

Review Article

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Antituberculosis, antimicrobial, antioxidant, cytotoxicity and anti-inflammatory activity of Schiff base derived from 2,3-diaminophenazine moiety and its metal(II) complexes: structural elucidation, computational aspects, and biological evaluation

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Abstract: Enticed by the present scenario of infectious diseases, four new Co(II), Ni(II), Cu(II), and Cd(II) complexes of Schiff base ligand were synthesized from 6,6'-(1E-1'E)(phenazine-2,3-dielbis(azanylidene)-bis-(methanylidene)-bis-(3-(diethylamino)phenol)) (**H₂L**) to ascertain as effective drug for antituberculosis, anti-inflammatory, antioxidant, cytotoxic and antimicrobial activities. The organic ligand and its metal(II) complexes were characterized by numerous

physical and spectroscopic methods, which showed that the complexes have a general formula, [**ML**], (where M = Co(II) (**C1**), Ni(II) (**C2**), Cu(II) (**C3**) and Cd(II) (**C4**)), for metal complexes have been proposed and have a square planar geometry, are amorphous in nature, and are thermally stable. Data highlight obtained from activity testing against tuberculosis, inflammation, and oxidants that all compounds are significantly active against these symptoms. Also, was to evaluate the effectiveness of various compounds against bacterial and fungal strains. Specifically, four bacterial strains (*Bacillus subtilis*, *Staphylococcus aureus*, *Escherichia coli*, and *Pseudomonas aeruginosa*) and two

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