Asymmetric Cyclopropanation of Allylic Alcohols Employing Sulfonamide/Schiff Base Ligands.

Jaume Balsells and Patrick J. Walsh*

P. Roy and Diane T. Vagelos Laboratories, University of Pennsylvania, Department of Chemistry, 231 South 34th Street, Philadelphia, Pennsylvania 19104-6323.

Supporting Information

Determination of enantiomeric excesses for different substrates was performed as described:

(-)-(1R,2R)-2-Phenylcyclopropylmethanol. Determined by Chiral HPLC \( t_R \) (1S,2S), 27.0 min ;\( t_R \) (1R,2R), 31.9 min (Chiralcel OB-H, hexane/i-PrOH, 95/5, 0.9 mL/min).

(+)-(1S,2R)-2-Phenylcyclopropylmethanol. Determined by \(^1\)H-NMR (CDCl\(_3\)) by relative integration of the signals at 3.50 ppm (1S,2R) and 3.54 ppm (1R,2S) of the corresponding Mosher ester.

1-Methyl-2-phenylcyclopropylmethanol. Determined by Chiral HPLC \( t_R \) 11.8 min ;\( t_R \) 18.5 min (Chiralcel OD-H, hexane/i-PrOH, 96/4, 1.0 mL/min).

(-)-(1R,2R)-2-(Benzylxoymethyl)-1-(hydroxymethyl)cyclopropane. Determined by Chiral HPLC \( t_R \) (1S,2S), 19.3 min ;\( t_R \) (1R,2R), 30.8 min (Chiralcel OB-H, hexane/i-PrOH, 95/5, 1.0 mL/min).

(+)-(1S,2R)-2-(Benzyloxymethyl)-1-(hydroxymethyl)cyclopropane. Determined by Chiral HPLC \( t_R \) (1R,2S), 13.5 min ;\( t_R \) (1S,2R), 19.1 min (Chiralcel OD-H, hexane/i-PrOH, 99.5/0.5, 1.0 mL/min).

(-)-(1R,2R)-2-Propylcyclopropylmethanol. Determined by \(^19\)F-NMR (CDCl\(_3\)) by relative integration of the signals at -72.0 ppm (1S,2S) and -72.1 ppm (1R,2R) of the corresponding Mosher ester.

(-)-(1S,2R)-2-Propylcyclopropylmethanol. Determined by Chiral GC of the corresponding trifluoroacetate \( t_R \) (1S,2R), 24.8 min ;\( t_R \) (1R,2S), 26.1 min (30-m Supelco \( \beta \)-DEX\(^{TM} \), 60 °C, 3.8 mL/min).