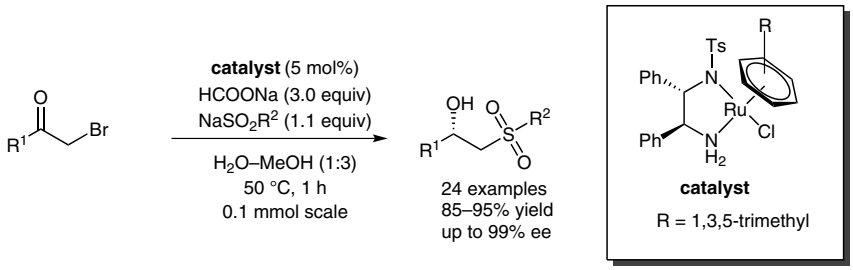
D. ZHANG, T. CHENG,* Q. ZHAO, J. XU, G. LIU* (SHANGHAI NORMAL UNIVERSITY, P. R. OF CHINA)

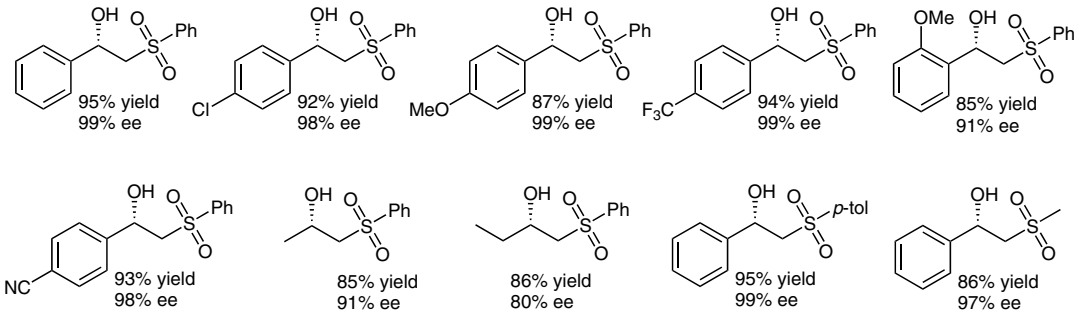
Highly Enantioselective One-Pot Synthesis of Chiral β-Hydroxy Sulfones via Asymmetric Transfer Hydrogenation in an Aqueous Medium

Org. Lett. **2014**, *16*, 5764–5767.

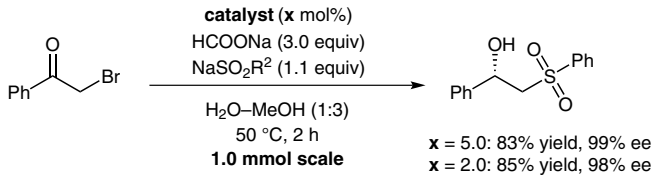
Enantioselective Synthesis of β-Hydroxy Sulfones via Transfer Hydrogenation



Selected examples:



Scale-up of the reaction:



Significance: Chiral β-hydroxy sulfones are useful building blocks in organic synthesis, as the α-position can easily be functionalized and the sulfonyl group easily be removed or transformed. In the present report, the authors describe a one-pot approach to chiral β-hydroxy sulfones, starting from α-bromo ketones and involving transfer hydrogenation.

Comment: A variety of products could be formed in high yield and high to excellent enantioselectivity. Interestingly, both alkyl and aryl substituents can be tolerated at the R^1 and R^2 positions, with aryl groups giving superior results. Through kinetic studies, the authors demonstrate that nucleophilic substitution followed by transfer hydrogenation is the dominant sequence.

SYNFACTS Contributors: Mark Lautens, Thomas Johnson
Synfacts 2015, 11(1), 0062 Published online: 15.12.2014
DOI: 10.1055/s-0034-1379682; **Reg-No.:** L14814SF