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Notice for the PhD Viva Voce Examination

Ms Harshitha K R, Registration Number: 2190021, PhD Scholar at the Department of Life Sciences, School of Sciences, CHRIST (Deemed to be University) will defend her PhD thesis at the public viva-voce examination on Thursday, 21 May 2026 at 10.00 am in Room No. 044, Ground Floor, R&D Block, CHRIST (Deemed to be University), Bengaluru - 560029, Karnataka, India.

Title of the Thesis	:	**Evaluation of Antioxidant and Anticancer Potential of *Ipomoea alba* L. In Triple-Negative Breast Cancer (MDA-MB-231) Cells**
Discipline	:	**Botany**
External Examiner - I	:	**Dr Anand M R** Associate Professor Department of Botany-Agronomy division University of Agricultural Sciences, Bangalore Vignana Kendra, Bengaluru - 560065 Karnataka
External Examiner - II	:	**Dr T Damodharam** Professor Department of Environmental Science Sri Venkateswara University Tirupati - 517502 Andhra Pradesh
Supervisor	:	**Dr Jobi Xavier** Associate Professor Department of Life Sciences School of Sciences CHRIST (Deemed to be University) Bengaluru - 560029 Karnataka

The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts and research scholars of all the branches of research are cordially invited to attend this open viva–voce examination.

Registrar (Academics)

Place: Bengaluru
Date: 18 May 2026

ABSTRACT

The discovery of new therapeutic agents remains crucial for the treatment of aggressive cancers such as Triple-Negative Breast Cancer (TNBC). Ipomoea alba L. (Moonflower), a member of the Convolvulaceae family, possesses several medicinal properties, but its anticancer mechanisms remain largely unexplored. In this study, leaves of Ipomoea alba were subjected to sequential Soxhlet extraction using chloroform, methanol, and aqueous solvents. The extracts were analyzed for phytochemical constituents through qualitative and quantitative methods. RP-HPLC was used to detect phenolic compounds, while GC-MS analysis identified volatile metabolites. Antioxidant activity was evaluated using DPPH and FRAP assays, and anti-inflammatory activity was assessed using the proteinase inhibition assay. The anticancer potential of the extracts was evaluated against the MDA-MB-231 human breast cancer cell line using the MTT assay, followed by flow cytometry to determine apoptosis and cell cycle distribution. The aqueous extract showed the highest yield (12.2%), whereas the chloroform extract contained higher levels of flavonoids (21 mg/mL) and alkaloids (9.979 mg/mL). HPLC analysis confirmed the presence of gallic acid (0.0396 mg/mL), and GC-MS identified fatty acid esters and volatile phenols. The chloroform extract demonstrated notable anti-inflammatory activity (24.7% inhibition at 100 µg/mL) and significant cytotoxicity against MDA-MB-231 cells with an IC50 value of 104.2 µg/mL. Mechanistic studies indicated apoptosis induction and cell cycle arrest at the G0/G1 phase, highlighting the potential of Ipomoea alba as a promising source of multi-targeted phytochemicals for TNBC therapy.

Keywords: Ipomoea alba L., Phytochemical studies, Triple-Negative Breast Cancer, MDA-MB- 231, Apoptosis.

Publications:

1. **Harshitha K.R.** & Jobi Xavier (2025) Phytochemical profiling and evaluation of antioxidant and anti-inflammatory activities of Ipomoea alba L., Plant Science Today, 12(2), ISSN: 2348-1900 (online), DOI: https://doi.org/10.14719/pst.6231
2. **Harshitha K.R.,** Xavier J. (2025) Anticancer potential of Ipomoea alba: Induction of apoptosis and cell cycle arrest in MDA-MB-231 cells, Medicinal Plants, 17(3): 510–517, DOI: https://doi.org/10.5958/0975-6892.2025.00052.5