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Synthesis, spectral characterization and antibacterial activities of heterocyclic complexes with Schiff base derived from 3-hydroxybenzofuran-2-carbaldehyde and (furan-2-yl)methanamine

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A Schiff base, 2-((E)-((furan-2-yl)methylimino)methyl)benzofuran-3-ol has been synthesized and assessed using elemental analysis, infrared spectroscopy, nuclear magnetic resonance, mass spectroscopy and thermal analysis (TGA). The complexes' analytical results confirm the synthesis of a 1:2 [M:L] ratio of the formula $[ML_2]$, where M corresponds to the ions Cu(II), Ni(II), Zn(II), Mn(II) and L for the deprotonated Schiff base. Metal ions are bidentately coupled to Schiff base *via* azomethine-N and phenolic-oxygen groups, as inferred from infrared spectra. The disc diffusion technique has been used to test the ligands and their metal chelates for their antibacterial properties against specified microorganisms.

Keywords: Schiff base, Metal complexes, Biological activity

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