Cooperative Catalysis for Asymmetric Decarboxylative Cyanation

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.