## Abstract

The synthesis of targeted molecules was implemented under controlled conditions. The reaction of substituted aniline (**1a-c**; one in each reaction) with 4-(Chloromethyl) benzoyl chloride (**2**) was carried out according to balanced chemical equation in aqueous sodium carbonate solution with pH maintained at 9-10. Reaction mixture was stirred for half hours at the room temperature, specified by the TLC technique. Precipitates collected, washed, and dried to get purified electrophiles, *N*-(substituted-phenyl)-4-(Chloromethyl) benzamides (**3a-c**). Then, *N*-phenylpiperazine (**4**) was taken in a flask in dimethylformamide, and LiH was added with continuous stirring for 0.5 hours at room temperature for activation of **4**. Finally, the newly synthesized electrophile (**3a-c**) was added, and the reaction mixture was stirred for 17-18 hours at room temperature. The progress of reaction was again monitored with TLC till single spot is displayed. Then reaction was quenched with cold water to get the final products, *N*-(substituted-phenyl)-4-[(4-phenyl-piperazinyl)methyl]benzamides (**5a-c**) as outlined in **scheme-1**, and their structures was deduced with some spectral techniques. Then their biological studies were carried out to ascertain their therapeutic potentials. The spectroscopic techniques $^{1}$H-NMR, $^{13}$C-NMR, IR and biological activity was done to illustrate the compounds. NMR was done by utilizing DMSO-d6 as a solvent operating spectrometer at 600 Mz and TMS used as standard reference.