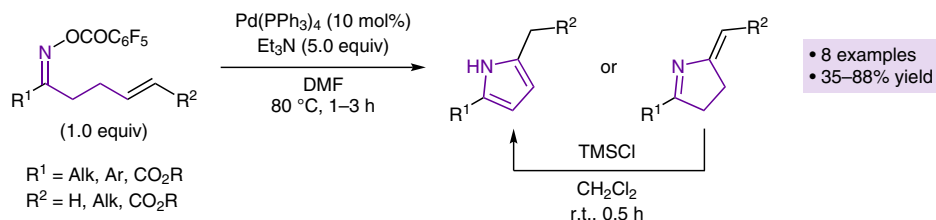
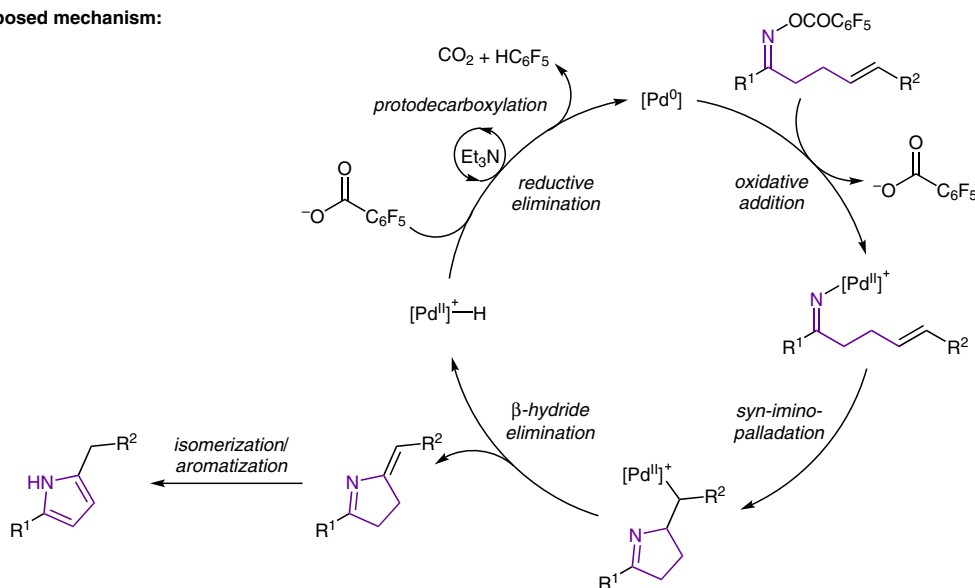


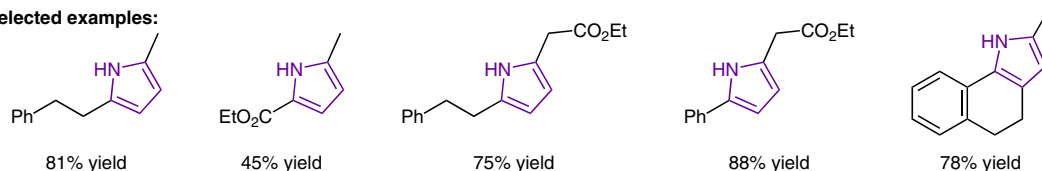
The Narasaka–Heck Cyclization



Proposed mechanism:



Selected examples:



Significance: Based on the finding that palladium(0) can cleave the N–O bond of sulfonyloximes, Tsutsui and Narasaka reported a catalytic protocol coupled with an intramolecular Heck-type cyclization to form pyrroles. Competing Beckmann rearrangement of the oxime derivatives could be suppressed by changing from the sulfonyl- to the pentafluorophenylacyl N-protecting group.

Comment: In the following years, this method was successfully extended to access various N-heterocycles (see Review below). An enantioselective version for the synthesis of dihydropyrroles bearing a stereogenic center at the 2-position was introduced by Bower and co-workers (*Chem. Sci.* **2017**, *8*, 1981).

Review: M. Kitamura, K. Narasaka *Chem. Rec.* **2002**, *2*, 268–277.