D. P. HARI, P. SCHROLL, B. KÖNIG* (UNIVERSITÄT REGENSBURG, GERMANY) Metal-Free, Visible-Light-Mediated Direct C–H Arylation of Heteroarenes with Aryl Diazonium Salts *J. Am. Chem. Soc.* **2012**, *134*, 2958–2961.

Eosin Y Promoted C–H Arylation of Heteroarenes with Aryl Diazonium Salts



Significance: König and co-workers have developed a metal-free, direct intermolecular C–H arylation of heteroarenes with aryl diazonium salts by photoredox catalysis with green light. The reaction proceeds smoothly at room temperature, does not require transition-metal catalysts or bases, and displays a broad scope toward diazonium salts and heterocycles with a wide range of functional group tolerance. A suggested radical mechanism has been proposed based on experimental observations and literature data.

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Comment: Arylated heteroarenes are widely used in materials science because of their interesting optical and electronic properties, but also in biomedical applications as peptide mimetics or drugs. Herein, the authors report a metal-free, direct intermolecular C–H arylation of heteroarenes with aryl diazonium salts by photoredox catalysis with green light. This single-electron transfer crosscoupling represents an efficient alternative to known transition-metal-catalyzed methods and may find applications beyond synthesis, such as in the chemical patterning of surfaces.

Category

Organo- and Biocatalysis

Key words

visible light

C-H arylation

heteroarenes

aryl diazonium salts

