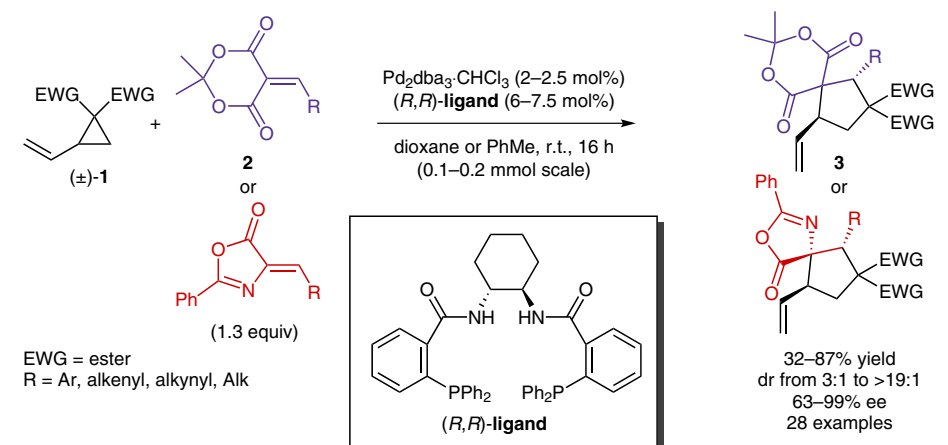
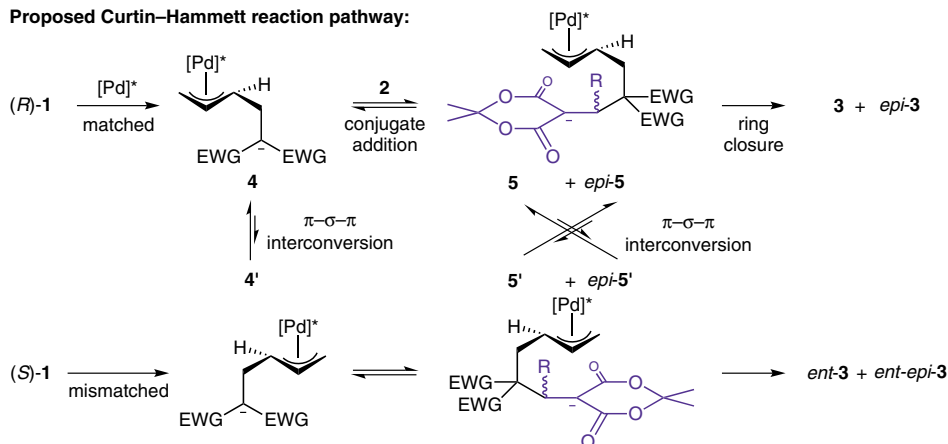


B. M. TROST,* P. J. MORRIS, S. J. SPRAGUE (STANFORD UNIVERSITY, USA)
Palladium-Catalyzed Diastereo- and Enantioselective Formal [3 + 2]-Cycloadditions of Substituted
Vinylcyclopropanes
J. Am. Chem. Soc. **2012**, *134*, 17823–17831.

Palladium-Catalyzed Asymmetric Formal [3+2] Cycloaddition



Proposed Curtin–Hammett reaction pathway:



Significance: A palladium-catalyzed asymmetric formal [3+2] cycloaddition of vinylcyclopropanes to electron-poor olefins is reported using the Trost ligand. The developed method can access highly substituted cyclopentanes with high diastereo- and enantioselectivity with moderate to high yield.

Comment: As the vinylcyclopropanes **1** used are racemic, the authors propose that the reaction occurs under Curtin–Hammett conditions for this stereo-convergent reaction. Notably, the effects of π - σ - π interconversion and the reversibility of the conjugate addition establish pre-equilibria of diastereomeric reactive intermediates **4** and **5**, consequently favoring the formation of **3**.

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Key words

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