



Solvent-Free Multicomponent Reactions of Dithiocarbamates, Activated Acetylenes and Isocyanides

F. Rostami-Charati ^{1*}, Z. Hossaini², R. Hajinasiri²

¹Faculty of Science, Gonbad Higher Education Center, Gonbad, Iran

²Department of Chemistry, Islamic Azad University, Qaemshahr Branch, Mazandaran, Iran

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Abstract

An efficient method to synthesis the 2H-pyrans using three component reactions of dithiocarbamats, activated acetylenes and isocyanides in water as the solvent is described. In these reactions, synthesis of 2H-pyrans is possible based on the one-pot reaction and without using any catalyst. The mild reaction conditions and high yields of the products exhibit synthetic advantage of these methods.

Keywords: *One-pot reactions, Dithiocarbamate, Alkyl bromides, Activated acetylenes, 2H-pyrans.*

Introduction

Multicomponent reactions (MCRs) have been generally used by synthetic chemists as a basic means to generate molecular diversity from bifunctional substrates that react repeatedly in an intramolecular method [1-4]. Developing such types of MCRs that are inclusive for the formation of multiple bonds in a single action is one of the main challenges in new organic synthesis [5-9]. They provide a great tool toward the one-pot synthesis of various and complex compounds as well as small and drug-like heterocycles [10]. MCRs that involve isocyanides are by far the most flexible

reactions in terms of scaffolds and number of handy compounds [1-5, 11]. Here, we describe an efficient synthesis of 2H-pyran derivatives via the reaction of dithiocarbamates, alkyl propiolates and isocyanides in water at 45°C (Scheme 1).

* **Corresponding author:** Dr. F. Rostami-Charati, Faculty of Science, Gonbad Higher Education Center, Gonbad, Iran, E-mail: f_ristami@yahoo.com