“Copper-Catalyzed Diboration of Carbonyl Compounds: Developing the Synthetic Utility of $\alpha$-Hydroxy Boronate Esters.”

The metal-catalyzed borylation of organic substrates has received significant attention over the past decade due to the synthetic utility of the carbon–boron bond in organic synthesis. Our research group has focused on the copper-catalyzed diboration of carbonyl compounds as a method to access $\alpha$-hydroxyboronate esters (Scheme 1). Although $\alpha$-hydroxyboronate esters have potential as key intermediates in organic synthesis, they have not been readily accessed through traditional methods. The diboration of aldehydes and ketones will be described using an in situ prepared (ICy)CuOt-Bu catalyst (originally described by Sadighi and co-workers). The resulting diboration products can be selectively hydrolyzed at the O–B bond to provide $\alpha$-hydroxyboronate esters. These intermediates have been shown to be useful in the Matteson homologation reaction and in the formation of 1,1-disubstituted and trisubstituted vinylboronate esters.

Prof. Timothy B. Clark
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Friday, September 10, 2010
3:30 PM ROOM 1315 CHEMISTRY

IF YOU WISH MORE INFORMATION PLEASE CALL THE INORGANIC OFFICE AT 262-6815. Refreshments will be available at 3:15 p.m. outside of the seminar room setup by Veronica Berns. Thanks Veronica!