

## ABSTRACT

The contemporary research project was initiated by the preparation of parent compound 5-(4-methoxyphenyl)-4-(4-nitrophenyl)-4*H*-1,2,4-triazole-3-thiol (**VII**) through the reaction of 4-methoxybenzohydrazide (**IV**) and 4-nitrophenylisothiocyanate (**V**). This compound was further treated with 2-Bromoheptane (**VIII**) in the presence of aprotic solvent using lithium hydride which work as activator to achieve 3-(heptan-2-ylthio)-5-(4-methoxyphenyl)-4-(4-nitrophenyl)-4*H*-1,2,4-triazole (**IX**). The structure of the novel molecule was elucidated by <sup>1</sup>H-NMR, and <sup>13</sup>C-NMR spectral techniques. Triazoles expose a lot of pharmacological applications which include anti-bacterial, anti-cancer, anti-inflammatory, anticonvulsant, antioxidant, antimicrobial, antifungal and work as inhibitors of various enzymes.