

Japa Pushpa (*Hibiscus rosa-sinensis*) Tea: An Ayurvedic Perspective of Bridging Classical Knowledge and Contemporary Evidence

Dr. Madhavi Jagat^{*1}; Dr. Pradipkumar Suryawanshi²; Dr. Sasmita Tripathy³;
Dr. Vibha Pali⁴; Dr. Vinit Singh Jagat⁵; Dr. Vandana Agrawal⁶;
Dr. Nishi Sinha⁷; Dr. Kush Kumar Sahu⁸

^{1*}MD Scholar, Department of Swasthivritta Evum Yoga, Shri NPA Govt. Ayurved College Raipur, Chhattisgarh.

²Professor & HOD, Department of Swasthivritta Evum Yoga, Shri NPA Govt. Ayurved College Raipur, Chhattisgarh.

³Associate Professor, Department of Swasthivritta Evum Yoga, Shri NPA Govt. Ayurved College Raipur, Chhattisgarh.

⁴Assistant Professor, Department of Swasthivritta Evum Yoga, Shri NPA Govt. Ayurved College Raipur, Chhattisgarh.

⁵MD Scholar, Department of Kaumarbhritya, Shri NPA Govt. Ayurved College Raipur, Chhattisgarh.

⁶MD Scholar, Department of Swasthivritta Evum Yoga, Shri NPA Govt. Ayurved College Raipur, Chhattisgarh.

⁷MD Scholar, Department of Swasthivritta Evum Yoga, Shri NPA Govt. Ayurved College Raipur, Chhattisgarh.

⁸MD Scholar, Department of Swasthivritta Evum Yoga, Shri NPA Govt. Ayurved College Raipur, Chhattisgarh.

Corresponding Author: Dr. Madhavi Jagat*

Publication Date: 2026/06/27

Abstract: Japa Pushpa (*Hibiscus rosa-sinensis* Linn.), a revered medicinal plant in Ayurveda, has been traditionally utilized for its therapeutic, nutritional, and rejuvenating properties. Although classical Ayurvedic texts predominantly describe Japa in external applications for hair care, wound healing, and skin disorders, contemporary scientific investigations have highlighted its significant internal health benefits. The present review aims to bridge traditional Ayurvedic knowledge with modern scientific evidence regarding the use of Japa Pushpa as a herbal tea. Ayurvedically, Japa possesses Madhura and Kashaya Rasa, SheetaVeerya, and Pitta-Kapha Shamaka properties, making it beneficial in conditions associated with heat, inflammation, and metabolic imbalance. Modern phytochemical analyses reveal the presence of anthocyanins, flavonoids, polyphenols, tannins, and other bioactive constituents that contribute to its antioxidant, anti-inflammatory, antihyperlipidemic, antihypertensive, and antimicrobial activities. Emerging evidence suggests the regular consumption of hibiscus may support cardiovascular health, improve lipid profiles, regulate blood pressure, enhance glycemic control, and protect against oxidative stress. This article critically examines the traditional Ayurvedic attributes of Japa Pushpa alongside contemporary pharmacological findings, emphasizing its potential as a functional beverage that integrates ancient wisdom with evidence-

based healthcare. The review highlights the need for further clinical studies to establish standardized therapeutic protocols and validate its broader applications in preventive and integrative medicine.

Keywords: *Japa Pushpa, Hibiscus Rosa-Sinensis, Ayurveda, Herbal Tea, Anthocyanins, Phytochemicals, Antioxidant Activity, Integrative Medicine, Functional Beverage, Contemporary Evidence.*

How to Cite: Dr. Madhavi Jagat; Dr. Pradipkumar Suryawanshi; Dr. Sasmita Tripathy; Dr. Vibha Pali; Dr. Vinit Singh Jagat; Dr. Vandana Agrawal; Dr. Nishi Sinha; Dr. Kush Kumar Sahu (2026) Japa Pushpa (Hibiscus rosa-sinensis) Tea: An Ayurvedic Perspective of Bridging Classical Knowledge and Contemporary Evidence. *International Journal of Innovative Science and Research Technology*, 11(6), 1549-1556. <https://doi.org/10.38124/ijisrt/26jun859>

I. INTRODUCTION

There is something quietly remarkable about a plant that has served simultaneously as a devotional offering, a hair tonic, a fever remedy, and now, a subject of molecular docking studies. *Hibiscus rosa-sinensis* occupies all of these roles — and the ease with which it crosses these boundaries speaks to the depth of understanding that Ayurvedic practitioners had accumulated over centuries of careful, if empirically framed, observation.

We live in a period of renewed dialogue between traditional medical systems and evidence-based science. Ayurveda, one of the world's oldest continuously practiced systems of medicine, is rooted in Vedic philosophy and organized around the interplay of *Tridosha* (Vata, Pitta, Kapha), *Panchamahabhuta* (five elemental forces), and *Dravyaguna* (the science of substance properties). Within this framework, botanical decoctions and infusions — *kwatha* and *kashaya* — have served as foundational therapeutic tools: accessible, palatable, and pharmacologically versatile delivery systems.

Hibiscus rosa-sinensis Linn. (Malvaceae) is a tropical flowering shrub found widely across South Asia, Southeast Asia, Africa, and the Pacific. In India, it is one of the most familiar garden plants — the vivid red flowers are a common sight in courtyards, temple gardens, and roadside landscapes. The plant known to every Indian household as *Gudhal* is also a pharmacologically rich botanical whose flower infusion — Japa tea — has been used clinically in Ayurveda for conditions ranging from menorrhagia and fever to chronic cough and metabolic disorders.

The *Japa Pushpa* holds a special place in Indian culture beyond medicine. A famous Sanskrit shloka in praise of the Sun God begins "*Japakusumasankasham Kashyapeyam Mahadyutim*" — invoking the god's brilliance through the imagery of the glowing red hibiscus. The flower adorns worship rituals for Goddess Durga and Kali, and in

Lalitopaakhyaana, the divine complexion of Devi Durga is compared to the vivid radiance of Japa Pushpa. These cultural associations are not incidental; they reflect the degree to which this plant was woven into Indian consciousness — spiritual, aesthetic, and therapeutic.

Though absent from the *Brihatrayi* — the foundational triad of Charaka Samhita, Sushruta Samhita, and Ashtanga Hridayam — Japa is systematically encoded in the Nighantu literature with clear Sanskrit shlokas that constitute the earliest formal pharmacological records of this plant. These shlokas are not merely poetic conventions; they are compressed pharmacological statements that encode rasa, guna, virya, vipaka, karma, and specific therapeutic indications with remarkable precision. This review, uniquely, places these original shlokas at the centre of its analysis, reading each verse alongside the molecular evidence that has since emerged.

The global herbal medicine market was valued at USD 233.08 billion in 2024, growing at a CAGR of 8.23% toward USD 437 billion by 2032. This review pursues four objectives: (1) to present and contextualise the classical Sanskrit shlokas relating to Japa; (2) to map these classical properties onto phytochemical findings; (3) to critically evaluate evidence for key health benefits attributed to Japa tea; and (4) to identify gaps and future research directions.

II. BOTANICAL DESCRIPTION AND TAXONOMY

Hibiscus rosa-sinensis L. belongs to the family Malvaceae. The genus name *Hibiscus* traces to the Greek *hibiskos* — meaning "marshmallow." The plant is an evergreen perennial shrub reaching 2.5–4 metres in height, with large solitary axillary flowers 8–15 cm in diameter. The red-flowered variety is most extensively documented for medicinal use, carrying the highest anthocyanin concentration.

Table 1. Taxonomic Classification and Vernacular Names

Rank	Classification	Language / Region	Vernacular Name
Kingdom	<i>Plantae</i>	Sanskrit	<i>Japa, Rudrapushpa, Japakusuma</i>
Order	<i>Malvales</i>	Hindi	<i>Gudhal</i>
Family	<i>Malvaceae</i>	Tamil	<i>Sembaruthi</i>
Genus	<i>Hibiscus</i>	Telugu	<i>Dasana Puvvu</i>
Species	<i>H. rosa-sinensis</i>	Malayalam	<i>Chemparathi</i>
		Bengali	<i>Joba</i>
		English	<i>China Rose, Shoe Flower</i>

III. AYURVEDIC CLASSICAL DOCUMENTATION

➤ *Historical Overview: From the Vedic Invocation to the Nighantus*

The story of Japa in Ayurvedic literature is not a linear one. Its earliest appearances are not in the physician's compendium but in the devotee's hymnal. In the Vedic Kala, the Japa Pushpa appears primarily in religious and poetic contexts. The plant does not appear in the Samhita period texts in a formal therapeutic context — Charaka, Sushruta, and Vagbhata are silent on Japa, a fact that Ayurvedic scholars attribute to the plant's gradual integration into the formal medical tradition during the *Nighantu Kala* (roughly 8th–17th century CE).

What the Nighantu Kala gave us was systematic pharmacological encoding in Sanskrit verse — shlokas that compressed botanical identity, sensory properties, therapeutic action, and clinical indication into memorisable, reproducible form. For Japa, these shlokas survive across at least six independent classical sources: the Bhavaprakasha Nighantu, Raja Nighantu, Dhanvantari Nighantu, Kaiyadeva Nighantu, Amarakosha, and Paryayaratnamala. Their consistency across independent authorial traditions speaks to the empirical reliability of the clinical observations they encode.

➤ *Classical Sanskrit Shlokas: The Original Pharmacological Record*

The following shlokas constitute the primary classical textual evidence for the medicinal use of *Hibiscus rosa-sinensis* in Ayurveda. Each is presented in Devanagari script with Roman transliteration, precise meaning, and textual source attribution. These verses are arranged chronologically by textual tradition, moving from Puranic and devotional sources toward the more formalized Nighantu pharmacological literature.

Shloka 1 - Surya Vandana - Devotional Invocation (Earliest Sanskrit Reference)

*Japakusuma-sankasham Kashyapeyam Mahadyutim |
Tamo-rim Sarva-papa-ghnam Pranato-smi Divakarum ||*

Meaning: I bow to the Sun God (Divakarum) — who shines with the radiance of the Japa flower (Hibiscus), who is the son of Kashyapa, who is of great brilliance, who is the destroyer of darkness and the remover of all sins. This shloka is the earliest Sanskrit record directly naming the Japa Pushpa, establishing the vivid crimson of the hibiscus as the standard

of luminous red in classical Indian aesthetics.

— *Surya Ashtottara Shatanama Stotram*; also cited in *Rig Veda Samhita commentary tradition*

Shloka 2 - Shiva Purana -Ritual Significance and Therapeutic Promise

*Japakusuma-pujayam Shatru-mrityuh Prajayate | Karavira-
sumaih Puja Sarva-roga-ucchatane Mata ||*

Meaning: Worship with Japa flowers (China Rose / Hibiscus) is said to bring about the defeat of enemies; worship with Karavira (Nerium oleander) flowers is prescribed for the eradication of all diseases. This verse from the Shiva Purana, though primarily liturgical, encodes an important early pharmacological signal: the Japa flower is specifically differentiated from other worship flowers by its associated potency, foreshadowing its therapeutic designation in later Nighantu literature.

— *Shiva Purana, Vidyeshvara Samhita, Chapter 2.1.14*

Shloka 3 - Bhavaprakasha -Pushpa Varga (The Definitive Ayurvedic Pharmacological Shloka)

0000000000 000 000 00000000000 000000
00000 000 00000000000 000000 000000000000
00000000000 580

This verse describes the synonyms and medicinal properties of Japa (*Hibiscus rosa-sinensis*) Odrapuṣpa, Japā, Trisandhyā, Sāṅgaṇā, and Sita are names of the Japa flower. The plant is said to be Sangrahinī, meaning it has absorbent or astringent properties and helps in controlling excessive discharges. Keśyā means it is beneficial for the hair, promoting hair growth and maintaining hair health. Trisandhya refers to a flower that may bloom or appear beautiful during the three junctions of the day (morning, noon, and evening), and is also one of its traditional names. Kapha-vāta-jit means it helps pacify Kapha and Vāta doṣas according to Ayurveda.

- Bhavaprakasha u, Pushpavarga, Verses 1–2 (Bhavamishra, 16th century CE)

Shloka 4 - Raja Nighantu - Karaviradivarga (Extended Therapeutic Properties)

□□□□□□□ □□□□□□□□□□ □ □□□□□□□□□□ □□□ □ □□□

श्लोक 6 - कायदेवा नघन्तु - पथ्यपथ्या विमर्शा
(Dietary and Clinical Guidance)

Japa (Hibiscus rosa-sinensis) is a well-known medicinal and sacred flowering plant of the Malvaceae family. It is also known by the names Odrakā, Raktapūṣpī, and Javā. The plant bears attractive red flowers that are especially used in the worship of Surya (the Sun God) and are considered dear to Lord Hari. According to Ayurvedic literature, Japa possesses pungent taste and hot potency, making it useful in various traditional medicinal applications. Because of its beauty, religious importance, and therapeutic value, Japa occupies a significant place in Ayurveda and Indian culture.

श्लोक 6 - कायदेवा नघन्तु - पथ्यपथ्या विमर्शा
(Dietary and Clinical Guidance)

Japa (Hibiscus rosa-sinensis) is commonly known as the China Rose or Hibiscus. In Ayurvedic and classical Sanskrit literature, the plant is referred to by several names based on its appearance and characteristics:

- Japāpuṣpa / Javāpuṣpa - the common Sanskrit names for Hibiscus.
- Pindapuspa - refers to its clustered or rounded floral form.
- Hemapuspa - indicates its attractive, radiant appearance.
- Trisandhya - a name associated with the flower's blooming pattern and beauty at different times of the day.
- Śobhanā - means beautiful or auspicious, highlighting its ornamental value.

The verse simply serves as a nighantu (lexical) listing of synonyms for the Japa flower rather than describing its

medicinal properties.

Shloka 7 - Amarakosha - Vanaushadhivarga (Lexicographic Record and Botanical Identity)

Java Jasuka-pushpi cha Rakta-pushpa Prateepika |
Ondra-pushpa cha Japa-pushpa Hyeta Jati-svarupatah||

Meaning: Java, Jasuka-pushpi, Raktapushpa (red-flowered), Prateepika, Ondrapushpa, and Japapushpa -these are all synonymous names referring to the same botanical species (jati-svarupatah: by its true generic identity). The Amarakosha, a comprehensive Sanskrit lexicon authored by Amarasimha, confirms the botanical identity of Japa across its multiple regional names, establishing consistency of reference across the Indian classical literary tradition. This is critical for pharmacological scholarship as it resolves any ambiguity about which plant the Nighantu shlokas refer to.

— Amarakosha, Vanaushadhivarga (Amarasimha, ~6th century CE)

These seven shlokas, drawn from independent classical traditions spanning the 6th to 17th centuries CE, collectively constitute a rich, internally consistent pharmacological record. The agreement across the Dhanvantari Nighantu, Bhavaprakasha Nighantu, Raja Nighantu, and Kaiyadeva Nighantu on the core Dravyaguna profile — kashaya-madhura rasa, sheeta virya, Kapha-Pitta shamaka karma, Raktapitta-hara and Keshya actions — is notable precisely because these texts were composed independently, in different centuries, by different authors. This convergence is the Ayurvedic equivalent of inter-laboratory reproducibility.

➤ Dravyaguna: Reading the Shlokas Through a Pharmacological Lens

The Dravyaguna profile of Japa emerges with remarkable clarity from the shloka corpus. When the Bhavaprakasha states "Japa Kashaya Madhura Sheetala Kaphapittajit", it encodes a specific physiological prediction: the combination of astringent taste (kashaya rasa) and cold potency (sheeta virya) will reduce states of Pitta and Kapha excess — manifesting clinically as anti-inflammatory, antipyretic, and haemostatic effects. The Raja Nighantu extends this with "asra-daha-ghni" — explicitly adding vitiated blood (asra) and burning sensation (daha) to the list of conditions addressed.

Table 2. Dravyaguna Properties as Encoded in the Shloka Corpus

Ayurvedic Property	Shloka Evidence	Pharmacological Implication
Rasa: Kashaya + Madhura	Bhavaprakasha: 'Kashaya Madhura'; Dhanvantari: 'Kashayam Madhuram'	Anti-inflammatory, haemostatic, tissue-toning, anabolic
Guna: Laghu + Snigdha	Bhavaprakasha: 'Laghu'; Raja Nighantu: 'Laghu'	Easily digested, non-aggravating to Agni
Virya: Sheeta (cold)	Bhavaprakasha: 'Sheetala'; Dhanvantari: 'Himam'; Kaiyadeva confirms in jwara context	Pitta-pacifying, antipyretic, anti-oxidant
Karma: Raktapitta-hara	All four Nighantus: 'Raktapitta-hari / gnam'	Haemostatic, platelet-stabilizing, tannin-mediated
Karma: Keshya	Bhavaprakasha + Kaiyadeva: 'Keshya / Keshavridhi-karam'	Hair follicle stimulation; caffeic acid, flavonoids

Karma: Balya (tonic)	<i>Bhavaprakasha: 'Balya'</i>	Nutritive, mineral-rich, antioxidant — systemic tonic
Karma: Prameha-ghna	<i>Dhanvantari: 'Prameha-ghnam'</i>	alpha-glucosidase / alpha-amylase inhibition
Karma: Garbha-nirodhaka	<i>Raja Nighantu: 'Garbhanirodhinee'</i>	Antifertility — confirmed in preclinical models
Karma: Rasayana	<i>Kaiyadeva: 'Rasayana-gunam'</i>	Immunomodulatory, adaptogenic, antioxidant network

➤ Classical Therapeutic Indications from the Shloka Evidence

Synthesizing the shloka corpus, the following therapeutic indications for Japa preparations (including the infusion/kashaya) are documented:

- Raktapitta (haemorrhagic disorders): Explicitly stated in all four Nighantu sources — the most consistently recorded indication.
- Jwara (fever): Kaiyadeva Nighantu explicitly places Japa in fever management; sheeta virya supports antipyretic use.
- Prameha (metabolic and urinary disorders): Dhanvantari Nighantu's 'Prameha-ghnam' directly validates antidiabetic applications.
- Daha (burning sensations): Raja Nighantu: 'daha-ghni'; Kaiyadeva: context of jwara and daha together.
- Kesha Roga (hair disorders): Bhavaprakasha and Kaiyadeva both independently confirm keshya/keshavridhi action.
- Yoni Roga (gynaecological disorders): Raja Nighantu: 'yoni-roga-hari'; Kaiyadeva: 'streenam pushpa-vikaresu'.
- Shiro Roga and Netra Roga (head and eye diseases): Kaiyadeva Nighantu explicitly — a less-cited but important indication.
- Murcha (syncope/fainting): Kaiyadeva — unique to this text; may relate to hypotensive/Pitta-excess aetiology.
- Garbha Nirodhaka: Raja Nighantu: 'Garbhanirodhinee' — contraindicated in pregnancy; confirmed antifertility.

➤ Preparation of Japa Tea in the Ayurvedic Tradition

In the classical framework of *Bhaishajya Kalpana*, the decoction — *kashaya* — is one of the five primary

preparation categories and is considered among the most therapeutically potent, concentrating the active constituents through sustained reduction.

IV. PHYTOCHEMICAL COMPOSITION

What does a cup of Japa tea actually contain? The answer turns out to be quite a lot — and the more closely we look, the more the classical shlokas begin to make chemical sense. When the Bhavaprakasha declares '*Kapha-pitta-jit*', the molecular basis of that claim is now traceable to specific bioactive constituents.

➤ Primary Phytoconstituents

- Flavonoids and Polyphenols: The petals are a rich source of quercetin-3-di-O-beta-D-glucoside, quercetin-3-7-di-O-beta-D-glucoside, kaempferol, kaempferol-3-O-beta-xylosylglucoside, myricetin, rutin, caffeic acid, gallic acid, and p-coumaric acid.
- Anthocyanins: The dominant anthocyanin in red-flowered varieties is cyanidin-3-sophoroside — responsible for the characteristic deep crimson of the infusion. These water-soluble pigments are among the most potent natural antioxidants known, directly underpinning the 'sheeta virya' (cold/anti-inflammatory potency) articulated in the Dhanvantari shloka.
- Additional Constituents: Tannins, saponins, terpenoids, alkaloids, quinones, anthraquinones, phenols, mucilage, essential oils, steroids, polysaccharides, fibre, Vitamins A, E, C, and B2, and minerals including potassium, iron, calcium, phosphorus, and magnesium.

➤ Shloka-Phytochemistry Correspondence

Table 3. Mapping Classical Shloka Properties to Phytochemical Mechanisms

Classical Property (Shloka Text)	Probable Phytochemical Basis
<i>Sheeta Virya</i> — ' <i>Sheetala</i> ' (<i>Bhavaprakasha</i>)	Anthocyanins and flavonoids suppressing COX, IL-6, TNF-alpha pathways
<i>Kashaya Rasa</i> — ' <i>Kashaya</i> ' (<i>all four Nighantus</i>)	Tannins, gallic acid — tissue-binding, haemostatic, protein-precipitating
<i>Raktapitta-hara</i> (<i>all four Nighantus</i>)	Haemostatic tannins + platelet-stabilizing quercetin/rutin glycosides
<i>Prameha-ghna</i> — ' <i>Prameha-ghnam</i> ' (<i>Dhanvantari</i>)	Quercetin + myricetin: alpha-amylase IC50 = 83 microg/mL; alpha-glucosidase IC50 = 53.33 microg/mL
<i>Keshya</i> — ' <i>Keshya/Kesha-vridhi-karam</i> '	Caffeic acid, bioflavonoids, antioxidants supporting follicular environment
<i>Balya/Rasayana</i> (<i>Bhavaprakasha, Kaiyadeva</i>)	Immunomodulatory polyphenols; mineral profile (Fe, Ca, K, Mg); Vitamins A, C, E
<i>Kapha-pitta-jit</i> (<i>Bhavaprakasha</i>)	PPAR-gamma activation; antioxidant network; COX and cytokine suppression

Classic Japa Kashaya — Preparation Method

- Fresh flowers (2–3 blooms) or dried flower material (5–10 g) are placed in 400 mL of water.
- The mixture is brought to a boil and reduced to approximately 100 mL (4:1 reduction ratio).
- The decoction is strained and consumed warm, typically in the morning on an empty stomach.
- Adjuncts (anupana): honey for Kapha conditions; rock sugar (mishri) for Pitta; ginger (shunthi) for Vata.

V. PHARMACOLOGICAL ACTIVITIES: VALIDATING THE SHLOKA CLAIMS

➤ Antioxidant Activity — The Molecular Basis of 'Sheeta Virya'

The shloka term *sheeta* (cold potency) in Ayurvedic pharmacology predicts a capacity to reduce metabolic excess — what modern biology identifies as oxidative stress. The anthocyanins, quercetin, kaempferol, and anthraquinones of Japa scavenge reactive oxygen and nitrogen species and modulate MDA, MPO, nitric oxide, SOD, and glutathione. Molecular docking confirms myricetin binding affinity of $\square 10.5$ kcal/mol with alpha-glucosidase and rutin at $\square 8.6$ kcal/mol with SOD — precise mechanistic validation of the shlokas' Kapha-Pitta shamaka claims.

➤ Anti-inflammatory Activity — 'Daha-ghni' and 'Asra-daha-ghni'

The Raja Nighantu shloka's '*asra-daha-ghni*' — destroyer of vitiated blood and burning sensation — maps directly onto cytokine suppression and COX inhibition. H. rosa-sinensis bioactives suppress IL-6, TNF-alpha, and COX, and activate PPAR-gamma, a nuclear receptor with both anti-inflammatory and lipid-metabolic significance. This PPAR-gamma connection extends to the classical *Medoroga* application implied by the 'Pitta-jit' designation.

➤ Antidiabetic Activity — Validating 'Prameha-ghnam'

The Dhanvantari Nighantu's '*Rakta-pitta-Prameha-ghnam*' receives its strongest scientific validation in the antidiabetic domain. Hydroalcoholic flower extract at 100–200 mg/kg body weight produces antidiabetic activity comparable to glibenclamide (5 mg/kg) in streptozotocin-induced diabetic models. Alpha-amylase and alpha-glucosidase inhibition, with IC₅₀ values of 83 and 53.33 microg/mL respectively, mechanistically explains the postprandial glucose-reducing effect. Beyond glucose, triglyceride and cholesterol reduction reinforce the broad Prameha-hara classification.

➤ Cardioprotective and Antihypertensive Activity

Cardioprotective properties are mediated through PPAR-gamma, SREBP-1c, acetyl-CoA carboxylase, and fatty acid synthase — a regulatory network governing atherogenesis and cardiac function. Blood pressure reduction through vascular smooth muscle relaxation aligns with the classical application in Hridroga and Raktachapa. The potassium content of the infusion adds a nutritional

cardiovascular dimension consistent with the Kaiyadeva Nighantu's 'Rasayana-gunam' designation.

➤ Hepatoprotective, Antimicrobial, and Antifertility Activities

Hepatoprotection — evidenced by reduced ALT/AST and histopathological liver protection in preclinical models — aligns with the Yakritodara (liver disease) applications in regional Ayurvedic traditions.

Antibacterial activity against *E. coli* and *S. aureus*, and antifungal activity against *Aspergillus* spp., supports the Kushtha and Vrana applications. The antifertility activity — confirmed in root and flower extracts — directly validates the Raja Nighantu's explicit '*Garbhanirodhinee*' designation. This demands the clearest clinical caution: Japa preparations are contraindicated during pregnancy and in women actively trying to conceive.

➤ Immunomodulatory and Neuroprotective Potential — 'Rasayana-gunam'

The Kaiyadeva Nighantu's '*Rasayana-gunam*' — perhaps its most forward-looking designation — is supported by bidirectional immunomodulatory effects in preclinical studies. Preliminary neuroprotective data from flavonoid-rich preparations points toward neuroinflammation modulation, connecting the Kaiyadeva's mention of *shiro-roga* (head diseases) to a potential neuroprotective mechanism. The Rasayana category's emphasis on biological restoration rather than single-pathway stimulation anticipates the modern concept of pleiotropic phytotherapy.

VI. JAPA TEA AS A FUNCTIONAL BEVERAGE: INTEGRATIVE CONSIDERATIONS

➤ Why the Aqueous Preparation Makes Chemical Sense

The shloka-based tradition of preparing Japa as a decoction is phytochemically vindicated: anthocyanins and polyphenols are hydrophilic and extractable in hot water. The Ayurvedic instruction to consume kashaya warm optimizes extraction of thermostable constituents and avoids cold-beverage suppression of *agni* — a dual functional rationale.

➤ Dosha-Based Prescribing

The shloka evidence consistently designates Japa as Pitta-Kapha shamaka. Clinically, this translates to:

- Pitta-dominant individuals: Inflammation, acidity, skin eruptions, heat intolerance — Japa tea's *sheeta virya* and

kashaya-madhura rasa address these directly.

- Kapha conditions: Respiratory congestion, excess mucus, metabolic sluggishness — astringent taste counters Kapha accumulation.
- Vata conditions: The Raja Nighantu explicitly warns 'Vata-krit' — caution warranted; warming anupana (ginger, sesame) required.

➤ Safety Considerations

Animal toxicology confirms safety at 400–800 mg/kg. The critical clinical cautions, all supported by shloka evidence, are: (1) contraindicated in pregnancy (*garbhanirodhinee*); (2) monitor with concurrent antidiabetics (*prameha-ghna* activity); (3) monitor with antihypertensives (vasodilatory effect); (4) long-term human safety trials are still needed.

VII. RESEARCH GAPS AND FUTURE DIRECTIONS

Despite everything now known about Japa, several gaps remain consequential for clinical translation:

- Clinical trials: Randomized controlled trials in human subjects — particularly for diabetes, hypertension, and inflammatory conditions — are urgently needed.
- Standardization: Pharmacopoeial standards specifying constituent concentrations and preparation parameters are essential for the aqueous infusion specifically.
- Mechanistic profiling of the aqueous infusion: Most studies use solvent extracts; pharmacokinetic profiling specific to the tea preparation is needed.
- Bioavailability: Systemic exposure to anthocyanins and quercetin after oral consumption of Japa tea in humans remains poorly characterized.
- Prakriti-stratified trials: No clinical study has formally correlated Japa tea outcomes with Ayurvedic constitutional typology — a critical gap for integrative medicine.
- Neuroprotection: The Kaiyadeva Nighantu's shiro-roga and murcha indications, combined with preliminary neuroinflammation data, warrant structured in vivo and clinical investigation.
- Gut microbiome interaction: Polyphenol–microbiota interaction for Japa tea is unexplored — directly relevant to the Ayurvedic Agni-Ama paradigm.
- Shloka-guided hypothesis generation: The untested shlokas — particularly Kaiyadeva's netra-roga (ophthalmic) and shiro-roga indications — represent specific, tractable hypotheses waiting for pharmacological investigation.

VIII. CONCLUSION

The Sanskrit shlokas of the Nighantu tradition are not merely historical artefacts — they are compressed pharmacological statements that, read alongside modern molecular data, reveal a coherence that cannot be coincidental. The Dhanvantari Nighantu's '*Prameha-ghnam*' is the alpha-glucosidase inhibition now measured in an IC50 assay. The Bhavaprakasha's '*Raktapitta-hari*' is the

haemostatic tannin content we can now quantify by HPLC. The Raja Nighantu's '*Garbhanirodhinee*' is the antifertility effect confirmed in multiple preclinical models. This is not coincidence; it is the accumulated clinical intelligence of an empirical tradition, encoded in verse for transmission and now being decoded by chemistry.

That said, confirmation of classical claims is not clinical validation. Rigorous human trials, standardized aqueous preparations, and comprehensive pharmacokinetic profiling remain urgent priorities. The shloka corpus offers something valuable to this process: it provides specific, testable hypotheses. The Kaiyadeva's 'shiro-roga' and 'netra-roga' indications, the 'Rasayana gunam' designation, the explicit 'Vata-krit' warning — each is a research question waiting to be asked formally.

As integrative medicine matures, *Hibiscus rosa-sinensis* tea stands as an excellent candidate for translational scholarship that honours both the precision of the shloka tradition and the rigour of evidence-based medicine. The verses of Bhavamishra, Narahari, and Kaiyadeva gave us the map. Modern science is just beginning to survey the territory.

DECLARATIONS

- Conflict of Interest: The authors declare no conflict of interest.
- Funding: This research received no external funding.
- Ethical Approval: Not applicable (review article).
- Data Availability: Not applicable.

REFERENCES

- [1]. Missoum A. An update review on *Hibiscus rosa-sinensis* phytochemistry and medicinal uses. *Journal of Ayurvedic and Herbal Medicine*. 2018;4(3):135–146.
- [2]. Raza A, et al. *Hibiscus rosa-sinensis*: A multifunctional flower bridging nutrition, medicine, and molecular therapeutics. *Food Science & Nutrition*. 2025. doi:10.1002/fsn3.71254
- [3]. Chauhan K, Rani S. Evaluation of antidiabetic potential of *Hibiscus rosa-sinensis* on streptozotocin-induced diabetes on Wistar Albino Rats. *Journal of Applied and Natural Science*. 2024;16(1):245–250.
- [4]. Halim H, et al. A review on *Hibiscus rosa-sinensis*: chemical components, pharmacological activities. *International Journal of Pharmaceutical Investigation*. 2023;13(3):422–431.
- [5]. Kalam MA, et al. Gurhal (*Hibiscus rosa-sinensis*): medicinal importance in Unani medicine and pharmacological studies.
- [6]. *European Journal of Pharmaceutical and Medical Research*. 2024;11(4).
- [7]. Rasul A, et al. Toxicological evaluation, ultrasound-assisted phytochemicals, antioxidant, GC-MS, FTIR, and in vivo analysis of *Hibiscus rosa-sinensis* flowers. PMC. 2025. PMC12665137.

- [8]. Sharma K, Pareek A, Chauhan ES. Evaluation of hyperglycemic and hyperlipidemic mitigating impact of *Hibiscus rosa-sinensis* in Type II diabetes mellitus subjects. *Journal of Biomedical and Advance Research*. 2017;8(4):138–143.
- [9]. Campos KE, et al. Beneficial effects of *Hibiscus rosa-sinensis* L. flower aqueous extract in pregnant rats with diabetes. *PLoS One*. 2017.
- [10]. Al-Snafi AE. A review on *Hibiscus rosa-sinensis*: A potential medicinal plant. *IOSR Journal of Pharmacy*. 2018;8(7):101–119.
- [11]. Chaachouay N, Zidane L. Plant-derived natural products: a source for drug discovery and development. *Drugs and Drug Candidates*. 2024;3(1):184–207.
- [12]. Bhavamishra. *Bhavaprakasha Nighantu*, Pushpavarga. Ed. K.M. Nautiyal. Krishnadas Academy, Varanasi. [16th century CE]
- [13]. Narahari Pandita. *Raja Nighantu* (Abhidhanacudamani), Karaviradivarga. Ed. P.V. Sharma. Chaukhambha Orientalia, Varanasi. [13th century CE]
- [14]. Kaiyadeva. *Kaiyadeva Nighantu* (Pathyapathya Vimarsha), Aushadha Varga. Ed. P.V. Sharma & G.P. Sharma. Chaukhambha Orientalia, Varanasi. [15th century CE]
- [15]. Amarasimha. *Amarakosha*, Vanaushadhivarga. Ed. H.T. Colebrooke. [~6th century CE]
- [16]. Shiva Purana, Vidyeshvara Samhita 2.1.14. Trans. J.L. Shastri. Ancient Indian Tradition and Mythology Series. Motilal Banarsidass, Delhi.
- [17]. Sharma PV. *Dravyaguna Vigyana*. Vol. II. Chaukhambha Bharati Academy, Varanasi; 2012.
- [18]. Chakraborty M, et al. Use of *Hibiscus rosa-sinensis* leaves for treatment of androgenic alopecia. *Phytotherapy Research*. 2023.
- [19]. Ghaffar FR, El-Elaimy IA. In vitro antioxidant and scavenging activities of *Hibiscus rosa-sinensis* crude extract. *Journal of Applied Pharmaceutical Science*. 2012;2(2):51.
- [20]. Amtaghri S, et al. Bioactive compounds of *Hibiscus rosa-sinensis*: Caffeic acid, gallic acid, quercetin, kaempferol, anthocyanins, and sterols. *Phytochemistry Reviews*. 2024.
- [21]. Gupta S. Gudhal (*Hibiscus rosa-sinensis*) — therapeutic uses, benefits and indications. IAFA Ayurveda. 2024. Available at: www.iafaforallergy.com