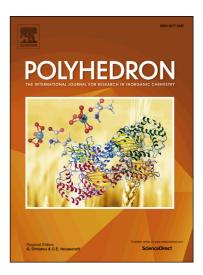
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## **ACCEPTED MANUSCRIPT**

# Phloroglucinol and resorcinol based mononuclear dioxidomolybdenum(VI) complexes: Synthesis, structural characterization and catalytic epoxidation

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*Keywords:* Tridentate ONO donor Schiff base ligands; Dioxidomolybdeum (VI) complexes; NMR spectroscopy; Catalytic epoxidation of Alkenes.

#### Abstract

Five mononuclear dioxidomolybdenum (VI) complexes of phloroglucinol and resorcinol derived ligands are reported. Two types of ligands are accessible through condensation of 2,4,6-trisacetyl-1,3,5-trihydroxybenzene (2,4,6-triacetylphloroglucinol) and benzoylhydrazide (H<sub>2</sub>ptk-bhz, I) or 2-furoylhydrazide (H<sub>2</sub>ptk-fah, II) and condensation of 4,6-diactylresorcinol and benzoylhydrazide (H<sub>2</sub>dar-bhz, **III**), 2-furoylhydrazide (H<sub>2</sub>dar-fah, IV) or nicotinoylhydrazide (H<sub>2</sub>dar-nah, V). Mononuclear dioxidomolybdenum (VI) complexes of these ligands have been prepared. Isolated complexes, [Mo<sup>VI</sup>O<sub>2</sub>(ptk- $[Mo^{VI}O_2(ptk-fah)(MeOH)]$  (2),  $[Mo^{VI}O_2(dar-bhz)(MeOH)]$  (3), bhz)(MeOH)] (1),  $[Mo^{VI}O_2(dar-fah)(MeOH)]$  (4) and  $[Mo^{VI}O_2(dar-nah)(MeOH)]$  (5) have been characterized by spectroscopic techniques like FT-IR, UV-Vis, <sup>1</sup>H NMR and single crystal X-ray diffraction (for complexes 1, 3 and 5) analysis. These complexes have been tested for the epoxidation of alkenes in the presence of 30% H<sub>2</sub>O<sub>2</sub> and NaHCO<sub>3</sub> where latter one acts as an additive. Under optimized reaction conditions, a good conversion of alkenes along with their selective epoxidation and high turnover number was achieved.

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