ABSTRACT

Triazoles are used in a variety of medications, including antidepressants, antidiabetic drugs, antihypertensive, antiepileptics, and antitubercular drugs. Fluconazole, voriconazole, trazodone, trapidil, estazolam, and rufinamide are all commercially marketed triazole-containing drugs. The contemporary research project is being initiated with an esterification reaction in the presence of strong sulphuric acid between 4-methoxybenzoic acid and ethyl alcohol leading to the formation of Ethyl 4-methoxybenzoate which is combined with hydrazine hydrate followed by the formation of 4-methoxybenzohydrazide under the presence of methanol serving as solvent. This product reacted with 4-nitrophenylisothiocyanate and produced 2-(4-methoxybenzoyl)-N-(4-nitrophenyl) hydrazine carbothioamide which is an uncyclized intermediate. Then under certain conditions including the presence of sodium hydroxide solution and methanol, this uncyclized triazole was cyclized. Under the presence of a salt, this uncyclized triazole is cyclized which led the formation of 5-(4-methoxyphenyl)-4-(4-nitrophenyl)-4H-1,2,4-triazole-3-thiol. This produced compound served as a parent for the formation 3-((3-Chlorobenzyl) thio)-5-(4-methoxyphenyl)-4-(4-nitrophenyl)-4H-1,2,4-triazole by reacting the parent with 3-chlorobenzyl chloride in the presence of a strong aprotic solvent lithium hydride and dimethyl formamide. The obtained product 3-((3-Chlorobenzyl) thio)-5-(4-methoxyphenyl)-4-(4-nitrophenyl)-4H-1,2,4-triazole was analyzed by using ^{1}H-NMR and ^{13}C-NMR.