

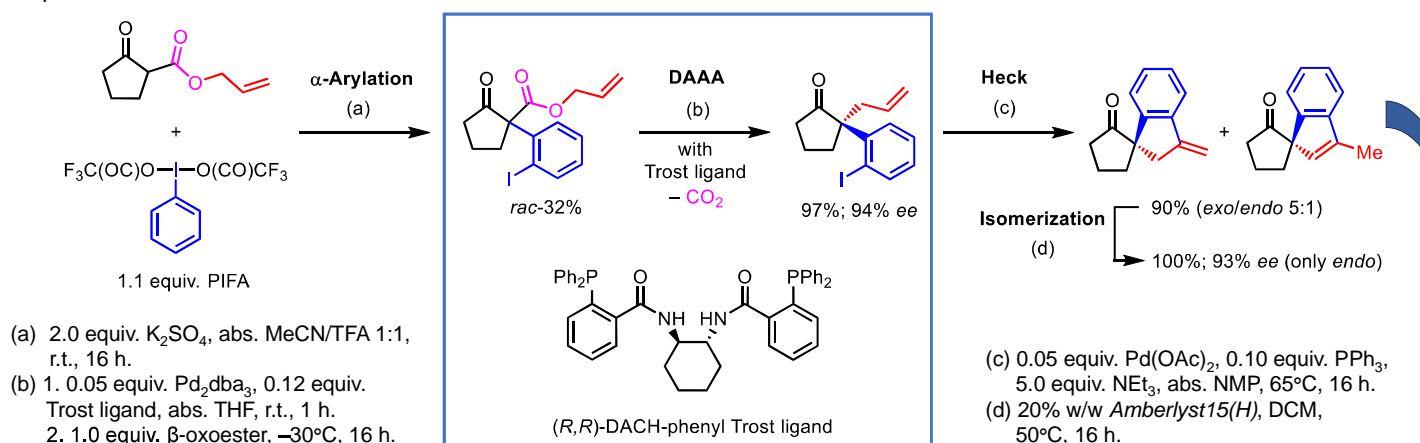
Synthesis of Optically Active Spirocycles by a Sequence of DAAA and Heck Reaction

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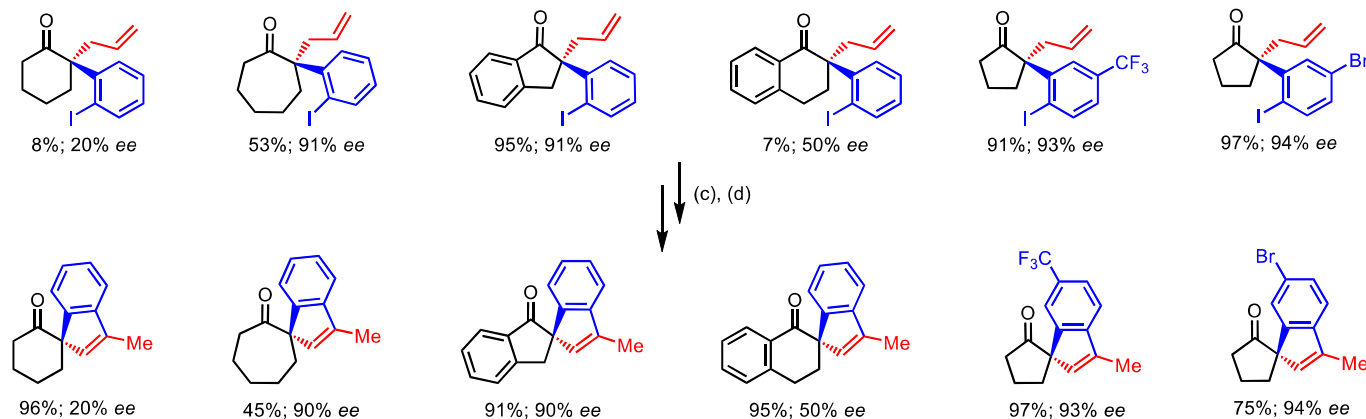
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Optically active spirocycles are obtained in a sequence of decarboxylative asymmetric allylic alkylation (DAAA) and Heck reaction with high enantioselectivity. These scaffolds are attractive for several natural product syntheses and show great potential for further derivatization.

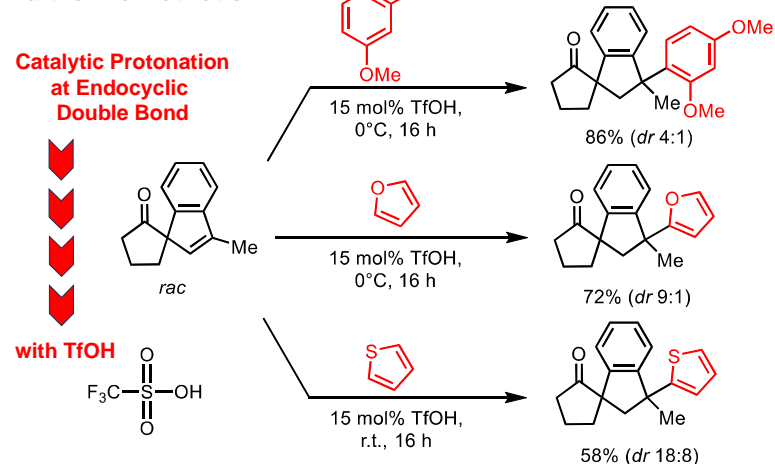
Starting Point for the synthesis of the presented spirocycles are racemic α -arylated β -oxoesters, which have already been applied several times in our group.^[1,2] The present work further underlines the potential of these β -oxoesters as starting material for important scaffolds. After α -arylation (a) with PIFA the DAAA (b) was carried out with the help of the (*R,R*)-DACH-Ph Trost ligand. The decarboxylated species was then submitted to the subsequent Heck reaction (c) to construct the optically active spirocycle as a mixture of *exo*- and *endo*cyclic isomers. After isomerization (d) by using an ion-exchange resin the *endo*-isomer could be obtained in 90% yield and with 93% ee over two steps.



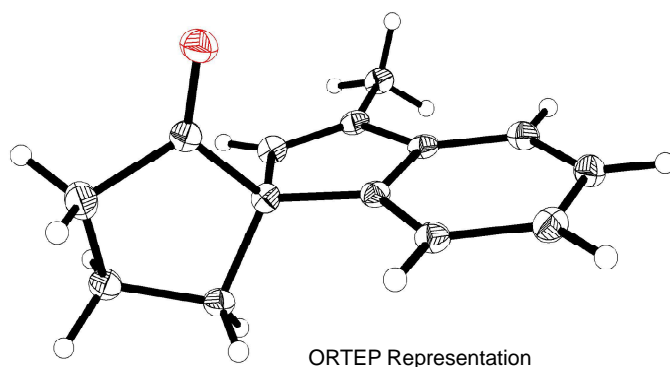
List of Selected Products



Further Derivatization



Confirmation of (*R*)-Configuration



[1] L. Fliegel, J. Christoffers, *Org. Lett.* **2022**, *24*, 8526–8530.

[2] L. Fliegel, J. Krauß, J. Christoffers, *Synlett* **2024**, *35*, 979–982.