

Electronic Supplementary Information

Synthesis, Structural Characterization, Protein Binding, DNA Cleavage and Anticancer Activity of Fluorophore Labelled Copper(II) Complexes Based on 1,8-Naphthalimide Conjugate

Sabiha A. Shaikh^a, Satish S. Bhat^a, Pooja L. Hegde, Vidyanand K Revankar^{*a}, Anup Kate^b, Deepi Kirtani^b, Anupa Kumbhar^b, Vijay Kumbhar^c and Kishore Bhat^c

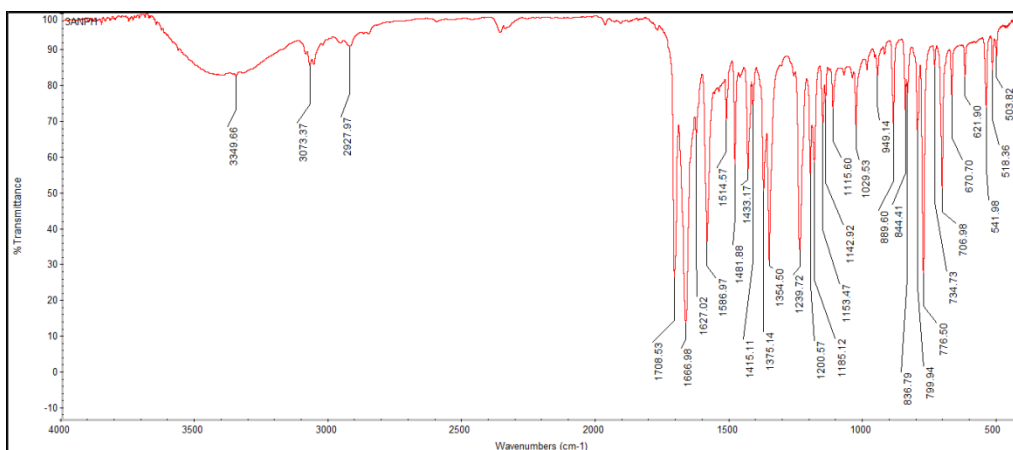
^aDepartment of Chemistry, Karnatak University, Dharwad-580003, Karnataka, India.

E-mail: vkrevankar@rediffmail.com,

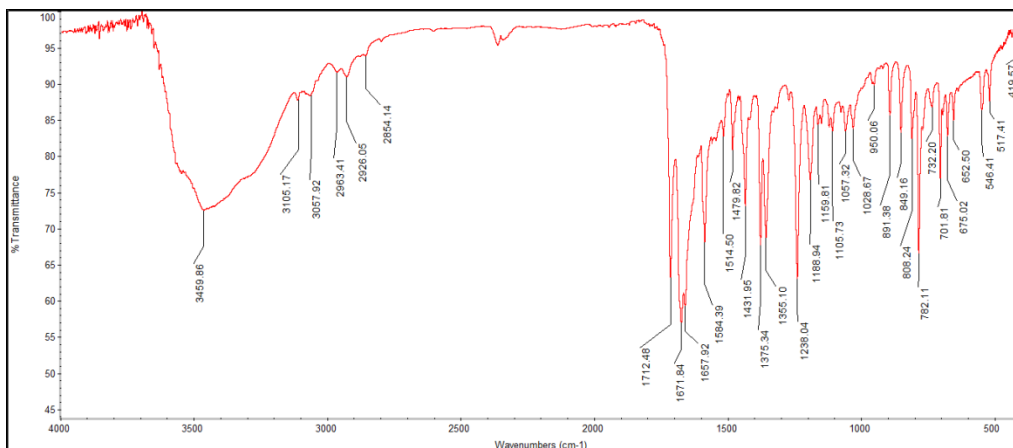
^bDepartment of Chemistry, Savitribai Phule Pune University, Pune-411007, Maharashtra, India

^cMaratha Mandal's Central Research Laboratory, Marathamandal Dental College and Research Centre, Belgaum, Karnataka, India.

(a)



(b)



(c)

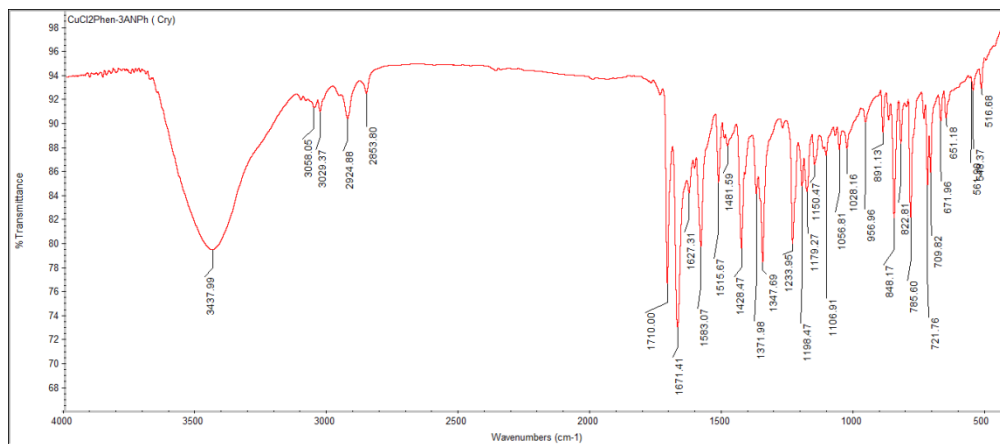
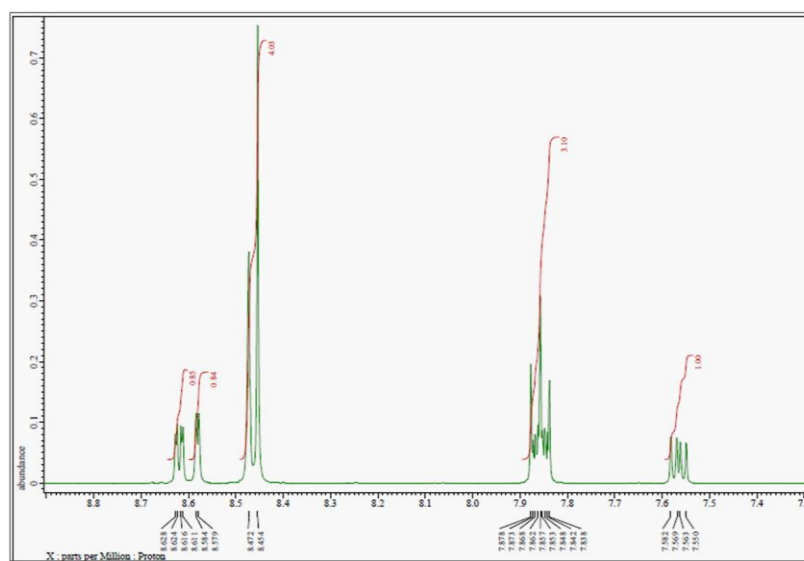


Figure S1. FT-IR spectra of (a) ligand (L), complexes (b) 1, (c) 2.

(a)



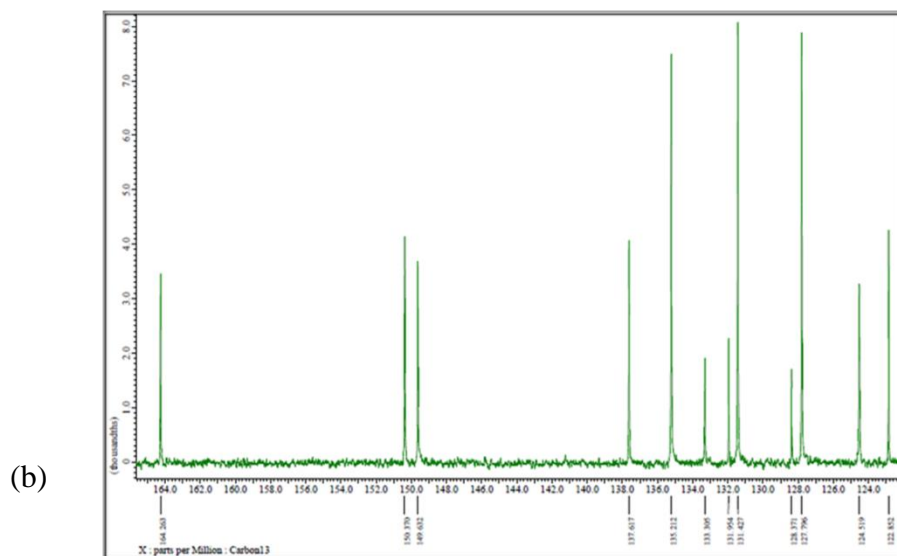


Figure S2. NMR spectra of ligand (**L**), (a) ^1H NMR, (b) ^{13}C NMR.

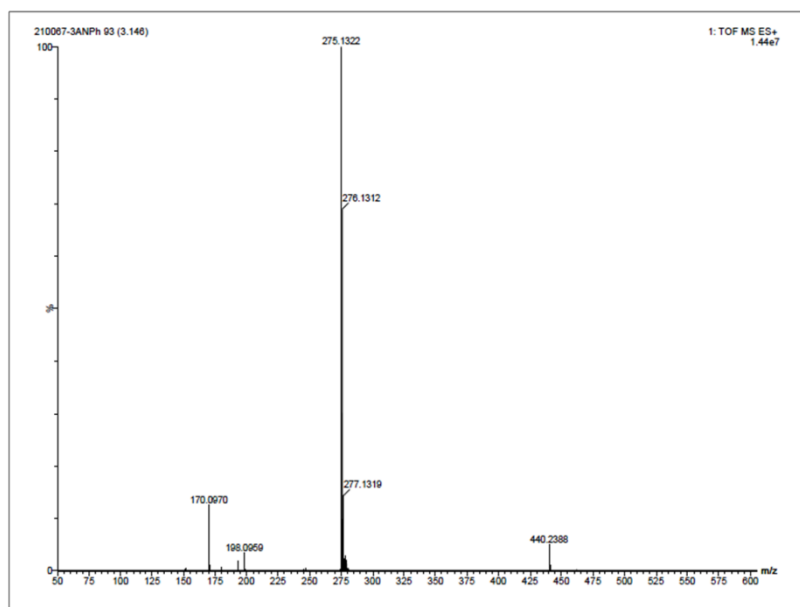


Figure S3. LC-MS spectrum of the ligand **L** showing significant peak at m/z 275 corresponds to $[\text{M}+\text{H}^+]$.

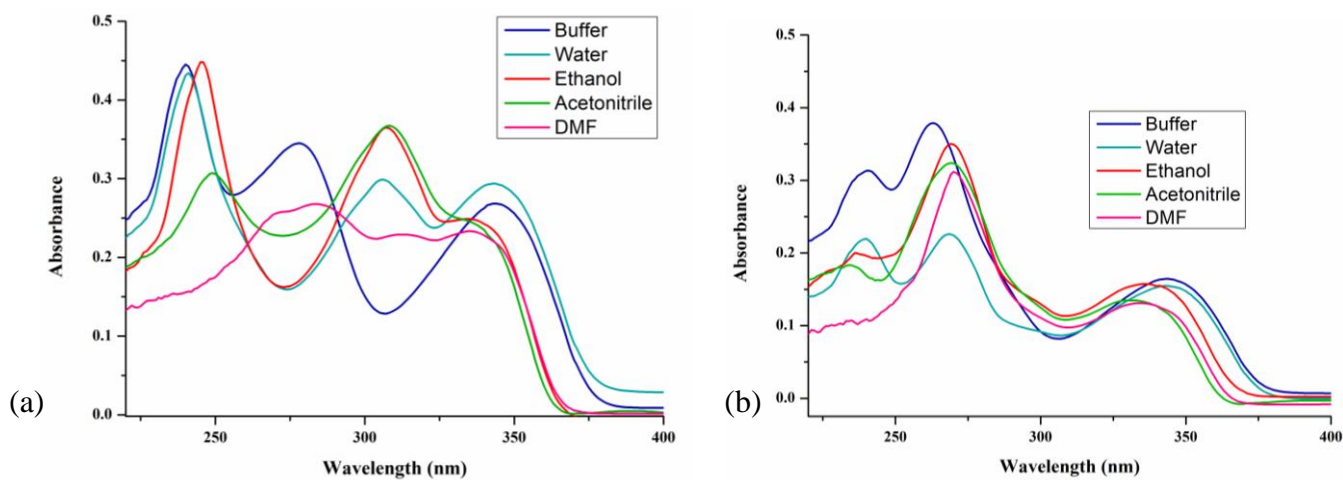


Figure S4. UV-visible spectra of complexes (a) **1**, (b) **2**, in different solvents; phosphate buffer, water, ethanol, acetonitrile, DMF (10 μM).

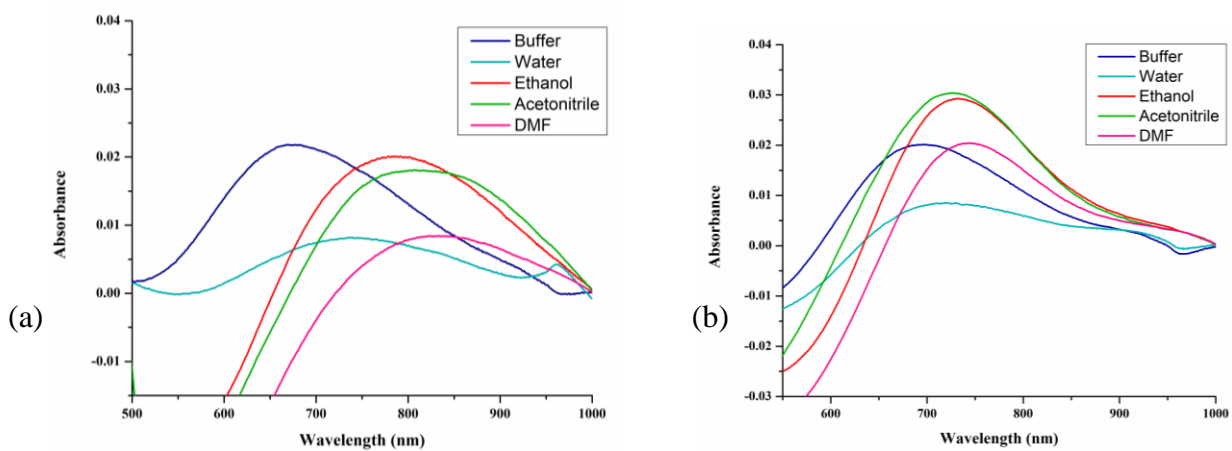


Figure S5. UV-visible spectra for the complexes (a) **1** and (b) **2** in different solvents phosphate buffer, water, ethanol, acetonitrile, DMF (500 μM) showing MLCT transitions.

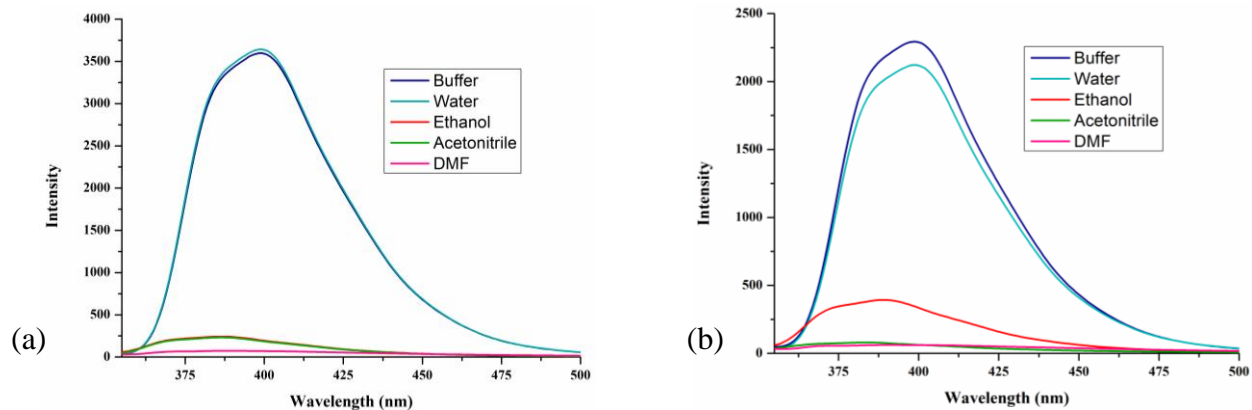


Figure S6. Fluorescence spectra of complexes (a) **1** and (b) **2** in different solvents phosphate buffer, water, ethanol, acetonitrile, DMF (10 μ M).

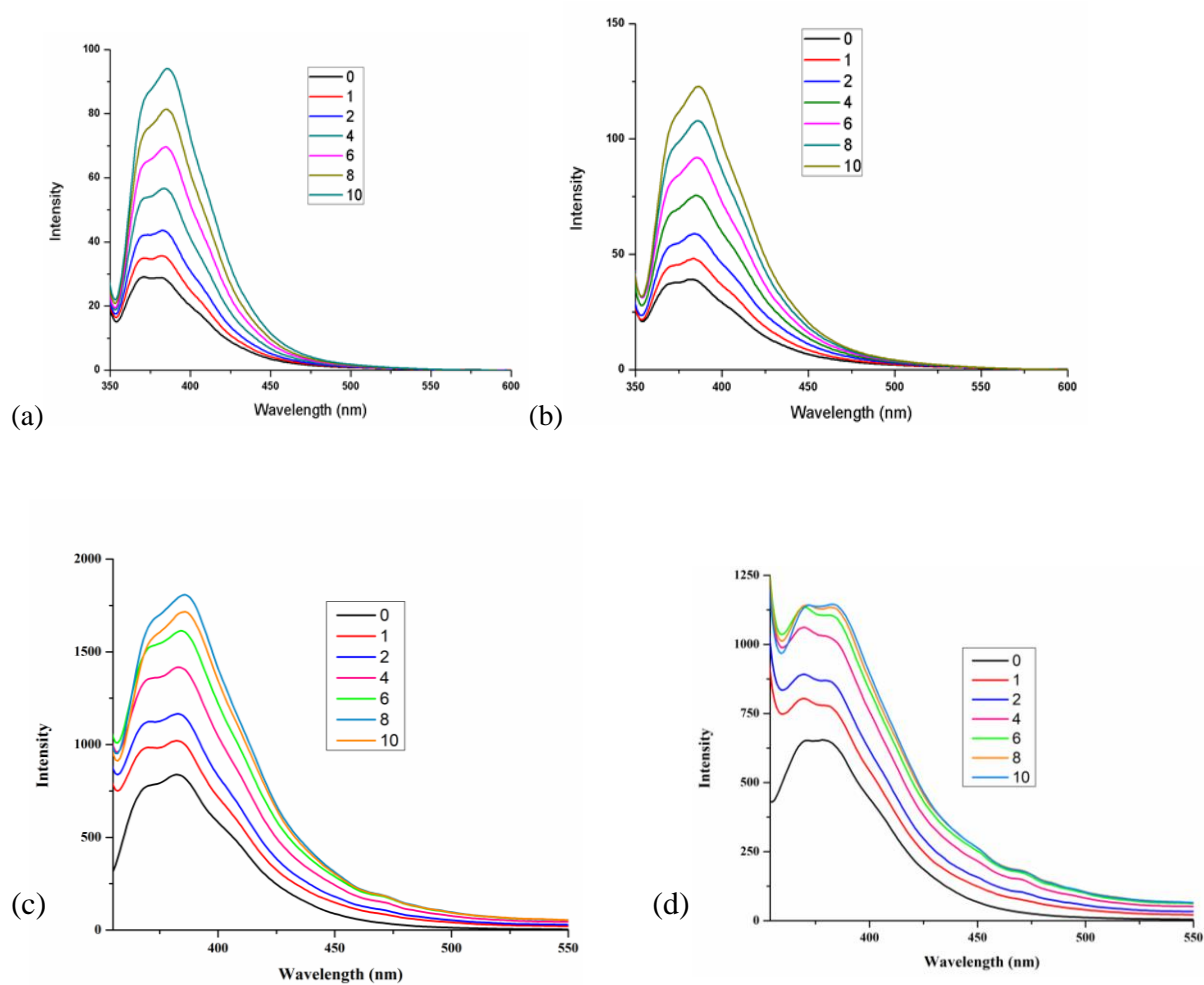


Figure S7: The changes in fluorescence spectra of complexes in acetonitrile upon gradual addition of water (a) **1** (b) **2** and buffer (c) **1** (d) **2**.

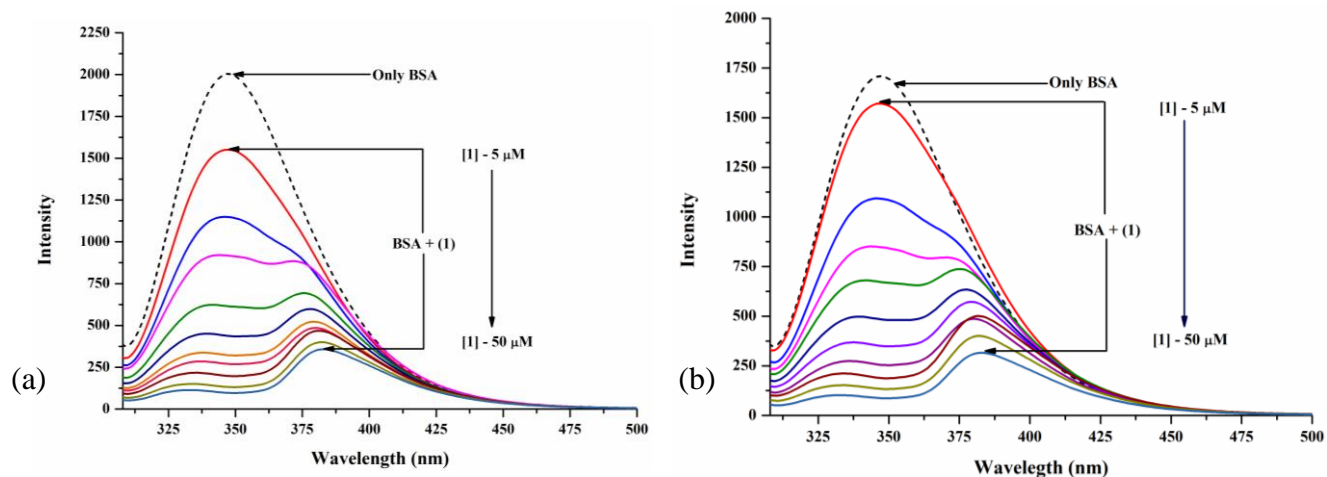


Figure S8. Fluorescence spectra of interaction of BSA (50 μM , $\lambda_{\text{ex}}=295\text{ nm}$) with complex **1** of various concentrations (5, 10, 15, 20, 25, 30, 35, 40, 45, 50 μM) at (a) 306K and (b) 313K.

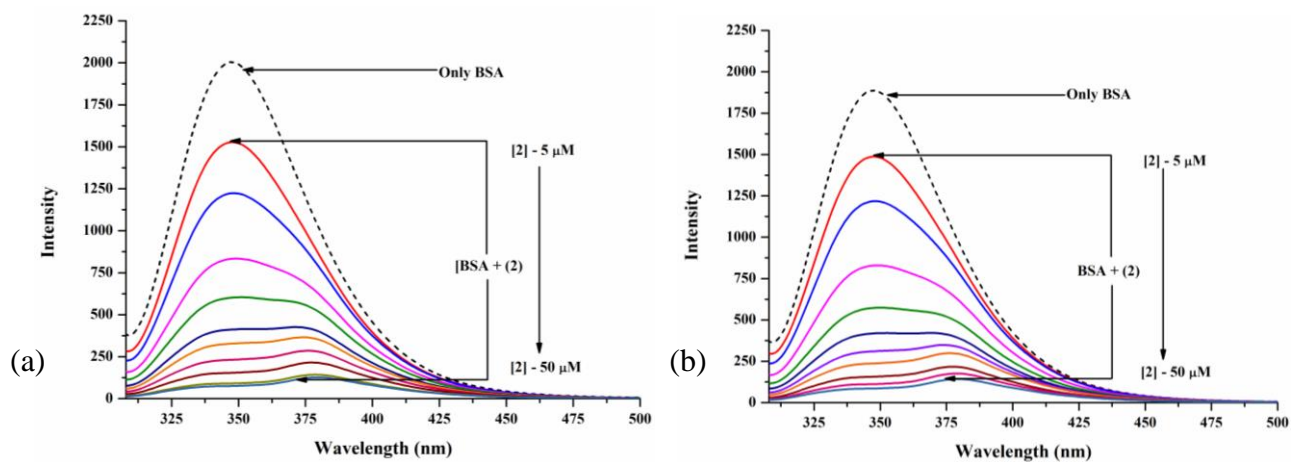


Figure S9. Fluorescence spectra of interaction of BSA (50 μM , $\lambda_{\text{ex}}=295\text{ nm}$) with complex **2** of various concentrations (5, 10, 15, 20, 25, 30, 35, 40, 45, 50 μM) at (a) 306K and (b) 313K.

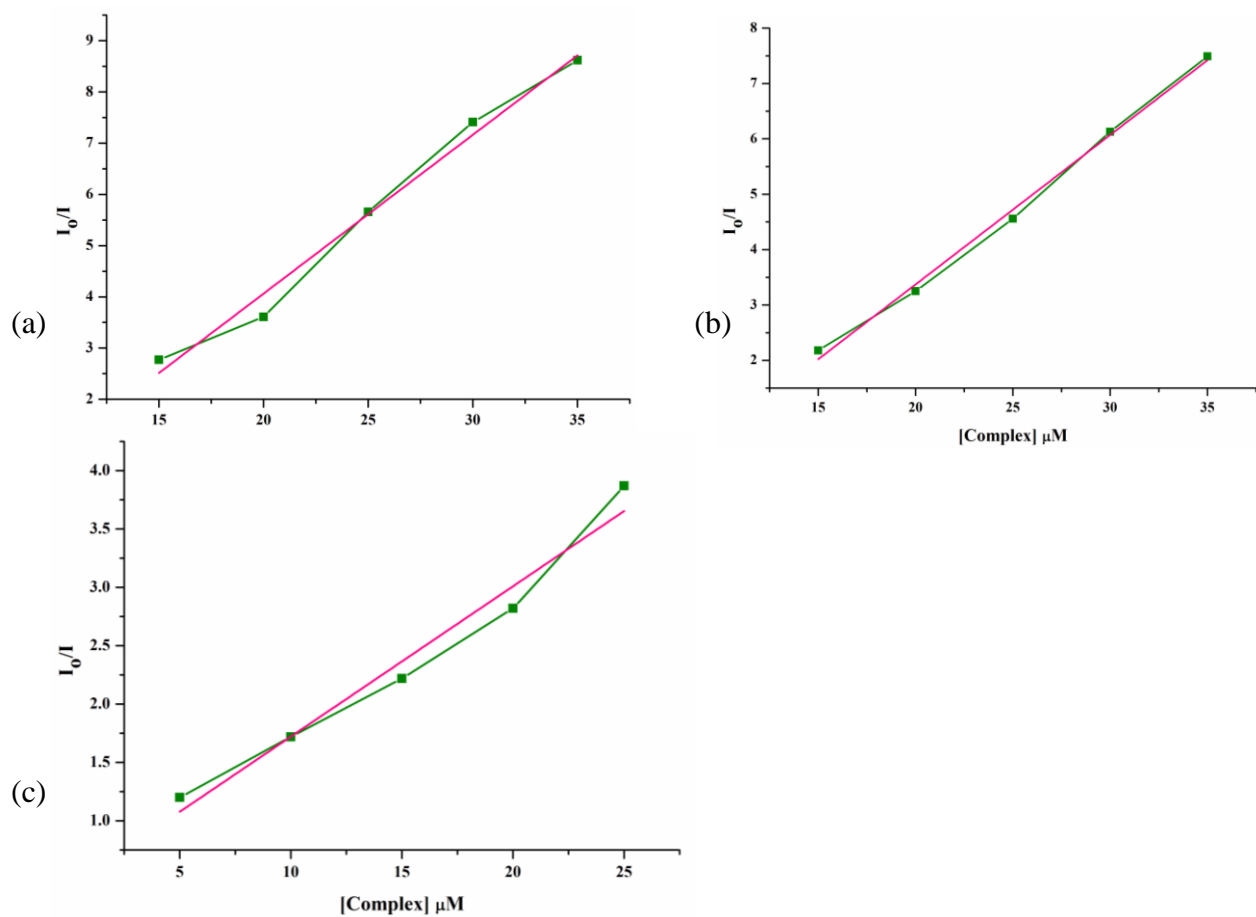
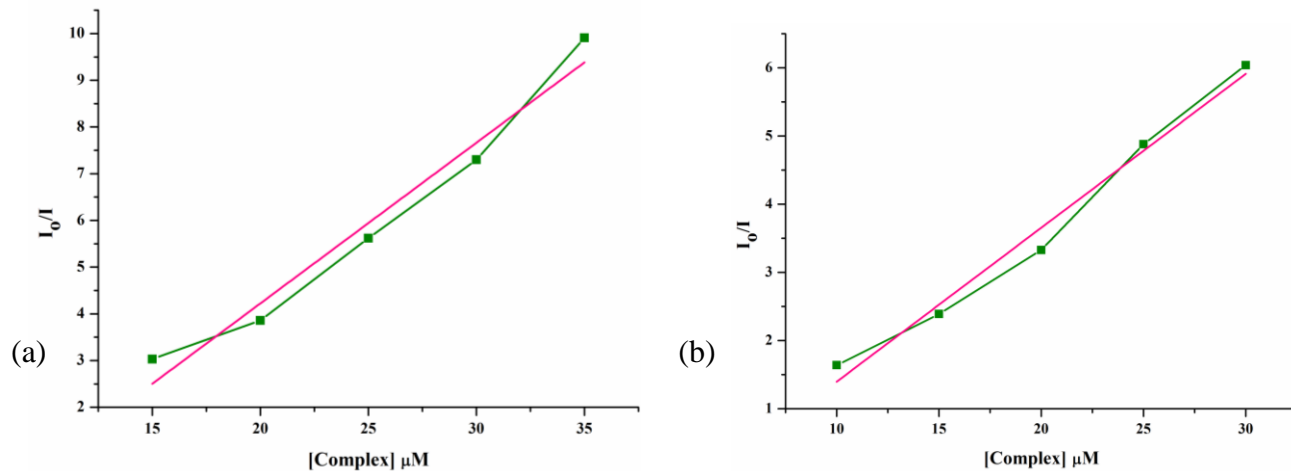


Figure S10. Plots for the Stern – Volmer quenching constant for the interaction of BSA with complex **1** at (a) 301K, (b) 306K, (c) 313K.



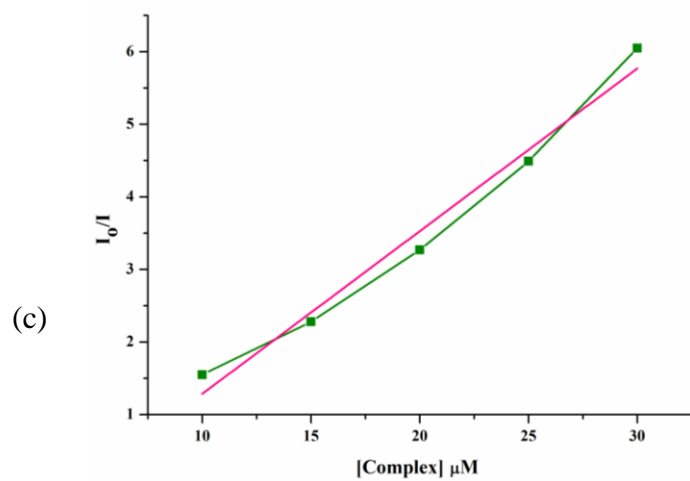


Figure S11. Plots for the Stern –Volmer quenching constant for the interaction of BSA with complex **2** at (a) 301K, (b) 306K, (c) 313K.