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## Review Paper

# Therapeutic Potential and Phytochemical Profile of *Jasminum Auriculatum*: A Review

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### ABSTRACT

Ayurveda and many other traditional medicines are part and parcel of human life for millions of years worldwide. Among a long list of medicinal plants, one such medicinally important Oleaceae family of genus *Jasminum* is *J. auriculatum*. In this paper, the various aspects of this species, especially botanical characteristics, traditional uses, and pharmacological properties, were summarized. Cultivated commercially from the regions like India, Nepal, and Sri Lanka for its oil and used frequently in traditional systems of medicine. The phytochemical composition of the leaves is rich in essentials such as terpenoids, flavonoids, tannins, steroids, alkaloids, and polyphenols. These show significant healing activities of various wounds, ulcers, and skin conditions. Scientific experimentation has confirmed the longtime used tradition for anti-inflammatory, antibacterial, and antioxidant activities. The roots were used to treat diseases of kidneys and bladder and showed considerable therapeutic effects. Research has shown anticancer activity or rather potential against breast and lung cancer. *J. Auriculatum* offers many medicinal benefits, yet proper pharmacovigilance is essential in ensuring its safe and effective application in modern health care. The review synthesizes current knowledge of the medicinal properties of *J. auriculatum*, focusing on its potential use in contemporary applications while considering quality control and safety monitoring in herbal medicine


### INTRODUCTION

Traditional medicine, particularly Ayurveda, Traditional Chinese Medicine (TCM), and Arabic medicine, has been used worldwide for thousands of years [1]. Ayurveda, India's traditional system of medicine, focuses on both prevention and cure

of illnesses, gaining global acceptance for its holistic approach [2]. The World Health Organization reports that about 80% of the world's population relies on herbal medicines for primary healthcare [4], with the US and European markets for herbal pharmaceuticals and health foods valued

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between \$80 and \$250 billion [3]. The Oleaceae family, which includes 25 genera and approximately 688 species [6], is distributed across most continents except Antarctica [7]. Within this family, the *Jasminum* genus is particularly widespread, stretching from Portugal to Australia. In India alone, there are 47 species of *Jasminum*, with 16 being indigenous [8]. The family exhibits diverse leaf characteristics, from simple to trifoliolate and imparipinnate leaves, with various species showing distinct features like abscission lines and domatia [9]. The use of herbal medicines is deeply rooted in history, with documentation in Indian, Chinese, Egyptian, Greek, Roman, and Syrian languages dating back more than 5000 years [5]. These traditional remedies and medications have been derived from both scientific legacy and rich cultural traditions. In countries like Germany and France, many plants and herbal extracts are prescribed as conventional drugs, demonstrating the continued relevance of traditional medicine in modern healthcare practices [3]. *Jasminum auriculatum*, a species found in the Andaman Islands, Bhutan, India, Nepal, and Sri Lanka, is particularly significant for its medicinal properties [9]. Its leaves, which contain various phytochemical components including terpenoids, flavonoids, tannins, steroids, alkaloids, and polyphenols [10], are used to treat wounds, ulcers, skin conditions, and leprosy. The plant's roots are also utilized in treating kidney and bladder issues, while its anti-inflammatory properties have shown promise in fighting various cancers [11]. Despite these benefits, proper pharmacovigilance of herbal medicines remains essential to ensure their quality, safety, and efficacy [12]. This review article mainly explores the therapeutic potential and phytochemical profile of the plant *Jasminum auriculatum*.

### Geographical Distribution

*Jasminum auriculatum* is predominantly found in South Asia, with significant distribution across

India, China, and Malaysia [13]. In India, it is mainly concentrated in the western peninsular states of Tamil Nadu, Kerala, and Karnataka, growing naturally in environments ranging from moist deciduous zones to dry woods. The species has adapted to diverse climatic conditions across the subcontinent, as evidenced by its presence in Nepal, Sri Lanka, Bhutan, and the Andaman Islands. The remarkable adaptability of this species to varying geographical and climatic conditions demonstrates its resilience and ecological versatility, making it a particularly successful plant species in the South Asian region. The natural distribution pattern of *J. auriculatum* across these different territories suggests its evolutionary adaptation to diverse environmental conditions, from coastal areas to inland regions. India and Thailand commercially cultivate *J. auriculatum* for its fragrant flowers, which are valued for essential oil production. Beyond its commercial importance, the species holds cultural significance in traditional medicine, where its roots and leaves are used for various therapeutic preparations. The widespread distribution and cultivation of *J. auriculatum* throughout South Asia underscore its horticultural and medicinal significance [10]. This dual importance as both a commercial crop and medicinal plant has led to its extensive cultivation across various regions, contributing significantly to local economies and traditional healthcare systems. The successful integration of *J. auriculatum* into both commercial agriculture and traditional medicine practices highlights its versatility as a plant species with multiple applications, making it an invaluable resource in South Asian botany and ethnomedicine.





Fig. No. 1: *Jasminum auriculatum* Flower



Fig. No. 2: *Jasminum auriculatum* Leaves  
Scientific Classification [14]:

Table No. 1: Scientific Classification of *Jasminum auriculatum*

Category	Classification
Domain	Eukaryota (Organisms with complex cell structures)
Kingdom	Plantae (Multicellular plants capable of photosynthesis)
Phylum	Magnoliophyta (Flowering plants)
Class	Magnoliopsida (Dicotyledons)
Order	Scrophulariales (Group of flowering plants)
Family	Oleaceae (Olive family, includes olives and jasmines)
Genus	<i>Jasminum</i> (Jasmines)
Species	<i>Jasminum auriculatum</i>

**Synonyms [14,15]**

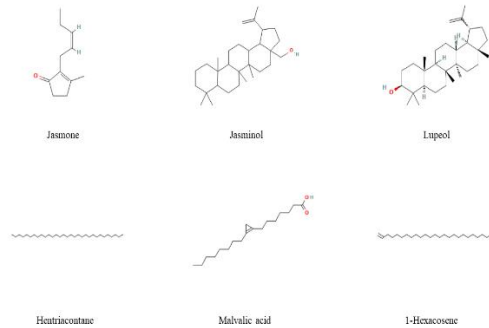
*Jasminum mucronatum*, *Jasminum ovalifolium*,

Table No. 2: Common Names of *Jasminum auriculatum* in Various Indian Languages.

Language	Common Name
Hindi	Juhi
Kannada	Juhi Mallige
Marathi	Jui
Tamil	Mullai
Malayalam	Urumundanga
Telugu	Mallichendu
Bengali	Jui
Gujarati	Chameli
Punjabi	Chameli
Sanskrit	Yuthi

**Phytochemistry**

This plant consists of benzyl acetate, jasmone, resin, glycoside, phenols, salicylic acid, terpenoids, tannins, saponins & flavonoids. The leaves yielded lupeol, aliphatic hydrocarbons (C20-C34), aliphatic alcohols (C21- C23), hentriacontane, n-tricontanol, fatty acids, jasmolinol, D-mannitol, inositol, sorbitol, xylitol, malvalic acid & jasmimine. The flower buds possessed indole, benzyl acetate and methyl anthranilate. Jasmine flower is a rich source of essential oils, ondule and jasmolinol. The concretes of the flower volatile oils were composed mainly of 17-pentatriacontene, 22-tricosanoic acid, 1-hexacosene, propyl oleate, 1,5,4-dibromotetrapentacontane, octadecane, 4-methyl 12-propyl-11-pentanol, 3,5-dimethyl-1-hexene, 3,3-dimethyl-1-hexene, 1-butoxy-2-pentene and 3,5,5-trimethyl-1-hexene. The rhizomes have high amount of (Z)-n-dotriacontenyl piperate, 4-pentadecanoxyferulic acid, (Z)-8-dehydromelissic acid,  $\beta$ -D-xylose, (Z)-6-lauroleiy1- $\beta$ -D-tetraglucoside, (Z)-6-lauroleiy1- $\alpha$ -D-tetraglucoside, etc [16].



**Fig. No. 3: Phytochemical constituents of *Jasminum auriculatum*.**

### Ethanopharmacological Uses

The shrub *Jasminum auriculatum* Vahl is utilized in Siddha, Unani, Ayurvedic and traditional medicine. *Jasminum auriculatum* has a lengthy history of traditional uses for a variety of ailments. Its roots, leaves and flowers are frequently used to treat a variety of illnesses. The roots help with skin conditions, including ringworm. Although they smell good, flowers can help with burning sensations. Stomatopathy, ulcers, leprosy, wounds, antiseptics, emollients and anthelmintics can all benefit from the leaves, roots and flowers [17].

### Pharmacological Activity

#### Anti-oxidant activity

*Jasminum auriculatum* consist of tremendous number of phytochemical compounds like terpenoids, flavonoids, tannins, steroids, alkaloids, polyphenols etc. and from the previous research study it has shown that the ethanolic extract of roots of *Jasminum auriculatum* possess some anti-oxidant activity which was done by in-vitro & in-silico studies. The results of HPLC analysis led to the presence of rutin and GC-MS analysis resulted in presence of various bioactive compounds. In-vitro evaluation of free radical scavenging ability using DPPH, NO and ABTS techniques exhibited that the root extract possesses good antioxidant activity. Also, with the help of docking which results in good glide docking score with protein targets namely NADPH oxidase and super oxide dismutase. Based on these findings, it can be

concluded that the roots of *Jasminum auriculatum* possess good antioxidant activity. [11]

#### Wound healing activity

The preliminary phytoconstituents present in *Jasminum auriculatum* such as flavonoids and triterpenoids promote wound healing process mainly due to their anti-microbial and free radical scavenging property which seems to be responsible for wound contraction and increased rate of epithelization. Flavonoids are known to reduce lipid peroxidation not only by preventing or slowing the onset of cell necrosis but also by improving vascularity. Most of the extracts that is petroleum, ether, ethanol, chloroform etc. shows better wound healing property and they increase the rate of wound contraction, enhanced epithelization and increased hydroxyproline content lead to faster healing [18].

#### Anti-microbial property

The *Jasminum auriculatum* plant shows certain degree of anti-microbial activity depending on the type of extracts and maximum activity is shown against *Pseudomonas* sp by methanol extract and chloroform extract against *Streptococcus mutans*. *Jasminum auriculatum* also shows minimum activity in propanol extract against *Bacillus subtilis* [19]

#### Anti-cancer activity

The biogenic gold particles using *Jasminum auriculatum* leaf extract were investigated for their anti-cancer activity using MTT assay. The test was done on human cervical cancer cell lines (hela) and

the study shows that the treatment of hela cell line with biogenic gold nanoparticles suppressed the cell viability of cancerous cell up to 69.28% at concentration 200µg/ml of gold nanoparticles [10].

## CONCLUSION

The comprehensive review of *Jasminum auriculatum* underscores its profound ecological significance and vast medicinal potential. This plant is cultivated commercially in India and Thailand for its fragrant flowers used in essential oil production and traditional medicine. *Jasminum auriculatum* is a cornerstone of traditional medicine, with its leaves being especially valued for their rich phytochemical composition and these compounds exhibit antioxidant, antimicrobial, anti-inflammatory and anticancer properties; making the plant effective for treating leprosy, skin diseases, ulcers, and wounds. Traditional formulations like jellies, juices and medicated ghee utilize its leaf extracts. The roots are used in decoctions for urinary issues and kidney stones, while pastes of roots and leaves are applied to wounds and used to treat headaches and eye irritation. Cold infusions serve as gargles for oral health. Despite these traditional uses and evidence of benefits in reducing risks of cardiovascular diseases, cancer, diabetes and obesity, scientific validation of some claims such as its anti-obesity effects is still limited warranting further research.

## REFERENCES

1. Li X, Wu L, Wu R, Sun M, Fu K, Kuang T, et al. Comparison of medicinal preparations of Ayurveda in India and five traditional medicines in China. *J Ethnopharmacol.* 2022;284:114775.
2. Mukherjee PK, Harwansh RK, Bahadur S, Banerjee S, Kar A, Chanda J, et al. Development of Ayurveda—tradition to trend. *J Ethnopharmacol.* 2017;197:10–24.
3. H Reindel JJ, Howard S, Agay-Shay K, Arrebola JP, Audouze K, Babin PJ, et al. Obesity II: establishing causal links between chemical exposures and obesity. *Biochem Pharmacol.* 2022;199(1):115015.
4. Bhat R, Noronha QW, Fathima T, Shabaraya AR. Current and emerging pharmacotherapies for Zika virus: A comprehensive review. *Indian J Pharm Drug Studies.* 2022;1(3):97-101.
5. Basu T, Selman A, Reddy AP, Reddy PH. Current status of obesity: protective role of catechins. *Antioxidants (Basel).* 2023;12(2):1-21.
6. Huang YL, Oppong MB, Guo Y, Wang LZ, Fang SM, Deng YR, et al. The Oleaceae family: A source of secoiridoids with multiple biological activities. *Fitoterapia.* 2019;136:104155.
7. Dupin J, Raimondeau P, Hong-Wa C, Manzi S, Gaudeul M, Besnard G. Resolving the phylogeny of the olive family (Oleaceae): confronting information from organellar and nuclear genomes. *Genes.* 2020;11(12):1508.
8. Jeyarani JN, Yohannan R, Vijayavalli D, Dwivedi MD, Pandey AK. Phylogenetic analysis and evolution of morphological characters in the genus *Jasminum* L. (Oleaceae) in India. *J Genet.* 2018;97:1225-39.
9. Green PS. Oleaceae In: Flowering Plants - Dicotyledons: Lamiales (except Acanthaceae including Avicenniaceae). Berlin, Heidelberg: Springer Berlin Heidelberg; 2014. p. 296–306.
10. Balasubramanian S, Kala SMJ, Pushparaj TL. Biogenic synthesis of gold nanoparticles using *Jasminum auriculatum* leaf extract and their catalytic, antimicrobial and anticancer activities. *J Drug Deliv Sci Technol.* 2020;57(1):101620.
11. Sreedevi A, Sangeetha S, Murali MA, Sruthi KS, Vadlamudi Y. Phytochemical, in vitro and in silico screening of roots of *Jasminum auriculatum* for antioxidant activity. *Eurasian Chem Commun.* 2022;4:768.



12. Al-Worafi YM. Herbal medicines safety issues. In: Drug safety in developing countries. Academic Press; 2020. p. 163–78.
13. Joy P, Raja DP, Selvam SI. Genetic analysis of somoclonal variation among *Jasminum auriculatum* and its callus. *Int J Biol Technol.* 2014;5(1):19-24.
14. Gowdhami T, Rajalakshmi AK, Sugumar N. Pharmacognostical and preliminary phytochemical screening of the leaf extract of *Jasminum auriculatum* Vahl. *Int Lett Nat Sci.* 2015;43(1):69-75.
15. Nirmala KS, Champa BV, Hegde MAH. Morphological diversity of jasmine cultivars and wild species in Karnataka. 2017;822–31.
16. Aneja S, Dhiman N, Arun M. Deeper insights into pharmacognostic, phytochemical, ethanobotanical and pharmacological perspectives of *Jasminum auriculatum*. *ECB.* 2023;5(1):954 -61.
17. Arangale KB, Kalokhe SS, Jadhav PS, Shinde YP, Sutar NG. Ethanobotanical uses and phytochemical analysis of *Jasminum auriculatum* Vahl. *World J Pharm Res.* 2018;7(8):101–3.
18. Arun M, Satish S, Anima P. Evaluation of wound healing, antioxidant and antimicrobial efficacy of *Jasminum auriculatum* Vahl. leaves. *Avicenna J Phytomed.* 2016;6(3):295-304.
19. Shekhar S, Prasad MP. Evaluation of antimicrobial activity of *Jasminum* species using solvent extracts against clinical pathogens. *World J Pharm Pharm Sci.* 2015;1247–56.

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