

ABSTRACT

The current research work was initiated by the reaction of 2-(3,4-dichlorophenyl)acetic acid (1) with ethyl alcohol (2) to produce ethyl 2-(3,4-dichlorophenyl)acetate (3) in the presence of conc. H₂SO₄ as catalyst. Ethyl 2-(3,4-dichlorophenyl)acetate (3) was further reacted with hydrazine hydrate (4) to produce 2-(3,4-dichlorophenyl)acetohydrazide (5) in the presence of methanol as solvent under reflux. The 2-(3,4-dichlorophenyl)acetohydrazide (5) was reacted with phenyl isothiocyanate (6) to produce intermediate product (7) using methanol as solvent system. Intermediate product was cyclized in the presence of aqueous NaOH which gave parent molecule 5-(3,4-dichlorobenzyl)-4-phenyl-4*H*-1,2,4-triazole-3-thiol (8). Parent molecule was treated by different alkyl halides to synthesize different derivatives. The structures of parent compound as well as their derivatives were elucidated by ¹H-NMR and EI-MS spectra.