

A Review of Elephantopus scaber Anti-inflammatory activity

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Submitted: 15-05-2022

Revised: 20-05-2022

Accepted: 25-05-2022

ABSTRACT: Elephantopus scaber roots are widely used in treatment of anti-inflammatory, antipyretic, cardiotoxic and diuretic. The Elephantopus scaber leaves are many uses for the treatment in the antidote for snakebite and antidiarrheal activity. It is mostly available in India species, including these indigenous to Indian are used in medicinal plant across the world for treating such as anti-inflammatory. Elephantopus scaber was used as traditionally medicine to treat a wide range of disease. It is containing several secondary metabolites which are used as several types of disease. The phytochemical screening manifests that

Elephantopus scaber contained Senquiterpenoids, Phenol (1,2), triterpenoids(9,10,11), Scabertopin, Isoscarbortopin, Deoxyelephantopin, 17,19-dihydrodeoxyelephantopin, Molephantinin, Scabertopinol, 11,13-dihydrodeoxyelephantopin, Isooxyelephantopin.

Keywords: Anti-inflammatory, antipyretic, Cardiotoxic, Antidote, Cardiotoxic, Secondary metabolites.

I. INTRODUCTION OF PLANT:

Elephantopus Scaber L. belonging to the family of Asteraceae is a small deciduous tree used in the indigenous system of medicine. It is commonly named as Samdudri, Bantambakhu(Hindi), Elephant foot (English), Hastipata (Marathi), Enugabira (Telegu), Gojivha (Sanskrit). The all parts of plants are practiced in various indigenous system of medicine and popular among the various ethnic groups in India for the cure of variety of ailment. The plants of Elephantopus scaber was studied and reported to have anti-inflammatory, antipyretic, diuretic, antidote, antidiarrheal activity and various other pharmacological activities.

Plant Profile:



Figure:1

ELEPHANTOPUS SCABER

Elephantopus Scaber:

Synonyms: Elephantopus scaber, Scabiosa cochinchinensis Lour,

Asterocephalus cochinchinensis Sprengel,

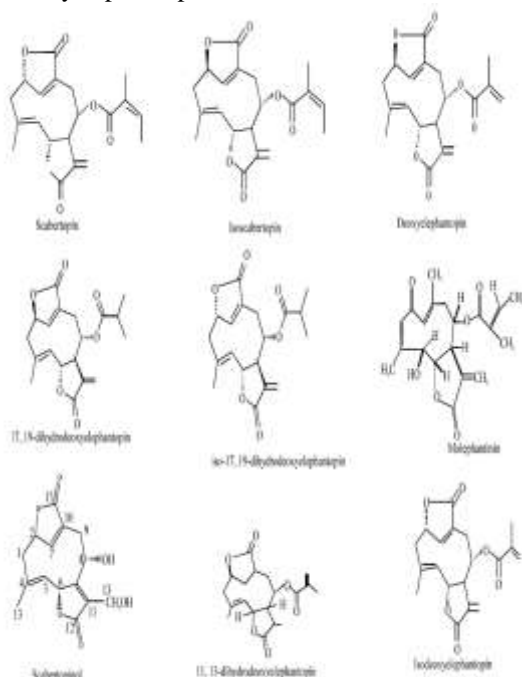
Elephantopus carolinensis G.Mey.

Family: Asteraceae.

Kingdom	Plantae
Clade	Tracheophytes
Order	Asterales
Family	Asteraceae
Genus	Elephantopus

Species	E. Scaber
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Chemical Constituent: Senquiterpenoids, Phenol(1,2), triterpenoids(9,10,11), Scabertopin, Isoscabertopin, Deoxyelephantopin, 17,19-dihydrodeoxyelephantopin, Molephantinin, Scabertopinol, 11,13-dihydrodeoxyelephantopin, Isodeoxyelephantopin.



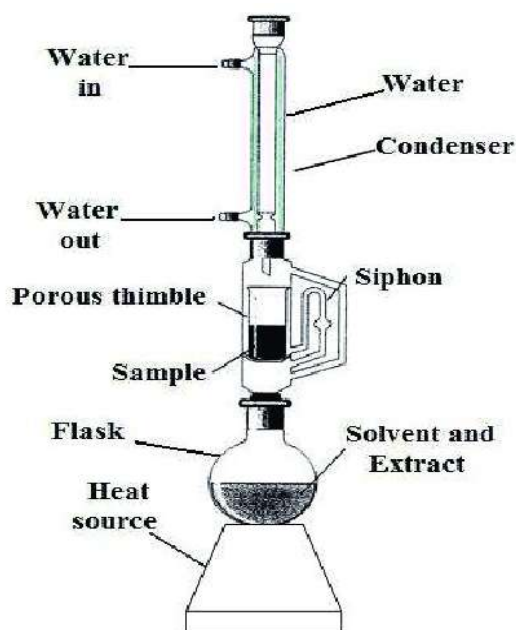
II. MATERIAL AND METHOD

Material:

Collection and authentication of plant materials: The whole plants were collected from wild sources surrounding Lucknow, U.P. The root and flowers of ethnobotanically important plant Elephantopus scaber were undertaken for the present study.

Extraction of phytochemical from Elephantopus scaber: The fresh Elephantopus scaber was collected from sources of Lucknow and deposited in the pharmacognosy lab. The unadulterated of plants were cleaned and dried under three days. The dried plant of Elephantopus scaber was converted to a powder form to the help of size reduction and plants were completely converted to a powder form. 400g of the powder plant material was extracted with hexane (bp. 59°C) by the help of Soxhlet extractor

Apparatus for 10 h. The dried powdered materials were again extracted with chloroform for 10h. The extracts were concentrated under reduced pressure using rotary evaporator and given 9.1g of hexane extract and 5.7g of chloroform extract, respectively.



Soxhlet apparatus for extraction of plants

Methods:

Physical Characteristic:

Colour: Green

Odour: Characteristic

Taste: Characteristic

Size: Up to 0.6 m tall (leaves 5-18cm long, 2-4cm wide)

Pharmacological activities:

Anti-inflammatory activity: Elephantopus scaber extract was studied and these isolated compounds are shown to have anti-inflammatory activity. Isolated compounds are effective against several types of inflammation like, acute, subacute and chronic inflammation. Anti-inflammatory activity of isolated compound from the hydrophilic extract of Elephantopus scaber in experimental model in albino rats and shows that higher dose of compound is more effective and inhibiting carrageenan induced edema formation in rat. Indian traditional medicine containing Elephantopus scaber is used for the treatment of anti-inflammatory, cardiotoxic, diuretic, antipyretic, antidiarrheal and antidote. The evaluation of anti-inflammatory activities of this crude drug extract of

elephantopus scaber indicated the pretreatment and significantly inhibited the carrageenan-induced acute arthritis. Therefore developed the more suppressant activity in the chronic arthritis. To the investigation of elephantopus scaber and mechanism of action of E. scaber of using lipopolysaccharide (LPS) induced inflammation of BV-2 microglial cells and effective against acute liver injury in Sprague-dawley rats.

Elephantopus scaber is reduced LPS-induced nitric oxide, interleukin IL-1, IL-6, reactive oxygen species and prostaglandins (PEG) production in BV-2 cells. Its decreased the serum aspartate aminotransferase and alanine aminotransferase level in LPS-treated rats. E. scaber dose dependently inhibited LPS-induced p38 mitogen-activated protein kinases and these are inhibit the cyclooxygenase (COX-2) in BV cells but decrease p38 MAPK and cyclooxygenase in liver of lipopolysaccharide-treated rats. The study of Elephantopus scaber plants are useful for the treatment of inflammation.

Other Pharmacological Activity: Tetrahydronaphthalenol showed hypocholesterolemic effect and antioxidant activity. Extract of elephantopus scaber with methanols are formulated hair oil on topical application stimulate the hair growth initiation and completion time and direct impact on hair follicles. The dried aerial part of elephantopus scaber with petroleum ether extract showed significant cardiotoxic activity on the frog heart. The ethanolic extract of elephantopus scaber is given low dose showed oxytocin effect and enhanced spermatogenesis and increased sperm density.

Traditional Application of Elephantopus Scaber: Elephantopus scaber plants have anti-inflammatory, antidiarrheal, antidiuretic and skin diseases and wounds reduces. This plants are mostly used for the various diseases.

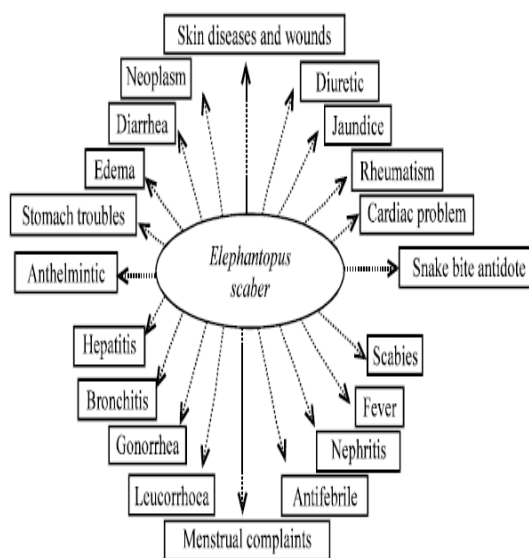


Figure-2 Uses of E. Scaber

III. CONCLUSION:

The plant extract of elephantopus scaber administration was action to produce anti-inflammatory and wonderful use full plants for antidiuretic and antidiarrheal activity. Therefore, it is clear by studying different biochemical parameter that extract affected but in manner. Thus, the study indicates Elephantopus scaber are potential plant for producing the anti-inflammatory and antidiuretic activity.

REFERENCE:

- [1]. P. Daisy, Nirmala A. Rayan and D. Rajathi. Hypoglycemic and other related effect of Elephantopus scaber extract on alloxan induced diabetic rats. Journal of Biological sciences 7 (2):433-437,2007.
- [2]. V.Sankar, R.Kalirajan, F.Sweetlin Vivian sales and S.Raghuraman. Anti-inflammatory activity of Elephantopus scaber in albino rats: Indian journal of pharmaceutical sciences november-december 2001.
- [3]. B.Raj Kapoor, B. Jayakar and R. Anandan. Antitumour activity of Elephantopus scaber Linn against dalton's ascitic lymphoma: Indian Journal of Pharmaceutical Sciences January-February 2002.
- [4]. P. Daisy, Cecilia Edel Priya. Hypolipidemic and renal functional potentials of the hexane extract fractions of elephantopus scaber linn: International journal of biomedical science Volume-6 No.3 September 2010.



- [5]. Awasthy V Nair, P Y Ansary, Sara Monsy Oommen, Shincy Mol V V. Elephantopus scaber linn-Phytochemical Evaluation :International Research Journal of Ayurveda & Yoga.
- [6]. Farha A.K and Remani Prathapan. Phytopharmacological Profile of Elephantopus scaber: Phamacologia.
- [7]. Abubakar Kabiru.Elephantopus Species-Tradional Uses, Pharmacological action and chemical composition: Advances in Life science and Technology Vol.15,2013.
- [8]. Ghulam Hussain, Azhar Rasul, Haseeb Anwar, Nirmra Aziz, Aroona Razzaq, Wei Wei, Muhammad Ali, Jiang Li, Xiaomeng Li. Role of plant derived alkaloids and their mechanism in neurodegenerative disorders.