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Antioxidant and antimicrobial activities of Oxalis corniculata leaf extract

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Current statistics from WHO indicate that more than 80% of the world's population depends on traditional medicine which include plants and plant products for their health needs. *Oxalis corniculata*, a herbaceous plant is used for treatment of a variety of disorders specially diarrheal diseases, hemorrhage, antidotes of venomous snakes etc. by tribes of India. The objectives of the present study are to investigate the biochemical composition of *Oxalis corniculata* leaves and to investigate the antioxidant as well as antimicrobial properties of methanolic extract of *Oxalis corniculata* leaves. The rutin and ferulic acid are present in the extract and had been detected by HPLC analysis. Total polyphenol and flavonoid content were also measured. Reducing power, hydroxyl radical scavenging activity, FRAP assay, DPPH radical scavenging activity, fenton reaction, liposome oxidation, emulsion peroxidation were measured which showed that the extract have a high antioxidant activity. Methanolic extract of *Oxalis corniculata* also showed a protective effect on peroxide formation during heating and subsequent storage of heated oil. Antibacterial activity were evaluated by comparing minimum inhibitory concentrations (MICs) and minimum bactericidal concentrations (MBCs) against several pathogenic bacteria i.e. *Staphylococcus aureus* (ATCC 25922), *Escherichia coli* (ATCC 25923), *Shigella dysenteriae 1* (SB 1), *Shigella flexneri2a* (2457T), *Shigella boydii* (SB 5), *Shigella sonnie* (SB 6). Leaf extract showed significant reduction of colonizing activity against *Shigella flexneri 2a* (2457T) infection in suckling mice model. On the whole, it can be concluded that the nano-encapsulation of leaf extract of *Oxalis corniculata* could be used as a productive antioxidant and antimicrobial drug in future.

Biography

Sayani Mukherjee has completed her M.Sc in Physiology from Burdwan University, West Bengal, India and received gold medal. After completion of her master degree, she has joined as a Junior Research Fellow in the University of Calcutta and started work on development of drug from medicinal plants.