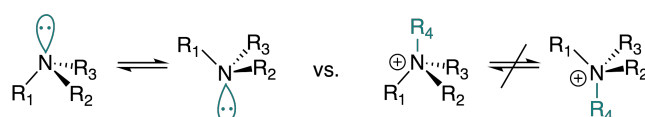


## Dynamic kinetic resolution of racemic amines with stereogenic nitrogen centers

S. Zaitseva<sup>1</sup>, V. Köhler<sup>1\*</sup>

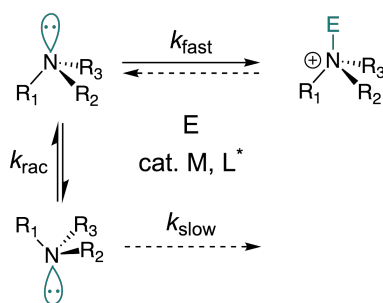
<sup>1</sup>University of Basel, Department of Chemistry, Mattenstrasse 22, BPR 1096, 4058 Basel

Within the last decades, much attention from the chemical community has been directed at the development of asymmetric reactions. Just as a tetrahedral carbon atom, nitrogen with three different substituents can be a stereogenic centre. Such tertiary amines, however, usually do not show optical activity due to a low lying transition state for nitrogen inversion, which results in a rapid equilibrium between the enantiomers. This inversion can be prevented by conformational strain such as the one observed in Tröger's base<sup>[1]</sup>, or by a quaternization of the nitrogen atom.<sup>[2]</sup>



Chiral ammonium salts are widely used as phase-transfer catalysts<sup>[3]</sup> and recently also as stereocontrolling cations<sup>[4]</sup>; they can be found in nature<sup>[5]</sup> and some exhibit pharmacological activity.<sup>[6]</sup> Current strategies for the synthesis of such compounds are based on the resolution techniques of diastereoselective adducts or salts.<sup>[7]</sup>

Recently we published the first example of the Pd-catalyzed enantioselective allylation of tertiary amines, where we could realize excellent conversions and significant stereoselectivities.<sup>[8]</sup> Hence, our research is focused on the dynamic kinetic resolution of racemic amines with stereogenic nitrogen centers via TM-catalyzed transformations.



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