



**Title: Antimicrobial and Antioxidant Activities of *Premna obtusifolia* and *Oxalis corniculata* L.**

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**Abstract:**

*Premna obtusifolia* (Lamiaceae) and *Oxalis corniculata* L. (Oxalidaceae) are traditionally used medicinal plants with reported ethnopharmacological applications. This study aimed to evaluate the antioxidant and antimicrobial activities of their crude methanolic extracts and respective n-hexane and chloroform fractions, along with determining their total phenolic content. Leaves of both plants were powdered and extracted with methanol. The crude methanolic extracts were subsequently partitioned using n-hexane and chloroform. Antioxidant activity was assessed via the DPPH radical scavenging assay, and IC<sub>50</sub> values were calculated. Antimicrobial activity was evaluated using the disc diffusion method against selected microorganisms. Total phenolic content (TPC) was quantified using the Folin-Ciocalteu reagent and expressed as mg gallic acid equivalents (GAE) per gram of extract. The crude methanolic extract of *Premna obtusifolia* exhibited an IC<sub>50</sub> value of 31 µg/mL, while *Oxalis corniculata* L. showed stronger antioxidant activity with an IC<sub>50</sub> of 15.61 µg/mL. Both crude methanolic extracts demonstrated significant antimicrobial activity, whereas the n-hexane and chloroform fractions showed mild inhibition. TPC was found to be 185.82 mg GAE/g in *P. obtusifolia* and 154.90 mg GAE/g in *O. corniculata* L., suggesting a correlation with their antioxidant capacities. The observed antioxidant and antimicrobial activities, particularly in the crude methanolic extracts, support the traditional medicinal use of *Premna obtusifolia* and *Oxalis corniculata* L. These findings suggest their potential as sources of natural bioactive compounds for therapeutic applications.

**Biography:**

Dr. Sitesh Chandra Bachar is serving as a Professor in the Department of Pharmacy, University of Dhaka, Bangladesh. He also served as Pro-Vice Chancellor (Academic), Dean of the Faculty of Pharmacy, and HOD of the Department of Pharmacy, University of Dhaka. Professor Bachar was awarded his Ph.D. in Pharmacy from Jadavpur University, Kolkata 700 032, West Bengal, India in 1996. Experience more than 35 years in research and education, He has had the opportunity to publish several publications in high-impact journals in the area of clinical, medicinal, and natural products chemistry. His research works have been published in several national and international reputed peer reviewed journals.

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Session name/ number:

Category: (**Oral presentation**/ Poster presentation)