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Editorial

Metal Complexes Characterization

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EDITORIAL

Coordination complexes of various substances having distinct pharmacological effects e.g., pyrazinamide (PZA), nicotinamide (NAM), nicotinic acid (NIC), theophylline (TEO), captopril (CPL), tolbutamide (TBA), clonidine (CLN), guanfacine (GUAF), with transition metals are synthesized and are used for drug analysis as well as control. The use of instrumental techniques such as elemental analysis, thermal methods, Raman Spectroscopy, Fourier transform Infrared Spectroscopy (FTIR), electron paramagnetic resonance, UV-Vis spectrophotometry, mass spectrometry, Surface Enhanced Raman Spectroscopy (SERS), X-ray spectroscopy and scanning electron microscopy are used for the characterization of the complex composition. A significant interest in the metal complex-based drugs with unique research, therapeutic and diagnostic opportunities is currently witnessed in medicinal inorganic chemistry. Many of them are used containing metals such as Pt and Ru (cis-platin as anticancer drug), Au (as auranofin for arthritis), Tc and Re (as radiopharmaceuticals used in imaging), Gn, Co, Fe, Ca, Cu, Zn, Al, V, and Mn. A lowered number of Co^{+3} complexes are known to have biochemical properties; Vit. B_{12} (a natural organometallic complex of Co^{+3} with glyoxime). In addition to this, use of these complexes in the biomedical field can be comprehended for various purposes such as the introduction of deficient metal ions in the human body and the attainment of pharmacotherapy consequences by blocking metal ions essential for enzymatic action. Moreover, chelating complexes are an evolving tool in drug discovery and widely used as therapeutics to treat diseases such as diabetes, anti-inflammatory, lymphomas, and neurological disorders. Further, it was also revealed that the antibacterial action can be pronounced upon chelation to the metal complexes.

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