

**PHARMACOLOGICAL ACTIVITY OF *WITHANIA SOMNIFERA*****Sunita Verma***

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ABSTRACT

Withania somnifera, Linn is the most important plant commonly known as Ashwagandha belongs to the family solanaceae. It is one of the most important herb of Ayurveda (the traditional system of medicine in India) used for millennia as a Rasayana for its wide ranging health benefits. The number of pharmacological activity of *Withania somnifera* needs scientific justification which would be helpful for the further research.

KEYWORDS: *Withania somnifera*, Ashwagandha, solanaceae.**INTRODUCTION**

Withania somnifera, also known as Ashwagandha, Indian ginseng, asgandh and winter cherry, belongs to the plant family Solanaceae. It has been an important herb in the Ayurvedic and indigenous medicine systems for over 3000 years.^[8] Ashwagandha or *Withania somnifera* is an ayurvedic herbs that has been used for centuries in India as an adaptogenic herbal remedy to improve overall health, vitality and longevity. Traditionally the plant *Withania somnifera* was used for different purposes such as asthma, bronchitis, rheumatoid arthritis, inflammation, skin diseases, tumor. Ashwagandha has sedative and hypnotic effect. It has been widely used as sex stimulant.

Ashwagandha is commonly available as a churna, a fine sieved powder that can be mixed with water, ghee (clarified butter) or honey. It enhances the function of the brain and nervous system and improves the memory. It improves the function of the reproductive system promoting a healthy sexual and reproductive balance. Being a powerful adaptogen, it enhances the body's resilience to stress. Ashwagandha improves the body's defense against disease by improving the cell-mediated immunity. It also possesses potent antioxidant properties that help protect against cellular damage caused by free radicals.^[9]

CLASSIFICATION

Kingdom : Plantae

Division : Angiosperms

Class : Dicotyledoneae

Order : Tubiflorae

Family : Solanaceae

Genus : *Withania*

Species : *somnifera*

VERNACULAR NAMES

English : Winter cherry

Gujarati : Asan, Asoda, Asundha,

Hindi : Asgandh,

Marathi : Askandha, Kanchuki,

Sanskrit : Ashvagandha, Ashvakandika,

Urdu : Asgand, Asgand Nagori



Fig 1: Whole plant of *Withania somnifera*

PHARMACOLOGICAL ACTIVITY**Anti stress**

Researchers using *Withania somnifera* discovered the animals given the herb an hour before the foot shock experienced a significantly reduced level of stress. This research confirms the

theory that Ashwagandha has a significant anti-stress adaptogenic effect.^[3] Anti-stressor effect of Ashwagandha was investigated in rats using cold water swimming stress test. The drug treated animals showed better stress tolerance.^[2] A withanolide-free aqueous fraction isolated from the roots of *Withania somnifera* exhibited anti-stress activity in a dose-dependent manner in mice.^[6]

Ashwagandha has traditionally been used to stabilize mood in patients with behavioral disturbances. Research has revealed that the herb produces an anti-depressant and anti-anxiety effect in rodents comparable to the anti-depressant drug imipramine and the anti-anxiety drug lorazepam (Ativan).^[2]

Anti biotic activity

Antibiotic activity of Withaferin A is due to the presence of the unsaturated lactone-ring. The lactone showed strong therapeutic activity in experimentally induced abscesses in rabbits, the being somewhat stronger than that of Penicillin. It substantiates the reputation of the leaves as a cure for ulcers and carbuncles in the indigenous system of medicine.^[1]

Anti oxidant

Antioxidant effect of active glycowithanolides of *Withania somnifera* (WSG) may explain, at least in part, the reported anti-inflammatory, immunomodulatory, anti-stress, antiaging and cognition-facilitating effects produced by them in experimental animals, and in clinical situations.^[4]

Anti inflammetry

Withaferin A and 3-b-hydroxy-2,3-dihydrowithanolide F isolated from *Withania somnifera* show promising antibacterial, antitumoral, immunomodulating and anti-inflammatory properties.^[5]

Cognition promoting effect

Ashwagandha, is used to promote intellect and memory. The cognition-promoting effect is best seen in children with memory deficits, or when memory is compromised following head injury, or a prolonged illness and in old age.^[10]

CONCLUSION

It is seen that *Withania somnifera* is a very important plant for its large number of medicinal properties which includes antistress, antiinflammation, neuroprotective, antioxidant and many more. Therefore, further studies are needed.

REFERENCES

1. Anonymous. The Wealth of India. Vol. X (Sp-W), Publications and Information Directorate, Council of Scientific and Industrial Research (CSIR), New Delhi, 1982; 580-585.
2. Archana, R., Namasivayam, A. Anti-stressor effect of *Withania somnifera* . J Ethnopharmacol, 1999; 64(1): 91-93.
3. Bhattacharya, A., Ghosal, S. and Bhattacharya, S.K. J Ethnopharmacol, 2001; 74: 1-6.
4. Bhattacharya, S.K., Satyan, K.S., Ghosal, S. Antioxidant activity of glycowithanolides from *Withania somnifera* . Indian J Exp Biol., 1997; 35(3): 236-239.
5. Budhiraja, R.D. and Sudhir, S. Review of biological activity of withanolides. JSIR, 1987; 46: 488-491.
6. Khare, CP. Indian Medicinal Plants—An Illustrated Dictionary. First Indian Reprint, Springer (India) Pvt. Ltd., New Delhi, 2007; 717-718.
7. Kundu, A.B., Mukherjee A. and Dey, A.K. Indian J.chem, 1976; 14B(6): 431.
8. Madhuri, S., Pandey and Govind. Anticancer activity of *Withania somnifera* Dunal (Ashwagandha). Indian Drugs, 2009; 46(8): 603-609.
9. Narendra, S., Bhalla, M., Jager, P.D., and Gilca, M. 2011. An overview on Ashwagandha: A rasayana (rejuvenator) of Ayurveda. Afr J Tradit Complement Altern Med., 2011; 8(S): 208-213.
10. Singh R.H. and Udupa K.N. (1993) Clinical and experimental studies on rasayana drugs and rasayana therapy. Special Research Monograph, Central Council for Research in Ayurveda and Siddha (CCRAS), Ministry of Health and Family Welfare, New Delhi.