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An efficient synthesis of imidazo[4,5-a]acridine-11-yl cyanides as new fluorescent heterocylic compounds

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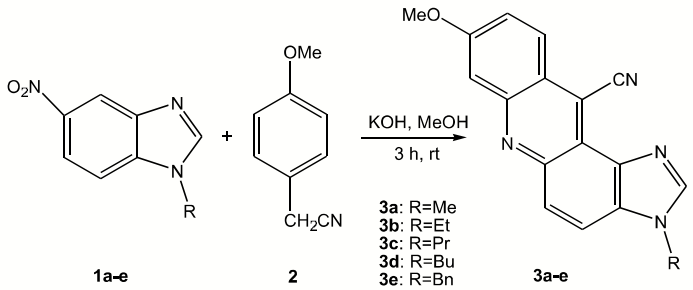
One of the most general mechanisms to transforming of δH-adducts into products of nucleophilic substitution of hydrogen is conversion of δH-adducts into nitroso compounds under proper conditions. This conversion occurs usually in protic solvents apparently via protonation of the negatively charged oxygen of nitro group of the δH-adducts and elimination of water [1,2]. These nitrosoarenes are mostly cyclized to heterocyclic systems under the reaction conditions [4,5].

In this work, we introduced an useful method for the synthesis of 3-aryl-8-methoxy-3H-imidazo[4,5-a]acridin-11-yl cyanides as new fluorescent compounds via the nucleophilic substitution of hydrogen of N-alkylated 5-nitrobenzimidazoles **1a-e** with 2-(4-methoxyphenyl)acetonitrile **2** in basic MeOH solution and following with the intramolecular electrophilic aromatic substitution at room temperature (Scheme 1). In this reaction, nucleophilic substitution of hydrogen in N-alkylated 5-nitrobenzimidazoles has been used as a key step



Scheme 1.

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