

# EVALUATION OF *invitro* ANTI- INFLAMMATORY ACTIVITY OF THE ETHANOLIC EXTRACT OF *Cardiosperumum* *halicacabum* LEAVES

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## ABSTRACT

Plant derived natural products such as alkaloids, terpenoids and other secondary metabolites received considerable attention in recent years due to their diverse pharmacological properties. Inflammation is the major and complex reaction of the body against infection upon tissue injury. This study is based on the anti-inflammatory effect of *Cardiosperumum halicacabum* leaves using ethanol extract.

Key Words: Anti-inflammatory, Phytochemical studies, *Cardiosperumum halicacabum*.

## INTRODUCTION

Inflammation is a host defence mechanism of the body and it's an essential immune response that enables the body to survival during infection or injury and maintains tissue homeostasis in noxious conditions. Inflammation is the major and complex reaction of the body against infection upon tissue injury (**Vashishtha Vishal, et al., 2014**). *Cardiosperumum halicacabum*, known as the balloon plant or love in a puff, is a climbing plant widely distributed in tropical and subtropical Africa and Asia (**M. M. Shabi, et al., 2009**). The leaves of the plant were used to treat diseases like nervous disease, chronic diseases, fever and possess anti-inflammatory activity (**P.Padmanabhan, et al., 2012**). It's called as "a king of human mysteries". The effect of *Cardiosperumum halicacabum* leaf extracts on different phases of acute inflammation was examined. (**Stalin C, et al., 2014**).

Botanical Name : *Cardiosperumum halicacabum*

English Name : Balloon vine

Tamil Name : Mudakathan keerai

Family Name : Sapindaceae

Fig: 1 *Cardiospermum halicababum*

## OBJECTIVES

Evaluation of anti-inflammatory activity of the ethanolic extract of *Cardiospermum halicababum* leaves

- To determine the presence of secondary metabolites
- To evaluate the anti-inflammatory activity

## MATERIALS AND METHODS

### Solvent extraction:

The leaf were dried under shade and powdered to coarse particles. The powdered material was extracted with ethanol in a soxhlet extraction apparatus (*Eswar Kumar, et al., 2008*).

### Collection of plant:

*Cardiospermum halicababum* is popularly known as mudakathan in South India because of its anti-inflammatory property. Leaves of the plant *C.halicababum* were collected from Salem district, Tamil Nadu, India. The plant was picked and washed with water to remove all unwanted debris (*R.Jeya Devi, et al., 2012*).

### Phytochemical Studies:

#### Qualitative analysis:

##### Test for Alkaloids:

To a few ml of plant extract, 2ml of Verners reagent was added. A reddish brown precipitate was present which indicates the presence of alkaloids.

##### Test for Flavonoids:

To 1ml of extract, added few fragments of magnesium ribbon and added few drops of concentration HCl drop wise. A pale yellow colour was absent which indicates the absence of flavonoids.

**Test for Protein:**

To a few ml of plant extract, 5% of ninhydrin solution was added and then heated for 10 minutes. A pink or purple colour was absent which indicates the absence of proteins.

**Test for Saponins:**

To a small quantity of extract, 2ml of water was added and shaken vigorously. The absence of foam indicates the absence of saponins.

**Test for Tannins:**

To 1ml of crude extract, added 1ml of ferric chloride. A blue green or black color was present which indicates the presence of tannins.

**DETERMINATION OF ANTI-INFLAMMATORY ACTIVITY****ALPHA AMYLASE ACTIVITY**

Different concentrations of plant extract (50, 100, 150, 200, 250 µl) was taken in test tube (S. Kumar, *etal.*, 2010). pH was adjusted to 6.3 by using 1N HCl, sample was incubated at 37°C for 20 minutes and then heated at 57°C for 3 minutes. After cooling, 2.5ml of phosphate buffer solution was added and then turbidity was measured at 600nm. 0.05ml of distilled water was used as a control.

**Calculation:** % of inhibition =  $\frac{\text{sample} - \text{control}}{\text{sample}} \times 100$

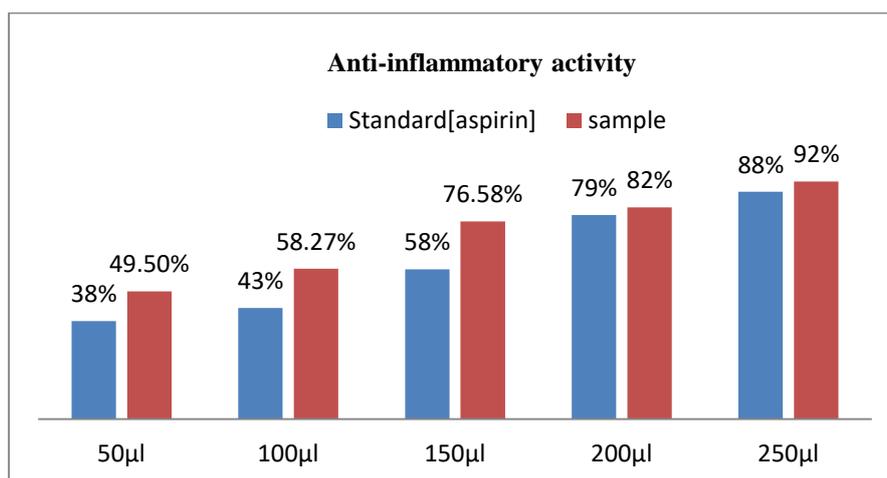
**RESULTS****QUALITATIVE ANALYSIS**

Phytochemical	Present or Absent
Alkaloids	+
Flavonoids	-
Saponins	-
Proteins	-
Amino acid	-
Tannins	+

Present (+); Absent (-)

In qualitative analysis, the ethanolic extract of *Cardiospermum halicacabum* showed the presence of secondary metabolites such as alkaloids and tannins.

## ANTI-INFLAMMATORY ACTIVITY



Percentage of inhibition was high in 250µl of concentration of the sample when compared with the standard and other lower concentrations.

## CONCLUSION

Thus the study has established the anti-inflammatory effect on *Cardiosperumum halicacabum* (Tamil *Shunmugaperumal*, *etal.*, 2015) and the phytochemical screening reveals the presence of secondary metabolites in the leaf extract.

## REFERENCE

- Vashishtha Vishal , Sharma Ganesh .N, Gaur Mukesh and Bairwa Ranjan,2014.A review On some plants having anti-inflammatory activity. The journal of phytopharmacology Vol-3 pp 214-221
- P.Padmanabhan and S.N.Jangle, 2012. Evaluation of in-vitro anti-inflammatory activity of herbal preparation .International Journal of Basic and applied medical sciences vol-2 pp 109-106.
- R.Jeya Devi, T.Sivasudha, A.Ilavarasi and N.Thajuddin, 2012. Chemicl Constituents and Antimicrobial Activity of Indian Green Leafy Vegetable cardiosperumum halicacabum. International Journal of Microbiology 53(2): 208-213.
- Stalin C, Gunasekaran V, Vivekanadhan K, Bhavya E, Lakshmi prassanna T, 2014. Anti – inflammatory activity of c.halicacabum Invent: pep 1013-14.

- Eswar Kumar, S.K.Mastan, N.Sreekanth, G. Chaitanya, G.Amenthara Reedy and Raghu nanthan, 2008. Anti- arthritic properties of the ethanoic leaf extract c.halicacabum Linn. Biomedical and pharmacology journal.
- Tamilvanan shunmugaperumal and varinder Kaur, 2015. In vitro anti-inflammatory and anti-microbial activities of azithromycin after loaded in chitosan-and tween 20-based oil-in-water macro emulsion for acne management.aaps pharm sci tech, vol 17, no.3.
- S. Kumar, V. Kumar and Om Prakash, 2010. Anti-diabetic and hypolipidemic activities of Hibiscus Tiliaceus (L) flowers extract in streptozotocin induced diabetic rats. Pharmacology online 2: 1037-1044.
- M.M.Shabi, R.Dhevi, Gayathri, U.Subashini, G.V.Rajamanickam and G.P.Dubey, 2009.c.Halicacabum (LINN): Investigations on Anti-Inflammatory and Analgesic Effect, Bulgarian journal of veterinary medicine, 12, no: 3,171-177.

