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Selenium dioxide in the synthesis of oxazole-5-carbaldehydes

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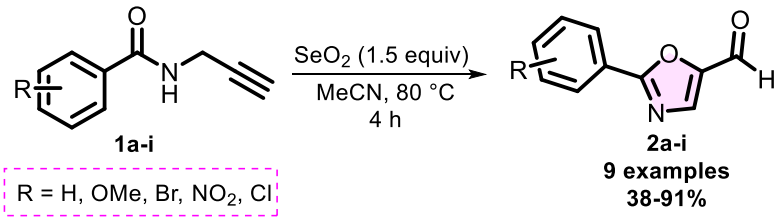
ABSTRACT

Heterocyclic systems are a prominent class of compounds, which are widely found in nature and extensively applied in different industrial segments.[1] Among them, oxazole derivatives are a class of biologically privileged structures, which play an important role in the prospection of new drugs in the pharmaceutical industry, being the core of important bioactive molecules.[2] Among the pharmacological properties of oxazoles are antitubercular,[3] anticancer,[4] antibacterial,[5] antifungal,[6] and antidiabetic.[7]
In this work it was developed a simple and efficient methodology to access 2-substituted oxazole-5-carbaldehydes. In this strategy, intramolecular cyclization reactions of *N*-propargylamide **1a-i** were performed, using selenium dioxide (1.5 equiv.) as the oxidant and acetonitrile as a solvent. The reactions were conducted at 80 °C for 4 h, leading to the respective oxazoles **2a-i** in good to excellent yields (Scheme 1).



Scheme 1. Synthesis of 2-substituted oxazole-5-carbaldehydes.

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