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Synthesis, Characterization and Antimicrobial Studies Of A Schiff Base Derived From 1,8 Diaminonaphthalene And 2-Hydroxy-1-Naphthaldehyde With Its Metal Complexes

Esther,I.Ville[1], Naomi,P. Ndahi[1,]*, Aliu,A Osunlaja[1], Olufunke,A. Sodipo[2]

[1]Department of Chemistry,Faculty of Science, University of Maiduguri,Maiduguri, Borno State, Nigeria
[2]Department of Pharmacology and Toxicology, Faculty of Pharmacy, University of Maiduguri, Maiduguri, Nigeria

Abstract : The metal complexes of Mn(II), Hg(II), Pb(II), Cd(II), Fe(III) and Cr(III) have been synthesized from a Schiff base ligand (HL) derived from the condensation of 2- hydroxy-1-naphthaldehyde with 1,8 diaminonaphthalene. The compounds were characterized by elemental analysis, M.pt, IR and ^{1}HNMR. The elemental analysis revealed a 1:2 molar ratio (amine:aldehyde) for the ligand (HL) and 1:1 molar ratio (M:L) for the complexes. The IR spectra showed the azomethine (>C=N) bond around 1624 cm^{-1} in the ligand. This was shifted to higher frequencies in the complexes. The doublet signals in the range δ10.08-10.82 ppm in the ^{1}HNMR of the ligand is assigned to the azomethine proton (>C=N) group. The multiplet signals in the range δ6.30-8.90 ppm, indicated aromatic proton. The synthesized compounds were assayed for antibacterial activity against some pathogenic bacteria such as Gram positive: *Staphylococcus aureus, Streptococcus pyogenes)* and two Gram negative *(Escherichia coli, Klebsiella pnuemonae)* and two fungi *(Aspergillus niger* and *Candida albicans)* using filter paper disc agar diffusion method.

Keywords : 2- hydroxy-1-naphthaldehyde , 1,8 diaminonaphthalene, Schiff base, metal(II) complexes, infrared, antimicrobial activity.

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