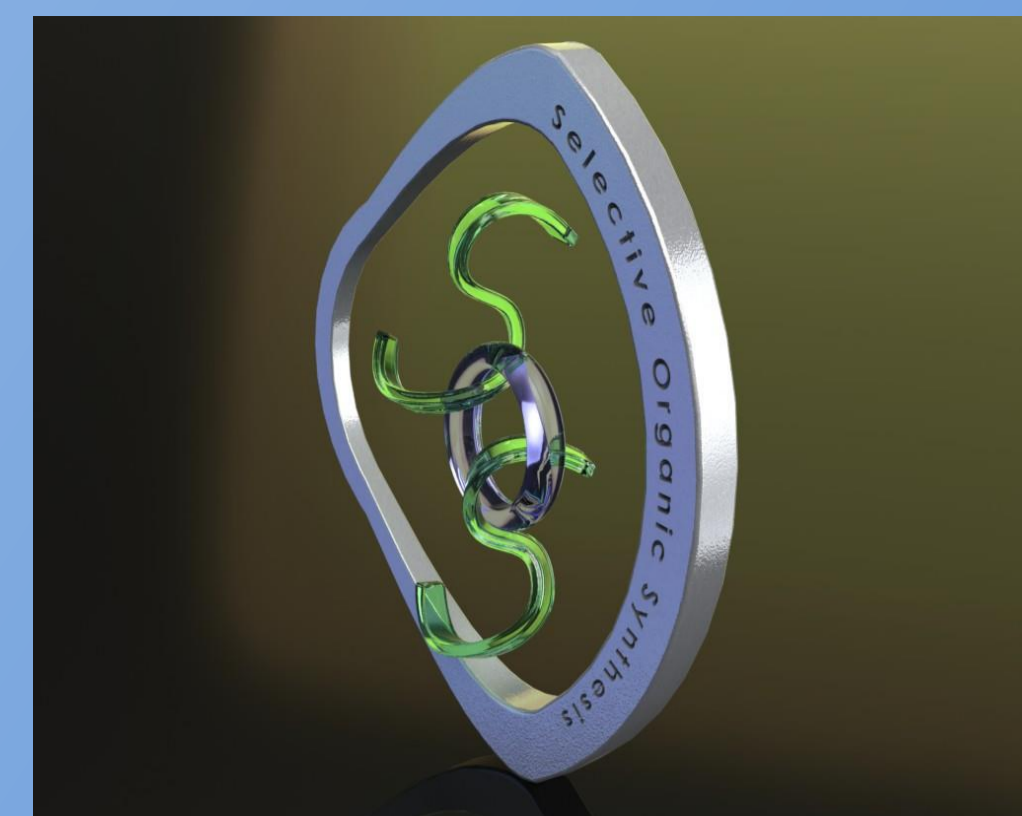


Synergistic Catalysis: Intermolecular Reaction of Aldehydes with Allenamides

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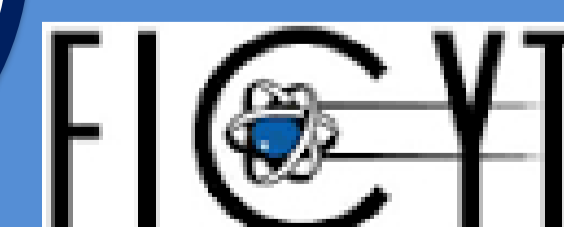
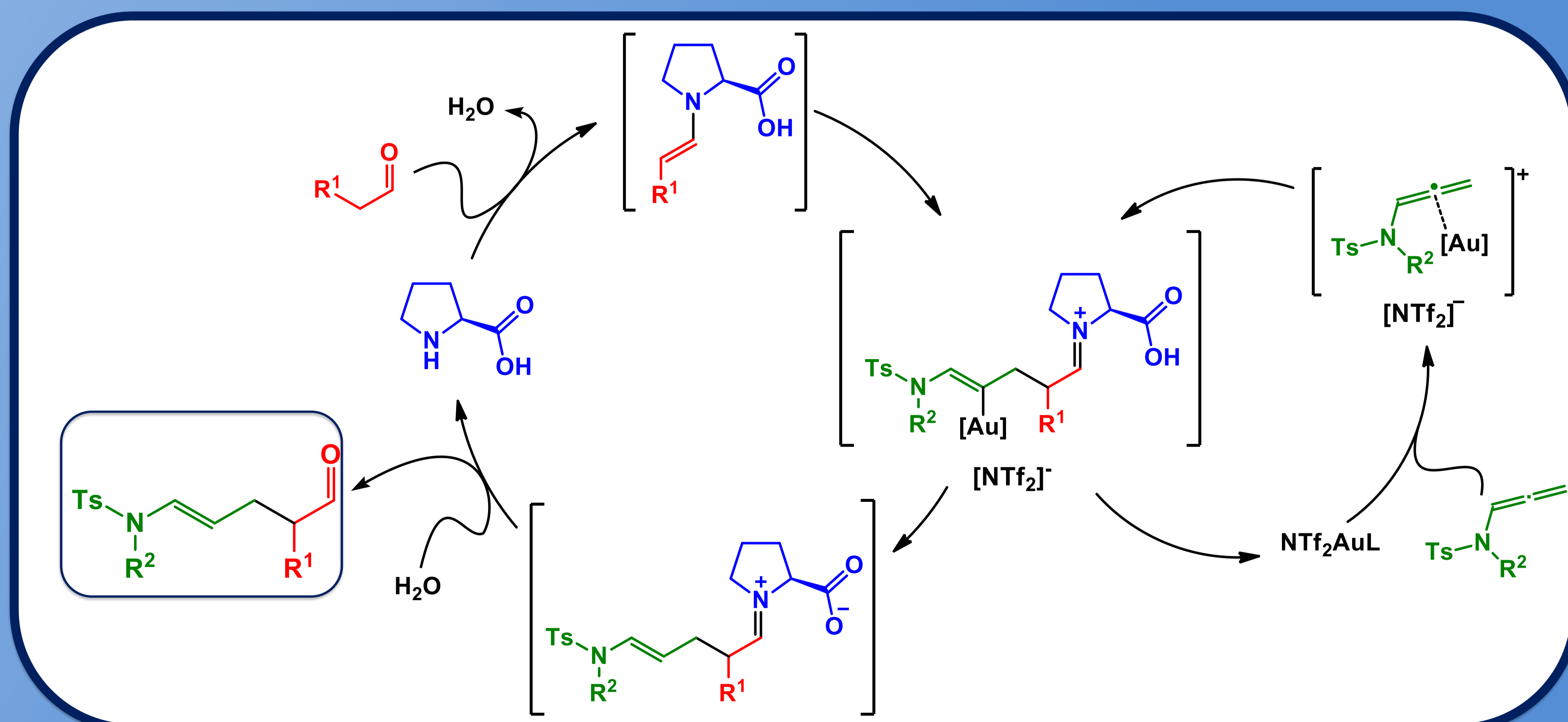
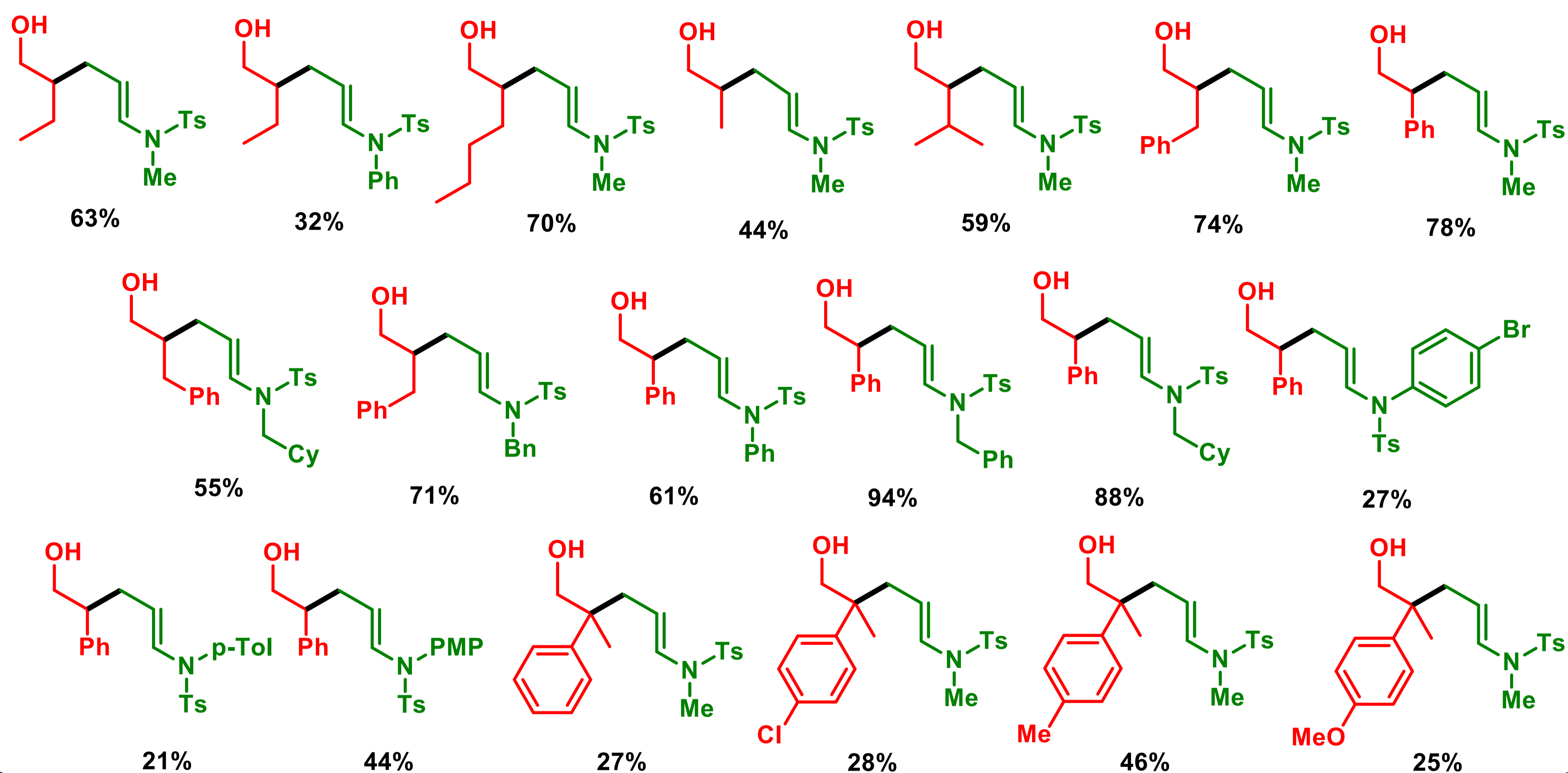
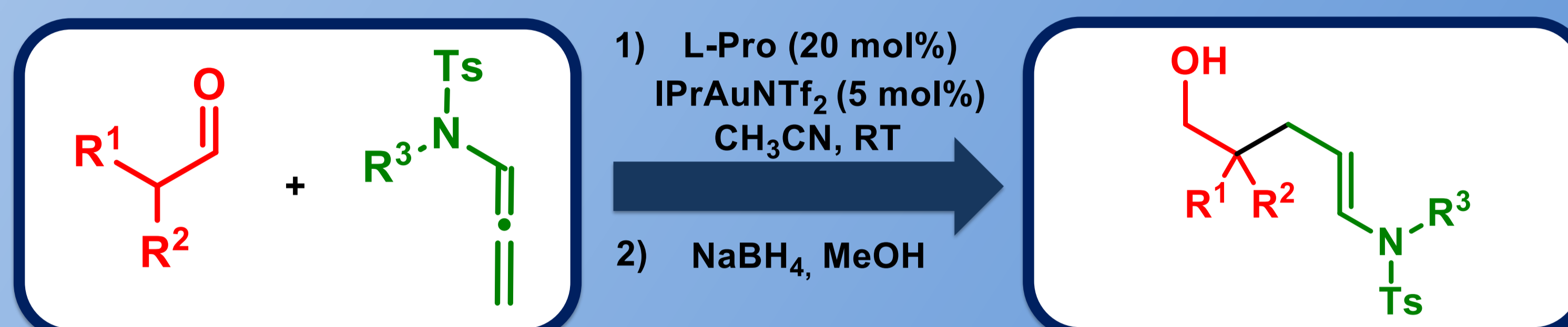
In the last few years asymmetric organocatalysis has proved to be a powerful tool to afford a variety of chemical transformations in good yield and enantioselectivity.¹ Transition metal catalysis is well established as a method to activate different types of chemical bonds.² The merging of these two methods allows that new chemical transformations can be successfully developed.³

Synergistic catalysis consists on the simultaneous activation of the electrophile and the nucleophile by two separate and distinct catalysts to afford a single chemical transformation.⁴ In this work a new synergistic catalytic system is tested.

Proline works synergistically with cationic gold complexes to allow the intermolecular reaction between allenamides and aldehydes. The aldehyde is activated by the organocatalyst via an enamine intermediate, while the allenamide is activated by the gold complex. Thus, a new C-C bond is formed.

The use of α -substituted aldehydes allows the construction of all-carbon quaternary stereocenters.

The asymmetric version of this process is being studied in our group.



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