

# Immune $\mu$ Biomic

Immune Strength and Regulation Probiotic

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# Immune $\mu$ Biomic

## Immune Strength and Regulation Probiotic

An immune system probiotic containing Alimentum Labs' patent-pending exclusive keystone species of probiotics. This unique blend of probiotics promote and regulate healthy immune responses while correcting the gut-immune axis.



Immunity



Gut



Whole Body



Brain

## Health Indications

- Regulate Autoimmune Reactions
- Resolve Persistent and Recurrent Infections
- Promotes The Body's Process of Elimination and Drainage
- Supports a Diverse Microbiome
- Reduce Inflammation
- Address Inflammatory Conditions
- Promotes Post-Antibiotic Recolonization

## Instructions For Use

Take 1-2 capsules daily for 30 days with or without food. Refrigerate after opening to optimize shelf life.

We highly recommend Immune  $\mu$ Biomic be paired with its synergistic prebiotic formula, Immune Superfood, for unparalleled results and remarkable health benefits.

\*\*Individual needs may vary; please consult your practitioner before altering the prescribed doses or protocols.

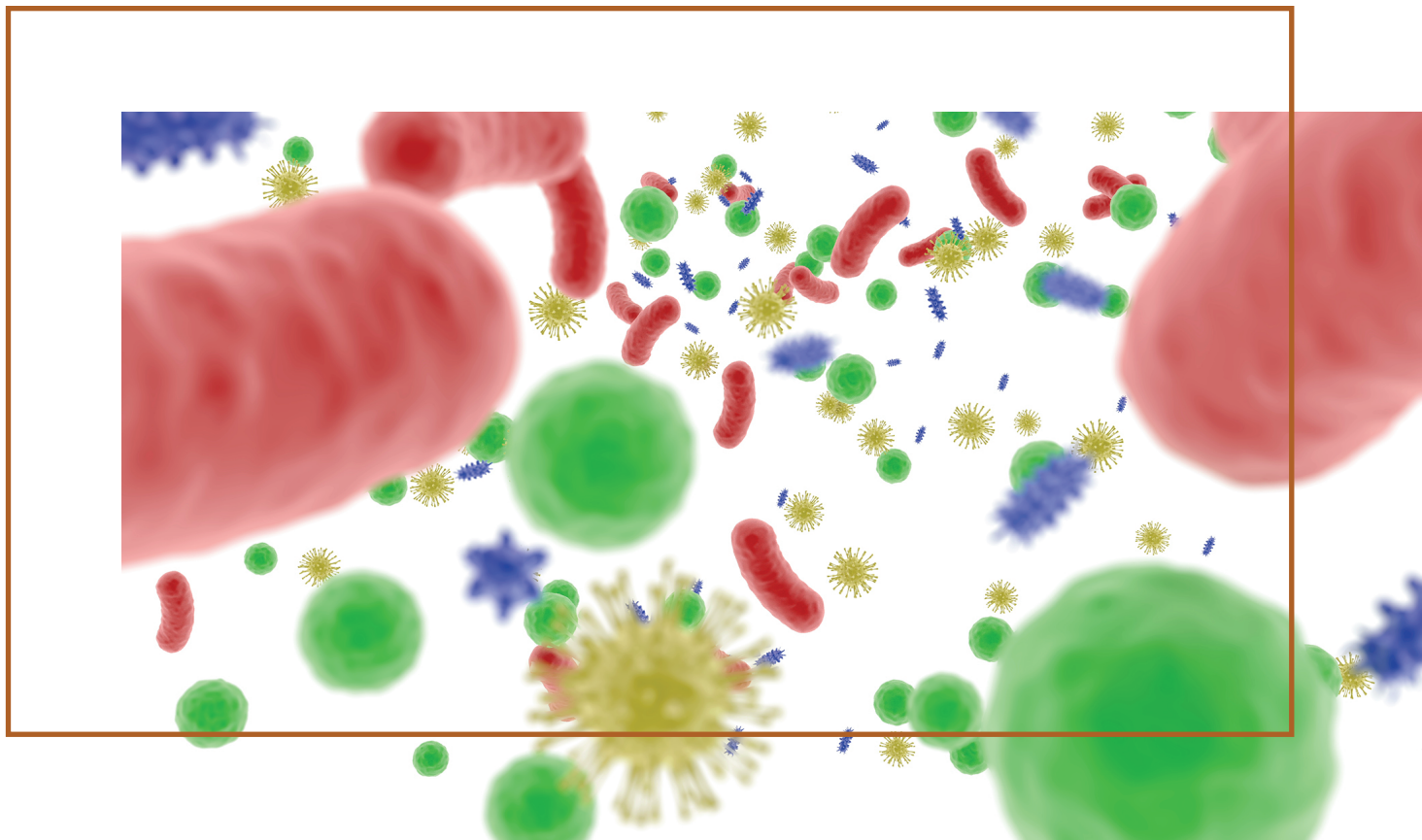
## Product Description

The gut-immune axis is responsible for maintaining a delicate balance between immune activation and immune tolerance. In order to prevent chronic inflammation and autoimmune reactions, it must be able to respond to potential threats, like pathogens, through activation while also having a tolerance for harmless substances, such as food and beneficial commensal bacteria. Given its direct role in regulating the immune system, the gut-immune axis should be a primary focus when addressing immune health.<sup>1</sup>

Several common lifestyle and environmental factors directly harm the gut-immune axis, leading to imbalances in gut health and immune function, and thereby increasing autoimmune complications or infections. These factors include environmental toxins in the food system, a poor diet filled with processed food and artificial sweeteners, genetics, stress, poor quality or lack of sleep, sedentary lifestyle, and various medications such as antibiotics, NSAIDs, and proton pump inhibitors.<sup>2</sup>



Probiotics are renowned for fostering gut well-being, with certain strains being especially adept at fortifying immune defenses. Immune  $\mu$ Biomic features a variety of these distinctive, research-backed probiotic strains that contribute to essential aspects of immune system wellness. Crafted after 15 years of research on human microbiomes and with the help of multiple microbiology facilities, Immune  $\mu$ Biomic introduces keystone species, or next-generation probiotics, that are exclusive to Alimentum Labs. Through the patent-pending probiotic blend that includes our unique probiotic species, which can only be found within our formulations, Immune  $\mu$ Biomic helps take control of persistent autoimmune conditions and pathogenic infections by modulating and correcting the gut-immune axis.



## Key Elements & Features of Immune $\mu$ Biomic

### Autoimmune Regulation

Probiotics play a vital role in autoimmune regulation through mechanisms such as immune modulation, inflammation regulation, maintenance of gut barrier integrity, induction of tolerance, and the regulation of regulatory T cells. By promoting a balanced immune response, preventing the gut barrier from being compromised, and supporting immune tolerance, Immune  $\mu$ Biomic contributes to mitigating autoimmune reactions.

### Fights Difficult, Lingering, and Recurrent Infections

The microbiome's beneficial bacteria defend the body by competing with pathogens, producing antimicrobials, and modulating the immune system. This prevents the persistence of infectious agents and enhances the immune system's ability to respond effectively, contributing to overall defense against infections.

### Manages Food Sensitivities

Thorough regulation of immune responses and enzyme metabolites produced by probiotics allows Immune  $\mu$ Biomic to reduce unnecessary responses from hard-to-digest foods. It also helps alleviate other intolerances of the digestive system.

## Manages Cellular Health and Metabolism

A healthy immune system efficiently regulates cellular replication, ensuring that the body's cells function correctly. The immune system's ability to recognize and eliminate abnormal cells, combined with its ability to modulate immune responses, ensures comprehensive protection against both internal threats and external infectious agents.

## Develops and Manages a Healthy Microbiome

Promotes a diverse and balanced gut microbiome, which plays a major role in overall health. Imbalances in intestinal microbes can cause dysbiosis and dysfunction in various gut axes (gut-brain, gut-skin, gut-lung, gut-immune, gut-hormone, etc.). These axes rely on a well-balanced microbiome and the health of functioning, undisturbed intestinal cells. Immune  $\mu$ Biomic specifically targets the gut-immune axis, offering a plethora of health benefits.



## Exclusive Probiotic Spotlight

This formulation features our own exclusively researched and developed probiotics, known as keystone species. These species are directly related to adverse health effects when missing or lacking in human microbiomes. Through 15 years of research, Alimentum Labs has carefully selected specialized probiotic species, each offering unique benefits for the gut-immune axis and overall immunity.

The nature of our exclusive keystone strains of probiotics grants them a distinctive advantage as they colonize specific niches within the gut where they are intended to thrive. Once established, these anaerobic bacteria tend to persist long-term, providing benefits that set them apart from traditional probiotics.

### ***Roseburia hominis* MS06**

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*Roseburia hominis*, a beneficial gut microbe, plays a vital role in our immune system.<sup>3</sup> It produces key compounds like butyrate and propionate that support gut health and interact with our genes to regulate immunity.<sup>3-5</sup> Specifically, *R. hominis* enhances genes that affect both the immune functions of the gut and immune cells, including antimicrobial peptides, gut barrier function, toll-like receptors (TLR) signaling, and T-cell biology (CD4, CD25, FoxP3).<sup>5</sup> This microbe also contributes to melatonin production, aiding digestion and reducing visceral sensitivity.<sup>4</sup> However, in conditions such as irritable bowel syndrome and inflammatory bowel diseases, it is often found in lower amounts.<sup>4</sup> When in balance, *R. hominis* strengthens our gut and immune system.<sup>6</sup>

### ***Bacteroides uniformis*** MS03

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*Bacteroides uniformis*, a beneficial gut microbe,<sup>7-9</sup> plays a crucial role in producing immune-supporting compounds like butyrate and  $\gamma$ -aminobutyric acid (GABA) through the breakdown of dietary fibers.<sup>9</sup> These substances have the remarkable ability to reduce inflammation, fine-tune immune cell activity, and bolster the integrity of the gut lining.<sup>9</sup> Early research suggests that *B. uniformis* can ameliorate immunological dysfunctions and metabolic disorders.<sup>10-12</sup> Excitingly, recent studies have unveiled its capacity to foster the growth of other highly beneficial gut bacteria, such as *Christensenella minuta* and *Akkermansia muciniphila*, further fortifying our immune health.<sup>8</sup>

### ***Collinsella aerofaciens*** MS05

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*Collinsella aerofaciens* is a gut microbe that is often lacking in the human intestinal microbiome. Low populations of this microbe in the gut have been associated with irritable bowel syndrome (IBS) and other symptoms of gastrointestinal distress.<sup>13</sup>

### ***Bacteroides ovatus*** MS02

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*Bacteroides ovatus* is a beneficial gut microbe with a unique ability to downregulate receptors that certain viruses use to enter our cells.<sup>14</sup> This makes it a key player in our immune defenses. Additionally, it offers other benefits like boosting the production of mucosal antibodies and producing compounds like butyrate and GABA, which can effectively calm an overactive immune system.<sup>15-17</sup> As a result, it is suggested that *B. ovatus* may help alleviate symptoms of inflammatory bowel diseases.<sup>18</sup>



### ***Anaerostipes caccae*** MS01

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This bacterium is an early colonizer of the human microbiome, beginning in infancy.<sup>19</sup> It has been shown to prevent allergic responses to food items like cow's milk.<sup>20</sup> *Anaerostipes caccae* is known as a powerful cross-feeder and co-partner in helping protect the mucin layer and thereby, the gut.<sup>19,21,22</sup> With the help of another powerful and beneficial bacterium within the microbiome known as *Akkermansia muciniphila*, *A. caccae* helps upregulate the expression of mucin-degrading genes that are involved in healing the gut lining and fortifying the immune system.<sup>22</sup>



## How Immune $\mu$ Biomic Works

Scientific research has predominantly focused on understanding the influence of probiotics on immune health to uncover substantial knowledge about how specific probiotic species strongly modulate our immune system. Several strains included in the Immune  $\mu$ Biomic formula have been found to be distinctly symbiotic to humans, offering unparalleled immune benefits and enhanced gut diversity. This formula represents the culmination of ongoing laboratory investigations into the viability of immune-supportive probiotics. In addition to our exclusive strains described above, our unique formula also includes the following indispensable probiotics.



## Key Ingredients

### ***Lactiplantibacillus plantarum***

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*L. plantarum* possesses the capacity to store essential nutrients, vitamins, and antioxidants. Scientific studies have demonstrated that this species also possesses the unique capability to generate L-Lysine, a valuable amino acid.<sup>23</sup>

### ***Pediococcus pentosaceus***

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*P. pentosaceus* produces bacteriocins to inhibit pathogens while preserving the natural flora to help keep the immune-gut axis functioning correctly.<sup>24</sup>

### ***Lacticaseibacillus rhamnosus* GG**

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*L. rhamnosus* exhibits exceptional resilience to the acidic conditions typically seen in the stomach and digestive tract.<sup>25</sup> It also aids in displacing undesired organisms within the intestines, promoting overall intestinal health while supporting immune regulation and strength.<sup>26,27</sup>

### ***Limosilactobacillus reuteri***

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The consumption of *L. reuteri* has been shown to colonize the stomach, duodenum, and ileum in healthy individuals. This colonization is often associated with significant beneficial modifications of the immune responses within the gastrointestinal lining.<sup>28-31</sup>

### ***Bifidobacterium lactis* HN019**

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*B. lactis* enhances individuals' immune response by boosting the function of immune cells that engulf and destroy pathogens.<sup>32,33</sup>

### ***Bifidobacterium bifidum* SL BB47**

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*B. bifidum* is an important microorganism that is often found deficient in the gastrointestinal tracts of adults.<sup>34,35</sup> It produces essential B vitamins,<sup>36</sup> contributes to maintaining intestinal balance,<sup>37-41</sup> and aids in the digestion of dairy products. This can potentially help decrease immune responses to certain foods.

***Lactobacillus  
helveticus* L10**

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*L. helveticus* promotes defense mechanisms against pathogens,<sup>42,43</sup> regulates immune responses,<sup>43,44</sup> and influences the composition of the intestinal microbiota in aging populations.

***Streptococcus  
thermophilus* St-21**

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*S. thermophilus* is reported to be clinically effective in supporting the reduction of uremic toxins within the intestines.<sup>45</sup> It is also reported to alleviate intestinal bacterial dysbiosis within the lumen, while enhancing and regulating immune function.<sup>46</sup>

***Bifidobacterium  
longum***

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*B. longum* promotes a robust digestive tract and aids in protecting the microbiome against colonization of undesirable species.<sup>47-51</sup>

***Limosilactobacillus  
fermentum* SBS-1**

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*L. fermentum* promotes skin health through educating the immune system and regulating normal inflammatory responses.<sup>52</sup>

***Lacticaseibacillus  
paracasei* Lpc-37**

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*L. paracasei* generates biosurfactants capable of disrupting the attachment of pathogenic biofilms to tissues.<sup>53</sup>

***Bifidobacterium  
infantis* SL BI211**

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*B. infantis* has been shown to interact with immune cells in the gut, such as dendritic cells and T cells. These interactions can promote a balanced immune response and help the immune system distinguish between harmful pathogens and beneficial microbes.<sup>54</sup>

***Lactobacillus pentosus*  
LPSO1**

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*L. pentosus* supports the maintenance and integrity of the intestinal barrier by boosting the amount of another highly beneficial bacteria called *Akkermansia muciniphila*.<sup>55</sup> Both *L. pentosus* and *A. muciniphila* produce metabolites that are beneficial for our overall well-being.

***Saccharomyces  
boulardii***

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*S. boulardii* is a crucial yeast probiotic that helps balance intestinal lining integrity, increase the diversity of intestinal microbes, enhance the barrier function of the mucosa, and modulate immune responses.<sup>56,57</sup>

***Roseburia hominis*  
MS06**

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Exclusive to Alimentum Labs, *Roseburia hominis* works to support the immune system by directly interacting with genes that protect and enhance the gut-immune axis.<sup>5</sup>

***Bacteroides uniformis*  
MS03**

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Exclusive to Alimentum Labs, *B. uniformis* produces compounds that support the immune system and soothe inflammation in the gut,<sup>9</sup> while also encouraging the growth of other beneficial gut microbes.<sup>8</sup>

***Collinsella aerofaciens*  
MS05**

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Exclusive to Alimentum Labs, *C. aerofaciens* has been shown to have greatly reduced population levels in people with symptoms of IBS or other gastrointestinal distress.<sup>13</sup>

***Bacteroides ovatus*  
MS02**

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Exclusive to Alimentum Labs, *B. ovatus* is able to directly limit the ability of viruses to infect human cells<sup>14</sup> and promotes the production of mucosal antibodies in the gut.<sup>15,16</sup>

***Anaerostipes caccae*  
MS01**

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Exclusive to Alimentum Labs, *A. caccae* helps prevent allergic responses to cow's milk<sup>20</sup> and interacts with genes that help heal the gut lining.<sup>22</sup>

## Warnings/Contraindications

When used as directed there are no known contraindications for Immune  $\mu$ Biomic.

\*\*It is always recommended that you consult your practitioner prior to adding any new supplement to your regimen if you are pregnant, breastfeeding, experiencing renal failure, undergoing an organ transplant(s), managing diabetes with insulin, or are taking medication(s) for any pre-existing conditions.\*\*

## Safety

All ingredients are tested before use for:

- Pathogenic microbial contaminants
- Heavy metals and/or chemical contaminants
- Correct genus and species of probiotic microbes
- Purity

## Additional Information

- Gluten Free
- Dairy Free
- Vegan
- No Sugar
- Non-GMO
- cGMP Facility
- No Egg



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