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Metal Complexes Derived from Dithiocarbamate Ligand: Formation, Spectral Characterization and Biological activity

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ABSTRACT The research involves synthesizing and characterizing a new ligand)potassium 5-cyano-3-formyl-1H-indole-1-carbodithioate(containing two atoms of the sulfur donor. The ligand was synthesized for 4 hours in the presence of alkali base (NaOH) through the reaction of one derivative of carbon disulfide and 3-Formyl-1H-indole5-carbonitrile in ethanol (as a solvent). Dithiocarbamate ligand was characterized along with the melting point using FT-IR, 1H NMR,13C-NMR, elemental analysis (C.H.N.S), UV-visible, and ESI-mass spectrum. Four metal complexes are prepared under refluxing. The complexes were prepared for 4 hours from the reaction of 2 potassium dithiocarbamate equivalent ligand with 1equivalent metal salt in refluxing ethanol. For other complexes the complexes were characterized by FT-IR, UVVisible, molar conductivity, magnetic sensitivity measurements, flammable atomic absorption spectroscopy solubility, melting point, product microanalysis and mass spectroscopy. The biological function of the synthesized dithiocarbamate ligand and its complexes has been examined using inhibition method for two types of bacteria; one gram positive and one

gram negative, and one type of pathogenic fungus. This will assess their possible antimicrobial activity.

Keywords: potassium 5-cyano-3-formyl-1h-indole-1-carbodithioate, metal complexes, synthesis