

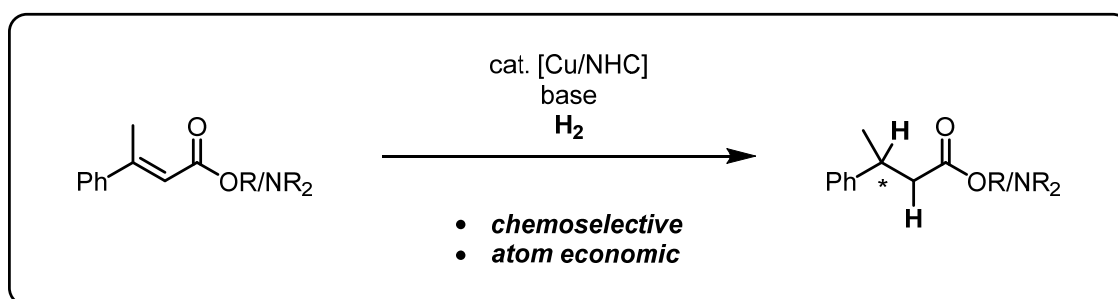
CHEMOSELECTIVE COPPER(I)-CATALYZED CONJUGATE REDUCTIONS OF ENOATES USING H₂

Birte M. Zimmermann, Sarah C. K. Kobosil, and Johannes F. Teichert

Institut für Chemie, Technische Universität Berlin, Straße des 17. Juni 115,
10623 Berlin, Deutschland

The copper(I)-catalyzed conjugate reduction with hydrosilanes is a well-established synthetic method.[1] However, the transition to the much more atom economic dihydrogen (H₂) as stoichiometric reducing agent remains challenging, as the processes represented so far suffer from chemoselectivity problems (1,2- vs. 1,4-reduction). Therefore, efficient reduction processes could only be realized with a selectivity for the carbonyl group.[2–5]

We present a generally applicable conjugate reduction of α,β -unsaturated esters employing an easily accessible copper(I)/NHC-complex (NHC = N-heterocyclic carbene) and H₂ as terminal reducing agent.[6] We were able to demonstrate the viability of a stereoselective process by employing a chiral copper(I)/NHC catalyst.



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