



Application of Green Chemistry in Synthesis of Functionalized Thiopyran *via* One-pot Multicomponent Reactions in Water

Z.Hossaini^{1*}, F. Rostami-Charati²

¹Department of Chemistry, Islamic Azad University, Qhaemshahr Branch, Mazandaran, Iran

²Department of Chemistry, GonbadKavous University, GonbadKavous, Iran

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Abstract

An efficient synthesis of 2*H*-thiopyran-3,4-dicarboxylate derivatives *via* one-pot reactions between acetylenic esters, arylisothiocyanates and enaminones in water is described. The advantages of this work were: (1) the reaction was performed under neutral and more important in water as the solvent. (2) No catalyst was required for this reaction. (3) The simplicity of the present procedure made it an interesting alternative to the complex multistep approaches.

Keywords: Enaminone, 2*H*-thiopyran-3,4-dicarboxylate, Arylisothiocyanate, Dialkylacetylenedicarboxylate.

Introduction

The use of water as a green media for organic synthesis has become an important research area. Other than the economic and environmental benefits, water also exhibits unique physical and chemical properties which lead to unique reactivity and selectivity in comparison with organic solvents. Thus, the development of organic reaction in water medium is necessitating in the present days [1-8]. In the past few years, combinatorial methods using multicomponent reactions have been closely examined as a fast and convenient

solution for the synthesis of diverse classes of compounds [9, 10]. Multicomponent reactions (MCRs), defined as one-pot reactions in which at least three functional groups join through covalent bonds, have been steadily gaining importance in synthetic organic chemistry [9-12]. In this paper, as part of our ongoing studies on the multicomponent area [13-16], we present herein our results of a novel discovery involving synthesis of 2*H*-thiopyran-3,4-dicarboxylate [17] derivatives, using commercially available starting materials in excellent yields. Thus,

* Corresponding author: Dr. Zinatossadat Hossaini, Department of Chemistry, Islamic Azad University, Qhaemshahr Branch, P.O.Box: 163, Mazandaran, Iran, E-mail: zshossaini@yahoo.com, Tel.: +989126161310; Fax: +98(123)2263127.