

The Stereoselective Arene-Forming Aldol Condensation

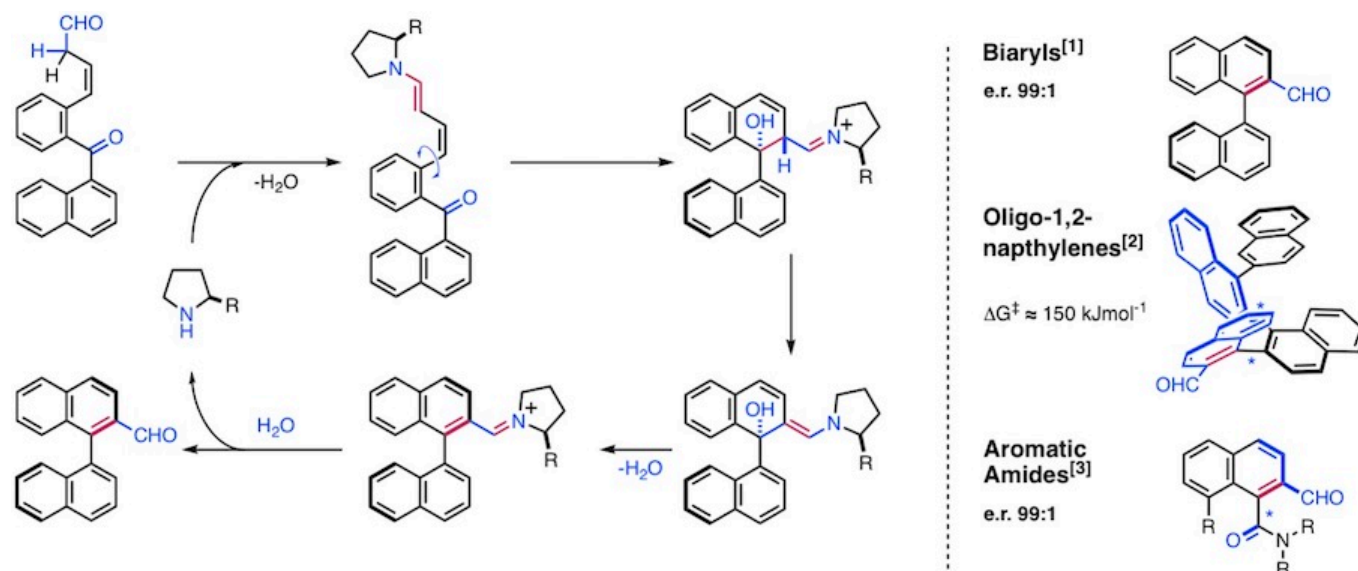
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Configurationally stable axially chiral compounds are structurally highly defined building blocks that serve for various applications, such as ligand design, natural product research or materials science. Despite the importance of such atropisomers, only few stereoselective methods are available for their synthesis.

The presentation will outline our efforts to develop a catalytic aldol condensation reaction to convert different ketoaldehyde precursors into axially chiral arenes upon treatment with an amine catalyst. The stereochemical information is thereby transferred from the catalyst into the axially chiral products to provide various atropisomeric scaffolds with excellent stereocontrol.

The stereoselective arene-forming aldol condensation reaction was found to be broadly applicable, as exemplified by the synthesis of biaryls, oligo-1,2-naphthylenes and aromatic amides. Insights into the mechanism and models to describe the stereinduction will be discussed to conclude the talk.



[1] A. Link, C. Sparr, *Angew. Chem. Int. Ed.* **2014**, *53*, 5458.

[2] D. Lotter, M. Neuburger, M. Rickhaus, D. Häussinger, C. Sparr, *Angew. Chem. Int. Ed.* **2016**, *55*, 2920.

[3] V. C. Fäseke, C. Sparr, *Angew. Chem. Int. Ed.* **2016**, *55*, 7261.