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Synthesis of arylidenepyruvic amide derivatives via Ugi-four component condensation

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Abstract

Arylidenepyruvic acids (APAs) have been successfully employed in an Ugi-four component condensation reaction which yielded polyfunctional amides. Condensation of various APAs, aldehydes, amines and isocyanides at room temperature in 96% ethanol as a green solvent proceeded in good yields. The extension of the reaction to diamines, formaldehydes and isocyanides to form more complex molecules is also reported. These novel products may have potential in various pharmaceutical applications.

Keywords: Ugi-condensation, arylidenepyruvic acids, amides, 96% ethanol, diamines.

One of the challenges in modern organic chemistry is the design of strategies capable of providing structurally diverse and complex molecules, which are useful for the study of important biological processes.¹

Arylidenepyruvic acids **1** (APAs), which are readily prepared from aldehydes and pyruvic acid under basic conditions are versatile intermediates in the construction of a wide variety of more complex molecules.² On the other hand α -ketoamides are valuable intermediates in organic synthesis, have intriguing biological properties, and are present in several natural products as the main skeleton.³

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