

Abstracts:

The reaction of 4-methoxybenzoic acid served as the foundation for the current investigation. The current research work started with the reaction of 4-methoxybenzoic acid (**1**) with ethyl alcohol (**2**) in order to form ethyl 4-methoxybenzoate (**3**) in the presence of concentrated sulphuric acid. Ethyl 4-methoxybenzoate (**3**) further reacted with hydrazine hydrate (**4**) to form 4-methoxybenzohydrazide (**5**) in the presence of methanol which acted as solvent. 4-methoxybenzohydrazide (**5**) further reacted with 4-nitrophenylisothiocyanate (**6**) to produce an uncyclized intermediate 2-(4-methoxybenzoyl)-N-(4-nitrophenyl)Hydrazine carbothioamide (**7**) using methanol as solvent. This uncyclized triazole was cyclized with the help of sodium hydroxide solution and our parent compound 5-(4-methoxyphenyl)-4-(4-nitrophenyl)-4H-1, 2, 4-triazole-3-thiol (**8**) was obtained. This parent compound was further treated with 2-chloropentane (**9**) to give 3-((2-chloro-2-methylpent-3-yn-1-yl) thio)-5-(4-methoxyphenyl)-4-(4-nitrophenyl)-4H-1,2, 4-triazole (**10**) derivative in the presence of dimethyl formamide and lithium hydride. The structure of derivative was studied via IR, ¹H-NMR, C¹³-NMR spectral analysis.