

A Comprehensive Review of Ashwagandha (*Withania Somnifera*) in Ancient Ayurvedic Texts

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Abstract

Aim: To systematically review Ayurvedic texts to delineate the documented historical use, pharmacological properties, and divisions of Ashwagandha (*Withania somnifera*) in clinical applications.

Source of data: Primary data comes from the Brihattrayi (Charaka Samhita, Sushruta Samhita, and Astangahridaya) and several Nighantus. Secondary data consists of contemporary Ayurvedic texts and modern scientific literature.

Review methods: This literature review exhaustively analyzed historical Ayurvedic texts and modern scientific research. Texts are critically examined to extract Ashwagandha's properties, indications, and formulations. Modern scientific studies were reviewed for pharmacological actions and clinical efficacy.

Conclusions: Ashwagandha, the iconic drug of Ayurveda with a long-standing historical legacy, finds synergistic use in a long range of therapeutic applications. Its rejuvenating, aphrodisiac, and anti-inflammatory properties, as enunciated by traditional Ayurvedic texts, were corroborated by modern studies identifying constituents like withanolides associated with its pharmacological effects. Ashwagandha's scope in stress management, anxiety, insomnia, and inflammatory conditions is promising. More scientific explorational studies should be taken for the possibility of opening it toward therapeutic avenues while establishing dosing and formulation particulars.

Keywords: Ashwagandha, Ayurvedic, *Withania Somnifera*

Introduction:

Withania somnifera, [1][2][3] commonly called ashwagandha, is an evergreen shrub in the family Solanaceae or nightshade that grows in Nepal, India, the Middle East, and parts of Africa. Other several species of the genus *Withania* appear morphologically similar. [4] There are many historical references to over the hundreds of years for the uses of this plant, particularly its root powder, in the traditional medicine of India. [4] Ashwagandha supplements containing root or leaf powder or extracts are normally sold today. [3] However, aside from herbal medicine and dietary supplements, there seems to be some insufficiency in clinical data proving the safety and efficacy of *W. somnifera* for the treatment of any health condition or disease. [2][3] It is a short shrub growing about 35 to 75 cm in height. It belongs to that family in which its branches spread out radially from a central stem. The leaves are dull green, elliptic to broadly elliptic, and usually up to 10–12 cm long. The flowers are small, green and bell-

shaped. The ripe fruit becomes orange-red.[2] *Somnifera*, the Latin species name meaning 'sleep-inducing'. [5] The name 'Ashwagandha' comes from two Sanskrit words, 'ashva', meaning 'horse', and 'gandha', meaning 'smell', representing that the root has strong horse-like odors.[2] *W. somnifera* is grown across many of the drier regions of India. It is also found in Nepal, Sri Lanka, China, and Yemen.[6][7] It performs best in well-drained rocky soil and tolerates full sun to partial shade. It can be propagated from seed in late winter or spring, or from greenwood cuttings in mid-spring.[8] Various pests and diseases attack *Withania somnifera*. The most virulent among these is the leaf spot disease caused by *Alternaria alternata*, often rampant in Punjab, Haryana, and Himachal Pradesh. Leaf spot disease augurs poorly for secondary metabolites[9]. The leaves are also affected by *Alternaria dianthicola*[10] in India. Treehopper (*Oxyrachis tarandus*) feeds on shoots of the stem, giving rough and woody appearances and a brown color.[11] The most common pest of the plant in India is the carmine red spider mite (*Tetranychus urticae*)[12]. This plant has become a recent reservoir host for an invasive, mealybug species, *Phenacoccus solenopsis*, in the last few years. The main phytochemical constituents of *W. somnifera* are withanolides, a group of triterpene lactones that include withaferin A, alkaloids, steroidal lactones, tropine, and cuscohygrine.[2] Forty withanolides, twelve alkaloids, and various sitoindosides have been isolated from this plant species.[2][14] As these withanolides are structurally similar to the ginsenosides of *Panax ginseng*, *W. somnifera* is commonly referred to as "Indian ginseng".



Table 1: Ayurvedic Properties Of Ashwagandha

Rasa	Kashaya(astringent),
Guna	Tikta(bitter)
Virya	Laghu,Singdha
Vipaka	Ushna(Hot)
Prabhava	Madhura(Sweet)

MATERIAL AND METHODS:

• **Ashwagandha in Vedic Literature:**

Vedic literature stands as the world’s first documented body of work, with the Vedic era firmly established from 6000 B.C. to 600 B.C. This extensive and crucial source of knowledge is systematically categorized into Samhita, Brahmana, Upanishad, and Vedanga. Ashwagandha, known in the Rigveda as

Ashwavati, is prominently featured in several important texts, including the Kalpasutra, Shatapathabrahmana, and Katyayana Shrautsutra. It is imperative to note that Ashwagandha must not be kept in a graveyard. Furthermore, the Ashwalayanagruhyasutra (as detailed in Narayanakrutavrutu) specifies that administering the juice of the Ashwagandha root into the right nostril significantly supports conception.

- **Samhita Literature:**

- **Charak Samhita (Agnivesha; 1000-1500 B.C.)[15]**

The Charaka Samhita, the first samhita of the Bruhatrayi, is the most popular and complete text in Ayurveda. Originally composed by Agnivesha as the Agniveshatantra, it was revised by Charaka, with Dridhabala later adding 41 chapters in the fourth century. This text includes a detailed description of Ashwagandha, covering its properties, actions, contraindications, and therapeutic uses.

Table No. 2 - Charaka Samhita Reference For Ashwagandha

Preparation	Reference	Preparation	Reference
Kushthadi Lepa	C.Su. 3/8	Gandhahasti Agad	C.Chi. 23/70
Bruhania Mahakashay	C.Su. 4/2	Mahagandhahasti Agad	C.Chi. 23/80
Balya Mahakashay	C.Su. 4/7	Amrut Ghrut	C.Chi. 23/244
Eleven Moolasava in 84 Asav	C.Su. 25/48	Kushtadi Tail	C.Chi. 27/43
Virechaniya Dravya Madhur Skandh(Basti)	C.Vi. 8/139	Ashwagandhadi Ustadana	C.Chi.27/50-51
Dwitiya Indrokta Rasayan	C.Chi. 1/4/26	Ashwagandha Tail	C.Chi. 28/166
Vajikaran Ghrut	C.Chi. 2/34	Vrushmuladi Tail	C.Chi. 28/170
Agurvadi Tail	C.Chi. 3/267	Jivakadi Mahasneha	C.Chi. 29/73
Mardana draya in Rajyakshma	C.Chi. 8/176	Erandmuladi Niruh Basti	C.Si 3/38
Devdarvyadi lepa in udar	C.Chi. 13/108	Dashmuladi Anuvasan tail	C.Si 4/4
Dhupana Yoga in Arsh	C.Chi. 14/50	Erandmuladi Yapan Basti	C.Si 12/15
Ashwagandha Kshar in Hikka	C.Chi. 17/117	Baladi Yapan Basti	C.Si12/15-6
Dhumpana Yoga in Kasa	C.Chi. 18/75	Baladi Yamak Anuvasan Basti	C.Si12/27-2
Ashwagandha Praheda	C.Chi. 21/123	Gandhahasti Agad	C.Chi. 23/70

- **Sushruta Samhita (Sushruta; 1000-1500 B.C.)[16]**

The Sushruta Samhita is the earliest authoritative treatise on Ayurveda and the only existing text on Shalyatantra (surgery). Written by Acharya Sushruta and amended by later authors, he is known as the "Father of Surgery." Although it primarily focuses on surgical practices, the text also significantly contributes to medicine. References to Ashwagandha in the Sushruta Samhita include:

Table No. 3 - Sushruta Samhita Reference For Ashwagandha

Preparation	Reference	Preparation	Reference
Karshya treatment	S.Su. 15/38	Pradeha	S.Chi. 5/10

Karnapalivardhana	S.Su. 16/20	Bala Tail	S.Chi. 15/33
Shatavaryadi Tailabhyang	S.Su. 16/22	Visarpa treatment	S.Chi. 17/14
Shothahar Dravya	S.Su. 37/6	Paripotak treatment	S.Chi. 25/15
Roopnartha Dravya	S.Su. 37/23	Unmatha treatment	S.Chi 25/18
Utsadana dravya	S.Su. 37/30	Lopakadi tail for Karnapali	S.Chi. 25/26
Urdhambhaghar dravya	S.Su. 39/3	Chitrakadi tail for Vatvyadhi	S.Chi. 37/17
Ashwagandhasavas anupana	S.Su. 46/ 432	Pradeha	S.Chi. 5/10
Vishwambharadi Vishahar Agad	S.K. 8/51	Sechan Dravya	S. U. 31/3
Nasya in Vataj Timeer	S.U. 17/34	Yakshma	S.U. 41/41
Nadiswedopyogi Draya	S.U. 21/6	Yakshmahar Ghрут	S.U.41/49

- **Ashtang Hridya (Vagbhata; 5th -7th century)[17]**

The Ashtanga Hridaya is a compilation of essential knowledge drawn from various texts across the country. It has been prepared to strike a balance, being neither too brief nor overly detailed. This text addresses the needs of both students and medical practitioners in a clear and descriptive manner. It includes an explanation of Ashwagandha, covering its uses, properties, and benefits as follows.

Table No. 4 In Ashtanga Hridaya Reference Ashwagandha

Preparation	Reference	Preparation	Reference
Bala Tail	AH.Sha. 2/50	Sinhadi Ghрут	AH.U 2/50
Nagbala Ghрут	AH.Sha. 3/122	Lakshadi tail	AH.U 2/55
Vashishta Rasayan	AH.Sha. 3/132	Ghrahapidahr Ghрут	AH.U 3/55
Ashwagandhasrut Siddha Ghрут	AH.Sha. 5/25	Bhootbadhahar	AH.U 5/15
Dhoopan in Arsha	AH.Sha. 8/18	Palishosha	AH.U 18/39
Dadhika Ghрут	AH.Sha.14/14	Unmath treatment	AH.U 18/45
Shothahar Lepa	AH.Sha.18/36	Karnapalivardhana	AH.U 18/58
Ubatan Dravya	AH.Sha.19/65	Vranaropan	AH.U 25/52
Bastikalpa Dravya	AH.K 4/7	Rasayana	AH.U 39/61
Anuvasan basti in Vataroga	AH.K. 4/54	Vajikar	AH.U 40/14

In Laghutrayi:

Madhava Nidana (700 A.D.): As Madhavanidana specially deals with the pathology of disease which aims the diagnosis of disease, Ashwagandha is not mentioned in Madhavanidana.

Sharangadhara Samhita (1300 A.D.)[19]: Ashwagandha is mentioned in Sharangdhara samhita for its Shukrala karma in Deepana panchana Adhyaya and also mentioned other rogadhikar in other adhyaya.

Table No 5- Reference of Ashwagandha in Sharangadhara Samhita

Preparation	Reference	Preparation	Reference
Shukral dravya	Pratham Khanda 4/15-16	Maharasnadi Yoga	Madhya khanda 2/90
Ashwagandhadi Churna	Madhya khanda 6/156-157	Kandarp Sundar Ra-sa Bhavana dravya	Madhyam khanda 2/269
Dhatura tailam	Madhyam khanda 9/200	Mashadi nasya	Uttakhanda 8/36
Madanakamadeva Rasa Bhavna dravya	Madhyam Khanda 2/263	-	-

Table No 6- Reference of Ashwagandha in Bhavaprakasha Samhita[20]

Preparation	Reference	Preparation	Reference
Lakshadi Tailam	Madhyam 1/151	Mahagudychyadi Ghruta	Madhyam 29/113
Mahalakshadi Tailam	Madhyam 1/154	Jevakadi MIishrakam	Madyam 29/152
Shitakesari Rasa	Madhyam 1/603	Yogasara amruta	Madhyam 29/247
Turangagandhadi Nasya	Madhyam 1/603	Amrutadi Kwatham	Madhyam 35/13
Mustadi Kwatham	Madhyam 1/603	Sukumara punarnvadya Leha	Madhyam 35/49
Sarsvata Churna	Madhyam 22/46	Ajagandhadi Lepa	Madhyam 47/24
Tagaradi Kwatham	Mahdyam 22/52		Madhyam 47/40
Trayodashanga Guggula	Madhyam 24/117	Dashmulyadi Upanaha	Madhyam 48/34
Mahabala Tailam	Madhyam 24/174	Lakshadi Guggula	Madyam 53/3
Mahamashadi Tailam	Madhyam 24/268	Ashwagandhadi Tailam	Madhyam 62/45
Madhyama Narayana Tailam	Madhyam 24/281	Kumari Tailam	Madyam 65/51
Maha Narayana Tailam	Madhyam 24/291	Shavatari Tailam	Madyam 70/54
Rasnadi Kwatham	Madhyam 25/27	Phala Ghruta	Madyam 70/86
Kushtadi Tailam	Madhyam 25/34	Ashwagandha Ksheera	Madhyam 70/95
Dwipanchmuladya Tailam	Madhyam 25/44	Ashwagandha Ksheera	Madhyam 71/75
Maharasnadi Kwatham	Madhyam 26/133	Gokshuradi Modak	Madhyam 72/25

Table no. 7 General Description Of Ashwagandha In Nighantu

Nighantu	Centur y	Varga	Key Properties	Therapeutic Uses	Synonyms	Dosha Effects	Taste
Shodhal Nighantu[21]	12th	Guduchyadi	Balya (Strengthener), Vatahara (Vata-pacifying)	Shwas (Dyspnea), Kasa (Cough), Kshaya (Consumption)	Ashvakanda, Gandharvagandha	Balances Vata	Sweet, Bitter

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Hrudaya Dipaka Nighantu[22]	13th	Kaphaghana	Kapha-pacifying	-	-	Balances Kapha	-
Madanpala Nighantu[23]	14th	Haritkyadi	Balya, Rasayana (Rejuvenator)	Shotha (Edema), Shwitra (Leucoderma), Kshaya	-	Balances Vata, Kapha	Sweet, Bitter
Raja Nighantu[24]	15th	Shatavahadi	-	-	Numerous synonyms (e.g., Ashvakandha, Gandharvagandha)	-	-
Kaiyadeva Nighantu[25]	15th	Aushadhi	-	-	Various synonyms	-	-
Bhavaprakasha Nighantu[26]	16th	Guduchyadi	Vataghna (Vata-pacifying), Shukral (Aphrodisiac), Balya, Rasayana	Shvitra, Shotha, Karshya (Emaciation)	Ashvakandha, Gandharvagandha, Varadad, Balada	Balances Vata, Kapha	Sweet, Bitter
Shaligram Nighantu[27]	19th	Guduchyadi	Balya, Rasayana, Shukrala	-	-	Balances Vata, Kapha	Sweet, Bitter
BruhatNighantu Ratnakara[28]	20th	-	-	Infertility, Arsha (Hemorrhoids), Karshya	-	Balances Vata, Kapha	Sweet, Bitter
Nighantu Adarsha[29]	20th	Kantakari	-	-	Various synonyms	Balances Vata, Kapha	Sweet, Bitter
Priya Nighantu	20th	Shatapushpadi	Rasayana, Vatahara, Shukradoshahara (Balances	-	-	Balances Vata, Kapha	Sweet, Bitter

			Shukra Dosha)				
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Table no. 8 Actions of Ashwagandha According to Rasapanchaka

Property	Action on Dosha	Action on Dhatu	Action on Mala
Tikta Rasa	Pittaghana, Kaphaghana	Dhatuvyagni Dipana, Stan- yashodhana	Grahi, Vatanulomana
Kashaya Rasa	Pittaghana	Dhatu sandhanakara Rak- tastambhana	Mutra, mala, sweda stambhana, Kleda Shoshana
Madhura- Vipaka	Pittaghana, Vataghana	Mansavardhana, Shukrala	Srushtavinmutra
Ushna- Veerya	Kapha, Vatashamana	Shukrala	Mutrasangrahi

Table no. 9 Specific Action On Strotas-

The Following actions of Ashwagandha due to its properties (Rasapanchaka) on different . The following strotas are mentioned below:

Sr. No.	Property	Strotas	Action	Indiction
1	Tikta Rasa	Pranavaha Strotas	Kaphaghna	Kasa Shwasa
2	Tikta Rasa	Udakavaha Strotas	Dipana, Pachana	Udara
3	Tikta Rasa, Ushna Veerya	Annavaaha Strotas	Dipana	Shoola Krumi
4	TiktaRasa, Madhura-Vipaka	Rasavaha strotas	Pachan, Ra- sayana	Kshaya, Shosha
5	Tikta Rasa Ushna Veerya	Raktavaha strotas	Raktashodhana	Visarpa, Shotha, Shwitra, Kandu, shata, Vishavrana
6	Tikta Rasa	Mansavaha strotas	Dipana	Ganda, Shwitra,
7	Tikta Rasa Madhura Vipaka	Majjavaha strotas	Medhya, Nidra- janana, Mastishka Shamaka	Bhrma,, Anidra, Mur- ccha, Smrutinasha
8	Madhura Vipaka, Snigdha Guna	Shukravaha, strotas	Shukrala, Vrushya	Vajikara, Klaibya
9	Madhura Vipaka	Purishavaha strotas	Vatanulomana	Vishtambha Krumi
10	Madhura Vipaka	Mutravaha strotas	Vatanulomana Mutrala	Mutrakruchha
11	Ushna Veerya	Artavaha strotas	Shoolhara	Yonishoola

Karma of Ashwagandha: Some of the special qualities of any Dravya are responsible for its certain actions. Ashwagandha is also having specific actions (Karma) on when it is administered either alone or in the form of Kalpa which is in combination with other drugs. The different actions of Ashwagandha mentioned by different texts are

Sr. No	Karma	CS	AH	DN	ShaN	ShoN	MN	KN	BN	RN	PN
1	Rasayana	-	-	+	+	-	+	+	+	-	-
2	Medya	-	+	-	-	-	-	-	-	-	-
3	Vajikara	-	+	+	-	-	-		+		+
4	Balya	-	+	-	-	-					+
5	Shotha				+	-	+	+	+		
6	Shwasa	+						+		+	
7	Shosha		+								
8	Kshaya	+		+	+		+	+	+	+	
9	Karshya		+								
10	Kasa							+		+	
11	Arsha	+	+								
12	Vrana										
13	Granthi	+	-	-	-	-	-				
14	Shwitra				+		+	+	+		
15	Krumi							+			
16	Kshata							+			
17	Vatvyadhi	+	+								
18	Apachi					+					
19	Kandu							+			
20	Urustamb	+									
21	Vrana			+						+	
22	Ganda				+						

Actions of Ashwagandha[30]

Antioxidant effect -

Ashwagandha may provide neuroprotective and anti-neurodegenerative effects due to its antioxidant, anti-inflammatory, and neurotransmitter-modulating properties. However, further research is needed to fully understand its potential for treating neurodegenerative diseases.

Anti-Inflammatory/Immunomodulatory Effects-

Ashwagandha, an ancient medicinal herb, is believed to offer significant benefits in reducing inflammation and modulating the immune system. By helping to lower levels of inflammation, it may play a role in promoting overall health and wellness. Additionally, ashwagandha appears to influence the immune response, potentially supporting the body in managing autoimmune conditions. However, it is important to note that more comprehensive research is required to gain a deeper understanding of its efficacy and mechanisms in treating these inflammatory and autoimmune disorders..

Antibacterial Properties

Drug resistance among microorganisms is a critical and escalating challenge. There has been a notable rise in infections caused by drug-resistant strains, which presents a significant threat to public health. The careless and often unnecessary use of antibiotics has directly fueled the emergence of these resistant strains, rendering many antibiotics completely ineffective. It is imperative that we address this issue to safeguard the effectiveness of our current treatment. Ashwagandha may serve as a valuable addition to antibiotic treatment for bacterial infections. While many existing medications for bacterial infections are effective, they often come with dangerous side effects due to their toxicity. In contrast, ashwagandha is a safe, non-toxic plant with minimal side effects..

Support for Infertility Treatment

Extensive research on men with normozoospermia has consistently proven that Ashwagandha, when taken in powdered root form, significantly enhances semen parameters. This powerful treatment results in increased sperm count, improved sperm morphology, larger sperm volume, and enhanced sperm motility, all of which substantially elevate the chances of pregnancy in women. Additionally, these studies have confirmed notable improvements in hormonal profiles and a significant rise in antioxidant enzymes, along with vitamins A, C, and E, in semen plasma.

Anticancer Effects

Witanolides are alkaloids derived from the Ashwagandha plant, recognized for their significant anti-cancer effects. These compounds are particularly notable for their key role in inducing apoptosis, the process of programmed cell death. Ashwagandha has demonstrated efficacy against a range of cancers, including those of the breast, colon, lung, prostate, and blood. Furthermore, it acts as a chemotherapeutic agent, proving especially effective against various forms of breast cancer, including estrogen receptor (ER) and progesterone receptor (PR)-positive breast cancer, as well as triple-negative breast cancer.

Antidiabetic Activity

The administration of a standardized Ashwagandha extract, identified by the brand name SENSORIL, significantly boosted antioxidant levels in the body while also improving the lipid profile. This study highlights not only the effectiveness of SENSORIL in promoting these positive health outcomes but also supports the tolerability and safety of this specific herbal ingredient.

Cardioprotective effect

Ashwagandha helps protect the heart by preventing cell death and restoring balance in the body. Another important component of Ashwagandha is withaferin A, which is known for its cancer-fighting properties. Research in rats showed that low doses of withaferin A can also protect the heart. This happens because it activates a pathway in the mitochondria that prevents cell death. The activation is due to an increase in a protein called AMP-activated protein kinase (AMPK) and a better balance between two other proteins, Bcl-2 and Bax. AMPK is essential for keeping energy levels stable in our cells and overall body. It controls the amounts of sugar, protein, and fat in the nervous system and other tissues. AMPK reacts to hormones by managing how much we eat and how we use energy. When we eat less, AMPK becomes more active. This suggests that AMPK plays a significant role in aging and health

issues related to getting older. By helping maintain energy balance, AMPK can improve both the quality of life and life expectancy.

Sleep Disorder Treatment

The Role of *Withania Somnifera* in the Treatment of Sleep Deprivation: Effects. Sleep deprivation exerts significant effects on brain function and adversely impacts all physiological systems within the body. Research indicates that it significantly contributes to mood deterioration, as well as declines in cognitive and motor functions.

Anxiolytic and Anti-Stress Activity

Supplementation with *Ashwagandha* has a beneficial effect on cognitive function, particularly in regard to attention and working memory. Additionally, it enhances mood by alleviating symptoms of anxiety and stress. *Withania somnifera* demonstrates promise as a natural supplement for improving cognition and mood in adults.

Adaptogenic Effect

The aqueous fraction free of withanolides, obtained from the roots of *Ashwagandha* (*Withania somnifera*), was also examined. This novel withanolide-free aqueous extract was evaluated for its adaptogenic properties in rats. The findings revealed significant anti-stress effects, including enhanced swimming endurance and a reduction in adrenal gland weight, all without any adverse effects.

Treatment of Hypothyroidism

Ashwagandha is one of the few medicinal plants that is free of iodine. Iodine is important because it stimulates the thyroid gland's production of hormones such as T3, T4, and TSH. Research indicates that *Ashwagandha* is particularly effective for treating subclinical hypothyroidism, though it can also be used as a supplement alongside conventional therapies for advanced hypothyroidism.

Increase Muscle Strength

Withania somnifera significantly improved muscle strength and caused fat gain. The research concluded that after 8 weeks of *Ashwagandha* supplementation, participants experienced greater increases in muscle strength and power.

Other Effects of *Ashwagandha*

Ashwagandha may have potential applications in the treatment of COVID-19 due to its valuable properties. These include maintaining immune homeostasis, regulating inflammation, suppressing pro-inflammatory cytokines, and providing protective effects on various organs. Additionally, it exhibits anti-stress, anti-hypertensive, and anti-diabetic effects.

Discussion

Ashwagandha (*Withania somnifera*) is a plant that has long been recognized for its therapeutic potential in both traditional Ayurvedic medicine and modern research. This review highlights its historical significance and extensive pharmacological effects. Known for its adaptogenic, anti-inflammatory, and immunomodulatory properties, *Ashwagandha* plays a vital role in stress management and overall well-

being. Additionally, it possesses antioxidant and anti-cancer properties, making it relevant in addressing significant health challenges such as neurodegenerative diseases and cancer. In the real of reproductive health, studies have shown that Ashwagandha can effectively improve male fertility parameters, including sperm count and motility. Its antidiabetic, cardioprotective, and muscle-strengthening effects further underscore its potential as a holistic health promoter. The herb also exhibits promising antibacterial properties, which could support its inclusion in antimicrobial therapies to combat issues of drug resistance. While the benefits of Ashwagandha are extensive, most evidence is derived from in vitro and animal studies, with very few clinical trials conducted on humans. Therefore, although the therapeutic potential of Ashwagandha is significant, further rigorous research is necessary to establish its efficacy, appropriate dosage, and safety across diverse populations.

Conclusion

Ashwagandha is a remarkable medicinal plant with numerous applications in both traditional and modern medicine. Its pharmacological properties—adaptogenic, anti-inflammatory, antioxidant, and anticancer effects—highlight its potential to address a variety of health concerns. Incorporating Ashwagandha into clinical practice may offer a holistic approach to health management. However, further scientific investigation is necessary to validate its therapeutic benefits, improve formulations, and ensure its safety for wider clinical use.

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