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Submitted on: 03-10-2025

Revised on: 18-11-2025

Accepted on: 25-01-2026

Published: 30-06-2026

Guduchi (Tinospora cordifolia): A Comprehensive Review of Ayurvedic and Modern Scientific Evidence

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DOI: <https://doi.org/10.64280/JAA.2026.V2I1020>

ABSTRACT

Plants bring us love, the nourishing power of the sun, which is the same energy of all the stars, of all light. These cosmic energies emanated by plants thus nourish, sustain and make grow our own astral body. In this way, the existence of plants is a great offering, a sacrifice. They offer us not only their own nutritive value but also the very light and love from the stars, from the cosmos whose messengers they are. They bring us the universal light so that we can enter the universal life. They exist for psychological, as well as physical, nourishment. *Guduchi (Tinospora cordifolia)* is one such plant and among the most highly revered herbs of Ayurvedic medicine. *Guduchi* is highly valued in *Ayurveda* for its detoxifying, rejuvenating, immune-boosting, and anti-rheumatic properties. It is now being studied and utilised in modern medicine for cold and flu prevention, immune support, skin disorders, arthritis, liver disorders, gout (and rheumatic disorders), and most recently to mitigate the negative effects of chemotherapy.

Keywords: *Guduchi, Tinospora cordifolia*, Amrita, Giloy



1. INTRODUCTION

Ayurveda is a 5,000-year-old system of medicine, rooted in the ancient Indian scriptures known as The *Vedas*. According to the *Vedas*, the entire universe is a manifestation of five elements: space, air, fire, water, and earth. The human being, a non-separate manifestation born of the universe, is also comprised of these very elements. Thus, living in harmony with the external universe and balancing the flow of the five elements in human physiology maintains health and well-being. What we take into our body affects this cosmic dynamism more than anything else, and this is where the significance of plant medicines becomes known.

The Sanskrit word for the plant, *osadhi*, means literally a receptacle or mind, *dhi*, in which there is burning transformation, *osa* [1]. *Guduchi* (*Tinospora cordifolia*) is one such plant and among the most highly revered herbs of Ayurvedic medicine. Known universally as *Guduchi* (the one who protects), the herb is also known by different names across the sub-continent of India: *Tippa-teega* (Telugu), *Shindilakodi* (Tamil), *Amruthaballi* (Kannada), *Rasakinda* (Sinhala), *Giloy* (Hindi), *Garo* (Gujarati), *Amrit* (Sanskrit), *Guduchi* (Marathi), and *Guluchi* (Oriya) [2].

Originating in India, *Guduchi* is a tropical climbing herb that belongs to the Menispermaceae family. It is now found not only in the tropical areas of India but also in Sri Lanka and Burma.² The *Guduchi* vine grows wild and does not require much cultivation. In the Indian city of Ahmedabad, for example, *Guduchi* grows wild on hedges. *Guduchi* is often found in the dry forests of India growing on large trees, particularly neem and mango trees. One of the defining characteristics of the plant is its green, heart-shaped leaves [3].

The sacred origin of *Guduchi* is described in the Indian epic, *The Ramayana* and the sacred text of the *Durga -Saptashati*. *Vaidya Ramakant Mishra* recounts the myth of *Guduchi* from *The Ramayana*, saying that *Guduchi* began growing on Earth from the hands of *Lord Indra*. *Lord Rama* made a special prayer to *Lord Indra*, asking *Indra* to resurrect all the monkeys and bears from his army that had died during the war with the *rakshasa* (demon), *Ravana*. Upon hearing the wish from *Rama*, *Lord Indra* granted *Rama* the boon and sprinkled nectar from the heavens to resurrect the animals. As the nectars drops fell upon the bodies of the dead monkeys and bears, they suddenly came back to life. The nectars drops that fell on the Earth formed the sacred *Guduchi* plant [4].

Guduchi is highly valued in *Ayurveda* for its detoxifying, rejuvenating, immune-boosting, and anti-rheumatic properties. It is now being studied and utilized in modern medicine for cold and flu prevention, immune support, skin disorders, arthritis, liver disorders, gout (and rheumatic disorders), and most recently to mitigate the negative effects of chemotherapy [5]. *Guduchi* is clearly an herb with a myriad of potent medicinal qualities, qualities that were recognized by the ancient rishis in Vedic times, long before modern scientific technology. Through spiritual means, the rishis were able to understand *Guduchi* (and other herbs) profoundly, and now modern science is able to evaluate and recognise many of the medicinal properties of *Guduchi*.

1.1.General Classifications

In Ayurvedic medicine, *Guduchi* is considered to be one of three amrit plants. The Sanskrit term amrit literally means nectar or ambrosia. In the context of Ayurvedic medicine, amrit is understood to be the nectar of the gods. The three plants that contain this heavenly nectar (or amrit) are *Guduchi*, garlic, and haritaki. Interestingly, the Sanskrit name for *Guduchi* is amritavalli, literally meaning creeper with amrit--creeper being a reference to its climbing nature. The classification of *Guduchi* as amrit

alone indicates the elevated status of this herb in *Ayurveda* [4].

Dr. Vasant Lad and Dr. David Frawley give further comment to the reverence with which one views herbs and why they are considered sacred: The proper usage of a plant or herb, during which its true power is released, implies a communion with it. The plant, when we are one with it, will vitalize our nervous system and invigorate our perception. This means giving value to a plant as something sacred, as a means of communion with all nature. Each plant, then, like a mantra, will help to actualize the potential of cosmic life of which it is a representative. In that spirit, *Vaidya Ramakant Mishra's Shaka Vansiya* family lineage has emphasized the therapeutic properties of *Guduchi* and the many ways to use it. Mishra considers *Guduchi* to be the most divine herb in *Ayurveda* and refers to it as divyaaushadhi (divine plant) and as the best *Rasayana*. Such a classification should make it clear that *Guduchi* enjoys a status in Ayurvedic medicine that extends far beyond that of a useful or highly medicinal herb, but that of a sacred herb that gives the body and mind the very nectar of life. Indeed, *Vaidya Mishra* has described *Guduchi* as jivanti (or life-giving), as illustrated by the mythological story of the monkeys coming back to life [4].

The 16th century Ayurvedic treatise, Bhav Prakash by Bhav Mishra, gives a further analysis of the spiritual nature of *Guduchi* by naming it chinnodbhava (able to grow even if cut). Vaidya Mishra elaborates on the significance of this quality, pointing out that it indicates *Guduchi*'s ability to live on air. According to Mishra, *Guduchi* is so full of life that it can grow without any soil or water. Mishra draws a profound comparison to the great yogis who were able to live without food or water, subsisting purely on the pranic energy in the air. Mishra says that *Guduchi* possesses amrit siddhi, or the capability to live entirely on the pranic energy available in the air without the need for grosser levels of sustenance, and indicates that it is an herb uniquely full of life-energy [4].

In terms of its medicinal actions, *Guduchi* is classified as a bitter tonic, febrifuge, alterative, diuretic, aphrodisiac, rejuvenative, and anti-rheumatic [1]. In Nadkarni's Indian Materia Medica, *Guduchi* is described as a stomachic, bitter tonic, alterative, aphrodisiac, hepatic stimulant, antiperiodic, mild diuretic, and demulcent.³ *Guduchi* brings nourishment to all seven tissues (or dhatus) of the body, making it a powerful nutritive tonic. The ability of this herb to detoxify the body while simultaneously rejuvenating it makes it a deeply effective

herbal medicine for all constitutional types [4].

1.2. *Rasapanchak*

Dravya means substance or material, and *guna* means quality. In Ayurvedic medicine, *Dravyaguna* is the study of herbal medicine via the specific qualities of each herb. Based on these qualities, *Ayurveda* classifies herbs according to four categories:

- *Rasa* (or taste)
 - *Virya* (or potency)
 - *Vipaka* (or post-digestive effect)
 - *Prabhava* (or special action)
- [6].

The *Rasa* of an herb indicates which tastes are predominant and allows one to evaluate the effect of the herb on the three doshas. The *Virya* of an herb indicates the energetic quality of the herb--whether it is heating or cooling. *Vipaka* is a classification unique to *Ayurveda* and describes the ultimate effect of the herb once it has been digested. *Prabhava* is another unique classification that describes the mysterious and often contradictory effects of an herb, such as the ability of a heating herb such as ginger to function as a powerful anti-inflammatory [6].

Guduchi has a *Rasa* that is bitter and astringent. Bitter taste reduces *Pitta* and

Kaphadoshas, while increasing *Vatadosha*. Astringent taste decreases *Pitta* and Kaphadoshas, while increasing *Vatadosha*.

Guduchi is considered to have an *ushna* (or heating) *Virya*, yet it does not aggravate *Pitta* dosha. Ginger also has *Ushna Virya*, which typically increases *Pitta* dosha, making this effect unique to *Guduchi*, an example of *Prabhava*. Vaidya Mishra's family tradition describes *Guduchi* as the only herb that can bind and safely remove acidic and environmental toxins from the body without aggravating *Pitta* dosha while also healing the damage caused by local toxins [4].

The *Vipaka* (or post-digestive effect) of *Guduchi* is sweet, meaning that in the long-term it will decrease *Vata* and *Pitta* doshas while providing a nourishing quality to the body. Altogether, the effect of *Guduchi* is that of reducing all three doshas.

In terms of *guna* (or quality), *Guduchi* is described as:

- *Laghu* (light)
- *Deepanam* (kindles digestive fire)
- *Chakshushyam* (good for the eyes)
- *Dhatukrit* (builds the seven bodily tissues)
- *Medhayam* (rejuvenating for the mind)

- *Bayasthaapankarakam* (maintains youthfulness and longevity).³

According to Mishra, *Guduchi* is a light quality coupled with its heating action, which allows it to penetrate the dhatus, while the astringent quality enhances absorption in the dhatus [4].

The *Caraka Samhita* also describes *Guduchi* as having the qualities of *guru* (or heaviness) and *snigdha* (or unctuousness) [7]. Heavy and unctuous qualities reduce *Vata* and *Pitta* doshas while increasing *Kaphadosha*. *Guduchi* is considered tridoshic because the comprehensive effect of the herb, the sum total of all its parts and qualities, reduces all three doshas, detoxifies the deepest dhatu (*shukra*), and rejuvenates the entire body. Thus, *Guduchi* is also able to build *ojas* of good quality and quantity, explaining its actions as an immune-booster. *Guduchi* is also described as being *pathyam*, meaning that it keeps one on the path of health by agreeing with one's physiology. As such, it is documented to have good effect for convalescents [4].

Guduchi's most powerful effects become known in examining its *Prabhava* (or special properties). The *Caraka Samhita* gives the following definition of *Prabhava*:

In cases, where in spite of similarity in *Rasa*, *Virya*, and *Vipaka*, there is a

difference in action, this (difference) is said to be due to *Prabhava* (specific potency) [7].

Vaghbata defines *Prabhava* in the *Astanga Hrdayam* as: The special action (of a substance) seen, when the *Rasa* and others (present in it) are of equal strength, that action is said to be arisen from *Prabhava* [7].

One such special action of *Guduchi* is that of *vakshagnidipani*, literally that which strengthens the flame of the heart. *Vaksha* means heart and *dipani* refers to the ability of *Guduchi* to increase the agni of the heart. When the flame of the heart is strong, one is able to endure emotional challenges without becoming emotionally imbalanced. Mishra goes on to state that by way of strengthening the heart, *Guduchi* is able to function as a *Medhya Rasayana* (rejuvenative for the mind) [4]. A comparative study was conducted to examine the effects of *Medhya Rasayanas*, including *Guduchi* alongside gotu kola, liquorice, and *shankapushpi*. The study found that consumption of these herbs (alongside yogic practices such as meditation) increased the short-term memory capacity of young children. The study concluded that *Medhya Rasayanas* were actually more effective and efficient in improving memory than yogic practices [11]. *Guduchi* also has *vyasthapana prabhava* (or the ability to

retain youthfulness) [4]. Another *Prabhava* of *Guduchi* is that of *vishaghna* which means anti-toxic and accounts for its potent detoxifying effects.

In their treatise on Ayurvedic herbs, Dr Vasant Lad and Dr David Frawley note that the primary actions of *Guduchi* are on the blood, fat, and reproductive tissues of the body (or the *rakta*, *medas*, and *shukradhatus*) [1].

1.3. Pharmacodynamics, Uses, and Formulations

The roots, stems, and leaves of the *Guduchi* plant are all used medicinally in *Ayurveda*, although it is primarily the bitter starch of the plant (known as *Giloy Sattva*) that is prized [1]. The leaves are described as being mucilaginous, while consuming large doses of the root gives a strong emetic effect. The stem is regarded to have anti-purgative effects [3]. One research study conducted an elemental analysis of the *Guduchi* stem, concluding that *Guduchi* stems are a potential source of nutrition and minerals for man as well as animals [9]. In the *Caraka Samhita*, *Guduchi* is listed as having the following actions:

- *Vatahara* (alleviates Vata)
- *Kaphahara* (alleviates kapha)
- *Deepana* (promotes digestion by increasing agni)
- *RaktaPittahara* (alleviates bleeding disorders)

- *Vayahasthapana* (anti-aging)
- *Stanyashodhana* (detoxifies breast milk)
- *Trushnanigraha* (alleviates thirst)
- *Dahaprashmana* (alleviates burning)
- *Jwaraghna* (alleviates fever)
- *Vivandahara* (alleviates constipation) [7].

In the *Bhav Prakash*, *Guduchi* is listed as being useful for the following conditions:

- Daha (burning)
- Meha (urinary conditions)
- Kasa (cough)
- Pandutam (anemia)
- Kamala (chronic jaundice)
- Kushta (skin diseases)
- Vatasrajwara (*Vata*-type fever)
- Krimi (parasites)
- Vamimharet (vomiting due to toxicity)
- Heart conditions that are difficult to treat (*krichahridaroga*) [4, 24].

In Chapter 4, verse 40 of *Sutrasthana*, *Caraka* classifies *Guduchi* among astringents, *Vata*-alleviators, appetisers, and pacifiers of *kapha*, *rakta* and constipation. *Caraka* mentions *Guduchi* in a list of other herbs saying, these may be used for non-unctuous enema in *udavarta* [bloating] and constipation. With this very group of drugs may be

prepared unctuous enema for alleviation of *Vata*. *Caraka* also lists *Guduchi* as an ingredient in a paste prepared for treating skin disorders, saying, These six formulations impregnated with ox-bile, ground again and prepared with mustard oil and then used externally by physicians along with the powder, thus administered they destroy in no time obstinate skin disease, acute leucoderma, alopecia, *kitibha* (a skin disease), ringworm, fistula-in-ano, piles, scrofula and papular eruptions in human beings. *Guduchi* is also featured in a gout formula which states that *Ghee* prepared with *rasna*, *Guduchi*, *madhuyasti*, both (types of) *bala*, *jivaka*, *rsabhaka* along with milk and added with bee-wax is used as paste for alleviating discomfort in *raktavata* (gout) [7].

In a discussion concerning the use of *Rasayana* herbs, the *Caraka Samhita* describes a formula that includes *Guduchi*, stating that these *Rasayana* drugs are life-promoting, disease-alleviating, promoters of strength, agni, complexion, voice and are intellect-promoting. *Guduchi* is classified in the *Caraka Samhita* under the category of *JeevaneeyaGana*, which means Enlivening and Anti-Ageing Herbs. In this context it is mentioned with a group of herbs for stanyashodhana, or the detoxification of breast milk. *Guduchi* is

also mentioned in the treatment of fever, *Guduchi*, *amalaka* and *musta* - these five (formulations for) decoctions ending in half verses alleviate five types of fever such as remittent, double quotidian, quotidian, tertian and quartan. *Guduchi* is listed in another formulation that is considered efficacious in chronic fever. It is also classified by *Caraka* to be an anti-dyspeptic [7].

Caraka lists *Guduchi* as the main ingredient in a taila formulation known as *Amrtataila*. He describes it as, one of the best oils. It brings back to normalcy persons with diminished energy, agni and strength and a confused mind and suffering from insanity, restlessness and epilepsy. It is an excellent alleviator of *vatika* disorders [7].

A study published in The Journal of Ethnopharmacology examined a 6th-century medical treatise written by Buddhist monks on birch paper known as the Bower Manuscript. In this manuscript, a recipe for Amrita Oil and an Amrita Ghee were given with *Guduchi* as the main ingredient alongside other *Rasayana* herbs. The study sought to identify the prized soma plant of the Rig Veda and concluded that the soma plant is likely a combination of *Guduchi* with tryptamine extract [12]. In another study, the *Amrita Taila* and *Amrita Ghrita* featuring *Guduchi* were examined for

their pharmacological effects. The authors of the study describe *Guduchi* as a drug that has properties like *Rasayana* (rejuvenating property), *Krimighna* (anthelmintics), and *Kushthighna* (skin disorders). The study found that the taila in particular had more of an immune-stimulant activity, while the *ghrita* exhibited an anti-stress effect with an immunosuppressant activity” [13].

Guduchi is also used in the treatment of convalescence, hyperacidity, hepatitis, diabetes, tuberculosis, arthritis, gout, and haemorrhoids. In Traditional Chinese Medicine, *Guduchi* is known as KuanJinTeng and is used primarily for treating swelling from arthritis or injury [1].

Vaghbata lists *Guduchi* in two herb categories in the *AstangaHridayam*:

1. *Patoladigana*: a group of herbs that subjugate *Kapha* and *Pitta* and cure leprosy (and other skin diseases), fevers, poison, vomiting, anorexia and jaundice.
2. *Guduchyadigana*: a group of herbs that mitigate *Pitta* and *kapha*, cure fever, vomiting, burning sensation, thirst and improve digestion [8].

The *Astanga Hridayam* gives two recipes featuring *Guduchi* used in the treatment of *Vata*-type fever [8]. One such formula is *Patolakaturohinyadi Kashayam*, a traditional formula used in the treatment

of liver disorders and skin diseases. *Guduchi* is one of six herbs in this formula that is used primarily to treat skin and liver disorders of *Pitta-Kapha* origin. It purifies the blood and liver, removes cellular toxicity, and rejuvenates the cellular system when it has been affected by disease [10].

In *Yoga and Ayurveda*, Dr. David Frawley highlights the ability of *Guduchi* to cool the body and mind, echoing sentiments similar to Vaidya Mishra in describing it as a rejuvenative for *Pitta*. According to Dr. Frawley, *Guduchi* not only reduces fevers but can counter viral infections such as the Epstein-Barr virus and AIDS. As a *Rasayana*, *Guduchi* also improves energy levels, especially in the context of chronic fatigue syndrome [14].

2. RESEARCH UPDATES

- i. *Guduchi* is not only well-documented in classical texts and modern Ayurvedic literature. Scientists and doctors are now able to evaluate the insight of the ancient rishis in the context of research studies that examine the effects of the herb.
- ii. One study published in the Journal of Ethnopharmacology concluded that *Guduchi* had immunomodulatory effects, confirming the Ayurvedic view of *Guduchi* as a *Rasayana* and immune-booster [15].

- iii. Another study compared the anti-stress effects of *Guduchi* and *gotu kola* in comparison to diazepam. Ethanol extracts of *Guduchi* and *gotu kola* showed significant anti-stress activity, especially in comparison to the pharmaceutical, diazepam [16].
- iv. In a study published in Immunopharmacology and Immunotoxicology, *Guduchi* was found to have anti-tumour properties. According to the study, an alcohol extraction of *Guduchi* was shown to activate tumour-associated macrophages (white blood cells that eat cancer cells) [17].
- v. *Ayurveda* describes *Guduchi* as being useful in conditions of hepatitis and jaundice due to its ability to detoxify the liver. In a clinical trial, liver toxicity was induced in rats, followed by the administration of an alcohol extract of *Guduchi*. The extract protected the livers of the rats, showing that *Guduchi* has clinically significant hepatoprotective properties [18].
- vi. *Guduchi* was found to be useful in the treatment of allergic rhinitis, an allergic condition characterised by sneezing, mucus discharge from the nose, sinus congestion, and related symptoms. The study showed that

Guduchi gave significant relief to the allergic symptoms [19].

vii. A study published in the Journal of Ethnopharmacology showed the efficacy of *Guduchi* in treating diabetes mellitus by lowering blood glucose levels and brain lipids in diabetic rats, concluding that *Guduchi* extract has hypoglycaemic and hypolipidaemic effects [20].

viii. Another study tested the rejuvenative potential of *Guduchi*, examining the ability of *Guduchi* (and ashwagandha) to reduce oxidative stress in human volunteers. The results of the study showed that both herbs are potent antioxidants that may also prevent premature ageing [21].

ix. Modern research has found that *Guduchi* also has gastroprotective properties. Epoxy clerodanediterpene, a compound in *Guduchi*, was isolated and given to rats with gastric ulcers. The compound reduced the gastric ulcer by reinforcement of defensive elements and diminishing the offensive elements [22].

x. *Guduchi* is also being studied for its positive effects on emotional and psychological health. In one study, rats were administered a *Rasayana* Ghana tablet comprised of *Guduchi*, amalaki, and gokshura. The tablet

was found to have anxiolytic and anti-depressive effects on the rats [23].

xi. A comprehensive and summary study was conducted to examine and validate the many pharmacological effects of *Guduchi* described in the Ayurvedic texts. The study examined and confirmed the following effects, actions, and uses of *Guduchi*.

1. Learning And Memory Enhancer (Medhyarasayana)
2. Anti-Inflammatory
3. Anti-Arthritic
4. Anti-Osteoporotic
5. Anti-Allergic
6. Antioxidant
7. Antineoplastic
8. Radio-Protective
9. Anti-Pyretic
10. Anti-Infective
11. Hepato-Protective
12. Immunomodulatory
13. Diuretic
14. Cardio-Protective
15. Anti-Leprotic
16. Anti-Ulcer
17. Osteo-Protective

The conclusion of the study states that the pharmacological actions attributed to *Tinospora cordifolia* in Ayurvedic texts have been validated by a remarkable body of modern evidence suggesting that this drug has immense potential in modern pharmacotherapeutics [25].

3. CONCLUSION

Guduchi occupies a distinguished position in the corpus of classical Ayurvedic literature, being extensively referenced in foundational texts such as Caraka Samhita, Astanga Hridayam, Astanga Samgraha, Sushruta Samhita, Bhav Prakash, and Indian Materia Medica. Its enduring prominence across centuries reflects the profound esteem in which ancient scholars and practitioners held it. These texts consistently describe Guduchi as a Rasayana, or rejuvenative agent, underscoring its role in promoting longevity, vitality, and systemic balance. The continuity of its use from Vedic times to contemporary practice illustrates its historical and cultural significance as a cornerstone of Ayurvedic pharmacology. Modern research further validates its wide-ranging pharmacological benefits, highlighting its role in preventive and clinical medicine. As Western science increasingly acknowledges its therapeutic potential, Guduchi stands out as a true amrit of Ayurveda—an essential and timeless medicinal resource.

Financial support

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflicts of Interest

Nil.

Acknowledgement

Nil.

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