

Preparation, characterization and investigation of thermal and antimicrobial behavior activity of some new bis-imine Zinc(II) complexes

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Schiff bases or imines are one class of important ligands in the Inorganic chemistry. The easily coordination of these ligands to various metal ions causes the researchers to synthesized and characterized them that strongly develop the coordination chemistry in many aspects.. Schiff bases and their metal complexes have various applications especially in medicinal fields. These compounds have been proved to affect on a variety of bacteria and fungi. These compounds have also antioxidant properties and well show anticancer activity[1-3].

In this research, a new double Schiff base ligand (1E,1'E,2E,2'E)-N,N'-(butane-1-4 diyl)bis(3-(2-methoxyphenyl)prop-2-en-1-imine) and its zinc(II) complexes with the general formula $ZnLX_2$, ($X = Cl^-, Br^-, SCN^-$) were synthesized in ethanol solvent. Physical and spectroscopic methods and techniques such as IR, UV-Visible, H and C NMR, molar conductivity and melting point were used to identify and investigate the synthesized compounds. Thermokinetic study of thermal decomposition of the compound was performed to evaluate some kinetic activation parameters during the decomposition processes. In addition, the antifungal and antibacterial activity of the ligand and complexes *in vitro* against two gram-positive bacteria *Staphylococcus aureus*, *Bacillus subtilis* and two gram-negative bacteria *Escherichia coli*, *Pseudomonas aeruginosa* and two strains of fungi (*Aspergillus aurinosa* and *Candida albicans*) were investigated.

Keywords: Synthesis, Zic(II) complexes, Antibacterial, Antifungal

References

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