

**INTERNATIONAL JOURNAL OF CURRENT RESEARCH IN
CHEMISTRY AND PHARMACEUTICAL SCIENCES**

(p-ISSN: 2348-5213; e-ISSN: 2348-5221)

www.ijcrpcs.com

DOI: 10.22192/ijcrpcs

Coden: IJCROO(USA)

Volume 5, Issue 7 - 2018

Research Article



DOI: <http://dx.doi.org/10.22192/ijcrpcs.2018.05.07.001>

**Anti-inflammatory activity of *Akkini Chooranam* –
A Siddha preparation**

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Abstract

Objectives: To evaluate the anti inflammatory activity of the Siddha preparation '*Akkini Chooranam*' through rat paw odema method.

Method: The paw odema volumes of the test compounds, standard and control groups were measured at 60, 240, 360 minutes after Carrageenan treatment with the help of plethysmometer. Mean increase in paw odema volume was measured and the percentage of inhibition was calculated.

Results: The results showed significant ($p < 0.01$) anti inflammatory activity when compared to control group.

Conclusion: The test drug shows potent activity at the concentration of 200mg/kg compared to standard drug, Diclofenac Sodium.

Keywords: *Akkini Chooranam*, Siddha, Carrageenan, Hind paw odema, Anti Inflammatory Activity

Introduction

In Siddha system, herbal products (*thavaram*) used as medicine, have studied from various Siddha literatures. The herbal plants constitute a source of raw materials ^[1]. The raw drugs are easily available much effective and safety at low cost and they can be used as home remedies too. The Siddha preparation of *Akkini Chooranam* is one among them which is effective in treating Vatha disease, Peptic ulcer, and abdominal pain ^[2]. In order to evaluate the test drug for anti inflammatory activity, experimental models using Carrageenan induced rat paw odema method was carried out.

Materials and Methods

From the Siddha text book of *Koshsayi Anubaga Vaithiya Bramma Ragasiyam*, the preparation of *Akkini Chooranam*^[3] was taken,

A) Ingredients of *Akkini Chooranam*^[1]:

- *Chirakam* (*Cuminum cyminum*. Linn)
- *Thippili* (*Piper longum*)
- *Chukku* (*Zingiberofficinale*)
- *Lavangam* (*Syzygiumaromaticum*.Linn)

B) Collection and purification of raw drugs:

The raw drugs were collected at Tirunelveli, Tamilnadu. It was then purified by to remove dust and impurities and made into fine powder.

C) Requirements

Animal : Albino rat (180-200 g)
 Drugs and chemicals: Carrageenan (1%w/v),
 Diclofenac sodium (standard),
 Carboxy methyl cellulose (1%w/v),
 Apparatus: Digital plethysmometer. U G O Basile (Italy)
 Test compound: Siddha preparation in Akkini Chooranam.

D) Preparation of test compound:

The test drug dissolved with 2ml sterile water given through orally before starting the experiment of carrageenan method to evaluate the anti inflammatory activity.

The method was carried out as per the guidelines Organization of Economic Co-operation and development (OECD) - 423 guidelines after the animal ethical clearance from IAEC approval No.KMCP/313/CPCSEA(2016 – 2017).

Carrageenan induced rat paw Odema method: (Bhandri et al)^[4]

The animals were divided into 4 groups, each group having six animals. A freshly prepared suspension of Carrageenan (1% w/v, 0.1 ml) was injected to the planter region of left hind paw of each rat; it causes the release of prostaglandins leads to inflammation and odema. One group was kept as control (Group I), Group II as standard and the animals of the other groups III, IV were pre treated with test Compounds of 100, 200 mg/kg respectively as oral, 30 min before the Carrageenan treatment. The paw volumes of the test compounds, standard and control groups were measured at 60,240,360 minutes after Carrageenan treatment with the help of Digital plethysmometer (Ugobasile, Italy). Mean increase in paw volume was measured and the percentage of inhibition was calculated.

$$\% \text{ Anti-inflammatory activity} = (Vc - Vt / Vc) \times 100$$

Where, **Vt**-mean increase in paw volume in rats treated with test compounds,

Vc- mean increase in paw volume in control group of rats.

Table no.1 Anti-inflammatory activity of Akkini Chooranam

Treatment	Dose (mg/kg)	Paw volume(ml) as measured by mercury displacement at 6 hour	Percentage inhibition of paw edema
Group I Normal saline	10ml/kg orally	5.63±0.98	-
Group II Std	10mg/kg I.P.Diclofenac sodium	1.71±0.48	69.62%*a
Group III AkkiniChooranam	100mg/kg.Orally.	2.10±0.48	62.69%*a
Group IV AkkiniChooranam	200mg/kg.Orally.	1.95±0.51	65.36%*a

* Data are expressed as Mean ± S.E.M.

*Data were analyzed by one way ANOVA followed by Newman's keul's multiple range tests, to determine the significance of the difference between the control group and rats treated with the test compounds.

*a Values were significantly different from normal control at P< 0.01.

Results

Both doses of Siddha formulation *AkkiniChooranam* at 100mg/kg and 200mg/kg were tested for their anti-inflammatory activity by using Carrageenan induced

rat paw edema method. The results reveals that Siddha formulation of *AkkiniChooranam* at 100mg/kg was observed as 62.69% and that of 200mg/kg was observed as 65.36% at the maximum inhibition. Both

doses possesses significant anti-inflammatory activity

when compared to control group at $p < 0.01$.

Conclusion

In conclusion, the *akkini chooranam* has potent activity at the concentration of 200mg/kg compared with the standard drug Diclofenac sodium.

Acknowledgments

We thank to Dr.N. Chidambaranathan K.M College of Pharmacy, Uttankudi for his help in performing pharmacological procedures

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	Website: www.ijrcrps.com
	Subject: Siddha Medicne
Quick Response Code	
DOI: 10.22192/ijrcrps.2018.05.07.001	

How to cite this article:

Priyanga P, Seetha Lakshmi T, Manoharan A. (2018). Anti-inflammatory activity of *Akkini Chooranam* – A Siddha preparation. Int. J. Curr. Res. Chem. Pharm. Sci. 5(7): 1-3.
DOI: <http://dx.doi.org/10.22192/ijrcrps.2018.05.07.001>