

Supplementary Material

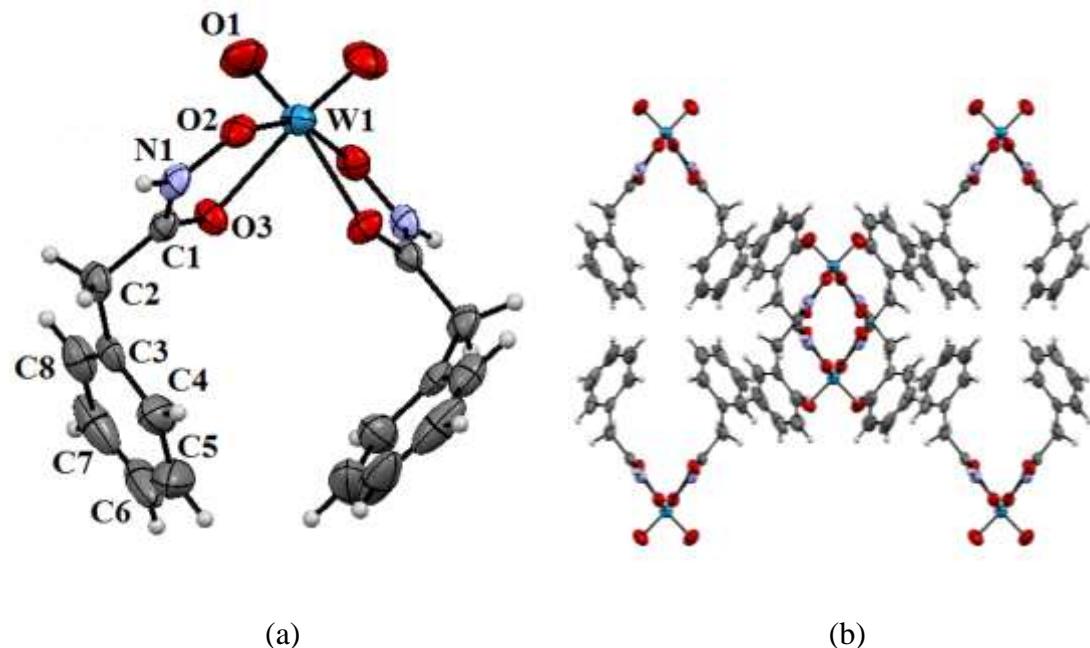


Fig. S1(a): ORTEP representation of the X-ray crystal structure of complex 2, with all non-hydrogen atoms shown as 50% thermal ellipsoids, **(b):** Crystal Packing of the complex 2.

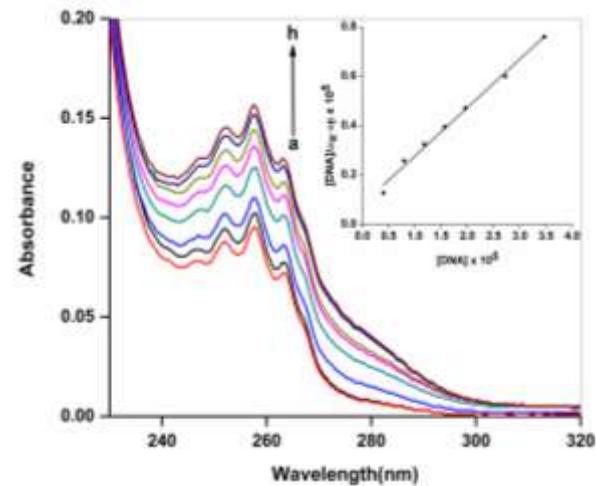


Fig. S2 (a): Absorption spectra of 200 μM ligand in the presence of increasing amounts of DNA
(a) 0.0 μM (b) 10 μM (c) 20 μM (d) 60 μM (e) 80 μM (f) 120 μM (g) 150 μM (h) 200 μM . (**Inset:** Plot of $[\text{DNA}] / (\epsilon_a - \epsilon_f) \times 10^8 \text{ M/M}^{-1}\text{cm}^{-1}$ versus $[\text{DNA}] \times 10^5 \text{ M}$.)

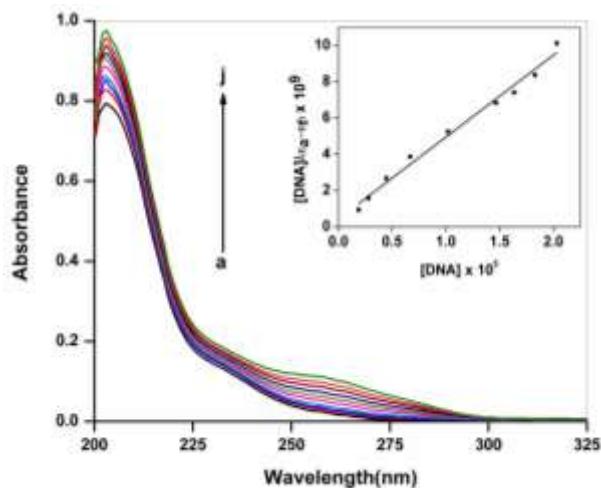


Fig. S2 (b): Absorption spectra of 20 μM MoP complex in the presence of increasing amounts of DNA. (a) 0.0 μM (b) 10 μM (c) 20 μM (d) 40 μM (e) 60 μM (f) 80 μM (g) 1 μM (h) 130 μM (i) 150 μM (j) 200 μM . (Inset: Plot of $[DNA]/(\epsilon_a - \epsilon_f) \times 10^8 \text{ M/M}^{-1}\text{cm}^{-1}$ versus $[DNA] \times 10^5 \text{ M}$.)

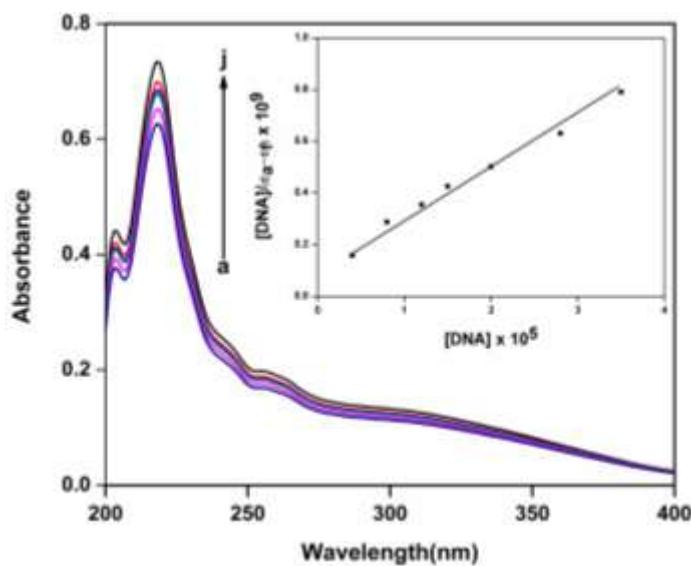


Fig. S2(c): Absorption spectra of 20 μM WoP complex in the presence of increasing amounts of DNA. (a) 0.0 μM (b) 10 μM (c) 20 μM (d) 40 μM (e) 60 μM (f) 80 μM (g) 1 μM (h) 130 μM (i) 150 μM (j) 200 μM . (Inset: Plot of $[DNA]/(\epsilon_a - \epsilon_f) \times 10^8 \text{ M/M}^{-1}\text{cm}^{-1}$ versus $[DNA] \times 10^5 \text{ M}$.)

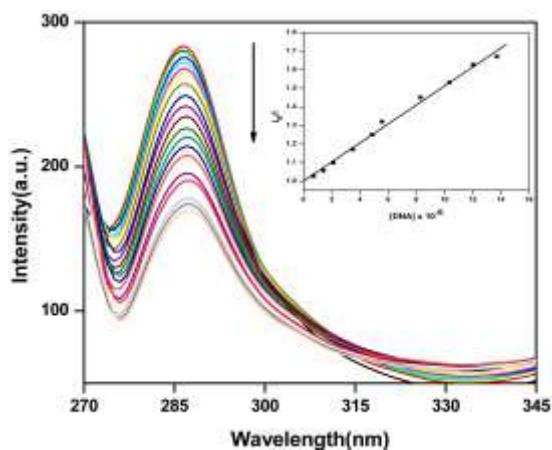


Fig. S3: Emission spectra of complex 2 in the presence of increasing amounts of DNA (a) 0.0 μM (b) 10 μM (c) 20 μM (d) 40 μM (e) 60 μM (f) 80 μM (g) 1 μM (h) 130 μM (i) 150 μM (j) 200 μM .
(Inset: Stern volmer plot for WoP.)

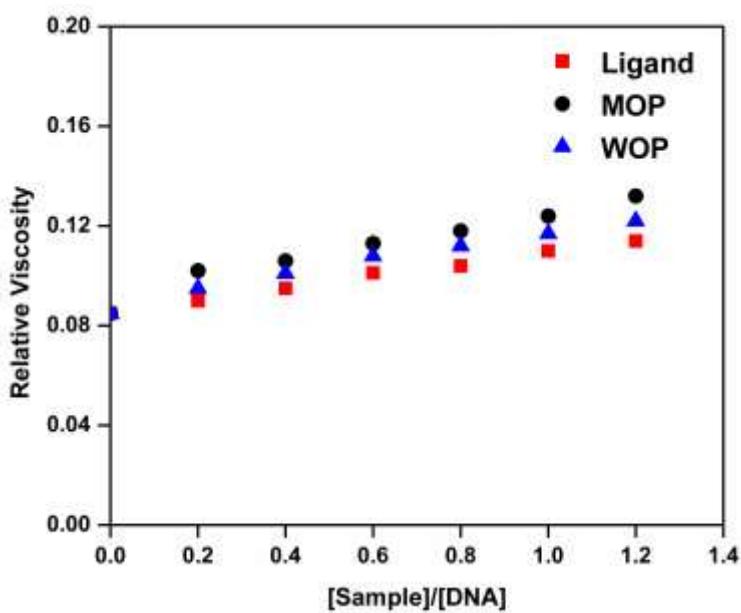


Fig.S4: Viscometric Studies of the ligand, Mo-complex and W-complex.

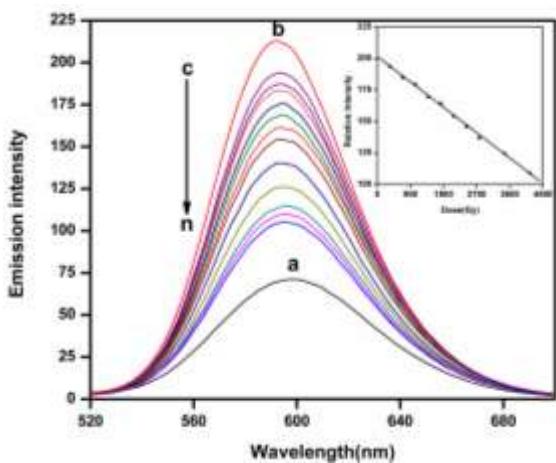


Fig. S5: Fluorescence spectra of the EB-DNA, (a) $[EB] = 30.0 \mu M$, (b) $[EB] = 30.0 \mu M + [DNA] = 20.0 \mu M$; (c) – (n) CT DNA with different doses of radiation at a dose rate of 69.3Gy/min for 5- 60 min. (**Inset:** Dose response relationship for DNA strand breaks Induced by gamma-irradiation at a dose rate of 63.9 Gy/min for 1 hr.)

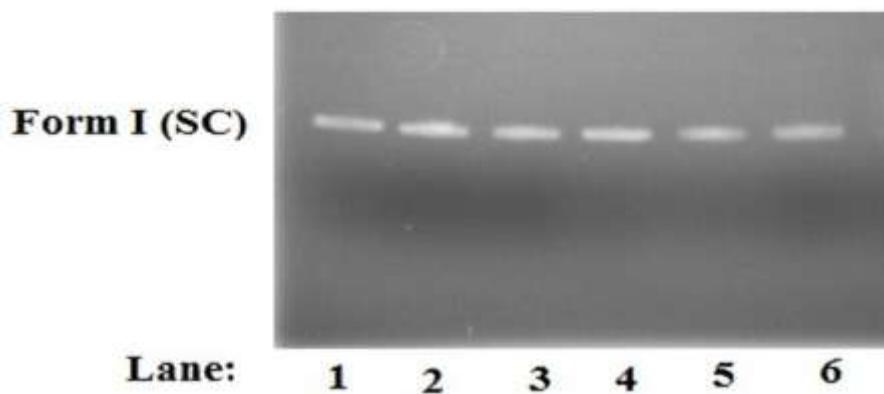


Fig. S6: Agarose gel (.9%) electrophoregram of supercoiled pUC19 DNA ($0.2\mu g$) incubated for 45 min at $37^\circ C$, in a buffer containing 50 mM Tris-HCl and 50 mM NaCl at $37^\circ C$ pH 7.2, with increasing concentrations of either the ligand ,complex 1 and complex 2.

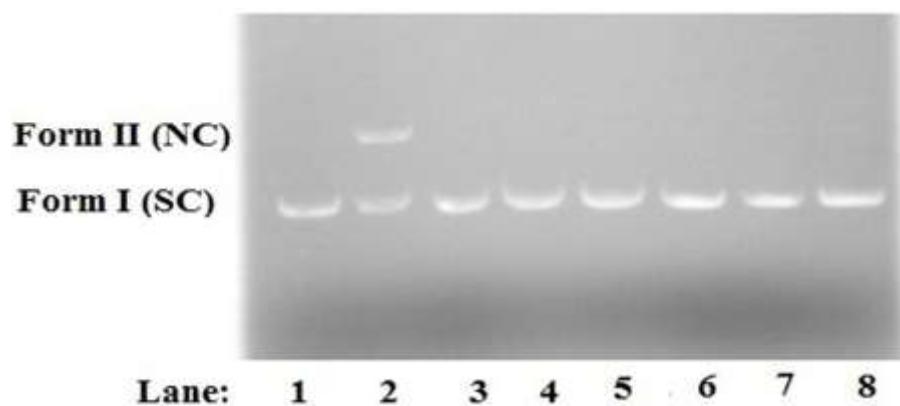


Fig. S7: Protection of plasmid pUC19 DNA at 20Gy with different doses of ligand, complex 1 and complex 2 on gamma-radiation induced strand breaks.

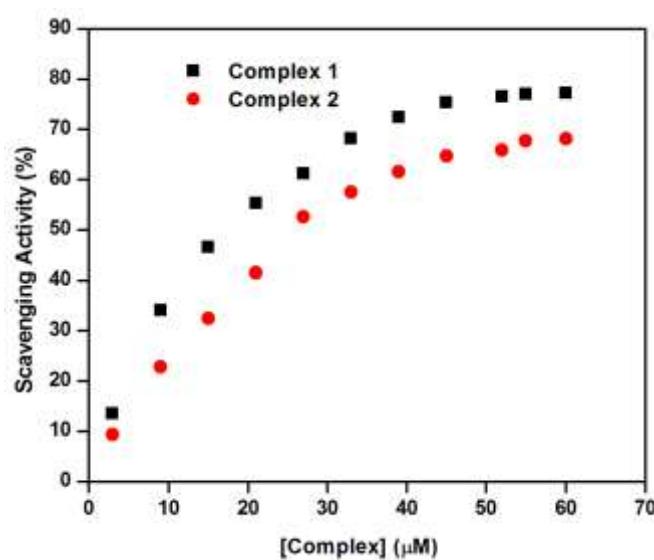


Fig. S8: DPPH scavenging activity of complex 1 and 2.