Indian Journal of Chemistry
Vol. 64, April 2025, pp. 373-377
DOI: 10.56042/ijc.v64i4.15116

Synthesis, characterization of N-(1-(4-nitrophenyl)ethylidene)-1*H*-benzo[d]imidazol-2-amine and amino acid alanine and it's metal complexes

Sriramoju Shamili
Department Of Chemistry, Chaitanya (Deemed to be University), Hanumakonda 506 001, Telangana, India
E-mail: shamoct02@gmail.com

Received 15 November 2024; accepted (revised) 26 March 2025

Transition metal ion complexes that include a variety of ligands have distinct biological effects. Schiff bases that comprise amino acids and azomethine may be used as building blocks for ternary complexes. In an effort to produce a novel metal(II) complexes, the conventional reflux method has been used to the interaction of two ligands, N-(1-(4-nitrophenyl)ethylidene)-1*H*-benzo[d]imidazol-2-amine as L_1, and an amino acid alanine as L_2, with freshly produced cuprous chloride solution in a 1:1:1 molar ratio. The synthesized ligand and metal(II) complexes are characterized using elemental analysis, molecular weight, magnetic moment, thermal analysis, and spectroscopic techniques. *Bacillus subtilis*, *Escherichia coli*, and *Candida albicans* have been used as test organisms to evaluate the compounds' antibacterial activities. These metal(II) complexes have been observed to have powerful antibacterial and antifungal activities.

Keywords: Azomethine group, Ligand, Metal complex, Antimicrobial activity