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NEW MIXED LIGAND OF DITHIOCARBAMATE AND 8-HYDROXYQUINOLINE WITH SOME COMPLEXES OF SCHIFF BASE LIGAND : SYNTHESIS, SPECTRAL ANALYSIS AND BIOLOGICAL ACTIVITY

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ABSTRACT : The preparation, spectroscopic characterisation of complexes derived from the mixed ligands with Cd^{II}, Zn^{II} and Co^{II} metal ions with Schiff base, Dithiocarbamates (DTCs) and 8-Hydroxyquinoline are reported. The compounds that prepared have been defined via; chloride content, F.T-IR, UV-Vis ^{1}H-NMR spectroscopy and C.H.N.S, as well as conductance and magnetic susceptibility.All data which collected from such methods specified complexes with 6 coordinates in solution and solid states. The biologicalactivity that is related to all the prepared compounds which were screened for their antimicrobial activitiesagainst *(G^+* and *(G^-))*. The data that collected from biological activity indicate that complexes will have extra activity against such tested bacteria in comparison to that in free ligands.

Key words : Complexes of Mixed ligand, 8-Hydroxyquinoline, structural characterisation, spectral analysis.

INTRODUCTION

Variety of ligands type Schiff-base as well as their metal complexes were isolated, which have very elastic and different structures, therefore their properties have been studied (Hakimi *et al*, 2012). Dithiocarbamates (DTCs) can be defined as a class related to the organic compounds, which can coordinate to the metal ions (Nabipour *et al*, 2010; Kanchi *et al*, 2014). DTCs compounds hold significant role in the coordination chemistry. This may be because of the metal ion stabilisation ability in many oxidation states, also permitting metal ions to implement their desirable structure (Singh *et al*, 2012). DTCs have presented important biological activity containing their role as anti-fungal, antitumor, as well as anti-bacterial agents. They have other potential applications in materials science and supramolecular chemistry (Normah *et al*, 2011; Tlahuext *et al*, 2011). Complexes of different metals with 8-hydroxyquinoline (HQ) or its derivatives have involved significant care having biological activities and capable use in organic light-emitting diodes (OLEDs), optical detecting, and so on (Song *et al*, 2015; Garrison *et al*, 2017). Specific attention has been located in supramolecular coordination compounds based on 8-hydroxyquinoline derivatives (Balasubramani *et al*, 2010; Yuan *et al*, 2013). Since because of the luxury of training and chemical change of 8-HQ, many 8-hydroxyquinoline derivatives with diverse substituents are in employment to build metal complexes with preferred structure and properties trusting on the non-covalent intra and intermolecular forces (Wheeler, 2013; Yue *et al*, 2008; Yuan *et al*, 2013). Recently, the present study has indicated the formation of two different azo-linked Schiff-base and DTCs ligands and their metallic (II) dithiocarbamates complexes (Ahmed *et al*, 2018; Enaam, 2018). Here, we synthesis two different Schiff-base, DTCs, 8-Hydroxyquinoline ligands and their metal (II) dithiocarbamates complexes.

MATERIALS AND METHODS

In this study, all the chemicals have been bought from Aldrich-Sigma, after that these chemicals has been applied as received. Solvents have been distilled through the use of suitable protocol prior to using.

Physical measurements

Elemental microanalyses (sulfur, carbon, hydrogen and nitrogen) for the ligands in addition to its metal complexes have been carried out on EuroEA3000. Electro-thermal Stuart SMP40 apparatus has been utilized for recording the melting points. FTIR spectra have been recorded as KBr discs with Shimadzu 8300s in the range of 4000-400cm^{-1}. UV-Vis spectra have been acquired with 10^{-3}M solution between 200-1100nm in dimethyl sulfoxide (DMSO) spectroscopic grade solvent at 25ºC through the use of Perkin-Elmer spectrophotometer