Abstract

Enatiomerically enriched allylic amines are important synthons for the synthesis of biologically active compounds.

This diploma thesis is focused on the preparation of these amines via organocatalytic allylic substitution reaction of Morita-Baylis-Hillman (MBH) alcohol derivates. We found an asymmetric decarboxylative reaction of MBH carbamates catalyzed by commercially available dimeric *cinchona* catalysts. This reaction provides corresponding products in yields up to 98% with enatiomeric excess up to 97%.

Our attention was also given to the transformation of allylic amines to the corresponding *β*-lactams. We found an one-pot reaction consisting of hydrolysis and following lactamization leading to *β*-lactams. This reaction provides corresponding lactams in isolated yield up to 86% with retained enantioselectivity.

Enantiomerically enriched intermediate that is pivotal for the synthesis of Ezetimibe was prepared via this organocatalytic reaction.

Possible reaction mechanism of this transformation was proposed based on carried out cross experiment and calculations.