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C-H Activation: A Sustainable Approach for the Direct Functionalization of Quinolines †

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Abstract: Quinoline is one of the most important heterocycles due to its occurrence in various natural products and pharmaceuticals. Obeying to its importance, tremendous progress has been made towards its synthesis and functionalization. Our group has synthesized various new quinolines derivatives via transition-metal catalyzed C-H activation and metal-free conditions [2, 3]. Most of these methods are applicable for C(sp^2)-H functionalization at C8, C2, and C3 positions of quinolines under thermal conditions. We recently initiated work on the functionalization of quinolines under photocatalytic conditions where an efficient iridium-based photocatalyst is used to synthesize *β*-norbenzomorphan skeleton *via* unsymmetrical coupling of 2-methylquinolines under the blue LED light [4]. Regioselective methods have also been developed for C(sp^3)-methylation, alkylation, and arylation of 8-methylquinolines [5]. Mild reaction conditions for the functionalization of quinolines through proper understanding of the reaction pathway is our long-lasting goal.

Keywords: C-H activation; functionalization of quinolines; LED light.

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Conflicts of Interest

The authors declare no conflict of interest.

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