

IMMUNITY

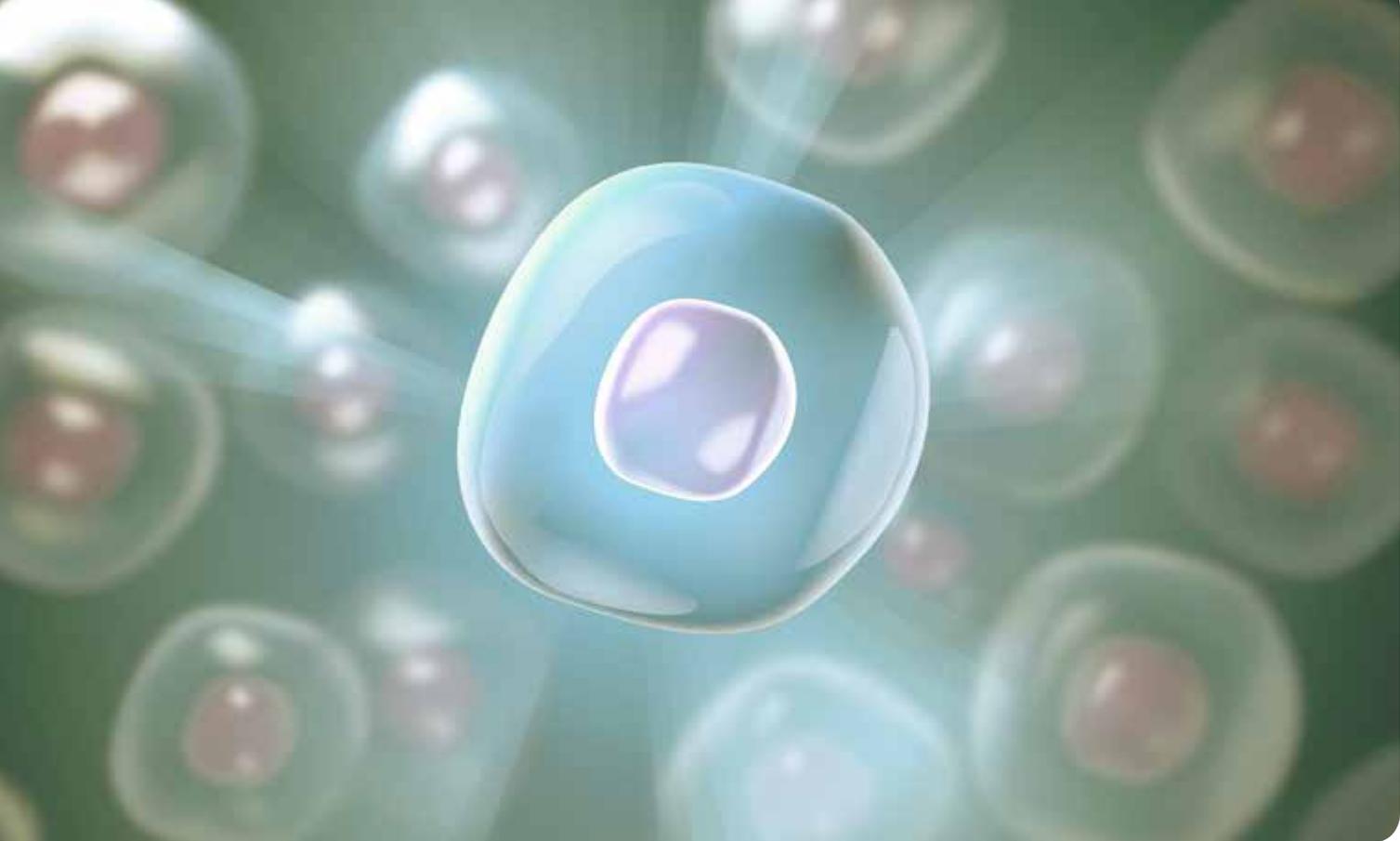


RESEARCH-BASED
YEAR-ROUND SUPPORT



WHOLE FOOD NUTRIENT SOLUTIONS
STANDARDPROCESS.COM





The Best Immune System Defense Is Year-Round Support

By supporting the immune system each day all year long, the body is well-equipped to take on the challenges of everyday life.

People often think about the immune system only when experiencing a challenge. The best defense, however, is to support the immune system each day, all year long. By doing so, the body is well-equipped to take on the challenges of everyday life—like travel, exposure to seasonal and environmental insults, and stress.



The immune system is made up of many components that can be supported by targeted nutrition.

A Complex System Needing Multifaceted Support

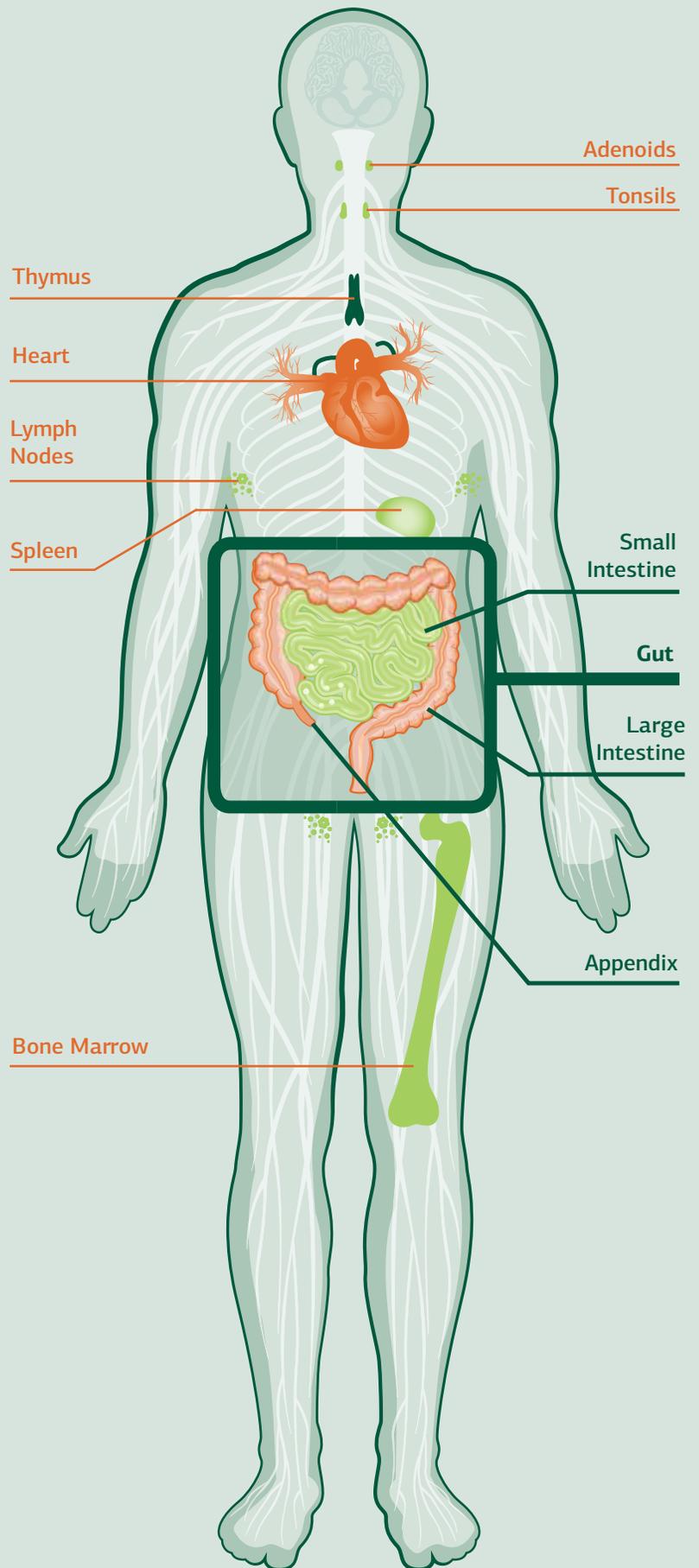
The immune system is made up of many components, including the spleen, thymus, lymph nodes, and lymphatic tissue in the gut. Targeted nutrition can support immune system function through general support and specific action involving natural killer cells, B cells, macrophage cells, immune effector cells, and secretory immunoglobulin A and immunoglobulin E.

Gut Health and Immune System Health Are Strongly Connected

The gut is home to a majority of the body's rich and complex immune system. The immune tissue in the gut gets a first "taste" at potential challenges coming through the gastrointestinal (GI) tract.

Probiotic strains can influence the immune system by modulating cell signals and abundance of cell types while interacting with receptors in the gut tissue. In cell-culture models, some strains have been demonstrated to interact with specific receptors, initiating a complex signaling cascade that can stimulate release of selected cytokines, important proteins involved in modulating immune balance. These results are strain specific and need to be confirmed in vivo.^{1*}

Probiotics have also been shown to affect immunoglobulin production, antibody response, and other cellular immune responses. Strain-specific results need confirmation in humans.^{2*}



1. Bron P, van Baarken P, Kleerebezem M. 2011. Emerging molecular insights into the interaction between probiotics and the host intestinal mucosa. *Nat Rev Microbiol.* 10(1):66-78.
2. Kozakova H, Schwarzer M, Tuckova L, Srutkova D, Czarnowska E, Rosiak I, Hudcovic T, Schabussova I, Hermanova P, Zakostelska Z, Aleksandrak-Piekarczyk T, Koryszewska-Baginska A, Tlaskalova-Hogenova H, Cukrowska B. 2015. Colonization of germ-free mice with a mixture of three lactobacillus strains enhances the integrity of gut mucosa and ameliorates allergic sensitization. *Cell Mol Immunol.* Epub ahead of print.

***These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.**

Arm Your Patients With Clinically Effective, Research-Supported Tools

Epimune Complex   | Two capsules daily for short- and long-term support*

4050 90 capsules

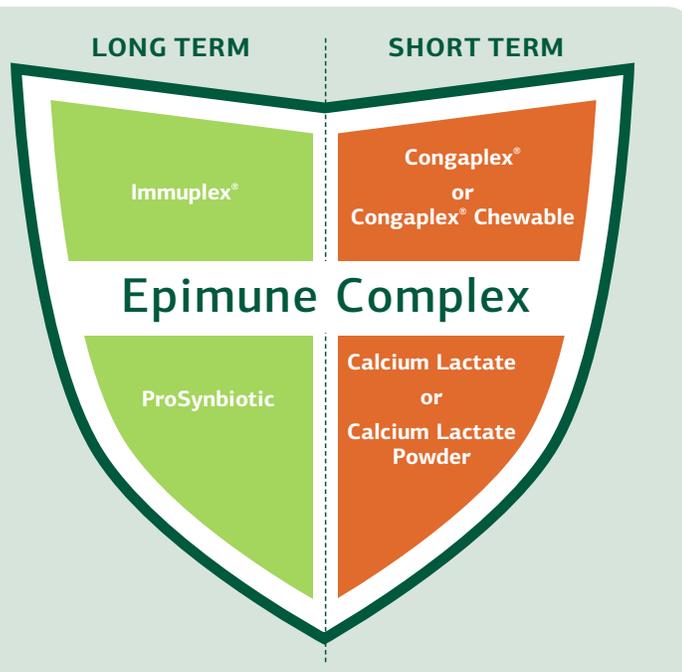
Epimune Complex is a unique blend of research-supported ingredients that affect multiple pathways of immune activity to provide comprehensive support to the immune system.*



- Epimune Complex includes EpiCor®, which has been shown to support a healthy mucosal barrier, as indicated by an increase of secretory immunoglobulin A in clinical studies.^{1,2}
- In laboratory studies, EpiCor had a prebiotic effect, stimulating the growth of lactobacilli, which are considered to be beneficial gut bacteria.^{3,4*}

Epimune Complex includes:

- **EpiCor®**: contains a variety of active compounds such as beta glucans, mannan-oligosaccharides, nucleotides, amino acids, and vitamins
- **Mushroom powders**: whole food powders of the mycelium of *Grifola frondosa* (maitake) and *Coriolus versicolor* (turkey tail) mushrooms
- **MaitakeGold 404®**: contains polysaccharides found in the mycelium of maitake mushrooms
- **Calcium lactate**: highly digestible calcium that supports numerous actions in the body (involved in cell signaling)
- **Zinc rice chelate**: highly bioavailable and needed throughout the body (plays a structural role in proteins and helps protect cell membranes while influencing cell communication, hormone release, and cell death, among other actions)
- **Acerola**: a rich source of vitamin C, which supports the immune system through peripheral means (supports mucosa, cell function, skin, blood vessels, and other tissue via its role in collagen synthesis and antioxidant activity; may help re-form other vitamins, like vitamin E)*



Maitake mushroom



Acerola berries

 This product contains less than 20 parts per million per the suggested use listed on each product label.  Vegetarian (lacto-ovo)

1. Sam Possemiers, Iris Pinheiro, An Verhelst, Pieter Van den Abbeele, Lois Maignien, Debby Laukens, Stuart G. Reeves, Larry E. Robinson, Thomas Raas, Yves-Jacques Schneider, Tom Van de Wiele, and Massimo Marzorati. 2013. A dried yeast fermentate selectively modulates both the luminal and mucosal gut microbiota and protects against inflammation, as studied in an integrated in vitro approach. *J Agric Food Chem.* 61, 9380-9392.
2. Marzorati M, Vanhoecke B, De Ryck T, Sadaghian Sadabad M, Pinheiro I, Possemiers S, Van den Abbeele P, Derycke L, Bracke M, Pieters J, Hennebel T, Harmsen HJ, Verstraete W, Van de Wiele T. 2014. The HMI™ module: a new tool to study the Host-Microbiota Interaction in the human gastrointestinal tract in vitro. 14: 133.
3. Jensen G, Patterson K, Barnes J, Schauss A, Beaman R, Reeves S, and Robinson L. 2008. A Double-Blind Placebo-Controlled, Randomized Pilot Study: Consumption of a High-Metabolite Immunogen from Yeast Culture has Beneficial Effects on Erythrocyte Health and Mucosal Immune Protection in Healthy Subjects. *The Open Nutr J.* 2:68-75.
4. Moyad M, Robinson L, Kittelsrud J, Weaver S, Reeves S, Guzman A, and Bubak M. 2009. Immunogenic yeast-based fermentation product reduces allergic rhinitis-induced nasal congestion: a randomized, double-blind controlled trial. *Adv Ther.* 26: 795-804.

EpiCor® is a registered trademark of International Nutrition Company BV, Loosdrecht, the Netherlands.

MaitakeGold 404® is a registered trademark of the Tradeworks Group, Inc. and is protected under U.S. Patent 5,854,404.

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Epimune Complex Research: Effective and Comprehensive Support for Immune System Function

Open-Label Pilot Study

Dosage: Two Epimune Complex capsules per day

25 subjects: 20-57 years of age; 15 men and 10 women; 18 Hispanic/Latino, five Caucasian, two Asian



Results

- Trend increases in salivary immunoglobulin A (IgA)
- Overall increase in multiple immune markers
- Statistically significant increase in red blood cell zinc
- Statistically significant increase in leptin

To assess the effect of Epimune Complex consumption on immune markers, Standard Process designed a 30-day open-label pilot study.*

This study examined how Epimune Complex affects both the white blood cells of the immune system and surrogate markers of their activity.*

Read the full report on the Epimune Complex research at www.standardprocess.com/epimune-complex-research.

Results

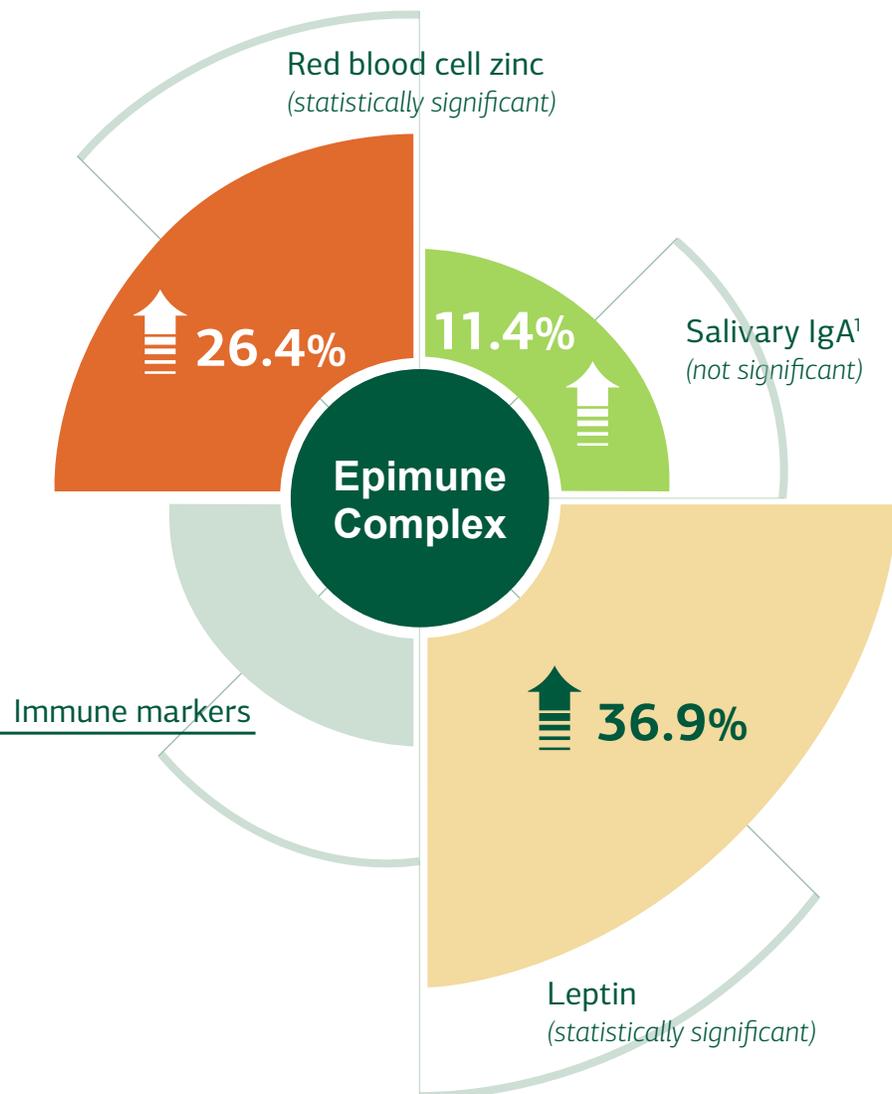
The results excerpted from the unpublished research report are highlighted above.

While an open-label pilot study does not result in clinical recommendations, it provides valuable insight into how Epimune Complex works with the human body's natural immune system response.*



25 participants

Immune markers: To begin to identify exactly how Epimune Complex interacts with the body, this study examined white blood cells and the immune system's communication molecules, cytokines. An overall increase in multiple immune markers throughout the immune system was found. The report states, "The Epimune Complex product appears to increase immune markers in the humoral and cellular immune system.**"



1. This finding is consistent with the results of a study based on one ingredient (EpiCor) where salivary IgA trended up at four weeks and became statistically significant at eight weeks; Jensen et al. 2008. The Open Nutrition Journal, 2:68-75.



Probiotic strains can influence the body's immune system by affecting cell signals, cell types, and cellular receptors in the gut tissue.

Immuplex ^{GF} | Two capsules per meal

4935 40 capsules | 4960 150 capsules

Immuplex blends essential micronutrients and minerals as well as Protomorphogen™ and Cytosol™ extracts to support the immune system. It helps to maintain normal white blood cell activity already within a normal range and support the body's normal inflammatory response function as it relates to periodic challenges like consumption of a high-fat meal or strenuous activity.*



ProSynbiotic ^{GF} | Three capsules per day

7080 90 capsules

ProSynbiotic contains a blend of four research-supported probiotic strains and two prebiotic fibers to promote gut flora and overall intestinal health.*



One of our microbiologists identifying cells that will be used in studies

TABLE 1 **UNIQUE BLEND FOUND IN PROSYNBIOTIC**

Probiotic	<i>Lactobacillus acidophilus</i> (including LA-5®)	The LA-5 strain has been evaluated for its ability to interfere with the communication between other types of bacteria, thus promoting a healthy balance of microbes. The LA-5 strain was also among several other lactobacilli that improved outcomes in subjects with occasional constipation as well as those with lactose tolerance challenges.*
	<i>Lactobacillus paracasei</i> ssp. <i>paracasei</i> (L. casei 431®)	To support the natural gut environment, this strain of lactic-acid-producing bacteria adheres to the intestinal tract and tolerates bile. This strain has been studied in humans and mice for its ability to support the gut during challenges and for its ability to help maintain the body's natural immune system response.*
	<i>Bifidobacterium lactis</i> (BB-12®)	Bifidobacteria are very tolerant of both acidic conditions and environments that contain bile. Bifidobacteria use a range of carbohydrates, including galactooligosaccharides (GOSs), for energy. Bifidobacteria are an important factor for all native microflora, and their numbers vary depending on lifestyle, diet, exercise, and age. Oral bifidobacteria have been shown to temporarily colonize the gut, competing with other bacteria to effectively support the natural bacterial balance.*
	<i>Saccharomyces cerevisiae</i> var. <i>boulardii</i>	Historically, this microbe was used to support normal stool consistency. In the gut, this yeast supports the growth of some bacteria and inhibits others through competition and environmental modification of the gut.*
Prebiotic	Inulin	Inulin is a complex carbohydrate that can be digested by certain microorganisms providing them with energy. Inulin supports the absorption of calcium and magnesium.*
	Galactooligosaccharides	Research suggests that GOSs are a preferred substrate for BB-12. In mice, GOS supplementation supported the active proteins and cells in the gut mucosa, and increased the amount of short-chain fatty acids and lactate in the gut.*

^{GF} This product contains less than 20 parts per million per the suggested use listed on each product label. ^V Vegetarian (facto-ovo)

LA-5®, BB-12®, and L. casei 431® are registered trademarks of Chr. Hansen, Inc.

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Health care professionals have used Congaplex for more than 50 years and Immuplex for more than 30 years.

Calcium Lactate or Calcium Lactate Powder GF V

Six tablets or one level tablespoon daily

1865	90 tablets	1885	330 tablets	1900	800 tablets
1925	12 oz. (340 g)	Powder			

This formula supports absorption of calcium and magnesium for use by the body, including the immune system. It is important to take calcium lactate every day but especially important when anticipating or experiencing immune system stress.*

A 2009 research study found that T cells (white blood cells that help protect the body by recognizing foreign cells) and B cells (immune cells that produce antibodies when needed) have receptors for calcitonin, which regulates the metabolism of calcium in the body. This suggests that the control of cellular calcium levels may play a role in some immune system functions.^{1*}



Congaplex or Congaplex Chewable

Three capsules/tablets per meal

2900	40 capsules	2925	150 capsules
2930	90 tablets	Chewable	

Congaplex supports the upper respiratory tract and thymus gland and contains ribonucleic acid to help the body build new cells.*

Congaplex contains a combination of key ingredients from Cataplex® A-C, Thymex®, Calcium Lactate, and Ribonucleic Acid (RNA) to provide short-term support for the immune system.*



Congaplex and Immuplex Study

In a 2009 publication, Standard Process scientists reported that in T cell cultures:

- Immuplex reduced T cell “discussions” and calmed cell signaling.
- Congaplex increased T cell signaling in a dose-dependent manner.
- In the mix of human white blood cells, both supplements reacted similarly, suggesting that with the complexity of multiple immune signals, these supplements act in a far more adaptogenic manner.*

In other words, these supplements work with the complex immune system response instead of simply upregulating or downregulating cell signals. Cell culture is a very simplified way to study these effects and comes with serious limitations. But it does provide a starting point for future investigation and interesting hypotheses related to the underlying mechanism of action for Congaplex and Immuplex.*

TABLE 2 Direction of Statistically Significant Change in Cytokine Level After Treatment

Cytokine	Treated With				
	Congaplex®		Immuplex®		
Tumor necrosis fact α		▲		▼	
Interleukin 13					▲
Interleukin 10	▲		▼		
Interleukin 2		▲		▼	
Interleukin 4					
Interleukin 8	▲	▲	▲	▲	
Granulocyte-macrophage colony-stimulating factor		▲	▼	▼	
Interferon γ					▼

CEM | Jurkat

Immature, immortalized T cell lines

CEM | Jurkat | PBMCs

Peripheral blood mononuclear cells

For the complete research report, see:

www.standardprocess.com/about-us/research-development

Go to standardprocess.com, place an order, and support your patients’ immune systems!

1. Cafforio P, De Matteo M, Brunetti A, Dammacco F, Silvestris F. Functional expression of the calcitonin receptor by human T and B cells. Hum Immunol. 2009;70(9):678-685.

Quality

From Seed to Supplement®



“Whole food nutrition begins with sun, water, and fertile soil.”
—Dr. Royal Lee

Our Commitment to Quality

Since 1929, Standard Process has followed the whole food philosophy of our founder, Dr. Royal Lee. Many of our supplements contain unique combinations of whole food and other ingredients. Many of our raw materials are harvested from our certified organic farm. Our quality control measures assure product excellence in every stage, from farming through shipping.

Our Respect for the Earth

Our organic farming practices ensure that the quality of our farmland is maintained for generations to come. We use environmentally safe farming, manufacturing, and business practices.

Our Promise to You

Our goal is to create supplements that provide nutrition as close to nature as possible. We're proud that our products help health care professionals transform lives.

Distributed Through Health Care Professionals

The informed guidance of a health care professional is vital to the optimal use of nutritional and herbal supplements.



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