SRI LANKA ASSOCIATION FOR LABORATORY ANIMAL SCIENCE

SIXTH ANNUAL SCIENTIFIC SESSIONS

2018/19

PROCEEDINGS

Future of Animal Based Research: Global Trends, Responsibilities and Challenges"

24th & 25th January 2019
Taj Samudra, Colombo, Sri Lanka
Acute anti-inflammatory activity of evolitrine isolated from Acronychia pedunculata leaves in Wistar rats

Ratnayake, W.M.K.M.¹, Suresh, T.S.¹, Abeysekera, A. M.², Salim, N.³ and Chandrika, U.G.¹

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.

*For correspondence: sugandhika@sjp.ac.lk

Introduction
As a result of the adverse effects caused by existing allopathic anti-inflammatory agents, investigations on the efficacy of plant based drugs have been seen as a fruitful research strategy in the search for new alternatives. Acronychia pedunculata (“Ankenda” in Sinhala, Family: Rutaceae) is a medicinal plant which has been used for centuries in traditional/folk medicine in Sri Lanka. Our previous studies have shown that 70% ethanol extract of leaves of this plant has significant anti-inflammatory activity on the carrageenan induced rat hind paw oedema test model.

Objective
In the present study, an attempt has been made to evaluate the anti-inflammatory activity of evolitine which was isolated as a major alkaloid from A. pedunculata leaves, by using the same in-vivo model.

Methodology
The protocol for animal experiments was approved by the Ethics Review Committee of the Faculty of Medical Sciences, University of Sri Jayewardenepura (No. 35/15). Healthy adult male Wistar rats in negative and positive control groups (n = 6/group) were orally administered 1.0 mL of 0.5% carboxymethyl cellulose (CMC) and 5 mg/kg b.w. of indomethacin in 1 mL of 0.5% CMC respectively, 1 hour prior to the induction of oedema. The test groups were administered with 25, 50, 75 and 100 mg/kg b.w. of evolitine in 1 mL of 0.5% CMC. Paw volumes were measured hourly for 5 consecutive hours and data analysis was carried out using one-way analysis of variance (ANOVA). Results with p < 0.05 were considered as statistically significant.

Results and Discussion
The results revealed that all the test doses of evolitine significantly (p < 0.05) reduced paw oedema as compared to the negative control. However, the differences between the doses of 50 mg/kg b.w. and 100 mg/kg b.w. were not significant (p > 0.05). Hence,
Dose of 50 mg/kg b.w. of evolitrine was found as the minimum effective dose with maximum inhibition of paw oedema. The maximum inhibition was observed at the 5th hour (89%) and it was comparable to that of the reference drug, indomethacin which caused an inhibition of 86%.

**Conclusion**

As evolitrine alone has shown an enhancement of anti-inflammatory activity when compared to the initial crude extract, it was identified as a major anti-inflammatory compound present in *A. pedunculata* leaves.

**Keywords:** Anti-inflammatory, *Acronychia pedunculata*, Rutaceae, Evolitrine