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Title:	Synthesis and phosphatase activity of a Cobalt(II) phenanthroline complex
Authors:	Choudhury, A.R. (/jspui/browse?type=author&value=Choudhury%2C+A.R.) Biswas, B. (/jspui/browse?type=author&value=Biswas%2C+B.)
Keywords:	cobalt(II) complex [Co(phen) ₂ Cl ₂] X-ray structural cis-configuration
Issue Date:	2017
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Citation:	Journal of Chemical Sciences, 129 (10)
Abstract:	A mononuclear cobalt(II) complex, [Co(phen) ₂ Cl ₂], (phen = 1,10-phenanthroline) has been synthesized and structurally characterized by different spectroscopic methods including single crystal X-ray structural study. X-ray crystal structural analysis revealed that the cobalt(II) complex crystallizes in a monoclinic system with C ₂ / c space group and exists in cis-configuration in its crystalline state. Room temperature magnetic measurement accounts for 3e paramagnetism and indicates high spin cobalt(II) in the solid state. The cobalt(II) complex has been evaluated as a functional model for phosphatase enzyme by using 4-nitrophenylphosphate (PNPP) as a standard substrate in aqueous DMF medium. This mononuclear cobalt(II) complex exhibits good hydrolytic phosphoester cleavage efficiency with <i>k</i> _{cat} value of 3.78×10 ² h ⁻¹ .
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