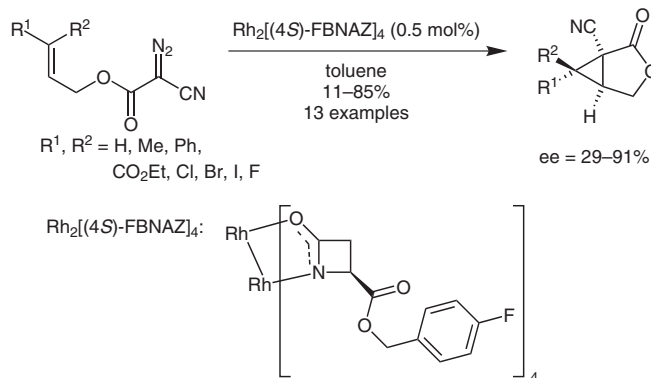


W. LIN, A. B. CHARETTE* (UNIVERSITÉ DE MONTRÉAL, CANADA)

Rhodium-Catalyzed Asymmetric Intramolecular Cyclopropanation of Substituted Allylic Cyanodiazoacetates
Adv. Synth. Catal. **2005**, 347, 1547-1552.

Asymmetric Intramolecular Cyclopropanation towards Fused Cyclopropyllactones



Significance: Asymmetric intermolecular cyclopropanations are well documented; however, highly enantioselective intramolecular examples are less common. This report describes a method for intramolecular cyclopropanation using a carbenoid precursor flanked on both sides by electron-withdrawing groups. Yields and enantioselectivities vary widely and demonstrate the difficulty of this reaction. Interestingly, vinyl halides are tolerated and allow for the enantioselective synthesis of halocyclopropanes.

Comment: Typically, reactions with extremely labile intermediates (carbenoids, radicals, etc.) suffer from poor enantioselectivity in intramolecular reactions. Thus, it is notable that a number of very good enantioselectivities were attained. The products of this reaction are particularly useful, as the cycloadduct can be easily converted into biologically interesting cyclopropane-containing β -amino acids. In addition, the halocyclopropane products have found wide synthetic utility, and can be converted into a variety of products (see reviews below).

Reviews: W. R. Dolbier, M. A. Battiste *Chem. Rev.* **2003**, 103, 1071-1098; M. Fedorynski *Chem. Rev.* **2003**, 103, 1099-1132.