

## ImmuWell™

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

### Patient Profile†

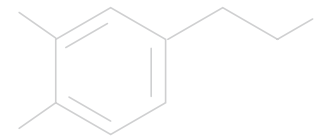
- Seeking overall immune health support\*
- Specific needs related to respiratory health\*
- Daytime exhaustion with a low mood\*
- Issues with working memory and memory consolidation\*



## Key Ingredients

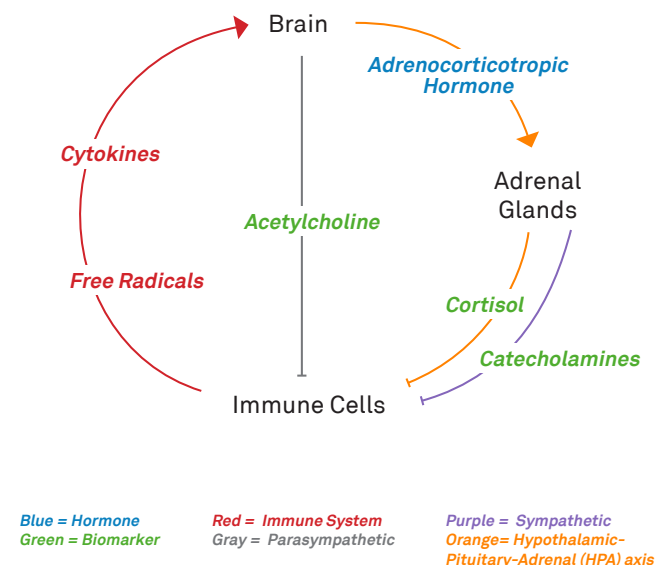
Vitamin D	<ul style="list-style-type: none"> <li>■ Promotes antimicrobial peptide creation, immune cell migration to sites of immune activation, and elimination of foreign material that trigger an immune response<sup>1*</sup></li> </ul>
<b>Black elderberry powder</b> ( <i>Sambucus nigra L.</i> ) (whole fruit)	<ul style="list-style-type: none"> <li>■ Contains a variety of bioactive constituents that provide antioxidant support and inhibit the replication of microbes<sup>2*</sup></li> <li>■ Shown to boost immune defenses against microbial agents and support healthy cytokine expression<sup>3*</sup></li> </ul>
L-tyrosine	<ul style="list-style-type: none"> <li>■ Readily absorbed across the intestinal epithelium and blood-brain barrier<sup>4</sup></li> <li>■ Precursor to catecholamines (dopamine, norepinephrine, epinephrine), which play an important role in energy, cognition, and healthy immune responses<sup>5,6*</sup></li> </ul>
<b>Beta 1, 3/1, 6 D Glucan</b> (from <i>Saccharomyces cerevisiae</i> )	<ul style="list-style-type: none"> <li>■ Beta-1,3 and beta-1,6 glucan are potent activators of the immune system<sup>7*</sup></li> <li>■ Contain patterns recognized by the immune system, priming the body for immune responses to microbial challenges<sup>8*</sup></li> </ul>
<b>Ginkgo biloba L. extract</b> (leaf) (24% total flavone glycosides, 6% total terpene lactones)†	<ul style="list-style-type: none"> <li>■ Consists of flavonoids as flavone glycosides (i.e. quercetin), terpene trilactones (ginkgolides A, B, C), and ginkgolic acid (GA)</li> <li>■ Involved in free radical scavenging by modulating amounts of reactive oxygen species tissue and membrane lipid peroxidation<sup>9*</sup></li> <li>■ Ginkgolides are shown to be specific and selective antagonists of platelet activating factor (PAF), an inflammatory mediator of the airways and bronchial hyperreactivity<sup>10*</sup></li> </ul>

## 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<sup>5,12-14</sup>

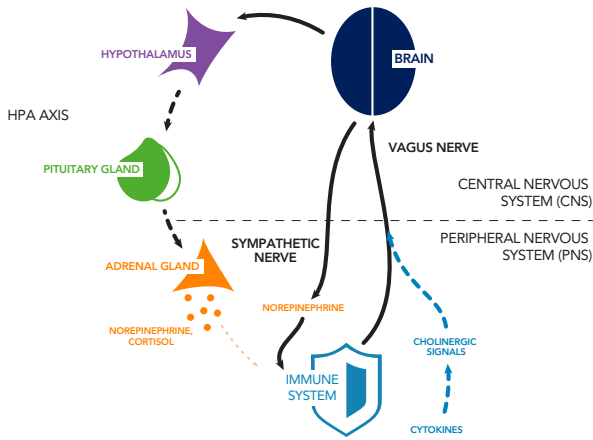
## NeuroImmune Response



\*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 the immune system<sup>5,6\*</sup>

1. When the immune system is active, vagal and sensory nerve receptors are engaged by immune messengers like IL-1 $\beta$ <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. Sympathetic nerves release neurotransmitters (NT) to restore local net anti-inflammatory balance while supporting non-specific immune processes<sup>5</sup>
  - Norepineprine 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 norepineprine production\*

Figure 2. Impacting Immune Reactions

	Vitamin C	Vitamin D	Beta glucan	Zinc	Black elderberry	Ginkgo biloba
Support balance in the face of microbes*	✓	✓	✓		✓	
Oxidative stress related immune damage*	✓			✓	✓	✓
Focused inflammatory cascade*	✓	✓				✓

## Ingredients blended to make an impact

Along with its Key Ingredients, ImmuWell also provides:

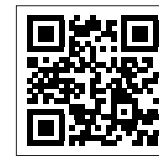
- **Vitamin C:** Protects immune cells from oxidative damage, aids in cell migration to inflammation sites, and improves elimination of foreign material<sup>15\*</sup>
- **Zinc:** Supports glutathione synthesis, modulates detoxification pathways, and acts as a cofactor for antioxidant enzymes<sup>16,17\*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

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

Research has shown daily intake of:

- Beta glucan (250 mg), vitamin C (1,000 mg), and zinc (13.3 mg) can support respiratory health<sup>18-20\*</sup>
- *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](http://www.neuroscienceinc.com/products/avipaxin)

Item Number	Available Sizes	Serving Size
20066	90 Capsules	3 Capsules

All NeuroScience products undergo rigorous third-party testing to guarantee the absence of heavy metals and microbes

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7. Chan G, et al. *J Hematol Oncol*. 2009;2:25.
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