Minor Research Project on

"SYNTHESIS, CHARACERISATION AND PHARMACOLOGICAL ACTIVITY OF N-BRIDGED OXYGEN CONTAINING HETEROCYCLIC COMPOUNDS"

By: Divya k, Department of Chemistry

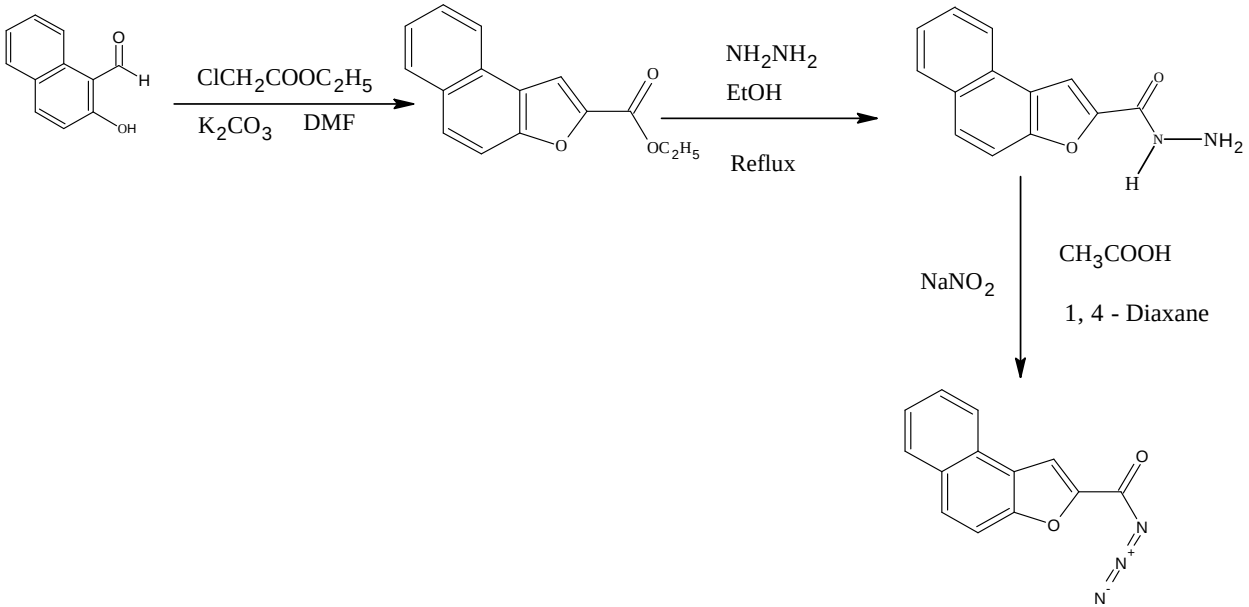
Abstract:

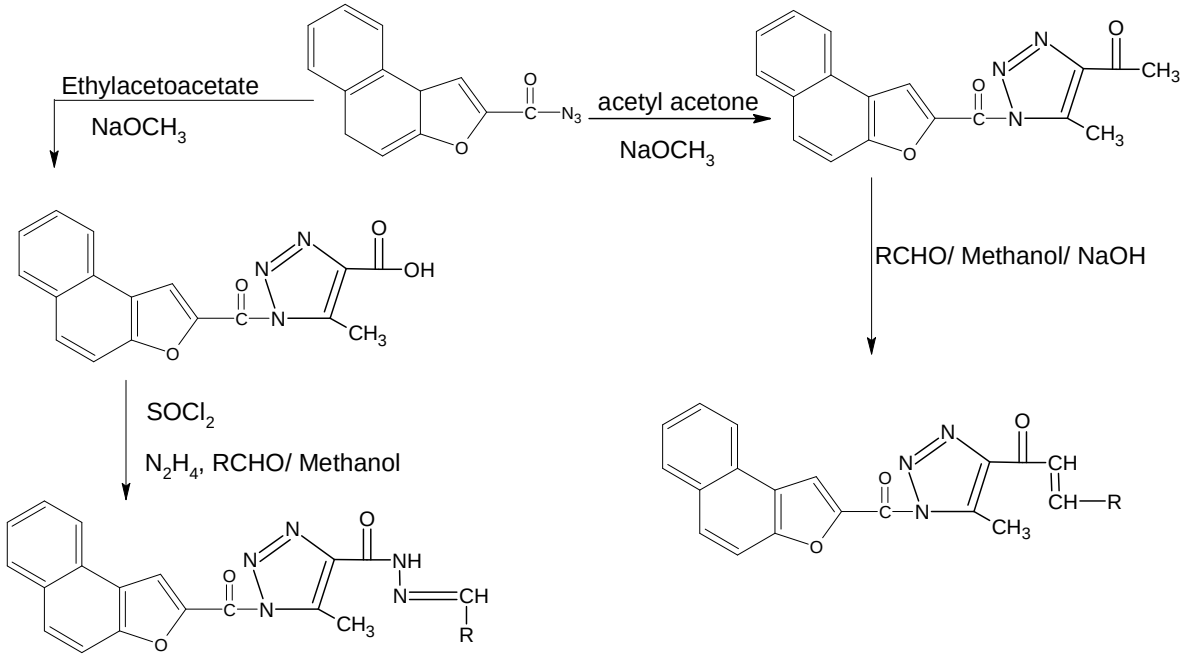
The present work deals with the synthesis of some new naphtho[2,1-*b*]furan derivatives bearing triazole nuclei attached to furan ring. The structure of newly synthesized compounds has been established by spectral studies. Some of the compounds evaluated for anti-inflammatory, anthelmintic, analgesic, diuretic and antipyretic activities. 2-hydroxy naphthaldehyde condenses with ethylchloro acetate in presence of anhydrous potassium carbonate to yield Ethyl naphtho[2,1-*b*]furan-2-carboxylate.

Ethyl naphtho[2,1-*b*]furan-2-carboxylate on reaction with hydrazine hydrate in presence of acid catalyst in ethanol medium offered naphtho[2,1-*b*]furan-2-carbohydrazide. The naphtho[2,1-*b*]furan-2-carbohydrazide on diazotization in presence of acetic acid as catalyst in dioxane produces naphtho[2,1-*b*]furan-2-carboxyazide. This undergoes cyclisation with ethylacetoacetate in presence of sodium methoxide to give naphtho[2,1-*b*]furan-2-carboxy-1,2,3-triazolo-4-methyl-5-carboxylate. This compound was further converted to acid chloride by the reaction with thionyl chloride. The acid chloride was then treated with hydrazine hydrate under cooling condition and the resulting compound was condensed with different types of aldehydes to get the mannich bases.

Naphthofuran derivatives exhibit very potent antibacterial, genotoxic and anticancer activity. The biheterocyclic compounds in which pyrazole moiety is coupled with furan or benzofuran nucleus exhibit antimicrobial and anti-inflammatory activities. However there are no reports in literature concerning coupling of triazole ring with another biologically active naphtho[2,1-*b*]furan nucleus, either directly or through carbon bridge.

The scheme of the work is as follows:





R= 4-Cl-C_6H_4, 4-OCH_3-C_6H_4, 4-NH_2-C_6H_4, 4-NO_2-C_6H_4, etc