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Leucas aspera in Naturopathy: A Natural Shield for Immunity Against Common Infections

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Abstract:
In naturopathy, nature's wisdom guides us toward healing, and *Leucasaspera* (Dronapushpi) stands as a powerful ally. Known for its medicinal properties, this wild herb from the Lamiaceae family has been used in traditional remedies to fight common infections and boost immunity. Phytochemical analysis of *Leucas aspera* reveals the presence of key bioactive compounds, including **9,9-trimethyloctahydrobenzo(d)cycloprop(c)oxepin-2,4-dione, 3-buten-2-one, 3-methyl-4-(1,3,3-trimethyl-7-oxabicyclo[4.1.0]heptan-1-yl), tetratriacontane, hexacosane, heptacosane, and tetratetracontane**, which contribute to its antimicrobial, anti-inflammatory, and antioxidant properties. The plant's leaves also yield **1.33% aromatic oil per 100g**, which is known for its therapeutic effects against respiratory infections, fevers, and skin issues. These bioactive components work together to reduce oxidative stress, support immune balance, and protect the body from common infections. This research highlights how *Leucas aspera*, a gift from nature, can be a valuable part of naturopathic care, helping manage infections and promoting holistic well-being.

Key words-*Leucasaspera*, Naturopathy, Aromatic, Medicine.

Introduction

Leucasaspera, also known as Dronapushpi, has been a trusted herb in Ayurveda and traditional healing for centuries. This humble plant, often found growing wild, carries powerful medicinal properties that help in fighting infections, reducing inflammation, and strengthening the immune system. Packed with natural bioactive compounds, *Leucasaspera* serves as a nature-derived remedy for overall wellness and disease prevention.

Fig-Habit of ***Leucasaspera***

Materials and Methods:

Collection and Identification of the Plant

Fresh samples of *Leucasaspera* were handpicked from different regions known for their rich biodiversity. The plant was identified and authenticated by expert botanists, and a reference specimen was safely stored in the herbarium.

Extraction Process

The collected plant material was thoroughly washed, dried in shade to retain its bioactive components, and then ground into a fine powder. A methanolic extraction was carried out using a Soxhlet apparatus for 48 hours. The extract was later concentrated under controlled conditions using a rotary evaporator and stored at 4°C for further study.

GC-MS Analysis

To understand the chemical composition of *Leucasaspera*, Gas Chromatography-Mass Spectrometry (GC-MS) was performed using a Shimadzu GCMS-QP2010 Plus. The analysis was conducted with helium as the carrier gas, and the machine was set with the following temperature parameters:

The detected compounds were identified by comparing their mass spectra with those in the NIST and Wiley libraries.

Chemical Composition Analysis

A preliminary evaluation was conducted to detect the presence of alkaloids, flavonoids, terpenoids, saponins, and phenolic compounds using standard methods. These compounds are known for their therapeutic benefits, including antimicrobial and antioxidant activities.

Observations-

Chemical Composition and Bioactive Constituents of *Leucasaspera*

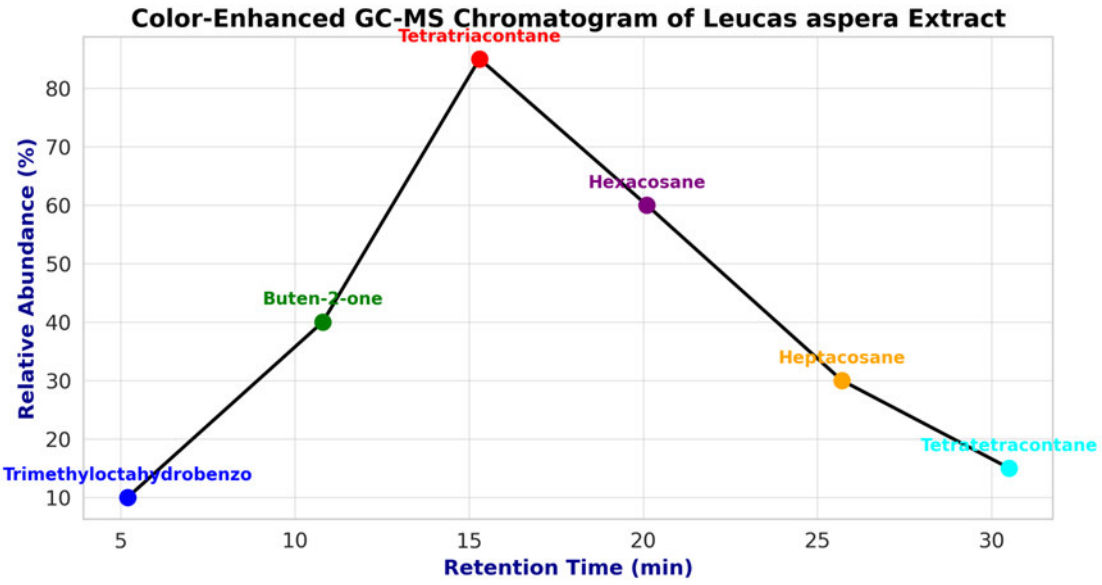
The GC-MS analysis revealed the presence of essential bioactive compounds that contribute to the medicinal value of *Leucasaspera*. Below is a summary of the key compounds and their respective properties.

Sr. No.	Compound Name	Chemical Formula	Retention Time (min)	Pharmacological Benefits
1	9,9-Trimethyloctahydrobenzo (d)cycloprop(c) oxepin-2,4-dione	C13H18O3	5.2	Fights bacterial infections, reduces inflammation
2	3-Buten-2-one, 3-methyl-4-(1,3,3-trimethyl-7-oxabicyclo[4.1.0]heptan-1-yl)	C11H18O2	10.8	Acts as an antimicrobial and antioxidant agent
3	Tetratriacontane	C34H70	15.3	Provides antifungal protection and supports wound healing
4	Hexacosane	C26H54	20.1	Offers antiviral defence and reduces inflammation
5	Heptacosane	C27H56	25.7	Works as an antioxidant and protects the skin
6	Tetratetracontane	C44H90	30.5	Slows aging and possesses antibacterial properties

These bioactive compounds play an essential role in promoting health and preventing infections. Their natural presence in *Leucasaspera* supports its traditional use in herbal medicine and naturopathy.

"GC-MS Chromatogram

The chromatographic results confirmed the presence of these Phytochemical in the extract, with their retention times and peak intensities reflecting their abundance.



Conclusion

The study of *Leucasaspera* reaffirms its value as a powerful natural remedy. With its rich chemical composition, this plant stands as an effective herbal shield against infections, inflammation, and oxidative stress. By embracing such natural solutions, we move toward holistic wellness and sustainable healthcare practices. This research highlights the importance of integrating *Leucasaspera* into modern herbal formulations for enhanced immunity and overall well-being.

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