



A Natural Ingredient from the Leader in Immune Enhancement

Clinically proven to enhance the immune system

More than \$250 million in Research & Development

Patent-protected

GRAS-approved, Kosher, nonallergenic and GMO-free

Available in both soluble and insoluble powder

Wellmune WGP® is a natural ingredient that is clinically proven to enhance key immune responses and promote health, wellness and vitality. Designed for functional foods and beverages and dietary supplements, Wellmune WGP recently was honored with the prestigious IFT Innovation Award at the Institute of Food Technologists 2007 Annual Meeting and Expo in Chicago. Wellmune WGP was one of six award recipients recognized for outstanding innovation in products, ingredients, applications, instruments, technology and services.

Ingredient Benefits

Wellmune WGP is the most effective and safest immune health ingredient available today.

Safety. Wellmune WGP is safe to consume daily. It is Generally Recognized as Safe (GRAS) under the provisions of U.S. Food and Drug Administration 21CFR170.35. Wellmune WGP is also GMO-free, Kosher, nonallergenic.

Efficacy. Wellmune WGP is designed to engage the body's natural defenses to protect against a wide range of challenges. Clinical (human) and preclinical studies demonstrate its safety and effectiveness. Wellmune WGP significantly increases:

- The percent of active immune cells available to defend the body.
- Presence of key biomarkers in the blood that regulate the body's immune response.
- The mobilization of innate immune cells to the site of a challenge, enabling faster recognition of an intruder.
- Engulfing and killing (phagocytosis) of foreign challenges, resulting in a more complete immune response.

Backed by Credible Research. The safety and efficacy of Wellmune WGP is supported by numerous studies published in peer-reviewed science and medical journals. Biothera and its research collaborators have invested more than \$250 million in research and development. Our research collaborations include leading medical and government institutions, including the Brown Cancer Center at the University of Louisville, the National Institute of Health, The Mayo Clinic and the U.S. and Canadian Departments of Defense. No other company has the depth and breadth of immune health research and expertise.



"A significant innovation representing the culmination of many years of research and study, that has led to a functional ingredient that could have significant public health benefits to improve the human immune response. The practical application of this compound has been through the incorporation in a soluble form for foods and beverages. The submission has significant scientific merit and is extremely well presented."

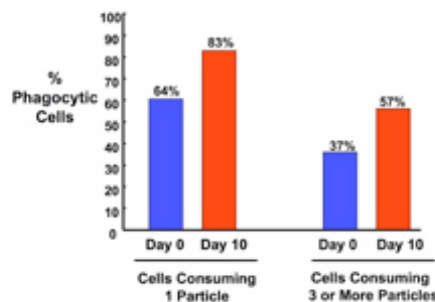
-- IFT Innovation Award
Judge

Patented. Protected by Biothera's intellectual property portfolio that includes more than 40 U.S. patents and patents pending, plus additional filings in more than 20 countries. Our patents protect the composition, manufacture and application of our ingredients. Secure your supply chain with the only ingredient containing beta 1,3/1,6 gluco polysaccharide that is patented for use in dietary supplements and functional foods and beverages.

Clinical Research

In an independent human clinical study conducted by Biophage Pharma Inc., a leading Canadian biopharmaceutical company, human volunteers were dosed for 10 consecutive days with one 250 milligram-capsule of Wellmune WGP. The subjects were monitored for 30 days during which the following observations were recorded:

- Wellmune WGP was safe and well tolerated, as evidenced by the lack of significant changes in key blood and liver enzymes.
- Wellmune WGP significantly increased phagocytic capacity -- the ability of the innate immune cells to eat and destroy foreign intruders. After 10 days of treatment, Wellmune WGP had increased the percentage of immune cells able to phagocytose one particle from 63.8% to 83.2% ($P < .05$). The number of highly phagocytic cells increased from 37.3% to more than 50% ($P < .05$).⁶ These results show that taking Wellmune WGP enhanced the human immune system to defend the body against a challenge.



"In many parts of the world, immunity is gaining importance with consumers. Data showed good preliminary evidence that the supplement was strengthening the body's immune response when fighting a challenge. Biothera appears to have carved out good IP space to protect their techniques extracting/producing the carbohydrate."

-- IFT Innovation Award
Judge

Biothera recently completed two larger human studies involving individuals under high levels of physical and/or lifestyle stress. Both double blind/placebo controlled research studies demonstrated that Wellmune WGP significantly reduced the

effects of immune suppression as measured by a number of physical and psychological measures.

The results of both studies have been accepted for presentation by the American College of Clinical Nutrition at its annual conference this fall, followed by publication in a peer-reviewed scientific journal.

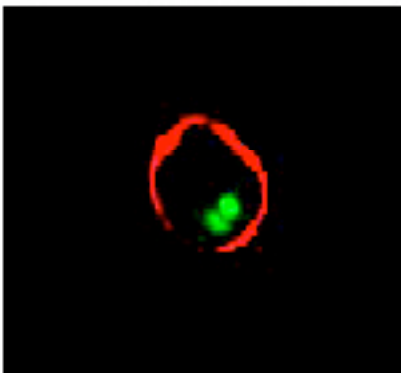
Proof that Wellmune WGP Works

Wellmune WGP is the only specialty ingredient that is scientifically proven to enhance the immune system, as evidenced by research both demonstrating its mechanism of action in the body and measuring significant changes in immune response. In fact, the science supporting the efficacy of Wellmune WGP is overwhelming.

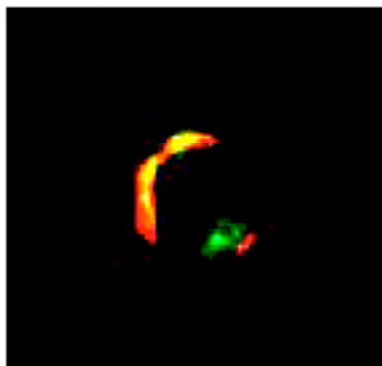
Mechanism of Action

The July 2004 issue of *The Journal of Immunology*, the official publication of the American Association of Immunologists, reported the mechanism by which Wellmune WGP activates the immune system. The discovery was made using fluorescently labeled Wellmune WGP that could be tracked at a cellular level inside test subjects. (See figure below.)

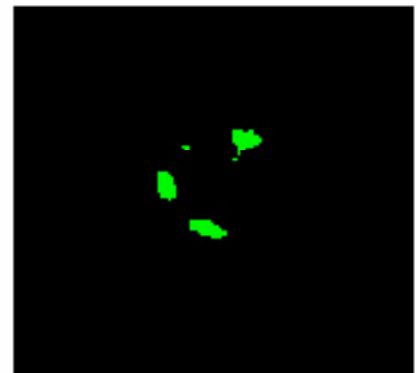
Research demonstrates the unique mechanism of action of Wellmune WGP primes key immune cells.



Day 1
Wellmune WGP ingested by macrophages



Day 3
Macrophages degrade Wellmune WGP and release tiny fragments.



Day 5
The Wellmune WGP fragments bind to neutrophils, priming them for activity.

Once in the body, Wellmune WGP binds to specific innate immune cells and enhances the body's immune response against a wide range of challenges.

Wellmune WGP is taken up into the body through the Peyer's Patches, specialized regions in the small intestines. It is then engulfed or phagocytosed by immune cells called macrophages that degrade Wellmune WGP into smaller fragments that are secreted and bound to neutrophils, the most abundant immune cell in the body. Neutrophils circulate throughout the body and are the primary cells involved in an immune response. When these cells are bound with the Wellmune WGP fragments, they become primed and are better able to kill foreign challenges. These primed neutrophils migrate to the site of challenges with enhanced killing capability.

Nutritional Dosage Guidelines

Biothera has established a recommended daily human dosage of approximately 2 milligrams of Wellmune WGP per kilogram of body weight. This dosage is based on results of human clinical studies.

Manufacturing

Biothera uses an ISO 9002 manufacturing facility to purify beta 1,3/1,6 gluco polysaccharides from other carbohydrates, lipids and mannan proteins in yeast that research shows may trigger an allergic reaction or inflammatory bowel flares in certain individuals.

The patented, proprietary manufacturing process for Wellmune WGP includes four essential steps:

1. Growth of primary yeast *Saccharomyces cerevisiae*.
2. Isolation of the cell wall of *Saccharomyces cerevisiae*.
3. Acid and Alkali wash steps to separate the gluco polysaccharide from other cell wall materials (mannoprotein removal in particular).
4. If soluble form, solubilization of the gluco polysaccharide and separation from insoluble portions of the matrix.



"Great concept. Too good to be true? I would take it."

-- IFT Innovation Award Judge

About Biothera, the immune health company

Biothera is a biotechnology company dedicated to developing novel compounds that improve immune health. We are developing a natural gluco polysaccharide that targets and directs innate immune system function.

Biothera's Healthcare Group manufactures and markets patented, GRAS ingredients for functional food, nutritional supplement, cosmetic and animal nutrition products worldwide.

Biothera also has a Pharmaceutical Group focused primarily on cancer drug development using the same patented technology platform. The company has initiated multiple FDA clinical trials.

Biothera was founded in 1997 is based in Eagan, Minnesota, USA.

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