

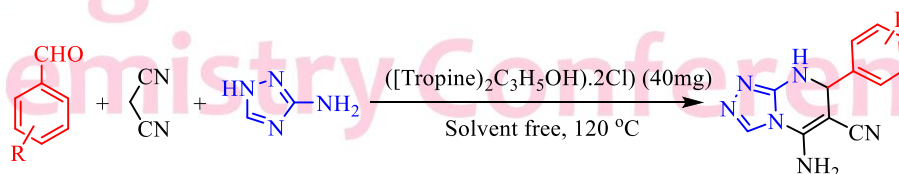
Application of tropine as a suitable base for the preparation of an active catalyst in acceleration of synthesis of 1,2,4-triazolo[4,3-*a*]pyrimidines

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In recent years, dicationic ionic liquids (DILs) have attracted increasing interest, finding unique applications as electrolytes, stationary phases in gas chromatography, lubricants, catalysts, fuel cells, solar cells, solvents in high temperature organic reactions [1]. DIL's cationic heads, the linker and the outer chains caused structural variability, high tunability, low volatility, high thermal stability and lower ecotoxicity to compare with parental monocationic ionic liquids. Tropine or 3-tropanol is an important member of azabicyclo compounds which contain a tropane ring. Pyrimidine and its derivatives are important heterocyclic compounds and the diversity of their chemical and biological importance have made them more vital in pharmaceutical chemistry [2]. On the other hand, triazole is a five-membered heterocycle with three nitrogen atoms which one of its isomers is 1,2,4-triazole. Among these compounds 3-amino[1,2,4]triazole derivatives which are composed of two rings, one pentamorous and the other senary, connected by a nitrogen bridge, have the ability to induce the growth of the cancer cells in the thyroid gland of rats [3]. In this work, a green and efficient procedure is reported for the synthesis of 1,2,4-triazolo[4,3-*a*]pyrimidine derivatives using a suitable dicationic molten salt based on tropine ($[(\text{Tropine})_2\text{C}_3\text{H}_5\text{OH}]\cdot 2\text{Cl}$). The simple catalyst preparation, straightforward separation and recovery of the catalyst from the reaction mixture, simple work-up method requiring no special separation procedure, solvent-free conditions, short reaction times and high yields of the products are the significant points of interest of this study.



Keywords: Dicationic molten salt, pyrimidines, Tropine, $[(\text{Tropine})_2\text{C}_3\text{H}_5\text{OH}]\cdot 2\text{Cl}$.

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