NOVEL AMINO vic-DIOXIME: SYNTHESIS, COMPLEXATION with TRANSITION METAL IONS and SPECTRAL STUDIES

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Dioxime ligands are known to coordinate metal ions as neutral dioximes and also as monoanionic dioximates via dissociation of one oxime proton; they are also known to act as bridging ligands via coordination through the oxygens. The chemistry of the bis-dioximate complexes of transition metal ions has attracted much attention because of their importance as reference models for vitamin B12, dioxygen carriers, catalysis in chemical transformations, intramolecular hydrogen bonding and metal-metal interaction.

In the present study, we investigated the synthesis and characterization of new ligand and its various transition metal complexes. A new amino vic-dioxime ligand, N,N'-[2,2'-{ethane-1,2-di-yl-bis(oxy)bis(2,1-phenylene)]bis(N'-hydroxy)-2-(hydroxyimino)acetimidamide],(LH₄),containing an amino group was synthesized from 1,2-bis(o-aminophenoxy)ethane and anti-chloroglyoxime. Binuclear {(M₂L₂)∙2H₂O, where M = Cu(II), Ni(II) and [M₂(LH₂)(AcO)₂]∙nH₂O, where M = Co(II), Cd(II), n = 2, 2; respectively} complexes of LH₄ were obtained with metal:ligand ratio of 2:2 through N,N-coordination. ¹H-NMR, IR, UV-visible spectra, elemental analysis, magnetic measurements, and TGA-DTA analyses are presented[¹,²].

References:
2. Duman, S., PhD Thesis, Department of Chemistry, Faculty of Arts and Sciences, University of Firat, 2008.