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# Anti-inflammatory and analgesic activities of leaf extracts of *Bryonopsis laciniosa* Linn.

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## SUMMARY

The aqueous, methanol and chloroform extracts of *Bryonopsis laciniosa* Linn. leaves (AEBL, MEBL and CEBL, respectively) was investigated for anti-inflammatory and analgesic activities. All the extracts (100 mg/kg each) were found to significantly ($P<0.05$) inhibit paw edema induced by carrageenan in rats and the nociception induced by Tail immersion in hot water (50.0 ±1.0°C) and acetic acid. The methanol extract produced the highest paw edema inhibition while in thermally induced nociception both the MEBL and CEBL show high and comparable analgesic activity with acetylsalicylic acid (150 mg/kg). However, in chemically induced pain (acetic acid) MEBL produced the highest and comparable analgesic activity to acetylsalicylic acid (150 mg/kg). It is therefore, concluded, that apart from the folklore uses of *Bryonopsis laciniosa* leaves used in bilious attack, in fevers with flatulence, the various extracts of the plant also posses anti-inflammatory and analgesic activities. Phytochemical analysis showed that the methanollic extract of *Bryonopsis laciniosa* contain some secondary metabolites namely steroids and some polyphenolic compounds.


**Key words :** *Bryonopsis laciniosa* Linn., Analgesic, Anti-inflammatory.

*Bryonopsis laciniosa* Linn. (Cucurbitaceae) commonly called Bahupatra and locally by various names (Shivlingi, Ishwaralingi) is widely used for the treatment of many aliments. As per Ayurveda the leaves are applied topically to inflammations and used in bilious attack, in fevers with flatulence. *Bryonopsis laciniosa* Linn. leaves are membranous, 10-15 cm. long and about as broad, green and scabrid above, paler and smooth or nearly so beneath, deeply cordate at the base, 5-lobed, the lobes oblong-lanceolate, the margins sinuate, distantly denticulate, sometimes subserrate, petioles 2.5-7.5 cm. long, striate, slender. The plant has a bad smell and pungent (Chopra *et al.*, 1956).

Very few reports are available in literature to establish the anecdotal uses of this plant. Gupta *et al.* (2003) have validated the folkloric use of *Bryonopsis laciniosa* as an anti-inflammatory agent. This study was aimed at investigating the effects of various extract (aqueous, methanol and chloroform extracts) of *Bryonopsis laciniosa* Linn. on pain (thermally and chemically induced) and inflammation in mice and rats, respectively.

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## MATERIALS AND METHODS

### *Plant material:*

*Bryonopsis laciniosa* leaves were collected from their natural habitat at Nagpur Forest Reserve, and authenticated by Mr. S.K. Chitale, a Herbarium Incharge, Department of Botany, Rashtrasant Tukdoji Maharaj, Nagpur university, Nagpur. Identification of the plant took place at Department of Botany by the same herbarium incharge. A voucher specimen (6511/A) has been deposited in the Herbarium of the same department.

### *Extract preparation:*

Air-dried and powdered leaves of *Bryonopsis laciniosa* Linn. were extracted succesively with $H_2O$, Me-OH and $CHCl_3$ at $80^0$C and $40^0$C and room temprature, respectively. The dried extract was stored at $4^0$C until use. The extract yields of the plant were 1.1g, 3.1g and 1.9g from 20.0g, 30.0g and 20.0g of powdered leaves in 150ml water, 300ml methanol and 250ml of chloroform, respectively. The aqueous extract (AEBL) was dissolved in 0.9% saline while the methanol extracts (MEBL) and chloroform (CEBL) were each dissolved in 2.5% Tween-80 and subsequently in normal saline.

### *Animals:*

Adult male and female swiss mice (20-30g) and albino rats (120-150g) obtained from the animal house, Sharad Pawar College of Pharmacy, R.T.M. Nagpur University, Nagpur were used. They were housed in cages