**NeuroScience®**

Kavinace® OS

Target the cellular consequences of sleeplessness with a formulation proven to improve both sleep onset and efficiency after the first serving[1,2]*

Patient Profile

- ☐ Requires quick relief from sleeplessness
- ☐ Needs help falling asleep
- ☐ Unhealthy lifestyle habits
- ☐ Known or suspected immune activity

Kavinace® OS
Dietary Supplement
NeuroImmune

60 CAPSULES

Quick sleep support*

Key Ingredients

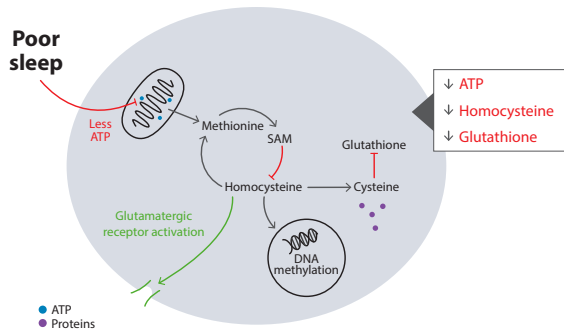| Ingredient	Details
L-theanine	■ Amino acid that acts as a glutamate receptor antagonist, shown to **reduce stress**[4]* ■ Modulates the immune response by regulating the secretion of **INF-y, IL-2 and IL-10**, cytokines shown to increase after strenuous activity and **display sleep regulating properties**[20-23]
Astaxanthin	■ Carotenoid that can have inhibitory effects on macrophage activity, IL-1 and IL-6 expression, and Nf-kB phosphorylation, impacting chronic and acute immune responses[17,18]* ■ Shown to **improve sleep onset** when taken with zinc[6]*
Magnesium (as magnesium bisglycinate chelate)	■ Cofactor for multiple mechanisms in the body including the **production of serotonin** and acting as a **GABA agonist**[7]*
Zinc (as zinc bisglycinate chelate)	■ Essential micronutrient cofactor for the antioxidant enzyme **superoxide dismutase (SOD)**[8]* ■ Zinc deficiency is directly associated with increased biomarkers of oxidative stress and inflammatory cytokines[9]
Melatonin	■ **Antioxidant** and hormone important for the **regulation of the sleep-wake cycle**[10]* ■ Melatonin restores the **circadian rhythm dependent activity of mast cells**, important for the allergic and inflammatory cascade and immune response to pathogens[19]
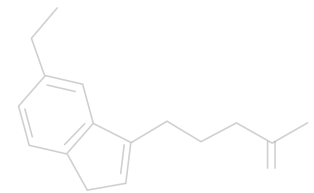
The Science

- ■ The nervous system works with the immune system to regulate the sleep-wake cycle and the immune response[11,12]
- ■ During daytime activity, the immune system generates free radicals and depletes antioxidants[13]
- ■ During bedtime hours, accumulated free radicals can stimulate the immune system with the adaptive immune system at its most active[12]
- ■ Poor sleep has been shown to increase oxidative stress markers, perpetuating the Immune-Sleep Cycle[13-15]

The Immune-Sleep Cycle
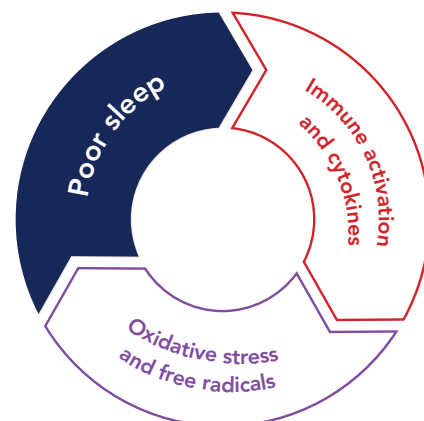
Poor sleep

Immune activation and cytokines

Oxidative stress and free radicals

Figure 1. Cellular Impact of Sleep Deprivation



↓ ATP
↓ Homocysteine
↓ Glutathione

One night of poor sleep changes cellular metabolic function (Figure 1.)[1]

Metabolic changes worsen the Immune-Sleep Cycle, perpetuating more sleepless nights[1]

- Decreased antioxidant capacity increases susceptibility to negative effects of free radicals and oxidative stress[1]
- Oxidative stress modulates immune regulators like Nf-kB[16]
- Wake promoting substances (hormones and neurotransmitters) respond to immune activation and further disrupt sleep[11, 15]

The uniquely formulated blend of Kavinace OS comprehensively intervenes at every portion of the Immune-Sleep Cycle*

Figure 2. Kavinace OS Decreases Sleep Latency

*** = p<.001 Extremely impactful
**** = p<.0001 Extremely impactful
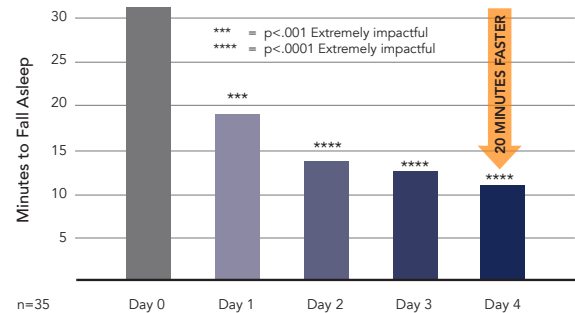
Researched ingredient blend, proven results*

Data gathering participants were prescreened for poor sleep (PSQI), received one serving of Kavinace OS at bedtime for seven days, and submitted a daily sleep diary

- **Fall asleep quickly.** Reductions in sleep latency were reported after the first serving of Kavinace OS, with ongoing improvement through day four[2]
- **Sleep better.** Improvement in sleep efficiency, or total sleep time relative to time in bed, was reported after one serving of Kavinace OS[2]*

Kavinace OS provides quick relief from sleeplessness at the symptom and cellular level*

NeuroScience supplements undergo rigorous, product specific third-party testing to guarantee label claims of each ingredient and the absence of heavy metals and microbes

Suggested Use: Take 2 capsules at bedtime or as directed by your healthcare provider.

Supplement Facts

Serving Size: 2 Capsules
Servings Per Container: 30

Amount Per Serving		% Daily Value
Magnesium (as magnesium bisglycinate chelate)	25 mg	6%
Zinc (as zinc bisglycinate chelate)	15 mg	136%
Selenium (as selenomethionine)	200 mcg	364%
Melatonin	5 mg	†
Proprietary Blend	214 mg	†
L-theanine, Trans-resveratrol (Polygonum cuspidatum) (root), and Astaxanthin (Haematococcus pluvialis).		

† Daily Value not established.

Other ingredients: Vegetable capsule (hypromellose, water), organic rice concentrate, microcrystalline cellulose, dicalcium phosphate, citric acid, and glycine.

NeuroScience®

Item Number	Available Sizes	Serving Size
20053	60 capsule	2 Capsules

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17. Lee S, et al. Astaxan Inhib Nitric. 2003; 16(1):97- 105.
18. Kishimoto Y. et al. Eur J Nutr (2010) 49: 119.
19. Carpentieri et al./Pharmacological Research 65 (2012).
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