ABSTRACT

The desired molecules were synthesized under precisely regulated conditions. In the first stage, 4-methoxybenzenesulfonyl chloride and ethyl piperidin-4-carboxylate were reacted to produce ethyl 1-[(4-methoxyphenyl) sulfonyl] piperidin-4-carboxylate. The reactants were placed in a flask with a round bottom and refluxed for roughly 3 hours or until the reaction had reached its maximum. The reaction was then monitored by TLC and the pH was maintained by adding aqueous Na_2CO_3 solution. Diluted HCl was used to neutralize the reaction mixture. The ester precipitate was collected and removed by filtering. By reacting with hydrazine hydrate in the presence of methanol solvent, the generated ester was subsequently transformed into 1-[(4-methoxyphenyl) sulfonyl] piperidin-4-carbohydrazide. At room temperature, the reaction was refluxed for two hours. After the completion of reaction, the hydrazide precipitates were gathered and dried. In a flask containing ethanol and potassium hydroxide, hydrazide compound was administered. CS_2(carbon disulfide) was added and the reactant was refluxed and the product 5-(1-((4-methoxy phenyl) sulfonyl) Piperidine-4-yl)-4-methyl 4H-1,2,4-triazole-3-thiol formed. After that 2-bromo acetyl bromide were reacted with 4-ethyl aniline in the presence of 10% Na_2CO_3 with constant stirring for one hour to produce 2-bromo *N*-(4-ethyl phenyl) acetamide was acquired. TLC was taken for confirmation. After that the reaction were performed further in which 5-(1-((4-methoxy phenyl) sulfonyl) piperidine-4-yl)-4-methyl-4H-1,2,4-triazole-3-thiol was combined with 2-bromo *N*-(4-ethyl phenyl) acetamide in the presence of DMF and NaH the target compound *N*-(4-ethyl phenyl)-2-((5-(4-((4-methoxy phenyl) sulfonyl) cyclohexyl)-4-methyl-4H-1,2,4-triazole-3-yl) thio) acetamide was synthesized and the purity of the compound was confirmed with TLC. Synthesized derivatives show considerable inhibition against lipoxygenase enzymes. The derivative was characterized by using ^{1}H-NMR and ^{13}C-NMR.