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Organo- and Biocatalysis

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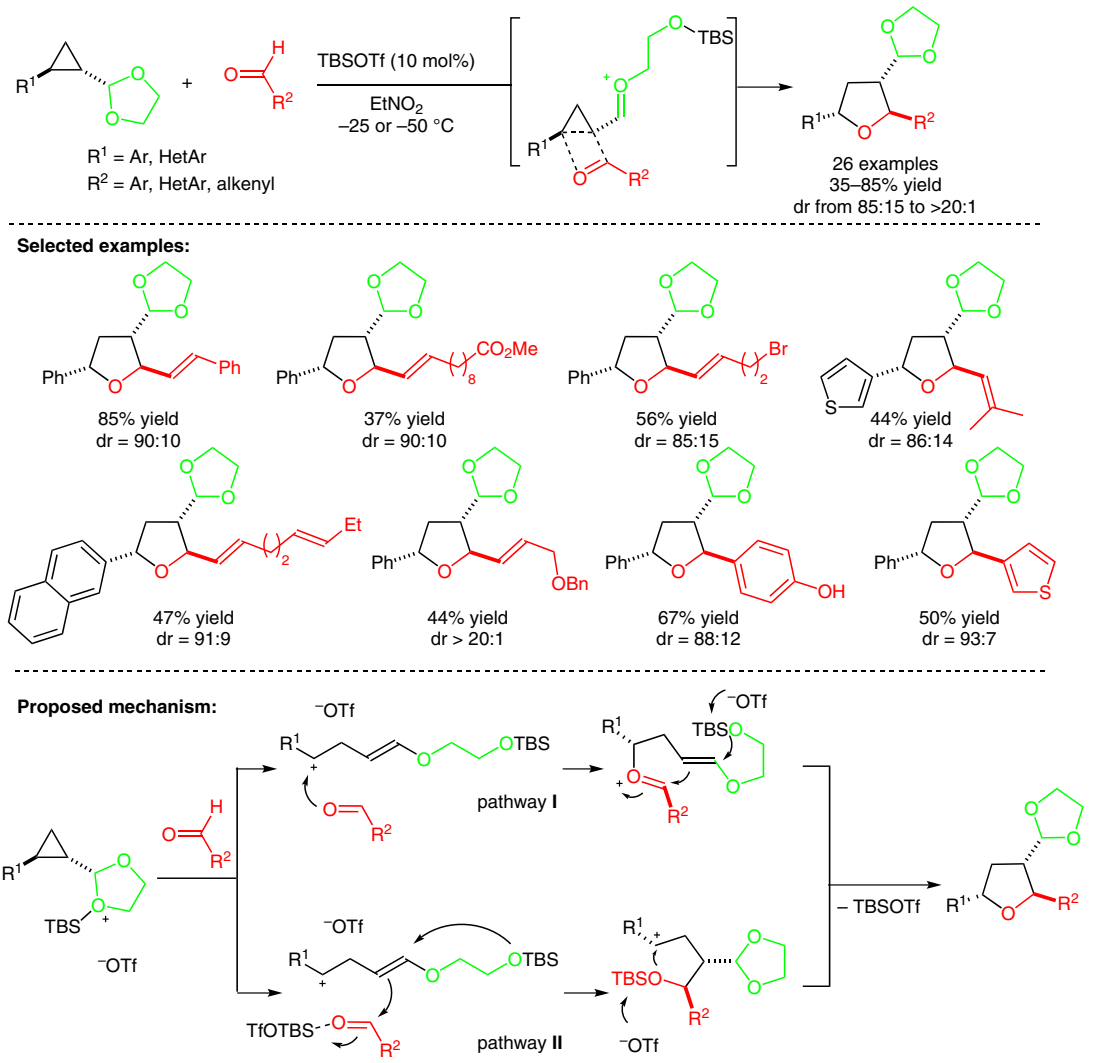
J. SABBATANI, N. MAULIDE* (UNIVERSITÄT WIEN, AUSTRIA)

Temporary Generation of a Cyclopropyl Oxocarbenium Ion Enables Highly Diastereoselective Donor–Acceptor Cyclopropane Cycloaddition

Angew. Chem. Int. Ed. **2016**, *55*, 6780–6783.

Lewis Acid Catalyzed Formal [3+2] Cycloaddition of Cyclopropyl Acetals



Significance: The Maulide group reports a formal [3+2] cycloaddition of cyclopropyl acetals with aldehydes. The reaction is catalyzed by TBSOTf and provides trisubstituted tetrahydrofurans in moderate to high yields and good to excellent diastereoselectivities. The authors propose the transient generation of cyclopropyl oxocarbenium ions as key intermediates to promote the transformation.

Comment: Multisubstituted tetrahydrofuran skeletons are among the most important core structures for pharmaceuticals and natural products. The authors propose stepwise pathways **I** or **II**, although a concerted mechanism has not been fully ruled out. The presented method is not only useful, but also provides new insights into Lewis acid catalyzed transformations.

SYNFACTS Contributors: Benjamin List, Nobuya Tsuji
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