

A Comparative Review of the Anticancer Potential of Haridra and Guduchi with Special Reference to Arbuda

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Abstract

Cancer is a complex and multifactorial group of disorders characterized by uncontrolled cellular proliferation, altered cellular differentiation, tissue invasion and, in advanced stages, metastasis. In the *Ayurvedic* system of medicine, pathological conditions presenting as abnormal growths or mass-like lesions are described under concepts such as *Arbuda* and *Granthi*. Although these classical concepts cannot be directly equated with modern histopathological classifications of cancer, they provide an important traditional framework for understanding abnormal tissue growth. Among the medicinal plants described in Ayurveda, *Haridra* (*Curcuma longa* Linn.) and *Guduchi* (*Tinospora cordifolia* (Willd.) Hook.f. & Thomson) have attracted considerable scientific interest because of their traditional therapeutic applications and experimentally demonstrated pharmacological activities.

The present review aims to comparatively evaluate the *Ayurvedic* pharmacological basis and contemporary scientific evidence regarding the potential anticancer activities of *Haridra* and *Guduchi*, with special reference to the *Ayurvedic* concept of *Arbuda*. It further aims to identify similarities and differences in their proposed pharmacological mechanisms and to assess the current status of evidence supporting their relevance in cancer research.

Keywords

Haridra; *Guduchi*; *Arbuda*; *Curcuma longa*; *Tinospora cordifolia*; curcumin; anticancer; Ayurveda.

1. Introduction

Cancer comprises a heterogeneous group of diseases characterized by abnormal cellular proliferation, tissue invasion and, in many malignancies, metastasis. Ayurveda describes pathological conditions involving abnormal masses under concepts including *Arbuda* and *Granthi*. The Ayurvedic perspective has therefore been explored in relation to tumor-like clinical entities, while direct one-to-one equivalence between *Arbuda* and modern histological cancer should not be assumed.¹

Haridra, botanically identified as *Curcuma longa* L., is a classical Ayurvedic drug traditionally used in inflammatory and other disorders. Curcumin, its major extensively investigated polyphenolic constituent, has been studied in numerous cancer models.^{2,3}

Guduchi, *Tinospora cordifolia* (Willd.) Hook.f. & Thomson, is traditionally described as *Rasayana* and has been investigated for immunomodulatory, antioxidant and anti-inflammatory activities.^{4,5}

A comparative review is useful because both drugs show pharmacological activities that may intersect with inflammation, oxidative stress and cellular regulation, while the strength and type of evidence available for each remain different.

2. Materials and Methods

A narrative review methodology was adopted. Literature was identified through PubMed and PubMed Central using combinations of the terms “*Curcuma longa*”, “curcumin”, “Haridra”, “*Tinospora cordifolia*”, “*Guduchi*”, “*Arbuda*”, “cancer”, “anticancer”, “clinical trial” and “systematic review”. Classical Ayurvedic concepts were incorporated to provide the traditional pharmacological framework. Priority was given to systematic reviews, indexed reviews and studies directly relevant to anticancer mechanisms or clinical oncology.

The literature was synthesized under four domains: Ayurvedic pharmacological profile; phytochemical and pharmacological basis; anticancer mechanisms; and clinical evidence with limitations. Because this was a narrative review rather than a meta-analysis, no pooled effect estimate was calculated.

3. Results

3.1 Ayurvedic profile of Haridra

Haridra is *Curcuma longa* L. of the family Zingiberaceae. Its classical description includes predominantly *Tikta* and *Katu Rasa*, *Ruksha* and *Laghu Guna*, *Ushna Virya* and *Katu Vipaka*. Its traditional actions include *Kaphahara*, *Kandughna* and *Vishaghna* applications in appropriate contexts. These Ayurvedic attributes provide a traditional pharmacological basis but do not by themselves establish anticancer efficacy.

3.2 Ayurvedic profile of Guduchi

Guduchi is *Tinospora cordifolia* (Willd.) Hook.f. & Thomson. It is traditionally described as a *Rasayana* drug. Classical descriptions include *Tikta* and *Kashaya* predominance, *Laghu* and *Snigdha* qualities, *Ushna Virya* and *Madhura Vipaka*. It is widely used in Ayurvedic practice for conditions involving fever, debility and metabolic disturbance, and has been investigated experimentally for immunomodulatory and antioxidant effects.⁴

3.3 Phytochemical and pharmacological basis

Curcuma longa contains curcuminoids, including curcumin, demethoxycurcumin and bisdemethoxycurcumin, together with volatile constituents. Curcumin has been investigated for modulation of inflammatory pathways, oxidative stress, cell proliferation, apoptosis, angiogenesis and other cancer-related mechanisms^{2,3}

Tinospora cordifolia contains diverse constituents including alkaloids, diterpenoid lactones, glycosides, steroids, phenolics and polysaccharide-related compounds. Reviews describe immunomodulatory, antioxidant and anti-inflammatory activities, with experimental research extending to cancer-related models.^{4,5}

3.4 Comparative anticancer mechanisms

Domain	Haridra / <i>Curcuma longa</i>	Guduchi / <i>Tinospora cordifolia</i>
Inflammation	Modulation of NF- κ B and other inflammatory pathways reported.	Anti-inflammatory activity reported in pharmacological studies.
Oxidative stress	Antioxidant and redox-related effects reported.	Antioxidant activity is a prominent area of research.
Cell proliferation/apoptosis	Extensive preclinical studies report effects on proliferation	Cancer-related experimental evidence exists, but is less

	and apoptosis.	extensive.
Immune modulation	Immunological effects reported; oncology interpretation remains heterogeneous.	Immunomodulatory activity is a major research area.
Clinical oncology evidence	Several randomized trials and systematic reviews; results remain heterogeneous.	Cancer-specific clinical evidence is comparatively limited.

3.5 Clinical evidence

A 2023 systematic review of randomized controlled trials identified seven eligible studies evaluating curcumin in cancer-related settings. The authors concluded that available clinical evidence was insufficient to support therapeutic use of curcumin for cancer, while noting some positive findings for selected outcomes.⁶

A later systematic review published in 2025 included 34 randomized controlled trials involving 2,580 patients. It reported heterogeneous outcomes and methodological limitations; some benefits were observed for selected oral symptoms and weight-related outcomes, but a clear conclusion regarding anticancer efficacy could not be made.⁷

For Guduchi, indexed reviews document substantial Ayurvedic and experimental pharmacological evidence, including immunomodulatory and antioxidant activity and some cancer-related investigations.^{4,5} However, the available evidence is insufficient to establish Guduchi as an independent clinical anticancer treatment.

4. Discussion

The comparative evidence indicates that Haridra and Guduchi occupy partially overlapping but distinct research positions. Haridra has a particularly extensive cancer-focused mechanistic literature centered on curcumin. Experimental studies have examined inflammatory signaling, cellular proliferation, apoptosis, angiogenesis and related pathways.^{2,3} However, systematic reviews of human trials emphasize heterogeneity, formulation differences, small samples and bioavailability limitations.^{6,7}

Guduchi has a strong traditional identity as a *Rasayana* drug and a substantial pharmacological literature concerning immunomodulation, antioxidant activity and inflammatory regulation.^{4,5} These properties are biologically relevant to cancer research, but biological plausibility should not be equated with demonstrated clinical anticancer efficacy.

From an Ayurvedic perspective, *Arbuda* provides a traditional framework for discussing abnormal mass-like pathology. Classical descriptions should be interpreted within their own diagnostic and therapeutic system rather than retrospectively assigning every *Arbuda* to a modern histological cancer subtype.¹

The principal limitation of this review is its narrative design. The available evidence is heterogeneous with respect to cancer type, stage, preparation, dose, route and concomitant conventional therapy. Therefore, the present comparison is an evidence-mapping exercise rather than proof of superiority of one drug over the other.

5. Conclusion

Haridra (*Curcuma longa*) and *Guduchi* (*Tinospora cordifolia*) both possess pharmacological properties relevant to research on tumor biology. Haridra/curcumin has a larger body of cancer-focused mechanistic and clinical research, whereas *Guduchi* has a prominent evidence base concerning traditional pharmacology, immunomodulation, antioxidant activity and experimental research. Current clinical evidence does not justify presenting either drug as a proven standalone treatment for modern malignancy. Future studies should use standardized preparations, clearly defined patient populations, appropriate control groups, validated outcomes, pharmacokinetic assessment and rigorous safety monitoring.

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