ABSTRACT

The thesis presents the synthesis of novel 1,3,4-oxadiazine compounds containing thiazole, 1,3,4-oxadiazole and 1,3,4-thiadiazines possessing pyrazole and pyrimidine moieties by employing reported methods and/or new methods or new reagents and results of our study on their biological activities.

A new series of 1,3,4-oxadiazine-2-carboxylic acid 100(a-d) and 4-aryl-thiazol-1,3,4-oxadiazine-2-carboxamides 102(a-l) were synthesized. Compounds 102(a-l) were evaluated for in vitro antioxidant and DNA damage inhibition activities. A new series of ethyl 5-oxo-1,3,4-oxadiazine-2-carboxylates 103(a-e) and its 1,3,4-oxadiazol analogues 106(a-j) were synthesized and evaluated for their antidiabetic and ACE inhibition activities. A new series of 1,3,4-thiadiazin-pyrazole-carboxamides 109(a-i) were synthesized and evaluated for antimicrobial activities. A novel derivatives of pyrimido[2,1-b][1,3,4]thiadiazine-7-carboxylate 111(a-m) were synthesized by multi component one pot reaction method and evaluated for antimicrobial activities.