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Antiinflammatory Activity of the Leaves of *Nothapodytes foetida*, Miers

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To study the antiinflammatory activity of *Nothapodytes foetida*, Miers using Wistar rats of either sex, the leaves of *Nothapodytes foetida* were extracted using petroleum ether and then with ethanol for 72 h each. Both the extracts were in 3 dose levels of 50 mg/kg, 100 mg/kg and 200 mg/kg. Antiinflammatory activity of the extracts was studied by carrageenan-induced hind paw edema in rats and the paw measured plethysmometrically at 0, 2 and 4 h after injection. The activities of the extracts were compared with control and standard, ibuprofen. All the drugs were administered orally. When compared to the petroleum ether extract the antiinflammatory activity of ethanolic extract was found to be effective and 200 mg/kg dose of ethanolic extract significantly ($P<0.01$) reduced the inflammation, which was comparable with that of the standard, ibuprofen.

The aerial parts of the plant *Nothapodytes foetida*, Miers, family (Icacinaceae) were used as anti fungal, antibacterial[1] and anti cancer[2]. The main constituent of plant was found to be alkaloids[3]. According to the local healers, the leaves of the plants have antiinflammatory activity. Since there is less information regarding this plant, qualitatative chemical tests were performed and to confirm the tribal claim, antiinflammatory study was carried out using petroleum ether (60-80°) and ethanolic extracts of leaves.

The aerial parts of fresh *Nothapodytes foetida* were collected, identified and authenticated by taxonomist in the survey of medicinal plants and collection unit, Udagamandalam. The air dried and powdered leaves of *Nothapodytes foetida* were extracted with petroleum ether (60-80°) and then with ethanol in soxhlet apparatus for 72 h each. The extracts obtained were made solvent free by distillation.

The phytoconstituents in the extracts were identified by treating the extracts with various chemical reagents[4]. The antiinflammatory activity of petroleum ether and ethanol extracts of *Nothapodytes foetida*, Miers was evaluated in Wistar rats of either sex weighing between 180-220 g using carrageenan-induced rat paw oedema method[5]. The study design was approved by Institutional Animal Ethics Committee (IAEC). The animals were fed with standard labora-

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TABLE 1: QUALITATIVE CHEMICAL ANALYSIS

Plant Constituents	*Nothapodytes foetida*
Alkaloids	+
Glycosides	—
Carbohydrates	+
Proteins	+
Saponins	+
Flavonoids	—
Triterpenoids	—
Tannins	+

(+) Presencs of the phytoconstituents, (—) Absence of the phytoconstituents.

tory feed and provided water *ad libitum*. Rats were divided in to 6 groups of 6 animals each. The ethanolic and petroleum ether extracts at dose levels of 50 mg/kg, 100 mg/kg and 200 mg/kg were prepared by suspending the extract in 5% of gum acacia and the reference control ibuprofen (100 mg/kg) was also suspended in the same vehicle. The doses were selected according to the toxicity assessment of EtOH-H_2O (1:1) extract in mice[2], LD_{50} was found to be 750 mg/kg.

In all groups, acute inflammation was produced by sub plantar injection of 0.1 ml of 1% suspension of carrageenan in normal saline in the right hind paw of the rats and paw volume was measured plethysmometrically at 0, 2 and 4 h after carrageenan injection[6]. Animals were pretreated either with vehicle (5% gum acacia) or extracts or ibuprofen orally

TABLE 3: PERCENTAGE PROTECTION OF BOTH THE EXTRACTS OF *NOTHAPODYTES FOETIDA*

Treatment	2 h	4 h
Control -	-	
Petroleum ether (50 mg/kg)	18.0	16.4
Petroleum ether (100 mg/kg)	26.3	26.3
Petroleum ether (200 mg/kg)	29.5	34.4
Ethanol (50 mg/kg)	26.3	26.3
Ethanol (100 mg/kg)	49.9	54.1
Ethanol (200 mg/kg)	57.3	59.0
Ibuprofen (100 mg/kg)	60.0	60.0

Comparative percentage protection at 2 and 4 h for petroleum ether extract, ethanol extract and ibuprofen

TABLE 2: ANTIINFLAMMATORY ACTIVITY OF ETHANOL AND PETROLEUM ETHER EXTRACTS OF *NOTHAPODYTES FOETIDA*

Treatment	Average Volume of mercury displaced (ml)		
	0 h	2 h	4 h
Control	0.25±0.02	0.62±0.03	0.61±0.03
Petroleum ether (50 mg/kg)	0.25±0.02	0.50±0.03*	0.51±0.03*
Petroleum ether (100 mg/kg)	0.25±0.02	0.45±0.03*	0.45±0.03*
Petroleum ether (200 mg/kg)	0.24±0.02	0.43±0.02*	0.40±0.02*
Ethanol (50 mg/kg)	0.24±0.03	0.45±0.02*	0.45±0.02*
Ethanol (100 mg/kg)	0.26±0.02	0.31±0.04*	0.28±0.04*
Ethanol (200 mg/kg)	0.25±0.02	0.26±0.03*	0.26±0.02*
Ibuprofen (100 mg/kg)	0.25±0.02	0.25±0.02*	0.25±0.03*

Values are expressed as mean±SEM. Number of animals used were 6 in each groups; *P<0.01.

2 h before injection[7]. Mean increase in paw volume was measured and percentage inhibition was calculated.

Qualitative chemical analysis revealed the presence of alkaloids, carbohydrates, proteins, saponins and tannins (Table 1). Antiinflammatory effect of extracts against carrageenan- induced inflammation is shown in Table 2. Comparatively the ethanolic extract showed significant antiinflammatory activity at 200 mg/kg dose ($P<0.01$) level, which was comparable with that of ibuprofen 100 mg/kg standard drug ($P<0.01$), where as the petroleum ether extract didn't show much significant activity when compared to standard. The percentage protection of the extracts is shown in the Table 3.

Inflammation is a response of the tissue to an infection, irritation or foreign substances. A variety of chemical agents like histamine (1 mg/ml), carrageenan (1% w/v), dextran (60 mg/ml), have been used to induce edema in the feet of rodents. Antiinflammatory activity of an extract can be determined by their ability to reduce or prevent oedema[8]. The development of carrageenan-induced edema is biphasic, the first phase is attributed to the release of histamine, 5-hydroxytryptamine and kinins, while the second phase is related to the release of prostaglandins[9-11]. The plant has direct or indirect action over this and that was the result of its antiinflammatory action.

The present study concludes that the plant *Nothapodytes foetida*, selected for antiinflammatory activity has shown appreciable results which supports the claim of local people and much work in this direction has to be done to confirm its utility in higher models.

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Reversed Phase HPLC Method for Determination of Glimepiride in Tablet Dosage Form

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Simple, rapid and precise reversed-phase HPLC method has been developed for the quantitation of glimepiride in tablet on a Hypersil C-18 (15 cmx3.9 mm) column using a mobile phase consisting acetonitrile:0.05 M monobasic potassium phosphate (pH 6.0) (40:60 v/v) at a flow rate of 1.5 ml/min and detection at 210 nm. The retention time of glimepiride have been found to be 7.8 min and recoveries were between 99-101%. Validation of the proposed method also been done.

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