Title:	Ligand template synthesis of an undecametallic iron(III) complex: X-ray structure, magnetism and catecholase activity
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Keywords:	oxo-hydroxo-carboxylato undecametallic iron(III) complex X-ray structure
Issue Date:	2015
Publisher:	Elsevier S.A.
Citation:	Inorganica Chimica Acta, 425 pp. 61-66
Abstract:	An undecairon(III) oxo-hydroxo-carboxylato bridged aggregate [Fe11(μ3-O)6(μ3-OH)6(μ-O2C-f)15] (1) has been synthesized and characterized by single crystal X-ray diffraction study. The anionic ligand N-(2-hydroxyethyl)-3-methoxysalicylaldimine (L) has been used as template to synthesize such high nuclearity complex. Interestingly, the ligand neither enters into the coordination sphere nor crystallizes with the iron cluster. Bond distance data indicate that all the iron atoms in 1 are high-spin Fe(III) in O-donor environment. 1 behaves as an effective catalyst towards oxidation of 3,5-di-tert-butylcatechol in different solvents, viz. methanol, dichloromethane and acetonitrile, to its corresponding quinone derivative in aerial oxygen. The reaction follows Michaelis-Menten enzymatic reaction kinetics with turnover numbers (Kcat) 3.21 × 103, 1.23 × 103 and 1.11 × 103 h-1 in methanol, dichloromethane and acetonitrile, respectively.
Description:	Only IISERM authors are available in the record.
URI:	https://www.sciencedirect.com/science/article/pii/S002016931400588X (https://www.sciencedirect.com/science/article/pii/S002016931400588X) http://hdl.handle.net/123456789/3003 (http://hdl.handle.net/123456789/3003)
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