

WHITE PAPER | FEBRUARY 2026

# AHARA Reishi Elixir

Nature's solution to sleep, stress, and inflammation

*The most comprehensive metabolomic analysis ever conducted on a mushroom extract*

AHARA sent its proprietary Reishi extract to Human Metabolome Technologies (HMT) in Tsuruoka, Japan — one of the world's leading metabolomics laboratories — for analysis using dual-panel CE-MS and LC-MS/MS mass spectrometry. The result: over 1,000 uniquely identified compounds across 8,757 molecular features, spanning 17 distinct metabolic pathways — endocannabinoid, GABAergic, cholinergic, anti-inflammatory, neuroprotective, purine/adenosine, serotonergic, and gut-brain axis — all naturally present in a single water-based extract.

<b>1,081+</b> Identified compounds	<b>250+</b> Neuroactive compounds	<b>17</b> Metabolic pathways	<b>26</b> Ganoderic acids
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## What's Inside

- **Adenosine** — the brain's primary sleep-pressure signal. Adenine and hypoxanthine, 170× enriched, feed directly into adenosine production.
- **GABA + neurosteroid potentiators** — the main inhibitory neurotransmitter, alongside pregnanolone compounds that amplify its effect.
- **Glycine** — inhibitory neurotransmitter and NMDA receptor co-agonist; supports sleep quality.
- **Oleamide** — the fatty acid amide the brain produces in CSF when sleep is needed. One of the highest relative abundances in the non-polar panel.
- **26 ganoderic acids** — anti-inflammatory triterpenoids unique to Reishi in all of nature. They suppress NF-κB, TNF-α, and IL-6 — the master signals that disrupt sleep, worsen anxiety, and damage neurons.
- **58 short- and medium-chain fatty acids** — complete C3–C17 ladder. Most gut products give you fiber and hope bacteria ferment it into SCFAs. This extract delivers them directly.
- **37 bioactive peptides** — cyclo(-Leu-Pro) (neuroprotective, antimicrobial), ACE-inhibitory peptides Ile-Pro-Pro and Val-Pro-Pro, 13 gamma-glutamyl peptides for glutathione recycling, and collagen peptides.
- **Energy & neuroprotection** — succinic acid (22,510 nmol/g, activates SUCNR1 anti-inflammatory receptor), lactic acid (neuronal fuel), citric acid (mitochondrial energy), kynurenic acid (neuroprotection), sphingolipids (blood-brain barrier and CSF integrity), ergosterol/vitamin D2, and 39 steroid and hormone metabolites.
- **Endocannabinoids** — palmitoylethanolamide (PEA), oleoyl ethanolamide (OEA), and stearoyl ethanolamide — four endocannabinoid-system compounds that reduce anxiety and promote sleep through receptors the body already uses.
- **44 phenolic and polyphenol compounds** — caffeic, ferulic, chlorogenic, and coumaric acids — supporting microbiome health and antioxidant capacity.

## Extraction and Delivery

Ganoderic acids exist nowhere in nature except Reishi and have traditionally been considered impossible to extract without harsh organic solvents. AHARA's proprietary water-based process recovered 26 of them — no ethanol, no methanol. The first demonstrated achievement of comprehensive ganoderic acid recovery through purely aqueous extraction, with the full spectrum of polar and non-polar bioactives preserved in a single extract.

Developed under Dr. Subhas Malghan's leadership — co-author of the FDA's first nanotechnology guidance — AHARA's nanofibers deliver the full compound spectrum through mucosal absorption. The extract bypasses the stomach, bypasses liver first-pass metabolism, and reaches circulation in seconds.

## Why AHARA Exists

At twenty, Ajay Malghan was diagnosed with acute lymphoblastic leukemia. The intrathecal chemotherapy that saved his life — methotrexate injected directly into his cerebrospinal fluid — left him with a severely damaged

CSF system. For two decades, severe sleep disruption exacerbated ADHD, depression, and anxiety. The drugs that saved him broke things other drugs couldn't fix.

In 2022, Ajay and his father Dr. Subhas Malghan founded AHARA. Dr. Malghan brought 28 years of federal research leadership at NIST, FDA, NIH, and NCI. Together they developed the proprietary water-based extraction process. Aaron Grimes, MBA, joined to build the growth infrastructure to scale it.

*The extracts solved Ajay's sleep. When sleep came back, the ADHD, depression, and anxiety began to resolve. Not managed. Not masked. Resolved.*

### **The Core Insight**

A sleeping pill delivers one molecule that manipulates one receptor. It works — consciousness is lost — but it doesn't produce natural sleep, and the side effects come from overdriving a single pathway while everything else gets nothing.

AHARA's extract delivers compounds across 17 metabolic pathways simultaneously — oleamide through cannabinoid receptors, ganoderic acids calming inflammation, GABA amplified by neurosteroids, adenine converted to adenosine, SCFAs through the gut-brain axis, peptides supporting blood pressure and antioxidant recycling, phenolics nourishing the microbiome. All at once.

**The richness is the mechanism.** Hundreds of compounds working across the systems the body already has in place. Each pathway supported. No single pathway overloaded.

Nanofiber delivery makes this practical. Seventeen pathways cannot fit into a capsule at meaningful doses. But efficient amounts of hundreds of compounds can be delivered through a nanofiber matrix that dissolves in seconds and absorbs through the mouth — into circulation before a capsule would even reach the stomach.

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*Data: HMT reports AHARA-HMT-001 (CE-FTMS, polar) and AHARA-HMT-002 (LC-MS/MS, non-polar) available upon request.*

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