

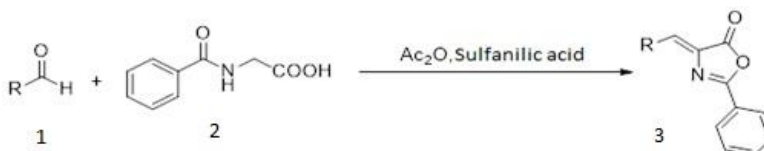
Efficient and green synthesis of azlactones using sulfanilic acid as catalyst

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Background: Azlactones are very interesting intermediates for the synthesis of a variety of bioactive molecules. These compounds are especially active as anticancer, antitumor, and inhibitor of central nervous system (1-3). These valuable organic compounds are also unique precursors for the synthesis of amino acids, peptides, heterocyclic compounds, biosensors, and *N*-substituted pyrroles. The most common method for their preparation is the Erlenmeyer-Plöchl reaction which proceeds by the cyclodehydration and condensation of various aldehydes and amino acid derivatives in acetic anhydride (4-6).

Methods: In this work, azlactons (**3**) were synthesized by the convenient three-component reaction of different aryl aldehydes (**1**), hipuric acid (**2**), and acetic anhydride.



Results: In search of optimum conditions for the reaction we found that water is the best solvent, and sulfanilic acid is the best catalyst. Also, the results showed that ambient temperature was the best choice for the completing the reaction. The scope of this reaction to form azlactone compounds was investigated by using various aldehydes and hipuric acid. As expected the reaction proceeded well to give desired heterocyclic products in good to high yields. These satisfactory results obviously show that the current catalytic approach is extendable to a wide range of aldehydes.

Conclusion: The presented approach was efficiently applied to synthesis of azlactones in high yields and relatively short reaction times. Straightforwardness, no elevated temperatures, and agreement with the green chemistry conventions have become it into an eye-catching and useful process for the synthesis of azlactones.

Keywords: Azlacton, Sulfanilic acid, hipuric acid, Green.

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