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Short communication

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Anti-inflammatory activity of aqueous extract of *Bergenia ciliata* rhizomes

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Abstract

Objective: To evaluate the anti-inflammatory activity of *Bergenia ciliata* rhizomes. Materials and method: Aqueous extract was prepared and anti-inflammatory activity was studied on carrageenin- induced paw oedema in rats. Results: Aqueous extract of *Bergenia ciliata* (50 and 100 mg/kg i. p.) showed a potent and dose dependent anti-inflammatory effect, comparable to diclofenac sodium (10 mg/kg i.p.). Conclusion: The present results indicate the potential of aqueous extract of *Bergenia ciliata* in the treatment of pain and inflammation.

Key Words: *Bergenia ciliata*, anti-inflammatory activity, carrageenin

1. Introduction

Bergenia ciliata possesses a variety of uses in the traditional system of medicine. In Indian ethno medicine, locally known as pashan bheda, it is reported to have anti-urolithiatic [1], astringent and diuretic properties [2]. Ethanolic extracts of certain Bergenia species were reported to possess anti-inflammatory effect [3]. We studied anti-inflammatory potential of aqueous extract of *B. ciliata* rhizomes in comparison with diclofenac sodium on carrageenin-induced paw oedema in rats.

2. Materials and method

2.1 Plant material

Bergenia ciliata Blatter (Saxifragaceae) rhizomes were collected from Jammu and Kashmir in March 1999 and authenticated by our Pharmacognosy department where the voucher specimen (hb/99/04) is deposited.

2.2 Preparation of extract

Moderately coarse powder of air-dried rhizomes was extracted by maceration process using distilled water (yield: 21.45 %). Phyto-chemical screening [4,5] gave positive tests

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Table 1
Anti-inflammatory effect of aqueous extract *of Bergenia ciliata* on carrageenin–induced paw oedema in rats

Treatment	Dose (mg / kg. i.p.)	Oedema volume (ml)	Inhibition (%)
Control (saline)	2.0 ml	0.60 ±0.03	_
Diclofenac sodium	10	0.18 ±0.03*	70.00
Aqueous extract	50	0.19 ±0.02*	68.33
	100	0.13 ±0.01*	78.33

Values are mean ± S.E.M; n=6 ; *P<0.001 *vs.* control; Student's *t* -test .

for tannins, catechins, saponins and flavonoids.

2.3 Anti-inflammatory activity

Albino rats (130 - 160 g) of either sex were used. They were kept in standardized environmental conditions and maintained on a standard rodent diet and water *ad libitum.* Acute inflammation was induced by 0.1 ml of 1 %(w/v) carrageenin into the plantar aponeurosis of the right hind paw of rats [6, 7].

Aqueous extract (50 and 100 mg/kg) or diclofenac sodium (10 mg/kg) was administrated intraperitoneally 45 min before carrageenin injection. Paw volume was measured with a plethysmometer before and 3h after the carrageenin injection. The percent inhibition of paw oedema was calculated.

2.4 Statistical analysis

Results were expressed as mean ± SEM. Difference between the means were analysed by student's *t* - test and the level of significance was set at P<0.05.

3. Results and discussion

A dose dependent reduction of carrageenin-induced oedema volume in rats was observed following intraperitoneal administration of the aqueous extract of *B. ciliata* (50 and 100 mg/ kg), the effect being comparable to that of diclofenac sodium (10 mg/kg). Our results reported in table 1, suggest that the aqueous extract of *Bergenia ciliata* rhizomes possesses a potent anti-inflammatory activity. Further studies are needed to better characterize the important active constituents responsible for the anti-inflammatory activity.

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