

## CHARACTERIZATION OF ANTIBACTERIAL, ANTICANCER PROPERTIES AND BIOACTIVE COMPOUNDS OF METHANOLIC LEAF EXTRACT OF *CATHARANTHUS ROSEUS*

V. MAHARAJASRI & D. DEVAMALAR

Department of Biotechnology, India

### ABSTRACT

Phytomedicines have been always the main principle form of medicine since traditions in India. Plants are the source of enormous drugs which are used directly/indirectly. *Catharanthus roseus* is one of the medicinal plants is a member of Apocynaceae family and the whole part of plant is an evergreen shrub and herbal in nature. It has anti-inflammatory, anti-bacterial, anti-fungal, anti-diabetic, anti-cancer, anti-oxidant, anti-hypertensive and anti-mitotic activities due to the presence of indole alkaloids and other biologically active compounds. The methanolic leaf extract was extracted by soxhlet extraction process. Thin Layer Chromatography was performed for methanolic leaf extract and the presence of alkaloid was detected by using Cerium Ammonium Sulphate as spraying reagent. The extract was subjected to GC-MS analysis and the identification of compounds was done by comparing the chromatogram, peak value of the unknown compounds with entries in NIST database. Five compounds were identified such as Vitamin d<sub>3</sub>, 14-Hydroxy-14-methyl-hexadec-15-enoic acid, methyl ester, Ethanoperoxoic acid, 1-cyano-1-[2-(2-phenyl-1,3-dioxolan-2-yl)ethyl]pentyl ester, 10-Octadecenoic acid, methyl ester, Dasycarpidan-1-methanol, acetate (ester). In which 10-Octadecenoic acid, methyl ester being the major compound in *C. roseus*. The anti-bacterial activity of the extract was performed for various pathogenic bacteria such as *Staphylococcus aureus*, *Eschericia coli*, *Bacillus megaterium*, *Bacillus subtilis*, *Bacillus flexus*, *Bacillus* sp. (KF781350), *Bacillus* sp. (KF772943), *Bacillus* sp. (KF746386), *Pseudomonas* sp. (KF762388), *Staphylococcus* sp. (KF782792), *Klebseilla pneumoniae*, *Pseudomonas stutzeri*, *Pseudomonas fluorescens*, *Proteus vulgaris*, *Enterobacter aeruginosa* by agar well diffusion method and the obtained results were compared with streptomycin as a positive control. Anticancer activity of methanolic leaf extract of *Catharanthus roseus* was determined through Colorimetric MTT assay against human breast adenocarcinoma (MCF-7) cell line. Study confirms the antibacterial activity and anticancer activity of methanolic leaf extract of *Catharanthus roseus* and identification of bioactive compounds which have the applications in therapeutic interventions

**KEYWORDS:** *Catharanthus roseus*, Methanolic Leaf