Indian Journal of Chemistry
Vol. 65, June 2026, pp. 548-563
DOI: 10.56042/ijc.v65i6.15453

Papers

Synthesis, characterization, molecular docking study and antimicrobial activity of new 1,3,4-oxadiazoles bearing isomeric pyridyl and thiazolyl scaffolds

Manjusha Suryawanshi*[a], Divya Ottoor[b], Amar Patil[a] & Santosh Chhajed[c]

[a] Department of Chemistry, H.P.T. Arts and R.Y.K. Science College, Nashik 422 005, Maharashtra, India

[b] Department of Chemistry, Savitribai Phule Pune University, Pune 411 007, Maharashtra, India

[c] Department of Pharmaceutical-chemistry, Bhujbal Knowledge City, MET Institute of Pharmacy Adgaon, Nashik 422 003, Maharashtra, India

E-mail: manjoosha28@gmail.com

Received 2 December 2024; accepted (revised) 11 June 2026

In search of new antimicrobial agents, herein is reported a series new isomeric 2-pyridinyl substituted thiazolyl-5-aryl-1,3,4-oxadiazoles **2a-4g**, using pyridine nitriles as starting compounds, following multistep synthetic route. An intermediate, pyridinyl substituted thiazolyl acid hydrazide when condensed with different *para*-substituted benzoic acids in the presence of $POCl_3$ yields better to excellent yields of the title compounds. All the synthesized compounds **2a-4g** have been screened for their *in vitro* antimicrobial activity. Amongst them, 3-pyridynyl and 4-pyridynyl derivatives are found to be more active than 2- pyridynyl derivatives.

Keywords: 1,3,4-Oxadiazoles, Pyridine, Thiazole, Antimicrobial activity