Title:	A Trinuclear Zinc–Schiff Base Complex: Biocatalytic Activity and Cytotoxicity
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Abstract:	A novel trinuclear zinc(II) complex [Zn3L2(μ- O2CCH3)2(CH3OH)4] (1) that contains an N,O-donor Schiff base ligand {H2L = 2-[(2-hydroxyphenylimino)methyl]-6-methoxyphenol} has been synthesized and crystallographically characterized. The X-ray crystal structure of 1 contains three zinc(II) centers, which have distorted-octahedral coordination geometry, and the molecule crystallizes in the Pbcn space group. The zinc(II) complex displays significant catecholase oxidation activity in methanolic medium through a ligand-centered radical pathway. This is the first example of catecholase oxidation through a trinuclear zinc(II)-Schiff base complex by means of the formation of a mononuclear intermediate as [ZnL(dtbc)] (dtbc = 3,5-di-tert-butylcatechol). The fluorescence property of 1 indicates that it can serve as a potential photoactive material. It effectively cleaves the double strand of pBR 322 plasmid DNA at a given concentration (25 μM). The complex shows remarkable cytotoxicity against a human hepatocarcinoma cell line (HepG2). A crystallographically characterized trinuclear zinc(II) complex [Zn 3L2(μ-O2CCH3)2(CH 3OH)4] (1) that contains an N,O-donor Schiff base ligand {H2L = 2-[(2-hydroxyphenylimino)methyl]-6-methoxyphenol} exhibits potential ligand-centered catalytic activity relevant to catechol oxidase. The molecule shows remarkable cytotoxicity against a human hepatocarcinoma cell line (HepG2).
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