



Synthesis, Spectral Characterization and Antimicrobial Activities of Binuclear Titanium (IV) Complexes With Schiff Bases Derived From 4-Amino-3-Hydrazino-6-Methyl-5-Oxo-1,2,4-Triazine

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Accepted on 20th July 2016

ABSTRACT

*Titanium (IV) complexes of type $[(\eta^5\text{-C}_5\text{H}_5)_2\text{TiCl}_2(\text{L})]$ have been synthesized by the reactions of bis(cyclopentadienyl) titanium (IV) dichloride with Schiff bases (LH_2) derived by the condensation of 4-amino-3-hydrazino-6-methyl-5-oxo-1,2,4-triazine with 2-hydroxy aldehyde/ketone in ethanol in 2:1 molar ratio in dry tetrahydrofuran in the presence of triethylamine. All these complexes are soluble in PhNO_2 , DMF and DMSO. The complexes were characterized by elemental analyses, electrical conductance, magnetic susceptibility, and UV-Vis, IR, and ^1H NMR spectral techniques. Low molar conductance values indicate that they are non-electrolytes. The spectral data indicate 5-coordinate geometry for the metal ion in all complexes. In vitro antifungal and antibacterial activities were determined by screening the compounds against the three fungi (*A.niger*, *A. fumigate* and *H. oryzae*) and gram negative (*E. coli*) and gram positive (*B. subtilis*) bacterial strain. The binuclear titanocene (IV) complexes have higher antimicrobial effect than the parent Schiff bases.*

Keywords: Titanocene, Schiff base, IR, NMR, Antimicrobial.
