

## **Supporting Information**

### **Investigation on New Ruthenium(II) Hydrazone Complexes as Anticancer Agent and Their Interaction with Biomolecules**

**Mani Alagesan<sup>a</sup>, Nattamai S.P. Bhuvanesh<sup>b</sup> and Nallasamy Dharmaraj<sup>a,\*</sup>**

*<sup>a</sup>Inorganic & Nanomaterials Research Laboratory, Department of Chemistry, Bharathiar University, Coimbatore – 641 046, India. E-mail: dharmaraj@buc.edu.in; Tel.: +91 422 2428319; Fax: +91 422 2422387.*

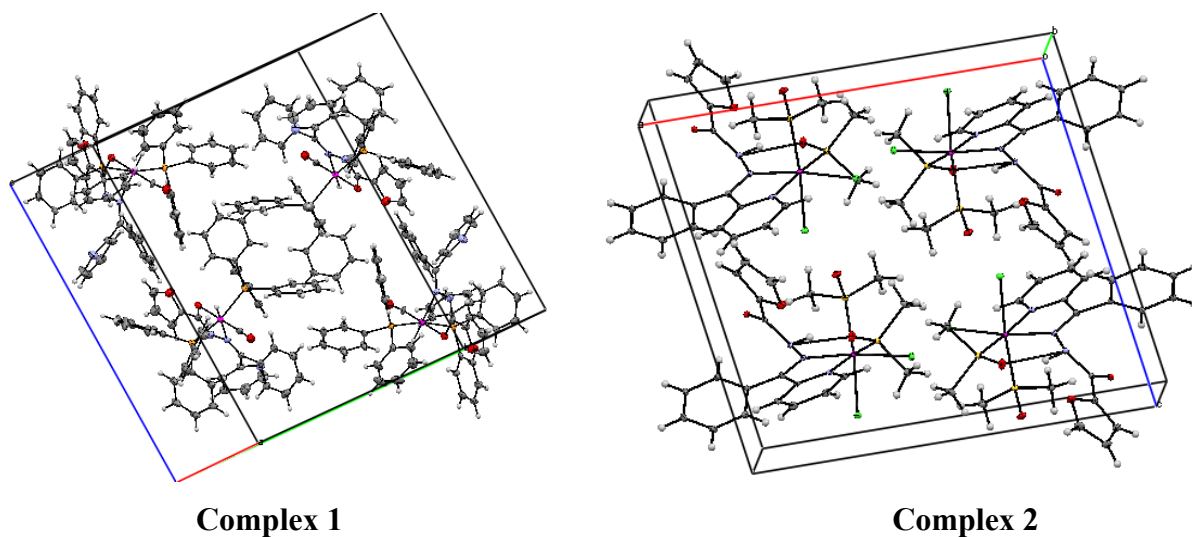
*<sup>b</sup>Department of Chemistry, Texas A&M University, College Station, TX 77843, U.S.A.*

Electronic supplementary information (ESI) available: CCDC reference number of the complex is 917920, 917921. For crystallographic data in CIF see DOI:

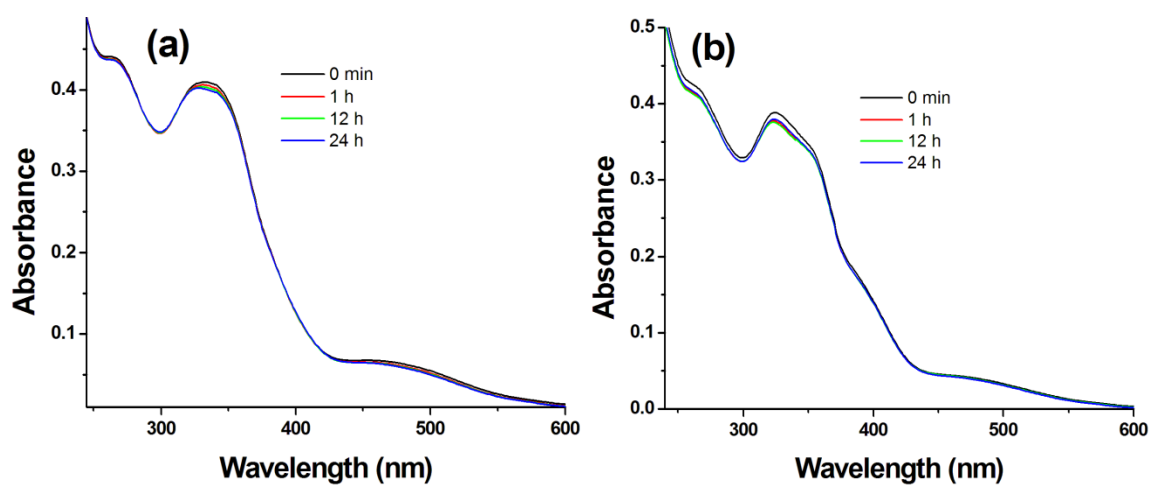
---

\*Corresponding author. Tel.: +91 422 2428319.

E-mail address: dharmaraj@buc.edu.in



**Figure S1** Packing diagram of Ru(II) complex with inter- molecular hydrogen bonding



**Figure S2** UV-Vis. absorption spectrum of complexes 1 and 2 in aqueous PBS buffer (phosphate buffered saline solution), at pH 7.4, to a final concentration of  $1 \times 10^{-3}$  M recorded after different time intervals.

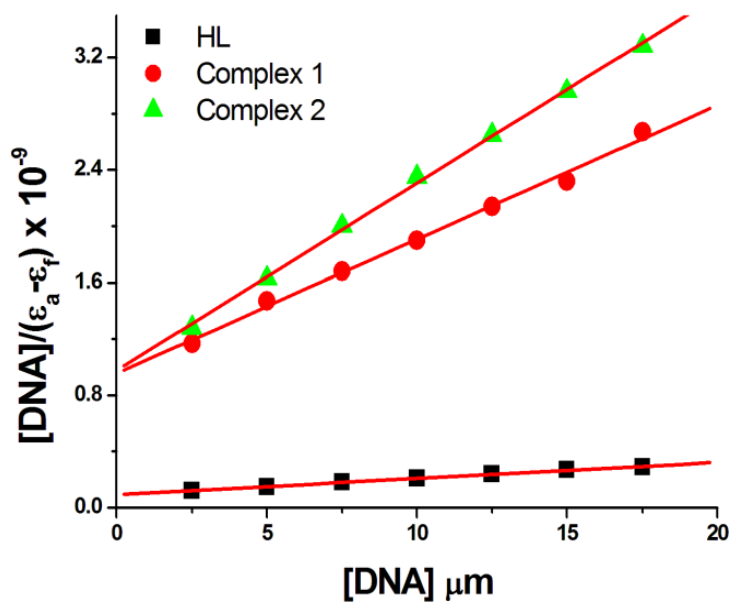


Figure S3 Plots of  $[DNA]/(\epsilon_a - \epsilon_f)$  versus  $[DNA]$  for the compounds with CT-DNA.

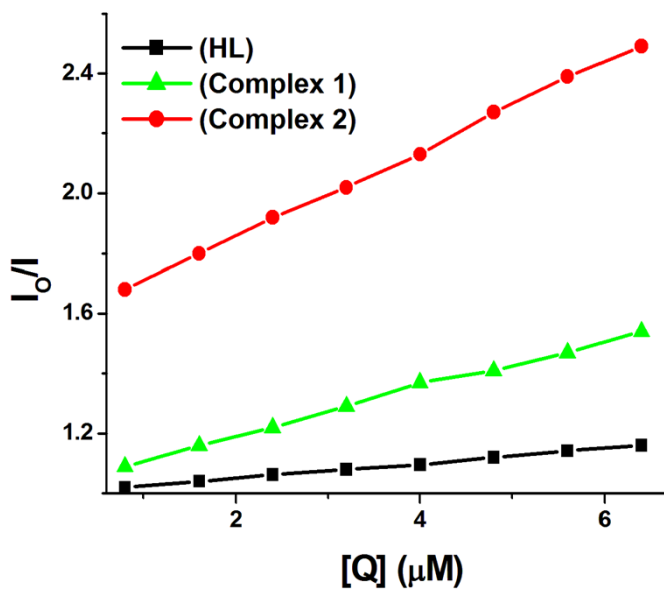


Figure S4 Stern-Volmer plots of the fluorescence titrations of the ligand and the complexes.

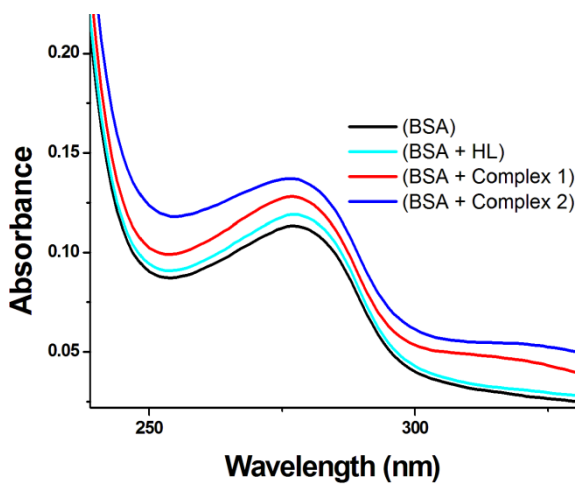
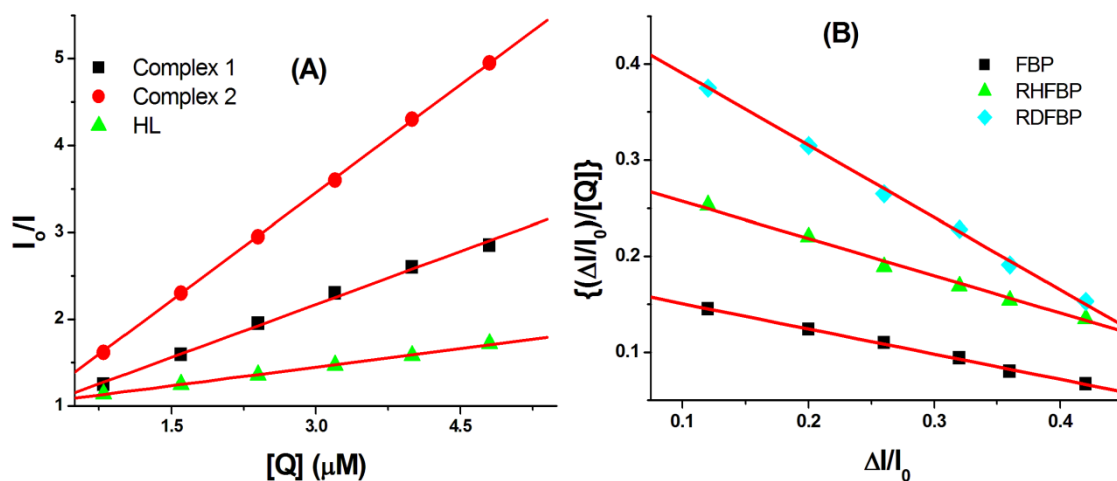
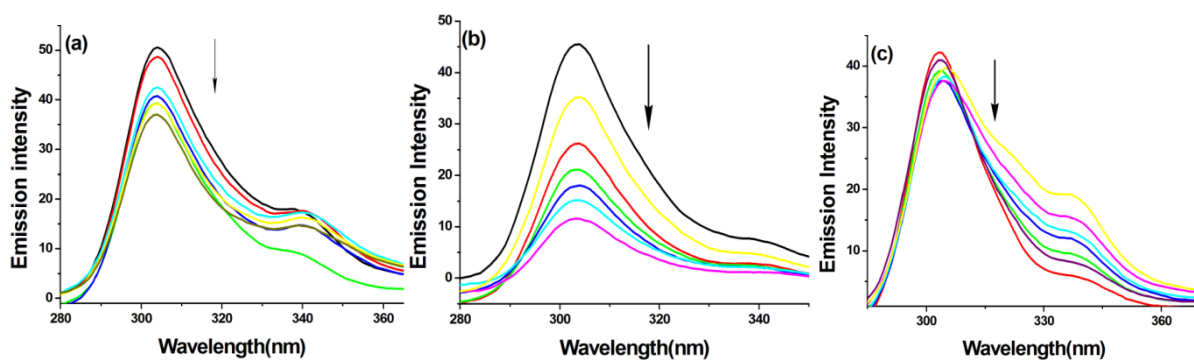


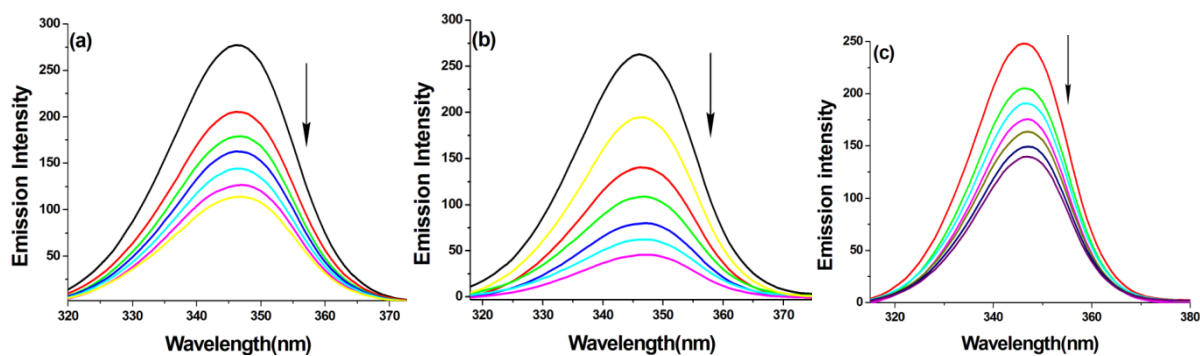
Figure S5 Electronic absorption spectra of BSA (10 μM), with ligand and complexes



**Figure S6** Stern–Volmer plots (A) and Scatchard plots (B) of the fluorescence titration of the ligand and the complexes with BSA.



**Figure S7** Synchronous spectra of BSA ( $1 \mu\text{M}$ ) in the presence of increasing amounts of the complexes **1** (a) and **2**(b) and ligand **HL**(c) (0-12  $\mu\text{M}$ ) at a wavelength difference of  $\Delta\lambda = 15 \text{ nm}$ . The arrow shows the emission intensity decreases upon the increase in concentration of the compounds.



**Figure S8** Synchronous spectra of BSA ( $1 \mu\text{M}$ ) in the presence of increasing amounts of the complexes **1** (a) and **2**(b) and the ligand **HL**(c) (0-12  $\mu\text{M}$ ) at a wavelength difference of  $\Delta\lambda = 60 \text{ nm}$ . The arrow shows the emission intensity decreases upon the increase in concentration of the compounds.

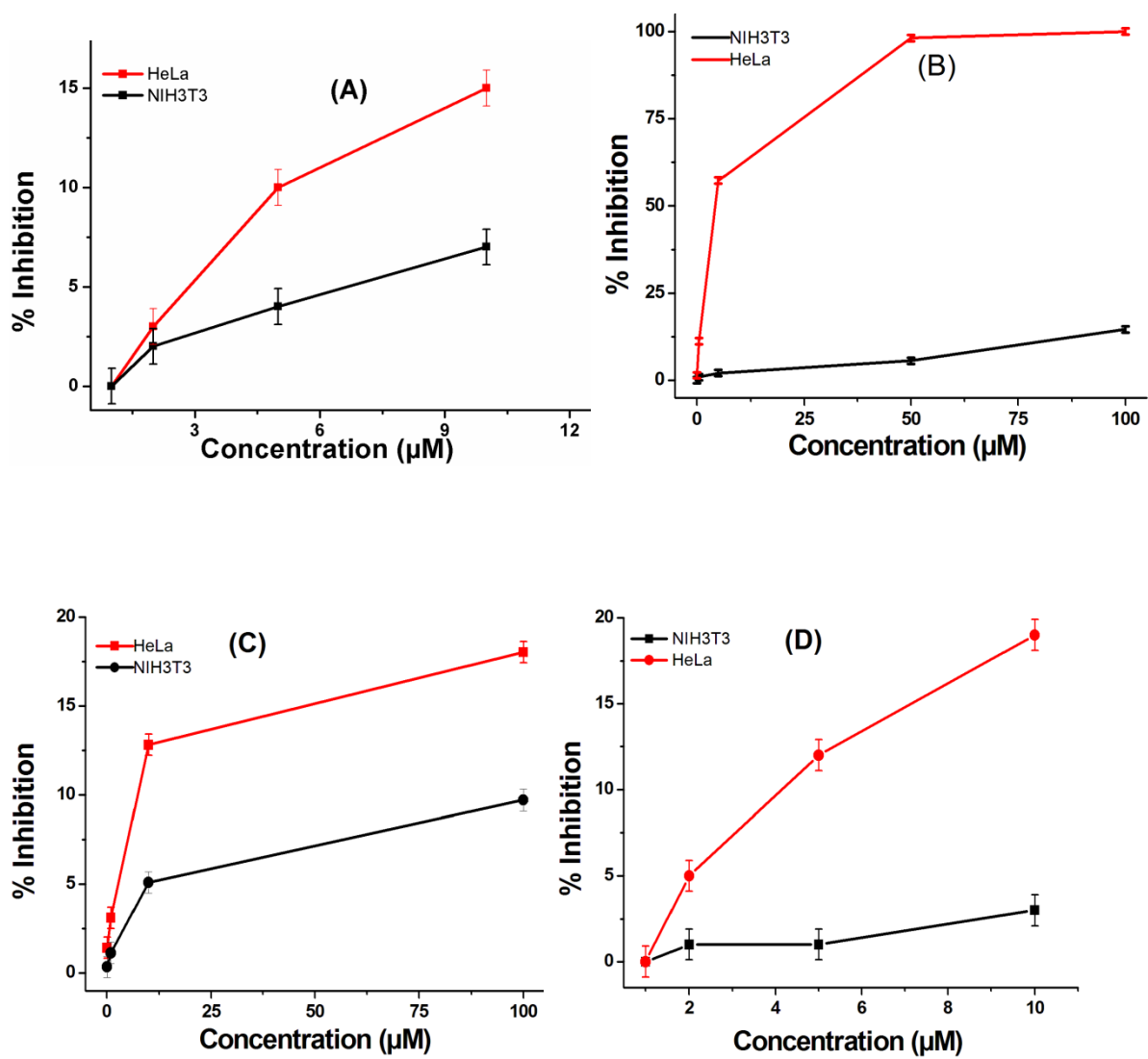


Figure S9 Cytotoxicity of complex 1(A), complex 2 (B), Ligand (C) and *cisplatin* (D), respectively