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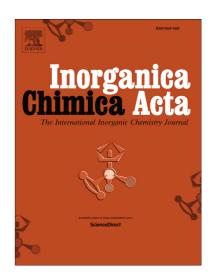
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## Synthesis, structure and catalytic alcohol oxidation by ruthenium(III) supported by Schiff base and triphenylphosphine ligands

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Treatment of [RuCl<sub>2</sub>(PPh<sub>3</sub>)<sub>3</sub>] with two equiv. bi-dentate Schiff base N,O-LH-Cl (N,O-LH-Cl = 2[(3-chloro-phenylimino)-methyl]-phenol) or N,O-LH-NO<sub>2</sub> (N,O-LH-NO<sub>2</sub> = 2[(4-nitro-phenylimino)-methyl]-phenol) in the presence of triethylamine afforded cis-[RuCl(PPh<sub>3</sub>)( $\kappa^2$ -N,O-L-Cl)<sub>2</sub>] (1) and trans-[RuCl(PPh<sub>3</sub>)( $\kappa^2$ -N,O-L-NO<sub>2</sub>)<sub>2</sub>]·Et<sub>2</sub>O (2), respectively. Reactions of [RuCl<sub>2</sub>(PPh<sub>3</sub>)<sub>3</sub>] and equal equiv. tetra-dentate Schiff bases gave corresponding ruthenium(III) complexes [RuCl(PPh<sub>3</sub>)(salen)] (3) (H<sub>2</sub>salen = N,N'-disalicylidene-1,2-ethanediamine), [RuCl(PPh<sub>3</sub>)(salipn)]·2CH<sub>2</sub>Cl<sub>2</sub> (4) (H<sub>2</sub>salipn = N,N'-disalicylidene-1,2-propanediamine), [RuCl(PPh<sub>3</sub>)(salphen)]·CH<sub>2</sub>Cl<sub>2</sub> (5) (H<sub>2</sub>salphen = N,N'-disalicylidene-1,2-phenyldiamine), [RuCl(PPh<sub>3</sub>)(saltoln)]·CH<sub>2</sub>Cl<sub>2</sub> (7) (H<sub>2</sub>saltoln = N,N'-disalicylidene-1,2-tolyldiamine) and [RuCl(PPh<sub>3</sub>)(saltoln)]·CH<sub>2</sub>Cl<sub>2</sub> (7) (H<sub>2</sub>saltoln = N,N'-disalicylidene-1,2-cyclohexanediamine). The molecular structures of complexes 1–5 and 7 have been determined by single-crystal X-ray crystallography. The catalytic oxidation properties of ruthenium(III) complexes 1–8 were tested towards alcohols in the presence of N-methylmorpholine-N-oxide.

Keywords: Ruthenium(III) complex; Schiff base; Synthesis; Crystal structure; Catalytic oxidation

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