ABSTRACT

The synthesis of the targeted molecules was applied under controlled environment. Their aim was to obtain less toxic, less expensive compounds with beneficial piperidine and oxadiazole ring to be considered as pharmaceutical products. Synthesis of **5a** by the reaction of 5-(1-(Phenylsulfonyl)piperidin-3-yl)-1,3,4-oxadiazole-2-thiol with Benzyl chloride in the presence of DMF and LiH. For synthesis of **(3)** Ethyl-1-(benzenesulfonyl)-piperidine-4-carboxylate **(1)** benzene sulfonyland **(2)** ethyl nipecotatereaction takes place which wasstirred at room temperature with pH maintained at 9-10 by adding sodium carbonate.TLC was done for confirmation of reaction and precipitates were collected, washed and dried to get purified ester. **(3)** Convertsto**(4)** 1-(benzenesulfonyl) piperidine-4-carbohydrazide by adding monohydrated hydrazine. The mixture was refluxed for about 2-3 hours and TLC technique was performed. After completion of reaction, the solvent wasevaporatedand placed in ice cubes. It was then filtered and dried for at least one day. **(5)** 1,3,4-oxadiazole-2-thiol formed by dissolving **(4)** in methanol and added in round bottom flask containing carbon disulphide, potassium hydroxide. Themixture was transferred reaction in 2000ml conical flask. To slow down kinetic energy, chilled ice water was added and pH wasmaintained at 5-6 by adding dilute hydrochloric acid. White precipitate wereformed which was filtered and washed. Oxadiazole **(5)** was added to flask containing DMF and add 0.004g of lithium hydride leaving solution for 15-20 minutes at room temperature. Electrophiles were added and TLC was done for regular evaluation. **(5a –e)** Precipitation was done, washed and dried.Some spectral techniques were figure out for their structural evaluation along with some biological studies for their therapeutic inspection. The spectroscopic techniques like ^{1}H-NMR and HR-MS spectra and IR-spectra were performed. Enzyme inhibition activities like alpha-glucosidase inhibition (yeast) activity, anti-urease inhibition studiesand AChE inhibition studies were performed.