



Synthesis, Spectroscopic Characterization and Biological Properties of Zinc(II) Complexes with Schiff bases Derived from Bis-(4-amino-5-mercapto-1,2,4-triazol-3-yl)arene/alkanes

Arti Vishwkarma^{1*}, Om P. Pandey¹, U. Yadava² and Soumitra K. Sengupta¹

1. Department of Chemistry, DDU Gorakhpur University Gorakhpur, Gorakhpur-273009, **INDIA**

2. Department of Physics, DDU Gorakhpur University Gorakhpur, Gorakhpur-273009, **INDIA**

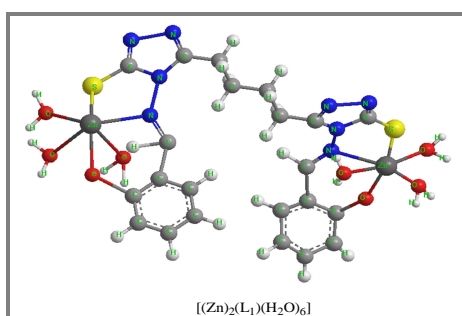
Email: vishwkarma.arti@gmail.com

Accepted on 10th June, 2019

ABSTRACT

A novel series of binuclear zinc(II) complexes of type $[\text{Zn}_2(\text{L})(\text{H}_2\text{O})_6](\text{H}_4\text{L}=\text{Schiff bases})$ has been synthesized by the reaction of zinc(II) acetate dihydrate with Schiff bases derived from bis-(4-amino-5-mercapto-1,2,4-triazol-3-yl)arene/alkanes and salicylaldehyde/2-hydroxyacetophenone in presence of base. The structures of these complexes were established on the basis of elemental analysis and spectral (IR and NMR) studies. The presence of coordinated water in metal complexes was confirmed by thermogravimetric analysis. Octahedral geometry for zinc(II) complexes have been proposed. The powder crystal structures of the complexes have been determined by XRD pattern. For surface morphology of the complexes SEM (scanning electron microscopy) has been carried out. The in vitro antibacterial and antifungal studies indicate that the synthesized complexes possess good antimicrobial properties against different species of pathogenic fungi and bacteria.

Graphical Abstract



Keywords: Schiff base, Zinc(II), IR, NMR, XRD, Antifungal, Antibacterial.