

Category

Metal-Catalyzed Asymmetric Synthesis and Stereoselective Reactions

Key words

phosphine ligands
hydrogenation
enesulfonamides
sultams
palladium

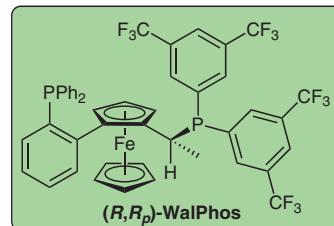
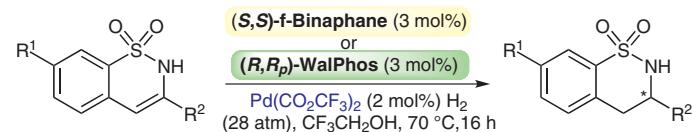
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Enantioselective Pd-Catalyzed Hydrogenation of Enesulfonamides

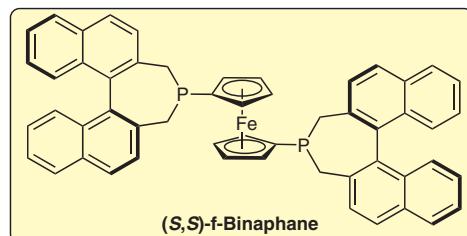
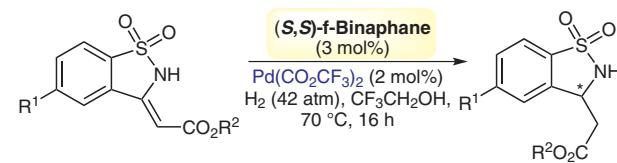
Chem. Commun. **2011**, *47*, 5052–5054.

Palladium-Catalyzed Asymmetric Hydrogenation of Enesulfonamides

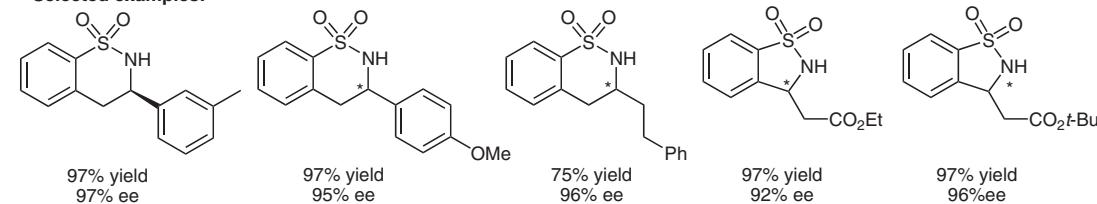
Asymmetric hydrogenation of *endo*-cyclic enesulfonamides:



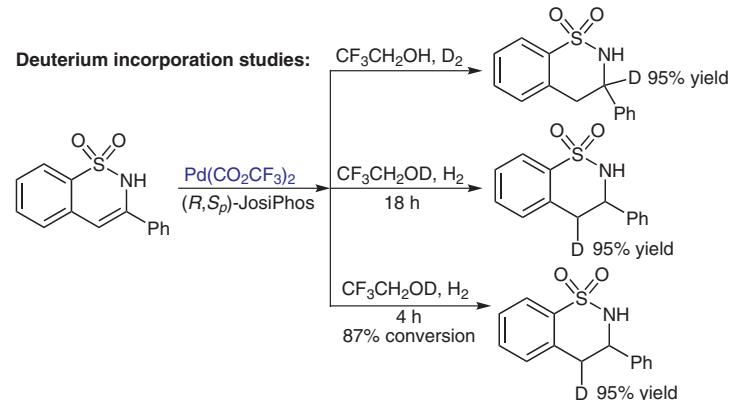
Asymmetric hydrogenation of *exo*-cyclic enesulfonamides:



Selected examples:



Deuterium incorporation studies:



Significance: The synthesis of enantioenriched sultams by asymmetric hydrogenation of enesulfonamides is described. Both *endo*- and *exo*-cyclic enesulfonamides react efficiently to give the sultams in high yield and enantioselectivity.

Comment: Deuterium incorporation studies suggest that the enesulfonamide initially undergoes acid-catalyzed tautomerization to form *N*-sulfonylimine **A**, which undergoes asymmetric hydrogenation to afford the sultam product.

SYNFACTS Contributors: Hisashi Yamamoto, Patrick Brady
Synfacts 2011, 8, 0868–0868 Published online: 20.07.2011
DOI: 10.1055/s-0030-1260826; **Reg-No.:** H07611SF