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# Oxidative Cleavage of β-Substituted Alcohols in Flow

Selective cleavage and functionalization of C–C bonds remain a significant challenge in organic chemistry due to their intrinsic kinetic inertness and high thermodynamic stability.1 Throughout the last decades, numerous valuable homogeneous catalytic systems have been well established for the cleavage and functionalization of alcohols (β-substituted primary alcohols), which are abundant in biomass and promote biomass valorization.2 Despite impressive progress made in this area, an over-reliance on environmentally harmful oxidants and catalysts that exhibit low recyclability in both metal and non-metal catalysts continues to restrict most of these reaction classes and leave a gap for further development in a sustainable manner. Transitioning to heterogeneous catalysis offers several advantages over homogeneous catalysis, including facile separation, enhanced recyclability, simplified product isolation, and seamless integration into continuous-flow reactors.

Herein, we report an efficient protocol that enables direct oxidative cleavage of β-substituted primary alcohols by a solid-supported hypervalent iodine catalyst under continuous flow conditions. A wide variety of structurally distinct β-substituted primary alcohols are viable in this reaction, enabling access to secondary alcohols using TBA-Oxone® as an environmentally benign oxidant. Moreover, reaction conditions also allowed cleavage and oxidation of tetrahydrofuran-2-methanol and pyrrolidine-2-methanols to lactones and lactams, respectively. This protocol features easy scalability, broad substrate scope, excellent functional group tolerance, and recyclable catalyst up to 15 times.

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