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Synthesis, structural and magnetic characterizations of a dinuclear copper(II) complex with an (N,S,O) donor ligand: catecholase and phenoxazinone synthase activities

Ayon Kanti Ghosh^a, Anzar Ali^b, Yogesh Singh^b, Chandra Shekhar Purohit^c, Rajarshi Ghosh^{a,*}

^aDepartment of Chemistry, The University of Burdwan, Burdwan 713 104, India

^bDepartment of Physical Sciences, Indian Institute of Science Education & Research, Mohali, Sector 81, S. A. S. Nagar, Knowledge City, Manauli PO, Mohali, 140 306, India

^cSchool of Chemical Sciences, National Institute of Science Education & Research, Bhubaneswar, Orissa, 751 005, India

Abstract

A new dinuclear Cu(II) complex (**1**) was synthesized and crystallographically characterized. Each of the Cu(II) centres has penta coordination and been found to adopt square pyramidal geometry. Variable temperature magnetic measurements showed that there is weak ferromagnetic interaction between the Cu(II) centres in **1**. **1** shows catecholase as well as phenoxazinone synthase activities in different solvents. The turn over numbers for the catecholase activity were $4.02 \times 10^3 \text{ h}^{-1}$ (MeOH) and $9.57 \times 10^3 \text{ h}^{-1}$ (MeCN), and that of phenoxazinone synthase activity were $1.065 \times 10^3 \text{ h}^{-1}$ (MeOH), $2.13 \times 10^2 \text{ h}^{-1}$ (MeCN) and $2.844 \times 10^3 \text{ h}^{-1}$ (DCM).

Keyword: Copper, Schiff base, catecholase activity, phenoxazinone synthase activity

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