

Synthesis And Characterization And Biocidal Activity Of Schiff's Base Transition Metal Complexes Derived From Salicylaldehyde

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Abstract

Schiff bases and their various metal complexes were widely prepared and characterized for many years of researches in the field of coordination chemistry as they possess versatile properties and biological activities such as anti bacterial, anti fungal, anti viral and anti tumor activities. This paper presents the antibacterial properties of zinc and copper complexes Schiff base derived from 4-bromo aniline and salicylaldehyde. Both the Schiff base and complexes were characterized by physical spectral and analytical data. The synthesized Schiff base acts as a bidentate ligand for the complexation reaction with copper and zinc ions. The in vitro antimicrobial study shows both the complexes and ligand is having good anti bacterial activity.

Introduction

Schiff base ligand and their complexes are extensively investigated due to their interesting biological and pharmacological activities. The ligand and complexes are considered privileged ligand because they are easiest to prepare. These compound and metal complexes had a variety of applications in the present scenario including analytical and industrial chemistry and also plays a vital role in catalysis. The presence of lone pair of electrons in an SP² hybridised orbital of nitrogen of azomethine group having a considerable chemical importance. The high affinity of ligand towards the transition metals are utilized in preparation of complexes having an excellent properties.

Experimental Methods

Ligands and complexes were synthesized by reported method. Physico-chemical measurements such as molar conductance and other spectral studies like IR spectroscopy and UV – Visible spectra were employed for the characterization of ligand and metal complexes. Antimicrobial studies are also conducted.

Synthesis of Ligand

Salicylaldehyde (3ml or 0.02825mmol) is dissolved in 5ml of methanol. A solution of 4-Bromoaniline in 5ml ethanol was slowly added to it with constant stirring. The mixture is shaken well for 2hours in a magnetic stirrer until a green colored precipitate is formed. It was filtered, washed and recrystallised from methanol.

Synthesis of Copper Complex