M. RUEPING,* A. P. ANTONCHICK (JOHANN WOLFGANG GOETHE-UNIVERSITÄT
FRANKFURT, GERMANY)

Organocatalytic Enantioselective Reduction of Pyridines

Angew. Chem. Int. Ed. **2007**, *46*, 4562-4565.

Enantioselective Reduction of Pyridines via Brønsted Acid Catalysis

Significance: An organocatalytic enantioselective reduction of 2-substituted simple and fused pyridines is reported. The reaction is designed to undergo catalytic protonation by Brønsted acid **1**, followed by reduction by hydride transfer from the Hantzsch dihydropyridine **2**. The hexahydroquinolinone and tetrahydropyridine products are formed in moderate to good yields with good enantioselectivities. The scope of the reaction was modestly investigated.

Comment: The chiral piperidine moiety is prevalent in the large class of piperidine plant and animal natural products, for example the dendrobatid alkaloid pumiliotoxin C, a noncompetitive blocker of nicotinic receptors (see book and review below). A previous synthesis of hexahydroquinolinones involves a multistep process and use of stoichiometric amounts of a chiral auxiliary (H. M. Sklenicka et al. *J. Am. Chem. Soc.* **2002**, *124*, 10435). The present methodology establishes the first direct and efficient organocatalytic route for the synthesis of such compounds.

Book: J. W. Daly, H. M. Garraffo, T. F. Spande In *Alkaloids: Chemical and Biological Perspectives*, Vol. 13; S. W. Pelletier, Ed.; Pergamon: New York, **1999**, 1-161.

Review: J. W. Daly, T. F. Spande, H. M. Garraffo *J. Nat. Prod.* **2005**, *68*, 1556.

SYNFACTS Contributors: Victor Snieckus, Yigang Zhao
Synfacts 2007, 9, 0912-0912 Published online: 23.08.2007
DOI: 10.1055/s-2007-968914; Reg-No.: V09107SF

2007 © THIEME STUTTGART • NEW YORK