

SAPTAPARNA IN SHALYA – TANTRA: A COMPREHENSIVE REVIEW

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Article Received on 15 July 2026,
Article Revised on 05 August 2026,
Article Published on 18 August 2026,

<https://doi.org/10.5281/zenodo.21990243>

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How to cite this Article: ¹*Dr. Lakhan Solanki,
²Prof. Dr. Ajay Kumar Gupta. (2026).
Saptaparna In Shalya - Tantra: A
Comprehensive Review. World Journal of
Pharmaceutical Research, 15(16), 1699-1708.

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ABSTRACT

Alstonia scholaris, commonly known as *Saptaparna* - the Devil's tree, is an important medicinal tree of the family *Apocynaceae* which holds significant importance in *Ayurveda*. The review summarizes its classical *Ayurvedic* references, botanical characteristics, phytochemical constituents, traditional uses, and pharmacological activities. *Ayurveda* describes *Saptaparna* as a *Tridosha-shamaka* drug indicated for the management of various diseases like *Kushtha* (skin diseases), *Vrana* (wounds), *Krimi* (parasitic infections), etc. The plant is also mentioned by *Acharya Sushruta* in the preparation of *Kshara*. Phytochemical studies reveal the presence of alkaloids, flavonoids, tannins, saponins and steroids, which contribute to its diverse biological activities. Alkaloid studies have demonstrated anti-inflammatory, analgesic, anti-bacterial, anti-diabetic, anti-oxidant, and wound-healing properties, supporting its traditional therapeutic uses. The available

evidence highlights the medicinal potential of *Saptaparna* and suggests that further clinical research is needed to validate its efficacy and expand its therapeutic applications.

KEYWORDS: *Alstonia scholaris*, *Saptaparna*, *Ayurveda*, phytochemistry, pharmacological activities.

INTRODUCTION

Herbal medicine is becoming an integral part of standard healthcare system, based on traditional uses and ongoing scientific researches. The traditional Indian system of medicine, *Ayurveda*, which means science of life, is one of the world's oldest systems of medicine. *Ayurvedic* system of medicine mainly uses plant-based preparations which are developed through real life experiences and experimentation. The *Apocynaceae* family contains more than 200 species. This family is known for herbs having very high biological activity as well as medicinal properties. *Alstonia scholaris* belongs to the same family which exhibits enough amount of medicinal potential and wide spectrum of biological activity. It grows into giant trees and thrives well along damp river banks in the evergreen forests of most tropical countries. It grows throughout India, in Sub Himalayan belt, west Bengal, U.P., Bihar and Southeast Asia^[1], in deciduous and evergreen forests. Historically the plant was scientifically named by Linnaeus as *Echites Scholaris*. As being a potent medicinal plant, it has been studied well for its bio-active principles present in leaf, stem and bark of the tree.

The *Saptaparna* is one among the most important medicinal plant described in many *Ayurvedic* literature – *Brihatrayi's* and *Nighantu*.^[2] In *Ayurveda*, it is highly used in disease conditions like *Kushtha*^[3] (skin diseases), *Prameha-pidika* (diabetic carbuncle), *Jwara* (fever) and *Shwasa* (asthma). *Saptaparna* is primarily used in skin disorders and chronic wounds for its *Shodhana* properties and it is classified among the herbs useful in *Vrana-shodhana*, *Vrana-ropana*^[4] and *Kushthaghna* due to its *Tikta-Kashaya rasa*, *Ushna Virya* and *Tridosha shamaka* properties. *Ayurveda* classics and modern text provide huge information about *Saptaparna* with its importance, synonyms, uses, part used, formulation and more. The tree has been mentioned by *Acharya Sushruta* for preparation of *Kshara* in *Ksharapaka Vidhi Adhyay*.^[5]

ETYMOLOGY^[6]

The Sanskrit name *Saptaparna* is derived as *Sapta* (seven) and *Parna* (leaves) referring to how the leaves are arranged as there are three to seven leaves in a whorl.

VERNACULAR NAMES^[6]

Hindi: *Satium, Satni, Satparna, Satveni, Satauna, Chitwan*

Sanskrit^[3]: *Saptaparna, Gajamadagandhapuspa, Guchha-pushpa, Sapta-chhada, Shaarada, Shalmalipatraka, Tvaka, Vishamacchada, Vishala-tvaka, Vrihat*

English^[7]: Devil's tree, Dita bark, Milkwood pine, Scholar tree, White cheese wood

Kannada: *Maddale* **Bengali:** *Chhatim* **Gujrati:** *Saatvan*

PROPERTIES AND ACTIONS MENTIONED IN AYURVEDA^[8]

Rasa	- Tikta, Kashaya
Guna	- Laghu, Snigdha
Virya	- Ushna
Vipaka	- Katu
Doshaghnata	- Tridosha-shamaka ^[9]
Karma	- Vrana-shodhana, Vrana-ropana, Kushthaghna
Part Used	- Leaves, Stem-bark, Root bark

CLASSICAL CATEGORIZATION

Sushruta Samhita^[10]: Aragvadhadi Gana

Lakshadi group of herbs

Charak Samhita^[11]: Kushthaghna- Group of herbs used in skin diseases

Udarda Prashamana- Group of herbs used in allergic skin conditions

Kashaya Skandh - Astringent group of herbs

Tikta Skandh - Group of bitter herbs

Ashtanghridaya: Aragvadhadi group of herbs.

Bhavaprakash Nighantu^[12]: Vatadi Varga of herbs

TAXONOMIC POSITION^[13]

- **Kingdom:** Plantae
- **Division:** Tracheophyta
- **Subdivision:** Spermatophytina
- **Class:** Magnoliopsida
- **Order:** Gentianales
- **Family:** Apocynaceae
- **Genus:** *Alstonia*
- **Species:** *Alstonia scholaris*

MORPHOLOGICAL CHARACTERISTICS^{[6],[14],[15]}

Leaves: Leaves are 3-7 in a whorl, coriaceous (leathery texture) and dark green. Leaf stalk is 1-1.5 cm long, the lamina is elliptic, 10-20cm × 4-5cm in size, upper surface is dark green and lower surface is greenish-white.

Bark: Bark is rough, greyish brown, when bark is incised, milky latex flows quickly.

Flower: Flowers are greenish-white in colour and are small in size as they are 7-10mm long and are strongly perfumed.

Fruit: Two lobbed green or brown, spindle shaped, 15-30 cm in length, 5-6 mm in diameter, containing numerous flat, oblong, brown seeds.

PHYTOCHEMISTRY^[16]

Alstonia scholaris (L.) R. Br. is rich in diverse phytochemical constituents distributed throughout its stem, bark, leaves, roots, fruits, and other plant parts. More than 300 chemical compounds have been isolated from species belonging to the *Alstonia* genus. The phytochemical profile of *Alstonia scholaris* includes alkaloids, flavonoids, coumarin derivatives, simple phenolic compounds, steroids, saponins, and tannins. In addition, leaf extracts have been reported to contain several mineral elements, including zinc (Zn), copper (Cu), iron (Fe), calcium (Ca), chromium (Cr), manganese (Mn), and cadmium (Cd).^[17] Among the main constituents of the species are alkaloids. Alkaloids are one of the important chemical classes found in medicinal plant species. They are responsible for the pharmacological qualities of medicinal plants. *Alstonia scholaris* is known to be rich in alkaloids, with numerous compounds having been isolated and identified from different parts of the plant.

Stem bark – It is having echitamine, new glycoside-renoterpine, glucoside triterpenes, aamyring acetate, echitamidine, ditamine.

Root – It contains akuammigine, tubaitowine, akuammigine, hydroxyl-19.

Leaves – It contains an indole alkaloid – picrinine, botulin, ursolic acid, beta-sitosterol and scholarin.

Flowers – It contains Picrinine and strictamine

Fruit- It contains Akuammidine.

PHARMACOLOGICAL ACTIVITY

Anti-inflammatory and Analgesic^[18]: The alkaloids fraction of *Alstonia scholaris* leaf there are three main alkaloids, picrinine, vallesamine and scholaricine, produces the anti-inflammatory and analgesic effect peripherally based on several in vivo assays.

Antibacterial activity^{[19],[20]}: Aqueous extract was found very active against both gram-positive and gram-negative bacteria. Total alkaloid extract was found only active against gram-negative bacteria.

Antidiabetic and antihyperlipidemic activity^[21]: *Alstonia scholaris* bark significantly

reduced serum triglyceride level in diabetic patient support its long-term use not only for better control of blood glucose but also for normalization of disturbances in lipid metabolism which may prevent further predisposition of the patients to cardiovascular complication.

KNOWN EFFECTS OF ALKALOIDS PRESENT IN ALSTONIA SCHOLARIS

Alkaloids	Pharmacological effect
Alstonine	Anti-malarial ^[23] , Anxiolytic ^[24]
Echitamine chloride, picrinine, ursolic acid, alstonine, lupeol	Anti-cancerous ^[22]
Picrinine, vallesamine, scholaricine	Anti-tussive ^[25]
Quercetin, quercetin-3-O- β -D-galactopyranoside	Anti-diabetic ^[26]
Kaempferol, lupeol, α -amyirin, scholaricine, ursolic acid	Anti-inflammatory ^[27]
Picrinine, vallesamine, scholaricine, ursolic acid, ditamine	Analgesic ^[28]
Quercetin, quercitrin Scholaricine, picrinine, vallesamine	Anti-asthmatic Cardiovascular ^[29]
Reserpine	Sedative ^[30]

TRADITIONAL USES

Leaves – The tender leaves are roasted and pulverized and made into poultices, acts as a useful local stimulant for unhealthy ulcers with foul discharges. (Indian medicinal plants)

In *Sushruta samhita Kshar-paka-vidhi Adhyaya Saptaparna* is mentioned for herbs by which *Kshar* is prepared.

Bark – Paste with water is applied in rheumatism and wounds. (the treatise on Indian medicinal plants)

It is also used in malarial fevers, dyspepsia, skin diseases and in abdominal disorders. The bark is bitter, astringent, digestive, laxative, anthelmintic and antipyretic.

In coastal Karnataka, the bark of *Saptaparna* is freshly collected by using stones on the *Amavasya* (no moon day of *Aashadha maasa*) in early morning. And its 2 cups of *Kashaya* are taken on empty stomach as tonic and fever of infective origin.

Fruits: The ripe fruits of the plant are used in syphilis and epilepsy. It is also used as a tonic and anthelmintic.

DESCRIPTION OF SAPTAPARNA IN CLASSICS

1. Acharya Charaka

।-दार्व्या रसाज्जनस्य च निम्बपटोलस्य खदिरसारस्य |
 आरग्वधवृक्षकयोस्त्रिफलायाः सप्तपर्णस्य ||
 इति षट् कषाययोगाः कुष्ठघ्नाः सप्तमश्च तिनिशस्य | (च.चि. 7/96–97)

Saptaparna is included in *Shat-Kashaya* (Six decoctions) in the management of *Kustha*.

सप्तच्छद करवीराः शस्यन्ते स्नानपानेषु | (च.चि. 7/129)

Saptaparna is mentioned for *Snana* (External) and *Paana* (Internal) in *Kustha*.

2. Acharya Sushruta

लाक्षा...सप्तच्छदमालत्यस्त्रायमाणा चेति ||
 कषायतिक्तमधुरः कफपित्तार्तिनाशनः |
 कुष्ठक्रिमिहरश्चौव दुष्टव्रणविशोधनः || (सु.सू. 38/64–65)

Acharya Sushruta mentioned *Saptaparna* among various drugs described for *Shodhana* of *Dushta Vrana*.

सप्तपर्णकरज्जार्कनिम्बराजादनत्वचः |
 हिता गोमूत्रपिष्टाश्च सेकः क्षारोदकेन वा ||
 प्रच्छाद्य मांसपेश्या वा कृमीनपहरेद्व्रणात् | (सु.चि. 1/121–122)

Ksharodaka and bark is used for *Krimighna Karma* in *Vrana*.

चित्रकार्को... सप्तपर्ण...तैलं धीरो विपाचयेत् |
 एतद्धि स्यन्दनं तैलं भृशं दद्याद्भगन्दरे ||
 शोधनं रोपणं चैव सवर्णकरणं | (सु.चि. 8/50–52)

Saptaparna is used in *Syandana taila* for *Shodhana*, *Ropana* and *Savarnikarana* of *Bhagandara*.

3. Acharya Shodhala

सप्तदलदुग्धकल्कः शमयति दुष्टव्रणं प्रलेपेन ।

Acharya Shodhala has mentioned use of *Dugdha* (Latex) and *Kalka* (Paste) of *Saptaparna* for external application in *Dushta Vrana*.

4. Dhanvantri Nighantu

त्रिदोषशमनो हृद्यः सुरभिः दीपनः सरः ।

शूलगुल्मकृमीन् कुष्ठं हन्ति शाल्मलीपत्रकः ॥ (घ.नि.)

Dhanvantri Nighantu mentioned good qualities of *Saptaparna* and included it in *Chandanadi Varga*.

5. Raj Nighantu

सप्तपर्णसु तिक्तोष्णः त्रिदोषघ्न दीपनः ।

मदगन्धो निरुद्धेऽयं व्रणरक्तामयकृमीन् (रा.नि.)

Saptaparna is mentioned under *Chandanadi Varga* in *Raj Nighantu* and is used to cure infestation of worms in *Vrana*.

6. Bhava Prakash

सप्तपर्ण विशालत्वक् शारदो विषमच्छदः ॥

सप्तपर्णो व्रणश्लेष्मवातकुष्ठास्रजन्तुजित ।

दीपनः श्वास गुल्मघ्न सिग्धोष्णास्तुवरः सरः ॥ 75 ॥ (भा.प्र.)

Saptaparna cures *Vrana* (ulcers), mitigates *Kapha* and *Vata Dosha*, cures *Kustha* (leprosy), bleeding disease and worm infestation, increases digestive fire, cures dyspnoea, *Gulma*, is *Snigdha*, *Ushna* and *Sara*.

DISCUSSION

The comprehensive review of *Saptaparna* establishes a profound alignment between classical *Ayurveda* properties and modern pharmacological evidence. In *Ayurveda*, the plant's *Tikta-Kashaya* (bitter-astringent) *Rasa*, *Ushna Virya*, and *Tridosha-Shamaka* properties justify its extensive clinical usage by *Acharyas* in managing *Kushtha* (skin disorders), *Vrana* (chronic wounds), and *Krimi* (infections). Modern phytochemistry thoroughly validates these traditional applications through the isolation of over 300 chemical compounds, dominated by bioactive indole alkaloids such as picrinine, vallesamine, and scholaricine. The documented antibacterial action against both Gram-positive and Gram-negative strains directly supports its role in wound purification (*Vrana-shodhana*). Concurrently, its anti-inflammatory, analgesic, and antioxidant mechanisms accelerate tissue repair (*Vrana-ropana*) by neutralizing reactive oxygen species (ROS) at the wound site. Ultimately, this synergy between ethno-botanical history and modern science underlines *Saptaparna's* vast therapeutic potential, though structured clinical trials

remain imperative to fully standardize its safety and efficacy for global healthcare systems.

CONCLUSION

Saptaparna has been used in traditional system of medicine for treating various ailments. The tree has been mentioned for preparation of *Kshara*, which means the prepared *Kshara* will be having the same medicinal properties as the tree contains in itself as per *Acharya Sushruta*. As the plant contains various chemical constituents mostly alkaloids that can promote health and reduce illness. The antioxidant properties of *Alstonia scholaris* also plays a significant role in wound healing by reducing oxidative stress and promoting tissue repair. Reactive oxygen species, which accumulate during inflammatory response to wounds, induces cellular damage and hinder the healing process. Antioxidants present in *Saptaparna* neutralizes the oxidative stress and reduce their detrimental effect on tissue repair.

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