



Synthetic, Structural and Biochemical Investigations of Titanium (IV) Complexes with Nitrogen–Oxygen and Nitrogen–Sulphur Donor Ligands

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ABSTRACT

Some new titanium (IV) complexes from semicarbazone and thiosemicarbazone ligands have been synthesized. These semicarbazone and thiosemicarbazone ligands have been prepared by condensing carbonyl compounds with semicarbazide hydrochloride and thiosemicarbazide in 1:2 molar ratio in ethanolic medium. The monomeric nature of these complexes has been decided by their molecular weight determination. The bonding pattern and probable geometry of these complexes have been investigated on the basis of elemental analysis, UV, IR, and (¹H, ¹³C) NMR spectral studies. The ligands and their metal complexes have been screened for antibacterial and antifungal activities and are found quite active in this respect. Titanium (IV) complexes have been found to be more active than their uncomplexed ligands.

Keywords: Semicarbazone, Thiosemicarbazone, Spectral studies, Antibacterial activities, Antifungal activities, Titanium (IV) complexes.
