Abstract

The desired molecules was synthesized under precisely regulated conditions. In the first step ethyl 1-((4-Methoxy phenyl) sulfonyl piperidine-4-carboxylate was formed by the reaction of the equimolar ratio of 4-methoxybenzenesulfonyl chloride and ethyl piperidine-4-carboxylate. The reactants were taken in a round bottom flask and refluxed for about 3 hours until the reaction completed maximum which was then supervised through TLC and pH maintained by aqueous Na_2CO_3 using distilled water. The reaction mixture was neutralized by dilute HCl. The precipitate of ester was obtained and filtered out. The formed ester was then converted into 1-((4-Methoxy phenyl) sulfonyl piperidine-4-carbohydrazide, by the reaction with ethyl 1-((4-Methoxy phenyl) sulfonyl piperidine-4-carboxylate in the presence of methanol solvent. The reaction was refluxed for 2 hours at room temperature. Methanol was evaporated after the completion of the reaction. The precipitates of hydrazide were collected and dried. Hydrazide was taken in a flask with ethanol and potassium hydroxide. Carbon disulfide was introduced. That reaction was refluxed for 4 hours and the product 5-(4-((4-Methoxy phenyl) sulfonyl cyclohexyl-4-methyl-4*H*-1,2,4-triazole-3-thiol was synthesized. pH was adjusted by adding HCl. The cyclized precipitates were collected. The 1,2,4-triazole was coupled with different substituted electrophiles in the presence of LiH and DMF and the derivative 2-((5-(1-((4-methoxyphenyle)sulfonyle)piperidine-4-yl-)-4-methyle-4*H*-1,2,4-triazole-3-yl)thio)-*N*-(*p*-tolyl)acetamide was synthesized and confirmed with TLC. The bioactivity of the derivative was determined against bacteria and fungi. Synthesized derivatives show considerable inhibition against Lipoxygenase Inhibition. The target compound was characterized by using ^{1}H-NMR and ^{13}C-NMR.