



An Integrative Review Of Varieties Of *Sahachara* In Ayurveda And Contemporary Scientific Research.

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ABSTRACT

Sahachara is an important medicinal plant described in Ayurvedic classics for the management of *Vatavyadhi*, *Palitya*, *Mutravaha Strotas Vyadhi*. Classical texts and Nighantus describe *Sahachara* under various synonyms such as *Saireyaka*, *Kurantaka*, *Bana*, *Dasi*, and *Kurabaka*, and is classified into *Peeta*, *Shweta*, *Neela*, and *Rakta* varieties based on colour of the flower, each with specific therapeutic indications. Botanically, these varieties correspond to *Barleria prionitis* Linn., *Barleria cristata* Linn., and *Barleria strigosa* Willd. (both *Shweta* and *Rakta*) of the family Acanthaceae. This integrative review compiles Ayurvedic descriptions from classical texts and correlates them with contemporary phytochemical and pharmacological studies. The review highlights traditional Ayurvedic knowledge and modern scientific evidence, while emphasizing the need for precise research studies, standardization, and clinical validation to support evidence-based use of *Sahachara*.

1. INTRODUCTION

Sahachara is an important medicinal plant described in Ayurvedic classics for therapeutic indications in *Vatavyadhi*, *Kesha Roga* and *Ashmari Vyadhi*. *Samhitas* and *Nighantus* mention *Sahachara* under various synonyms such as *Saireyaka*, *Kurantaka*, *Bana*, *Dasi*, and *Kurabaka*. Further it is classified into four types based on the external morphology (flower color) into *Peeta*, *Shweta*, *Neela*, and *Rakta* varieties. This classification reflects the traditional understanding of varietal diversity and its clinical relevance. Botanically, these varieties are correlated with species of the genus *Barleria*—*Barleria prionitis* Linn., *Barleria cristata* Linn., and *Barleria strigosa* Willd.—belonging to the family Acanthaceae. Modern scientific studies have identified various bioactive constituents in these species, including flavonoids, iridoid glycosides, phenylethanoid glycosides, phenolic acids, and sterols, which exhibit diverse pharmacological activities. The present review aims to integrate classical Ayurvedic knowledge with contemporary scientific research to provide a comprehensive understanding of the varieties of *Sahachara* and their therapeutic potential.

Keywords- *Sahachara*, *Saireyaka*, *Kurantaka*, *Barleria prionitis*, *Barleria cristata*, *Barleria strigosa*, *Dravyaguna*, *Ayurveda*

2. NEED FOR THE STUDY

Despite extensive traditional use, a consolidated review comprehensively detailing both Ayurvedic insights and modern scientific validation of types of *Sahachar*, highlighting gaps, is lacking. This study aims to fill that void.

3. AYURVEDIC CLASSIFICATION AND TYPES OF SAHACHAR

In Ayurveda *Sahachara* is mentioned in four varieties based on the color of flowers. They are *Peeta*(Yellow) *Sahachara* (*Barleria prionitis* Linn.) ; *Shweta* (white) *Sahachara* (*Barleria cristata* Linn.) ; *Neela* (blue) *Sahachara* (*Barleria strigosa* Willd.) ; *Rakta*(red) *Sahachara* (*Barleria cristata* Linn.).^[1]

A. Types of *Sahachara* mentioned in Ayurvedic *Samhitas* and texts ^[2]

- *Charak samhita* - *Zhinti* (*neela Sahachar*) is mentioned in *Vyadhitroopiya adhyaya*, *Trimarmiya adhyaya* and *Saireya* also mentioned as *Zhinti* (*Neela Sahachar*) in *Sweda adhyaya*. Along with this there is also mention of *kurantaka* (*peeta Sahachara* and synonym of *Sahachara*).^[2]
- *Sushruta Samhita* - *Dalhan* commentary has described *kurantaka* as *peeta sahachara* in *Aragvadhadi gana*. *Sahacharadwaya* is also mentioned as *rakta Sahachara* and *neela sahachara* together in *varunadi gana*.^[2]
- *Ashtanga Hridaya*- *Saireyakayugma* is mentioned in *Varunadi gana*. *Arundatta* in *Sarvangasundar* commentary mentions *Saireyakayugma* as *Kurabaka* (*Rakta Sahachara*), *Kurantaka* (*Peeta Sahachara*).^[2]
- *Kashyapa samhita* has mentioned *Neela* and *Rakta* variety in *Balagraha Chikitsa* and *Dhatri chikitsa*. *Sharangdhar samhita*, *Yog Ratnakar*, *Bhaisajya ratnavali* have not mentioned any variety of *Sahachara*.^[2]

B. Types of *Sahachara* mentioned in *Nighantu*.^[2]

Sr. No	Authors	Sweta	Peeta	Rakta	Neela
1.	<i>Ashtang nighantu</i>				+
2.	<i>Abhidhaan manjiri</i>	+			+
3.	<i>Bhavprakash Nighantu</i>	+	+	+	+
4.	<i>Dhanvantari Nighantu</i>		+	+	+
5.	<i>Kaiyadeva Nighantu</i>	+	+	+	+
6.	<i>Madanpal Nighantu</i>		+	+	+
7.	<i>Nighantu shesha</i>		+	+	+
8.	<i>Raj Nighantu</i>		+	+	+
9.	<i>Shodhal Nighantu</i>	+	+	+	+

1) *Shweta Sahachara* (White-flowered *Sahachar*):

Botanical Identification: *Barleria cristata* Linn. (white variety)

Botanical description - *Sahachara* is a prickly undershrub, with 0.6-1.5 m height. Found throughout the country. Roots are upto 1 cm thick at the top, cylindrical and tapering, bearing lateral branches and numerous rootlets; surface has dot-like lenticels, externally the color is brown. Inner part of root is cream in color. Stem - Erect, green, glabrous, nodes swollen, branching at nodes, mature stem cylindrical with scattered dot-like lenticels. Leaf - Dorsiventral, variable in size, 6- 9.5 cm long, 2.5 - 3.5 cm wide, simple, elliptic, acuminate, entire, acute, reticulate, unicostate, with short petiole. Flower - Yellow in color, funnel

shaped five petals, sessile. It has four stamens 2 fertile and 2 staminodes. Filaments of the fertile stamens seen outside of flower. Fruit - Capsules, ovoid shape, 2 seeded. Seed- Compressed, 0.8 cm in diameter and clothed with silky fine glandular hairs. [3]

Rasapanchaka:^[1]

- **Rasa :** Tikta , Madhura
- **Guna :** Laghu , Ruksha
- **Virya :** Ushna
- **Vipaka :** Katu
- **Karma-** Vatahara, Kaphahara , Vishahara , Keshranjaka
- **Doshaghnata :** Pacifies aggravated Vata and Kapha doshas. Its Ushna Virya helps alleviate Vata disorders, while its Tikta and Ushna properties pacify Kapha imbalances.
- **Rogaghnata :** beneficial in diseases like – Vatavyadhi, Kushta, Palitya, Kesha Vikar, Dantashula, Mutrakricha, Mutraashmari, Mushika Visha, Shotha, Kandu, Vishadosha.

Sanskrit synonyms – Saireyaka , Shwetapushpa-Saireyaka, Saireyah, Katsarika.^[1]

Ayurvedic formulations- Sahacharadi Tail, Maharasnadi Kwatha, Shadasthi Guggulu, Kushadya Ghrita, Nilikadya Tail, Mahanila Taila.^[1]

Amayik prayog of Sahachara/ Shweta Sahachara-

- According to Acharya Sushruta, Sahachara is useful in the treatment of Ashmari (urinary stones) based on their types. Shweta variety of Sahachara is specifically recommended for Kaphaj Ashmari.^[4]
- In patients of Vatarakta, a medicated paste containing of Sahachara along with other herbs should be applied externally.^[5]
- Medicated oil prepared with Sahachara and other dravya helps in preventing and curing palitya (premature greying of hair.)^[6]
- Bhavprakash samhita mentions Sahachara as DviSahachara (i.e Shweta, Peeta) Siddha ghrita beneficial in management of Yoni roga.^[7]
- The root of Sahachara is advised to be taken orally with honey and other substances to counteract the toxic effects of rat bite (Akhuvisha).^[8]

2) Peeta Sahachara (Yellow-flowered Sahachara):

Botanical Identification: Barleria prionitis Linn. This is the most widely recognized and utilized variety of Sahachara.^[1]

Sanskrit synonyms : Kurantaka^[1]

Ayurvedic formulations- Mashadi Tail, Shatavari Tail, Neelikyadi Tail, Agninama Rasa.

Amayik prayoga of Peeta Sahachara / Kurantaka -

- Kurantaka used for external Application as Lepa Visarpa mentioned in Ashtanga Hridaya Chikitsasthana.^[9]
- Acharya Vagbhata has mentioned Kurantaka Pushpa used in combination for Kwath which is used for External application on eyes after Arma Shastra karma.^[10]
- Kurantaka in Tail formulation used for Nasya for management of Palitya, mentioned by acharya Vagbhata.^[11]
- According to acharya Sushruta, Sahachara is useful in the treatment of Ashmari (urinary stones) based on their types. Peeta variety i.e kurantaka is specifically recommended for Pitaja Ashmari.^[4]
- Bhavprakash samhita described Kurantaka in Virtarvadi gana which is beneficial in treating Ashmari, Sharkara, Mutrakruchra.^[12]
- Kurantaka moola with anupana of Cow's milk for management of Garbha prada.^[13]

3) *Neela-Sahachara* (Blue-flowered *Sahachar*):

Botanical Identification: *Barleria strigosa* Willd.^[1]

Sanskrit synonyms – *Bana, Dasi, Artagala, Zhinti*.^[1]

Ayurvedic formulations- *Virtarvadi kwatha, Triphaladi Ghrita*

Amayik prayog

- *Acharya Vagbhata* described use of *Panchanga* of *Artagala Siddha Ghrita* to be taken internally for *Vatajanya Kasa Vyadhi*.^[14]
- *Chakradatta* has mentioned in *kushtachikitsa* – *neela Sahachara patra swaras* to be applied continuously on affected area of *Sidhma Kustha*.^[15]
- *Gandusha* using *Artagala Patra Kwath* (decoction of leaves) in teeth disorder, mentioned by *Chakradatta*.^[16]
- Oil medicated with *Sahachara, Agnimantha* etc. should be used for *abhyanga* of the baby while treating almost all *Graha badha* diseases.^[17]
- According to *Acharya Sushruta*, *Sahachara* is useful in the treatment of *Ashmari* (urinary stones) based on their types. *Artagala* is specifically recommended for *Vataja Ashmari*.^[4]

4) *Rakta Sahachara* (Red-flowered *Sahachar*):

Botanical Identification: *Barleria cristata* Linn. (Red variety). While *B. cristata* is often associated with white flowers, the species exhibits floral polymorphism and includes a distinct red or reddish-purple variety. In some regional texts, *Barleria courtallica* Nees is also used as a source for the red variety^[18]

Sanskrit synonyms – *Kurabaka*^[1]

- *Saireyakayugma* is mentioned in *Varunadi gana* from *Ashtang hridaya*. It contains two plants *Rakta pushpa saireyaka* i.e *kurabaka* and *pita pushpa* i.e. *kurantaka* according to commentary of *Arundatta Sarvangasundar* on *Ashtang Hridaya*.^[19]
- In *Dalhana* commentary of *Sushruta Samhita*, *Sahacharadwaya* is mentioned as *Rakta* and *Neela* varieties of *Sahachara* in *Varunadi gana*.^[20]

Amayik prayog

- *Rakta Sahachara* is mentioned as *Sahacharadwaya* in *varunadi gana* – *varunadi gana* is mentioned helpful in management of *Kapha Dosha* and *Meda Dhatu Vikar* and diseases like *Shirashoola*, *Vidradhi* and *Gulma*.^[20]
- *Viratarvadi gana* useful for *Mutravaha Strotas Vyadhi* also mentions *Rakta Sahachara* as *Sahacharadwaya*.^[19]
- According to *Acharya Sushruta*, *Varunadi Gana* is specifically indicated in the management of *Kaphaja Ashmari*. Since *Varunadi Gana* includes *Rakta Sahachara*, it is implied that *Rakta Sahachara* is beneficial in the treatment of *Kaphaja Ashmari*.^[4]

Table 1: Ayurvedic Classification and Properties of *Sahachar* Types

Type of <i>Sahachar</i> (Ayurvedic Name)	Synonyms in Ayurveda	Botanical Identification
<i>Peeta Sahachara</i> (Yellow-flower)	<i>Kurantaka</i>	<i>Barleria prionitis</i> Linn.
<i>Shweta Sahachara</i> (White-flower)	<i>Shweta Pushpa, Saireyaka, Saireyah</i>	<i>Barleria cristata</i> Linn.
<i>Neela Sahachara</i> (Blue-flower)	<i>Bana, Dasi, Artgala, Zhinti</i>	<i>Barleria strigosa</i> Willd.
<i>Rakta Sahachara</i> (Red-flower)	<i>Kurabaka</i>	<i>Barleria cristata</i> Linn.

4. Key Phytochemicals and their Potential Activities of varieties of *Sahachara*.Table 2: Key Phytochemicals and their Potential Activities of *Barleria prionitis*

Phytochemical	Specific Compounds Identified	Documented or Potential Activities
Flavonoids	Apigenin, Scutellarin, Luteolin-7-O-glucoside ^[21-23]	Antioxidant, Anti-inflammatory, Anticancer, Neuroprotective ^[24]
Iridoid Glycosides	Barlerin, Acetylbarlerin ^[25]	Anti-inflammatory, Hepatoprotective ^[25]
Phenolic Compounds	Vanillic acid, Syringic acid ^[26,27]	Antioxidant, Anti-inflammatory, Antimicrobial, Anticancer ^[24]
Triterpenoids	Lupeol, β -sitosterol ^[28,29]	Anti-inflammatory, Anticancer, Anti-diabetic, Cholesterol-lowering ^[30]

Table 3: Key Phytochemicals and their Potential Activities in *Barleria strigosa* Wild.

Phytochemical	Specific Compounds Identified	Documented or Potential Activities
Flavonoids	Apigenin 7-O- α -L-rhamnosyl-(1 $\rightarrow$ 6)-O- β -D-glucoside; other flavonoid glycosides. ^[31]	Antioxidant, Anti-inflammatory, Anticancer, Neuroprotective ^[24]
Iridoid Glycosides	10-O-trans-coumaroyl-eranthemoside; 7-O-acetyl-8-epi-loganic acid (iridoid derivative) ^[31]	Anti-inflammatory, Hepatoprotective ^[25]
Phenylethanoid glycosides	Verbascoside; isoverbascoside; decaffeoylverbascoside; 4-hydroxyphenylethyl glucoside ("strigoside") ^[32]	Antioxidant, antimicrobial, cytotoxic potential (reported in <i>Barleria</i> spp.) ^[32]
Sterols/Terpenoids	B-sitosterol, caryophyllene, ergosterol derivatives. ^[33]	Anti-inflammatory, Anticancer, Anti-diabetic, Cholesterol-lowering ^[30]

Table 4: Key Phytochemicals and their Potential Activities in *Barleria cristata* Linn.

Phytochemical	Specific Compounds Identified	Documented or Potential Activities
Flavonoids	Luteolin, 7-methoxy luteolin; apigenin-7-O-glucoside; other flavonoid glycosides isolated from leaves/ethyl acetate fraction of <i>B. cristata</i> var. <i>alba</i> ^[34]	Antioxidant, Anti-inflammatory, Anticancer, Neuroprotective ^[24]
Phenylethanoid/Phenolic Glycosides	Verbascoside, isoverbascoside, dimethoxyverbascoside, acteoside, poliumoside (reported phenylethanoid glycosides) ^[35]	Antioxidant, Chemopreventive enzyme induction (NQO1), Antimicrobial/antibacterial contributions ^[34]
Phenolic Acids & Aromatic Derivatives	p-Hydroxybenzoic acid; p-coumaric acid; 4-hydroxy-trans-cinnamate derivatives. ^[35]	Antioxidant, Anti-inflammatory, Potential cytoprotective effects ^[35]
Iridoid Glycosides	Barlerin, shanzhiside methyl ester (iridoid glycosides) ^[35]	Anti-inflammatory, Hepatoprotective ^[19]

4. Modern Research

4.1 Modern research and pharmacological activities studied on *Barleria prionitis* Linn.

1. **Antioxidant Activity**- Studied total phenolic content, reducing power, and free radical scavenging (DPPH/hydroxyl) of leaf, flower, and stem extracts. Leaves showed the highest phenolics and strongest antioxidant/radical scavenging activity.^[36]
Root extract antipyretic & antioxidant in vivo. Ethyl acetate root extract scavenged free radicals (DPPH) and reduced yeast-induced fever in rats, validating traditional use for fever/oxidative stress.^[37]
2. **Antimicrobial Activity**- Antimicrobial evaluation- Tested methanol, ethyl acetate, chloroform, acetone, etc. extracts against bacteria (e.g., *E. coli*, *P. aeruginosa*) and fungi (*A. niger*, *C. albicans*). Methanol and ethyl acetate extracts showed strong inhibition, suggesting potential natural antimicrobial agents.^[38]
3. **Antifungal activity**- Crude leaf extracts inhibited fungi such as *Aspergillus flavus* and *A. niger* in poisoned-food antifungal assay.^[39]
4. **Anticancer / Cytotoxic Activity**- Ethanolic leaf extract showed >70% inhibition against several cancer cell lines including MCF-7 (breast) and DLD-1 (colon), with results comparable to doxorubicin in some cases.^[40]
5. **Anti-Inflammatory / Analgesic Activity**- Different solvent extracts of *B. prionitis* showed anti-inflammatory activity in carrageenan/histamine/dextran models in rats; due to iridoid-rich extracts acting as active components.^[41]
6. **Antidiabetic Activity**- Alcoholic leaf extract significantly decreased blood glucose, lowered glycosylated hemoglobin, increased insulin and liver glycogen in diabetic rats.^[42]
7. **Immunomodulatory Activity**- Iridoid fraction immune studies (in vitro + in vivo). The iridoid-rich fraction enhanced neutrophil activation, phagocytosis, humoral immunity, and countered cyclophosphamide-induced myelosuppression in mice.^[43]
8. **Neuroprotective / Anti-Alzheimer Potential**- Ethanolic leaf extract in rats improved memory behavior, reduced acetylcholinesterase activity, and increased antioxidant enzyme levels, suggesting neuroprotective/anti-Alzheimer effects (preclinical).^[44]

4.2 Modern research and pharmacological activities studied on *Barleria cristata* Linn

Antioxidant, Cytotoxic activity- Study on *Barleria cristata* leaf extracts (ethyl acetate, chloroform, acetone, ethanol, water) for antioxidant, antibacterial and anticancer effects (MCF-7 & Hep-G2 lines). Phenolics/flavonoids quantified; extracts showed strong antioxidant, antibacterial and cytotoxic potential in vitro.^[45]

Antimicrobial Activity - Isolated saponin fraction from *B. cristata* leaves showed significant inhibitory effects against bacteria (e.g., *Klebsiella pneumoniae*, *Staphylococcus aureus*, *E. coli*) and fungi (*Aspergillus* spp.) via agar diffusion.^[46]

Anti-Inflammatory Activity- Methanolic extract of *B. cristata* roots was evaluated for anti-inflammatory activity in experimental animals, showing dose-dependent reduction in inflammation (rats).^[47]

Antidiabetic & Hypolipidemic Effects- Leaf extracts (ethyl acetate & hydro-alcoholic) significantly reduced elevated blood glucose levels in diabetic rats and improved body weight and biochemical parameters over 21 days, compared to control and standard drug.^[48]

Hepatoprotective Activity- Petroleum ether and ethanolic *B. cristata* extracts improved cell viability and hepatocyte morphology against CCl₄-induced damage, suggesting significant liver-protective potential.^[49]

4.3 Modern research and pharmacological activities studied on *Barleria strigosa* Willd.

Comprehensive Bioactivity Profiling for antioxidant, antidiabetic, antibacterial, anti-inflammatory, antiproliferative activities and in silico molecular docking analysis of *Barleria strigosa* was studied. this study revealed Leaves extracts (hydrophilic & lipophilic) showed strong **antioxidant** effects (DPPH, ABTS, FRAP). **Antidiabetic activity** via α -glucosidase and α -amylase inhibition. **Antibacterial activity** against *L. monocytogenes*, *E. coli*, *P. aeruginosa*, *S. aureus*, *V. parahaemolyticus*. **Anti-inflammatory, antiproliferative effects**, plus in silico docking to α -amylase/ α -glucosidase reported.^[50]

Antimicrobial & Cytotoxic Activity - Cytotoxicity and antimicrobial activities of leaf extracts from *Barleria strigosa*. Methanolic leaf extract exhibited antibacterial effects specifically against *Bacillus subtilis* (inhibition zone ~14 mm) and others. Butanol fraction showed activity versus *Micrococcus luteus* and *Staphylococcus aureus*. Moderate cytotoxicity against murine leukemia cell line (P-388).^[51]

Immunomodulatory activity – *Barleria strigosa* extracts containing barlerin and verbascoside boost immunity and regulate CYP450 gene in prostate cancer cells. *B. strigosa* leaf extract exhibited moderate toxicity in certain human cell lines (HPrEC, THLE-3). Activated immune cells (PBMCs) and upregulated cytokines (IL-2, IL-10, etc.), promoting cytotoxicity against PC-3 prostate cancer cells. Influenced expression of CYP450 genes, especially CYP2E1.^[52]

5. Discussion

Sahachara is widely used in management of *Vatavyadhi*, *Mutravaha Srotas Roga* and *Kesha roga*. In Ayurvedic literature *Sahachara* is differentiated based on color of the flower i.e *Peeta Sahachara*, *Shweta Sahachara*, *Neela Sahachara*, and *Rakta Sahachara*. Botanically identified as They are *Peeta* (Yellow) *Sahachara* (*Barleria prionitis* Linn.) ; *Shweta* (white) *Sahachara* (*Barleria cristata* Linn.) ; *Neela* (blue) *Sahachara* (*Barleria strigosa* Willd.) ; *Rakta* (red) *Sahachara* (*Barleria cristata* Linn.). Comprehensive review of literature reveals a description of *Sahachara* varieties mentioned in *Samhita* and *Nighantus*. *Peeta Sahachara* (*Kurantaka*) is the most frequently cited variety and is widely employed in formulations for *Pittaja Ashmari*, *Palitya*, *Visarpa*, and inflammatory conditions. *Neela Sahachara* (*Artagala/Zhinti*) shows predominance in *Vataja* disorders, *Kasa*, *Kushta*, *Graha Roga*, and dental conditions, while *Shweta Sahachara* is emphasized in *Kaphaja Ashmari*, *Vatarakta*, *Yoni Roga*, and *Vishaja Chikitsa*. *Rakta Sahachara* (*Kurabaka*), often mentioned as part of *Sahacharadvaya* or *Saireyakayugma*, is associated with *Kapha-Meda* disorders, *Gulma*, *Vidradhi*, and *Mutravaha srotas roga*.

Modern phytochemical research studies show *Barleria prionitis* is rich in iridoid glycosides (barlerin, acetylbarlerin), flavonoids, phenolic acids, and triterpenoids, which are strongly associated with its anti-inflammatory, antidiabetic, immunomodulatory, neuroprotective, and anticancer activities. *Barleria cristata* exhibits a high concentration of phenylethanoid glycosides (verbascoside, acteoside) and flavonoids, correlating with its antioxidant, hepatoprotective, and antimicrobial potential. *Barleria strigosa* demonstrates a broader phytochemical spectrum, including flavonoid glycosides, sterols, and phenylethanoids, and shows promising antidiabetic, anti-inflammatory, antiproliferative, and immunomodulatory activities. However, most scientific studies focus on *Barleria prionitis*, with limited variety-specific and clinical evidence. Therefore, modern research supports the therapeutic potential of *Sahachara*, it also highlights the need for variety-specific pharmacological profiling, clinical trials, and standardization protocols to ensure safe and effective integrative use.

6. Conclusion

The present integrative review establishes that *Sahachara* has been described in ayurvedic texts along with its varieties, therapeutic indications, and formulation usage. Ayurvedic texts recognize four varieties of *Sahachara*—*Peeta*, *Shweta*, *Neela*, and *Rakta*. Botanical correlation identifies these varieties primarily with *Barleria prionitis* Linn., *Barleria cristata* Linn., and *Barleria strigosa* Willd. Contemporary scientific studies validate pharmacological activities such as antioxidant, anti-inflammatory, antimicrobial, antidiabetic, immunomodulatory, neuroprotective, hepatoprotective, and anticancer effects, attributed to bioactive constituents like iridoid glycosides, flavonoids, phenylethanoid glycosides, and sterols. However, the review also identifies significant research gaps, including limited clinical trials, inadequate differentiation between varieties, lack of standardization, and insufficient pharmacokinetic and safety data. Future research should focus on variety-specific experimental and clinical studies, development of quality control markers, and evidence-based integrative protocols.

7. References

1. Dr.Chunekar K.C., Dr. Pandye, Bhavaprakasha Nighantu, Chaukamba Bharati Academy, Varanasi, saptam sansakaran, 1986, P.N.
2. Pathak S, Gokhale V. KURANTAKA (BARLERIA PRIONITIS LINN) A DRUG REVIEW FROM NIGHANTU KAAL.
3. The Ayurvedic Pharmacopoeia of India, Part 1, volume 3, page 165.
4. Vd. Yadavaji Trikamaji Acharya and Narayan Ram Acharya, 2002 7th publication, sushruta samhita of sushruta with the Nibandhasangraha commentary of Shri Dalhanacharya and Nyayachandrikapanjika of shri Gayadasacharya on Nidanasthana; Chaukhambha orientalia, Varanasi. Reprint 2012.Sushruta samhita ,Chikitsasthan, 5/12
5. Acharya Vidyadhar Shukla, Prof. Ravi Dutta Tripathi, Charak Samhita Chikitsasthan 29/139 with Vaidya manorama Hindi Commentary Chaukhambha Sanskrit Pratishthan, 2010
6. Acharya Vidyadhar Shukla, Prof. Ravi Dutta Tripathi, Charak Samhita chikitsasthan 26 ,with Vaidya manorama Hindi Commentary Chaukhambha Sanskrit Pratishthan, 2010.
7. Bhavaprakasha, Bhavaprakash Samhita, Uttartantra 70/53 Edited by Prandit Sri Brahma Sankara Mishra, Reprinted in 2005.
8. Acharya vagbhatta, Ashtanghridaya, uttartantra 38/39 with commentary of Arundatta & Hemadari, Edited by Pt.Hari Sadashiva Shastri Paradkar, Chaukhambha orientalia, Varanasi, Reprint, 2010.
9. Acharya vagbhatta, Ashtanghridaya, chikitsasthana 18/15 with commentary of Arundatta & Hemadari, Edited by Pt.Hari Sadashiva Shastri Paradkar, Chaukhambha orientalia, Varanasi, Reprint, 2010
10. Acharya vagbhatta, Ashtanghridaya, uttartantra 11/22 with commentary of Arundatta & Hemadari, Edited by Pt.Hari Sadashiva Shastri Paradkar, Chaukhambha orientalia, Varanasi, Reprint, 2010
11. Acharya vagbhatta, Ashtanghridaya, uttartantra 24/35 with commentary of Arundatta & Hemadari, Edited by Pt.Hari Sadashiva Shastri Paradkar, Chaukhambha orientalia, Varanasi, Reprint, 2010
12. Bhavaprakasha, Bhavaprakash Samhita, Uttartantra 37/19 Edited by Prandit Sri Brahma Sankara Mishra, Reprinted in 2005.
13. Bhavaprakasha, Bhavaprakash Samhita, Uttartantra 70/28 Edited by Prandit Sri Brahma Sankara Mishra, Reprinted in 2005.
14. Acharya vagbhatta, Ashtanghridaya, chikitsasthana 5, with commentary of Arundatta & Hemadari, Edited by Pt.Hari Sadashiva Shastri Paradkar, Chaukhambha orientalia, Varanasi, Reprint, 2010.
15. Chakra Datta, kusthachikitsasthan, by Bajpeyee,pandit Jagnnath Sharma,1959, third edition, published by THE PROPRIETOR,SHRI LAXMI VENKATESHWAR STEAM PRESS.KALYAN-BOMBAY.
16. Chakra Datta, by Bajpeyee,pandit Jagnnath Sharma,1959, third edition, published by THE PROPRIETOR,SHRI LAXMI VENKATESHWAR STEAM PRESS.KALYAN-BOMBAY.
17. Kashyapa samhita , chikitsasthana, balagraha chikitsa chapter.
18. Sastri JLN. Dravyaguna Vijnana. Vol. II. Varanasi: Chaukhambha Orientalia; 2005. p. 290-2.
19. Acharya vagbhatta, Ashtanghridaya, Sutrasthan 15/21-22 with commentary of Arundatta & Hemadari, Edited by Pt. Hari Sadashiva Shastri Paradkar, Chaukhambha orientalia, Varanasi, Reprint, 2010; 236.
20. Susrutasamhita of sushruta with the nibandhasangraha commentary, volume , of Sri Dalhanacharya by Susrutena; Sarma, Trivikramatmajena Yadava, 1938.
21. Salehi B, et al. Apigenin: A review of its phytochemistry, pharmacology, and toxicology. Phytother Res. 2019;33(5):1254-73.
22. Zhang J, Zhou H, Ma Y, Tang L, Su Z. Scutellarin: A review of its phytochemistry, pharmacology, and pharmacokinetics. Phytother Res. 2018;32(7):1199-216.
23. Jeong CH, Choi GN, Kwak JH, Kim DO. In vitro and in vivo antioxidant activities of the leaves of *Barleria prionitis* Linn. Food Chem. 2010;120(1):132-8.

24. Pietta P-G. Flavonoids as antioxidants. *J Nat Prod.* 2000;63(7):1035-42.
25. Singh D, Singh B, Sharma RA, Sharma A. Isolation, identification and pharmacological activities of barlerin from *Barleria prionitis* Linn. *Asian J Tradit Med.* 2011;6(2):59-65.
26. Kaur S, et al. Vanillic acid: A review of its phytochemistry, pharmacology, and pharmacokinetics. *Phytother Res.* 2021;35(4):1807-28.
27. Rangaswamy V, Mohan S, Sreeramulu D, Chandrasekhar C. Phytochemical and pharmacological attributes of syringic acid: A review. *Phytochem Rev.* 2020;19(4):1121-44.
28. Saleem M. Lupeol, a novel anti-inflammatory and anti-cancerous triterpene. *Cancer Lett.* 2009;285(2):109-15.
29. Awad AB, Fink CS. Phytosterols as anticancer dietary components: Evidence from in vitro and in vivo studies. *Annu Rev Nutr.* 2000;20:513-31.
30. Sharma A, Kumar M, Gupta M, Sharma PK. Pharmacological investigation of triterpenoids. *Asian J Biomed Pharm Sci.* 2014;4(3):1-7.
31. Tripetch Kanchanapoom, Pawadee Noiarsa, Somsak Ruchirawat, Ryoji Kasai, Hideaki Otsuka, Phenylethanoid and Iridoid Glycosides from the Thai Medicinal Plant, *Barleria strigosa*, Chemical and Pharmaceutical Bulletin, 2004, Volume 52, Issue 5, Pages 612-614, Released on J-STAGE May 05, 2004, Online ISSN 1347-5223, Print ISSN 0009-2363.
32. <https://doi.org/10.1186/s40538-023-00451-2>
33. <https://caps.ncbs.res.in/GRAYU/plant/Barleria%20strigosa>
34. <https://doi.org/10.1186/s12906-018-2214-9>
35. <https://doi.org/10.5281/zenodo.11491007>
36. <https://ijp.arjournals.org/index.php/ijp/article/view/32>
37. <https://doi.org/10.61096/ijrpp.v13.iss4.2024.643-654>
38. <https://doi.org/10.53555/AJBR.v27i3S.2191>
39. PRAKASH, SWETA, et al. "PHYTOCHEMICAL AND ANTIFUNGAL ACTIVITY OF FOLK MEDICINAL PLANT BARLERIA PRIONITIS L. (VAJRADANTI)". *Asian Journal of Pharmaceutical and Clinical Research*, vol. 15, no. 6, June 2022, pp. 122-4, doi:10.22159/ajpcr.2022.v15i6.44330.
40. <https://doi.org/10.22159/ijpps.2018v10i10.27967>
41. <https://journals.innovareacademics.in/index.php/ijpps/article/view/3375>.
42. Kooti, Wesam et al. "The role of medicinal plants in the treatment of diabetes: a systematic review." *Electronic physician* vol. 8,1 1832-42. 15 Jan. 2016, doi:10.19082/1832
43. Ghule BV, Yeole PG. In vitro and in vivo immunomodulatory activities of iridoids fraction from *Barleria prionitis* Linn. *J Ethnopharmacol.* 2012 May 7;141(1):424-31. doi: 10.1016/j.jep.2012.03.005. Epub 2012 Mar 13. PMID: 22440262.
44. https://www.researchgate.net/publication/381920842_Anti-Alzheimer_Effect_of_Ethanollic_Extract_of_Barleria_Prionitis_Leaf_Neurodegeneration_in_Li_popolysaccharide_induced_Neurodegeneration
45. <https://ijpsr.com/bft-article/phytochemicals-in-vitro-cytotoxicity-antioxidant-and-antimicrobial-evaluation-of-barleria-cristata-l-philippine-violet/>
46. [http://dx.doi.org/10.13040/IJPSR.0975-8232.3\(10\).4040-44](http://dx.doi.org/10.13040/IJPSR.0975-8232.3(10).4040-44)
47. <https://dsu.org.in/content/preliminary-phytochemical-screening-and-evaluation-anti%E2%80%90inflammatory-activity-methanolic>
48. <https://pubmed.ncbi.nlm.nih.gov/33927962/>
49. <https://ijpsr.com/bft-article/hepatoprotective-activity-of-barleria-cristata-linn-whole-plant/>
50. <https://chembioagro.springeropen.com/articles/10.1186/s40538-023-00451-2>
51. <https://li04.tci-thaijo.org/index.php/IJAT/article/view/6318>
52. <https://www.nature.com/articles/s41598-025-07397-5>