

RESEARCH PAPER

Synthesis and characterization of Ni(II) complexes with ester semicarbazone

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ABSTRACT

General composition of Ni(II) complexes [ML₂X₂], [ML₂X]X were prepared with semicarbazones (L¹, L², L³ and L⁴). These complexes were characterized by elemental analysis, molar conductances measurements, Magnetic moments IR, electronic spectra, and EPR spectral studies. All are the nonelectrolyte in nature therefore these complexes may formulated [M(L)₂X₂]. All the complexes are of high-spin and show octahedral geometry.

Key Words : Acetoacetic ester semicarbazone, Isopropyl semicarbazone, 6-methyl Pyran-2-one-4 hydroxy 3 diacarbonylic acid, Semicarbazone, Biological activity

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The biological and medicinal properties of these ligands and their derivatives have gained much interest. Semicarbazones and their 3d-metal complexes have been found to exhibit anti-fungal[1], anti-bacterial[2], anti-viral[3], anti-tubercular[4] and anti carcinogenic activities [5]. The anti-fungal activity of these compounds is due to the presence of toxophyrically important N=C=O moiety[6]. Semicarbazides and their Schiff bases also display anti-tumour [7-8] activity. It is expected that ligands will also show variability in structure and bonding in its transition metal complexes. It has been reported that semicarbazide and its complexes with 3d-metal ions show *in vitro* and *in vivo* anti-tumour activity[9].

RESEARCH METHODOLOGY

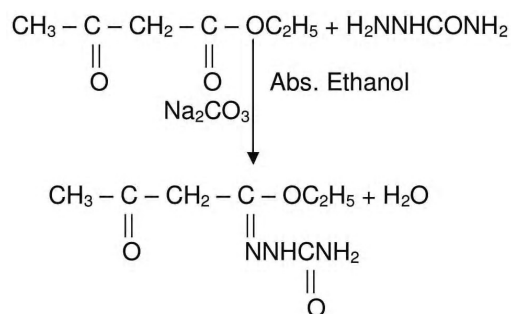
A.R. Grade chemical and fluka reagents were used in the present study. The solvents were purified before use by processing. Semicarbazide hydrochloride, acetoacetic ester,

isopropyl ester, methyl ester of 6-methyl Pyran-2-one-4 hydroxy 3 diacarbonylic acid, sodium acetate and different metallic salts.

Preparation of ligands :

Preparation of Acetoacetic ester semicarbazone (AESC)(L¹):

Aqueous solution of semicarbazide hydrochloride (.01 mol, 1.12 g) and acetoacetic ester (0.01 mol. of 1.83 ml) were



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