

A Review on Herbal Patches

Mr. Madane Atharva Sunil and Prof. Surekha S. Thakur

Padmashree Dr. Vithalrao Vikhe Patil Foundation's, College of Pharmacy, Ahilyanagar, India
atharvamadane52@gmail.com

Abstract: More than 42,700 existing spider species have been documented, with many more yet to be identified. Spider venoms consist of intricate combinations of chemicals, but the primary components are small peptides rich in disulfide bonds. A single venom can contain up to a thousand peptides, suggesting that there may be over 10 million bioactive peptides in spider venoms. The main categories of venom components include small molecules, antimicrobial peptides, cysteine-rich (neurotoxic) peptides, and enzymes and proteins. Scorpion stings are a public health concern with limited symptomatic treatment options. Both traditional and modern medicine rely heavily on plants globally. This study explored indigenous medicinal plants and their use as a form of treatment for scorpion envenomation. Bee stings are among the most prevalent insect bites. In certain insects such as bees, the sting and venom gland detach from the bee's body after a sting and remain at the site. Bee stings can lead to symptoms such as skin redness, itching, allergic reactions causing inflammation, headache, dizziness, nausea, chest pain, breathing difficulties, and paralysis in the sting area. Ant venom is composed of a complex mixture of chemicals including proteins, enzymes, biogenic amines, peptides, hydrocarbons, formic acid, and alkaloids. These compounds are produced by the venom gland, which consists of two free cylindrical elongated and convoluted tubes connected to a venom reservoir. This review study aimed to identify natural medicinal plants for treating spider venom, scorpion stings, bee stings, and ant venom. Some natural antidote plants include *Trichodesma indicum*, *Leucas aspera*, *Citrus limon*, *Helianthus annuus*, *Cuminum cyminum* Linn, *Hybanthus enneaspermus*, *Curcuma longa*, *Aloe barbadensis miller*, and *Melaleuca alternifolia*.

Keywords: Spider venom; Ant venom; Scorpion sting; Bee sting; Herbal medicine; Herbal patches.

I. INTRODUCTION

An antipoinson is a substance that reduces the harmful effects of poison. The term "antipoinson" originates from the Greek word "ANTIDOTON," which means a remedy. Antipoinson is a reversal agent and is also known as an antidote. An antidote is a substance used to counteract the damaging effects of poison by neutralizing it and preventing its absorption. (1)

Natural antidote patches, also known as herbal plasters, are topical patches containing herbal extracts. These medicinal patches are adhesive and infused with natural ingredients to provide various health benefits, such as muscle relaxation, pain relief, and healing. They may contain natural extracts like menthol, turmeric, arnica, and ginger. When applied directly to the skin, these patches allow the natural ingredients to be absorbed, providing relief to the affected area. Anti-venom patches can be used to treat insect bites or stings. (2)

Using natural antidote patches has fewer side effects. Most insect stings and bites can be effectively treated with these patches. They can alleviate symptoms such as swelling, itching, redness, and stinging within 1 to 2 days. Insect bites and stings have the potential to transmit disease-causing viruses, bacteria, or parasites. Severe allergic reactions can be caused by stings from bees, spider venom, ant venom, or scorpion venom. (2)

How herbal patches are work-

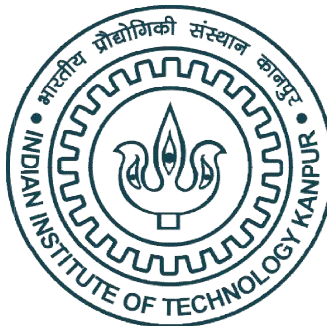
Patches are the filled with various active ingredient. When applied to the skin the patches are slowly releases into blood stream and give its action locally.

They are applying to affected area before applying the places of application should be meticulously cleaned, the excessive hair growth causes destruction of patches.

They help to reduce inflammation, relive pain. The patches can provide relive to the targeted area. Patches are the best alternative for traditional medicines. they have positive soothing effect on the affected area. Herbal patches have minimum side effects, as compared to other medicines. Herbal Patches are widely used in day to life. HERBAL PATCHES are the attractive alternative for convectional medicines. (2)

#. Notable Research and Institutions:

Indian Institute of Technology (IIT) - Working on nanofiber patches for scorpion sting treatment.



Source: <https://gyaanarth.com/college/indian-institute-of-technology-iit-kanpur/>

National Institutes of Health (NIH) - Funding research on transdermal patches for venomous bites.



Source: <https://www.medicaljane.com/directory/company/national-institutes-of-health-nih/>

University of California, Los Angeles (UCLA) - Developing hydrogel patches for snakebite treatment.



Source: <https://logolook.net/wp-content/uploads/2023/03/UCLA-Emblem.png>

#. These are some herbal medicinal plants that used in anti- poisonous patches:

Trichoderma indicum.

Leucas aspera.

Citrus limon.

Helianthus annuus.
Cuminum cyminum Linn.
Hybanthus enneaspermus.
Curcuma longa.
Aloe barbadensis miller.
Melaleuca alternifolia.

Trichodesma indicum. (छोटा कल्पा)

Scientific Classification-

Kingdom - Plantae

Phylum - Tracheophyta

Class - Magnoliopsida

Order - Boraginales

Family - Boraginaceae

Genus - Trichodesma

Species - Trichodesma indicum



source: <https://efloraofindia.com/2011/04/03/trichodesma-indicum/>

Trichodesma indicum was extensively discussed in the *Dravyaguna* book authored by Acharya Priyavrt Sharma, which covers the properties of the plant such as taste, potency, characteristics, and post-digestive effect. In the Indian system of medicine, *Trichodesma indicum* is used to treat skin diseases. These plants are commonly employed to address skin and joint issues, serving as a soothing, pain-relieving, fever-reducing, carminative, purifying, and respiratory aid. The plant's leaves are utilized in cancer treatment. *Trichodesma indicum* possesses purifying properties, aiding in blood purification, and is also known as *Adhapushpi*. (3)

According to an ancient verse: "Adhapushpi is bitter in taste, light to digest, and highly praised. It is hot in potency, alleviates phlegm, and is excellent for healing wounds and swelling."

Ancient Verse:

अधःपुष्पी रसे तिक्त्वा कटवी लघ्वी प्रशस्ये। वीयोष्णा कफवाग्नि व्रणशोधहरा परम।।

Meaning:

Adhapushpi is praised for having a light nature and a bitter, spicy taste. It has a strong heat potency, balances *vata* and *kapha*, and works wonders for healing cuts and lowering inflammation."

CHEMICAL CONSTITUENT:

Alkaloids: suspension and monocrotolin, Lupeol Triterpenoids

Phenolics: Gallic acid, syringic acid, ferulic acid, caffeic acid, cinnamic acid, and chlorogenic acid

Flavonoids, such as quercetin and myricetin

A significant component of the n-hexane extract of the plant's aerial sections is 1,2- benzenedicarboxylic acid diisooctyl ester.

Trichodesma indicum is a tropical and subtropical plant found in Asia, Africa, and

Australia. It belongs to the Boraginaceae family. Numerous biological actions have been identified for it, such as cytotoxic, antibacterial, antiparasitic, antioxidant, anti-inflammatory, and hepatoprotective effects.

Trichodesma indicum root paste is used to treat joint swelling in traditional medicine. (15,16)

Method of Extraction:

The phenolics chlorogenic acid, ferulic acid, caffeic acid, cinnamic acid, syringic acid, and gallic acid, as well as the flavonoids myricetin and quercetin, are present in ethanolic extract. (17)

MECHANISM OF ACTION:

Trichodesma indicum help to treat harmful fungus wall by releasing enzymes that break down chitin, which makes it easier to enter the pathogen's inner. Through adhering, twining, inter-penetration, and other means, *Trichoderma mycelium* hyperparasitized *Fusarium graminearum*, resulting in the mycelium of F.

USES:

Trichodesma indicum is used to alleviate inflammation, which is the body's response to injury. It encompasses a complex series of processes involving enzyme activation, release of mediators, fluid leakage, cell movement, tissue damage, and repair.

Leucas aspera. (तुंबा)

Scientific Classification-

- Kingdom - Plantae.
- Order - Lamiales.
- Family - Lamiaceae.
- Genus - Leucas.
- Species - L. aspera.
- Binomial name - Leucas aspera.



Leucas aspera, commonly known as 'Thumbai', is found throughout India, from the Himalayas to Ceylon. Traditionally, it has been used as a fever reducer and insect repellent. (4) Medicinally, it has been found to possess various pharmacological activities such as antifungal, antioxidant, antimicrobial, antinociceptive, and cytotoxic properties. Studies have identified the presence of several phytochemical components, including triterpenoids, oleanolic acid, ursolic acid, b-sitosterol, nicotine, sterols, glucoside, diterpenes, and phenolic compounds, indicating that *L. aspera* contains medicinally active compounds with diverse pharmacological effects. Therefore, there is potential for discovering new therapeutic uses for this plant in various medicinal applications. (5)

Leucas aspera has natural medicinal uses for conditions such as skin conditions, infections, and pain. In traditional medicine, the plant is used for treating a variety of ailments, including skin conditions, pain, and infections. For example, the juice of the leaves is applied to treat psoriasis, chronic skin eruptions, and scabies, while the leaves are also used for chronic rheumatism. Additionally, the plant is utilized for treating painful swellings and migraines, as well as for addressing snake bites.

Leucas aspera is used as an ornamental plant in gardens and as a hedge plant. It is also used in traditional medicine to treat fever, headache, and rheumatism. Flower, seeds and Seedlings.

Leucas aspera has white flowers with five petals and a yellow center. The seeds are small, black and round. The seedlings are small and have thin, light green leaves. (6,7,8)

Ancient Verse

द्रोणपुष्पी िु या प्रोक्िा श्वेिपुष्पा सुगन्धनी। कफपत्तहरा तिक्िा पवषघ्नी पवषमज्वरान्।।

Meaning:

Drōṇapūṣpī, has a bitter and aromatic taste. It balances pitta and kapha, eliminates toxins, and aids in the treatment of erratic fevers."

CHEMICAL CONSTITUENT:

The phenolics chlorogenic acid, ferulic acid, caffeic acid, cinnamic acid, syringic acid, and gallic acid, as well as the flavonoids myricetin and quercetin, are present in ethanolic extract.

Extract from n-hexane: Exhibits anti-inflammatory properties. (17)

Method of Extraction:

Cold maceration in 50% ethanol Shade dried and coarsely powdered aerial parts of the plant are subjected to cold maceration in 50% ethanol for 24, 48, or 72 hours. The solvent is filtered, distilled under vacuum, and dried to obtain the hydroalcoholic extract. (13)

MECHANISM OF ACTION:

Thumbai, another name for *Leucas aspera*, is a plant with a variety of medicinal qualities. Traditional medicine has utilized it to treat a number of ailments, such as: Antipyretic: AidS in lowering fevers

Antimicrobial: The leaves' juice has antibacterial properties.

Antifungal: The plant's ether and chloroform extracts exhibit antifungal properties.

Anti-inflammatory: Animal models have demonstrated the plant's anti-inflammatory properties.

Wound healing: The plant can heal wounds.

Treatment for snake bites: *Leucas aspera* is used to cure snake bites in the Philippines. Triterpenoids, oleanolic acid, ursolic acid, b-sitosterol, nicotine, sterols, glucoside, diterpenes, and phenolic compounds are among the numerous phytochemical elements found in the plant. Additionally, the plant is utilized as a pesticide. (5)

Citrous limon- (ललिंबू)

Kingdom - Plantae.
Order - Sapindales.
Family - Rutaceae.
Genus - Citrus.
Species - C. limon.
Binomial name - Citrus × limon.



source: <https://pixabay.com/en/lemons-mediterranean-citrus-fruits-2252560/>

This particular species is grown commercially in tropical, subtropical, and warm temperate regions around the world, including the Mediterranean area. *C. limon* has a rich history of cultivation in Southeast Asia and China, but it only made its way to the Mediterranean during Roman times and was introduced to the New World in the 16th century. (9) The lemon tree can grow up to six meters tall and has sturdy thorns. Its leaves are evergreen, oblong, elliptical, leathery, and dark green. Lemon peels contain a wealth of nutrients such as vitamin C, pectin, calcium, potassium, fiber, alpha hydroxy acids, and flavonoids like D-limonene. Research has demonstrated that lemon peel harbors bioactive compounds with numerous health benefits. Many venoms have been found to be inhibited by lemon peel, specifically phospholipase A2 (PLA2) enzymes. This inhibition displays antioxidant properties and reduces oxidative stress caused by venom. Lemons are a natural remedy for scurvy due to their high vitamin C content. (10,11)

India is the world's largest producer of lemons. Lemons can aid in lowering blood pressure and improving digestion. They are also utilized in traditional medicine for their antiseptic properties. The Citrous limon has been found to have effects and to mitigate venom-induced inflammation. It can neutralize venom at the site of a bite, reducing inflammation and pain, as well as enhancing wound healing. Lemon extract has been shown to decrease scorpion venom-induced inflammation and neutralize snake venom. The potential of Citrus limon in developing anti-venom patches has been investigated.

Citrus limon rich in vitamin C and contains smaller amounts of B vitamins. The climates of coastal Italy and California are especially favourable for the cultivation of lemon trees, which in these regions produce fruit 6–10 times a year. (12)

Ancient Verse:

तन्मुखिं तिकिमथुरिं कषायिं शीलिं लघु। दीपनि पाचनि रुच्यं कफपत्तपवनाशनम्।।

Meaning

Lemons are refreshing, light, astringent, bitter and sweet. It eliminates the pitta and kapha doshas, enhances taste, and acts as an appetizer.

CHEMICAL CONSTITUENT:

Essential oils:

Limonene, sabinene, citronellal, linalool, neral, geraniol, (E)- β -ocimene, myrcene, citronellol, β -caryophyllene, terpen-4-ol, geraniol, and α -pinene are all present in lemon leaf essential oil. The lemon pericarp's essential oil comprises β -pinene, γ -terpinene, and limonene.

Components that are volatile:

Citrus limon's volatile constituents include alcohol, esters, aldehydes, ketones, monoterpenes, and sesquiterpenoids.

Acid citric:

Citric acid is found in lemons. Peel a lemon:

Protein, phosphorus, calcium, copper, manganese, iron, zinc, sodium, potassium, and other chemical components are all present in lemon peel. (18)

Method of Extraction:

processing and extracting method for lemon-related products comprises steeping a lemon peel in low temperature, getting lemon oil by cold press, and getting lemon essential oil by freeze isolating the lemon oil. Further, the peeled lemon fruit can be squeezed directly for juice. (14)

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MECHANISM OF ACTION:

Citrus limon have antioxidant qualities due to the presence of flavonoids. Multivitamin complexes contain the flavanone eriocitrin, which is particularly prevalent in lemons and limes. Eriocitrin possesses anticancer, anti-inflammatory, anti-allergic, and antidiabetic qualities.

Antimicrobial:

Bioactive substances included in lemon juice have the ability to stop the growth of bacteria. Flavonoids have the ability to disrupt bacterial cell membranes and change the makeup of their proteins. Additionally, citric acid can lower the pH of cells.

Gastroprotective:

By activating HSP-70, citrus lemon essential oil can promote adaptive cellular defense.

Antimicrobial:

In food systems, citrus lemon essential oil can be utilized as a natural preservative due to its antibacterial qualities.

Cooling:

Lemon juice is said to have cooling properties and can help lower fever, jaundice, nausea, and vomiting.

Helianthus annuus. (सूर्यफल)

Kingdom - Plantae

Order - Asterales

Family - Asteraceae

Genus - Helianthus

Species - H. annuus

Binomial name - Helianthus annuus



source: <https://wallpapercave.com/helianthus-annuus-wallpapers>

The sunflower, scientifically known as *Helianthus annuus*, is being studied for its potential to create anti-venom patches. Belonging to the Asteraceae family, the common sunflower is a large annual forb. Its edible oily seeds are harvested for various purposes such as cooking oil production, livestock feed, bird feed, and ornamental gardening.

While wild sunflowers typically have multiple flower heads, domestic sunflowers usually have a single large flower head on an unbranched stem. Sunflower extracts have been utilized in hydrogel patches for controlled release, nanofiber patches for enhanced delivery, and transdermal patches for sustained release. Traditional medicine has extensively used preparations made from sunflower seeds, which are rich in nutrients and phytochemicals, offering antioxidant, anticancer, and other health benefits. (19)

Ancient Verse

सूर्यमुखी िु या प्रोक्िा पीिपुष्पा सुगन्धनी। कफवािहरि तिकििं पवष्नी पवषमज्वरान्।।

Meaning

"The fragrant, yellow-flowering sunflower balances the vata and kapha doshas. It has a bitter flavor, neutralizes poisons, and works well to treat erratic fevers."

CHEMICAL CONSTITUENT:

Essential oils: The volatile components found in the essential oil of sunflowers include α - pinene, verbenone, terpinolene, and α -terpineol.

The leaves, stems, and roots of sunflowers include flavonoids, alkaloids, and tannins. Triterpene glycosides: These have anti-inflammatory qualities and are present in the petals of sunflowers.

Carbohydrates: Sunflower seeds contain carbohydrates. Sunflower seeds are a reliable source of proteins.

Acids: The seeds of sunflower plants include these. (20)

Method of Extraction:

Water extraction: A water extract of sunflower flower heads can yield seven undescribed compounds and eighteen known compounds. (15)

MECHANISM OF ACTION:

Helianthus annuus, or sunflower, has a variety of pharmacological effects and modes of action, such as:

The glandular trichomes on sunflower leaves prevent insects from growing and eating.

Anti-diabetic:

The antidiabetic effects of sunflower seeds may be mediated by increasing insulin release by raising glucose.

Antimalarial:

Sunflower seeds and leaves contain antimalarial properties.

Skin defense:

Vitamin E, which is abundant in sunflower oil, can help reduce irritation and keep skin hydrated.

Additional pharmaceutical consequences:

In addition to their anti-inflammatory and analgesic properties, sunflowers also have antimicrobial, anti-ulcer, antidiarrheal, antihistaminic, and many other pharmacological actions. In addition to being a food source, sunflowers are the world's second-largest source of edible oil. (21)

Cuminum cyminum Linn. (जिरे)

Kingdom - Plantae.

Order - Apiales.

Family - Apiaceae.

Genus - Cuminum.

Species - C. cyminum.

Binomial name - Cuminum cyminum.



source: <https://www.flickr.com/photos/32179778@N00/21381235480>

The herb *Cuminum cyminum* produces cumin, which is the dried seed and a member of the parsley family. Cumin plants are typically 30–50 cm tall and are manually harvested. Cumin seeds contain antioxidants such as phenolic acids (CHA), flavonoids, and coumarins. The essential oil of cumin contains cumin aldehyde, cuminal, β -pinene, γ -terpinene, and safranal, which contribute to its antioxidant properties. Pinocarveol, found in volatile cumin oil, may have antioxidant potential. Antioxidant components in cumin oils from roots, stems, leaves, and flowers include γ -terpinene, α -terpinene, and bornyl acetate. Quercetin is the primary phenolic compound in the roots, while p-coumaric, rosmarinic, trans-2-dihydrocinnamic acids, and resorcinol are major in the stems and leaves. Studies have confirmed cumin's potent antioxidant capabilities in scavenging free radicals and inhibiting radical-mediated lipid peroxidation.

Cumin is predominantly cultivated in warm climates with well-drained soil, particularly in India, Iran, and the Mediterranean region. Rich in iron, essential oils, and antioxidants, cumin seeds also contain vitamins A, C, and E. Widely used in Indian, Middle Eastern, and Mexican cuisines, cumin seeds are known for their distinct flavor and aroma. Traditionally, cumin has been used to aid digestion, reduce inflammation, and treat respiratory problems, owing to its antioxidant, anti-inflammatory, and antimicrobial properties. Cumin is also utilized in snakebite, scorpion sting, spider bite, and ant venom treatments. (22)

Ancient Verse:

जीरकिं कटुकिं तिक्किं दीपनी पाचनिं लघु। कफवाहिरिं रुच्यं हृद्यं दीपनमेव च॥

Meaning:

"Strong and bitter, cumin is a digestive, light, appetizer, and healthful spice. It stimulates the heart, enhances taste, and balances the kapha and vata doshas."

CHEMICAL CONSTITUENT:

essential oils:

Thymol, β -pinene, α -terpinen-7-al, γ -terpinene, p-cymene, β -pinene, p-cymen-7-ol, and cuminaldehyde.

The phytochemicals:

Anthraquinone, coumarin, glycoside, alkaloid, flavonoid, protein, resin, saponin, tannin, and steroid. (23)

Method of Extraction:

The hydro-distillation procedure is used to extract the essential oil of cumin after the seeds have been crushed. Oil extraction went on for three hours, or until no more vital oil could be extracted. (24)

MECHANISM OF ACTION:

Cuminum cyminum, commonly referred to as cumin, works in a number of ways, such as:

Antibacterial:

Intracellular DNA and protein are released when cumin oil breaks down cell membranes. Additionally, it exhibits antibiofilm action against strains of *Klebsiella pneumoniae*.

Immunomodulatory:

Cumin can alter T lymphocyte expression and raise the number of CD4+ and CD8+ T lymphocytes.

Wound healing:

Powdered cumin seeds help hasten the healing process.

Anti-hypertensive:

In rats with hypertension, cumin seeds can lower systolic blood pressure and increase plasma nitric oxide. Cumin has the ability to promote digestion.

Heart tonic:

Poor circulation, hypotension, and palpitations can all be treated with cumin.

Astringent:

In cases of bronchopulmonary and digestive diseases, cumin oil may have an astringent effect.

Analgesic: Cumin oil has analgesic properties. (25)

Hybanthus enneaspermus. (रथनपरस)

Kingdom - Plantae

Order - Malpighiales

Family - Violaceae

Subfamily - Violeidae

Tribe - Violeae

Genus - Hybanthus



source: <https://www.flickr.com/photos/62003631@N00/5228307187/>

This herb is highly valued for its medicinal properties and is commonly used as a diuretic, demulcent, and tonic for men. Its root, known for its diuretic properties, is utilized in treating urinary issues and bowel disorders in children. A decoction made from the leaves and tender stalks serves as a demulcent, while the fruit is used to treat scorpion stings. However, gathering sufficient quantities of the entire plant, let alone specific parts, can be a challenging task. (26)

According to Ayurvedic literature, the plant is recommended for treating conditions related to "Kapha" and "Pitta", urinary calculi, strangury, painful dysentery, vomiting, burning sensations, mental wandering, urethral discharge, blood disorders, asthma, epilepsy, cough, and for toning the breasts. It is known to have anti-inflammatory and analgesic properties, making it effective in reducing inflammation and pain. Additionally, it exhibits antimicrobial activity against bacteria, fungi, and viruses, and acts as an antioxidant, protecting against oxidative stress and cellular damage. Furthermore, it has antipyretic properties, reducing fever and promoting tissue repair and regeneration.

Ancient Verse:

रिञ्जोतिं िु या प्रोक्िा शीिला लघु तिक्िका। कफवािहरिं रुच्ये पवषघ्नी पवषमज्वरान्।।

Meaning:

It is said that ratanjot is bitter, light, and cool. It balances vata and kapha, improves taste, fights toxins, and eases sporadic fevers."

CHEMICAL CONSTITUENT:

Dipeptide alkaloids are alkaloids. Medication: β -sitosterol.

phenols: phenols.

Polyphenols: Polyphenols. Sugars: Sweets.

Three amino acids: glutamic acid, valine, and leucine.

Additional substances: catechins, isoarborinol, and aurantiamide acetate. (27)

Method of extraction:

Chloroform: Extracts prepared with this solvent contain phytosterols and flavonoids.

Petroleum ether: Extracts prepared with this solvent contain anthraquinones and steroids. (28,29)

MECHANISM OF ACTION:

Munbora, another name for Hybanthus enneaspermus, has a wide range of medicinal applications.

Analgesic

The plant's leaves are used to ease pregnant women's childbirth pains. Animals can get pain relief from the flavonoids, tannins, and saponins found in the leaves.

Anxiolytic

In animal studies, the plant's ethanolic and aqueous extracts have been demonstrated to alleviate depression and anxiety antitussive, antimicrobial, and anti-inflammatory

The herb possesses antitussive, anti-inflammatory, and antibacterial qualities. Anti-diabetic

Although there is little scientific proof, some Orissan tribes utilize the plant to treat diabetes.

Antimalarial and anti-convulsant

The plant is used to cure inflammation, male sterility, leucorrhea, dysuria, diarrhea, and urinary infections.

Alkaloids, anthraquinones, L-DOPA, diosgenin, flavonoids, phenols, and triterpenes are among the numerous phytoconstituents found in the plant. (17)

Curcuma longa. (हळद)

Kingdom - Plantae.

Order - Zingiberales.

Family - Zingiberaceae.

Genus - Curcuma.

Specie - C. longa.

Binomial name - Curcuma longa.



source:https://commons.wikimedia.org/wiki/File:Curcuma_longa_roots.jpg

Turmeric, also known as *Curcuma longa*, contains curcuminoids, which are polyphenols with properties similar to nonsteroidal anti-inflammatory drugs (NSAIDs) and are commonly used in many herbal capsules. Transdermal patches can be utilized to administer curcumin through the skin for systemic effects. Curcumin exhibits various pharmacological activities, including antioxidant, anti-inflammatory, antibacterial, and antiviral properties. It also aids in wound healing, reduces inflammation, and protects the skin. However, the clinical use of curcumin is limited due to its low bioavailability. These patches are typically employed for healing wounds and alleviating pain caused by spider bites. The primary objective of this study was to extract turmeric oil and incorporate it into a transdermal drug delivery system. These herbal patches are typically applied to the affected area of the body. (30)

Ancient Verse

हररद्रा तिक्िका रुच्या कण्ठ्या कुष्ठपवनालशनी। कफपपत्तहरि हृद्या मेध्या च पवषघातिनी।।

Meaning:

"Turmeric is bitter, enhances flavor, helps with sore throats, and heals skin conditions. It balances the pitta and kapha doshas, strengthens the heart, sharpens the mind, and eliminates poisons."

CHEMICAL CONSTITUENT:

The primary bioactive components of turmeric are called curcuminoids, and they consist of curcumin, demethoxycurcumin, and bisdemethoxycurcumin. Of the curcuminoids, curcumin constitutes approximately 80% and is the most extensively researched active component.

Monoterpenes make up the majority of essential oils, which are found in flowers and leaves.

Tangerone, atlantone, and zingiberone are examples of volatile oils. Turmeric contains phenolic chemicals as well

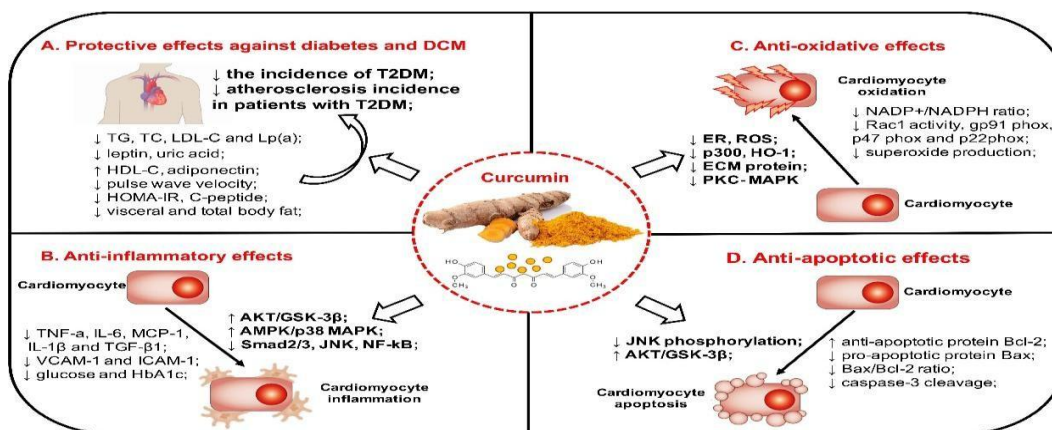
Terpenoids: Triterpenoids, diterpenes, and sesquiterpenes are among them. Sterols: Turmeric contains them as well. (28,29)

Method of extraction:

Extraction aided by ultrasound

ultrasonic-assisted extraction to determine the ideal extraction conditions for curcumin. The ideal parameters, according to their research, were 40°C, 1:30 solid to solvent ratio, 240 w of ultrasonic power, and 22 khz of frequency. (31)

MECHANISM OF ACTION:



Aloe barbadensis miller. (कोरफड)

Kingdom - Plantae.
 Order - Asparagales.
 Family - Asphodelaceae.
 Subfamily - Asphodeloideae.
 Genus - Aloe.
 Species - A. vera. Binomial name - Aloe vera.



source: <https://fitnesspell.com/wp-content/uploads/2015/12/aloe-vera-1113-1.jpg>

Aloe vera possesses a cooling property and has the ability to alleviate pain. It is also known for its cosmetic benefits. Researchers have developed a new type of swollen hydrogel by incorporating Aloe vera leaf extract, which could expedite wound healing by absorbing harmful ultraviolet rays. This hydrogel has potential for use as a medical patch to treat skin ailments. (32)

Ancient Verse:

रसे तिक्ठिोष्णा लघ्नी न्मृधा कफपत्तनुि्। व्रणशोधनसधधने कासश्वासाशयसािं जयेि्॥

Meaning:

"It has a mild, unctuous, spicy, and bitter flavor. It reduces kapha and pitta, purifies and mends wounds, and works well for hemorrhoids, cough, and asthma."

CHEMICAL CONSTITUENT:

Latex:

Aloe vera latex has a yellow-brown tint and about eighty different chemical components. Anthraquinones and phenolic anthrones, including barbaloin, isobarbaloin, aloesin, and aloeresin A, are the principal constituents of the latex.

Gel:

Aloe vera gel is a transparent, jelly-like material that contains 99–99.5% water. Dietary fibers, soluble carbohydrates, ash, proteins, enzymes, lipids, and mineral components make up the gel's residual solids. Acemannan, an acetylated glucomannan, is the primary active ingredient in the gel.

Additional chemical components:

Aloe vera also contains the following other chemicals: Chromosome, phenols. (28)

Method of extraction:

The anthraquinones:

These substances consist of emodin, aloin A, and aloe-emodin. Traditional herbal medicine and food supplements use aloe extracts high in anthraquinones to promote better bowel function.

Chromones: Aloesin, aloeresin A, isoaloeresin D, and aloeresin E are some of these substances. (33)

MECHANISM OF ACTION:

Aloe vera promotes collagen synthesis and fibroblast activity, which speeds up the healing of wounds. Additionally, it can aid with strength and wound contracture.

Anti-inflammatory: Aloe vera can aid with inflammation by lowering the synthesis of prostaglandin E2.

Antioxidant: Antioxidants found in aloe vera help shield cells from DNA damage and oxidative stress. Aloe vera has the potential to have antiviral and anticancer properties.

Laxative: Aloe vera latex's anthraquinones can relieve constipation. Salicylic acid, urea nitrogen, and cinnamonic acid are examples of antiseptics found in aloe vera. Aloe vera gel can aid in shielding skin from the damaging effects of radiation.

Immune system: Alprogen in aloe vera can prevent mast cells from releasing histamine and leukotriene. (33)

Melaleuca alternifolia. (टी ट्री ऑईल)

Kingdom - Plantae

Order - Myrtales

Family - Myrtaceae

Genus - Melaleuca

Species - M. alternifolia

Binomial name - Melaleuca alternifolia



Melaleuca alternifolia, a small tree indigenous to Australia, is widely utilized for its medicinal properties. Its essential oil is well-known for its broad spectrum of antibacterial, antiviral, antifungal, and antiparasitic properties. The essential oil derived from the foliage of M. alternifolia demonstrated 99% efficacy in treating fish infested with I. multifiliis on their gills and skin. (34)

CHEMICAL CONSTITUENT:

The most prevalent ingredient in tea tree oil, terpinen-4-ol, often accounts for 30 to 40 percent of the oil. (29)

Method of extraction:

Melaleuca alternifolia, commonly referred to as the tea tree, has chemical compounds that can be removed from its leaves by a variety of techniques, such as progressive extraction, soxhlet extraction, steam refining, supercritical liquid extraction, and small- scale stove extraction. (27)

MECHANISM OF ACTION:

Tea tree oil, or Melaleuca alternifolia, has numerous therapeutic applications, such as: Acne, athlete's foot, contact dermatitis, and other skin problems can all be treated with tea tree oil. can aid with burns, wounds, and stings as well. Tea tree oil is effective in treating fungal infections of the mouth, vagina, and skin. Fungal nail infections are another condition it can be used to treat. Using tea tree oil to treat viral illnesses can help stop the spread of viruses, including the flu.

Reducing inflammation: Tea tree oil can help reduce joint stiffness and moderate edema. Immune system stimulation:

The antibacterial qualities of tea tree oil can aid in immune system stimulation. Insect repellent: Tea tree oil works well as a natural insect repellent

to ward off pests like ticks and mosquitoes. (35)

II. CONCLUSION

Herbal antidote patches offer a new method for delivering natural remedies, including patches designed for venomous bites and stings. They can be used for pain relief, wound healing, and treating osteoarthritis. These patches combine the benefits of natural treatments with the convenience of transdermal delivery, providing targeted relief and enhancing the body's natural healing processes. While promising, further research is needed to fully understand their effectiveness and safety. Individuals using herbal patches should consult healthcare professionals before incorporating them into their wellness routines, ensuring a balanced approach to managing health. Overall, herbal antidote patches can be a valuable addition to holistic health practices and are convenient for anyone interested in using them, as they have minimal side effects and are safe for those without allergies to the herbal ingredients.

Natural materials used in the patches can have a more targeted and effective treatment as well as reducing the risk of side effects. It has been observed that the transdermal patches developed using sustainable and natural biomaterials help in wound healing and increase the efficiency of drugs by controllable drug release [CDDS]. They would be also an affordable solution for people in developing countries. They are easily used by every one. No Need of Physician at every time. the patches are directly applied on the affected area. As highlighted in this review, innovative and arising renewable technologies for the synthesis of biomaterials for treatments of skin diseases can pave the way toward a prosperous and sustainable culture for the benefit of humanity. In addition, apart from the skin diseases mentioned in here, the patches developed and being developed will be used in the treatment of many other skin diseases while having additional benefits such as a targeted treatment, reduced risk of side effects, and affordable solution. Patches are affordable for everyone that's why the need of patches is increases in now a Days.

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