ABSTRACT

Several new 1-hydroxyxanthone complexes with the metal ions (Cu^{2+}, Ni^{2+}, Co^{2+}, Mn^{2+}, Zn^{2+}, and Mg^{2+}) were prepared by mixing methanolic solutions of the metal and the ligand solutions in an acetate medium.

The resultant complexes were characterized by elemental analysis and spectral data. IR data show that they are not simple salts, but true coordination complexes formed by the carbonyl groups and the hydroxy oxygen atoms. The nature of the species in solution and their stabilities were determined by potentiometric titration techniques. The results are consistent with high stabilities of these complexes in solution and follow the Irving-Williams order of divalent ions for nitrogen donor ligands.

Another ligand plumbagin isolated from the plant *Aristea ecklonii* was inorder to investigate it's coordination properties. Several new plumbagin complexes with the metal ions (Cu^{2+}, Ni^{2+}, Co^{2+}, Mn^{2+}, Zn^{2+} and Mg^{2+}) were prepared by mixing methanolic solutionsof the metal acetate and the ligand solution.

These complexes were also characterized by elemental analysis and spectral data. IR data show that they are true coordination complexes.

The nature of the plumbagin metal complexes in solution and their stabilities were determined by potentiometric titration techniques. Their stabilities in solution are in agreement with Mellor and Maley's series for divalent metals for the corresponding 8-hydroxyquinoline complexes.

The relevance of these metal complexes in biology as possible agents in absorption, trnasport and storage of metal ions has been discussed.