

Isolation of Fungal Endophytes from *Catharanthus roseus* and its Antibacterial Effect †

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Abstract: Fungal Endophytes are ubiquitous in the plant kingdom, with an estimate of at least a few million species. Plants may serve as a repository of an innumerable number of microorganisms known as endophytes. Such ubiquitous endophytes dominated their assemblages of distinct hosts, suggesting that certain genera of fungi are well adapted to make an endophytic way of life. *Catharanthus roseus* a flowering plant with inflorescences of pink flowers and Angiosperm, belonging to the family Apocyanaceae. *Catharanthus roseus* is used to treat cancer with drugs of vincristine and vinblastine. The plant has an anti-diabetic and ant-oxidant property. In the present study, fungal endophytes were isolated from *Catharanthus roseus* by the agar plate method, and the various fungal isolates include the *Cladorrhinium* sp., *Penicillium chrysogenum*, *Gliocladium fimbriatum*, *Mycelia sterilia*, and *Gliocladium roseum*. The fungal endophytes were cultured in a broth medium, and the antibacterial study was conducted by the turbidity method and Agar Diffusion technique. All the endophytic fungal isolates from the plant *Catharanthus roseus* were studied for the antibacterial property on *Staphylococcus aureus*, *Escherichia coli*, and *Klebsiella pneumonia*. The isolated fungal endophytes *Penicillium chrysogenum* showed inhibition of all three test bacteria. *Myceliasterilia* and *Gliocladium roseum* showed inhibition of only *Staphylococcus aureus*. The fungi *Cladorrhinium* sp. and *Gliocladium fimbriatum* did not show any antibacterial activity. The endophytic fungi showing antibacterial property were screened and found to produce acids and phenols. Hence *Catharanthus roseus* harbours fungal endophytes with medicinal importance inhibiting the pathogenic bacteria.

Keywords: *Catharanthus roseus*; endophytic fungi; antibacterial effect; phenols and acid.

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Conflicts of Interest

The authors declare no conflict of interest.