Gategory
Metal-Catalyzed Asymmetric Synthesis and Stereoselective Reactions

Key words

## rhodium

## diols

## phebox ligand

Significance: Chiral diols are useful synthetic motifs in organic synthesis. Common methods for their synthesis include dihydroxylation, hydrogenation of hydroxyketones, and hydrolysis of epoxides. The authors report an enantioselective 1,2diboration of alkenes leading to optically active diols after oxidation.
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Comment: Morken showed a similar diboration of terminal alkenes with a platinum catalyst with enantioselectivities up to $94 \%$ (J. Am. Chem. Soc. 2009, 131, 13210). The authors present a rhodi-um-catalyzed diboration-oxidation of terminal alkenes providing enantioselectivities up to $99 \%$. However, disubstituted alkenes proved to be more difficult. 1-Methylstyrene gave the diol with a moderate $76 \%$ ee, whereas $\beta$-methylstyrene, 1,2-dihydronaphthalene, and trans-stilbene did not react.

