

ANALGESIC ACTIVITY OF METHANOLIC EXTRACT OF LEAVES OF *CROTON SPARSIFLORUS*

M. PALANIVELU* and S. MURUGESAN

Department of Pharmaceutical Chemistry, Arulmigu Kalasalingam College of Pharmacy,
KRISHNANKOIL-626190. (TN) INDIA

ABSTRACT

Methanolic extract of leaves of *Croton sparsiflorus* was tested for analgesic activity in rat by tail flick method, in which, pain was induced by radiant heat. The result revealed a significant analgesic activity by increasing the time of withdrawal of tail from the heat source.

Key word : Analgesic, *Croton sparsiflorus*

INTRODUCTION

The plant *Croton sparsiflorus*¹ is a small herb known as Muthumanickka chedi. It is widely distributed as weed throughout the plains of India. It belongs to the family Euphorbiaceae². The leaves are simple, alternate and oblique, containing stipules. The literature survey reveals that the plant contains alkaloid crotsparin³, N-methyl crotsparinin, and N, O-dimethyl crotsparinin. The plant also contains triterpenoids⁴ and β -sitosterol. The N,O-dimethyl crotsparinin methiodide exhibits hypotensive activity⁵. No other pharmacological activities have been reported in this plant. Hence, this study is aimed to find out the analgesic activity of the leaf extract of *Croton sparsiflorus*.

EXPERIMENTAL

Animals

Healthy albino rats of either sex (100-150 g) was selected and were kept under controlled conditions for one week prior to the experiment.

Extract preparation

The plant *Croton sparsiflorus* were collected in Tamil Nadu, Virudhunagar district, Chatrapatti village. The leaves were removed carefully and dried in shade for 10 days. Then the leaves were made into coarse powder and extracted with methanol by maceration for three days. The methanolic extract was concentrated under reduced pressure and finally dried till free from the solvent. The extract was light brown color in day light and brown on exposure to UV light.

The preliminary phytochemical investigation⁶ on the methanolic extract shows the presence of flavones, glycoside, alkaloid and protein.

The lethal dose LD50 of the methanolic extract of *croton sparsiflorus* was studied by karben⁷ method and was determined as 1.287 g/kg body weight.

20% aqueous solution of methanolic extract of *croton sparsiflorus* was prepared by dissolving the extract in distilled water.

Analgesic activity⁸ :

The analgesic activity on rat was studied in INCO analgesiometer by tail flick method. Eighteen healthy albino rats of either sex were selected and divided into three groups of six animals in each group. The animal were fasted for 24 hours with water and libitum. Preliminary screening was done to select the rats. (which showed a response within 3–5 seconds). Animals failed to withdraw its tail from the heat source after 10 seconds were not taken for the experiment.

Group I served as control, Group II received paracetamol (500 mg/kg/ip) served as standard, Group III received the test drug (500 mg/kg/ip). The observations were made at 30 mts, 60 mts, 90 mts, 120 mts, 150 mts and 180 mts. When the reaction time reaches 10 seconds, it was considered as maximum analgesia and the tail was removed from the heat source to avoid tissue damage. The observations are tabulated in Table 1.

Table 1 : Analgesic activity of methanolic extract of *Croton sparsiflorus*

Drug	30 mts	60 mts	90 mts	120 mts	150 mts	180 mts
Control	6.53 ± 0.27	6.5 ± 0.41	6.36 ± 0.32	6.24 ± 0.44	6.18 ± 0.37	6.10 ± 0.32
Std 500 mg/kg	7.79*** ± 0.13	8.08** ± 0.436	9.25*** ± 0.19	7.73* ± 0.67	7.42* ± 0.47	7.83* ± 0.55
Test 500 mg/kg	7.95** ± 0.41	9.0** ± 0.34	9.05*** ± 0.22	6.67** ± 0.33	5.62*** ± 0.12	6.02* ± 0.15

*p = < 0.01; **p = < 0.1; ***p = < 0.001

RESULTS AND DISCUSSION

The methanolic extract of leaves of *Croton sparsiflorus* exhibit analgesic activity in rats tested by tail flick method. The methanolic extract of *Croton sparsiflorus* shows significant analgesic activity at the dose of 500 mg/kg body weight. The test drug shows maximum activity at 90 mts after its administration.

Further study on the mechanism of the analgesic activity of *Croton Sparsiflorus* is in progress.

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