

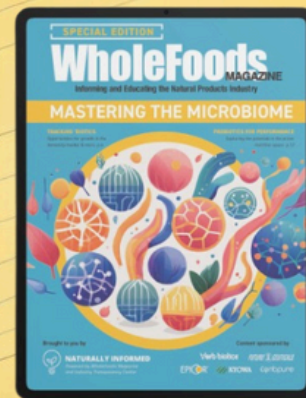
SPECIAL EDITION

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MICROBIOME
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MASTERING
THE
MICROBIOME



IMMUNE HEALTH AND THE MICROBIOME: POSTBIOTICS FOR YEAR-ROUND SUPPORT

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As we all continue to navigate the post-pandemic world, it's crucial to understand the shifting desires of consumers. And for today's supplement consumer, immune health and digestive health go hand-in-hand. A recent survey from Kyowa Hakko shows that in 2023, 81% of U.S. supplement consumers said they looked for ways to boost their digestive health, with diet, activity, and supplements. In terms of postbiotics, nearly half (49%) believe postbiotics are effective for supporting immune health, and 70% agree that their microbiome is important to their overall health.

But the connection between digestive health and immune health isn't just mere perception among consumer groups—it's rooted in science, too. The gut microbiome is a vast and complex ecosystem. Integral not only for proper digestive function, the microbiome is also in continuous dialogue with our immune cells, working together to defend our body's health. Remarkably, 70% of our immune system is embedded within our gut (1).

The vast majority of our immune cells collect in organized lymphoid tissues within the gastrointestinal tract known as the GALT (gut-associated lymphoid tissues). Made up of several types of lymphoid tissues, including Peyer's patches in the small intestine, the GALT contains the largest reservoir of immune cells in the entire body (2). The bacteria in our gut then signals to the immune cells collected in the nearby GALT indicating that they are indeed friendly, while also helping them recognize unfriendly microbes that need to be eliminated. In return, the immune system helps maintain a stable community of microbiota, keeping the microbiome in balance (3).

WHERE DO POSTBIOTICS COME INTO PLAY?

As discussed earlier, the microbiome is incredibly complex, and it contains a collection of trillions of microscopic organisms: bacteria. And while we often think of bacteria and other microorganisms as bad or harmful, the good bacteria in our gut has a crucial role for the immune system. This bacteria exists in three forms: pro-, pre- and postbiotics.

Prebiotics are nutrients, such as dietary fibers and minerals, that feed and promote the growth of the healthy bacteria living in the gut. In other words, prebiotics are the food probiotics need to thrive.



Found in fermented foods, such as yogurt, kefir and kombucha, as well as dietary supplements, probiotics are live microorganisms that impart health benefits to the body when consumed. Probiotics help maintain a healthy population of microbiota living in the gut, which positively affects digestion and overall well-being.

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Unlike probiotics, postbiotics are not living microorganisms, but nonviable microbial cells that provide health-promoting properties when consumed. According to the International Scientific Association for Probiotics and Prebiotics (ISAPP), postbiotics are defined as preparation of inanimate microorganisms that confers a health benefit to the host. Postbiotics are also nonviable, making them more stable, convenient and flexible than live bacteria and yeasts. They also don't require refrigeration or special handling, which leads to an easier shipping and storage process and ease of integration into product formulations.

A CUTTING-EDGE POSTBIOTIC INGREDIENT

Fortunately, there is one postbiotic ingredient that addresses many of consumers' need-states and desires surrounding the connection between immune and digestive health. IMMUSE™ is a clinically researched lactic acid bacteria developed by Kirin Holdings Co., Ltd.

IMMUSE™ is a cutting edge ingredient—it's the first of its kind to activate pDCs (plasmacytoid dendritic cells). PDCs are a rare subset of immune cell types that act as leaders of the immune system. The acronym can be easily remembered as the cells that Protect, Defend, and Communicate – or pDC. Once they are activated, they recruit, stimulate, and organize other key immune cell types across both the innate and adaptive immune systems. Importantly, this activity activates interferon (IFN- α) production, which is critical to immune health. IMMUSE™ also has demonstrated the ability to directly stimulate key immune cells situated in the GALT's Peyer's patches, which is another avenue of a more comprehensive immune support that traditional immune health supplements.

As an award-winning postbiotic, IMMUSE™ has won many relevant accolades. In 2023, it was named the inaugural recipient of the “Ingredient of the Year: Microbiome Modulation” category in the esteemed annual awards by popular publication, NutraIngredients-USA—also finishing as a finalist in the same category for 2024. And in 2021, IMMUSE™ received the Frost & Sullivan 2021 North American New Product Innovator Award for its clinical studies and exceedingly high manufacturing standards.

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