SYNTHESIS AND CHARACTERIZATION OF
2,6-PYRIDINEDIHYDROXAMIC ACID AND ITS IRON(III) COMPLEX

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ABSTRACT

SYNTHESIS AND CHARACTERIZATIONS OF 2,6-PYRIDIDENEHYDROXAMIC ACID AND ITS IRON(III) COMPLEX

2,6-pyridinedihydroxamic acid (2,6-pyha) was synthesized and characterized their complexation properties with iron(III) metal. The percentages compositions of each elements in 2,6-pyha and iron(III) complex was determined by elemental analysis. It shows that the percentages C, H and N in 2,6-pyha are 44.48%, 3.63% and 21.12%. While in iron(III) complex, the percentages compositions are 32.72%, 3.60% and 18.74% which corresponds to C, H and N. It is indicated in the IR spectra of 2,6-pyha that the \(\nu_{O-H}\), \(\nu_{N-H}\) and \(\nu_{C=O}\) are at 2822.75 cm\(^{-1}\), 3153.31 cm\(^{-1}\) and 1669.48 cm\(^{-1}\) respectively. While the IR spectra for iron(III) complex shows the shifting value at N-H bond which then was confirmed there is a coordination mode between nitrogen from pyridine ring with iron(III) metal. The \(^1\)H NMR spectra shows for 2,6-pyha, the presence of O-H resonance at 11.85 ppm, N-H resonance at 9.331 ppm and H resonance from disubstituted pyridine ring at 8.137 ppm.