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New Insights into the DNA Interactions of Novel Ru(II) Complexes of Chromeno[2,3-b]Quinoline and Fused Aromatic NN- Incorporated Ligands

Chittanahalli N. Sudhamani, Halehatty S. Bhojya Naik*, Kalligundi R. Sangeetha Gowda, Manju Giridhar and Dugganna Girija

*Department of Studies and Research in Industrial Chemistry, School of Chemical Sciences, Kuvempu University, Shankaraghatta-577 451, **INDIA**

Email: hsb_naik@rediffmail.com

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ABSTRACT

Three new Ru(II) complexes, namely$[Ru(cq)_3](PF_6)_2$, $[Ru(bpy)_2(cq)](PF_6)_2$ $[Ru(phen)_2(cq)](PF_6)_2$ (where cq=chromeno[2,3-b]quinoline, phen=1,10-phenanthroline and bpy=2.2′-bipyridine) were synthesized and structurally characterized. The Spectroscopic data designated an octahedral geometry for all the complexes. The binding studies of these complexes with double-stranded (ds) DNA were investigated by absorption spectra, viscosity measurements and thermal denaturation studies. These results suggested that the metal complexes intercalates into the DNA base stack as intercalator. The oxidative nuclease activities of the complexes were studied with supercoiled pUC19 DNA using gel electrophoresis technique and the results shows that the complexes have potent nuclease activity.

Keywords: Ru(II) complexes, binding studies, intercalator, gel electrophoresis.