Benign by Design: A Strategic Approach to the Synthesis of Pyrano[3,2-*c*]Coumarin Catalysed by *N* Heterocyclic Carebne

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ABSTRACTS

Potential biological activities and marvellous synthetic utilities of pyranocoumarins have led to their identification as a class of compounds which has received overwhelming attention in the pharmaceutical industry as well as in the diversified field of organic synthesis. Among them pyrano[3,2-*c*]coumarin exhibit the broad spectrum of biological activities such as antifungal, insecticidal, anticancer, anti-HIV, anti-inflammatory and antibacterial. Numerous methods to access pyrano[3,2-*c*]coumarin have been reported in the literature, with most based on the use of hazardous metal catalysts, cumbersome experimental procedures and multiple steps. In continuation of our program for the development of simple, efficient, and sustainable protocols, we describe herein multi-component reaction of 4-hydroxycoumarins, aromatic aldehydes and alkynes catalyzed by *N*-heterocyclic carbene for the synthesis of a series of pyrano[3,2-*c*]coumarin derivatives in dichloromethane under positive pressure of argon. The protocol is adorned with several attributes of green chemistry like recycling of the catalyst, atom-economy and mild reaction conditions. Good to high yields of the products, the ready availability of the starting materials and the simplicity of the reaction are the main advantages of this method.