

In-vitro and *in-vivo* antioxidant activity of aqueous extract of *Psychotria sarmentosa* leaves

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Psychotria sarmentosa Blume (named "Gonica" in Sinhala; Family: Rubiaceae) has a long history of use in the folk medicine in Sri Lanka and it has wide popularity in the community as a leafy vegetable. A traditional porridge made from the leaves is used in alleviating the discomfort and inflammation due to physical trauma. As a part of our ongoing study on the anti-inflammatory activity of *P. sarmentosa* we evaluated its antioxidant activity as this could be contributing to its anti-inflammatory activity. There are only a few reports available on the biological activities of this plant. The general objective of the present study was to determine the *in-vitro* and *in-vivo* antioxidant effect of aqueous extract of *P. sarmentosa* leaves (AEPL). The free-radical scavenging capacity of AEPL was evaluated with the DPPH stable radical with gallic acid as the positive control. Inhibition of *in-vivo* lipid peroxidation was investigated by measuring the level of thiobarbituric acid reactive substances (TBARS) in the serum of Wistar rats receiving an AEPL dose of 100 mg /kg of body weight. This dose was found to be the most effective dose in our studies on anti-inflammatory activity. The results were compared with the control group which received distilled water. The AEPL showed antioxidant activity with an EC₅₀ value of 28.7 µg/mL as compared to 2.4 µg/mL for gallic acid. The TBARS value of rats fed with AEPL was 0.96 ± 0.2 µmol/L malondialdehyde equivalents and it was significantly (P < 0.05) lower than that of the control group which was 1.62 ± 0.2 µmol/L. On the basis of the results obtained in the present study, we conclude that the aqueous extract of the leaves of *Psychotria sarmentosa* possesses significant *in vitro* and *in vivo* antioxidant activity which may contribute towards its ethno medically reputed anti-inflammatory effects.

Keywords: DPPH, *Psychotria sarmentosa*, TBARS