Supporting Information

Selective Oxidation of Benzyl Alcohols to Aldehydes with A Salophen Copper(II) Complex and Tert-butyl hydroperoxide at Room Temperature

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1. Experimental Section

1.1. General remarks

All reagents were purchased from commercial sources and used without treatment. 70% TBHP in water was used. The products were purified by column chromatography over silica gel. ^1H NMR spectra were recorded on a Bruker AMX500 (500 MHz) spectrometer and tetramethylsilane (TMS) was used as a reference. A Nicolet IS-10 spectrometer was recorded for IR spectroscopy.

1.2. Synthesis of salophenH₂

O-phenylenediamine (108mg, 1mmol) in 5mL MeOH was added to a stirred mixture of salicylaldehyde (244mg, 2mmol) in 10mL MeOH. The resulting orange

mixture was stirred overnight at room temperature. The solid product was collected by filtration, washed with cool alcohol and dried in vacuo (256mg, yield: 81%); ^1H NMR (500 MHz, CDCl_3): δ 13.05 (s, 2H), 8.63 (s, 2H), 7.46 – 7.31 (m, 6H), 7.27 – 7.20 (m, 2H), 7.05 (d, J = 8.2 Hz, 2H), 6.92 (t, J = 7.4 Hz, 2H).

1.3. Preparation of salophen copper(II) complex

Solution of salophenH₂ ligand (189mg, 0.5 mmol) in EtOH (10mL) and $\text{Cu}(\text{OAc})_2 \cdot \text{H}_2\text{O}$ (99mg, 0.5mmol) in water (1mL) were mixed and refluxed with vigorous stirring for 2 h. The resulting solution was then cooled to room temperature and filtered. After filtration, the solid product was washed with H_2O , MeOH and Et_2O subsequently, then dried in vacuo to afford the desired copper complex (139mg, yield: 71%). IR: ν (cm^{-1}) = 1602, 1519, 1334.

1.4. Typical procedure for the oxidation of alcohols

Alcohol (0.5 mmol), salophen copper(II) complex (2 mol %) , NaOH (0.6equiv) and 70% TBHP in water (1.1equiv) were dissolved in acetonitrile (5 mL) and the homogeneous solution was stirred at room temperature overnight. After completion of the reaction, the solvent evaporated under reduced pressure. The residue was purified over silica gel by column chromatography (10-25 % EtOAc in hexane). All the products were known compounds and were identified by comparison of their physical and spectra data with those of authentic samples.