



Supporting Information

for

Angew. Chem. Int. Ed. Z50464

© Wiley-VCH 2003

69451 Weinheim, Germany

Chiral Mn(Salen) complex-catalyzed Kinetic Resolution of Racemic Secondary Alcohols

Wei Sun, Hongwang Wang, Chungu Xia^{*}, Jingwei Li and Peiqing Zhao

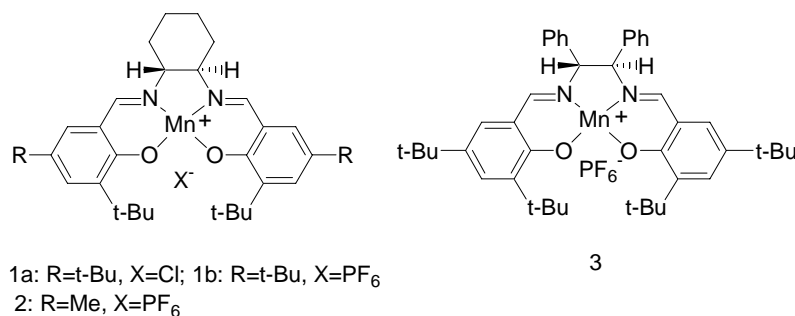
State key Laboratory for Oxo Synthesis & Selective Oxidation, Lanzhou Institute of Chemical Physics, Chinese Academy of Science, Lanzhou, 730000, P. R. China

General:

The Jacobsen ligand, *sec*-phenethyl alcohol, *o*-methoxy-*sec*-phenethyl alcohol, 4-methyl-*sec*-phenethyl alcohol, 1,2,3,4-tetrahydro-1-naphthol, $\text{PhI}(\text{OAc})_2$ and derivative of benzaldehyde were purchased from Acros Chemical Company and used as received. The other secondary alcohols were prepared from derivative of benzaldehyde and CH_3MgI or $\text{C}_2\text{H}_5\text{MgBr}$. This secondary alcohols were analysed by GC-MS (Agilent 6890N GC/ 5973N MS). The complexes **1-3** were prepared according to the procedure reported in this literature.^{1,2} The ee values were determined by GC (HP 6890) with a CP-Chirasil-Dex CB capillary column (25m \times 0.25mm, 0.25 μm i.d.). The yield were determined by GC using decane as internal standard. Chiral GC conditions for resolved alcohols and GC data were included at the end of the supporting information.

General procedure for kinetic resolution of secondary alcohols

To a 5ml tube were added 0.25 mmol substrate, 0.005 mmol catalyst, 0.02 mmol tetraethylammonium bromide and 1 ml water. The mixture was stirred for a few minutes at room temperature, then oxidant (0.175mmol $\text{PhI}(\text{OAc})_2$) was added into the reaction system, continued stirring for 0.5-1h. The products were extracted with diethyl ether when the reaction was over. The yields and e.e. values were determined by GC.



Scheme 1

1. Larrow, J. F.; Jacobsen, E. N. *J. Org. Chem.* **1994**, *59*, 1539
2. Hamada, T.; Irie, R.; Mihara, J.; Hamachi, K.; Katsuki, T. *Tetrahedron* **1998**, *54*, 10017.



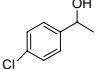

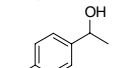
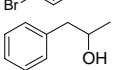
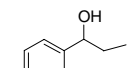

Alcohol	Retention Times (in minutes)	Conditions
	13.50 major R 13.73 minor S	70 hold 5 min, ramp 10 /min to 150
	14.44 major R 14.81 minor S	70 hold 5 min, ramp 10 /min to 150
	13.88 major 14.33 minor	80 hold 3 min, ramp 10 /min to 160
	13.42 major 14.03 minor	80 hold 3 min, ramp 10 /min to 160
	14.2 major 14.55 minor	80 hold 2 min, ramp 10 /min to 170
	20.57 minor 2.073 major	70 hold 3 min, ramp 3.52 /min to 120
	12.54 minor 12.74 major	80 hold 3 min, ramp 10 /min to 160
	20.17 minor 20.39 major	70 hold 5 min, ramp 10 /min to 150

Table 1 Separation Conditions

