

Synthetic, Characterization and Biological Studies of Bis(Tetrathiomolybdate) Compounds of Pt (II), Pd (II) and Ni (II)

Authors : V. K. Srivastava

Abstract : The chemistry of compounds containing transition metals bound to sulfur containing ligands has been actively studied. Interest in these compounds arises from the identification of the biological importance of iron-sulfur containing proteins as well as the unusual behaviour of several types of synthetic metal-sulfur complexes. Metal complexes $(C_6H_5)_4P)_2 Pt(MoS_4)_2$, $(C_6H_5)_4P)_2 Pd(MoS_4)_2$, $(C_6H_5)_4P)_2 Ni(MoS_4)_2$ of bioinorganic relevance were investigated. The complexes $[M(M'S_4)_2]^{2-}$ were prepared with high yield and purity as salts of the variety of organic cations. The diamagnetism and spectroscopic properties of these complexes confirmed that their structures are essentially equivalent with two bidentate $M'S_4^{2-}$ ligands coordinated to the central d^8 metal in a square planer geometry. The interaction of the complexes with CT-DNA was studied. Results showed that metal complexes increased DNA's relative viscosity and quench the fluorescence intensity of EB bound to DNA. In antimicrobial activities, all complexes showed good antimicrobial activity higher than ligand against gram positive, gram negative bacteria and fungi. The antitumor properties have been tested in vitro against two tumor human cell lines, Hela (derived from cervical cancer) and MCF-7 (derived from breast cancer) using metabolic activity tests. Result showed that the complexes are promising chemotherapeutic alternatives in the search of anticancer agents.

Keywords : anti cancer, biocidal, DNA binding, spectra

Conference Title : ICCCA 2018 : International Conference on Coordination Chemistry and Applications

Conference Location : Paris, France

Conference Dates : March 15-16, 2018