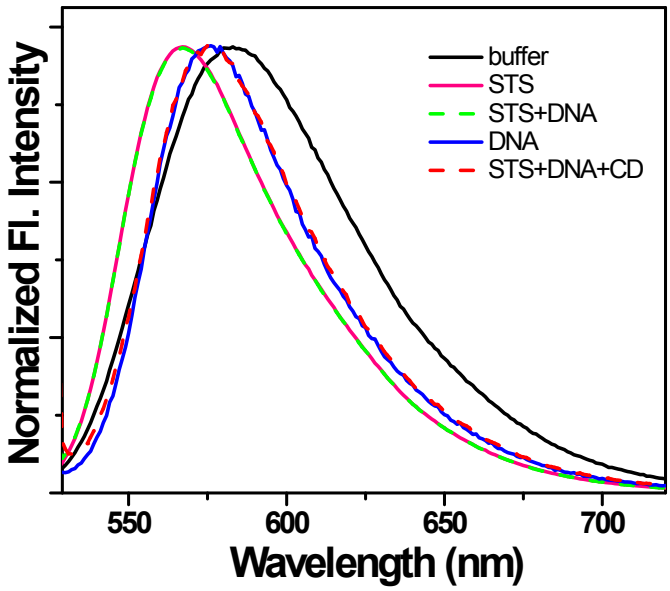

Fig. S7. Normalized fluorescence spectra of PSF in different environments as mentioned in the legends.

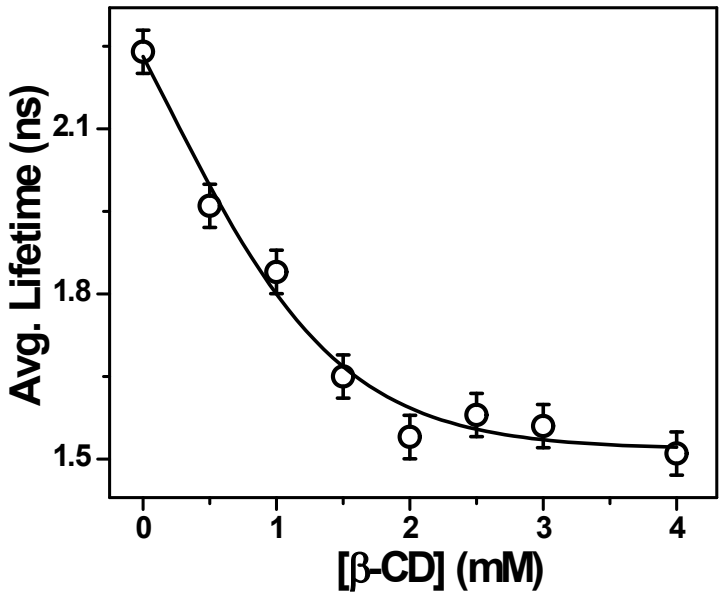

Fig. S8. Variation in the average fluorescence lifetime of PSF in STS-DNA mixture as a function of β-CD concentration.