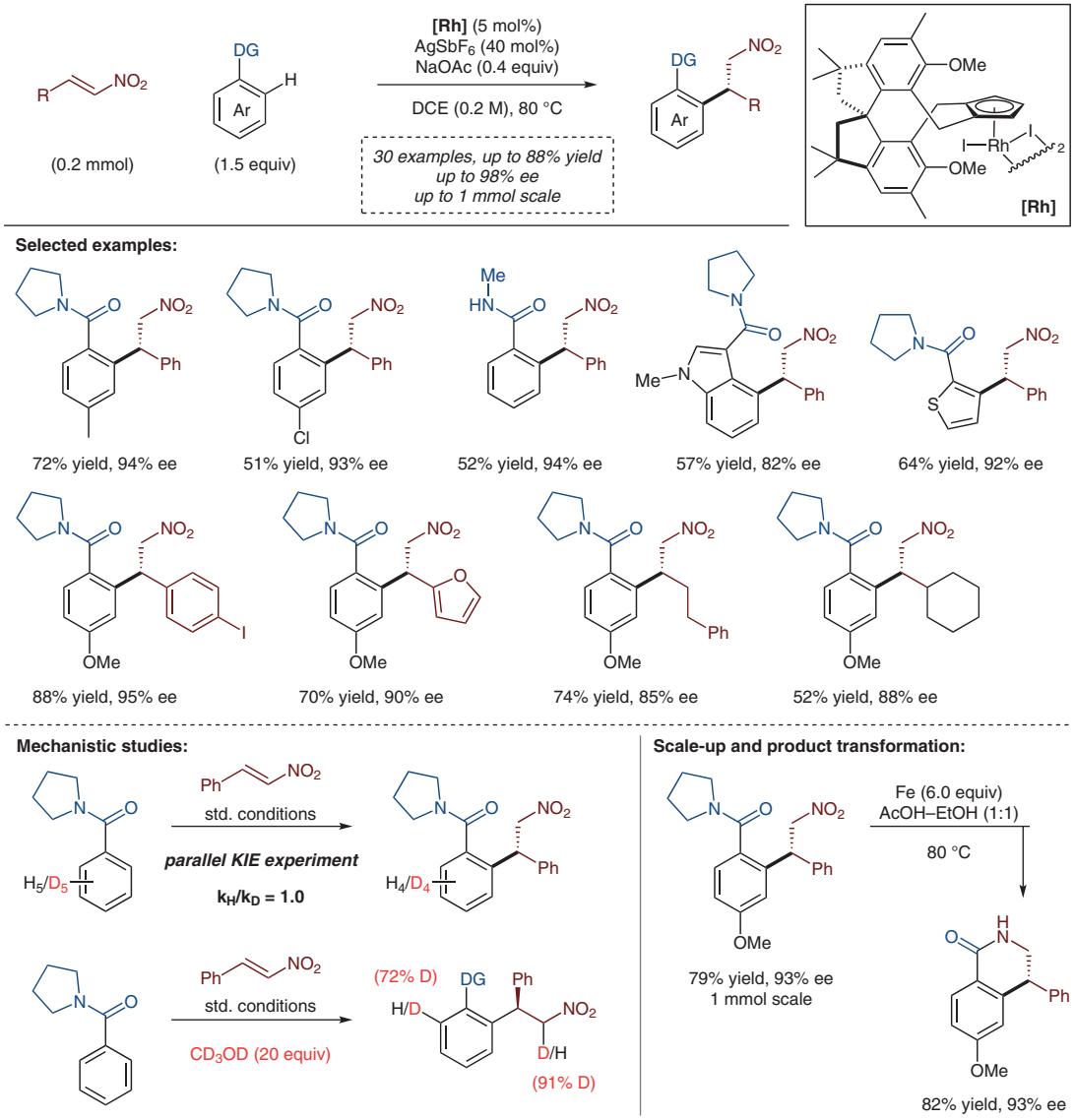
H. YANG, R. ZHANG, S.-Z. ZHANG, Q. GU, S.-L. YOU* (SHANGHAI INSTITUTE OF ORGANIC CHEMISTRY, P. R. OF CHINA)

Synthesis of Hexamethyl-1,1′-spirobiindane-Based Chiral Spiro Cp Ligands and Their Application in Rhodium-Catalyzed Enantioselective Aryl C–H Addition to Nitroalkenes
ACS Catal. **2023**, *13*, 8838–8844, DOI: 10.1021/acscatal.3c02199.

Rhodium Catalyzed Aryl C–H Functionalization with Nitroalkenes



Significance: You and co-workers report the use of a spiro cyclopentadienyl rhodium catalyst for the asymmetric C–H functionalization of aryl and heteroaryl amides with nitroalkenes. The reaction was amenable to scale up, and mechanistic studies support that the C–H bond cleavage is reversible and is not involved in the rate-determining step.

Comment: The authors report a broad substrate scope regarding both coupling partners. Aryl nitro alkenes react with higher enantioselectivity compared to alkyl derivatives. Both heteroaryl and aryl amides, with electron-donating or -withdrawing substituents undergo the transformation with high selectivity.

SYNFACTS Contributors: Mark Lautens, Alexa Torelli
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Synfact of the Month