**ABSTRACT**

Tetradentate N2O2 type complexes of Co(II) have been synthesized by the condensation of ophenylenediamine, salicylaldehyde and isatin / naphthaldehyde / acetyl acetone. The complexes were characterized by elemental analyses, molar conductance, magnetic susceptibility, IR, Uv-Vis spectral data and thermal analyses. The elemental analysis of the complexes confine to the stoichiometry of the type [ML(H2O)(OAc)]. The complexes were found to be non-electrolytic in nature on the basis of low value of molar conductance. From the spectral datas an octahedral geometry has been proposed for all the complexes. The possible geometries of metal complex were evaluated using 3D molecular modelling picture. The metal complexes have been screened for their antibacterial and antifungal activity. DNA cleavage activities of Schiff bases and their metal complexes were monitored by agarose gel electrophoresis method in the presence of H2O2.