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EVIDENCE MAPPING OF *PATHYA PATRA DRAVYA IN KUSHTHA AND SHVAYATHU*: FROM AYURVEDIC THERAPEUTIC PRINCIPLES TO CONTEMPORARY PHARMACOLOGY

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ABSTRACT

Introduction: *Kushtha* and *Shvayathu* are important clinical conditions described in Ayurveda, involving complex disturbances of *Dosha*, *Dhatu*, and *Srotas*. *Kushtha* encompasses a broad spectrum of cutaneous disorders, while *Shvayathu* is characterized predominantly by localized or generalized swelling associated with disturbed fluid dynamics and *Dosha* involvement. Ayurveda emphasizes *Pathya* as an essential component of management, including specific *Patra Dravya* selected according to disease characteristics. However, evidence concerning their classical indications and contemporary pharmacological relevance remains dispersed. This review aimed to systematically evaluate *Pathya Patra Dravya* indicated in *Kushtha* and *Shvayathu* and examine their contemporary scientific correlates. **Methods:** Classical references were systematically reviewed from the *Brihattrayi* to identify *Patra Dravya* described as *Pathya* in *Kushtha* and *Shvayathu*. Data on disease-specific indications and relevant *Rasapanchaka* were extracted. Contemporary pharmacological literature was examined for biological activities relevant to the clinical manifestations and pathophysiological components associated with these conditions. **Results:** The classical literature demonstrated disease-specific application of the selected *Patra Dravya*. *Patola* and *Nimba* were identified as *Pathya* in *Kushtha*, whereas *Patola*, *Nimba*, *Kakamachi*, *Vetra*, and *Mulaka* were documented in relation to *Shvayathu*. Their *Rasapanchaka* profiles provide an Ayurvedic rationale for their therapeutic and dietary utilization. Contemporary studies have reported pharmacological activities including anti-inflammatory, antioxidant, antimicrobial, immunomodulatory, and related effects that may correspond to selected clinical components of these disorders. Nevertheless, the strength and directness of evidence varied across individual drugs. **Conclusion:** *Pathya Patra Dravya* represent a disease-oriented component of Ayurvedic therapeutic nutrition in *Kushtha* and *Shvayathu*. This ancient knowledge also gets supported by relevant pharmacological studies at many instances.

KEYWORDS: *Kushtha*, *Shvayathu*, *Pathya Patra*, Pharmacological justification.

INTRODUCTION

Herbal market

Medicinal plants have been the mainstay of traditional health care practices across all societies for centuries. A very significant population in the developing countries continues to thrive upon the herbal drugs, which could be gathered from nature almost free. India also has very strong traditional health care practices that are represented by the classical systems of medicine like *Ayurveda*, Siddha, Unani, and Sowa-rigpa on one hand, and by a very diverse area-specific and community-specific folk healthcare practices on the other. The major commonality of the Indian classical and the folk health care traditions is their dependence upon the raw material derived from a large diversity of plant species, which is estimated to be about 6,500 species.[1]

Importance of medicinal plants

Indian medicinal plants also provide a rich source for antioxidants that are known to prevent/delay different

diseased states. The antioxidant protection is observed at different levels. The medicinal plants also contain other beneficial compounds like ingredients for functional foods.

Millions of Indians use herbal drugs regularly, as spices, home-remedies, health foods as well as over-the-counter (OTC) as self-medication or also as drugs prescribed in the non-allopathic systems.[2]

Since ancient times a number of Indian medicinal plants have been used globally. There are many references to Indian medicinal plants and trade in spices in a number of historical documents. For instance, Indian aloe is very widely used in India for cosmetic, medicinal and nutraceutical purposes.[3] But the antiaging effects of the pickled preparations are unique.[4,5] Despite the global reputation of aloe in dermato-cosmetics, the potential as antiaging is still untapped.

Demand of food as well as leafy vegetables

It has been recognized in the developing world that there is a serious gap between the demand and supply of food. Now a days researchers are focused in narrowing this gap by introducing lesser-known edible plant that can uplift the nutritional security of the state and in turn the country.[6] In India there are 6000 species of plants for consumption, among them 1/3rd are green leafy vegetables which are rich sources of minerals and vitamins, which if consumed regularly can substantially improve the micronutrient status of a particular population.[7]

Leafy vegetables as medicinal purpose

Since ages man has been using green leafy vegetables as medicine. Ethno-botanists have been elucidating their over lapping role in context to nutrition and therapeutics. Plants used for medicinal attributes contain phytochemicals with pharmacological and physiological significance.[8] These are identified to be good sources of natural antioxidants such as tocopherols, vitamin C and polyphenols which play an important role in the sustenance of good health.

In recent years, systems biology has provided a transformative framework for validating traditional dietary paradigms through network pharmacology, shifting the focus from a "one-target, one-drug" model to a "multi-target, multi-component" interactome.[9,10] Within this context, the classical Ayurvedic concepts of *Pathya* (wholesome) and *Apathya* (unwholesome) *Dravyas* represent an early form of personalized nutrition and therapeutic intervention.[11] Specifically, the *Patra Shaka* (leafy vegetables) described in the *Brihattrayi* are reported to possess diverse bioactivities, including antioxidant, anti-inflammatory, hepatoprotective properties and many more.[12] While these botanical entities are traditionally classified based on their systemic effects, contemporary research suggests that their therapeutic efficacy—or potential for aggravation—arises from complex phytochemical-protein interactomes.[13] By utilizing pharmacological studies, it is now possible to map the bioactive constituents of these leaves to specific molecular targets and signalling pathways, thereby providing a mechanistic basis for why certain *Patra* act as supportive *Pathya* in specific disorders while others function as *Apathya* by perturbing pathological networks.[14,15] Consequently, integrating *Brihattrayi* classical descriptions with modern bioinformatics not only validates ancient dietary wisdom but also establishes a rigorous scientific foundation for their application in contemporary, network-based healthcare.

Kushtha and *Shvayathu* are important disease entities in Ayurveda involving complex disturbances of *Dosha*, *Dhatu*, and *Srotas*. *Kushtha* encompasses diverse disorders primarily affecting the skin and is closely associated with impaired tissue integrity and systemic *Dosha* involvement, whereas *Shvayathu* is characterized by localized or generalized swelling resulting from derangement of *Dosha* and fluid homeostasis. Ayurveda emphasizes *Pathya* as an integral component of management, recognizing appropriate diet and medicinal food substances as supportive measures for maintaining *Agni*, regulating *Dosha*, and promoting restoration of physiological balance. Within this framework, *Pathya Patra Dravya* are particularly relevant because they can function at the interface of nutrition and therapeutics, with their selection guided by the specific disease state and *Rasapanchaka*. Systematic evaluation of their classical indications may therefore provide a better understanding of the role of dietary medicinal plants in *Kushtha* and *Shvayathu* and facilitate their correlation with contemporary scientific evidence.

MATERIAL AND METHOD

Ayurvedic books called Brihattrayi named Charaka Samhita, Sushruta Samhita and Ashtanga Hridaya were used with their commentaries for review of *Patra Dravya* as *Pathya Dravya* for *Kushtha* as well as for *Shvayathu*. All references of *Patra* including references of *Patrashaka* were collected and depicted in tables given below in observation section. To explore Ayurvedic ideology of *Patrashaka* other Ayurvedic texts like Nighantus were also referred. For correlation with contemporary scientific evidence, published research articles were retrieved from electronic databases such as PubMed, Google Scholar, Scopus, and Web of Science. Only peer-reviewed articles, experimental studies, and review papers related to the pharmacological actions of the identified plant leaves were included. The collected data were systematically analyzed to compare classical Ayurvedic attributes and dietary recommendations with reported pharmacological activities, thereby establishing a conceptual correlation between traditional Ayurvedic knowledge and modern scientific findings.

OBSERVATIONS & DISCUSSION

Medicinal plants have been the cornerstone of traditional healthcare practices across societies for centuries, with a significant population in developing countries relying on herbal drugs. India, in particular, has a rich tradition of Ayurveda, Siddha, Unani, and Sowa-rigpa systems, utilizing around 6,500 plant species. Medicinal plants are very useful as they provide antioxidants, preventing/delaying diseased states;[16] contain beneficial compounds for functional foods;[17] used as spices, home remedies, health foods, and OTC medications;[18] globally used with historical references in Indian medicinal plants and spice trade.[19]

1/3rd of 6,000 edible plant species in India are green leafy vegetables. They are rich sources of minerals, vitamins, and phytochemicals.[20] Also possess health-benefiting substances, making them ideal for value-added products.[21] Thus, leafy vegetables act as Nutritional Powerhouses for all of us.

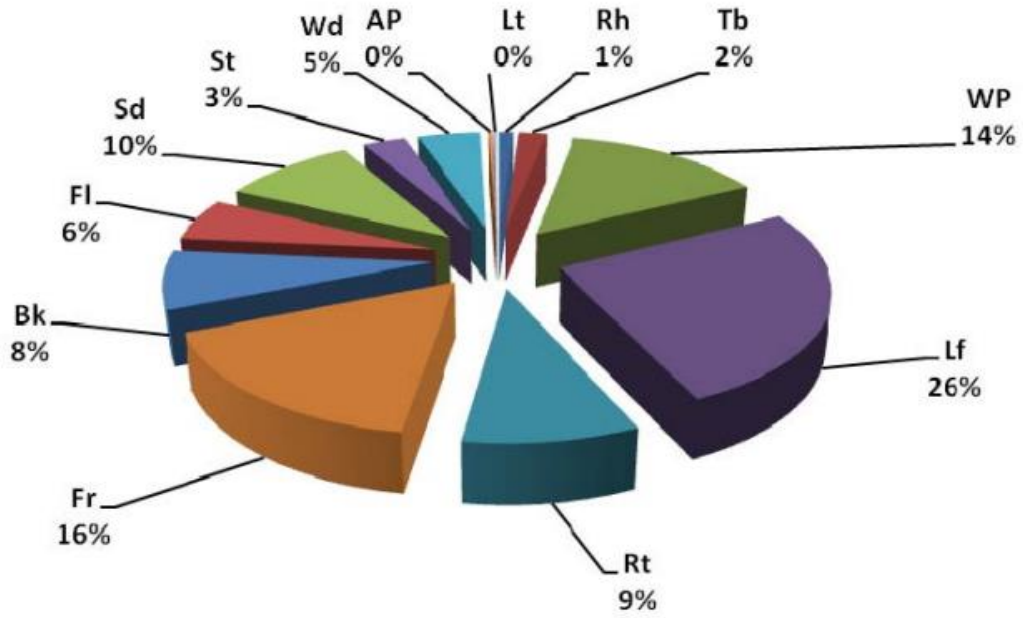

Figure 3. Statistics of plant parts used. Fr = Fruit; Rt = Root; Lf = Leaf; WP = Whole Plant; Bk = Bark; Fl = Flower; Sd = Seed; Tb = Tuber; Rh = Rhizome; St = Stem; Lt = Latex; Wd = Wood and AP = Aerial Parts.

Image 1: Use of different plant parts.[22]

Given image is showing the statistical distribution of plant parts used. It depicts that among all parts of plant, leaves are sharing major portion of percentage through its various application viz. for medicinal purpose, as a diet, as supplements, for preparation of household things, for rituals, for various industrial products etc.

This study catalogs *Pathya Patra Dravya* for diverse clinical indications by integrating ethnobotanical profiles with modern systems biology. Identified by their botanical source and family, these agents are analyzed via the Ayurvedic concepts of *Guna-Virya-Vipaka* to define their specific therapeutic roles. Using network pharmacology, the study maps the phytochemical-protein interactomes to identify the signaling pathways modulated by these leaves. Correlated with supportive pharmacological evidence findings provide a mechanistic foundation for the use of medicinal leaves as precision dietary interventions in integrative medicine.

Table No. 1: *Pathya Patra Dravya* for *Kushtha* and *Shvayathu.*

Sr. No.	Disease	Herb	Botanical source	Family	Reference
1.	*Kushtha*	*Patola*	*Trichosanthes dioica* Roxb.	Cucurbitaceae	Cha.Chi. 7/83
2.	*Kushtha*	*Nimba*	*Azadirachta indica* A. Juss.	Meliaceae	Cha.Chi. 7/85
3.	*Shvayathu*	*Patola*	*Trichosanthes dioica* Roxb.	Cucurbitaceae	Cha.Chi. 12/63
4.	*Shvayathu*	*Nimba*	*Azadirachta indica* A. Juss.	Meliaceae	Cha.Chi. 12/63
5.	*Shvayathu*	*Kakamachi*	*Solanum nigrum* L.	Solanaceae	Cha.Chi. 12/63
6.	*Shvayathu*	*Mulaka*	*Raphanus sativus* L.	Brassicaceae	Cha.Chi. 12/63
7.	*Shvayathu*	*Vetra*	*Calamus tenuis Roxb.*	Arecaceae	Cha.Chi. 12/63

(Cha. Chi. – Charaka Chikitsasthana)

1. *Kushtha* (Skin Diseases)

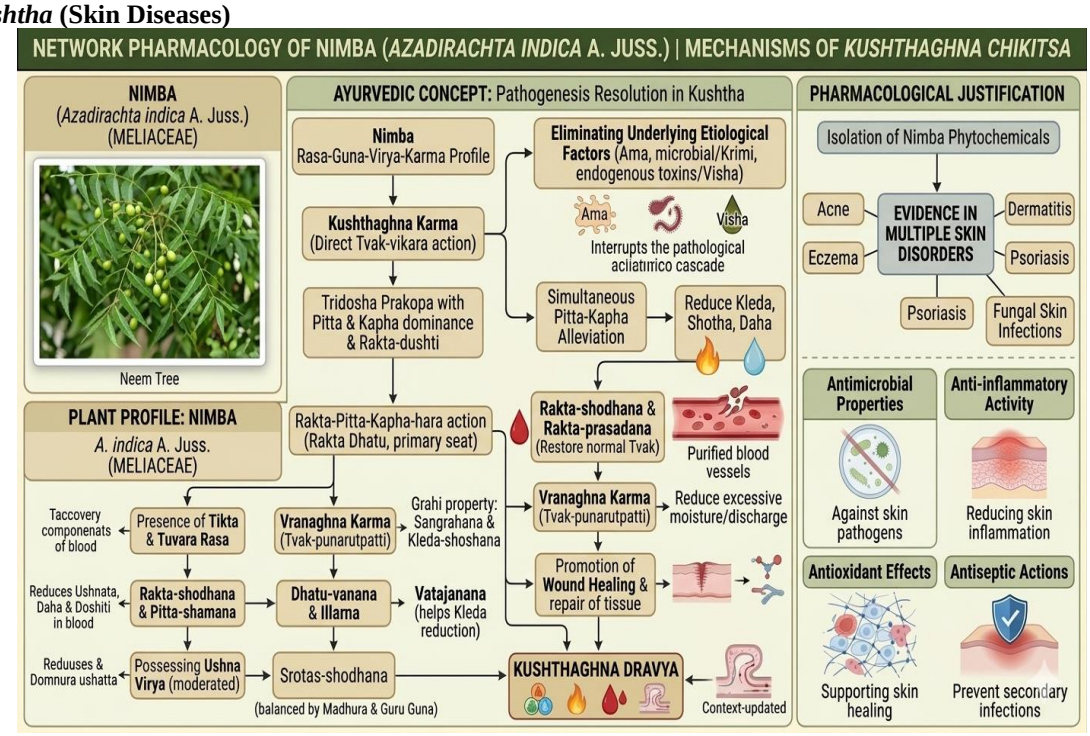

Image 2: Schematic representation of the integration of Ayurvedic concepts with contemporary pharmacological evidence showing *Pathya* effect of *Nimba* in *Kushtha*

A. *Nimba*

Ayurvedic concept

निम्बपत्रं स्मृतं नेत्र्यं कृमिपित्तविषप्रणुत् ॥83॥[23]
ग्राहि प्रवालं निम्बस्य रक्तपित्तकफकृमीन् ।कुष्ठघ्नं वातजननं नेत्र रोगान् विनाशयेत् ॥881॥
तद्वत् पत्राणि निम्बस्य व्रणघ्नानि विशेषतः ।[24]

Neem leaves (*Nimbapatram*) are known to be beneficial for the eyes (*Netryam*) and alleviate worms, *Pitta*, and toxins (*Krimi-Pitta-Vishapranut*).

Coral-like parts of Neem (*Nimbasya Pravalam*) are absorbent (*Grahi*), and alleviate disorders of blood, *Pitta*, *Kapha*, and worms (*Rakta-Pitta-Kapha-Krimin*); they are beneficial in skin diseases (*Kushthaghnam*), generate *Vata* (*Vatajananam*), and destroy eye diseases (*Netrarogan Vinashayet*). Similarly, the leaves of Neem (*Tadvad Patrani Nimbasya*) are especially useful in healing wounds (*Vranaghnani Visheshatah*)

The efficacy of *Nimba* in the management of *Kushtha* can be comprehensively understood through its *Rasa–Guna–Virya–Karma* profile. The explicit mention of *Kushthaghna Karma* indicates its direct action on *Tvak-vikara*, which in *Ayurveda* are primarily rooted in *Tridosha Prakopa* with dominance of *Pitta* and *Kapha* along with *Rakta-dushti*.

The *Krimi*, *Pitta*, and *Visha-pranut* properties of *Nimba* play a crucial role in eliminating underlying etiological factors of *Kushtha*, such as *Ama*, microbial factors (*Krimi*), and endogenous toxins (*Visha*). By removing these causative agents, *Nimba* interrupts the pathological cascade at its root level. The simultaneous alleviation of *Pitta* and *Kapha* helps reduce *Kleda*, *Shotha*, and *Daha*, which are chief features in *Kushtha* pathology.

The action on *Rakta* (*Rakta-Pitta-Kapha-hara*) reflects a strong *Rakta-shodhana* and *Rakta-prasadana* effect, which is essential since *Rakta Dhatu* is the primary seat of *Kushtha* manifestation. By purifying *Rakta* and restoring its qualitative balance, *Nimba* prevents further vitiation and supports normalization of *Tvak*.

The *Grahi* property contributes to *Sangrahana* and *Kleda-shoshana*, helping to reduce excessive moisture and discharge commonly observed in certain types of *Kushtha*. Additionally, its *Vranaghna Karma* indicates promotion of *Tvak-punarutpatti* and wound healing, aiding in the repair of damaged skin and restoration of normal tissue architecture.

Although *Nimba* exhibits *Vatajanana* tendency, this may assist in *Kleda* reduction and *Srotas-shodhana*, thereby preventing stagnation and supporting proper circulation within *Rasavaha* and *Raktavaha Srotas*.

Pharmacological justification

Evidence of Nimba in multiple skin disorders such as acne, dermatitis, eczema, psoriasis, and fungal skin infections. It highlights:[25]

- Antimicrobial properties against skin pathogens
- Anti-inflammatory activity reducing skin inflammation
- Antioxidant effects supporting skin healing
- Antiseptic actions that prevent secondary infections

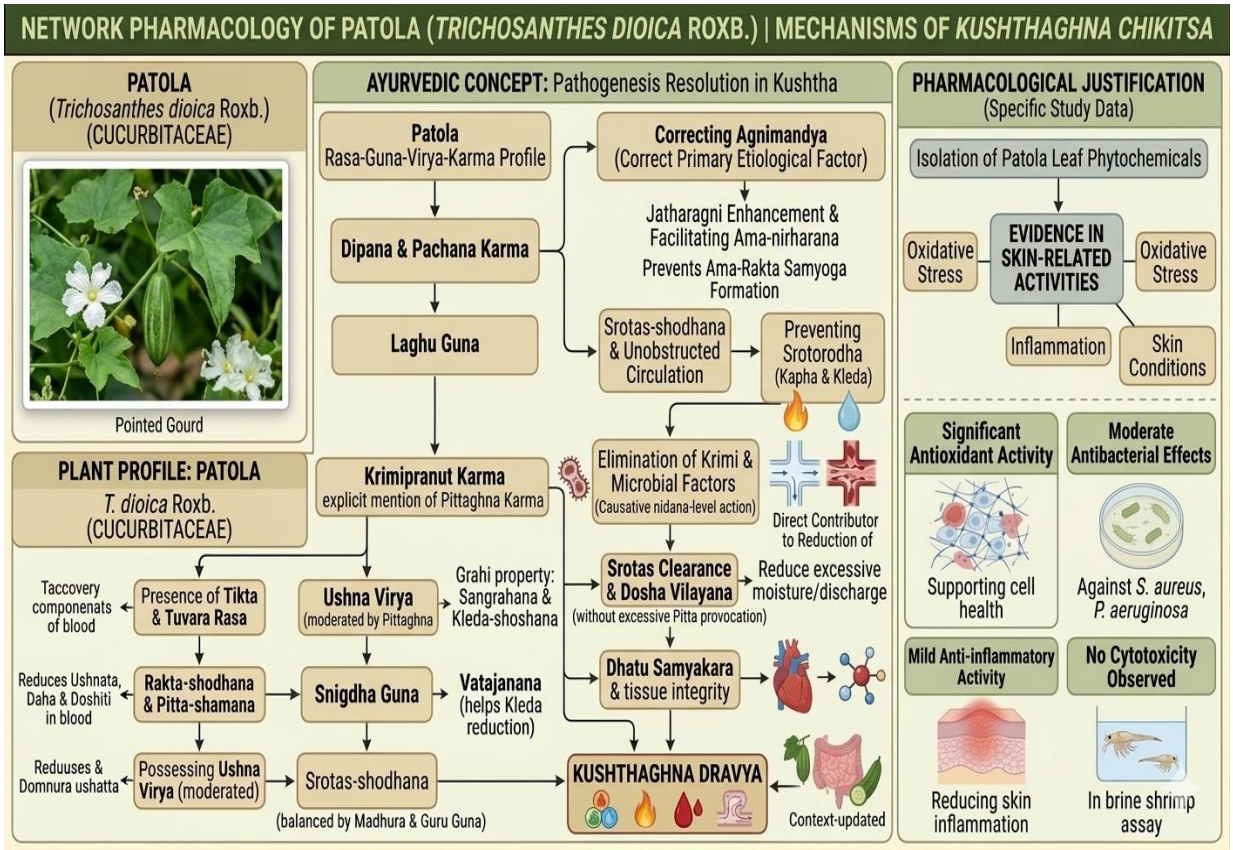

Image 3: Schematic representation of the integration of Ayurvedic concepts with contemporary pharmacological evidence showing *Pathya* effect of *Patola* in *Kushtha*

B. *Patola*

Ayurvedic concept

पटोलपत्रं पित्तघ्नं दीपनं पाचनं लघु |
स्निग्धं वृष्यं तथोष्णं च ज्वरकासक्रिमिप्रणुत् ||33|| [26]

Patola leaves (*Patolapatram*) alleviate *Pitta* (*Pittaghnam*), stimulate digestion (*Dipanam*), aid in digestion (*Pachanam*), and are light (*Laghu*); unctuous (*Snigdham*), aphrodisiac (*Vrushyam*), and hot in potency (*Ushnam*); they alleviate fever, cough, and worms (*Jvara-Kasa-Krimipranut*)

The role of *Patola* in the management of *Kushtha* can be understood through its *Rasa–Guna–Virya–Karma* profile. *Kushtha* is predominantly a manifestation of *Tridosha Prakopa* with dominance of *Pitta*, *Kapha*, and *Rakta-dushti*, and the *Pittaghna Karma* of *Patola* directly contributes to reduction of *Daha*, *Raga*, and inflammatory changes in *Tvak*.

The *Dipana* and *Pachana* properties play a crucial role in correcting *Agnimandya*, which is a primary etiological factor in *Kushtha* through the formation of *Ama*. By enhancing *Jatharagni* and facilitating *Ama-nirharana*, *Patola* prevents further *Dosha* vitiation and the formation of *Ama–Rakta Samyoga*, which is central to the pathogenesis of *Kushtha*.

The *Laghu Guna* supports *Srotas-shodhana* and unobstructed circulation, preventing *Srotorodha* caused by *Kapha* and *Kleda* accumulation. Although endowed with *Snigdha Guna*, *Patola* maintains a functional balance that prevents excessive dryness while not contributing to pathological *Kleda*, thereby supporting *Dhatu-samyata*, *Poshana* and tissue integrity.

Its action as *Krimipranut* is particularly significant, as *Krimi* and microbial factors are considered important contributors in certain forms of *Kushtha*. By eliminating these causative factors, *Patola* acts at the *Nidana* level, interrupting disease progression. The presence of *Ushna Virya*, when balanced by *Pittaghna* action, aids in *Srotas* clearance and *Dosha Vilayana* without inducing excessive *Pitta* aggravation.

Pharmacological justification

Methanolic extract exhibited significant antioxidant activity, moderate antibacterial effects (e.g., *Staphylococcus aureus*, *Pseudomonas aeruginosa*), and mild anti-inflammatory activity, with no cytotoxicity observed in brine shrimp assay. These actions are relevant to oxidative stress and inflammation in skin conditions.[27]

2. *Shwayathu* (Swelling)

A. *Patola*:

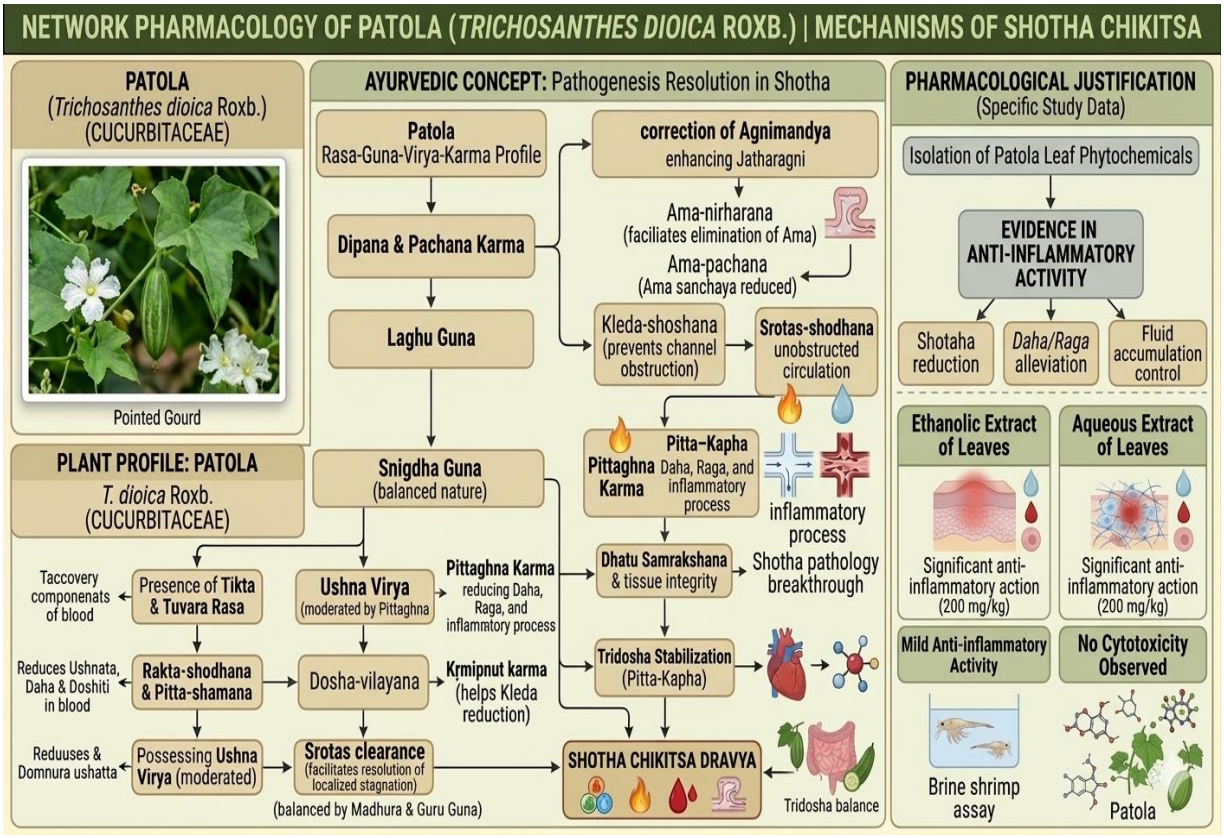

Image 4: Schematic representation of the integration of Ayurvedic concepts with contemporary pharmacological evidence showing *Pathya* effect of *Patola* in *Shwayathu*

Ayurvedic concept

पटोलपत्रं पित्तघ्नं दीपनं पाचनं लघु |
स्निग्धं वृष्यं तथोष्णं च ज्वरकासक्रिमिप्रणुत् ||33|| [28]

Patola leaves (*Patolapatram*) alleviate *Pitta* (*Pittaghnam*), stimulate digestion (*Dipanam*), aid in digestion (*Pachanam*), and are light (*Laghu*); unctuous (*Snigdham*), aphrodisiac (*Vrushyam*), and hot in potency (*Ushnam*); they alleviate fever, cough, and worms (*Jvara-Kasa-Krimipranut*)

The efficacy of *Patola* in the management of *Shotha* can be understood through its *Rasa–Guna–Virya–Karma* profile, which primarily facilitates *Pitta–Kapha Shamana*, *Ama-pachana*, and *Srotas-shodhana*, thereby addressing the core pathogenesis of inflammatory conditions. *Shotha* is predominantly associated with *Dosha Prakopa* (especially *Pitta* and *Kapha*) along with *Ama* and *Srotorodha*, and the *Pittaghna Karma* of *Patola* plays a crucial role in reducing *Daha*, *Raga*, and inflammatory process.

The *Dipana* and *Pachana* properties contribute significantly to the correction of *Agnimandya*, which is a fundamental factor in the formation of *Ama*, a key contributor to *Shotha*. By enhancing *Jatharagni* and facilitating *Ama-nirharana*, *Patola* reduces the underlying cause of *Dosha sanchaya* and inflammatory swelling, thereby breaking the pathological cascade.

The *Laghu Guna* aids in *Kleda-shoshana* and *Srotas-shodhana*, preventing accumulation of fluid and obstruction within channels, which are central features in the development of *Shotha*. Although it possesses *Snigdha Guna*, its balanced nature ensures *Dhatu Samrakshana* without contributing to pathological *Kleda*, thereby maintaining tissue integrity while reducing inflammation.

The presence of *Ushna Virya*, when moderated by *Pittaghna* action, supports *Dosha-vilayana* and *Srotas-vishodhana*, facilitating resolution of localized stagnation without aggravating *Pitta*. Additionally, its *Krimipranut Karma* helps eliminate potential underlying etiological factors that

Pharmacological justification:

Both the ethanolic & aqueous extracts of leaves at 200 mg/kg dose possess significant anti-inflammatory activity.[29]

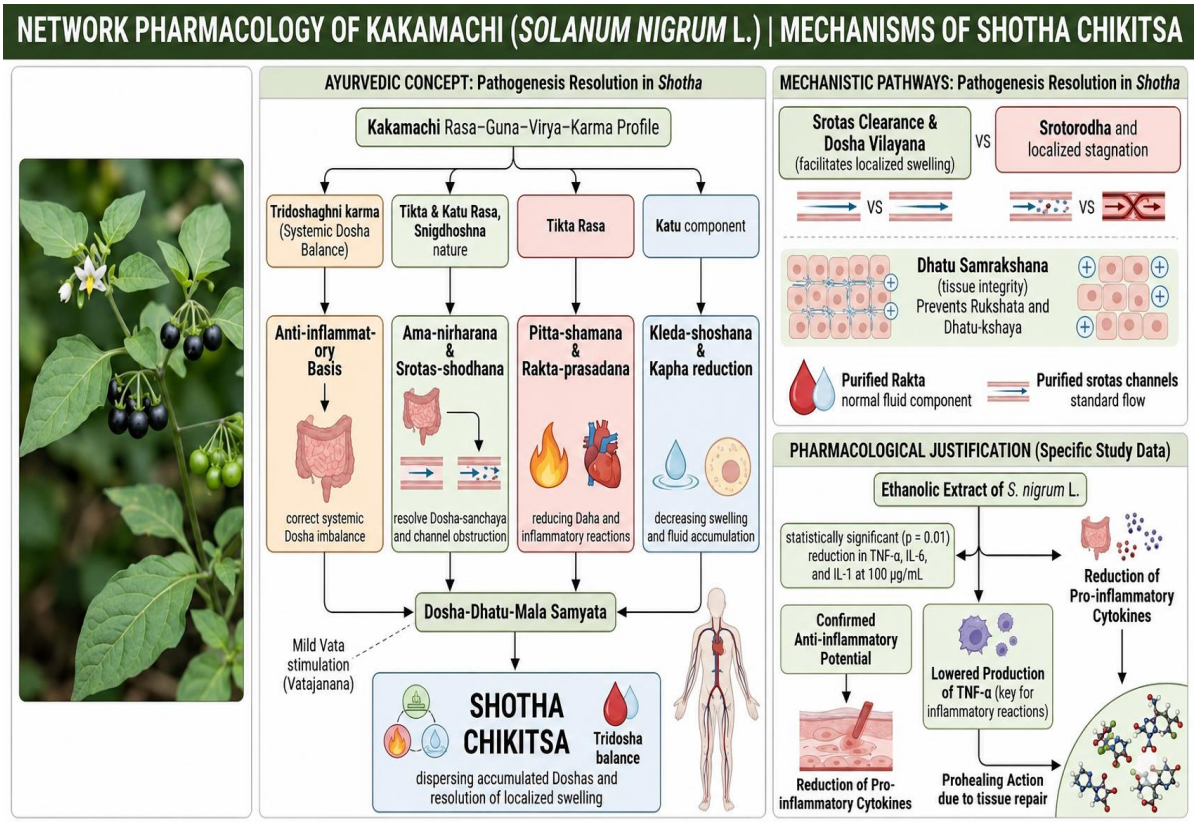

Image 5: Schematic representation of the integration of Ayurvedic concepts with contemporary pharmacological evidence showing *Pathya* effect of *Kakamachi* in *Shwayathu*

B. *Kakamachi*

Ayurvedic concept

काकमाची त्रिदोषघ्नी स्निग्धोष्णा स्वरशुक्रदा |तिक्ता रसायनी शोथकुष्ठार्शोज्वरमेहजित् |
कटुर्नेत्रहिता हिक्काच्छर्दिहृद्रोगनाशिनी ||211||[30]

Kakamachi alleviates all three *Doshas* (*Tridoshaghni*), is unctuous and hot in potency (*Snigdhoshna*), and promotes voice and reproductive tissue (*Svara-Shukrada*); it is bitter (*Tikta*), rejuvenative (*Rasayani*), and alleviates inflammation, skin diseases, piles, fever, and urinary disorders (*Shotha-Kushtha-Arsha-Jvara-Mehajit*). It is pungent (*Katu*), beneficial for the eyes (*Netrahita*), and alleviates hiccup, vomiting, and heart diseases (*Hikka-Chhardi-Hridroganashini*).

The efficacy of *Kakamachi* in the management of *Shotha* can be interpreted through its *Rasa–Guna–Virya–Karma* profile. *Shotha* arises from *Dosha-prakopa* (especially *Pitta* and *Kapha*) along with *Ama* and *Srotorodha*, and the explicit *Tridoshaghni Karma* of *Kakamachi* indicates its ability to correct systemic *Dosha* imbalance, forming the basis of its anti-inflammatory action.

The predominance of *Tikta* and *Katu Rasa*, along with *Snigdhoshna* nature, facilitates *Ama-nirharana* and *Srotas-shodhana*, helping to resolve *Dosha-sanchaya* and channel obstruction, which are central to *Shotha* development. The *Tikta Rasa* contributes to *Pitta-shamana* and *Rakta-prasadana*, reducing *Daha* and inflammatory reactions, while the *Katu* component aids in *Kleda-shoshana* and *Kapha* reduction, thereby decreasing swelling and fluid accumulation.

The *Snigdha Guna* plays a stabilizing role by preventing excessive *Rukshata* and *Dhatu-kshaya*, ensuring that inflammation is resolved without compromising tissue integrity. Simultaneously, the *Ushna Virya* supports *Dosha-vilayana* and *Srotas-vishodhana*, facilitating dispersal of accumulated *Doshas* and resolution of localized swelling, while its *Tridosha*-balancing nature prevents aggravation of *Pitta*.

Pharmacological justification:

This implies that ethanolic extract of *S. nigrum* L. may effectively lower the production of TNF-α, which is essential for inflammatory reactions. The study demonstrated a statistically significant ($p = 0.01$) reduction in TNF-α, IL-6, and IL-1 at 100 µg/mL, confirming the anti-inflammatory potential of *S. nigrum* L.[31]

C. *Mulaka*

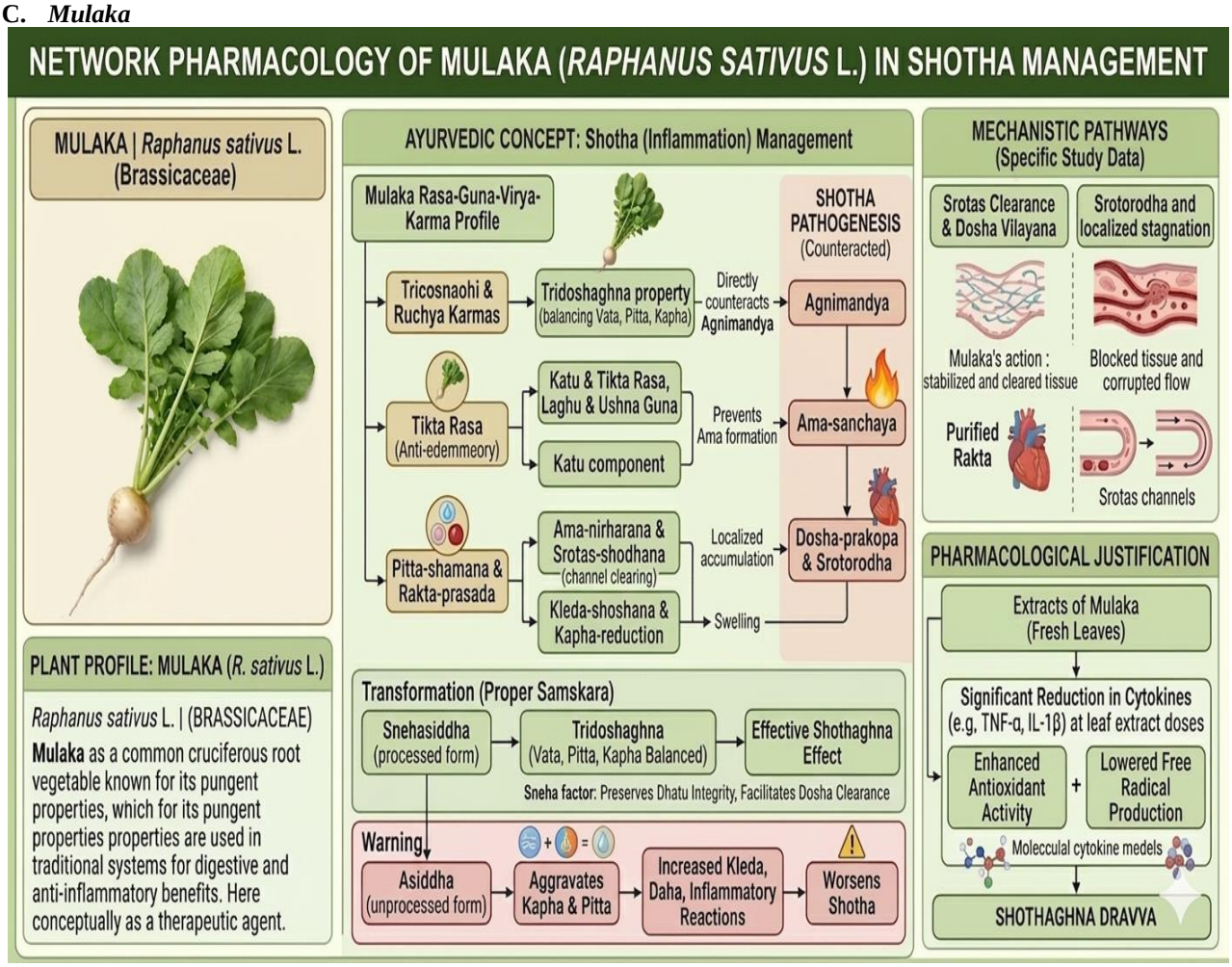

Image 6: Schematic representation of the integration of Ayurvedic concepts with contemporary pharmacological evidence showing *Pathya* effect of *Mulaka* in *Shwayathu*

Ayurvedic concept

पाचनं लघुः रुच्योष्णं पत्रं मूलकजं नवम् |
स्नेहसिद्धं त्रिदोषघ्नमसिद्धं कफपित्तकृत् ||26||[32]

Fresh leaves of radish (*Mulakajam Navam Patram*) are digestive (*Pachanam*), light (*Laghu*), appetizing and hot in potency (*Ruchyoshnam*); when processed with fats (*Snehasiddham*), they alleviate all three *Doshas* (*Tridoshaghnam*), but when unprocessed (*Asiddham*), they aggravate *Kapha* and *Pitta* (*Kapha-Pittakrit*).

The role of *Mulaka* (fresh leaves) in the management of *Shotha* can be understood through its *Rasa–Guna–Virya–Karma* profile, which facilitates *Ama-pachana*, *Dosha-Shamana* (when properly processed), and *Srotas-shodhana*, thereby addressing the fundamental pathology of inflammatory conditions. *Shotha* commonly arises from *Agnimandya* leading to *Ama-sanchaya*, followed by *Dosha-prakopa* and Srotorodha, and the *Pachana* and *Ruchya Karmas* of *Mulaka* directly counteract this by enhancing *Jatharagni* and promoting proper digestion.

The *Laghu Guna* supports *Ama-shoshana* and ease of metabolism, reducing the burden on impaired *Agni* and preventing further formation of *Ama*, which is a main causative factor in *Shotha*. The *Ushna* nature (*Ruchyoshnam*) facilitates *Dosha-vilayana* and *Srotas-vishodhana*, helping to resolve channel obstruction and localized accumulation of *Doshas*, thereby reducing swelling.

A critical aspect of its action lies in its *Snehasiddha* (processed) form, wherein *Mulaka* becomes *Tridoshaghna*, effectively balancing *Vata*, *Pitta*, and *Kapha*. This transformation is essential for its *Shothaghna* effect, as it ensures that inflammatory processes driven by multiple *Doshas* are simultaneously addressed. The presence of *Sneha* mitigates the otherwise *Ruksha–Ushna* impact, preserving *Dhatu* integrity while facilitating *Dosha* clearance.

Conversely, when used in *Asiddha* (unprocessed) form, *Mulaka* aggravates *Kapha* and *Pitta*, potentially increasing *Kleda*, *Daha*, and inflammatory reactions, thereby worsening *Shotha*. This highlights the importance of proper *Samskara* (processing) in achieving its therapeutic potential.

Pharmacological justification:
Extracts of radish leaves significantly reduced nitric oxide (NO) production in lipopolysaccharide (LPS)-stimulated RAW264.7 macrophages. Expression of inflammatory enzymes inducible nitric oxide synthase (iNOS) and cyclooxygenase-2 (COX-2) were reduced. Nuclear factor-κB (NF-κB) activation — a major inflammatory signaling pathway — was suppressed.[33]

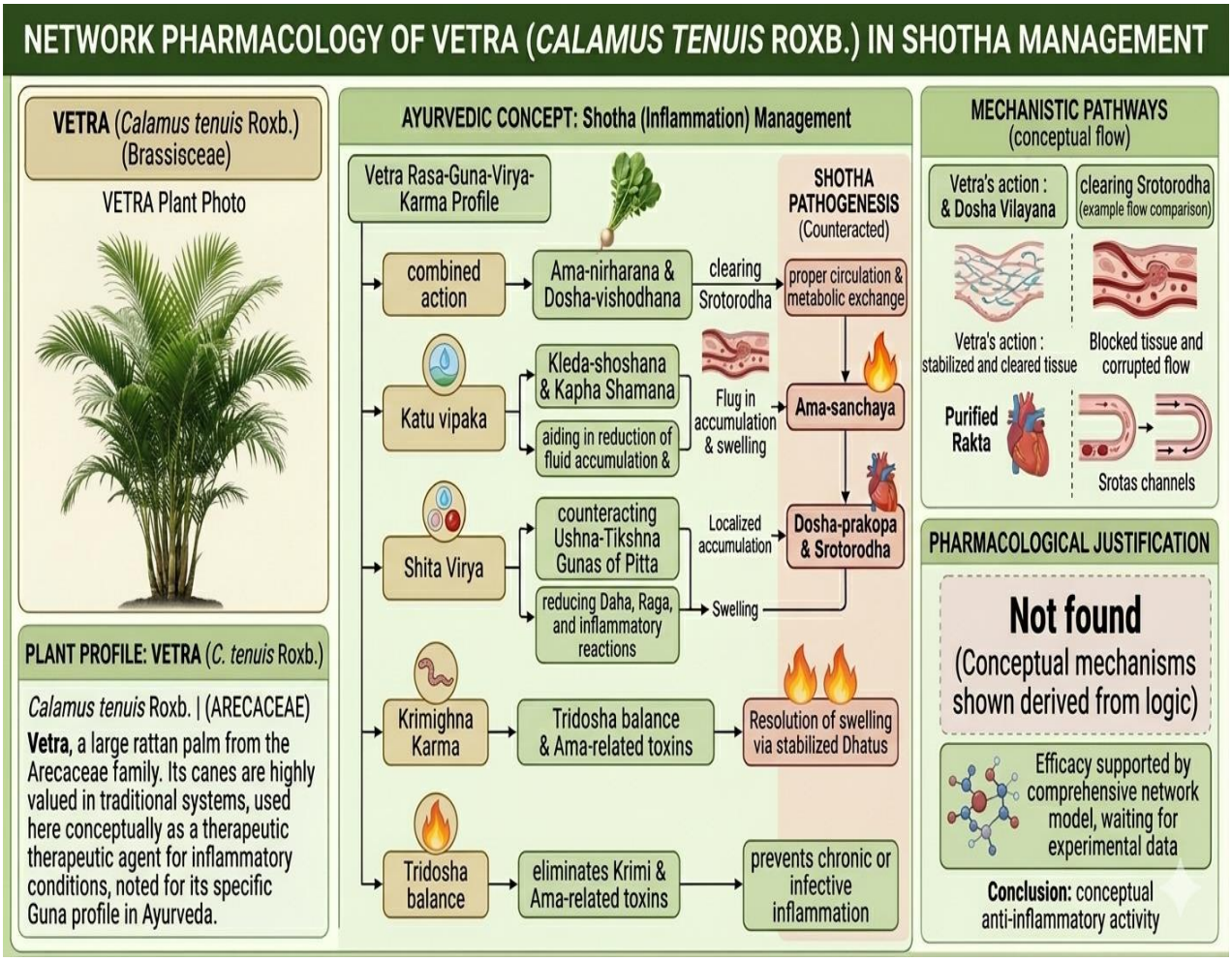

Image 7: Schematic representation of the integration of Ayurvedic concepts with contemporary pharmacological evidence showing *Pathya* effect of *Vetra* in *Shwayathu.*

D. *Vetra*
Ayurvedic concept:
शीतं विपाके कटुकं कृमिघ्नं सर्वरोगजित् |1253|[34]
Cooling (*Shitam*), pungent in post-digestive effect (*Vipake Katukam*), anthelmintic (*Krimighnam*), and alleviates all diseases (*Sarvarogajit*).

The efficacy of *Vetra* in the management of *Shotha* can be understood through its *Rasa–Guna–Virya–Vipaka–Karma* profile. *Shotha* is chiefly associated with *Dosha-prakopa* (especially *Pitta* and *Kapha*) along with *Ama* and *Srotorodha*, and the *Shita Virya* of *Vetra* plays a crucial role in counteracting *Ushna–Tikshna Gunas* of aggravated *Pitta*, thereby reducing *Daha*, *Raga*, and inflammatory reactions.

The *Katu Vipaka* contributes to *Kleda-shoshana* and *Kapha Shamana*, aiding in the reduction of fluid accumulation and swelling, which are key features of *Shotha*. This post-digestive effect ensures sustained metabolic correction at the *Dhatu* level, preventing recurrence of inflammatory processes. Additionally, the *Krimighna Karma* helps eliminate underlying etiological factors such as *Krimi* and *Ama*-related toxins, which may contribute to chronic or infective inflammatory conditions.

Through its combined action, *Vetra* facilitates *Ama-nirharana* and *Dosha-vishodhana*, thereby clearing *Srotorodha* and restoring proper circulation and metabolic exchange within the tissues. The reduction of *Kleda* and *Pitta*-induced heat leads to stabilization of *Dhatus*, preventing further pathological changes and promoting resolution of swelling.

Pharmacological justification:
Not found

E. *Nimba*:

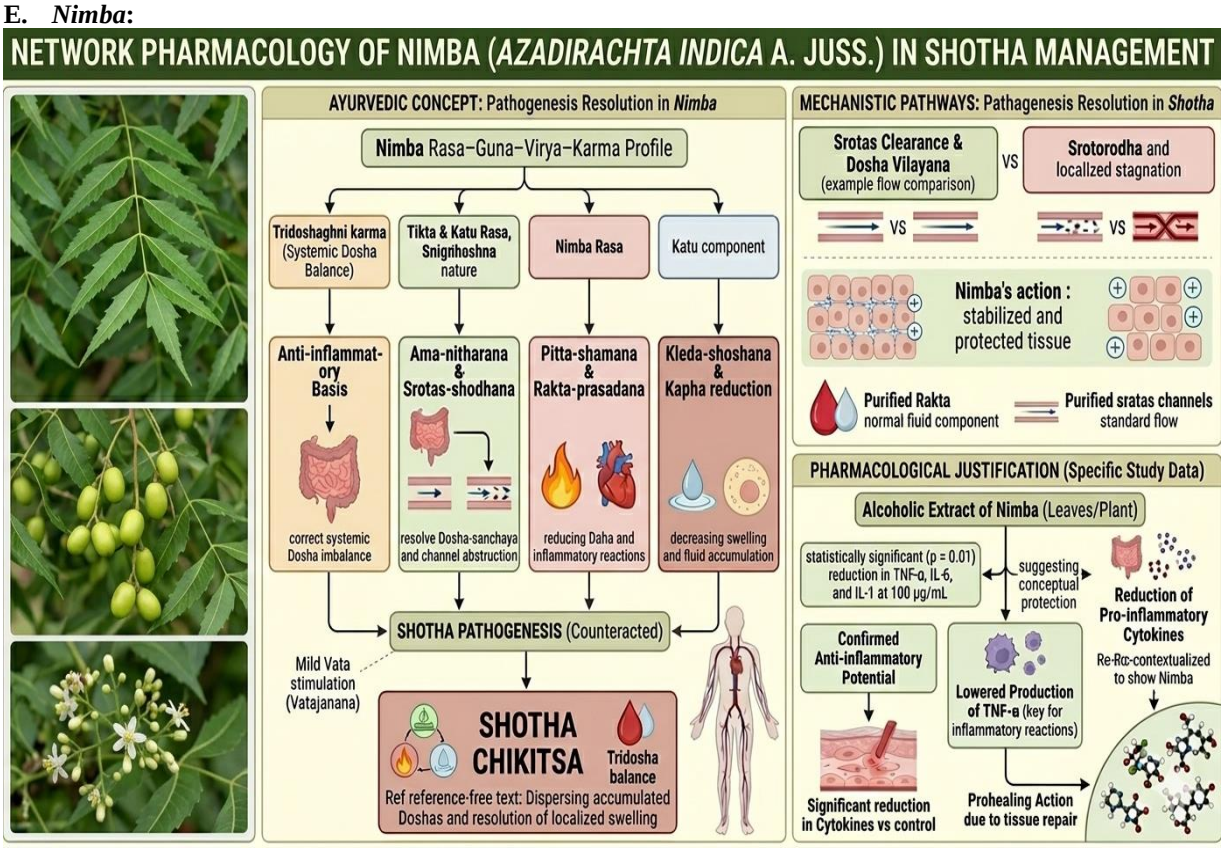

Image 8: Schematic representation of the integration of Ayurvedic concepts with contemporary pharmacological evidence showing *Pathya* effect of *Nimba* in *Shwayathu.*

Ayurvedic concept

निम्बपत्रं स्मृतं नेत्र्यं कृमिपित्तविषप्रणुत् ॥83॥[35]

ग्राहि प्रवालं निम्बस्य रक्तपित्तकफकृमीन् ।कुष्ठघ्नं वातजननं नेत्र रोगान् विनाशयेत् ॥881॥

तद्वत् पत्राणि निम्बस्य व्रणघ्नानि विशेषतः ॥[36]

Neem leaves (*Nimbapatram*) are known to be beneficial for the eyes (*Netryam*) and alleviate worms, *Pitta*, and toxins (*Krimi-Pitta-Vishapranut*).

Coral-like parts of Neem (*Nimbasya Pravalam*) are absorbent (*Grahi*), and alleviate disorders of blood, *Pitta*, *Kapha*, and worms (*Rakta-Pitta-Kapha-Krimin*); they are beneficial in skin diseases (*Kushthaghnam*), generate *Vata* (*Vatajananam*), and destroy eye diseases (*Netrarogan Vinashayet*). Similarly, the leaves of Neem (*Tadvad Patrani Nimbasya*) are especially useful in healing wounds (*Vranaghnani Visheshata*)

The efficacy of *Nimba* in the management of *Shotha* can be elucidated through its *Rasa–Guna–Virya–Karma* profile, which predominantly facilitates *Pitta–Kapha Shamana*, *Ama–Visha nirharana*, and *Srotas-shodhana*, thereby addressing the fundamental pathology of inflammatory conditions. *Shotha* is primarily a manifestation of *Dosha-prakopa* (especially *Pitta* and *Kapha*) associated with *Ama* and *Kleda* leading to *Srotorodha*, and the *Pitta-pranut* and *Rakta–Kapha-hara* actions of *Nimba* directly counteract *Daha*, *Raga*, and inflammatory process.

The *Krimi* and *Visha-pranut* properties play a crucial role in eliminating underlying etiological factors, including *Ama* and endogenous/exogenous toxins, which contribute to chronic inflammation and tissue reactions. By removing these causative elements, *Nimba* interrupts the progression of *Shotha* at its root level.

The *Grahi* property, particularly attributed to its *Pravala*, supports *Sangrahana* and *Kleda-shoshana*, reducing excessive fluid accumulation within tissues, which is a main feature of swelling. This action helps in restoring *Srotas* stability and integrity, thereby preventing further pathological exudation.

Its influence on *Rakta* (*Rakta-Pitta-Kapha-hara*) ensures *Rakta-shodhana* and *Rakta-prasadana*, which is essential in controlling inflammatory changes mediated through *Rakta-dushti*. The *Kushthaghna* and *Vranaghna Karmas* further indicate its role in reducing inflammatory skin disorders and promoting tissue healing, thereby aiding resolution of both internal and external *Shotha*.

Although *Nimba* exhibits *Vatajanana* tendency, this contributes to *Srotas-shodhana* and mobilization of stagnated *Doshas*, facilitating proper circulation and resolution of localized swelling. Its overall action ensures reduction of *Kleda*, *Pitta*-induced heat, and *Dosha* accumulation, which are central to *Shotha* pathology.

Pharmacological justification

The impact of *A. indica* is a combined and synergistic reaction of several classes of phytoconstituents, rather than a single ingredient with a variety of polarities that work by blocking the COX-1 and COX-2 en-zymatic activity, as well as IL-1, CRP, IL-6, and TNF-α production is inhibited.[37]

This systematic investigation establishes a mechanistic rationale for the therapeutic integration of *Pathya Patrashaka* (wholesome leafy vegetables) by linking traditional nutritional properties to modern biochemical pathways and physiological targets. By mapping these wholesome phytoconstituent interactomes through applied pharmacology, the study provides a molecular basis for classical dietary prescriptions. Ultimately, these findings bridge traditional Ayurvedic dietary principles with empirical evidence, enhancing the clinical precision of integrative nutritional interventions.

CONCLUSION

The available evidence highlights the clinical and dietary relevance of *Pathya Patra Dravya* in *Kushtha* and *Shvayathu*. Their classical use reflects an individualized approach in which food-based medicinal resources are selected in accordance with disease characteristics and Ayurvedic pharmacodynamic principles. Contemporary research offers preliminary support through biological activities relevant to inflammatory, oxidative, and tissue-related processes, although direct disease-specific evidence remains limited. Future research should prioritize standardized plant materials, defined preparations, reproducible experimental models, and well-designed clinical studies to clarify their efficacy, safety, and translational potential. This evidence-oriented approach can strengthen the scientific understanding of *Pathya Patra Dravya* while preserving their classical therapeutic context.

REFERENCES

1. S. Goraya, D. K. Ved & T. P. Singh. Herbal sector in India: Current scenario, Medicinal Plants: An Assessment of their Demand and Supply in India.
2. Gautam V., Raman R.M.V., Ashish K. Exporting Indian healthcare (Export potential of Ayurveda and Siddha products and services). Road Beyond Boundaries (The Case of Selected Indian Healthcare Systems) Export-Import Bank of India; Mumbai, 2003; pp. 14–54.
3. Srivastava V.K., Singh B.M. In: Indian aloe in Supplement to cultivation and utilization of medicinal plants. Handa S.S., Kaul M.K., editors. RRL (CSIR); Jammu-Tawi, 1996; pp. 323–332.
4. Raina M.K. In: Aloe in Supplement to cultivation and utilization of medicinal plants. Handa S.S., Kaul M.K., editors. RRL (CSIR); Jammu-Tawi, 1996; pp. 313–322.
5. Indraji J.K. Vanaspati-Shastra: Kunvak, Pravin Prakashan, Rajkot. 2nd Ed. 1998; pp. 668–670.
6. Getachew, A.G., et al. Dietary values of wild and semi-wild edible plants in southern Ethiopia, Afr. J. Food Agric. Nutr. Dev, 2013; 13(2): 7485-7503.
7. Krishnendu, J.R. &Prasannakumari, B. Consumption pattern of green leafy vegetables by rural women in district Thiruvananthapuram, J. Krishi Vigyan, 2015; 3: 4-8.
8. Sree, M. D., et al. A review on South Indian edible leafy vegetables. J. Global Trends Pharmaceutical Sci, 2013; 4(4): 1248-1256.
9. Pandey S, Singh R, Singh K. Network Pharmacology: An Emphasis on Traditional Chinese Medicines and Its Adaptability for Ayurveda Medicines in India. J Ayurveda Integr Med Sci, 2022; 7(10): 113-121.
10. Pathak N. Reverse pharmacology of Ayurvedic drugs includes mechanisms of molecular actions. J Ayurveda Integr Med, 2011 Apr; 2(2): 49-50. doi: 10.4103/0975-9476.82512.
11. Payyappallimana U, Venkatasubramanian P. Exploring Ayurvedic Knowledge on Food and Health for Providing Innovative Solutions to Contemporary Healthcare. Front Public Health, 2016 Mar 31; 4: 57. doi: 10.3389/fpubh.2016.00057. PMID: 27066472; PMCID: PMC4815005.
12. Central Council for Research in Ayurvedic Sciences. Pharmacological Research [Internet]. New Delhi: CCRAS, Ministry of Ayush, Government of India; 2026 [cited 2026 May 8]. Available from: https://ccras.nic.in/services/pharmacological-research/
13. Chandran U, Mehendale N, Tillu G, Patwardhan B. Network Pharmacology of Ayurveda Formulation Triphala with Special Reference to Anti-Cancer Property. Comb Chem High Throughput Screen, 2015; 18(9): 846-54.
14. Joshi S, Pathak A, Regati DR, Menon R, Ajith DS, Sheshadri A, et al. GRAYU: Graph-based database integrating Ayurvedic formulations, medicinal plants, phytochemicals and diseases. Front Pharmacol, 2026 Jan 22; 16: 1727224. doi: 10.3389/fphar.2025.1727224.
15. Hopkins AL. Network pharmacology: the next paradigm in drug discovery. Nat Chem Biol, 2008 Nov; 4(11): 682-90. doi: 10.1038/nchembio.118. PMID: 18936753; PMCID: PMC7148629.
16. Liu, R. H., Health benefits of fruit and vegetables. Nutrition Reviews, 2013; 71(1): 1-11.
17. Slavin, J. L., Fiber and prebiotics: mechanisms and health benefits. Nutrients, 2013; 5(4): 1417-1435.
18. Arora, R. K., Diversity and conservation of plant genetic resources. Journal of Plant Genetic Resources, 2014; 12(1): 1-10.
19. Kothari, V., Medicinal plants of India. Journal of Ayurveda and Integrative Medicine, 2017; 8(1): 1-12.
20. Kumar, V., Antioxidant and anti-inflammatory activities of green leafy vegetables. Journal of Food Science and Technology, 2015; 52(1): 1-10.

21. Patil, S., Nutrient content of underutilized green leafy vegetables of southern Karnataka. Journal of Food Science and Technology, 2018; 55(1): 1-8.
22. Jyoti, S. S. Samant, Kamal K., Brijmohan U., Mamta B., Neetu B. et al. Diversity, distribution, indigenous uses and conservation prioritization of the economically important floristic diversity in Nadaun Block of Hamirpur District, Himachal Pradesh. International Journal of Biodiversity and Conservation, July 2014; 6(7): 522-540.
23. Acharya Bhavmishra, Bhavprakash Nighantu, E-book. designed and developed by National Institute of Indian Medical Heritage (NIIMH), Hyderabad. Guduchyadi Varga, Ver. 83. New Delhi: Central Council for Research in Ayurvedic Sciences (CCRAS), 2015.
24. Acharya Kaiyadeva, Kaiyadeva Nighantu, E-book. designed and developed by National Institute of Indian Medical Heritage (NIIMH), Hyderabad. Aushadhi Varga, Ver. 881-882. New Delhi: Central Council for Research in Ayurvedic Sciences (CCRAS), 2015.
25. Singh V, Roy M, Garg N, et al. *An Insight into the Dermatological Applications of Neem: A Review on Traditional and Modern Aspect*. Recent Advances in Anti-Infective Drug Discovery, 2021; 16(2): 94-121.
26. Acharya Bhavmishra, Bhavprakash Nighantu, E-book. designed and developed by National Institute of Indian Medical Heritage (NIIMH), Hyderabad. Shaka Varga, Ver. 33. New Delhi: Central Council for Research in Ayurvedic Sciences (CCRAS), 2015.
27. Shah M, Hasan M, Parvin M, Shuvo SA, Abdullah, Naznin A, et al. Evaluation of analgesic, antioxidant, antibacterial, and anti-inflammatory activities of Trichosanthes dioica leaf extract. J Phytopharmacol, 2025; 14(6): 432-442. doi: 10.31254/phyto.2025.14603
28. Acharya Bhavmishra, Bhavprakash Nighantu, E-book. designed and developed by National Institute of Indian Medical Heritage (NIIMH), Hyderabad. Shaka Varga, Ver. 33. New Delhi: Central Council for Research in Ayurvedic Sciences (CCRAS), 2015.
29. Nitin Kumar, Sunil Kumar, Vijay Sharma, Anurag Chaudhary, Evaluation of anti-inflammatory activity of Trichosanthes dioica R. Leaves, Journal of Pharmacognosy and Phytochemistry, 2016; 5(2): 01-03
30. Acharya Bhavmishra, Bhavprakash Nighantu, E-book. designed and developed by National Institute of Indian Medical Heritage (NIIMH), Hyderabad. Guduchyadi Varga, Ver. 211. New Delhi: Central Council for Research in Ayurvedic Sciences (CCRAS), 2015.
31. Nandini V, Vandana S, Karthikeyan R. *Anti-inflammatory effect of Solanum nigrum Linn. ethanolic leaves extract for oral ulcer in LPS-stimulated THP-1 cell line.* Int J Ayurvedic Med, 2025; 16(2): 430-436.
32. Acharya Bhavmishra, Bhavprakash Nighantu, E-book. designed and developed by National Institute of Indian Medical Heritage (NIIMH), Hyderabad. Shaka Varga, Ver. 26. New Delhi: Central Council for Research in Ayurvedic Sciences (CCRAS), 2015.
33. Park H-J, Song M. *Leaves of Raphanus sativus L. Shows Anti-Inflammatory Activity in LPS-Stimulated Macrophages via Suppression of COX-2 and iNOS Expression.* Prev Nutr Food Sci, 2017; 22(1): 50-55. doi:10.3746/pnf.2017.22.1.50.
34. Acharya Kaiyadeva, Kaiyadeva Nighantu, E-book. designed and developed by National Institute of Indian Medical Heritage (NIIMH), Hyderabad. Aushadhi Varga, Ver. 1253. New Delhi: Central Council for Research in Ayurvedic Sciences (CCRAS), 2015.
35. Acharya Bhavmishra, Bhavprakash Nighantu, E-book. designed and developed by National Institute of Indian Medical Heritage (NIIMH), Hyderabad. Guduchyadi Varga, Ver. 83. New Delhi: Central Council for Research in Ayurvedic Sciences (CCRAS), 2015.
36. Acharya Kaiyadeva, Kaiyadeva Nighantu, E-book. designed and developed by National Institute of Indian Medical Heritage (NIIMH), Hyderabad. Aushadhi Varga, Ver. 881-882. New Delhi: Central Council for Research in Ayurvedic Sciences (CCRAS), 2015.
37. Ammara A, Sobia A, Nureen Z, Sohail A, Abid S, Aziz T, Nahaa MA, Rewaa SJ, Ahellah MJ, Nouf SAA, Nehad AS, Manal YS, Amnah AA, Majid A, Abdulhakeem SA, Anas SD, Saad A. Revolutionizing the effect of Azadirachta indica extracts on edema induced changes in C-reactive protein and interleukin-6 in albino rats: in silico and in vivo approach. Eur Rev Med Pharmacol Sci. 2023 Jul;27(13):5951-5963. doi: 10.26355/eurrev_202307_32947. PMID: 37458623.