## ABSTRACT

Sulfonamides are considered as the bacteriostatic agents. Many types of sulfonamides have been prepared but only a few are used as drugs against different types of bacterial infections. The main work described here is the synthesis of parent compound 4-Chloro-*N*-(4-ethylphenyl)benzenesulfonamide from 4-ethylaniline and 4-Chloro Benzenesulfonyl Chloride. Further the parent compound was treated with different alkyl halides and aromatic carbonyl halides to produce substituted derivatives 4a to 4l. These synthesized compounds were characterized by EIMS, I.R and H-HMR. The activities of all the prepared compounds were screened against three gram-negative (*E.coli, P. aeruginosa* and *S. typhi*) and two gram-positive (*B. subtilis, S. aureus*) bacteria. Against *E.coli* good activity is shown by 4a and 4j with MIC value 11.66±3.22 and 11.32±3.89 and all other compounds show moderate activity against it. Against *P. aeruginosa* 4j showed good activity with MIC value 10.64±2.43 while compounds 4a, 4c, 4d and 4g exhibited moderate activity while remaining all compounds are inactive against *P. aeruginosa.* Against *S. typhi* 4b, 4g and 4b showed good activity with MIC value 10.64±3.55, 10.85±4.73 and 10.79±1.73 respectively. Compound 4f was inactive against *S. typhi.* While all other compound showed moderate activity against it. Against *B. subtilis* only 4j showed good activity with MIC value 10.64±1.40. All other compounds were in active against it. Against *S. aureus* 4j shows good activity with mic value. Compound 4b, 4c and 4g shows moderate activity, remaing compounds were inactive againt *S. aureus*. Compound 4j exhibited good activity against all bacteria three gram negative (*E.coli, P. aeruginosa* and *S. typhi*) and two gram positive (*B. subtilis, S. aureus*).