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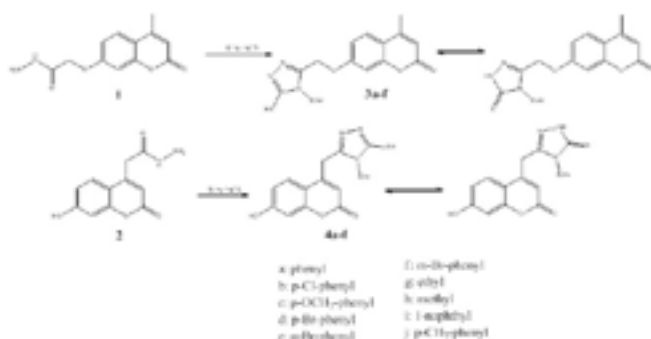
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## Eco-friendly approach to synthesis of coumarinyl 1,2,4-triazoles

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1,2,4-Triazoles, a heterocyclic compounds with a wide range of biological activities such as antibacterial, antifungal, antitumor, anticolvulsant, antiinflammatory and antimicrobial, exist in two tautomeric forms, 1H and 4H. Until recently, these heterocycles are usually prepared from 1,2,4-oxadiazoles in reaction with hydrazine, 1,3,4-oxadiazoles and hydrazides or thiosemicarbazides in basic conditions. Hereby, we report a synthesis of 1,2,4-triazoles in deep eutectic solvents. DES is a mixture of a salt, usually choline chloride which is hydrogen bond acceptor (HBA) and a hydrogen bond donor (HBD) such as alcohols, sugars, amides and carboxylic acids, which mostly exist as liquid at or below 100°C. A model reaction between 2-((4-methyl-2-oxo-2H-chromen-7-yl)oxy)acetohydrazide and phenyl isothiocyanate was carried out on two different temperatures (40°C and 80°C) in 14 choline chloride based deep eutectic solvents (DESs). Pure thiosemicarbazide was formed in choline chloride:malonic acid (1:1), choline chloride:malic acid (1:1) and DESs with different alcohols as HBDs. The best conversion to 1,2,4-triazole derivatives was obtained in choline chloride:urea (1:2) at 80°C, so this DES was used for next synthesis of 1,2,4-triazoles with various isothiocyanates and hydrazides.



## Biography

Mario Komar has completed his MSc at Department of Chemistry in Osijek, Croatia. He is a PhD student at Faculty of Chemical Engineering and Technology in Zagreb and works as Assistant on the Faculty of Food Technology in Osijek. The main subject of his research is application of deep eutectic solvents in organic synthesis. He has published two papers in reputed journals.

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