

# ImmuWell™

Contains ingredients shown to support healthy immune responses as well as energy, mood, and memory processes\*

### Patient Profile†

- ☐ Seeking overall immune health support\*
- ☐ Seeking ingredients to target balanced respiratory health\*
- ☐ Bring daytime fatigue and low mood into balance\*
- ☐ Support for working memory and memory consolidation\*



# Key Ingredients

### Vitamin D

 Promotes antimicrobial peptide creation, immune cell migration to sites of immune activation, and elimination of foreign material that trigger an immune response in a healthy system<sup>1\*</sup>

### Black elderberry powder (Sambucus nigra L.) (whole fruit)

- Contains a variety of bioactive constituents that provide antioxidant support and inhibit replication of substances that can cause microbial imbalance in a healthy system<sup>2\*</sup>
- Shown to boost immune defenses and support healthy cytokine expression<sup>3\*</sup>

### L-tyrosine

- Readily absorbed across the intestinal epithelium and blood-brain barrier<sup>4</sup>
- Precursor to catecholamines (dopamine, norepinephrine, epinephrine), which play an important role in energy, cognition, and healthy immune responses<sup>5,6\*</sup>

### Beta 1, 3/1, 6 D Glucan

(from Saccharomyces cerevisiae)

- Beta-1,3 and beta-1,6 glucan are potent activators of a healthy immune system<sup>7\*</sup>
- Contains patterns recognized by the immune system, priming the body for immune responses, imbalances, and challenges<sup>8</sup>\*

### Ginkgo biloba L. extract (leaf) (24% total flavone glycosides, 6% total terpene lactones):

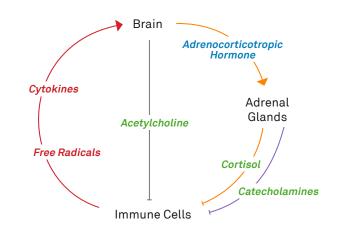
- Consists of flavonoids as flavone glycosides (i.e. quercetin), terpene trilactones (ginkgolides A, B, C), and ginkgolic acid (GA)
- Involved in free radical scavenging by modulating amounts of reactive oxygen species tissue and membrane lipid peroxidation<sup>9\*</sup>
- Ginkgolides are shown to have natural antagonistic actions toward platelet activating factor (PAF), an inflammatory mediator balancing the airways and bronchial reactivity<sup>10\*</sup>

## The Science



- The sympathetic and parasympathetic nervous systems work together with the immune system to regulate the immune response<sup>7</sup>
- Oxidative stress is directly linked to immune activation and can damage proteins, lipids, and DNA<sup>11</sup>
- Long term immune activation can lead to imbalances in these systems and can contribute to symptoms such as fatigue, low mood, and sleep difficulties 5,12-14

### **Neurolmmune Response**

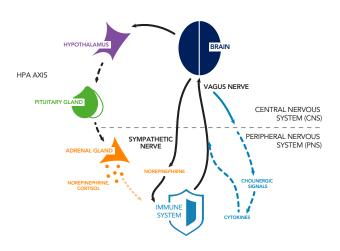


Blue = Hormone Green = Biomarker Red = Immune System Gray = Parasympathetic Purple = Sympathetic Orange= Hypothalamic-Pituitary-Adrenal (HPA) axis

\*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.

## MORE SCIENCE BEHIND IMMUWELL

Figure 1. NeuroImmune Response (Detailed)



### **Balancing an Immune Response**

Norepineprine (NE), or noradrenaline, impacts both fatigue and mood, and is impacted by stress as well as immune system balance<sup>5,6</sup>\*

- When the immune system is active, vagal and sensory nerve receptors are engaged by immune messengers like IL-1β<sup>5</sup>
- 2. Pro-inflammatory activity in the periphery generates afferent signals to the CNS, resulting in sympathetic nerve activation<sup>5</sup>
- 3. Healthy sympathetic nerves release neurotransmitters (NT) to restore local net anti-inflammatory balance while supporting nonspecific immune processes<sup>5</sup>
  - Norepinephrine is the NT shown to influence immune cells, including recruitment of leukocytes and increased blood flow, lymph flow, and antigen processing<sup>5</sup>

ImmuWell provides L-tyrosine and vitamin C to support bodily norepinephrine production\*

Figure 2. Impacting Immune Reactions

	Vitamin C	Vitamin D	Beta glucan	Zinc	Black elderberry	Ginkgo biloba
Support balance in the face of immune challenges*	•	•	•		•	
Oxidative stress related immune imbalances*	0			0	0	•
Optimal inflammatory cascade*	0	0				•

### Ingredients blended to make an impact

Along with its Key Ingredients, ImmuWell also provides:

- Vitamin C: Protects healthy immune cells from oxidative damage, aids in optimal cell migration to inflammation sites, and improves elimination of foreign material<sup>15</sup>\*
- **Zinc**: Supports glutathione synthesis, modulates detoxification pathways, and acts as a cofactor for antioxidant enzymes<sup>16,17</sup>\*

The immune system is activated by many triggers. Support multiple aspects of the immune response with ImmuWell\*

### Data shows daily intake of:

- Beta glucan (250 mg), vitamin C (1,000 mg), and zinc (13.3 mg) can support optimal respiratory health 18-20\*
- Ginkgo biloba (120 mg) can support both working memory and memory consolidation<sup>21</sup>\*

ImmuWell delivers these ingredients at or above the researched amounts at its suggested use\*









## Add in acetylcholine support?

Learn more about Avipaxin at www.neuroscienceinc.com/products/avipaxin

#### Third party tested to deliver consistent quality trusted by healthcare providers for 25 years

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