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IN VITRO SCREENING OF ANTIOXIDANT AND ANTIBACTERIAL ACTIVITIES OF DIFFERENT SOLVENT EXTRACTS OF LEAF OF *MIMOSA PUDICA* L AGAINST SELECTED BACTERIA

Sanraj¹, S.Sivasinthujah^{2*}, T.J. Gnanakarunyan³

^{1,2} Department of Pharmacy, ³ Department of Medical Laboratory Sciences,
Faculty of Allied Health Sciences, University of Jaffna.

[*ssinthuja@univ.jfn.ac.lk](mailto:ssinthuja@univ.jfn.ac.lk)

Mimosa pudica. L is one of the important herbal plants, used extensively in indigenous medicine with various therapeutics activities. Though antibacterial and antioxidant activity of *M. pudica* L in Sri Lanka has been evaluated, the level of antibacterial and antioxidant activity in acetone and methanolic leaf extracts of *M. pudica* has not been investigated so far. Therefore, this study intended to focus on the in vitro screening of the antioxidant and antibacterial activities of different solvent extracts of leaf of *M. pudica* present in the Batticaloa district, Sri Lanka. The fresh and healthy leaves of *M. pudica* were collected from Ampilanthurai, Batticaloa District, dried under shade, extracted by percolating separately with methanol, acetone and petroleum ether and filtered followed by removing the solvents with a rotary evaporator. The 2, 2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay and antibacterial assay were performed separately on the leaf extracts of *M.pudica* to determine their antioxidant and antibacterial activities by employing ascorbic acid and ciprofloxacin as the standard respectively. The half inhibition concentration (IC₅₀) values for the leaf extracts were calculated from the respective DPPH assays and the diameter of the complete zone of bacterial growth inhibition was measured. The results were analyzed with one-way ANOVAs. The leaves extracted in methanol, acetone and petroleum ether revealed the half inhibition concentration (IC₅₀) values 16.87, 161.0 and 219.87 µg/ml respectively. The antioxidant activity of extracts showed significant difference (P > 0.05) between them and methanolic extract was found to be similar to that of the standard (ascorbic acid). Further, the high mean value of inhibition zone was observed for the methanolic extract (13.67±3.78 and, 13.33±1.15 mm) compared to acetone (9.67±2.88 and 0 mm) and petroleum ether (0 and 0 mm) extracts at high concentration (100 µg/ml) against *Staphylococcus aureus* and *Pseudomonas aeruginosa* respectively. Methanolic extract showed a significant difference in the activity with the standard for both bacteria. Hence, the leaf methanolic extracts of leaf of *M. pudica* was found to possess good antioxidant activity and revealed antibacterial property against the tested bacterial strain.

Key words: - Antioxidant activity, Antibacterial activity, DPPH assay, *Mimosa pudica* L.