

NOTE

Antimicrobial Activity of the Plant *Syzygium alternifolium*

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Extracts of leaves of the plant *Syzygium alternifolium* were tested for antibacterial and antifungal activity. This study revealed good antifungal activity for the non-polar extracts and good antibacterial activity was observed in ethyl acetate and alcoholic extracts.

Key Words: *Syzygium alternifolium*, Antimicrobial activity.

Plants are well known for their antibacterial potential. Seed extracts of *S. alternifolium* reported to have anti-diabetic activity¹. The seed powder of *S. alternifolium* in water given orally 3 times a day after food, controls diabetes^{2,3}. It is also used for fevers and skin diseases^{4,5}.

Syzygium alternifolium Walp, Myrtaceae, leaves were collected in January from Tirupati, India and authenticated by Dr. K. Madhavchetty, Department of Botany, Sri Venkateswara University. Voucher specimens are deposited at the herbarium, Department of Botany, S.V. University, Tirupathi.

The plant material (200 g) was successively extracted with solvents of increasing polarity using soxhlet apparatus. The extracts were concentrated under reduced pressure to yield petroleum-ether extract (1.5 g), dichloromethane extract (1.8 g), ethyl acetate extract (10 g) and alcoholic extract (21 g). The preliminary chemical examination showed presence of terpenes in pet-ether and dichloromethane extracts. Alcoholic and ethyl acetate extracts showed positive tests for presence of flavonoids.

Antibacterial activity of the non-aqueous extracts of the experimental plant have been examined by disc diffusion method⁶.

The microorganisms used in present studies are listed in Table-1. All these microorganisms have been obtained from Deccan Medical College, Hyderabad, India.

The alcoholic and ethyl acetate extracts were found to have an MIC of 24 and 18 μ g against *S. aureus* and *P. aeruginosa* (Table-1). Petroleum

ether extract showed an MIC of 28 µg against *C. albicans*. Plant extracts of *Syzygium* species are known antibacterials⁷. Essential oils of plants belonging to the family Myrtaceae are known for their biological activities which is suggested to be due to the presence of 1,8-cineole⁸. The same observation reflected in good antifungal activity obtained for the petroleum ether and dichloromethane extracts, which showed good terpene content. It is interesting to observe, ethyl acetate and methanolic extracts, which had no terpene content, showed good antibacterial activity.

TABLE-1
RESULTS OF ZONES OF INHIBITION (mm) OBTAINED FOR THE
EXTRACTS TESTED ANTIBACTERIAL ACTIVITY

Microorganisms	PE extract*	DCM extract*	EA extract*	Alcoholic extract*	Gentamycin (10 µg)	Nystatin (5 µg)
<i>S. aureus</i>	8	7	5	11	14	–
<i>P. aeruginosa</i>	6	5	18	9	12	–
<i>P. vulgaris</i>	6	7	9	10	14	–
<i>E. coli</i>	10	7	5	5	16	–
<i>C. albicans</i>	12	6	6	7	–	30
<i>P. notatum</i>	13	9	8	4	–	15
<i>A. niger</i>	5	5	5	4	–	16

PE = Petroleum ether; DCM = Dichloromethane; EA = Ethyl acetate

*Disc diameter 3 mm, dose: 50 µg

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