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Synthesis, Spectroscopic, Thermal and Antimicrobial Studies of Some Transition Metal mixed ligand Complexes of Schiff Base

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ABSTRACT

Some new Schiff base metal complexes of Cr(III), Mn(II),Fe(III)Co(II), Ni(II) and Cu(II) derived from ortho hydroxyacetophenone semicarbazone and pyruvic acid semicarbazone have been synthesized by conventional methods. These compounds have been characterized by elemental analysis, FT-IR, molar conductance, electronic spectra, magnetic susceptibility, thermal, electrical conductivity. The complexes are colored and stable in air. Analytical data revealed that all the complexes exhibited 1:1:1(metal: ligand: ligand) ratio with the coordination number 6. The Schiff base and metal complexes show a good activity against the Gram-positive bacteria; Staphylococcus aureus and Gram-negative bacteria; Escherichia coli and fungi Aspergillus niger and Candida albicans. The antimicrobial results also indicate that the metal complexes are better antimicrobial agents as compared to the Schiff bases.

Keywords: Schiff base complexes, semicarbazone ligand, Spectral studies, Thermodynamic parameters, Biological activities.