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Synthesis, Characterization and Antimicrobial Activity of Some Transition Metal Complexes with Schiff Base Ligand

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ABSTRACT

Transition metal complexes of Cu(II), Co(II), Ni(II), Zn(II), Cd(II) and Fe(III) have been synthesized with the Schiff base ligand prepared by the condensation reaction between 5-methyl isooxazol-3-yl amine and salicylaldehyde. Elemental analysis of these complexes suggests that these metal ions forms complexes of type $ML_2(H_2O)_2$ stoichiometry for Cu(II), Co(II), Ni(II), Zn(II), Cd(II) and Fe(III). The ligand behaves as bidentate and forms coordinate bonds through O and N atoms. Magnetic susceptibility, IR, mass and ESR spectral studies suggest that Cu(II), Co(II), Ni(II), Zn(II), Cd(II) and Fe(III) complexes posses octahedral geometry. The complexes were tested for their antimicrobial activity against the bacterial strains Staphylococcus aureus, Bacillus subtilis, and Klebsiella pneumoniae.

Keywords: Schiff base, transition metal complexes, antimicrobial activity, ESR.