ABSTRACT

Four derivatives, **(5a-d)**, were synthesized in the carried work, beginning from substituted aniline (**1a-d)** according to the outline illustrated in Scheme 1. The synthesis was started by the reaction of substituted aniline **(1a-d)** with 3-bromoacetyl chlorides **(2)** at an equal ratio in aqueous sodium carbonate solution with pH maintained at 9-10. The reaction mixture was stirred for 3-4 hours at room temperature and monitored by the TLC. The precipitates obtained were washed and dried to obtain purified electrophile N-phenyl-3-bromopropanamide **(3a-d)**. 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-d)** was added, and the reaction mixture was stirred for 15-16 hours at room temperature. TLC again monitored the progress of the reaction until a single spot was obtained. Then the reaction was quenched with cold water to get the final products, *N*-(aryl)-3-(4-phenyl-1-piperazinyl)propanamides **(5a-d)** as outlined in **scheme-1**, and their structures were deduced with IR, ^{1}H-NMR, and ^{13}C-NMR spectral techniques. The synthesized molecules have been subjected to evaluation of their bioactivity using different enzyme inhibitors, i.e., alkaline phosphatase, alpha-amylase, and urease inhibition. Also, their hemolytic potential was studied, and results were discussed.