



Synthesis and Characterization of Fe(II) and Mn(II) Complexes of Schiff Base derived from Ninhydrin and L-Valine

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Abstract : The metal complexes of both Mn(II) and Fe(II) were synthesized using template synthesis method in ethanolic media. The metal complexes of Mn(II) and Fe(II) synthesized were colored complexes and stable to atmospheric conditions. The metal Mn(II) and Fe(II) complexes were soluble in common organic solvents such as dimethylformamide (DMF), dimethylsulfoxide (DMSO), ethanol and insoluble in methanol and water. Both complexes such as Mn(II) and Fe(II) were characterized by using elemental analysis, molar conductance, magnetic susceptibility, infrared spectroscopy and electronic spectral studies. The analytical data showed that the complexes having six coordination number with the following formulas $[MnL_2]$ and $[FeL_2]$ where L= Indane-1, 3-Dione-2-imine-N-3-methylbutanoate. The Schiff base L was shown to behave as a monobasic tridentate ONO donor. Results obtained from the magnetic susceptibility measurement of Schiff base complexes of Mn(II) and Fe(II) revealed that, the metal complexes have paramagnetic properties. From the values of conductivity measurement were 12.5 and $18.47 \Omega^{-1} \text{cm}^2 \text{mol}^{-1}$ for Mn(II) and Fe(II) respectively and they were non-electrolyte and coordinated with two ligands per metal ions (1:2) metal to ligand ratio. From the above data the geometry proposed for Mn(II) and Fe(II) complexes were octahedral geometry. All data obtained from FTIR, UV-VIS, elemental analysis, molar conductivity magnetic susceptibility confirmed that the formation of Schiff base (L) complexes of Mn(II) and Fe(II).

Key words : L-valine, Indane-1, 3-Dione-2-imine-N-3-methylbutanoate (IDIMB), Metal complexes, Schiff base.

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