



ABSTRACT

The nucleophilic substitution reaction of *N*-methylpiperazine with a series of aryl/alkylsulfonyl chlorides was carried out in aqueous alkaline media under dynamic. The pH was control at 9.0 by adding aqueous solution of Na₂CO₃ at room temperature. The product was precipitated by adding concentrated HCl till pH to 2.0 to afford the *N*-Methyl-*N'*-(aryl/alkylsulfonyl) piperazine which was substituted at N-position by aryl/alkylsulfonyl chlorides in DFM and LiH to achieve *N*-Methyl-*N'*-(aryl/alkylsulfonyl)piperazines. The resulting compounds were characterized by ¹³CNMR, EIMS and ¹H-NMR analysis. Biological evaluation of synthesized derivatives was checked by anti bacterial activity and compounds showed excellent activity against tested strains. Cytotoxicity of compounds were also checked by hemolytic activity and synthesized derivatives showed significant hemolytic activity.