

DNA interaction studies of oxovanadium, manganese, copper and nickel complexes

Rajeswari Kundu^a, Saraswathi Kothandan^a, A. Sheela^{a*}, Anushree Suresh^b and Jayanthi Abraham^b

^aDepartment of Chemistry, School of Advanced Sciences, Vellore Institute of Technology, Vellore-632 014, Tamilnadu, India

E-mail: asheela@vit.ac.in

^bMicrobial Biotechnology Laboratory, School of Biosciences and Technology, Vellore Institute of Technology, Vellore-632 014, Tamilnadu, India

Manuscript received online 04 September 2018, accepted 10 October 2018

DNA is a molecule that carries most of the genetic instructions and interaction between small molecules and DNA often causes DNA damage in cancer cells, blocking the division, resulting in cell death. Towards the same, DNA interaction studies of transition metal complexes have been explored extensively. Further, the geometry of complexes can be tuned by the choosing the appropriate ligand bringing about perfect synergism to achieve greater therapeutic efficacy. In this context, we have synthesized and characterized V^{IV}, Mn^{II}, Cu^{II} and Ni^{II} complexes using 4-(2-amino-phenylimino)-2-methyl-4*H*-pyran-3-ol ligand. UV absorption titration and gel electrophoretic study brings about the comparative DNA binding and cleaving ability of synthesized complexes. Based on the results, the efficacy towards anticancer potential can be ascertained.

Keywords: Metal complexes, Schiff base, DNA interaction, binding constants.