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Synthesis And Antimicrobial Evaluation of some Novel (5Z)-5- (4-substitutedbenzylidene)-2- (4-nitrophenyl)[1,3] thiazolo [3,2-b] [1,2,4] triazol-6- (5H)-one derivatives

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Abstract

A series of [1,2,4] triazol-6- (5H)-one derivatives[A_{1-9}] has been synthesized by the cyclization of the 1-acyl-thiosemicarbazide (1) in alkaline medium followed by acidification with 37% HCl gives 5- (4-nitrophenyl)-2,4-dihydro-3H-1,2,4-triazole-3-thione (2). Mixture of 5-(4-nitrophenyl)-2,4-dihydro-3H-1,2,4-triazole-3-thione (2), chloroacetic acid, required aromatic aldehyde, anhydrous sodium acetate, acetic anhydride and acetic acid was refluxed for 6 hr. which gives (5Z)-5- (4-substitutedbenzylidene)-2- (4-nitrophenyl)[1,3] thiazolo[3,2-b] [1,2,4] triazol-6- (5H)-one derivatives (A_{1-9}) The crude products were recrystallized from methanol.

Keywords: Thiosemicarbazide, 1,2,4-triazoles, [1,2,4] triazol-6- (5H)-one derivatives, disc diffusion method, antifungal activity.

Introduction

In the last few decades, the chemistry of 1,2,4-triazoles and their fused heterocyclic derivatives has received considerable attention owing to their synthetic and effective biological importance. 1,2,4-triazoles represent important class of heterocyclic compounds. 1,2,4-triazoles possess a wide range of bioactivities viz. anti-inflammatory[1-2], anticancer[3-4], antimicrobial activity[5-9]. 1,2,4-triazoles has potential to bind with the receptors and enzymes to produce different pharmacological actions. The aim of present investigation is a trial to combine the structural features of with 1,2,4-triazoles. The target compounds which are structurally-related to previously reported pharmacologically-active compounds are expected to possess anti-inflammatory and antimicrobial activities. An attempt is to synthesize some Novel (5Z)-5- (4-substituted benzylidene)-2- (4-nitrophenyl)[1,3] thiazolo [3,2-b] [1,2,4] triazol-6- (5H)-one derivatives.

