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**Comparative study of gene expression analysis from the leaves of *Clerodendrum colebrookianum* and *Clerodendrum infortunatum*****D Gnanasekaran<sup>1</sup>, Hannah Elizabeth S<sup>2</sup> and D Vijai<sup>3</sup>**<sup>1</sup>Bharathi College of Pharmacy, India<sup>2</sup>Auxilium College, India<sup>3</sup>Arignar Anna Government Arts College, India

The aim of the present study was to carry out the identification and isolation of alkaloid secondary metabolite gene and their expression from the two different plants from the same family. The plants chosen for the study are *Clerodendrum colebrookianum* and *Clerodendrum infortunatum* due to their wide range of pharmacological activities. Extraction, qualitative identification and quantification of the alkaloid content from the leaves of both *Clerodendrum colebrookianum* and *Clerodendrum infortunatum* were carried out by using standard methods. The protein and nucleotide sequence were designed. Prime quest tool was used for designing the primer sequence from the nucleotide sequence. The designed primer was used for amplification of *Clerodendrum* plants collected from different areas. Total RNA was isolated and quantified. The cDNA was synthesized from the isolated RNA using reverse transcriptase PCR. The obtained cDNA was amplified with the designed primer using reverse transcriptase PCR. The MADS-box gene was expressed by gel documentation method. The relative expression of MADS-box gene *Clerodendrum colebrookianum* was found to be much higher than that of *Clerodendrum infortunatum*. Thus, it is evident that, MADS-box gene plays a significant role in the synthesis of alkaloids in *Clerodendrum colebrookianum* and *Clerodendrum infortunatum*. The further characterization of MADS-box gene will be helpful for further understanding of its role in the alkaloids biosynthetic pathway in those medicinal plants which will enhance the easy and cost-effective availability of these medicinally important alkaloids.

**Biography**

D Gnanasekaran is working as Professor and Department Head of Pharmacology at Bharathi College of Pharmacy, Bharathinagar, Karnataka, India. He is a Pharmacist, Researcher and Academician and has guided 15 Master's degree students and supervised 4 PhD scholars in the advanced research areas of Pharmacology. He has developed novel herbal formulations for the ailments of piles, fistula and fissures, obesity, high blood pressure, viral hepatitis, type I diabetes mellitus and psoriasis without any side effects and promising efficacy. His research interests include: herbal medicines, molecular pharmacology, sexually transmitted diseases, neurodegenerative diseases and liver diseases.

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