Isoxazolinium Salts in Asymmetric Synthesis. 1. Stereoselective Reduction Induced by a 3'-Alkoxy Stereocentre. A New Approach to Polyfunctionalized β-Amino Acids* [1, 2]

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A new approach to optically active *N*-methylamino acids is presented, relying on stereoselective reduction of *N*-methylisoxazolinium salts with a dioxyethyl side-chain. The diastereoselectivity of the reduction step is studied systematically, in comparison with that of respective isoxazolines. A two-step transformation of isoxazolinium salts – with $NaBH_3(OAc)$ and subsequent catalytic hydrogenation as well as a one-pot reduction by catalytic hydrogenation led to high (95:5 and 87:13) diastereomeric ratios of protected *erythro*-*N*-methylaminopentanetriols. The hydroxyethyl side-chain is elaborated by oxidation to afford the β-*N*-methylamino acid **37**, exemplifying the potential of this strategy.

Key words: Isoxazolinium Salts, Methylamino Alcohols, Diastereoselective Reduction, Homoserine, β-Amino Acids