

ABSTRACT

This manuscript reports the synthesis of a series of *N*-substituted derivative of 2-phenitidine. Firstly, the reaction of 2-phenitidine (1) with benzene sulfonyl chloride (2) yielded *N*-(2-ethoxyphenyl) benzenesulfonamide (3), which further on treatment with sodium hydride and alkyl halides (4a-g) furnished into new sulfonamides (5a-g). Secondly, the phenitidine was reacted with benzoyl chloride (6) and acetyl chloride (8) to give reported *N*-benzoyl phenitidine (7) and *N*-acetyl phenitidine (9), respectively. These derivatives were characterized by IR, ¹H-NMR and EI-MS and then screened against acetylcholinesterase, butylcholinesterase and lipoxygenase enzyme and were found to be good inhibitors of butyrylcholinesterase only.