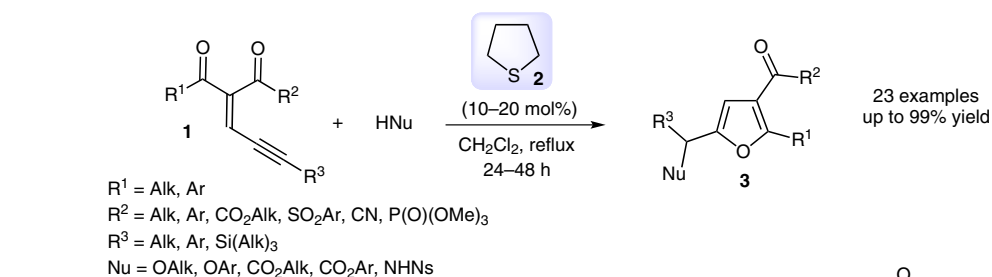


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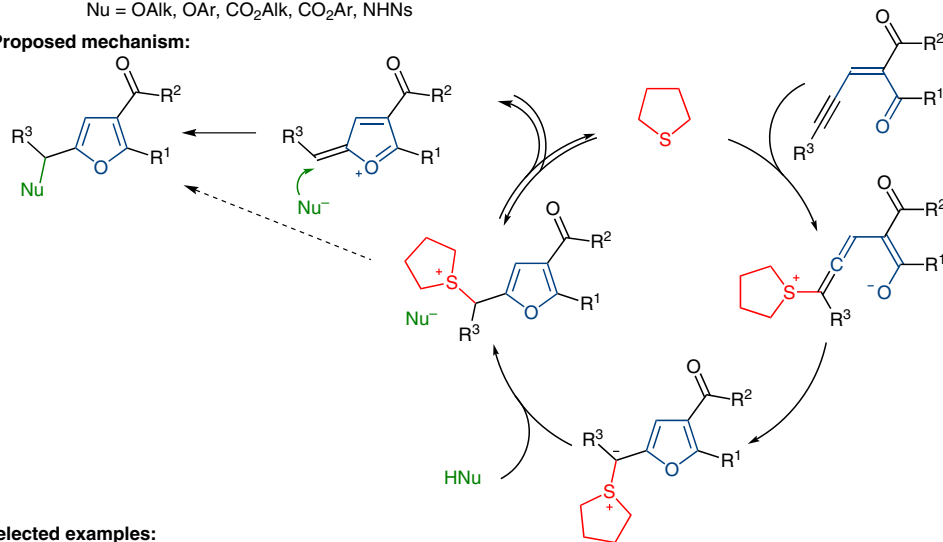
Organocatalytic Synthesis of Highly Substituted Furfuryl Alcohols and Amines

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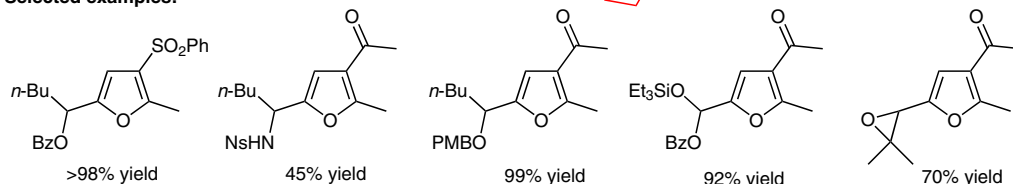
Organocatalytic Synthesis of Substituted Furfuryl Alcohols and Amines



Proposed mechanism:



Selected examples:



Significance: The authors present an organocatalytic approach for the synthesis of highly substituted furfuryl alcohols and amines in good to excellent yield. The reaction is catalyzed by tetrahydrothiophene (**2**), using a Lewis base for the activation of the alkynylcarbonyl derivatives **1**. In contrast to **2**, other Lewis bases such as DABCO or Bu_3P led to decomposition.

Comment: While electrophilic metal-catalyzed furan syntheses are common, organocatalytic approaches are rare. Inspired by the work of Krische (*J. Am. Soc. Chem.* **2004**, 4118) and Kuroda (*Tetrahedron* **2004**, 1913), Clark and co-workers applied a Lewis base activation concept for their reaction. By using tetrahydrothiophene (**2**) as a catalyst, an enolate is formed that cyclizes to a sulfur ylide containing furan which can react with different nucleophiles. This method can also be used for a multi-component domino synthesis of substituted furans.

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