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# Comparatively Study of The Antimicrobial Properties of *Nerium Oleander L.* Leaf and Flower Extract

Nakshathra M.B[1,2], Vipin P Sivaram[2*]

[1]Department of Microbiology, St Mary's College, Kerala, India.
[2] Department of Biochemistry, Govt Arts and Science College, Kerala, India.

The study investigates the phytochemical composition and antibacterial potential of *Nerium oleander* belonging to the family Apocynaceae which is commonly known as Arali. Traditionally various parts of this plant—such as the root and leaves—have been used in the treatment of cancer, cardiovascular disorders and skin diseases. This study specifically focuses on the extraction and analysis of bioactive compounds from the dried leaves and flowers using solvents like chloroform, and alcohol, as well as aqueous extraction following sun-drying. Preliminary phytochemical screening of all solvent extracts revealed the presence of alkaloids, saponins, tannins, and carbohydrates. The antibacterial activity of the leaf and flower extracts was evaluated using the disc diffusion method against *Escherichia coli* and *Streptococcus* spp. on Mueller-Hinton Agar (MHA). Tetracycline and chloramphenicol served as standard antibiotic controls. The results demonstrated that the plant extracts possess significant antibacterial activity, with zones of inhibition comparable to those of standard antibiotics. Specifically, the zones of inhibition measured were 25 mm and 14 mm for flower and leaf extracts, respectively, while the standard antibiotics showed 22 mm (tetracycline) and 15 mm (chloramphenicol).

**Keywords:** Antibacterial, Alkaloids, Nerium Oleander, Phytochemicals, Saponins

***Correspondence:** Vipin P Sivaram
drvipin.p@gmail.com