Oxidation von Methylpiperidin-Derivaten unter Berücksichtigung der Chiralität

Oxidation of Methylpiperidine Derivatives with Regard to Chirality

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When 2-(2-methyl-1-piperidinyl)ethanol derivatives **3a** and **3b** were dehydrogenated with Hg(II)-EDTA, an iminium function involving the tertiary α-carbon atom of the piperidine ring is formed regioselectively. Cyclization of these intermediates yielded diastereomeric mixtures of oxazolidines **7a** and **7b**, in solutions of which hydroxy-enamine species **8a/9a** and **8b/9b**, respectively, could be detected by NMR spectroscopy. A hydroxy-enamine derived from **7a** could be trapped by cycloaddition to tetrazine **10**. Protonation of the oxazolidines generated the iminium salts **6a/6b**·X with loss of a chirality center. For prevention of different directions of ring dehydrogenation in the 2-(3-methyl-1-piperidinyl)ethanol compounds, the 6-position was blocked with two methyl groups. With amino alcohol **17**, the isolation of one of the racemates in pure form was achieved, which by dehydrogenation produced a diastereoisomeric lactam mixture **18**, as shown by NMR spectroscopy. Reaction of 2-(4-methyl-1-piperidinyl)ethanol **19** with Hg(II)-EDTA gave rise to a diastereomeric lactam mixture **21** in the ratio 60 : 40. From enantiomerically pure phenyloxiranes, the amino alcohols *R*(–)-**19** and *S*(+)-**19** became available. Their dehydrogenation under standardized conditions always showed a spreading range of isomeric lactams, which could not be separated.

Key words: Hg(II)-induced Dehydrogenation, Methylpiperidine, Oxazolidine