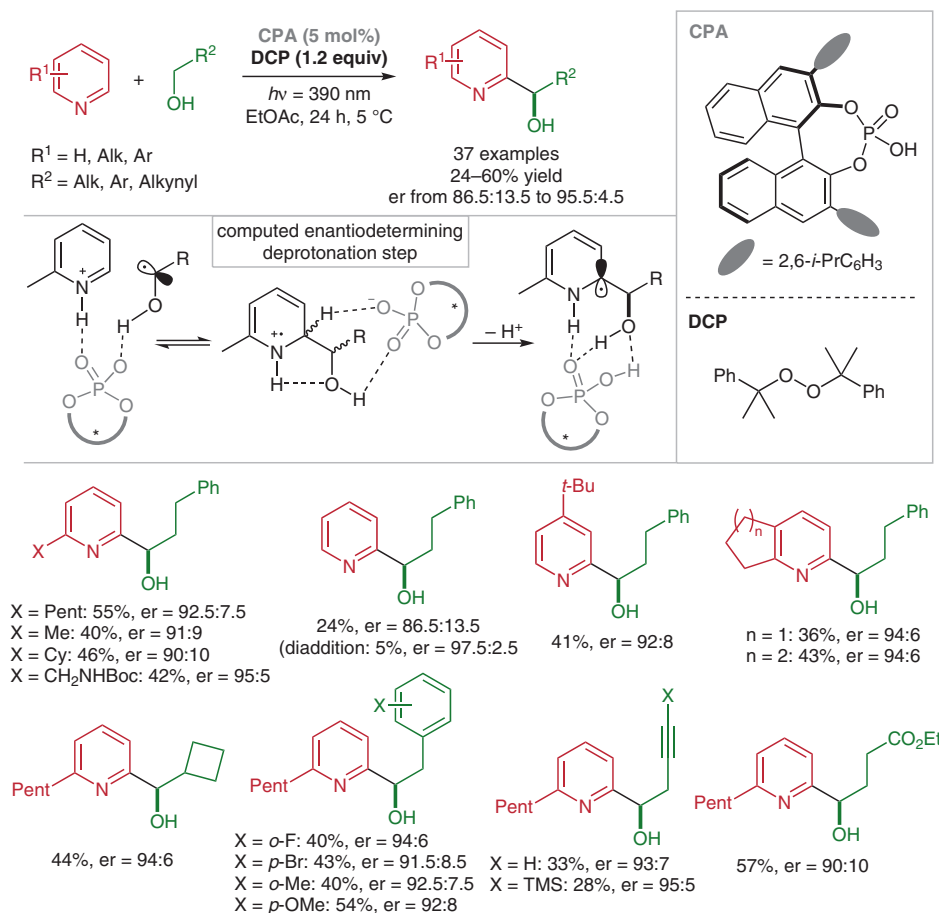


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Hydrogen Atom Transfer Driven Enantioselective Minisci Reaction of Alcohols

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Light-Initiated Hydrogen Atom Transfer-Driven Asymmetric Minisci Reaction of Primary Alcohols



Significance: Ermanis, Phipps, and co-workers report a light-initiated, hydrogen atom transfer (HAT)-driven asymmetric Minisci reaction of primary alcohols with pyridines. The reaction proceeds through an α -hydroxy radical intermediate formed by α -hydrogen atom abstraction from the alcohol by dicumyl peroxide (DCP) upon irradiation. The resulting hydroxyalkylated pyridines are obtained in moderate yields and with good to excellent enantioselectivities. The reaction is selective to the C2 position of the pyridine and tolerates alkyl functionalization on every position of the pyridine, as well as a variety of functional handles on the primary alcohol.

Comment: The currently reported formal dehydrogenative C–H to C–H bond coupling expands upon the authors' previously reported Minisci reaction between N-heterocycles and α -imido radicals generated in situ (*Science* 2018, 360, 419) by eliminating the requirement for a protected amine to form the α -radical. The addition of unprotected feedstock alcohols to the scope of this type of reactivity presents a significant advance in its utility. We look forward to potential modifications of this methodology that would optimize the yield.

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