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BIOACTIVITY AND WOUND HEALING PROPERTIES OF SELECTED PLANTS

M.C.G. Silva[1], D.R. Uduwela[1*], J.M.S. Jayasinghe[1], W.S.S. Gunathilake[1], E.W.M.A. Ekanayake[2] and U.P.R.U. Dissanayake[2]

[1]Department of Chemistry, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka
[2]Department of Microbiology, Faculty of Medicine, University of Peradeniya, Peradeniya, Sri Lanka
[*]dimanthi.uduwela@sci.pdn.ac.lk

Herbs as traditional therapy for wound healing and skin regeneration is common in Asian countries such as China, India and Sri Lanka. The phytochemicals in these herbs may possess antioxidant, anti-inflammatory, antibacterial activities, and cell migration and proliferation properties to provide tissue remodelling, which helps heal wounds. The aim of this research was to investigate the wound healing properties of *Coffea arabica* (coffee), *Murraya koenigii* (curry leaves), and *Tabernaemontana dichotoma* (poison nut) leaves. The extracts were prepared using dried, powdered leaves where water and water-acetone (v/v 1:1) extracts were obtained using a bottle shaker and hot water extracts by Soxhlet extraction. Nine extracts were prepared and assessed for antioxidant activity by DPPH radical scavenging assay and FRAP assay. Their anti-inflammatory activity was determined by heat-induced hemolysis assay and antibacterial activity by broth microdilution assay against six bacterial strains representing gram-positive and gram-negative strains. Water-acetone extracts exhibited the highest activities, amongst which coffee leaves water-acetone extract showed the best activity. Coffee leaves water-acetone extract showed the lowest IC_{50} value of 27.44 ± 1.12 ppm in DPPH assay, the highest FRAP value of 24.25 ± 0.98 mmol dm^{-3} g^{-1} in FRAP assay, the lowest IC_{50} value of 280.00 ± 19.88 ppm in anti-inflammatory assay and the lowest MIC values ranging from 25.00 mg ml^{-1} to 6.25 mg ml^{-1} against the six bacterial strains tested. Coffee leaves water-acetone extract showed the highest activities in antioxidant, anti-inflammatory and antibacterial assays suggesting that it may possess the highest wound healing properties among the nine extracts investigated in this study.

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