

# Synthesis and Biological Studies of Some Sulfur, Selenium and Tellurium Organic Compounds Based on Diethanolamine

## Abstract—

Several new and known bis(2-(arylchalcogeno)ethyl)amines (i.e.  $\text{HN}(\text{CH}_2\text{CH}_2\text{EAr})_2$ ; where  $\text{E} = \text{S}, \text{Se}$  and  $\text{Te}$ ,  $\text{Ar} = \text{C}_6\text{H}_5$ ,  $4\text{-CH}_3\text{C}_6\text{H}_4$ ,  $4\text{-CH}_3\text{OC}_6\text{H}_4$ ,  $4\text{-CH}_3\text{CH}_2\text{OC}_6\text{H}_4$ ,  $4\text{-BrC}_6\text{H}_4$ ,  $4\text{-ClC}_6\text{H}_4$  and  $4\text{-PhC}_6\text{H}_4$ ) were prepared by the reaction of bis(chloroethyl)amine with lithium arylthiolate or with the corresponding sodium arylchalcogenate (generated in situ by borohydride reduction of  $\text{R}_2\text{Ee}_2$ ; i.e.  $\text{ArE}^-\text{Na}^+$ ;  $\text{E} = \text{Se}$  and  $\text{Te}$ ). All compounds were obtained in good yield and characterized by elemental analysis, IR,  $^1\text{H}$  and  $^{13}\text{C}$  NMR and mass spectroscopic data. Antibacterial activity study of these compounds showed some promising activity against *S. aureus*, *P. aeruginosa* and *E. coli*.

Key words— Diethanolamine, organotellurium, selenium, sodium arylchalcogenate, diaryl dichalcogenides, biological activity.