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

Supplementary Material for

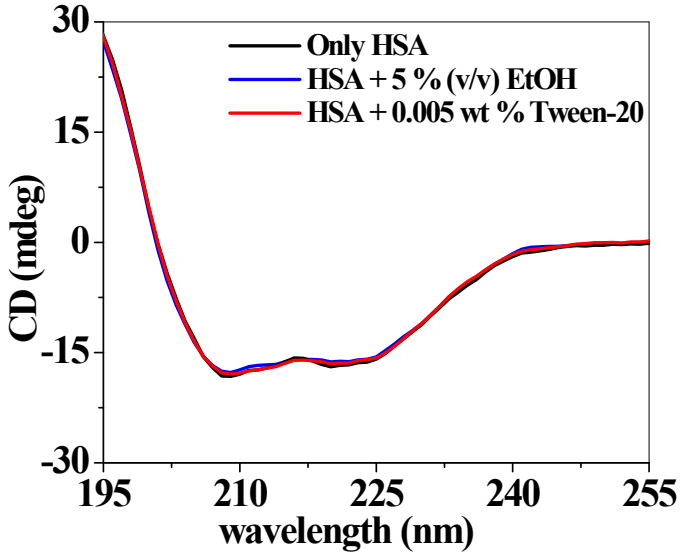
Unfolding and Refolding of a Protein by Cholesterol and Cyclodextrin: A Single Molecule Study

Shirsendu Ghosh, Catherine Ghosh, Somen Nandi and Kankan Bhattacharyya*

Department of Physical Chemistry, Indian Association for the Cultivation of Science, Jadavpur, Kolkata -700032, India.

*Email: pckb@iacs.res.in

Figure S1. CD spectra of HSA in phosphate buffer in native, in presence of 5% ethanol and 0.005% Tween-20.



$$G_{AC}(\tau) = \frac{1}{N}\left[1 + \frac{\tau}{\tau_D}\right]^{-1}\left[1 + \frac{\tau}{\omega^2 \tau_D}\right]^{-1/2} \qquad \text{(S1)}$$

$$G_{AC}(\tau) = \frac{1 - F + F\exp(-\tau/\tau_R)}{N(1-F)}\left(1 + \frac{\tau}{\tau_d}\right)^{-1}\left(1 + \frac{\tau}{\omega^2 \tau_d}\right)^{-1/2} \qquad \text{(S2)}$$

Figure S2. FCS trace of CPM labeled HSA in phosphate buffer. Comparisons of fit to (a) free diffusion (green) (b) one component diffusion and one component of relaxation (blue) and one component diffusion and two components of relaxation (black). Bottom panel shows the residuals.

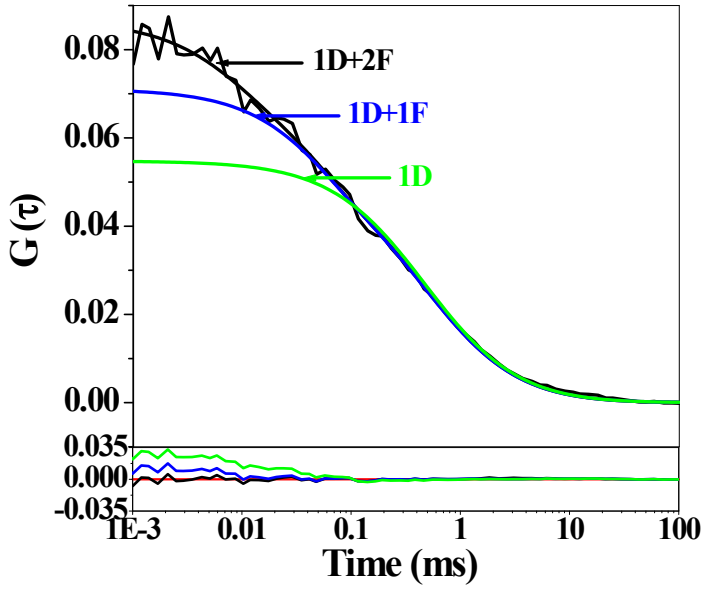


Figure S3: Variation of relaxation time (τ_{R1}) of HSA with laser power.

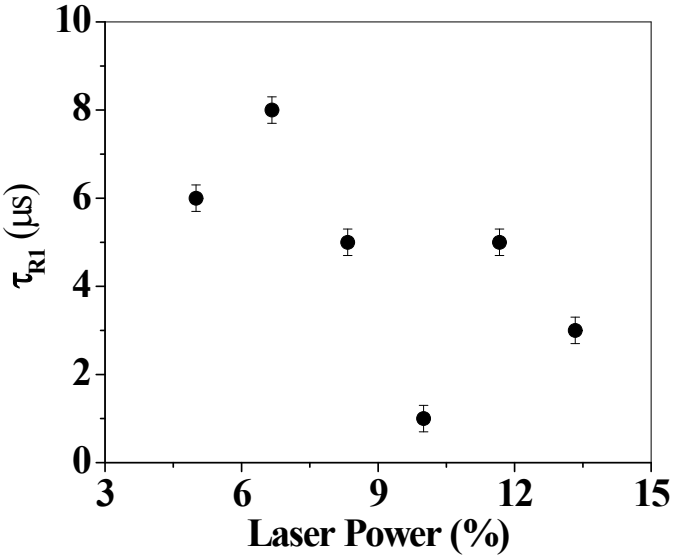


Figure S4: CD spectra of (A) HSA in different concentration of Cholesterol (Chl) (B) 1 mM Cholesterol denatured HSA and different concentration of β-cyclodextrin (β-CD).

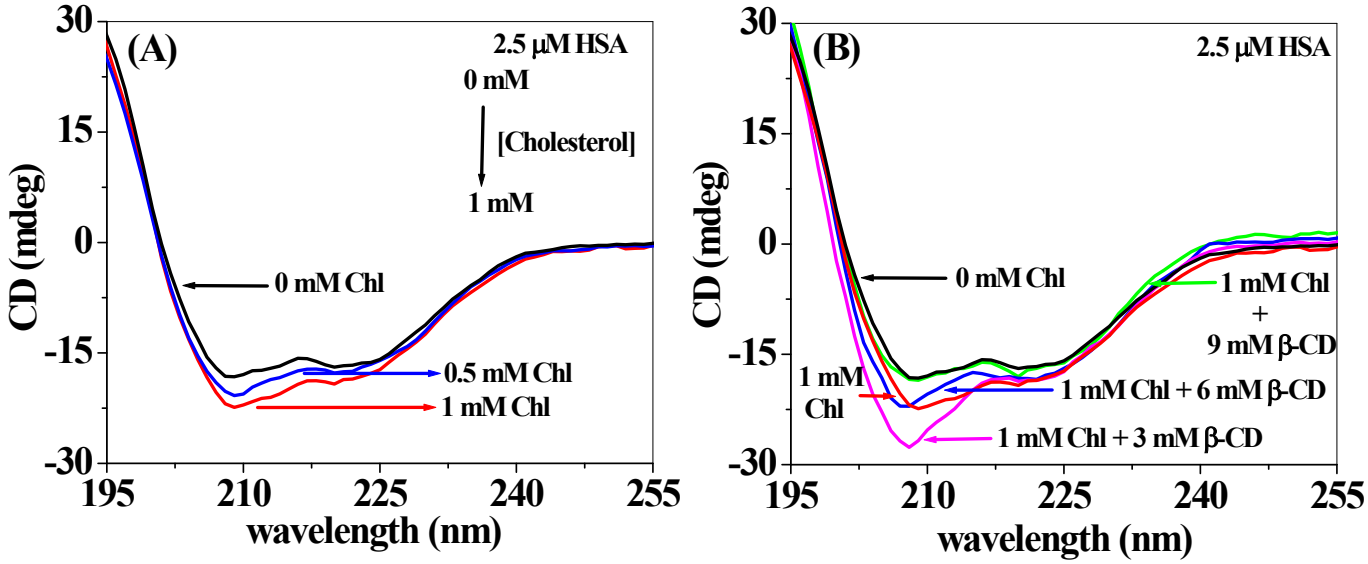


Figure S5. Intensity of fluorescence emission of ANS bound to HSA in native state (--) and in 1 mM Cholesterol denatured state (--).