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Synthesis, Characterization and Antimicrobial studies of Schiff base Ligand from amino acid L-arginine and its Cu(II), Ni(II),Co(II) complexes

Sree Devi R.K.^{1*}, S. SudhaKumari²

^{1*}Research scholar, Reg. No: 11775, Department of Chemistry, S.T. Hindu college, Nagercoil-629 002(Tamil Nadu) India. Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli- 627 012, Tamil Nadu, India.

²Assistant Professor, Department of Chemistry, S.T. Hindu College, Nagercoil-629 002 (Tamil nadu) India.

Abstract : Transition metal complexes of Cu(II), Ni(II), Co(II) with a Schiff base Ligand (R,Z)-2-(2-hydroxy-3-methoxybenzylideneamino)-5-guanidinopentanoic acid (HMA-GPA) was synthesized by the condensation of 2-hydroxy-3-methoxybenzaldehyde and L- Arginine. These were characterized by elemental analysis IR, UV, magnetic susceptibility and molar conductivity measurements. The IR spectra of the Ligand HMA-GPA and the metal complexes suggest that the Ligand coordinates the metal ion through azomethine nitrogen, carboxylate Oxygen and Oxygen of the phenolic -OH group. The electronic absorption spectra and magnetic data indicate the Cu(II), Ni(II) complexes to be square planar and Co(II) complex to be octahedral. The metal complexes and the ligand were subjected to antimicrobial studies by Kirby Bayer Disc-diffusion method and found to have significant activity against the selected bacterial and fungal strains under study.

Keywords : 2-hydroxy-3-methoxy benzaldehyde, L-arginine, molar conductivity, antibacterial, antifungal activity.

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