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Short Communication

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Anti-inflammatory activity of aqueous extract of *Rhus succedanea* galls

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Abstract

Objective: To evaluate the anti-inflammatory activity of *Rhus succedanea* galls. Materials and methods: Aqueous extract was prepared and anti–inflammatory activity was studied on carrageenin induced paw oedema in rats. Results: Aqueous extract of *Rhus succedanea* galls (50 and 100 mg/kg i.p.) showed a highly potent and dose–dependent anti–inflammatory activity comparable to diclofenac sodium (10mg/kg i.p.) on carrageenin induced paw oedema in rats. Conclusion: The present results indicate the potential usefulness of aqueous extract of *Rhus succedanea* galls in the treatment of inflammatory diseases.

Key Words: *Rhus succedanea*, anti–inflammatory activity, carrageenin.

1. Introduction

Rhus succedaneum Linn. (Anacardiaceae) has been reported to possess astringent [1], antiviral [2], tonic, expectorant, and stimulant properties [3]. In Indian ethno medicine, this plant is locally known as Kakrasingi and its galls have been used as Ayurvedic remedy for diarrhea and dysentery [4]. In recent years, there is an increasing interest in the research of natural anti-inflammatory agents, because of the necessity to find safer treatment against inflammatory diseases. Hence we have studied anti-inflammatory potential of aqueous extract of *Rhus succedanea* galls, in comparison with diclofenac sodium a well-known synthetic anti-inflammatory agent.

2. Materials and methods

2.1 Plant material

Rhus succedanea Linn. (Anacardiaceae) galls were collected from Jammu and Kashmir in March 1999 and authenticated at

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Table 1
Anti-inflammatory activity of aqueous extract of *Rhus succedanea* galls 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	0.26 ±0.04*	56.66
	100	0.12 ±0.03*	80.00

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

our Pharmacognosy department where the voucher specimen (hb/99/06) has been deposited.

2.2 Preparation of extract

Air-dried, powdered galls of *Rhus succedanea* were extracted by maceration process using distilled water (yield: 40.32%). Phytochemical screening [5-7] of aqueous extract gave positive tests for flavonoids, catechins, saponins and tannins.

2.3 Anti-inflammtory activity

Albino rats (130-160g) 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 0.1ml of 1%(w/v) carrageenin into the plantar aponeurosis of the right hind paw of rats [8,9].

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

2.4 Statistical analysis

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

3. Results and discussion

A potent and dose–dependent reduction of carrageenin induced paw volume in rats was observed following intraperitoneal administration of the aqueous extract of *Rhus succedanea* (50 and 100mg/kg), the effect being comparable to the diclofenac sodium (10mg/kg). Our results reported in table 1, suggests that the aqueous extract of *Rhus succedanea* galls possesses a highly potent anti-inflammatory activity.

Further studies are needed to better characterize the important active constituents and mechanism/s of action responsible for the anti-inflammatory activity.

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