

**REVIEW ARTICLE ON ASTHISHRUNKHALA (*CISSUS QUADRANGULARIS LINN*).****Dr. Meghla Kamble\***

India.

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India.**ABSTRACT**

*Asthishrunkhala* is a cactus-like succulent fleshy plant that is botanically known as *Cissus quadrangularis* Linn. It is a plant of family Vitaceae and usually found in tropical area. It is a useful plant in many conditions. Research on *C. quadrangularis*, proves pharmacological activities like cell reinforcement, anti-microbial activity, tissue regeneration activity, bone regeneration activity, pain relief activity, diuretic activity and ulcer healing activity. Hence, we document the available pharmacological data on *Cissus quadrangularis*.

**KEYWORDS:** *Cissus quadrangularis* Linn, pharmacological action, traditional use.

**INTRODUCTION**

Ayurveda is one of the best traditional systems of Indian medicine. *Cissus quadrangularis* is a perennial herb with medicinal properties distributed throughout the tropical world. It is one of the most frequently used medicinal plants in *Ayurveda*. It is believed that the plant is native to India, Sri Lanka, Malaysia, Java and West Africa. This plant is used in bone healing.<sup>[1]</sup> Stem of *Cissus quadrangularis* resembles the shape of bones and joints in the body. It is very effective in strengthening the bones and joints so it is explained as *Asthisamharak*, *Asthishrunkhala*, and *Vajravalli*.<sup>[2]</sup> It is a climbing herb that turns leafless as it ages. It is a shrubby climber that can grow up to 1.5 metres tall. Iridoids, alkaloids, flavonoids, stilbene derivatives, sterols, triterpenes, fatty acids, methyl esters, and other phytochemicals have been found in the plant. It has bone protective activity. The plant's protective action is due to its steroidal content, which functions as phytoestrogens to prevent or minimise bone loss and suppress bone reabsorption caused by estrogen deficiency.<sup>[3]</sup>

1. Reddy BS, et al. African Journal of Traditional, Complementary and Alternative Medicine, 2017; 14: 105. [PMC free article] [PubMed] [Google Scholar]
2. <https://www.easyayurveda.com/2010/05/08/strengthen-your-bones-joints-and-cartilages-with-cissus-quadrangularis/>
3. <https://pharmaeasy.in/blog/ayurveda-uses-benefits-side-effects-of-hadjod/>

## MATERIALS AND METHODS

The literature of Asthishrunkhala drug reviewed from various texts and Samhitas as mentioned later. All quality control parameters such as Solvent extractive values, ash values, crude fiber, foaming index were prescribed by WHO, to incorporate any natural drug into the herbal pharmacopeia.

### Vernacular Names of Asthishrunkhala (*Cissus quadrangularis*)

English- Edible stemmed vine, Adamant creeper, Bone setter

Hindi- Hadjod, Hadjora, Hadsarihari, Kandavel

Marathi- Harjora, Harsankar, Kandavel, Nallar

Bengali- Har, Harbhanga, Hasbhanga, Horjora

Gujarati- Chodhari, Hadsand, Hadsankal, Vedhari

Kanada- Managarahalli

Tamil- Piranti, Vajjiravalli

Telugu- Nalleru, Nelleratiga, Vajravalli

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### Sanskrit Synonyms

Vataj valli, Vajrangi- Make the body as strong as diamond.

Asthi Shrunkhala, Asthiyuk- Stems resembles bones.

Granthimana- knotted stem

Bhutopadrava

Chaturdhara, Chatusira- Stem having four edges.

Asthisamhari- One of the best drug for the fracture of bones and promote union of bone.

<https://www.easyayurveda.com/2010/05/08/strengthen-your-bones-joints-and-cartilages-with-cissus-quadrangularis/>

**Habitat**

It is found all over India. Mainly found in tropical area like Marathwada. Also found in Sri Lanka, Malaysia, Java and West Africa.

Ref- Dravyagun Vigyan, proff. Dr. A. P. Deshpande, Profishant Publication House Pune, Reprint, November, 2019; 832.

**Taxonomy**

Kingdom- Plantae

Clade- Tracheophytes

Clade- Angiosperms

Clade- Eudicots

Clade- Rosids

Order- Vitales

Family- Vitaceae

Genus- Cissus

Species- C. quadrangularis

Ref- [https://en.wikipedia.org/wiki/Cissus\\_quadrangularis](https://en.wikipedia.org/wiki/Cissus_quadrangularis)

**Classification of Asthishrunkhala in Ayurvedic Samhitas and Nighantus**

1. Susruta Samhita - In Asthibhanga chikitsa
2. Chakradatta - In Asthiroga chikitsa
3. Shaligram Nighantu - Guduchyadi varga
4. Kaiyadev Nighnatu - Ousudhu varga
5. Madanpal Nighnatu - Abhayadi varga
6. Bhavprakash Nighnatu - Guduchayadi varga
7. Shodhal Nighantu - In Urustambha chikitsa
8. Priya Nighnatu - Pippaladi Varga
9. Nighnatu Adarsha- Drakshadi gana
10. Ratnakar- Guduchyadi varga

Ref-

Review article of Dr. Sandeep Malik and Dr. Jagdish Mohan, on Asthishrunkhala Sriganganagar College of Ayurvedic Science & Hospital, Tania University, Sriganganagar – 335001, India.

**Rasapanchak**

Rasa- Madhura

Guna- Laghu, Ruksha

Virya- Ushna

Vipaka- Katu

Ref- Dravyagun Vigyan, proff. Dr. A. P. Deshpande, Profishant Publication House Pune, Reprint, November, 2019; 832.

**Effect of Astishrunkhala on Tridosha**

Due to Ushna Virya of Astishrunkhala it releaves Kafa and due to Madur rasa it acts as vatahara.

Ref- Dravyagun Vigyan, proff. Dr. A. P. Deshpande, Profishant Publication House Pune, Reprint November, 2019; 832.

**Prayojyang**

Kanda (Stem)

**Dose**

Swaras of stem - 10-20ml.

**Formulations**

Lakshadi guggulu, Panchajiraka guda

Ref- Dravyagun Vigyan, proff. Dr. A. P. Deshpande, Profishant Publication House Pune, Reprint, November, 2019; 832,833

Phytochemical evaluation-

**Cultivation**

Astishrunkhala is mostly found in forests and tropical areas but now a days it is cultivated in many botanical gardens.

Ref.- <https://www.easyayurveda.com/2010/05/08/strengthen-your-bones-joints-and-cartilages-with-cissus-quadrangularis/>

**Morphology of Asthishrunkhala**

**Habit-** Asthishrunkhala is a tendril cliber with jointed quadrangular stems that are shout and fleshy.

**Stem-** Stem of Asthishrunkhala are leafless, when old become very long, fleshy, glabular, tendrils long slender, simple.

**Tendrils-** Tendrils of Asthishrunkhala are simple, long slender and leaf opposite. In addition to the normal roots, some aerial roots arising from the jointed nodes grow downwards and strike the soil.

**Leaves-** Leaves are simple, 2.5-5 cm long, broadly ovate or reniform, sometimes 3-7 lobes, dendriculate, glabrous, cordate, rounded, truncate or cuneate at the base, ref- <https://www.iafaforallergy.com/dravya-herbs-part-b/asthishrunkhala-cissus-quadrangularis/>

### Phytochemistry

Phytochemical studies of Asthishrunkhala (*Cissus quadrangularis*) have shown the presence of various versatile constituents such as flavanoids, triterpenoids, vitamin C, stilbene derivatives and many others, e.g resveratrol, piceatannol, pallidol perthenocissin and phytosterols. Out of which ascorbic acid, triterpene,  $\beta$ -sitosterol, ketosteroid, two asymmetrical tetracyclic triterpenoids and calcium were identified as major constituents of this plant. *Cissus quadrangularis* have high contents of anabolic steroidal substances, ascorbic acid, carotene, and calcium.

Ref. - Jainu M et al. Effect of *Cissus quadrangularis* Linn. on gastric mucosal defensive factor in experimental induce gastric ulcer-a comparative study with sucralfate. *Journal of Medicinal Food*, 2004; 7(3): 372–76.

Ref- Shirley D et al. High resolution Xray photoemission studies on the active constituents of *Cissus quadrangularis* Linn. *Current Science*, 1966; 35: 317.

### Raw drug standardization (As per API 1619 of *Cissus quadrangularis* stem1,

Parameters Values %

Foreign Matter < 1% w/w

Total ash < 5% w/w

Acid insoluble ash < 1% w/w

Water soluble extractive > 3% w/w

Fixed oil > 3% w/w

Sulphated Ash content < 5% w/w

Arsenic < 1 ppm

Lead < 5 ppm

Total bacterial count < 800 cfu/g

Total fungal count < 500 cfu/g

Moisture content < 5% w/w

Ref. Rastogi RP compendium of Indian medicinal plants, part I publication and information directorate, 1995; 104.