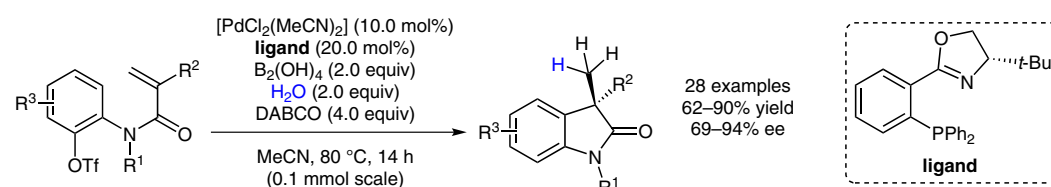
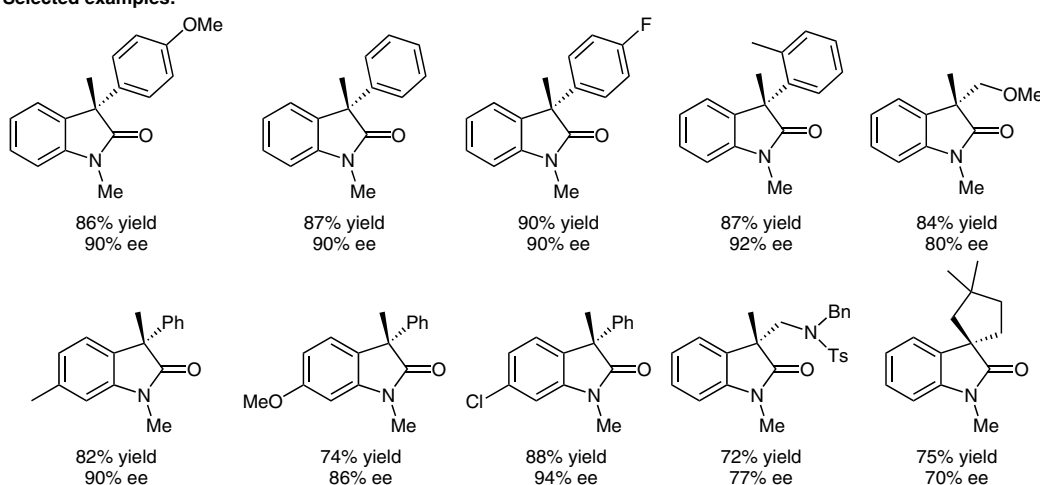


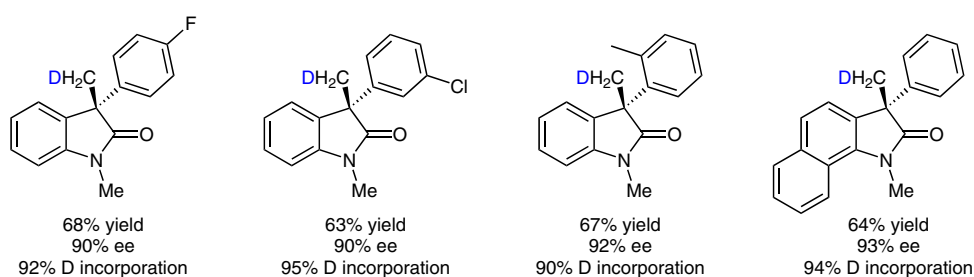
# Palladium-Catalyzed Reductive Heck Reaction



## Selected examples:



## Reactions performed with D<sub>2</sub>O and B<sub>2</sub>Cat<sub>2</sub>:



**Significance:** Water represents the cheapest and most environmentally benign source of hydrogen or hydride; therefore, its use in combination with transition-metal catalysis is very appealing. In the present work, the authors present a palladium-catalyzed enantioselective reductive Heck reaction using water as final hydride donor.

**Comment:** *N*-Aryl acrylamides reacted in the presence of a [PdCl<sub>2</sub>(MeCN)<sub>2</sub>] catalyst and (*S*)-*t*-BuPHOX ligand to generate the corresponding products in good yields and good enantioselectivities using water as hydride source. The use of DABCO as a base and a catalytic amount of B<sub>2</sub>(OH)<sub>4</sub> was found to be crucial for the success of the transformation. The use of deuterium oxide allowed the synthesis of D-labeled oxindoles with >90% D incorporation.

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