

Antifungal, Antibacterial, and Cytotoxicity Study of Transition Metal Complexes Derived from Novel Quinoline Schiff Base

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Abstract: *The present study reports the synthesis of a new quinoline Schiff base by condensing 2-hydroxy-6-methoxyquinoline-3-carbaldehyde and Para-methylbenzenesulfonohydrazide. Prepared Schiff base was further used to form metal complexes with copper, cobalt, cadmium, and nickel, metal salts. The structure of the prepared Schiff base and its metal complexes was proved through FTIR, ¹H NMR, ¹³C NMR, ESR, ESI-MS, electronic spectra, elemental analysis, and TGA. Magnetic susceptibility values indicate that Cu(II), Co(II), and Ni(II) complexes were paramagnetic. The molar conductivity values reveal that the prepared compounds are non-electrolytic. The presence of N and O donor atoms in the ligand was confirmed by FTIR data. Further, these compounds were subjected to in vitro Antifungal, Antibacterial, and Cytotoxicity activity. The results showed that most of the prepared compounds exhibited excellent cytotoxicity activity against the human lung cancer cell line (A-549) compared to the standard drug paclitaxel. Hence, the present study proposed that all the synthesized Schiff base metal complexes have excellent biological activity and might act as potential anticancer agents.*

Keywords: Metal complexes, ESR, ESI-MS, and Schiff base

