A crystallographically characterized tetranuclear Cu(II) complex \([\text{Cu}^{II4}(L)4]\) (1) \([\text{H}_2L = \text{N-(2-hydroxyethyl)-3-methoxysalicylaldimine}]\) is found to show overall ferromagnetic exchange coupling. High nuclearity transition-metal complexes are of current interest for their possible utility in molecular magnetism\(^1\) with special emphasis on single molecule magnets.\(^2\) Copper has long been the metal of choice for assembling high nuclearity cluster\(^3\) primarily based on ligands with oxygen along with nitrogen donor atoms. Moreover, dinuclear copper complexes play an important role in biological metalloenzymes. Complex (1) mimics the catalytic activity of the plant enzyme catechol oxidase by oxidising 3,5-di-tert-butylcatechol to its corresponding quinone in methanol and dichloromethane medium in presence of aerial oxygen. The reaction follows Michaelis-Menten enzymatic reaction kinetics with turnover numbers (Kcat) \(6.99 \times 10^3\) and \(1.85 \times 10^3\) h\(^{-1}\) in methanol and dichloromethane, respectively. 1 is also phenoxazinone synthase active in methanol medium with a turnover number of \(1.21 \times 10^5\) h\(^{-1}\).


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