

Anti-Inflammatory Activity of Latex of *Calotropis Gigantea*

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ABSTRACT: The aim of this present research work is to determine the anti-inflammatory activity of the latex of *Calotropis gigantea* on male Wistar rats. The medication property of the latex of *Calotropis gigantea* is study on formalin induced rat paw edema model. 24 Wistar rats is used for the study. The Wistar rats are divided into four groups and each group contained six Wistar rats, which weight is about 180-200gm. Group 1 is normal control received no treatment, Group 2 is formalin control received no treatment, Group 3 is received formalin and standard control, and Group 4 is received formalin and test control. The latex of *Calotropis gigantea* (300mg/kg/day) is evaluated for anti-inflammatory in Wistar rats. The Diclofenac Sodium gel (3% w/w) is used as standard.

Keywords: *Calotropis gigantea*, Anti-inflammatory, Diclofenac sodium gel

I. INTRODUCTION:

Anti-inflammatory drugs are the agent or a chemical substance used to treat or reduce inflammation and the pain arising from it. In 1875, German chemist Felix Hoffmann discovered Acetyl salicylic acid, by converting salicylic acid. Latter in 1899 Bayer named the Acetyl salicylic acid as Aspirin. Anti-inflammatory drugs also known as Anti-inflammatories¹. Anti-inflammatories block certain substances that cause inflammation in the body in different conditions, they are used to treat. Some agents are being studied in the prevention and treatment of cancer also². The latex is collected from the *Calotropis gigantea* plant. The latex containing alkaloids, cardiac glycosides, calotropin, uscharidin, calotoxin, calactin, calotropin DI & DII and calotropin FI & FII and its defence organism fungi, bacteria, insect etc. The latex is employed depilatory, anthelmintic, asthma, abortifacient, analgesic, leprosy, liver injuries similarly as on aerobic stress⁴. The latex is also used Antifungal property, Wound healing activity and Anti-inflammatory activity. The study of Anti-inflammatory property of the latex of *Calotropis gigantea* on male Wistar rats with a view to relating the result of activity⁵.

II. MATERIALS AND METHODS:

❖ Collection of plant Materials;

The latex of *Calotropis gigantea* is collected from the *Calotropis gigantea* plant from the rural belt of Panskura, Purba Medinipur, West Bengal, India.

❖ Chemicals;

Formalin and Diclofenac sodium is collected from the Dey Medical Store, Panskura, Purba Medinipur, West Bengal, India.

❖ Animals;

Healthy male Wistar albino rats of approximately the same age, weighing about 180-200gm were used for the study. They were fed with common place diet and water and libitum. They were house in polypropylene cages maintained under common place conditions (12/12 hr unit light/dark cycle; 25°C ± 30°C, 35- 60% RH). All works were approved by the Institutional Animal Ethical Committee, Bharat Technology, Uluberia, Howrah.

❖ Selection of dose;

For Anti-inflammatory activity the dose is chosen during acute toxicity studies (300mg/kg/day)⁶.

❖ Grouping of animals;

Animal are divided into 4 groups each group contained 6 rats.

Group 1; Normal controlled received no treatment.

Group 2; Formalin controlled received no treatment (0.1ml of 1% solution in NS).

Group 3; Formalin controlled and received standard drug (Diclofenac sodium 3% w/w).

Group 4; Formalin controlled and received test drug (*Calotropis gigantea*).

❖ Paw edema model;

Paw edema model is used for the study of Anti-inflammatory activity Group 1 is normal controlled, group 2 Formalin controlled received no treatment. Group 3 is injected formalin injection and received standard drug (Diclofenac sodium). Group 4 is injected formalin injection and received test drug (*Calotropis gigantea*). The inflammation is measured on the hours 0, 3, 6, 12, 36, 72 for all groups by lateral malleolus by the mercury displacement method^{7,8}.

III. RESULT AND DISCUSSION:

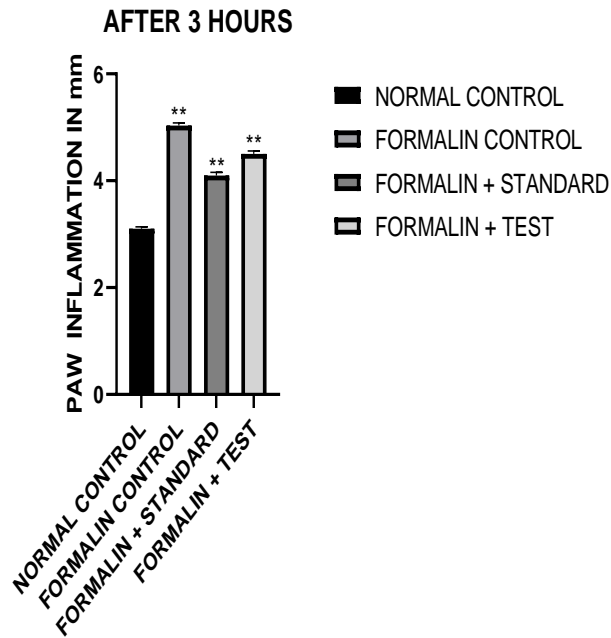
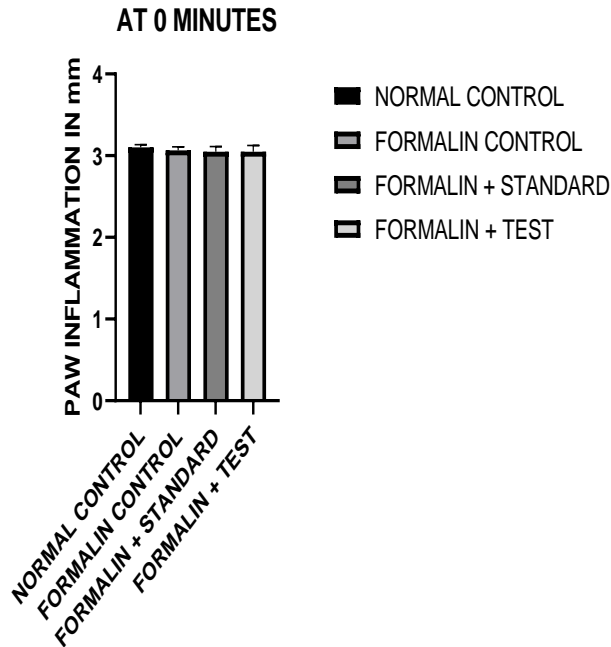
In the study of Anti-inflammatory activity of the Wister rats following result is obtained.

Acute toxicity studies showed the drug was found to be safe up to maximum dosage of 2000mg/kg/Day body weight of the animal⁹.

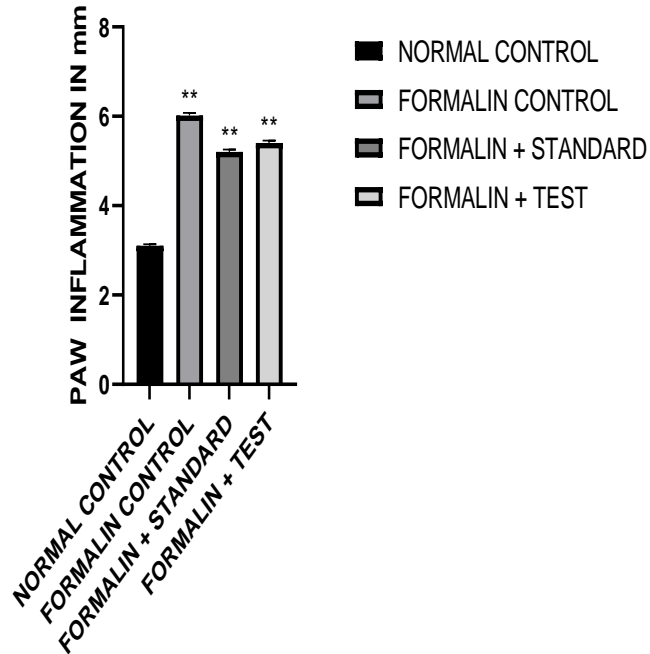
Table:1 Anti-inflammatory activity of rats using different drug.

Sl.no	0hour	3hour	6hour	12hour	36hour	72hour
Normal controlled	3.1	3.1	3.1	3.1	3.1	3.1
	3.2	3.2	3.2	3.2	3.2	3.2
	3.1	3.1	3.1	3.1	3.1	3.1
	3.0	3.0	3.0	3.0	3.0	3.0
	3.2	3.2	3.2	3.2	3.2	3.2
	3.0	3.0	3.0	3.0	3.0	3.0
Formalin controlled	3.1	5.0	6.1	6.1	5.9	4.2
	3.2	5.1	5.8	6.2	5.7	4.0
	3.1	4.9	5.9	6.3	5.8	4.1
	3.0	5.2	6	6.4	5.9	4.2
	3.1	4.9	6.1	6.5	5.0	4.3
	2.9	5.1	6.2	6.6	6.1	4.4
Formalin and standard controlled	3.0	4.1	5.2	5.4	5.1	3.2
	3.1	3.9	5.0	5.2	5.0	3.3
	3.2	4.0	5.1	5.3	4.9	3.4
	3.0	4.1	5.2	5.4	4.8	3.5
	3.1	4.2	5.3	5.5	4.7	3.4
	2.8	4.3	5.4	5.6	4.9	3.4
Formalin and test controlled	3.0	4.7	5.5	5.9	5.1	3.6
	3.1	4.6	5.2	5.6	4.9	3.4
	3.3	4.5	5.3	5.7	5.0	3.6
	2.8	4.4	5.4	5.8	5.1	3.7
	3.2	4.3	5.5	5.9	5.2	3.8
	2.9	4.5	5.6	6.0	5.3	3.5

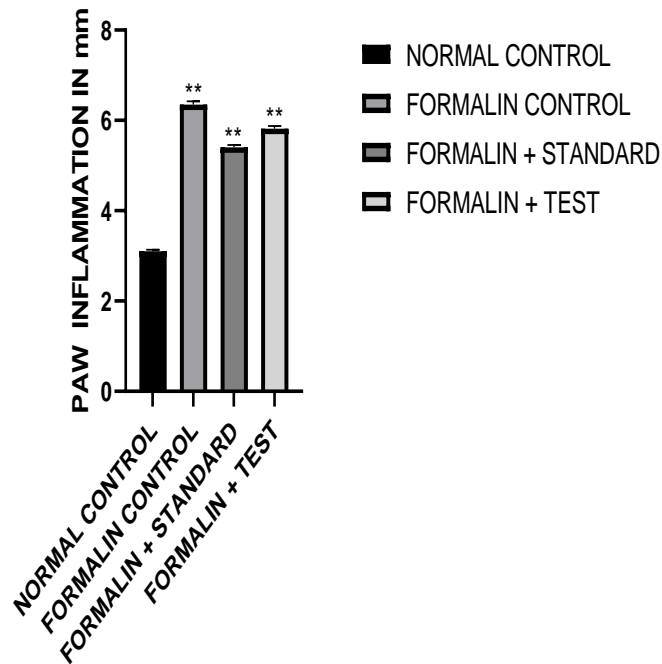
Values are mean± SEM (n=6), considered statistically significant as compare to normal control group; **p

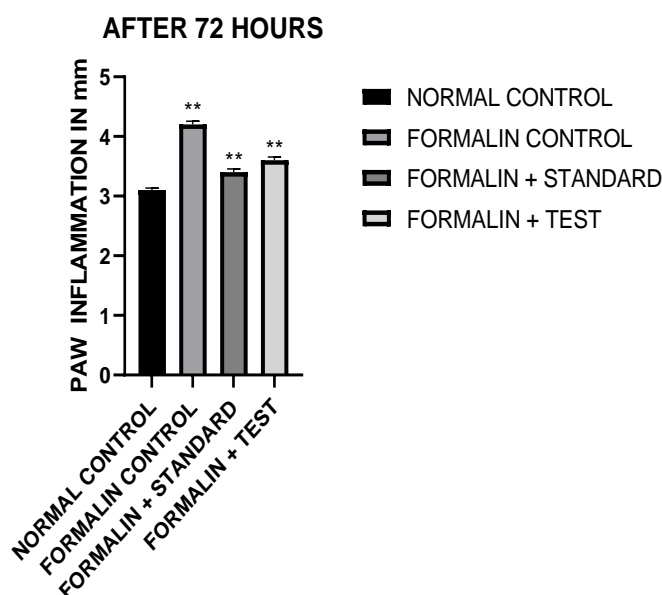
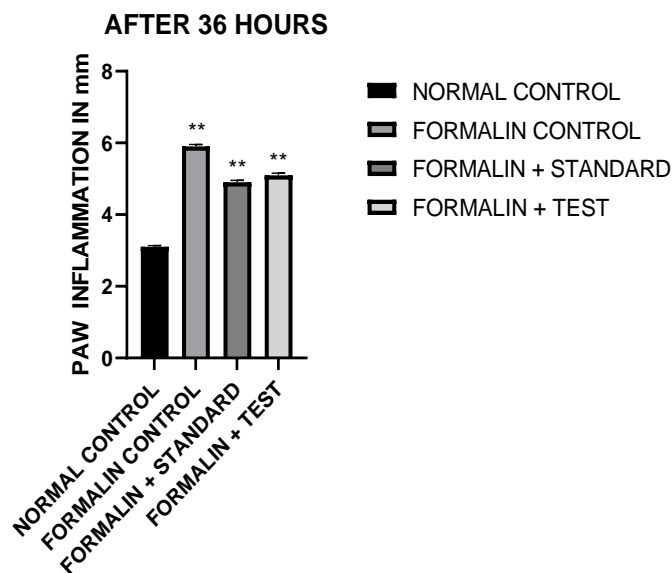


AFTER 6 HOURS



AFTER 12 HOURS





IV. CONCLUSION:

The Anti-inflammatory activity of the latex of *Calotropis gigantea* is studied by using the paw edema model and the latex is shown the significant Anti-inflammatory activity as like as the standard drug Diclofenac sodium gel.

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