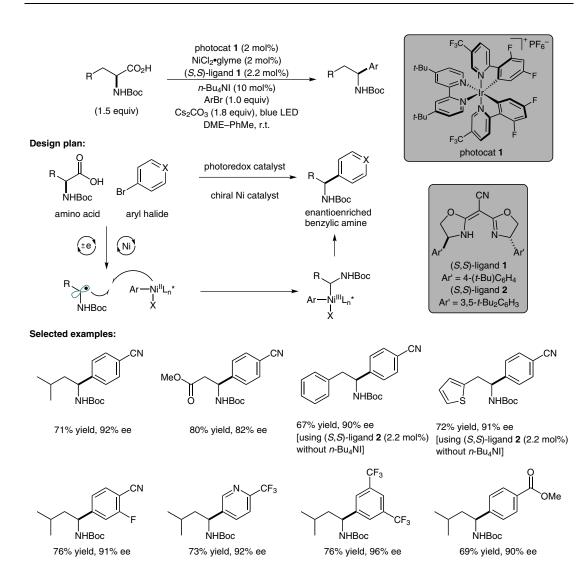
Z. ZUO, H. CONG, W. LI, J. CHOI, G. C. FU,* D. W. C. MACMILLAN* (CALIFORNIA INSTITUTE OF TECHNOLOGY, PASADENA AND PRINCETON UNIVERSITY, USA) Enantioselective Decarboxylative Arylation of α-Amino Acids via the Merger of Photoredox and Nickel Catalysis *J. Am. Chem. Soc.* **2016**, *138*, 1832–1835.

Decarboxylative Coupling by Photoredox and Chiral Nickel Catalysis



Significance: The authors present an asymmetric arylation of α -amino acids by using a dual photoredox/chiral nickel catalysis approach. A broad array of naturally occurring α -amino acids were arylated with various aryl halides to generate high-value chiral benzylic amines in high yields and with high enantioselectivities.

SYNFACTS Contributors: Hisashi Yamamoto, Ramesh C. Samanta Synfacts 2016, 12(4), 0387 Published online: 15.03.2016 **DOI:** 10.1055/s-0035-1561772; **Reg-No.:** H01916SF

Comment: The authors have previously reported the coupling of aryl halides with an α -carboxy sp³ carbon by dual photoredox reaction/nickel catalysis (*Science* **2014**, *345*, 437). Identification of chiral ligands compatible with a nickel catalyst under photoredox conditions permitted an asymmetric transformation. Chiral benzylamines that form the core structures of many pharmaceutically active molecules have been synthesized in optically pure form by this method.

Category

Metal-Catalyzed Asymmetric Synthesis and Stereoselective Reactions

Key words

asymmetric catalysis

coupling reaction

photoredox

nickel

decarboxylation



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