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Identification of Active Anti-nociceptive and Anti-inflammatory Fraction from Crude Aqueous Extract of *Psychotria sarmentosa (Gonica)* Leaves

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Background: *Psychotria sarmentosa* ("Gonica" in Sinhala; family: Rubiaceae) has wide popularity in the Sri Lankan community as a leafy vegetable used in traditional porridge. In folk medicine an aqueous extract of leaves is prescribed for individuals who have been physically assaulted. Our previous studies have shown that aqueous extract of this plant leaves have significant anti-inflammatory and anti-nociceptive activities.

Objectives: To identify the active anti-inflammatory and anti-nociceptive fractions of the aqueous crude extract.

Methodology: The acute anti-inflammatory and anti-nociceptive effects were evaluated by the determination of inhibition of hind paw oedema induced by carrageenan (0.1%, subcutaneous) and inhibition of abdominal writhes induced by 0.6 % acetic acids (intraperitonial) in Wistar rats (n=6/ group) respectively. The negative and positive control groups were orally administered with 1.0 mL of distilled water and standard drugs respectively. The test groups received aqueous crude extarct (AEPL) or ethanol insoluble macromolecular fraction (EIPL).

Results: Acute anti-inflammatory activity of AEPL was dose-dependent and 100 mg/kg body weight (b.w.) dose of AEPL was found as the minimum effective dose with maximum inhibition (66%) of oedema at 3rd hour compared to the negative control ($p<0.05$). Among the tested fractions EIPL exhibited enhancement of activity over the crude extract. Hence, it was identified as an active fraction of *P. sarmentosa* leaves. The results showed that both AEPL (28% inhibition) and EIPL (48% inhibition) treated groups had significantly ($p<0.001$) reduced of writhes when compared to the negative control and this confirms the anti- nociceptive activity of both extracts. As EIPL showed enhancement of activity and it was also identified as an active fraction for analgesic activity.

Conclusions: The findings of the current study rationalize the usage of leaves of *P. sarmentosa* in Sri Lankan folk medicine as an nociceptive and anti-inflammatory agent. Further investigations are needed to isolate active compounds which contribute towards its ethnomedically reputed anti-inflammatory and analgesic effects.

Keywords: *Anti-inflammatory, Anti-nociceptive, P. sarmentosa*

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