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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 volitricine isolated from Acronychia pedunculata leaves

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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 leaves of A. pedunculata is a major analgesic compound.

Keywords: Acronychia pedunculata, Ankenda, anti-nociceptive