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*"Importance of endemic and lower plants for discovery of
natural medicines and bioactive agents in times of climate change"*

Anti-nociceptive activity of evolitrine isolated from *Acronychia pedunculata* leaves

W.M.K.M. Ratnayake¹, T.S. Suresh^{1*}, A.M. Abeysekera², N. Salim³ and U.G. Chandrika¹

¹Department of Biochemistry, Faculty of Medical Sciences, University of Sri Jayewardenepura, Gangodawila, Nugegoda, Sri Lanka.

²Department of Chemistry, Faculty of Applied Sciences, University of Sri Jayewardenepura, Gangodawila, Nugegoda, Sri Lanka.

³Department of Botany, Faculty of Applied Sciences, University of Sri Jayewardenepura, Gangodawila, Nugegoda, Sri Lanka.

*sugandhika@sjp.ac.lk

As a result of adverse effects caused by existing allopathic analgesic agents, investigations on the efficacy of plant based drugs has become a fruitful research strategy in the search of new alternatives. *Acronychia pedunculata* ("Ankenda" in Sinhala, Family: Rutaceae) is a medicinal plant used for centuries in the folk medicine in Sri Lanka. Our previous studies have shown that 70% ethanol extract of leaves of this plant has significant anti-nociceptive activity on acetic acid induced writhing test model. Hence, in the present study an attempt has been made to evaluate the anti-nociceptive activity of evolitrine which was isolated as a major alkaloid from *A. pedunculata* leaves, by using the same *in-vivo* model. Healthy adult male Wistar rats in negative and positive control groups were orally administered 1.0 mL of 0.5 % carboxymethyl cellulose (CMC) and 100 mg/kg b. w. of acetyl salicylic in 1 mL of 0.5% CMC respectively. The test groups received 50 mg/kg b. w of evolitrine in 1 mL of 0.5% CMC which was found as the effective dose in the anti-inflammatory activity assay. All rat groups received 0.6 % v/v acetic acid and the number of writhes over a period of 20 minutes was counted. Average number of writhes in the evolitrine treated group was 25 ± 2 . It was 67 ± 4 and 30 ± 2 in the negative and positive control groups respectively. The treated group showed a significantly lesser number of writhes reduction of 63 %: ($p < 0.001$) when compared with the negative control group. This anti-nociceptive activity was comparable to that of the reference drug, acetyl salicylic acid which caused an inhibition of 55 % ($P < 0.001$). Hence, evolitrine was identified as an analgesic compound with more activity than the acetyl salicylic acid in this assay. Further, evolitrine alone has shown an enhancement of anti-nociception when compared to the initial crude extract. The present study confirms that evolitrine from leave of *A. pedunculata* is a major analgesic compound.

Keywords: *Acronychia pedunculata*, *Ankenda*, anti-nociceptive