

Mixed ligand coordination complex of Mn(II) containing oxidized pyridine-2,6-dicarboxylic acid and 1,10-phenanthroline: Synthesis and characterization

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For the last two decades, the synthesis of mixed ligand coordination compounds with transition metals and their applications have become an attractive field because of the excellent properties such as catalysis, ion exchange, microelectronics, nonlinear optics, porous materials, etc. The use of acid–base mixed ligands is a very suitable method for the preparation of these compounds. Naturally, acid and base ligands are perfect partners that can compensate charge balance, coordination deficiency, repulsive vacuum, and weakly interaction all at once.¹ For this purpose, polycarboxylic acids and N-heterocycle bases are very excellent candidates.² As an aromatic polycarboxylate ligand derived from pyridinedicarboxylic acid, pyridine-2,6-dicarboxylic acid *N*-oxide (H₂pydco), has limited steric hindrance and weak stacking interactions and can form various coordination structures through carboxylate and *N*-oxide bridges.³ In this work, H₂pydco as a primary ligand and 1,10-phenanthroline (phen) as secondary ligands were employed to synthesis mixed ligand coordination complex of Mn(II). This compound has been characterized by melting point, elemental analysis, infrared spectroscopy (IR), and thermogravimetric (TGA) analysis. The purpose molecular formula [Mn(pydco)(phen)(H₂O)] (**1**) is confirmed by results (Fig. 1).

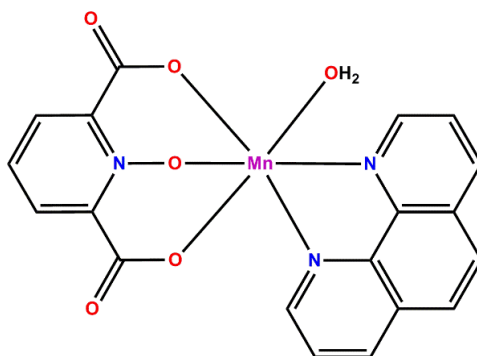


Fig.1 The molecular structure of **1**.

References

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