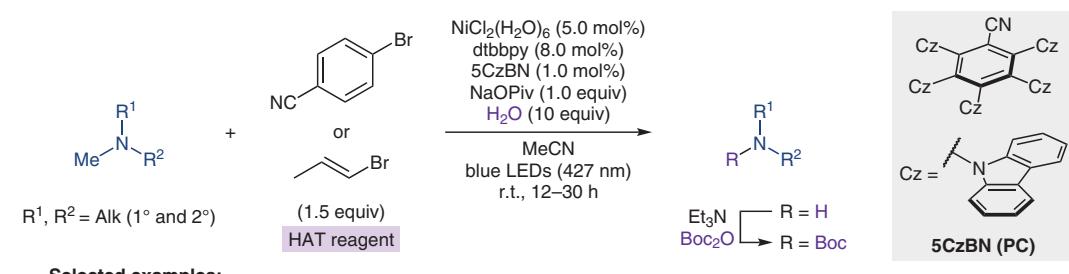
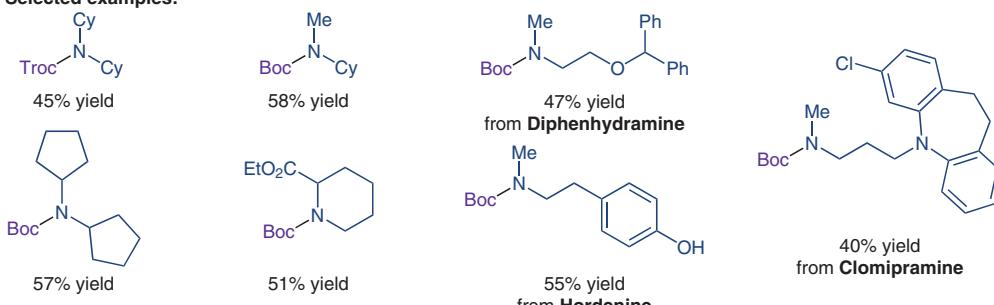


Category
Metals in Synthesis
Key words
aryl bromides
hydrogen atom transfer
N-demethylation
nickel catalysis
photoinduced catalysis
trialkylamines
vinyl bromides

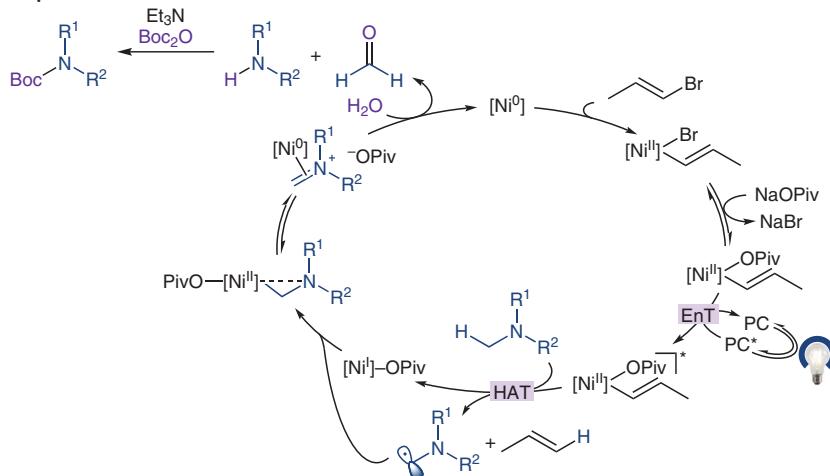
Cutting Me Off: Selective N-Demethylation of Trialkylamines Using C(sp²)-Bromides as HAT Reagents



Selected examples:



Proposed mechanism:



Significance: Rovis and co-workers report a photoinduced nickel-catalyzed protocol for the N-demethylation of trialkylamines. In contrast to classical approaches, the use of C(sp²)-bromides as hydrogen atom transfer (HAT) reagents allows for selective demethylation over debenzylation.

Comment: Mechanistic studies support the shown mechanism, where photoinduced Ni-C(sp²) bond homolysis leads to the formation of a vinyl (or aryl) radical that is involved in the α -amino radical generation by hydrogen atom abstraction from the trialkylamine.

Synfact of the Month