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Three-component reaction between 2-aminopyridines, aldehydes, and isocyanides using catalytic $Ce(SO_4)_2$ under solvent-free conditions

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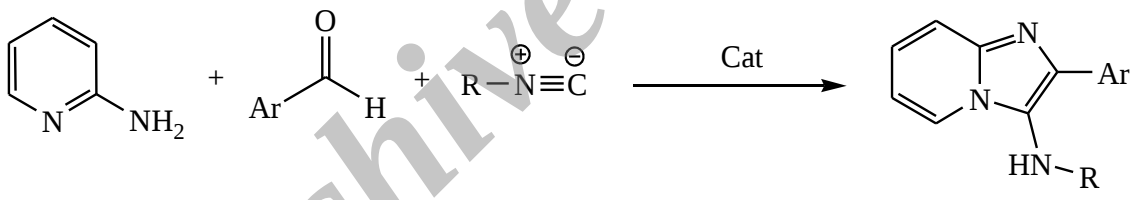
Derivatives containing the imidazo[1,2-a]pyridine ring system have been shown to possess a broad range of useful pharmacological activities, including antibacterial, antifungal, anthelmintic, antiviral, antiprotozoal, anti-inflammatory, anticonvulsant, and immunomodulatory (Kifunensine) activities [1-2].

Several methods have been reported for the synthesis of imidazo[1,2-a]pyridine derivatives via a three-component condensation of 2-aminopyridin with aldehydes and an isocyanide [3-5].

However, in most cases the yields are good at high temperatures and some of the reagents require longer reaction times and tedious purification procedures. Thus, there is a certain need for the development of an alternative route for the production of imidazo[1,2-a]pyridine, which surpassesthose limitations.

In continuation of our efforts to develop efficient and environmentally benign protocols for the synthesis of heterocycles [6], We report herein an efficient synthesis of the imidazo[1,2-a]pyridine derivatives by three-component condensation of an 2-aminopyridin, an aldehyde, and an isocyanide in the presence of catalytic amounts of $Ce(SO_4)_2$ as an inexpensiven catalyst in excellent yields under solvent-free conditions.



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