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SCI-010: ASHWAGANDHA: AN EVIDENCE-BASED OVERVIEW

Withanolide Standardization, HPA Modulation, Cortisol Control & Clinical Review

Document Code	Published	Last Reviewed	Next Review Date
SCI-010	July 2026	July 2026	July 2027
Prepared By	AARVIONA Scientific Affairs (Review Process & Standards: /science/editorial-standards)		

ARTICLE PURPOSE
A comprehensive clinical review of Withania somnifera (Ashwagandha), focusing on withanolide chemistry, standardized extract verification, stress mitigation, and neuro-recovery pathways.

SEO Metadata & Website Architecture

SEO Field	Recommended Website Text / Architecture
Page Title	Ashwagandha: Evidence-Based Science, Cortisol & Benefits AARVIONA
Meta Description	An evidence-based review of Ashwagandha (Withania somnifera). Learn about 5% withanolides standardization, HPA axis regulation, cortisol reduction, and clinical studies.
URL Slug	/science/ashwagandha-evidence-based-overview
Primary Topic	Botanical Adaptogens and Endocrine Modulation
Suggested Schema	Article + FAQPage + BreadcrumbList

AT A GLANCE

Property / Metric	Key Scientific Fact
Botanical Species	Withania somnifera (Solanaceae family)
Active Standardized Marker	Withanolides (steroidal lactones) standardized to 5.0% yield via HPLC

Serum Cortisol Impact	Clinical double-blind RCTs report up to 27.9% reduction in serum cortisol
Clinical Dosage Range	62.5 mg to 300 mg of standardized root extract per day

1. BOTANICAL STANDARDIZATION & WITHANOLIDE CHEMISTRY

Raw, unstandardized ashwagandha root powders vary widely in bioactive concentration (~0.5% withanolides).

To guarantee repeatable therapeutic efficacy, premium formulations utilize root extracts standardized to exactly 5.0% withanolides via HPLC testing.

Research Domain	Observed Outcome in Double-Blind RCTs
Serum Cortisol Reduction	Double-blind trials report up to 27.9% reduction in serum cortisol after 60 days.
Perceived Stress Score (PSS)	Significant reductions in subjective anxiety and stress ratings vs. placebo.
Sleep Quality Index	Improved sleep latency, deep sleep duration, and morning alertness.
Executive Function	Enhanced information processing speed and stress-task mental resilience.

Figure 1. Educational illustration created by AARVIONA Scientific Affairs.

FREQUENTLY ASKED QUESTIONS (FAQ)

Q1: Why is standardization to 5% withanolides important?

Standardization ensures every capsule delivers an exact, verified dose of active steroidal lactones, avoiding raw root powder inconsistency.

Q2: When is the best time to take Ashwagandha?

Taking Ashwagandha in the evening or before bed optimizes nighttime HPA axis recovery and prevents 3 AM cortisol spikes.

SCIENTIFIC REFERENCES

Primary Clinical Sources

- Salve J, et al. Adaptogenic and Anxiolytic Effects of Ashwagandha Root Extract in Healthy Adults: A Double-Blind, Randomized, Placebo-Controlled Clinical Study. Cureus. 2019;11(12):e6466. doi: 10.7759/cureus.6466.
- Choudhary D, et al. Efficacy and Safety of Ashwagandha (Withania somnifera) Root Extract in Improving Memory and Cognitive Functions. J Diet Suppl. 2017;14(6):599-612. doi: 10.1080/19390211.2017.1284970.
- Chandrasekhar K, et al. A prospective, randomized double-blind study of high-concentration ashwagandha root extract in reducing

stress. Indian J Psychol Med. 2012;34(3):255-262. doi: 10.4103/0253-7176.106022.

Regulatory Opinions & Institutional Sources

1. Health Canada. Monograph: Ashwagandha - Withania somnifera. 2026.

RELATED SCIENCE LIBRARY ARTICLES

Article Code	Article Title & Topic Link
SCI-002	Magnesium Glycinate vs. Magnesium L-Threonate
SCI-004	How Magnesium Supports Sleep
SCI-005	Understanding Stress and Cortisol
SCI-009	L-Theanine Explained

Version Control & Document History

Version	Date	Description	Author/Reviewer
1.0	July 2026	Initial Publication	AARVIONA Scientific Affairs

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