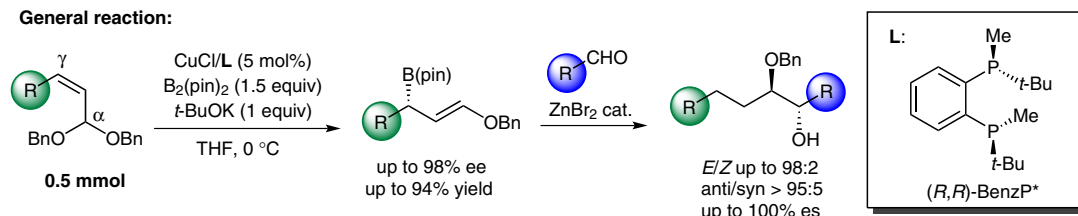


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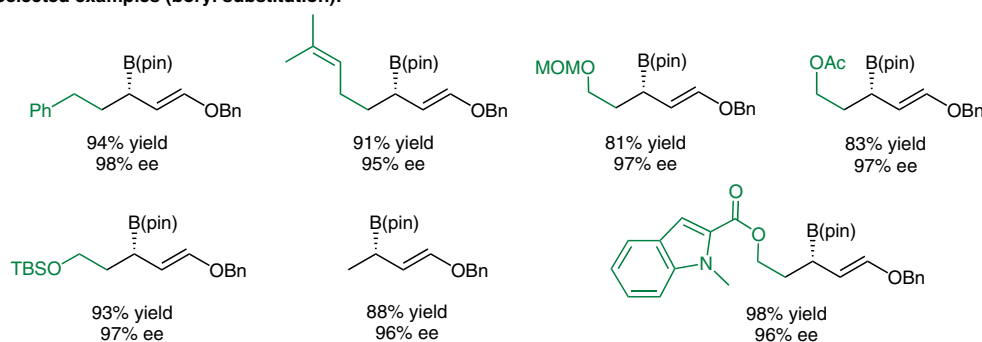
Copper(I)-Catalyzed Enantioselective Synthesis of α -Chiral Linear or Carbocyclic (*E*)-(γ -Alkoxyallyl)boronates
J. Am. Chem. Soc. **2014**, *136*, 16515–16521.

Copper(I)-Mediated Asymmetric Boryl Substitution of Allyl Acetals

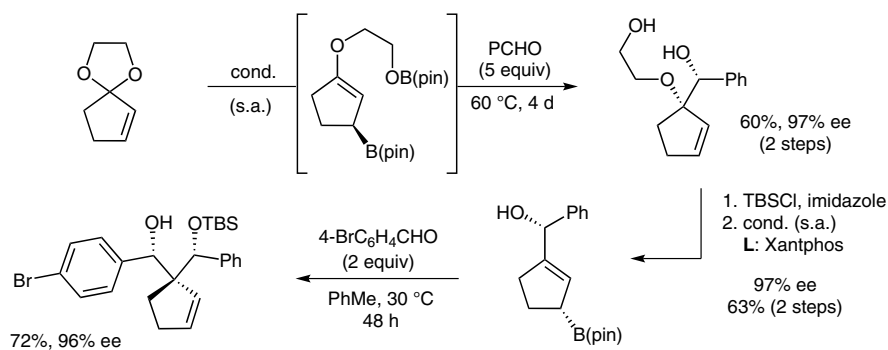
General reaction:



Selected examples (boryl substitution):



3,3-Disubstituted cyclopentenes via a double boryl substitution/allylation strategy:



Significance: The authors describe a novel Cu-mediated enantioselective and γ -selective boryl substitution of allyl acetals for the synthesis of enantioenriched α -chiral linear or carbocyclic (*E*)-(γ -alkoxyallyl)boronates under mild conditions. The derived chiral boronates were used in aldehyde allylation reactions rendering the respective 1,2-diol products in good yields and excellent enantioselectivity.

SYNFACTS Contributors: Mark Lautens, Steffen Kress
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DOI: 10.1055/s-0034-1379778; Reg-No.: L16314SF

Comment: *Z*-Substituted allyl acetates gave superior results over the analogous *E*-substrates. This versatile strategy was highlighted by an impressive example within the modular synthesis of 3,3-disubstituted cyclopentene. In this system the strategy was used twice, formally replacing both alkoxy groups of the acetal by two subsequent boryl substitution/aldehyde allylation reactions. Exceptional enantiocontrol and high yields were obtained.