

Y. YIN, Y. DAI, H. JIA, J. LI, L. BU, B. QIAO, X. ZHAO, Z. JIANG* (HENAN UNIVERSITY AND HENAN UNIVERSITY OF TECHNOLOGY, P. R. OF CHINA)

Conjugate Addition–Enantioselective Protonation of *N*-Aryl Glycines to α -Branched 2-Vinylazaarenes via Cooperative Photoredox and Asymmetric Catalysis

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Category

Organo- and Biocatalysis

Key words

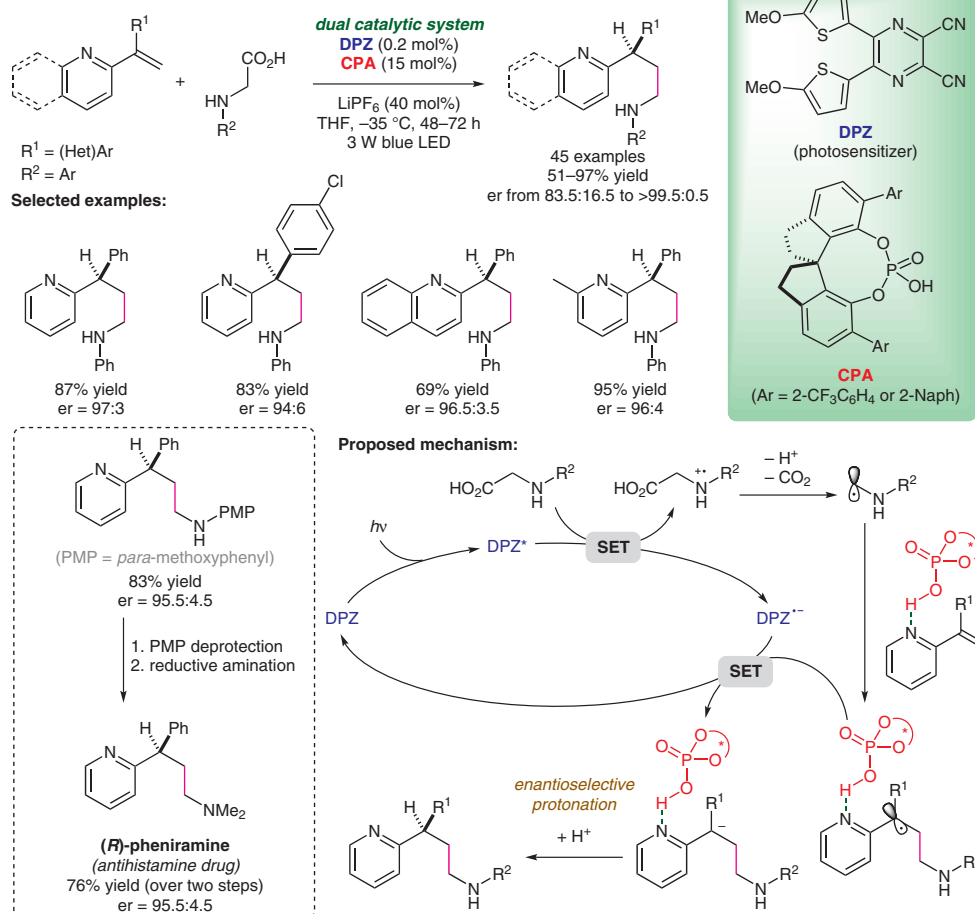
enantioselective protonation

conjugate addition

cooperative catalysis

azaarenes

Cooperative Catalysis: Radical Addition to Olefins and Asymmetric Protonation



Significance: Jiang and co-workers report the enantioselective radical conjugate addition–protonation of *N*-aryl glycines to α -branched vinylazaarenes using a metal-free dual catalytic system (a photosensitizer and a chiral phosphoric acid). The corresponding products are obtained in high yields with good to excellent enantioselectivities, and the methodology is applied to the synthesis of the medicinal compound pheniramine.

Comment: Because α -amino acids are abundant, their use as starting materials for organic synthesis is desirable. In this report, *N*-aryl α -glycines undergo photooxidative decarboxylation and react further with highly activated olefins in a radical pathway followed by enantioselective protonation. While many examples are shown, the presented substrate scope is still limited to pyridine- and quinoline-containing substances.

SYNFACTS Contributors: Benjamin List, David Díaz-Oviedo
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