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

Supporting Information

Excited State Proton Transfer Dynamics of an Eminent Anticancer Drug, Ellipticine in Octyl Glucoside Micelle

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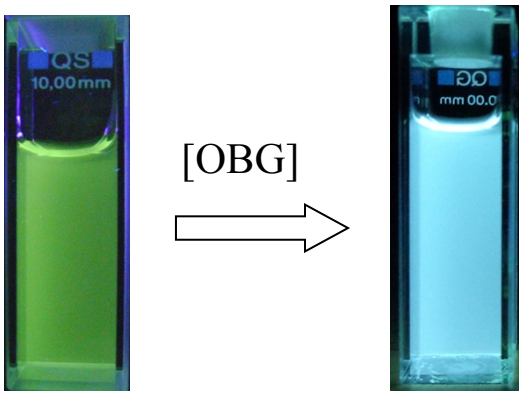

Figure S1. Fluorescence switch of EPT in presence of OBG micelles (λ_{ex} = 360 nm).

Note S1. The excitation spectrum monitored at 530 nm, which is the characteristic emission maximum of protonated EPT, shows three bands at 300 nm, 355 nm and 420 nm in buffer (Figure S2). In presence of OBG micelles these peaks are shifted to 280 nm, 335 nm and 400 nm, respectively. Moreover, these new peaks observed at 530 nm in OBG micelles are same as the bands observed in excitation spectrum collected at 440 nm which is attributed to neutral form. These results confirm that protonated form is generated in the excited state at the cost of neutral form via excited state proton transfer.

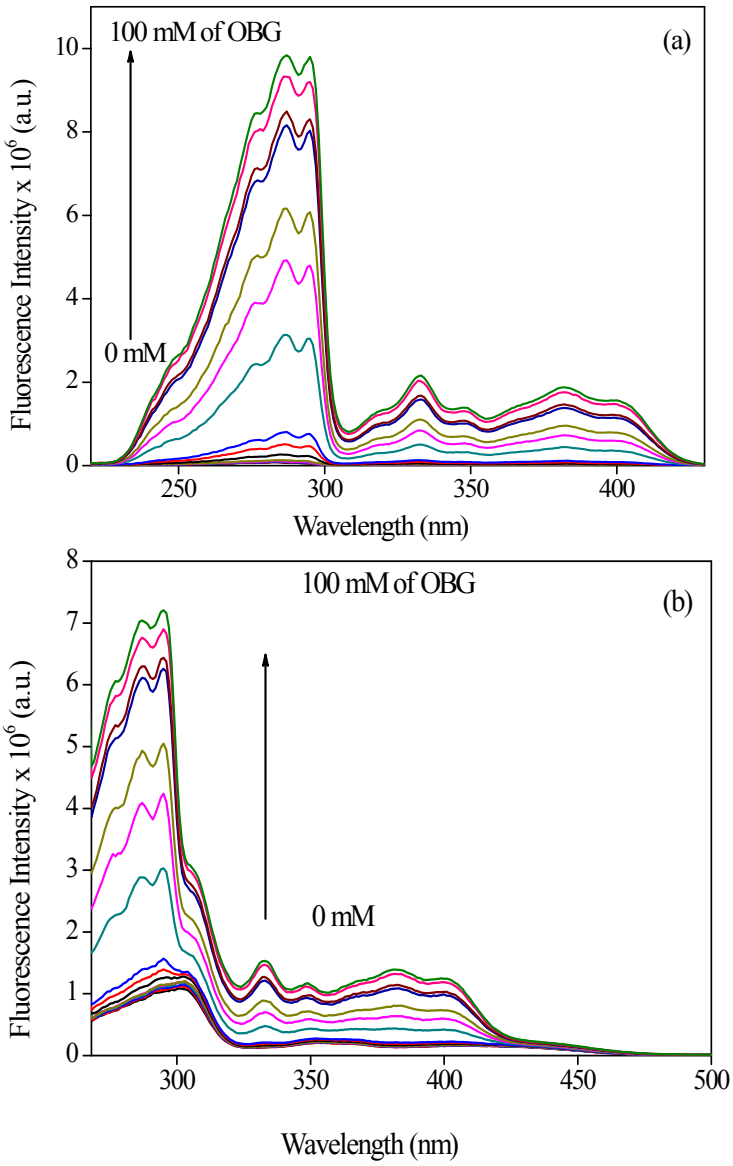

Figure S2. Excitation spectra of EPT in buffer with increasing concentration of OBG (0 mM to 100 mM) collected at 440 nm (a) and 530 nm (b).

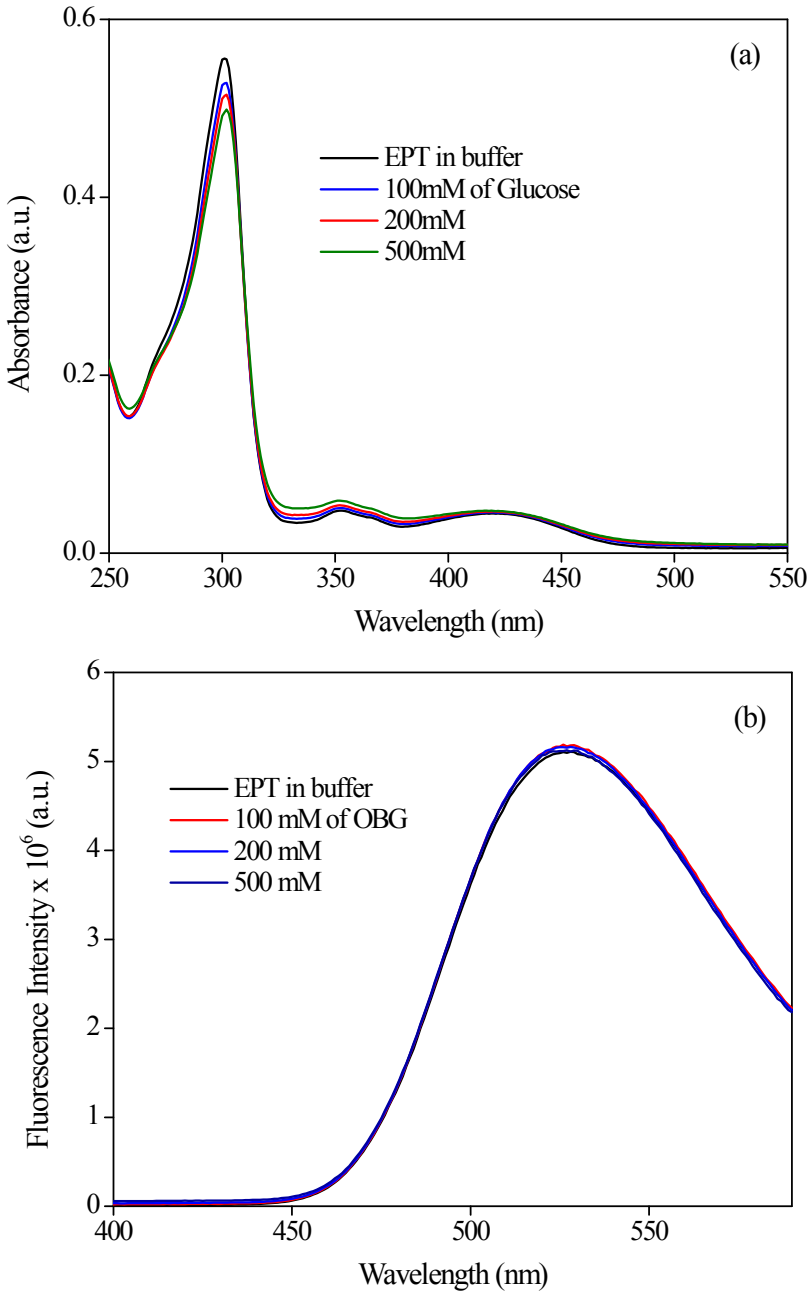

Figure S3. Absorption (a) and Emission (b) spectra of EPT in pH 7 buffer with increasing concentration of glucose (0 mM to 500 mM).

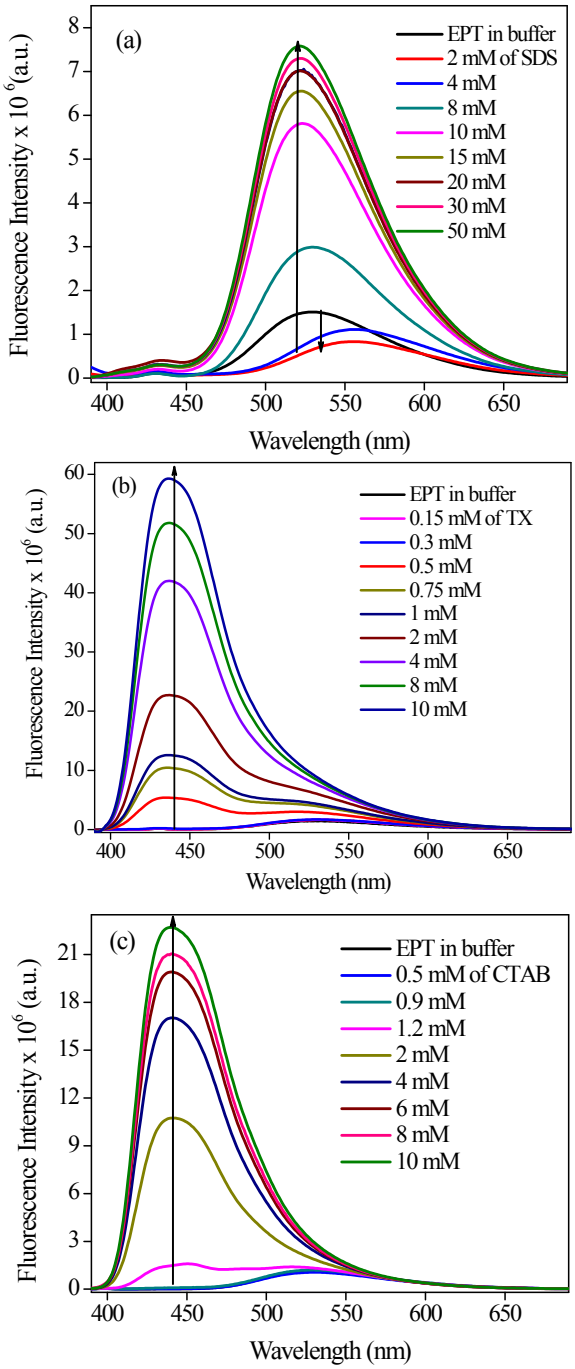

Figure S4. Emission spectra of EPT in buffer with increasing concentration of (a) SDS (0 mM to 50 mM) (b) Triton-X (0 mM to 10 mM) and (c) CTAB (0 mM to 10 mM). (λ_{ex} = 375 nm).

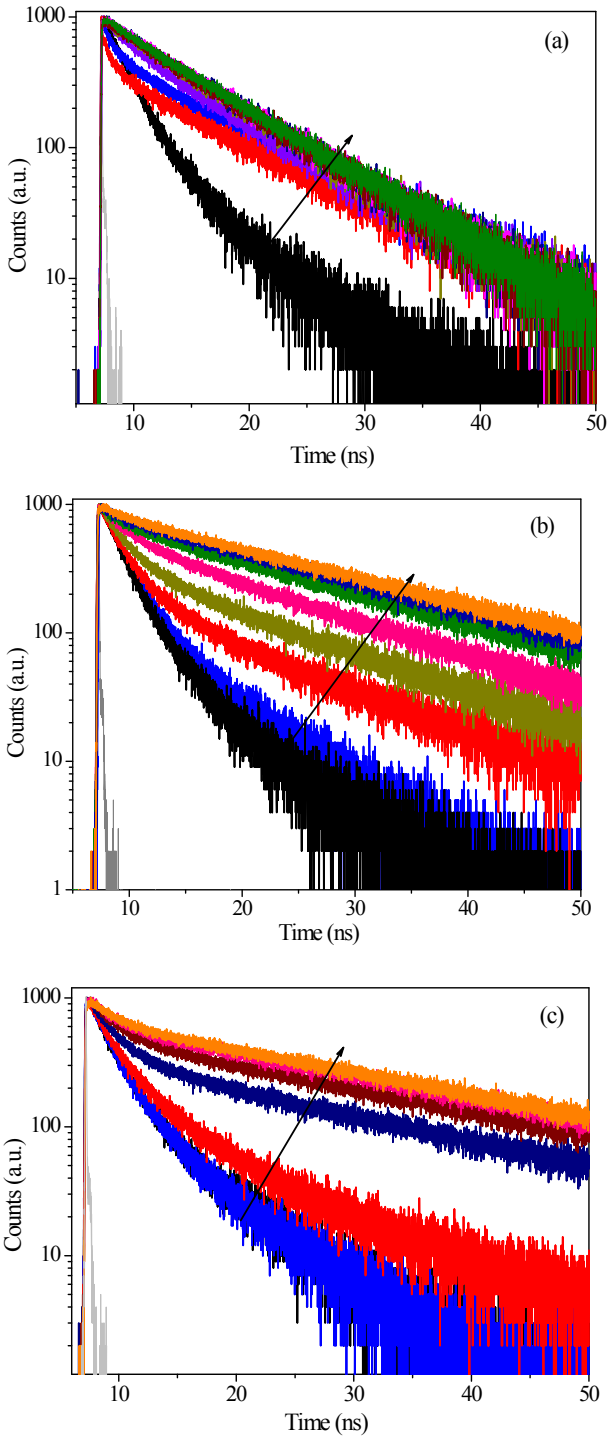

Figure S5. Time resolved emission decays of EPT in buffer with increasing concentration of (a) SDS (0 mM to 50 mM) (b) Triton-X (0 mM to 10 mM) and (c) CTAB (0 mM to 10 mM) collected at 530 nm (λ_{ex} = 375 nm).

Note S2: There is no growth observed in the decay profiles of EPT in SDS, CTAB and TX-100 micelles. Therefore, we believe that ESPT process is not taking place in the above mentioned three conventional micellar environments, as we observed in case of OBG micelle.