

# Anti-inflammatory activity of aqueous extract of flowers of *Bauhinia purpurea*

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## Abstract

An intricate web of processes, including enzyme activation, mediator release, fluid extravasations, cell migration, tissue breakdown, and repair, results in inflammation, a natural defensive reaction to tissue injury. It's a complicated process that often causes discomfort and includes things like increased vascular permeability, increased denaturation of proteins, and changes to membranes. Inflammation is the result of harmful stimuli such as infections, irritants, or damaged cells that cause vascular tissue to react. An aqueous extract will be produced by dissolving 15g of *Bauhinia purpurea* flower powder in 200 mL of distilled water. The mixture will undergo heating on a hot plate with continuous stirring at 30-40°C for 20 minutes. Subsequently, the water extract will be filtered through filter paper to remove any solid particles. The resulting filtrate will be collected in a beaker and subjected to drying by heating in a boiling water bath. The gummy residue will be obtained after drying will utilized for the analysis of percentage yield. The rats was randomly assigned to five groups, each containing six animals. The first group was serve as the normal control, receiving a normal saline solution at a dose of 10 mL/kg.

**Key words.** Anti-inflammatory, *Bauhinia purpurea*, Inflammation

## INTRODUCTION

The WHO analgesic ladder was developed in 1986 by the World Health Organization (WHO) to help cancer patients receive sufficient pain treatment. (1) The WHO Cancer Pain and Palliative Care Programmed, a comprehensive health initiative, included the analgesic ladder as one of its components. The program's goals were to improve cancer pain management techniques through shared tactics, educational campaigns, and the creation of an international support network. This analgesic pathway was created in response to the advice of a global panel of experts. It has undergone multiple changes over time and is currently used to treat both acute and chronic pain associated with conditions other than cancer, including musculoskeletal disorders, degenerative diseases, neuropathic pain disorders, and other chronic pain conditions. The strategy's effectiveness is up for debate and has not yet been demonstrated by extensive research.

## Inflammation

An intricate web of processes, including enzyme activation, mediator release, fluid extravasations, cell migration, tissue breakdown, and repair, results in inflammation, a natural defensive reaction to tissue injury. (3) It's a complicated process that often causes discomfort

and includes things like increased vascular permeability, increased denaturation of proteins, and changes to membranes. **(4)** Inflammation is the result of harmful stimuli such as infections, irritants, or damaged cells that cause vascular tissue to react. The body uses inflammation as a defense mechanism to chase away harmful stimuli and start the tissue's healing process. On the other hand, untreated inflammation can result in the development of conditions like atherosclerosis, rheumatoid arthritis, and vasomotor rhinorrhea. **(5)** Also one of the body's defense mechanisms to eliminate the substance causing cell damage and subsequent necrosis is inflammation, or the host body's defensive reaction to an inflammatory stimulus. **(6)** There are four important cardinal signs of inflammation

### **Martial and method**

An aqueous extract will be produced by dissolving 15g of Bauhinia purpurea flower powder in 200 mL of distilled water. The mixture will undergo heating on a hot plate with continuous stirring at 30-40°C for 20 minutes. Subsequently, the water extract will be filtered through filter paper to remove any solid particles. The resulting filtrate will be collected in a beaker and subjected to drying by heating in a boiling water bath. The gummy residue will be obtained after drying will utilized for the analysis of percentage yield.

### **Carrageenan-induced Paw edema model**

**Animals:** Albino Wistar rats of either sex, weighing between 120 and 200 grams, was utilized for the experiment. They were housed under standard laboratory conditions at room temperature, with a relative humidity of 70–80%. The rats was fed a standard commercial diet and provided with water ad libitum.

**Study Design.** The rats was randomly assigned to five groups, each containing six animals. The first group was serve as the normal control, receiving a normal saline solution at a dose of 10 mL/kg. The second group, acting as a negative control, was receive receive 1% DMSO at the dose of 10ml/kg body weight. Thirty minutes after administration of the respective drugs, all the animals were challenged with 0.1 ml of 1% carrageenan in the sub planter region of left hind paw. Paw volume was measured by using digital plethysmometer before administration of carrageenan and after 30, 60, 120 & 180 min intervals. Animals in the standard group will receive Indomethacin at the dose of 10 mg/kg, by oral route. The efficacy of different dose (50mL/kg and 100mL/kg, oral) of flower extract of Bauhinia purpurea will be tested on its ability to inhibit paw edema as compared to control group

The percentage of inhibition of paw-edema will be calculated by

$$\% \text{ inhibition of paw edema} = \frac{C - T}{2C} \times 100$$

**Where,**

C = increase in paw volume of control group

T = increase in paw volume after administration of extracts

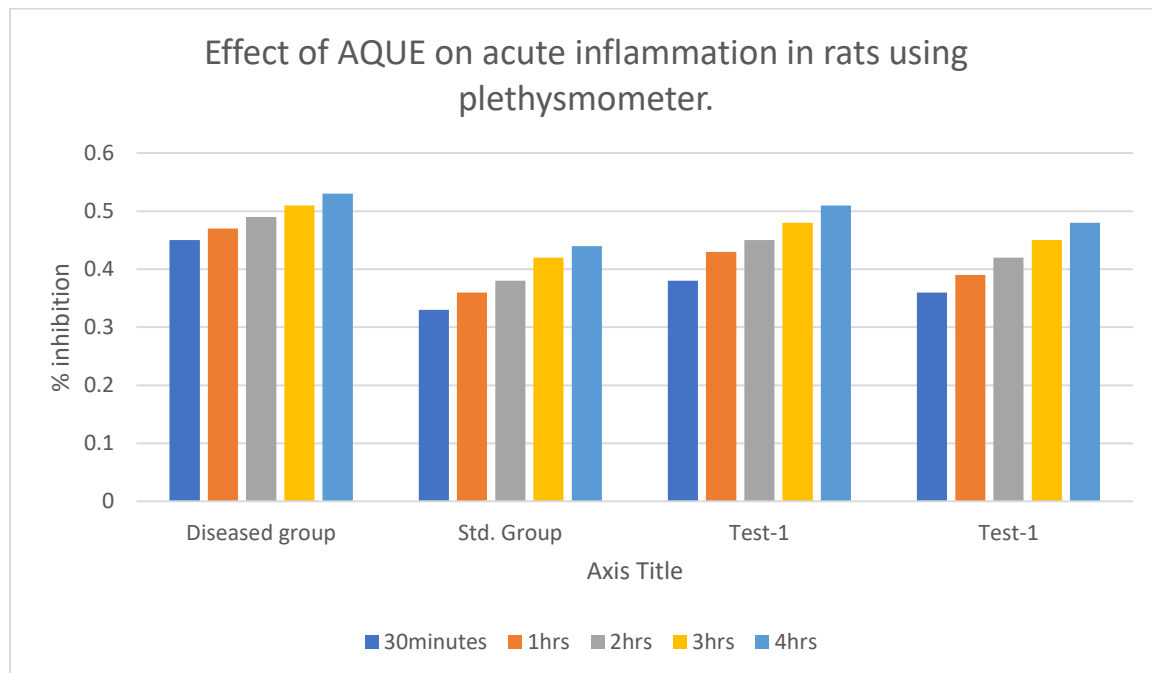
### 6.1.1 Anti-inflammatory activity of carrageenan root

**Table 6.5 Effect of AQUE on acute inflammation in rats using plethysmometer.**

Group	Dose (mg/kg)	Inflammation paw volume (ml)				
		30 minutes	1 hour	2 hours	3 hours	4 hours
eased gp	-	0.25±0.035	0.45±0.084	0.45±0.078	0.25±0.021	0.52±0.09
Std. gp	10	0.35±0.044	0.25±0.04	0.41±0.03	0.85±0.014	0.41±0.07
Test 1 gp	200	0.58±0.057	0.65±0.0301	0.52±0.04	0.45±0.027	0.51±0.05
Test 2 gp	400	0.65±0.041	0.325±0.0325	0.45±0.01	0.47±0.034	0.47±0.07

Notes: Values shown as mean ± SD, no.= 6 in every group P< 0.050 indicates significant.

### 6.7.3. Effect of carrageenan on acute inflammation in rats.



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