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Facile synthesis, spectral characterization and biological evaluation of metal complexes comprising ((1-hydroxynaphthalen-2-yl) methyleneamino-cyclohexylimino-methyl)naphthalen-1-ol Schiff base ligand and assessing chemo pharmaceutical properties

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This work particularize a series of transition metal complexes such as Mn, Fe, Co, Ni, Cu and Zn, which have been synthesized from newly synthesized bidentate Schiff base ligand namely ((1-hydroxynaphthalen-2-yl)methyleneamino-cyclohexylimino-methyl)-naphthalen-1-ol and anticipated to evaluate the chemopharmaceutical properties of metal complexes. The Schiff base ligand and corresponding transition metal complexes have been characterized by spectral studies such as elemental analysis, UV-Vis, FT-IR, ^1H NMR, ^{13}C NMR spectroscopy and ESI mass spectrometry. Schiff base metal complexes have been screened for their *in-vitro* antimicrobial activities against bacterial and fungal strains in order to prove their biological activity. The theoretical molecular docking studies revealed the existence of favorable interaction between biomolecule and synthesized complexes. Outcome of the investigation proved that the transition metal complexes exhibited prominent activity towards MCF17 breast cancer tumor cell lines and therefore appropriate to design new therapeutic chemopharmaceuticals with vital applicability and good values of antiproliferative activity.

Keywords: Antiproliferative activity, Antimicrobial activity, Chemopharmaceuticals, Molecular docking, Schiff base

Undoubtedly, design and development of organic ligands, prof...