

An Efficient, Practical, and Selective Multicomponent Copper-Catalyzed Process

Category

Metal-Mediated Synthesis

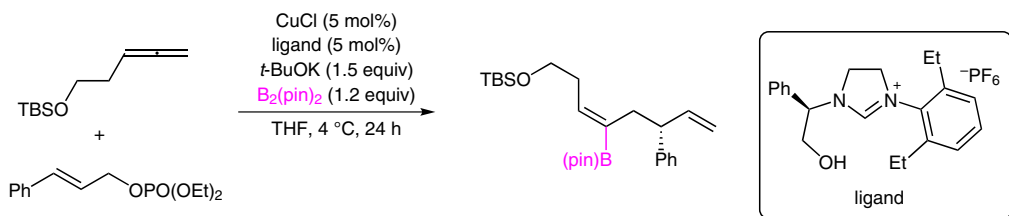
Key words

boron

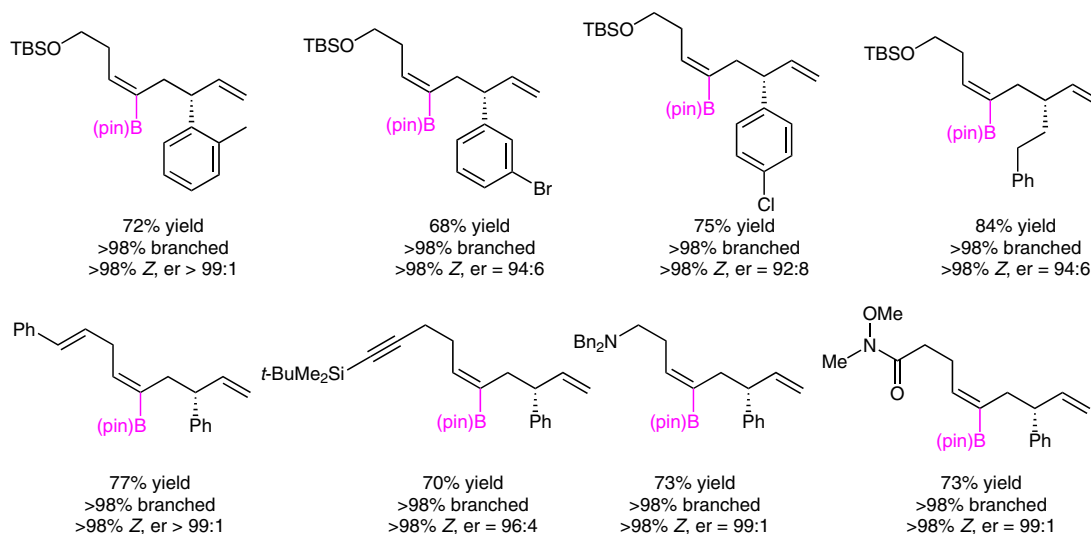
multicomponent reaction

copper

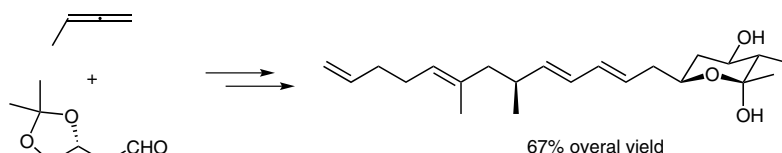
SYNFACTS
of the month



Selected examples:



Application to the total synthesis of rotnestol:



Significance: The authors demonstrate the generation of multifunctional alkenylboron fragments starting from two simple unsaturated organic molecules and a commercially available diboron reagent. These fragments were shown to carry several advantageous properties. The catalyst used is generated in situ by the reaction of inexpensive CuCl with a chiral ligand which was prepared on multigram scale in good yield.

Comment: The practical protocol can be performed on large scale and makes gram quantities of a variety of complex organic molecules easily available. The products, which contain a stereogenic carbon center, a monosubstituted alkene, and an easily functionalizable Z-trisubstituted alkenylboron group, are obtained in good yields and excellent selectivities.