



Experts Get Brand-specific About Immune and Seasonal Health

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Nutrition Industry Executive asked our panel of experts the following question: “Briefly summarize, in a few paragraphs, the research behind your main immune-health product or ingredient.”

Here’s what they had to say:

“Decades ago, Ingredients by Nature began exploring citrus extract standardization and now provides the broadest variety of citrus bioflavonoids available. Our branded Brewster Bioflavonoids are drawn from multiple citrus sources—orange, lemon, lime, tangerine and grapefruit—with each source contributing to and supporting aspects of immune health.

“Citrus bioflavonoids have been shown to convey systemic antioxidant support. A unique aspect to these ingredients is the synergistic properties found when paired with vitamin C. When consumed together, there is a complementary outcome, enhancing the effectiveness of both ingredients beyond what each can do on its own. The combined antioxidant properties provide a boost to the

body's ability to protect itself from free radicals. Strengthened antioxidant defense systems provide much-needed support to immune health.

"Research has also shown that citrus flavonoids provide powerful support for a healthy inflammation response. This, in turn, helps to encourage a balanced, not over-active, immune response in the presence of seasonal challenges. As seen in our study on the lemon-flavonoid blend Eriomin, the citrus flavonoid approach to properly maintaining inflammation levels is multi-functional because it also helps support the antioxidant defense mechanisms to function properly."

-Rob Brewster, President, Ingredients by Nature, Montclair, CA, <http://ingredientsbynature.com>

"Our versatile prebiotic ingredient Bimuno is designed to support overall bodily health by supporting a diverse gut microbiome, and we have been publishing human clinical trials on its efficacy since 2008.

"The research journey started at the University of Reading by demonstrating how beneficial endogenous bacteria can be selectively grown in the colon by the galactooligosaccharides (GOS) mixture contained in Bimuno, in a replicable way.

"Bimuno is shown to beneficially affect the human gut microbiome through its selective stimulation of bifidobacteria. The proliferation of good bacteria in the gut has been repeatedly demonstrated in studies in healthy adult populations (Depeint, 2008; Vulevic, 2008 & 2015), IBS cohort (Silk, 2009) and obese adults (Vulevic, 2013). Human research demonstrated the effect of bifidobacteria and associated metabolites on the gut microbiome and the resulting influence on digestive health, immune function and cognitive health.

"The significant benefits to the immune system from the modulation of the gut microbiome, by Bimuno, have also been demonstrated measured by improvements in immunity activity. In addition, a study on a population with a phenotype of asthma, Exercise-Induced Bronchoconstriction (EIB), found an improvement in respiratory function and immune biomarkers. (Williams, 2016).

"A study on overweight adults found that supplementation of Bimuno significantly lowered levels of general markers of inflammation including improvement in a biomarker of gut barrier function. This supports the role of Bimuno in beneficially modulating the immune system."

-Melanie Bulger, Nutrition & Regulatory Manager, Clasado Biosciences, Reading, U.K., <https://clasado.com>

"In a randomized double-blind clinical trial conducted on a group of healthy active adult population, it was found that when taken daily over 90 days, Kemin's BetaVia, an algae fermentate containing >50 percent beta-glucans, participants reported significantly fewer number of sick days, upper respiratory tract infections (URTI) symptoms, symptoms days, episode of URTI infections, and lower global severity of symptoms on BetaVia Complete (Evans et al., Nutrients, 11 (12) 2019).

"In addition, in another study in mice, BetaVia was found to have gut health benefits by protecting gut integrity (unpublished data). Further, in an in vitro study, BetaVia promoted growth of common probiotic bacteria such as lactobacillus and bifidobacterium. Overall, BetaVia is a great ingredient for dietary supplement and food/beverage applications."

-Kim Edwards, Global Product Manager, Kemin Human Nutrition and Health, Des Moines, IA, www.kemin.com

“ParActin, our patented extract of *Andrographis paniculata*, is standardized to andrographolide, 14 deoxyandrographolide and neoandrographolide.

“In a randomized, double-blind placebo-controlled study, 109 healthy students were given either 25 mg per day of ParActin or placebo for three months. During the first month, there was no significant change between the groups, evaluated for the presence or absence of common colds. However, during months two and three, there was significantly less incidence of common cold in the ParActin group (30 percent) compared to the placebo group (62 percent).

“In another randomized, double-blind placebo-controlled study of 158 adults already with common cold symptoms, 200 mg of ParActin per day for five days were shown to significantly decrease the intensity of symptoms compared to the placebo group.

“According to Dr. Hancke, at a low dosage (50 mg), ParActin stimulates natural defense mechanisms by activating NF-kB, thereby increases the production of cytokines such as interferon gamma and interleukin-2 to help boost the immune response in winter. Once an individual begins to feel under the weather, 300 mg of ParActin inhibits NF-kB, thereby reducing the production of pro-inflammatory cytokines such as interferon gamma and interleukin-2 to help produce a better sense of wellness...

“...Further, ParActin protects immune function via its adaptogenic abilities. The aim of one study was to pharmacologically evaluate the beneficial effect of andrographolide on stress-induced thermoregulatory and other physiological responses in mice for 11 consecutive days. Observations revealed that, like *A. paniculata* extracts, pure andrographolide also possess adaptogenic properties. The study authors also noted that their observations showed that andrographolide is functionally a diazepam-like desensitizer of biological mechanisms, and processes involved in stress trigger thermoregulatory and other physiological responses.”

-Annie Eng, CEO, HP Ingredients, Bradenton, FL, <https://hpingredients.com>

“EpiCor, a whole food fermentate, is a postbiotic ingredient clinically shown to support the immune system and beneficially modulate the gut microbiota. Backed by over 75 years of fermentation expertise, EpiCor is made through a natural, proprietary process that creates a unique fingerprint of metabolites.

“EpiCor has a great discovery story. Our parent company has 75 years of fermentation experience, which is how it developed the specialized method for beneficial fermentation. About 15 years ago, it noticed that the factory workers who worked directly with the fermentation ingredient it produced for animals seemed healthier. Based on this hunch, it decided to develop a new product for humans. After years of research and development, EpiCor was created.

“EpiCor is a postbiotic ingredient with eight human clinical studies that show it supports the immune system and modulates the gut microbiota. In two randomized double-blind, placebo controlled human clinical trials, EpiCor supported immune strength during the winter. To show balance, the same product was shown in a randomized double-blind placebo-controlled trial to provide immune support during the spring. As this clinical research demonstrates, when taken daily, EpiCor has been shown to be a safe and effective way to help support the immune system.”

-Justin Green, PhD, Director of Scientific Affairs, Embria Health Sciences, Ankeny, IA, www.embriahealth.com

“Many of our ingredients offer multiple benefits that help support overall wellness, including immune health. Specifically, Tinofend, our *Tinospora cordifolia* extract, as well as Restoridyn, our proprietary blend of curcuminoids and ellagitannins, are two exciting solutions in our diverse portfolio.

“Tinofend offers significant potential for immune health and allergy support through traditional applications. Through the regulation of immune mediators and stimulation of macrophages, an important part of the body’s immune response, Tinofend is able to target traditional applications with clinical substantiation. Clinical studies on Tinofend show beneficial attributes for symptom improvement in people experiencing allergic rhinitis.

“Restoridyn offers benefits for those leading an active lifestyle looking for additional health support for recovery and overall maintained health. Regular or high intensity physical activity can lead to damage within the body, increasing oxidative stress. Restoridyn is shown to support the immune response and aid recovery through improvements to inflammation and oxidative stress in clinical settings.

“Research shows Pomella, our *Punica granatum* extract, offers potential gut-health benefits through hydrolysis of antioxidant ellagitannins in the gut indicating that ingestion of Pomella may stimulate the growth of *Akkermansia muciniphila*, thus acting as a prebiotic. This may support ongoing research into the gut’s role in supporting immune health and wellness.

Other offerings with potential immune support benefits include Longvida Optimized Curcumin, ashwagandha, amla (*Emblica officinalis*), Gingerize (*Zingiber officinale*), Bacognize (*Bacopa monnieri*), holy basil, *Andrographis*, Wokvel (*Boswellia serrata*), and Thymocid (*Nigella sativa*).”

-Leisha Jenkins, Marketing Associate, Verdure Sciences, Noblesville, IN, <https://vs-corp.com>

“Our main immune health product is ImmunoSEB, a powerful immunomodulatory formulation of enzymes and probiotics to aid in immune response. It is shown to stimulate cell-mediated immunity by upregulating Th-1 cytokine production, stimulating immunomodulator T-lymphocytes, immunoglobulin IgG production and increasing drug penetration. In in vitro research, ImmunoSEB demonstrates antibacterial and antifungal properties.

“A synergy is observed when ImmunoSEB was paired with commonly used antibiotics such as ampicillin, penicillin, ceftazidime and ciprofloxacin, showing a reduction in the minimum inhibitory concentrations (MIC) of the antibiotics. In vivo animal studies demonstrated that ImmunoSEB acted as an immunomodulator in rats, thereby enhancing immune response. Immunity markers such as T-lymphocytes and immunoglobulin IgG showed statistically significant elevation.

“In addition, ProbioSEB CSC3, a probiotic and prebiotic blend of three bacilli species and fructooligosachharides (FOS) with significant immune health supporting capabilities. Unlike many probiotics, these soil-based organisms are spore-forming, and thereby able to withstand the harsh pH conditions of the stomach, allowing the probiotics to retain their potency when they reach the gut. *B. clausii* is notable for its antibiotic resistance, allowing it to support a healthy microbiome and immune system during and after antibiotic use. *B. subtilis* produces two powerful bacteriocins which naturally inhibit many “bad” bacteria in the gut, thereby promoting the growth of beneficial bacteria.

“And *B. coagulans* is notable for its ability to improve gastric health, restoring healthy immune function in people with severe diarrhea or irritable bowel syndrome. Two recent clinical studies demonstrated the benefits of our *Bacillus coagulans* strain (LBSC) in alleviating these two conditions. In severe diarrhea afflicted patients, all of the patients taking *B. coagulans* had complete recovery of diarrhea and abdominal pain after 5 days, compared to only 47% recovery for the

placebo. After only two days, 80 percent of the LBSC-treated patients had full recovery. In the second study, people with irritable bowel syndrome taking *B. coagulans* LBSC exhibited statistically significant improvement versus placebo in all parameters, including bloating, cramping, diarrhea/constipation, abdominal pain, vomiting, nausea, headache and mental anxiety.

“Gut health is critical to healthy immune function.”

-Thomas Laaman, PhD, Director of Technical Sales, Specialty Enzymes, Chino, CA, <http://specialtyenzymes.com>

“Asthma and allergy—like hay fever or seasonal allergy—are widespread. In fact, over 50 million Americans suffer from allergies like these every year. Allergic rhinitis, often called hay fever, is very common, and causes sneezing, stuffy nose, runny nose, watery eyes and itchy nose or eyes.

“Well, spring might have met its match with L-92. Produced from sterilized cells of a proprietary strain of lactic-acid bacterium *Lactobacillus acidophilus*, L-92 is a patented, powdered food ingredient that has been studied in both adults and children.

“Maypro’s GRAS (generally recognized as safe)-affirmed L-92 ingredient has been shown in placebo-controlled human clinical research to: promote dermal health, moisture and comfort; provide seasonal support for the health of the nasal mucosa; and provide seasonal support for eye comfort.

“L-92 is Non-GMO (genetically modified organism)-Project-Verified and is also self-affirmed GRAS for use in nutritional supplements. It is suitable for seasonal support, immune support and skin-care formulations.”

-Dan Lifton, President, Maypro Ventures, Purchase, NY, www.maypro.com

“Parry Organic Spirulina is the first and only spirulina in the world to hold the standard of U.S. Pharmacopeia (USP)-Verified for quality and purity. Delivering immune support really needs to start with quality and purity, since those are foundational to priming the immune system and delivering strong support. Delivering this quality proposition means consistency in production – all the time. Parry Organic Spirulina delivers industry-leading levels of protein, phytonutrients and vitamins and minerals, all important for fueling the immune system. Add to that the fact that Parry Organic Spirulina has the highest level of enrichment of phycocyanin—a powerful antioxidant—and you have the basis of a powerful immune ingredient.

“Research with Parry Organic Spirulina has shown the important anti-oxidant and anti-inflammatory effects on the immune system, key to immune system balance and maintaining immune system activity. Add to this immune system benefit the nutritional value in protein and vitamins, minerals and phytonutrients and you have something more than an immune ingredient. You have a tool that the body can use to drive support, maintenance, and even repair of the immune system for health and wellness, and of course healthy aging.”

-Umasudhan Pal, President & CEO, Valensa International, Eustis, FL, <https://valensa.com>

“Lonza’s ResistAid arabinogalactan is a proprietary naturally-derived, sustainably produced ingredient, extracted from North American Larch trees using a gentle, water-based method, with all bi-products repurposed in other capacities. It has been clinically demonstrated to potentially support natural immune function.

“At Lonza, we invest in randomized, double-blind, placebo-controlled clinical trials with statistically relevant group sizes, the results of which are published in peer-reviewed, high impact journals. Like every product in our portfolio, the ResistAid brand’s proposed immune system benefits are cumulatively supported by several studies conducted under these stringent conditions. Based on two randomized double-blind placebo controlled human trials, the ResistAid ingredient has been shown to further support the immune system when added to vaccines. In addition, healthy subjects consuming 4.5 g of ResistAid arabinogalactan experienced fewer symptoms of respiratory tract infections compared to placebo.

To summarize, the ResistAid ingredient is a soluble polysaccharide which supports immune health by different MOAs: indirect action through modulation of the gut microbiota, and directly through support of the immune system. These mechanisms have been demonstrated to support increased beneficial immune cell populations and also to help modulate and deliver an appropriate immune response.”

-Aparna Parikh, Head of Global Marketing Communications, Lonza, Morristown, NJ,
<https://lonza.com>

“Our patented probiotic strain LPLDL isn’t specifically an immune health product, however it certainly plays a large part in the overall immune eco-system.

“LPLDL harnesses the microbiome-liver axis to positively impact upon the cholesterol levels using the gut’s microbiome. It has a mechanism of action that increases the breakdown rate of bile salt molecules in the intestine, leading the liver to synthesize additional bile salt using cholesterol from the blood.

“LPLDL was found to deliver these benefits following a randomized, double-blind, and placebo-controlled human study:

- Lowered total cholesterol (TC) by up to 36.7 percent and LDL cholesterol by up to 13.9 percent
- Increased HDL cholesterol (HDL-C) by up to 4.5 percent
- Lowered systolic blood pressure by 5.1 percent

As the ingredient helps to maintain healthy cholesterol levels, the body can focus on other parts of the immune system to help restore equilibrium.

In addition, LPLDL has been determined as GRAS by an independent Expert GRAS panel in the United States – a unique element, as very few strains have achieved this status.”

-Steve Prescott, CEO, ProBiotix Health (subsidiary of York, England-based OptiBiotix), Seattle, WA, <http://optibiotix.com>

“Chaga is a medicinal mushroom with reputed effects in immunomodulation. The product in raw form has been used in traditional medicine for prophylactic health for centuries in the Arctic regions of the World. Eevia Health manufactures a standardized product with high concentrations of the bioactive components extracted from wild-crafted chaga. Together with our science partners, we are studying the possible beneficial efficacy of wild-crafted chaga extract polysaccharides and polyphenols for leukocyte proliferation and activity.

“Chaga polysaccharides have demonstrated immunomodulating efficacy. Recent research produced data from in-vitro and ex-vivo studies on both human and mice primary leukocytes. The Eevia Health studies show that our chaga extract influences the cytokine responses already in minuscule concentrations, but particularly in controlling the activity of white blood cells.

“Furthermore, we have evidence that depending on the dosage, chaga polysaccharides can, for example, significantly activate natural killer cell killing activity both in vitro and ex vivo. At the same time, the extract does not affect the proliferation rate of the NK (natural killer) cells. NK cell activity is an essential first line of defense in responses of innate immunity, highlighting the importance of being able to modulate this activity in the immune health category of products.

“With increased dosages, the extract returns neutrophils from an induced inflammatory state to a normal state. As a consequence, the extract removes all redundant activity of neutrophils, which is often the underlying problem in low-grade inflammation. Chaga polysaccharides are also reducing the expression of CD proteins in cell membranes of neutrophils during this, confirming efficacy not related to the pure chemical anti-oxidative activity.”

-Stein Ulve, Eevia Health, Seinjoki, Finland, Eevia Health, <https://eeviahealth.com>

-Joseph Weiss, President, Nutrition 21, Purchase, NY, <https://nutrition21.com>

“One of Nutrition 21’s main immune health ingredients is Zinmax (zinc picolinate). Zinmax has been shown to have enhanced absorption compared to other forms of zinc.

“Researchers at John Bastyr College of Naturopathic Medicine compared the absorption of zinc picolinate to zinc citrate and zinc gluconate in a double-blind, placebo-controlled, four-period crossover trial in healthy volunteers. Zinc erythrocyte, urine and hair levels rose significantly only after zinc picolinate administration. The enhanced absorption of zinc picolinate was also shown in a study in patients with chronic obstructive pulmonary disease and in a study in subjects with taste disorders (associated with zinc deficiency).

“Zinc picolinate was originally discovered by researchers at the USDA (U.S. Department of Agriculture) looking at why zinc was better absorbed by infants given human breast milk over cow’s milk. The USDA researchers found that the enhanced bioavailability was due to the presence of a natural substance in human milk, called picolinic acid, which facilitates zinc absorption from the intestine. Zinmax zinc picolinate is now manufactured based on those initial findings.

“Zinc has been linked to a number of immune-enhancing benefits. A study of particular interest is an in vitro study conducted by researchers at Leiden University Medical Center and the University of North Carolina, that showed that increasing intracellular zinc concentrations impairs the replication of SARS-coronavirus (SARS-CoV), as well as a variety of other RNA viruses, including poliovirus and influenza virus.

“With there being so much data supporting the benefits of zinc in immune health, many formulators are choosing Zinmax zinc picolinate because of its enhanced absorption demonstrated in multiple clinical trials, the origins of zinc picolinate discovered in human milk, and its long history of safe use.”

-Joseph Weiss, President, Nutrition 21, Purchase, NY, <https://nutrition21.com>