



Cobalt(II) and Nickel(II) Metal Complexes of Glycine-Benzimidazole Conjugate Based Ligands: Synthesis, Characterization and Biological Activities

Sabithakala Thatituri*, Pushpanjali Kale

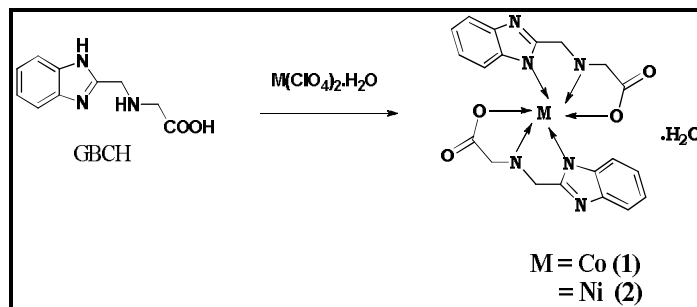
Department of Chemistry, Jawaharlal Nehru Technological University Hyderabad-UCEST,
Hyderabad, 500085, **INDIA**
E-mail: sabithakalatituri@jntuh.ac.in

Accepted on 26th October, 2024

ABSTRACT

Benzimidazole derivatives are prominent ligands in coordination chemistry, known for their ability to form stable complexes with transition metals. This study focuses on the synthesis, characterization, and biological activity of cobalt(II) and nickel(II) complexes of glycine, benzimidazole conjugate ligand, 2-((1H-benzimidazol-2-yl)methylamino) acetic acid (**GBCH**). The results demonstrate that ligand acts as an effective tridentate ligand, and complex structure have been determined by electronic, IR, UV, powder XRD, TGA and DTA. An in vitro antibacterial activity study of Ligand and its complexes showed activity against *Bacillus subtilis* and *Staphylococcus aureus*.

Graphical abstract:



Schematic representation of the synthesis of metal complexes of GBCH.

Keywords: Benzimidazole, cobalt(II) complex, nickel (II) complex, Antibacterial activity, molecular docking.