Metal-Free C–H Oxidation Using Malonoyl Peroxides: Mechanistic Insights

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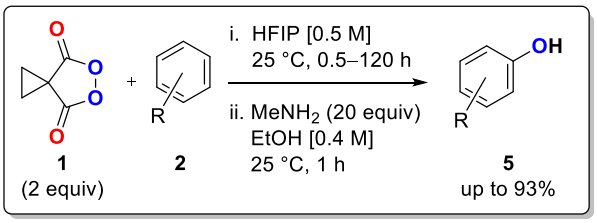
Increased molecular complexity at the expense of ubiquitous C–H bonds makes direct functionalization of C–H bonds a highly desirable transformation. Drawing inspiration from a recent report,[1] a simple and effective method for the direct oxidation of aromatic C–H bonds using malonoyl peroxide **1** will be presented, with emphasis on the mechanistic course of the reaction. Isotope labeling experiments, Hammett analysis, EPR studies and DFT calculations, along with reactivity patterns have all suggested that this metal-free oxidation of arenes proceeds *via* an ionic mechanism.[2]



1. C. Yuan, Y. Liang, T. Hernandez, A. Berriochoa, K. N. Houk, D. Siegel, *Nature* **2013**, *499*, 192–196.

2. A. Dragan, T. M. Kubczyk, J. H. Rowley, S. Sproules, N. C. O. Tomkinson, *manuscript submitted.*