Synthesis of Cobalt(III), Iron(III), and Chromium(III) Complexes with Salicylaldiminato Ligands: Evaluation of the Complexes as Catalysts for Oxidation of L-Cysteine

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A series of new cobalt(III)-, iron(III)-, and chromium(III)-based complexes of the general formula \([\text{M(N\cap O)Cl}_2]\) (\(\text{N\cap O}: \text{N-salicylidene(X)amine and sodium N-(4-sulfonatosalicylidene(X)amine)}\)) (\(X = \text{cyclohexyl and 1-naphthyl}\)) was prepared and characterized. Some of the isolated complexes have been evaluated as catalysts for the oxidation of L-cysteine. Preliminary results show that the rate of oxidation of L-cysteine is influenced by the nature of the metal center, the geometry of the complex, the auxiliary substituents, and the backbone of the ligand.

Key words: Co(III), Fe(III), Cr(III), Schiff Bases, Catalysis, L-Cysteine