



“ROLE OF RASAYANA DRAVYAS IN IMMUNOMODULATION: A SCIENTIFIC REVIEW” - SUMMARIZING RECENT EVIDENCE SUPPORTING AYURVEDIC REJUVENATIVE HERBS LIKE AMALAKI, GUDUCHI, ASHWAGANDHA, HARITAKI

*¹Dr. Manishankar Narayan Gupta and ²Dr. Parshuram Pawar

¹PG Student, Department of Dravyaguna Saptashrungi Ayurved College, Nashik, Maharashtra.

²HOD Dravyaguna Department, Shree Saptashrungi Ayurved Mahavidyalay, Nashik.

How to cite this Article Dr. Manishankar Narayan Gupta, Dr. Parshuram Pawar (2025). “ROLE OF RASAYANA DRAVYAS IN IMMUNOMODULATION: A SCIENTIFIC REVIEW” - SUMMARIZING RECENT EVIDENCE SUPPORTING AYURVEDIC REJUVENATIVE HERBS LIKE AMALAKI, GUDUCHI, ASHWAGANDHA, HARITAKI, 2(3), 85-89.



Copyright © 2025 Dr. Manishankar Narayan Gupta | World Journal of Advance Pharmaceutical Sciences

This is an open-access article distributed under creative Commons Attribution-Non Commercial 4.0 International license ([CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/))

Article Info

Article Received: 03 August 2025,

Article Revised: 23 August 2025,

Article Accepted: 13 September 2025.

DOI: <https://doi.org/10.5281/zenodo.17128475>

*Corresponding author:

*Dr. Manishankar Narayan Gupta

PG Student, Department of Dravyaguna
Saptashrungi Ayurved College, Nashik,
Maharashtra.

ABSTRACT

The free radicals are formed because of improper metabolism results production of the toxins in the body because of that may produce different condition which may be thought of Amavisha (Free radicals). Ultimately may lead to destruction of cell and weakened body tissues. To overcome of this Different Rasayana (rejuvenation therapy) may help in dissolving free radicals and boost up the cells and body tissue. This Article enlightens the concept of Rasayana, Importance, Kayakalpa (renewal of body), Benefits, Rasayana based on Age, Rasayana according to disease, Active constituents present in Rasayana and Immunomodulators etc.

KEYWORDS: Rasayana, Kayakalpa, Free radicals, Antioxidants, Immunomodulator.

INTRODUCTION

Rasayanachikitsa is considered one among Ashtanga Ayurveda. Acharyas have explained many Rasayana, ingredients, method of preparation; dose and indications in different classics. The Rasayana yoga/ Kalpa or formulation consists of different ingredients different active principles present in plant stimulate immune mechanism example Ashvagandha Sioindosides and acylsteryl glucosides etc are active principles present. These are consumed both by healthy individual to maintain health and diseases person to treat disease.

To live healthy and happy to extend the aging process, to enhance the quality of life and to cure many diseases, Acharyas have explained different types of Rasayanawhich act as Antioxidants and prevent damage to the body's cells.

This article highlights about basic aspects of Rasayana, about Free radicals, Immunomodulator, some of the drugs like Amalaki, Guduchi, Haritaki, Pippali,

Ashvaganadha, different active principles present, each active principle and its actionand Mechanism of Immunomodulators has been discussed.

Definition of Rasayana^[1]

- Rasayana is one which nourishes Rasaraktadisaptahatu (healthybody tissues) (Shashtanam-Prashastha)
- The Medicine which cures old age as well as diseaseis called rasayana
- Rasayanatretment is one which gives strength to the body, sense organs and teeth eliminates skin folding, Alopecia and graying of hairs and hair fallis known as Rasayana. Ha.Sam. 1/22.Acharya Yogaratnakara added Chakshushya.

Classification of Rasayana

- a. Kutipraveshaka
- b. Vatatapika

2. a. Medhya Rasayana
b. Dhronipravesika
c. Achara Rasayana
3. a. Shodhana (Does doshashodhana)
b. Shamana (Nagabalarasayanadi)
4. a. kama (Bala-Buddhi nVruddhi)
i. Shree Kama(Lavanyakara)
ii. Medhakama
iii. Ayukama
b. naimittika (Vyadhihara)
c. Ajasruk (Ksheera, Ghritaetc)

Importance of Rasayana^[2]

There are two types of treatments explained by Acharya Charaka one which enhances and maintain health of a person and another which cures the disease of the patient. Chakrapani commented on roganut as Jwaradiharam.

Rasayana Benefits^[3]

Deerghayu, Deha indriya balakara, Smruti, Vaksiddi, Medhakara, Pranati (loka vandyata), Arogya Mana & Shareera, Vrushyatam, Taruna vata, Kanti, Prabha, Varna and Smruti. Chakrapani commented on pranati as lokavandya means the person will be identified in the society.

Poorvakarma for Rasayana prayoga^[4]: Importance of Shodhana: The person has to undergo Vamanadi Samshodhana karma and later when he attains normal strength, Rasayana is advised.

“Without Shodhana if Rasayana is administered it becomes useless like ‘Maleenavastrerangaivaphalaha’ Acharya Bhavamishra and Yogaratnakara also opine the same. After purification of the body Rasayana is advocated.

Hriyamanadhathu avastha^[5]

During 6th decade of life Loss of vision and Acharya Vagbhata said Netrashakti that to during 7th decade of life. In such stage medicines like Chakshushya and Saptamritaloha are best Rasayana.

Rasayana as Kayakalpa (Renewal of body)

Kayakalpa (renewal of body) is a specific field of practice profoundly honoured within the Ayurveda and Siddha medical systems of India as the ideal treatment for Health, Vitality, Longevity and higher consciousness. Kayakalpa means transformation of body. Kayakalpa (renewal of body) means specific set of different treatment modalities in Vedic literature and in classics which can reverse the physical degeneration caused by age factor. Kayakalpa treatment-transforms old cells into new one. Kayakalpa is form of treatment which restores the aged and debilitated body to its pristine youth and vigor, potentialities of the senses organs and gives good health. Kayakalpa adds new life

to years and new years to life. In ancient time Acharyas use to take Kayakalpa treatment to rejuvenate and to live longevity. In Puranas Shukracharya used to treat old age with Kayakalpatreatment.

Telomere Testing- To test the Patient Age

Telomere test can determine a person's or patient's age. It is blood test which reveals about individual's health.

Rasayana in Netravikara

In case of Mandadhrishti Dhrishti becomes sharp sight
– Vachaghrita Rasayana^[6] Dose: 10ml two times before food, Anupana: Milk
– Narasimhachurna^[7] - Dhrishti becomes sharp sight
– Dose: 2gram three times Anupana: Milk
– Vijayasaradi Rasayana- Dhrishti becomes sharp sight Su. Chi. 27/10
– Amalakiras Rasayana^[8]- Timira
– Triphala Rasayana- Dhrishtivardhaka
– Kalyanakaraka/ Rasayanadikara
– Lashunasarayana- Timira, Naktandya Dose: 4,6,8 phalavara, madhyama, pravaramatra respectively.
– Anupana: Jala, Ksheera, Takra, Ka. Sam. Kalp.
– Shivagutika Rasayana-Peenasa, Mukharoga, Netraroga, Shiroroga Dose: 6grams, Anupana: Ksheera, Mamsarasa, Madu, Sheetajala C.D. Rasayanadhikara
– Varshika Rasayana^[9] - Duradhrishti, Chakshushya
– Dose: 6-12grams Anupana: Water
– Mayuradhyaghrita^[10]: Netraroga, Karnaroga,
– Dose: 10grams, Anupana: Milk, Warm water
– Acharya Vagbhata said Madhutailikabasti Rasayana and Chakshushya. A.S.Kal.Si. 4/27-28

Rasayana in Pranavahasrotas

In Swarabedha, Vaishvarya, Kasa, Swasa and Peenasa Shatapaka Vacharasayana, Haritaki Rasayana - Dose: 10ml two times before food Anupana: Milk, Su.Chi. 28/7, Cha.Chi.1/1/35.
Pippalirasayana and Vardhamanapippali Rasayana^[11] - Vaishvarya, Swarabedha
Dose: 5, 7, 8, 10 Pippali and 3, 6, 10 Pippali.
Anupana: Milk, Ghee, Honey, Ksheera
Vyaghriharitakirasayana- Kasa, Swasa, Peenasa, Swarakshaya Dose: 5-10gram, Anupana: Warm water, Ksheera Bai. Rat.15/161-172.
Agastyaharitakirasayana- Kasa, Swasa, Peenasa Dose: 5-10 gram, Anupana: Warm water A.H.Chi.31/125-128.
Chyavanaprasharasayana^[12]- Kasa, Swasa and Swarakshaya, Dose: 12-24grams, Anupana: Water, Milk
Kusmandarasayana^[13]- Swarabedha, Dose: 5- 10 gram, Anupana: Milk, Water
Saraswatarishta- Swarakshaya- Dose: 12-24ml, Anupana: Water Bai.Rat. Rasayanaprakarana
Tilarasayana^[14]- Danta becomes strong
Krishnatilarasayana- Danta becomes strong Rasayana for Twakroga- Shivagutika, Madhusnuhirasayana, Gandhakararayana In case of Smritikshaya- Medhyarasayana, Vacharasayana, Tilarasayana, Bhramirasayana.

RASAYANA IN PAEDIATRIC CONDITION

Medhya Rasayana (Nootropic herbs)^[15] Bramhi, Mandukparni, Triphala, Chitraka, Vacha, Shatapushpa, Shatavari, Nagabala (any one) with honey and ghrita. Panchagavyaghrita, Kalyanakaghrita, Bramhighrita. Triphala, Bramhi, Bala, Atibala, Chitraka is given along with honey and ghrita as Anupana. Balashuskaroga16-Yashtyadi ghrita - Brimhana, Balakari Balakadourbalya^[16] - Ashvagandhaghrita Pustikara, Varnya, Balya and Sukakaram. Bhudhijadya - Mahasarasvatichurna Vakpati Sahasragranthadhari, and Bhudhijadyaparam hitam.^[16]

Immunomodulator and Antioxidant effect^[17]

Immunomodulator means substance that modifies the immune system to help the body to respond against disease. They work by stimulating or suppressing the immune system. The modulation of immune system by various medicinal plant products are called as herbal Immunomodulator.

Antioxidant

A substance (such as beta-carotene or Vitamin C) that inhibits oxidation or reactions promoted by oxygen, peroxides, or free radicals.

Free radicals: Free radicals are like robbers which are deficient energy. Free radicals attack and snatch energy from the other cells to satisfy them. "In the body free radicals are high-energy particles that wildly damage cells".

Factors of Immune system

Lymphocytes	Lymph
Immunoglobulin	Spleen
Cellular immunity	Thymus
Humoral immunity	

Immunomodulator properties of herbal plants

Multiple immunomodulatory actions including Cytokine secretion, Immunoglobulin production and Histamine release cellular co-receptor expression Lymphocyte Phagocytosis, promotion Proliferation.

Mechanism of Immunomodulators

The main target- macrophages (A large phagocyte; some are fixed and other circulate in the blood stream). Stimulation of Phagocytosis and activation of macrophages. killing of pathogens by producing effector molecules like free radical and nitric oxide and cytokine production. These cytokines may have direct function of other immune cell population such as activation of natural killer cell mediated cytotoxicity or generation of cytotoxic T- lymphocyte.

Antioxidant

Prevents ROS (reactive oxygen species), remove ROS before cell damage, Aids the human body Natural defence mechanism, repair oxidative damage, Eliminate the damaged molecule, Prevent mutations (an organism

that has characteristics resulting from chromosomal alteration)

Active principles**Amalaki^[18, 19, 20]**

Chemical constituents: Ascorbic acid, tannins, trigalloyl glucose, flavanoids etc.

Root: ellagic acid, lupeol, oleonic aldehyde.

Bark: tannin

Fruit: Vit-C, linolic acid, ascorbic acid, flavonoids, phyllemblic acid, acetic acid, salts.

Ellagic acid, as a powerful antioxidant present in *E. officinalis* (Amalaki).

Haritaki

Glycosides have been isolated from haritaki, including the triterpenes, chebulosides, gallic acids chebulin, as well as other phenolic compounds and Chebulic acid.

Active principles present in Haritaki- Like Chebulin, chebulagic, ferulic, vanillic acid have antioxidant and immunomodulatory activities thus capable of protecting cells from oxidative damage.

Guduchi

Chemical constituents: Alkaloids, glycosides and phenolics are having Anti-oxidant property. The active principles of Guduchi (*Tinosporacordifolia*), gave rise to significant increase in IgG antibodies in the serum.

Pippali

Chemical constituents: Alkaloids and amides: The fruit of *P. longum* contains piperine, together with methyl, iperonaline, piperettine, asarinine, pellitorine, piperundecalidine, piperlongumine, Alcoholic extract of the fruits and piperineare cytotoxic found protection against externally induced stress.

Ashvagandha

Chemical constituents: Alkaloids, saponins, glycosides, withanolides, steroidal lactones (withanolides, withaferins).

The active principles like sitoindosides VII-X and withaferin A (glycowithanolides), having antioxidant activity and observed as increased enzymatic activity in brain.

Major Active constituents present in Rasayana drugs

Alkaloids: Alkaloids serve as defence chemical against herbivores and to lesser defence against bacteria, Fungi and viruses.

Tannin: Tannins are powerful antibiotic that can defence the plant tissue. The antioxidant activity tannins possess their capacity to act as oxidizable substrates and free radical scavengers to protect cellular constituents by oxidation.

Saponin: Saponins are one of the most numerous groups of plant natural products. They serve a range of

ecological roles including plant defence against diseases and herbivores.

Flavonoids: Any of a large class of plant pigments having a chemical structure based on or similar to flavone. They also act as antioxidant. Immunomodulator:

Immunomodulator means substance that modifies the immune system to help the body to respond against disease. Inhibits Mast cells, Stimulates Antibody production. Stimulates lymphocyte proliferation, Decreases serum level of Allergen specific IgE and enhances Phagocytic activity of monocyte.^[18,19,20]

Results: Table showing Role of Active principles and their action:			
SL. NO.	Drugs	Chemical constituents/ Active principles	Action
1.	Amalaki	Ascorbic acid, tannins, trigalloyl glucose and flavanoids etc.	Ellagic acid, as a powerful antioxidant present in <i>E. officinalis</i> , has the ability to repairs the chromosomal abnormalities.
2.	Haritaki	Chebulin, chebulagic, ferulic, vanillic acid	Antioxidant and immune boosting thus capable of protecting cells from oxidative damage.
3.	Guduchi	Alkaloids, glycosides and phenolics are having Anti-oxidant property.	The active principles of Guduchi (<i>Tinosporacordifolia</i>), gave rise to significant increase in IgG antibodies in the serum.
4.	Ashvagandha	Alkaloids, saponins, glycosides, withanolides, steroidal lactones (withanolides, withaferins).	The active principles like sitoindosides VII-X and withaferin A (glycowithanolides), having antioxidant activity and observed as increased enzymatic activity in brain.

DISCUSSION

The drug Amalaki (Indian gooseberry) is consists of tannins and flavanoids are the active principles.

Flavonoids mediate their antioxidant effects by scavenging free radicals and chelating metal ions. They also act as antioxidant defence system in plant tissue.

Tannins are powerful antibiotic that can defence the plant tissue. The antioxidant activity tannins protect cellular constituents by oxidation.

Rasayanas act as Antioxidants which prevent damage to the body's cells. The free radical theory of ageing implies that antioxidants like Vitamin A, Vitamin C, Vitamin E, and Superoxide dismutase will slow the process of ageing by preventing free radicals from oxidizing sensitive biological molecules or reducing the formation of toxin. The probable action of Rasayana act at dosha level, nourishes body tissues, improves digestion and metabolism, and improves the microcirculation (Srotoshodhaka). The action will be based on Rasa, Veerya and Prabhava.

CONCLUSION

- Rasayana which keeps healthiness of the body tissues, which extends the Old age, cures diseases and enhances the quality of life, is Rasayana.
- Rasayanadrugs have the ability of protecting the body against external factor that induce diseases.
- Rasayanas they act as Antioxidant and immunomodulator as they consisting of different active principles they nourishes the body. Ex- Amalaki-Ascorbic acid.
- Different Rasayanas kalpas told in samhithagarntas definitely act on Natural and Acquired immunity.

REFERENCES

1. Kasinatha Shastri, editor Charakasamhita Chakrapanidatta with vidhyotini Hindi commentary of Chikitsasthana 1st chapter, 1st pada, 8th verse, Part-2, 1st edition 1970, Chowkambha Sanskrit series Varanasi. P.No.3.
2. Kasinatha Shastri, editor Charakasamhita Chakrapanidatta with vidhyotini Hindi commentary of Chikitsasthana 1st chapter, 1st pada, 5th verse, Part-2, 1st edition 1970, Chowkambha Sanskrit series Varanasi. P.No.2.
3. Ambikadatta Shastri Bhaishajya Ratnavali with Vidyotini Hindi vyakhya, vimarshaparishishta sahita, Rasayanaprakarana 4th verse Published by Choukumbha Sanskrit Bhavana 14th edition. P.No.1102.
4. Vaidya Sri Lakshmipathi Shastry Yogaratnakara Vidyotini Hinditeeka Rasayanadrikara 1st- 2nd verse 8th edition, 2004. Chauwkambha Samskritasamsthana Varanasi. P.No.498.
5. Pandit Parashuram Shastryvidyasagar Sharangadhara, Sharangadhara Samhita, prathamakhanda Kasirams Gudarthadipika 4th chapter 20th verse with Adhamalla'sdipika and, 5th Edition 2002, Chaukambha Orientalia Varanasi,
6. Kaviraj Ambikadatta Shastry, Sushruta, Chikitsasthana 28th Chapter, 17th verse Ayurveda tatvasandipikavyakhyana 11th edition1997, Chowkambha Sanskrit SansthanVaranasi. P.No.125.
7. Vangasena, Vangasenasamhita, Rasayanadrikara 424-429th verse Jain Sankarlalji Vaidya, Mumbai Khemaraj Srikrishnadas publishers; P.No. 948.
8. Vaidya Sri Lakshmipathi Shastry Yogaratnakara Vidyotini Hinditeeka Rasayanadrikara 8th edition, 2004. Chauwkambha Samskritasamsthana Varanasi. P.No.501.

9. The Ayurvedic Formulary of India Part-1, 2nd edition 2003, Government of India Ministry of Health and Family Welfare Department of Indian System of Medicine and Homeopathya.
10. Ambikadatta Shastri Bhaishajya Ratnavali with Vidyotini Hindi vyakhya, vimarshaparishishtasahita 65th chapter 77th-80th verse 11th edition 1997, Published by Choukumbha Sanskrit Bhavana Varanasi. P. No.1023.
11. Vaidya Shodala Gadanigrahavidyotini Hindi edited by Indradeva Tripathy and Gangashaya Pandeya Rasayanadhikara verse Chauwkambha Sanskrit Series Varanasi. Reprint 2005.
12. Kasinatha Shastri, editor Charakasamhita Chakrapanidatta with vidhyotini Hindi commentary of Chikitsasthana 1st chapter, 1st pada, 70-74th verse, Part-2, 1st edition 1970, Chowkambha Sanskrit series Varanasi. P.No.2.
13. The Ayurvedic Formulary of India Part-1, Taila 2nd edition 2003, Government of India Ministry of Health and Family Welfare Department of Indian System of Medicine and Homeopathya.
14. Brahmanand Tripathi Vagbhata, Asthangah ridaya Uttaraasthana 39th chapter, 158th verse Choukambha Sanskrit Sansthan Dehli, Reprint 2003. P.No.1202.
15. Vriddajivaka, Kashayapasamhita edited by Pandit Hemaraja Sharma Lehanaprakarana, 29-37th verse, Varanasi: Choukambha Sanskrit Sansthan 8th edition 2002.
16. Dr.Indradeva. Tripathi, Rasaratna Sammuchaya Balaroga, 147th and 149th verse 2nd edition 2003 Choukambha Sanskrit Bhavana Varanasi. P.No. 302.
17. <https://www.herbalimmunomodulator.in>
18. G.S.Lavekar, M.M.Padhi, A.K.Mangala at.al, Database on Medicinal plants used in Ayurveda and Siddha, Vol 1- 8, 1st edition: 2002, reprint 2008, published Central Council for Research in Ayurveda and Siddha department of AYUSH ministry of health, and family welfare Government of India.
19. K.M Nadakarni editor Indian Material Medica A.K. Nadakarni reprint 1989, Bombay popular prakashana.
20. P.V. Sharma editor Dravyagunavignana, Vol-2 Reprint-1999, Chowkambha Bharati Academy Varanasi.