# Stereoselective Synthesis of 3-Substituted and 3,4-Disubstituted Piperidine und Piperidin-2-one Derivatives

Ellen Klegraf and Horst Kunz

Institut für Organische Chemie, Universität Mainz, Duesbergweg 10–14, 55128 Mainz, Germany

Reprint requests to Prof. Dr. Horst Kunz. Fax: +49 6131 39 24786. Email: hokunz@uni-mainz.de

*Z. Naturforsch.* **2012**, *67b,* 389 – 405; received February 13, 2012

The stereoselective synthesis of 3-substituted and 3,4-disubstituted piperidine and piperidin-2-one derivatives was achieved starting from 2-pyridone. After *N*-galactosylation and subsequent *O*-silylation, nucleophilic addition of organometallic reagents proceeded with high regio- and stereoselectivity at 4-position. Substituents at position 3 were stereoselectively introduced by reaction of electrophiles with amide enolates of the *N*-galactosyl-2-piperidones.

*Key words:* *N*-Galactosyl Pyridone, 3-Alkyl-piperidines, 3,4-Dialkyl-piperidines, Carbohydrate Auxiliaries, Stereoselective Reactions