

<https://www.researchgate.net/publication/339297463> Synthesis and Characterization of Some New Cu II Co II Ni II Au III potassium 2-(2,4-dinitrophenyl) Hydrazine-1-Carbodithioate Complexes and Evaluation of their Biological Activity

Synthesis and Characterization of Some New Cu II, Co II, Ni II, Au III potassium 2-(2, 4-dinitrophenyl) Hydrazine-1-Carbodithioate Complexes and Evaluation of their Biological Activity

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ABSTRACT

The work includes synthesis and characterization of a new ligand (potassium 2-(2,4-dinitrophenyl) hydrazine-1-carbodithioate) which contains two sulfur donor atoms. The ligand was synthesized by the reaction of one equivalent of carbon disulfide and 2, 4-dinitrophenylhydrazine in ethanol (as a solvent) for 4 hours in the presence of alkali base (NaOH). Dithiocarbamate ligand was characterized using FT-IR, ¹H NMR, ¹³C-NMR, elemental analysis (C.H.N.S), UV-visible and ESI-mass spectrum along with melting point. Under refluxing, four metal complexes are prepared. The complexes were prepared from the reaction of 2 equivalent of potassium dithiocarbamate ligand with 1 equivalent metal salt in refluxing ethanol for 4 hours. The complexes were characterized by FT-IR, UV-Visible, molar conductivity, magnetic susceptibility measurements, solubility of flammable atomic absorption spectroscopy, melting point, element microanalysis and mass spectroscopy for certain complexes. The biological activity of the synthesized dithiocarbamate ligand and its complexes were studied using inhibition method for two types of bacteria; one Gram positive and one Gram negative in addition to one type of pathogenic fungus.

Keywords: Dicarbodithioate, Metal complexes, Synthesis.