ABSTRACT

Indoles and their derivatives find a prominent place in synthetic organic chemistry, as they are found to be potent pharmacophores next only to purines and pyrimidines. It has been found that, very often, the 2-and 3-substituted indoles are found to be biologically active.

Phenyl hydrazone (1) of 3-chloro-4-fluoroaniline was prepared by the reaction of diazonium salt of chlorofluoro-aniline with ethyl-α-benzylacetoacetate. This hydrazone was then subjected to cyclisation in the presence of dry HCl to give 2-acetyl-6-chloro-5-fluoro3-phenylindole (2). Various chalcones (3a-g) were synthesized using different aromatic aldehydes. These chalcones were used for synthesizing various indolyl-phenyl pyrazolines (5a-g), using phenyl hydrazine and triethyl amine. Likewise indolyl pyrazolines (7a-g) were synthesized by refluxing chalcones (3a-g) with hydrazine hydrate in the presence of triethyl amine. Indolyl isoxazolines (9a-g) were synthesized by refluxing chalcones (3a-g) with hydroxylamine hydrochloride in the presence of potassium hydroxide and ethanol. Chalcones (3a-g) were treated with bromine in acetic acid to get chalcone dibromides (4a-g). These were further used for synthesizing indolyl phenyl pyrazoles (6a-g), by reaction with phenyl hydrazine in presence of triethanol amine and indolyl pyrazoles (8a-g), by reaction of dibromo chalcones (4a-g) with hydrazine hydrate in presence of triethanol amine. In a similar manner indolyl isoxazoles (10a-g) were prepared by reacting dibromo chalcones (4a-g) with hydroxyl amine hydrochloride in presence of triethanol amine. These structures of the synthesized compounds were characterized confirmed by elemental anlysis, IR, ^1^HNMR and Mass spectral data. Finally all the synthesized compounds were screened for their antibacterial
and antifungal activities, of which some of the compounds showed appreciable activity against the bacterial and fungal strains used. Anti-inflammatory activity of the synthesized compounds revealed that some of the compounds showed significant activity.