

ABSTRACT

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-bromobutane (9) to give 3-(butylthio)-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, $^1\text{H-NMR}$, $\text{C}^{13}\text{-NMR}$ and EI-MS spectral analysis.