D. WANG, N. ZHU, P. CHEN, Z. LIN*, G. LIU* (SHANGHAI INSTITUTE OF ORGANIC CHEMISTRY AND THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY, P. R. OF CHINA)

Enantioselective Decarboxylative Cyanation Employing Cooperative Photoredox Catalysis and Copper Catalysis
J. Am. Chem. Soc. **2017**, *139*, 15632–15635.

Cooperative Catalysis for Asymmetric Decarboxylative Cyanation

Selected examples:

Application:

Significance: Chiral alkyl nitriles are synthetically valuable compounds in organic synthesis. The authors have developed an asymmetric decarboxylative cyanation of *N*-hydroxyphthalimide esters by cooperative photoredox and copper catalysis.

Comment: This catalytic decarboxylative cyanation provides enantioenriched alkyl nitriles in good yields with high enantioselectivities. The reaction can be applied in the synthesis of a key intermediate for the chiral antidepressant molecule (*R*)-phenibut.

SYNFACTS Contributors: Hisashi Yamamoto, Wataru Muramatsu
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Category

**Metal-Catalyzed
Asymmetric
Synthesis and
Stereoselective
Reactions**

Key words

iridium catalysis
 copper catalysis
 photoredox
 catalysis
 decarboxylative
 cyanation
 hydroxyphthalimide
 esters
 alkyl nitriles

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