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SYNFACTS Highlights in Current Synthetic Organic Chemistry

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Category

Organo- and **Biocatalysis**

Key words

cycloaddition acetals cyclopropyl acetals tetrahydrofurans

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. SYNFACTS Contributors: Benjamin List, Nobuya Tsuji

Synfacts 2016, 12(07), 0748 Published online: 17.06.2016 **DOI:** 10.1055/s-0035-1562258; **Reg-No.:** B03616SF

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.