

# Adrenal Complex

- Improves Stress Resilience
- Supports Healthy Energy Levels
- Strengthens the Body's Stress Response
- Improves Mental and Physical Performance
- Supports Healthy Cortisol Levels

This product contains a blend of adaptogenic botanicals and nutrients specifically formulated to counteract the effects of daily stress and support healthy energy levels. This product provides a unique blend of “stress-adapting botanicals” that support the body’s resistance to fatigue and help to maintain balanced cortisol and DHEA levels.

## Overview

Stress is defined as any disturbance—extreme cold or heat, psychological stress, sleep deprivation, work overload, physical trauma, as well as toxic exposure—that can trigger the stress response. The body’s stress response system is comprised of the hypothalamic-pituitary-adrenal (HPA) axis. Prolonged stress triggers the HPA axis and consists of three stages: alarm, resistance and exhaustion.

The initial, short-lived phase is the body’s normal fight-or-flight response to danger, characterized by elevated cortisol levels. The subsequent resistance phase allows the body to continue buffering extended stress exposure, long after the initial fight-or-flight response has dissipated. Hormones released by the adrenals, such as cortisol and DHEA, help support the “resistance” reaction. Extended periods of stress not only burden the system, creating an imbalance in cortisol and DHEA production, but can result in mental and physical fatigue, nervous tension, irritability and poor memory- all of which are characteristic of stage 3. This product provides a unique blend of botanicals and nutrients that support the stress response, particularly promoting cortisol balance during the initial alarm phase.

## L-Theanine†

L-theanine is an amino acid found abundantly in green tea. L-theanine has been shown to quickly improve stress perception and resilience. The stress-buffering mechanisms of L-theanine have been connected to the ability of L-theanine to increase serotonin and dopamine production in the brain.<sup>1</sup> L-theanine has also been shown to significantly increase alpha brain wave activity, which is critical for increasing attention and promoting a sense of relaxation.<sup>2</sup> In a study using 16 healthy volunteers, electroencephalograph (EEG) readings of participants were recorded following the ingestion of 50 mg of L-theanine. The researchers found a significant increase in alpha brain wave activity versus placebo.<sup>2</sup> L-theanine has also been shown to have a protective effect for nerve cells and reduces excitatory glutamate activity in the brain.<sup>3</sup>

## Phosphatidylserine†

Phosphatidylserine is a phospholipid that is found in high concentrations in the brain. In studies administering phosphatidylserine (50-800 mg) to subjects under stress (physical, emotional, mental, etc.), it has been found that phosphatidylserine reduces stress-induced excretion of cortisol.<sup>4-7</sup> Administration of phosphatidylserine has also been studied in exercising subjects. It has been demonstrated that phosphatidylserine reduces the cortisol response to overtraining, resulting in a reduction in perceived muscle soreness and improvement in athletic performance.<sup>8-10</sup>

## Ashwagandha Root Extract†

Ashwagandha’s strong adaptogenic properties provide several benefits for individuals that have compromised health due

to extreme stress exposure. Ashwagandha's benefits include improving stress resilience, supporting immune response, regulating the sleep cycle, supporting healthy thyroid function and protecting against exhaustion of the nervous system.<sup>11</sup> Ashwagandha has shown to be beneficial in supporting proper mood regulation and restoring a sense of calmness under stress.<sup>11</sup>

### **Rhodiola rosea Root Extract†**

*Rhodiola rosea* has been categorized as an adaptogenic botanical due to its ability to increase resistance to a variety of stressors.<sup>12</sup> *Rhodiola* has been studied extensively and is widely used in Eastern Europe and Asia to help support the nervous system, mood regulation, mental clarity, work performance and the sleep cycle.<sup>12</sup> Within the central nervous system, *Rhodiola* has demonstrated an ability to preserve levels of neurotransmitters such as serotonin, dopamine and norepinephrine. In a randomized, double-blind, placebo-controlled study examining the effects of *Rhodiola* on fatigue and stress, 161 patients aged 19 to 21 years received *Rhodiola* twice daily resulting in a significant reduction in fatigue.<sup>13</sup> An additional study using *Rhodiola* extract in students showed significant improvements in mental performance, greater mood stability, and improved sleep patterns.<sup>14</sup>

### **Eleuthero Root Extract†**

*Eleutherococcus senticosus* has also been identified as a strong adaptogenic botanical and is widely used in China to improve general health, support memory and endurance.<sup>15</sup> In addition to its ability to improve stress resilience and fight fatigue, Eleuthero has exhibited immune supporting effects.<sup>16</sup> In a double-blind study, 45 healthy volunteers received Eleuthero or placebo for 30 days. A cognitive challenge test was given to assess stress response, along with heart rate. Unlike placebo, subjects receiving Eleuthero demonstrated a 40% reduction in heart rate in response to the stressor.<sup>17</sup> Eleuthero has also been shown to improve performance in runners. In a study on performance athletes, Eleuthero extract (2 or 4 mL) given 30 minutes prior to a race significantly reduced race time (48.7 minutes) compared to the control group (52.6 minutes).<sup>18</sup>

### **Skullcap Root Extract†**

Native to China and parts of Russia, skullcap root (*Scutellaria baicalensis*) has been used in traditional Chinese medicine for its immune-supporting properties. *S. baicalensis* has flavonoids which provide numerous protective effects including antioxidant activity and protection against unwanted organisms.<sup>19</sup> Skullcap root has also been shown to support the proper activities of key mediators involved in the inflammatory response and protect against free radicals that cause lipid oxidation.<sup>19</sup>

### **Dosage**

2 capsules taken one or two times per day, or as recommended by your health care professional.

### **Does Not Contain**

Wheat, gluten, corn, yeast, animal or dairy products, fish, shellfish, peanuts, tree nuts, egg, artificial colors, artificial sweeteners or preservatives.

### **Caution**

Do not consume this product if you are pregnant or nursing.

<b>Supplement Facts</b> <sup>v2</sup>		
Serving Size 2 Capsules Servings Per Container 30		
	<b>Amount Per Serving</b>	<b>% Daily Value</b>
Ashwagandha Root Extract (Standardized to contain 1.5% Withanolides)	250 mg	*
Chinese Skullcap ( <i>Scutellaria baicalensis</i> ) Root Extract (Standardized to contain 30% Flavonoids)	250 mg	*
Eleuthero Root Extract (Standardized to contain 0.8% Eleutherosides)	200 mg	*
Rhodiola ( <i>Rhodiola rosea</i> ) Root Extract (Standardized to contain 3% Rosavins)	200 mg	*
L-Theanine (Suntheanine®)	100 mg	*
Phosphatidylserine (from Sunflower Seed)	100 mg	*

\* Daily Value not established.



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†These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

## References

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