

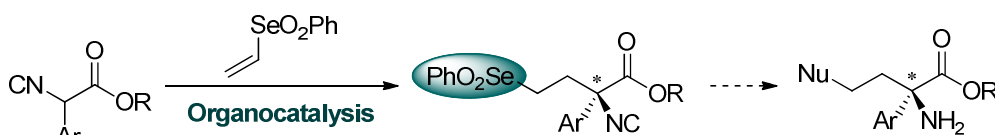
Enantioselective Michael Addition of Isocyanoacetate to Vinyl Selenone: Access to α -Quaternary Amino Acids

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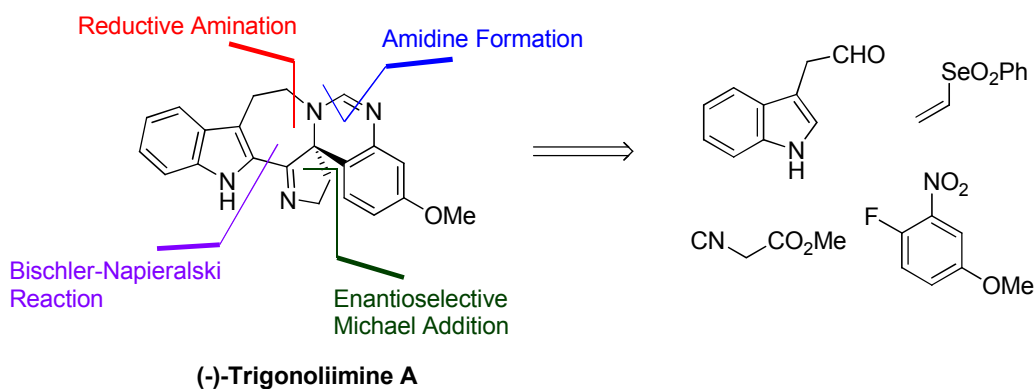
Enantio enriched α -quaternary amino acids are presents in many natural products. Moreover, their resistance against enzymatic degradation and their rigid conformation makes them useful as peptidomimetics.¹

We wish to present our approach towards this key structure through an organocatalyzed Michael addition of α -substituted isocyanoacetate to vinyl selenone. The use of isocyanoacetate as a glycine template is known but only few examples achieved an enantioselective transformation without a subsequent cyclization of the isonitrile part. The substitution of the selenoyl group makes this a versatile method to produce α -quaternary amino-acids.



Scheme 1: Enantioselective Michael addition towards quaternary α -amino acids

The scalability of this transformation was then illustrated through the enantioselective synthesis of both (+)- and (-)-trigonoliimine A.²



(-)-Trigonoliimine A

Scheme 2: Access to (-)-Trigonoliimine A

1. For a review on stereoselective synthesis of quaternary α -amino acids see: C. Cativiela, M. D. Díaz-de-Villegas, *Tet. Asym.* **2007**, *18*, 569-623.
2. T. Buyck, Q. Wang, J. Zhu, *Org. Lett.* **2012**, *14*, 1338-1341.