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Synthesis, Characterization and Antimicrobial Study of Cu(II) and Ni(II) Complexes of Schiff base Ligand Derived from 2-hydroxy-5-methylbenzophenone and 2,3-butanedionedihydrazone

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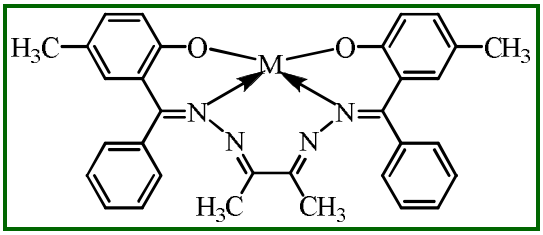
ABSTRACT

New Schiff base ligand was synthesized by the condensation of 2-hydroxy-5-methylbenzophonone and2, 3-butanedionedihydrazone. The Cu(II) and Ni(II)complexes of Schiff base were prepared. The ligand and complexes have been characterized by elemental analysis, FT-IR, ^{1}H NMR, diffuse reflectance spectroscopy, magnetic moment measurements and TGA. Study suggests 1:1 (metal:ligand) stoichiometry in the complexes. FT-IR spectra agreed with coordination of ligand to the metal ions through azomethine nitrogen and deprotonated oxygen atoms. On the basis of diffuse reflectance spectra, magnetic moment values and TGA both the synthesized complexes have been assigned square planer geometry. The antimicrobial study of the Schiff base and its Cu(II) and Ni(II) complexes was carried out, shows that the Schiff base and complexes show good to moderate active against some common bacterial strains and fungi.

Graphical Abstract:



M = Cu(II), Ni(II)

Keywords: Schiff base, Benzohenone, Buntanedionedihydrazone, TGA, Antimicrobial activities.