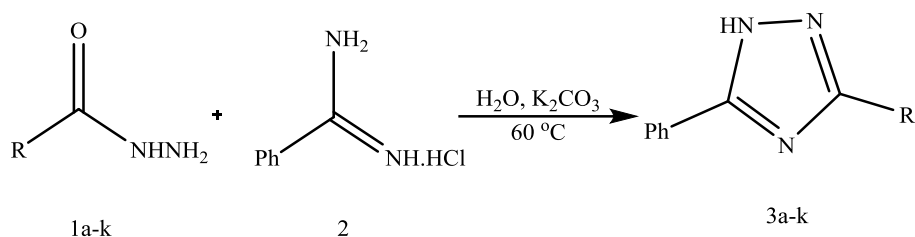


## Abstract

Triazoles are an important class of five-membered aromatic heterocycles containing three nitrogen atoms. They are contained in two resonance forms. The triazole ring system is found in a variety of naturally occurring compounds and biologically active molecules. They are used in medicine as antifungal agents. The resistance of bacteria and fungi to antibiotics is still increasing and can be a serious threat to human health in the future. New antimicrobial agents must be designed and identified to confront these pathogens. In this study, 1,2,4-triazole derivatives were prepared by the interaction of benzamidine and hydrazides in the presence of  $K_2CO_3$  in water at 60 °C and synthesized eleven triazole derivatives with excellent to good yields. The inhibitory activity of all compounds synthesized on several gram-positive and gram-negative bacteria and pathogenic fungi has been investigated. Studies have shown that they are particularly potential antifungal agents. Environmental problems caused by the use of most organic solvents necessitates the need to find green alternatives. Although there have been many advances in the design of environmentally friendly organic solvents, but still, water is the best option.



**Keywords:** Green Synthesis of 1,2,4-Triazole Antimicrobial, Antifungal and Antioxidant activities



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Department of Chemistry

The Thesis Submitted for the Degree of Master of Science

(In the Field of Organic Chemistry)

**Green Synthesis of 1,2,4-triazole derivatives and evaluation of effects  
antibacterial and antifungal and their antioxidant**

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Summer 2019