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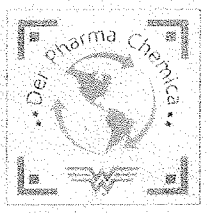

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Review Article on Substituted 1,3,4-Oxadiazole Derivatives and their Biological Activities

Sachin Vishnu Patil[1]*, Seema Kashinath Bhagwat[1], Manjusha Balkrishna Suryavanshi[1], Deepak Raghorao Nagergoje[2]

[1]*Department of Chemistry, Savitribai Phule Pune University, Research Institute, H. P. T. Arts and R. Y. K. Science College, Nashik, 422005, India*
[2]*Department of Chemistry, Arts, Science and Commerce College, Mokhada, Maharastra*

***Corresponding author:** Sachin Vishnu Patil, Department of Chemistry, Savitribai Phule Pune University, Research Institute, H. P. T. Arts and R. Y. K. Science College, Nashik, 422005, India, E-mail: sachin.dhokare@yahoo.com*

ABSTRACT

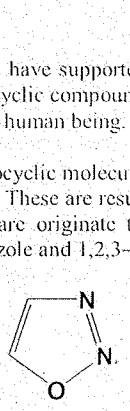
Amongst well known heterocycles 1,3,4-oxadiazole are of great interest due to their versatile biological activities such as antimicrobial, anti-tumor, ant-inflammatory, anti-convulsant, anti-oxidant, antimalarial etc. This wide range of important applications have attracted researchers for development and study of new heterocyclic compounds containing 1,3,4-oxadiazole. In this review article we have tried to summarize some of the important and major research acknowledged for different biological activities shown by 1,3,4-oxadiazole derivatives. This article will helpful to develop new molecule containing 1,3,4-oxadiazole derivatives which could play key to cure different diseases and act as leading drug molecule.

Keywords: 1,3,4-Oxadiazole; Biological activities; Antimicrobial; Anti-tumor; Anti-inflammatory; Anti-convulsant; anti-oxidant; Anti-oxidant

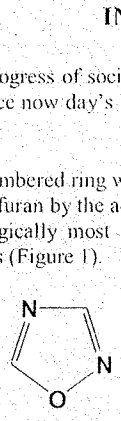
INTRODUCTION

Heterocyclic compounds have supported in the progress of society because of their importance. Our day to day life style is improved because of large numbers of heterocyclic compounds and hence now day's large efforts are given in designing and developing new compounds and study their different applications for human being.

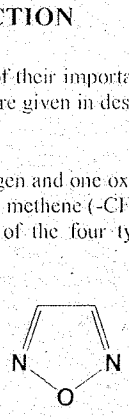
Amongst different heterocyclic molecules, five membered ring with two nitrogen and one oxygen called oxadiazole are important class of aromatic heterocyclic compounds. These are resulting from furan by the addition of two methene (-CH=) groups by two pyridine type nitrogens (-N=). 1,3,4-oxadiazoles (Figure 1) are originate to be biologically most effective out of the four types of oxadiazoles namely: 1,3,4-oxadiazole, 1,2,4-oxadiazole, 1,2,5-oxadiazole and 1,2,3–oxadiazoles (Figure 1).



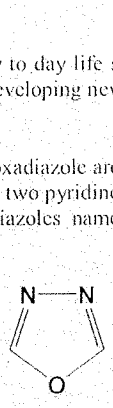
1, 2, 3-oxadiazole



1, 2, 4-oxadiazole



1, 2, 5-oxadiazole



1, 3, 4-oxadiazole