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A REVIEW ON SAPTAPARNA (Alstonia Scholaris R. Br)

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ABSTRACT

Many medicinal plants were described in Ayurveda with their therapeutic importance. The plant *Saptaparna* (Alstonia scholaris R.Br.) is one of the most important medicinal plant which is widely cultivated species of the family Apocynaceae. The word ''*Sapta*'' means seven and ''*Parna''* means leaves. It is an ornamental plant, commonly known as Devil's tree, Dita bark. *Saptaparna* stem bark is one of the ingredient of Antimalarial drug Ayush-64 prepared by CCRAS, India. Traditionally the plant is used in *Jwara, Shwas, Kushtha, Gulma, Vrana etc.* The Alstonia scholaris R.Br. is well known medicinal plant due to its various pharmacological activities as like antidiabetic, antibacterial, antianxiety, anti-inflammatory, antiulcer, anticancer, antimicrobial, antidiarrhoel, antioxidant, wound healing activities etc. The plant contains the Phytoconstituents such as alkaloids, steroids, reducing sugars, flavonoids. The present review attempt to detailed introduction of its pharmacological profile, ethanomedical use, chemical constituents, as a medicinal value.

Keywords: *Saptaparna (Alstonia scolaris R. Br.), Apocynaceae, Ayush-64, Pharmacological activity, Phytochemicals.*

INTRODUCTION

Herbal medicine has become an integral part of standard healthcare, based on a combination of time-honored traditional usage and ongoing scientific research. Herbal medicine contains natural substances that can promote health and reduce illness. Ayurveda utilizes plenty of herbs to cure different ailments. The *Saptaparna* is one among the most important medicinal plant described widely in almost all Ayurveda literature and as well as *Nighantu*.[1] A great poet of Sanskrit literature from 5 th Century AD has written *Raghuwansha Mahakavya*, which contains a poetic description of *Saptaparna* with regards to the *Madagandha* of its *Pushpa* and *Ksheera*.[2] The botanical name of *Saptaparna* is Alstonia scholaris R. Br.; Family: Apocynaceae. It is also known as ''Devil's tree'', ''Dita bark''. The Apocynaceae family consists of about 250 genera and 2000 species of tropical trees, shrubs and vive. Alstonia scholaris R.Br. is common tree, growing up to 17 to 20 meter in height, distributed throughout the sub Himalayana belt, west Bengal, Southeast Asia.[3] The wood has been used for school blackboards, hence the name 'Scholaris' .[4]

Synonyms of Saptaparna: Vishaltwak, Chatraparna, Shalmalipatrak, Gucchapushpak, Sharada, Saptacchada, Madaganda etc.[5]

Properties and action mentioned in Ayurveda:[6]

Guna: Laghu (light), Snigdha (Oily)

Rasa: Tikta (bitter), Kashaya (Astringent)

Vipaka: Katu (pungent)

Veerya: Ushna (hot)

Dosha: Kaphapittashamak

According to Ayurveda, Saptaparna used to cure many allements such as Kushtha, Shwas, Gulma, Jwara, Visarpa.

Morphology: [7], [8], [9] The plant is a large evergreen tree.

Bark	**Grayish brown, rough, white milky latex that flows rapidly when cut.**
Leaves	4-7 in a whorl, bluntly acuminate, pale beneath.
Flowers	Small, Greenish white, numerous in umbellate panicles, Scented.
Fruits	Dehiscent follicles, brown or green, spindle shaped, a pendulous, two lobed
Seed	Flat oblong, brownish hair at each end.

Phytochemistry: [10] The plant enriched with wide range of chemical compounds. It is known to be rich source of alkaloids which are useful for medicinal purposes. Alkaloids stand as a class of major importance in developing new drugs because alkaloids own a great variety of chemical structure and have been identified as being responsible for the pharmacological properties of medicinal plants.

Stem bark-It having echitamine, new glycoside-renoterpine, glucoside triterpenes, a-amyring acetate, echitamidine, echitenine, Ditamine.

Root- It contains akuammigine, tubaitowine, akuammigine, Hydroxyl-19.

Leaves- It contains an indole alkaloid- picrinine, botalin, ursolic acid, β-sitosterol, new alkaloid Scholarin.

Flowers- Picrinine, strictamine are present in flowers.

Fruits- Fruit contains Akuammidine (rhazine).

Physical contents:[11]

Foreign matter- Not more than 2%

Total Ash - Not more than 11%

Acid insoluble ash - Not more than 3%

Water soluble extractives - Not less than 12%

Alcohol soluble extractives - Not less than 4%

Pharmacological activity:[7], [12]

Alstonia scholaris also been reported to inhibited liver injuries induced by carbon tetrachloride, β- galactosamine, acetaminoohen, ethanol as remarked by the reduced elevation of levels of serum transamiases and histopathologic changes such as necrosis and inflammatory cell infiltration.[12] Ayurveda recommends Alstonia scholaris for bowel complaints. The herb is given to lactating mothers to increased lactation, helps post-delivery weakness and digestion. Almost all parts of plant are used in medicine.

Bark [13] - The bark is most intensively used part of the plant. It is a bitter, astringent, antipyretic, digestive, laxative, anthelmintic, cardiotonic, useful in skin diseases, chronic ulcers, asthama.

Leaves [14] - Leaves are used to cure Maleria, snake bite, diarrhea, dysentery, beriberi, Congested liver, antimicrobial.

Fruits [15] - Fruits are used in epilepsy, syphilis, antiperiodic, anthelmintic. Alstonia scholaris is used in various Ayurvedic formulations like Saptaparnasatvadi vati, Saptacchadadi tail, Saptacchadadi kwath, Sattaparna ghanasara.[16] Alsonia scholaris is one of the ingredient of an antimalerial drug Ayush-64, prepared by CCRAS, India which proved to be quite effective incombacting

malaria and it was also found effective in clearance of parasitaemia.[17]

Propagation and cultivation:[10,17] The tree is sometimes planted in gardens for ornamental purpose. It is easily raised through seeds and prefers fairly moist conditions.

Necessary Altitude: 0-900 M

Mean Annual rainfall: 1200-1400 mm

Soil type: Soil including alluvia, basaltic red earth, yellow earth with grey brown top soil, sandy grey earth.

Diseases affecting: Diseases caused by collectotrichum glocosporioides (Penz) sacc. Sordaria humana (Fuckel) wint and other fungi have been reported on this tree.

Substitute and Adulterants: Trachelospermum fragrant Hook. F. (Apocynaceae)H.

Trachelospermum lucidom (Don) schum. syn.

CONCLUSION

The plant Saptaparna (Alstonia scholaris R.Br.) is a beautiful foliage tree with a large canopy. Alstonia scholaris R. Br. has been used in traditional systems of medicines for treating various ailments such as antibacterial, antimicrobial. The plant contains various chemical constituents mostly alkaloids that can promote health and reduce illness. It is one of the ingredient of antimalerial drug Ayush-64, prepared by CCRAS. The plant Saptaparna (Alstonia scholaris R. Br.), invites attention of the researchers worldwide for its pharmacological activities.

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