

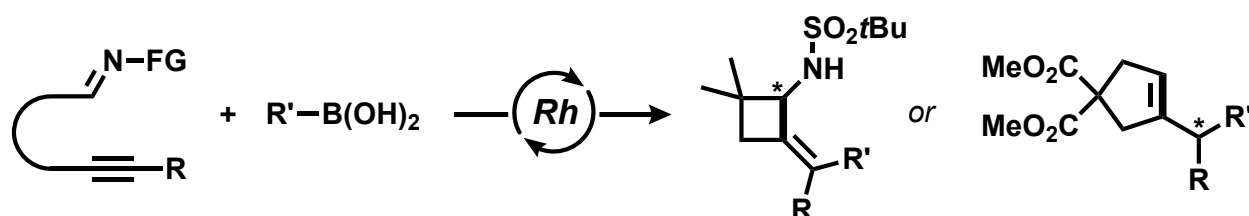
Tandem Rhodium Catalysis for the Synthesis of Enantioenriched Carbocycles from Alkynes

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Development of the methods enabling efficient construction of carbo- and heterocycles has been a major undertaking in organic synthesis, since they constitute a mainstay structural motif of natural products and pharmaceuticals. In this context, the transition metal-catalyzed cyclization of alkynes represents an attractive approach, as the ring structures may be accessed in an atom-economical manner making use of simple π -unsaturations. Presented in this seminar will be our studies directed toward the development of rhodium-catalyzed tandem addition–cyclization reactions of alkynes with organoboronic acids. In the presence of a single rhodium catalyst, alkyne substrates tethered with C=N bonds undergo regioselective C–C bond forming cyclization. Furthermore, the reactions can be carried out with enantiocontrol to produce highly enantioenriched carbocycles using an *N*-attached chiral auxiliary or a chiral ligand for the rhodium catalyst. Design, implementation, and mechanistic studies of tandem cyclization of alkynylimines¹ and alkynylhydrazones² will be discussed.



1) Choi, K.; Joo, J. M.; Lee, C. *Tetrahedron* **2015**, *71*, 5910-5917.

2) Choi, K.; Park, H.; Lee, C. *J. Am. Chem. Soc.* **2018**, *140*, 10407-10411.