SYNTHESIS, CHARACTERIZATION OF A NEW SCHIFF BASE LIGAND 3-ETHOXYSALICYLIDENE-4-CHLORO-O-AMINOPHENOL AND INVESTIGATION OF THEIR METAL COMPLEXES

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Schiff bases derived from an amine and an aldehyde are an important class of compounds which coordinate to metal ions via azomethine nitrogen and have been studied extensively \cite{1}. Schiff base complexes are important for designing metal complexes related to synthetic and natural oxygen carriers. The complexes make these compounds effective and stereospecific catalysts for oxidation, reduction and hydrolysis and they show biological activity, play an important role in biological systems. Schiff bases were used at medicine and pharmacy, the preparation of some drugs, biological systems, production of the dyestuffs, cosmetics, agriculture, production of polymers and many subsection of industry like plastic industry, electronic industry and aircraft industry. We know that some schiff bases and their transition metal complexes have antibacterial, antifungal, anticancer, antiulcer, antitumor, antioxidant properties. Today, some platinum compounds and gallium complexes of schiff bases which derived from salicylaldehyde with propane, butane, pentane amines were used at cancer chemotherapy \cite{2}.

In this study, the ligand of 3-ethoxysalicylidene-4-chloro-o-aminophenol was synthesized by the reaction of 3-ethoxysalicylaldehyde and 4-chloro-o-aminophenol in the absolute ethanol at 60 °C by the catalyzed of p-toluenesulfonic acid. Later, the complexes of this ligand were prepared with Co(II), Ni(II), Cu(II) and Zn(II) in acetate forms in pure EtOH. The structures of ligands and complexes were identified using Elemental Analysis, FT-IR, \textsuperscript{1}H-NMR, \textsuperscript{13}C-NMR, UV-Vis, Magnetic Susceptibility and Thermogravimetric Analysis as techniques. All of the Schiff bases were found to be bidentate ligands involving the imino nitrogen and phenolic oxygen atoms in the complexes and M:L ratio were found to be 1:2 for all the complexes. Additionally, electrical and optical properties of synthesized ligand and complexes were examined.

KEYWORDS : Aminophenol, Complex, Schiff Base

REFERENCES :