A Novel Metal Complex as Anti-Cancer Drug

Hurulihal, Arjun

New transition metal complexes of Co(II), Ni(II), Cu(II) and Zn(II) with the Schiff bases derived by condensation of 3-formyl-2-hydroxy quinoline with Guanine(GUOH) and 3-formyl-2-mercapto quinoline with Guanine(GUSH) were synthesized and characterized by elemental analysis, molar conductance, magnetic susceptibilities, UV, IR, 1H-NMR, Mass, ESR and thermal studies. The elemental analysis of the complexes confirms the octahedral geometry. The synthesized ligands and the metal complexes were screened and characterized for the following : a) DNA Cleavage Analysis b) In Vitro Cytotoxicity test c) Anti-cancer Analysis against standard cell lines d) Nephrotoxicity Analysis e) DNA Binding studies. The results revealed, the Cu(II) complex of the ligands possess higher activity than the others. The DNA cleavage studies revealed that three metal complexes VIZ: Co-GUOH, Ni-GUSH and Cu-GUSH have completely cleaved the DNA whereas the other complexes show partial cleavage property. The DNA Binding studies confirms the intercalative mode of binding. The anticancer studies shows that Cu(II) complex is more active against cervical Cancer cell line than others. The Nephrotoxicity studies shows that, Cu(II) complex has a CTC50 value of 526±0.6 . In case of cell line analysis, the comparison studies have also been performed.

Awards Won: