

EKOLOŠKI PRIHVATLJIVA SINTEZA DERIVATA TRIAZOLA S KUMARINSKOM JEZGROM

AN ECO-FRIENDLY ROUTE FOR THE SYNTHESIS OF COUMARIN BASED TRIAZOLE DERIVATIVES

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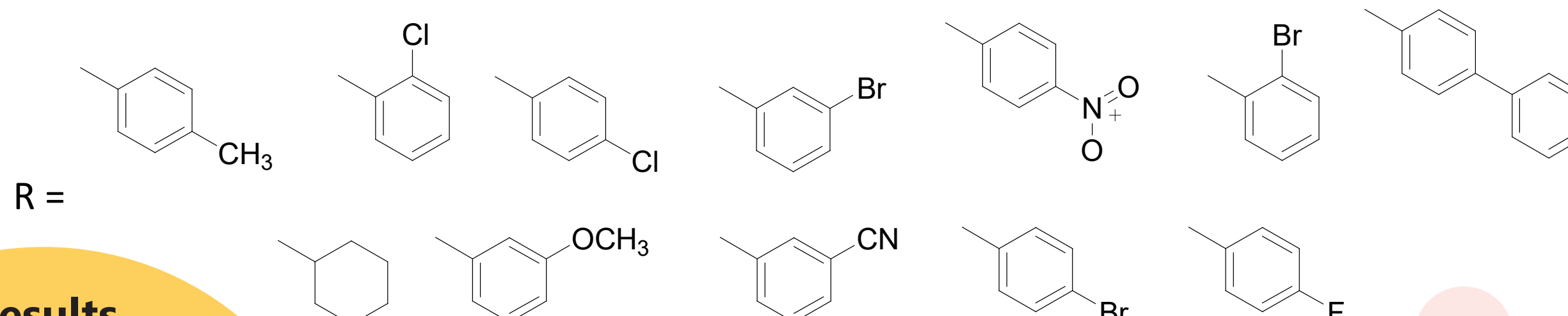
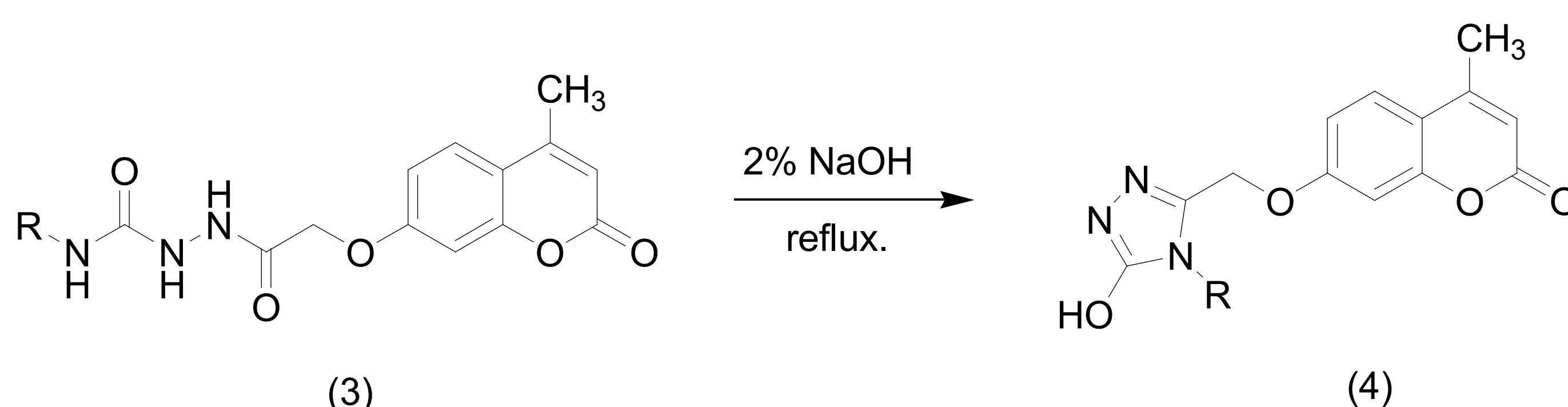
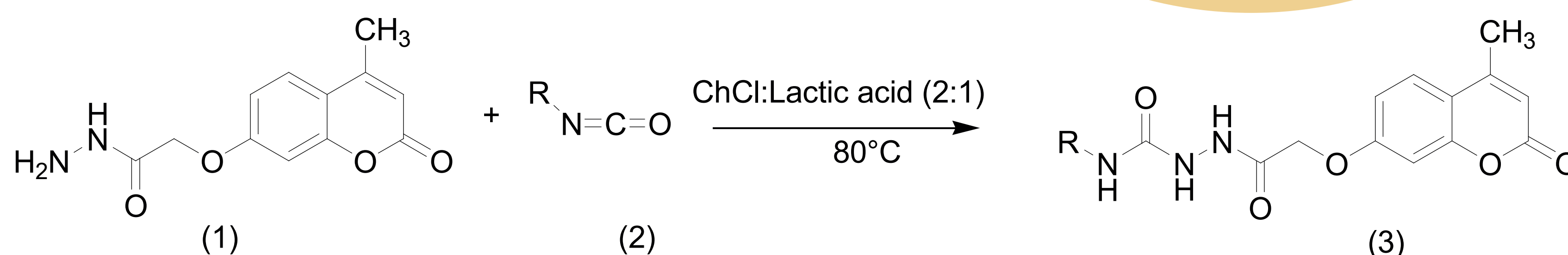
ABSTRACT

Due to the numerous advantages of deep eutectic solvents (DESs) compared to organic solvents and in continuation of our on-going interest in the development of new green synthetic approaches, the aim of this study was to synthesize coumarin triazole derivatives utilizing ChCl-based DES as a reaction media. We applied an environmentally friendly approach, utilizing a solvent made of biodegradable components, with low toxicity and vapor pressure.

INTRODUCTION

Coumarins and their derivatives have attracted considerable attention due to their extensively biological, pharmacological, biochemical and therapeutic activities. Some authors have shown that the combination of coumarin moiety and some nitrogen-containing heterocycles, such as triazoles, contribute to better biological activity in comparison with initial material [1].

Deep eutectic solvents (DESs) are novel generation of "green solvents" that have proven to be a convenient media for many synthetic pathways. They are often described as environmentally friendly and sustainable mixtures of nontoxic and cheap components, whose properties can be adjusted for various applications using different molar ratios of initial components [2, 3].



Results

The applied method is more convenient than conventional ones, providing high product yields and cleaner reaction paths, while the isolation of the final product was easy, and included only the addition of water and filtration.

MATERIALS AND METHODS

In first step, we obtained semicarbazides (3) from 2-[(4-methyl-2-oxo-2H-chromen-7yl)oxy] acetohydrazide (1) and different isocyanates (2) utilizing ChCl:Lactic acid (2:1) DES as a reaction media. Afterwards, the obtained derivatives were subjected to cyclization in 2% sodium hydroxide solution under reflux to obtain final product (4).

ACKNOWLEDGMENTS

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Literature

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