



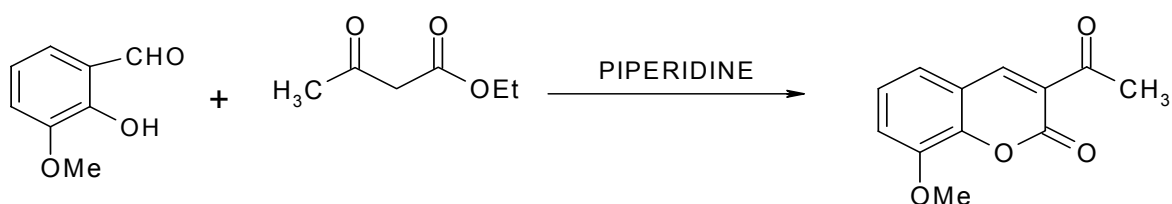
A GREEN CHEMICAL APPROACH FOR THE SYNTHESIS OF 8-METHOXYCOUMARINS AND SUBSTITUTED THIAZOLES

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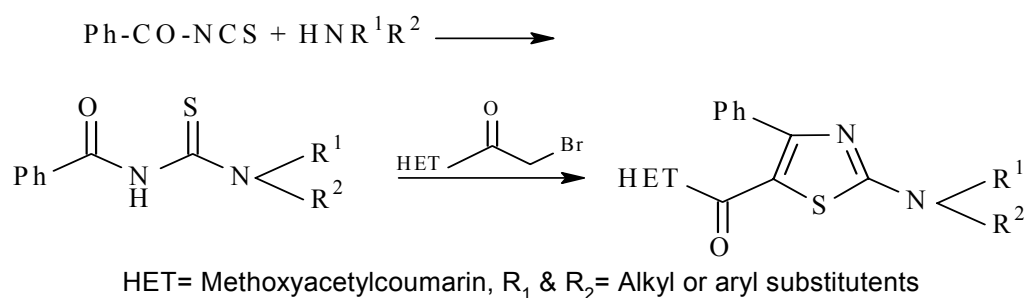
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Compounds containing the coumarin skeleton are an important class of compounds that occur naturally in plants. They are minor constituents of the human diet and have been reported to exhibit a wide range of biological effects. These biological properties include anti-inflammatory, antibacterial, antitumor, antioxidant, anti-HIV, vasodilator, antiviral and antiallergenic. The importance of these compounds has led to the development of various methods for their synthesis. Substituted coumarins have been synthesised by several routes including Pechmann, Perkin, Knoevenagel, Reformatsky and Wittig reactions. All these methods are associated with many disadvantages like expensive or corrosive reagents, long reaction time, tedious workup, and low selectivity. For these reasons there has been some attempt to find alternative environmentally benign synthetic routes. The aim of the present paper is to introduce a novel environmental friendly microwave assisted, solvent free method for the synthesis of substituted coumarin. This method offers several advantages; the reaction time is reduced to a few seconds (15-20 seconds), Solvents can be avoided, can be run safely in good yields, and the work up procedure is reduced to the recrystallization of desired products. We hereby report the synthesis of a new series of compounds under microwave irradiation of o-vanillin with ethylacetoacetate in presence of piperidine under the solvent free condition. The newly synthesized compounds were characterized and found to be identical with those prepared by conventional methods by using MP, TLC, UV-Vis, IR spectra, ¹H NMR and ¹³CNMR.





Also we report microwave assisted solvent free synthesis of 2-alkyl/arylsubstitutedamino-5-(8-methoxycoumarin-3-oyl)-4-phenylthiazoles from 3-bromoacetyl-8-methoxycoumarin and variously substitutedthioureas.



By this technique we could reduce the reaction time to a few seconds (15 sec), avoid hazardous solvents and cumbersome procedure.