

BETA is the NEW Alpha!

BY LISA SCHOFIELD

Naturally occurring molecules are like diamonds; they exist in rough matrices, and when extracted to glow on their own, are powerfully efficacious for specific areas of human health. Beta glucans are a perfect example. These naturally occurring polysaccharides that are found *in situ* in fungi, some plants and certain bacteria, have extraordinary positive influence in healthy immune function.

More than 1,500 scientific papers have investigated the roles, safety and efficacy of beta glucan for more than 40 years. Researchers from the National

Cancer Institute, Harvard Medical School, Departments of Defense and Agriculture and Tulane University, just to name a few, have studied this powerhouse intensively and, overall, research on beta glucans have focused on nearly every health condition. Beta glucan has been shown to modify and support the immune system during instances of potential health threats. Beta glucan, which is considered to be an external immunomodulator, is attracted to white blood cells (macrophages), potentiating their activity and keeping them alert and ready to roll.

The conditions that beta glucan supplements and functional food/beverage

fortification can benefit are several, obesity/weight management, cholesterol/heart health and stress.

Cun Zhuang, PhD, vice president of research and development for Maitake Products (East Rutherford, NJ), explained that there are four types of beta glucans existing in nature: beta-1,2, beta-1,3, beta-1,4 and beta-1,6-glucans. "It has been reported that the bioactivities of beta glucans are closely related to their chemical structures, side chains, molecular weight, etc., and beta-1,3-glucan with beta-1,6 side chains and beta-1,6-glucan with beta-1,3 side chains show remarkable immune-enhancing activities."

Nutraceuticals

Beta glucans, observed Hartley Pond, technical sales specialist of Futureceuticals (Momence, IL), have been shown to support cardiovascular health, modulate glucose and insulin levels as well as to improve immunity. The beta glucans found in both oat and barley bran (the beta glucans in which Futureceuticals specializes) are 1-3, 1-4 chains of beta glucans that Pond said have been demonstrated in studies to reduce cholesterol and reduce the risk of coronary heart disease. "The beta glucans found in mushrooms are 1-3, 1-6 chains and have been shown to improve immune response," he said. "Additionally, the beta glucans found in oat and particularly barley bran have been shown to reduce glucose and insulin levels in diabetic people."

Of further note, the beta glucans from oat and barley bran have been part of extensive research at the USDA's Agricultural Research Service for control of cholesterol. Observed Pond, "We see a new interest in healthy carbohydrates in the post-Atkin's world of nutrition. Complex carbohydrates contain vital soluble and insoluble fiber and are a great source of slow burn energy." Similarly, Viscofiber®, from Natraceutical Canada, Inc. (Edmonton, Alberta), a highly viscous beta glucan derived from oat and barley cell walls, has been shown in studies to improve glycemic response, improve cholesterol ratio and to increase satiety onset.

Stress is a known factor that disrupts and degrades the function and quality response of the immune system. David Walsh, vice president of communications for Biothera (Eagan, MN), asserted that physical and psychological stress can weaken the immune system and render an individual more susceptible to the health challenges typically faced. Biothera has conducted several clinical studies to determine the ability of Wellmune WGP and its other ingredients to protect individuals from stress-related health challenges. The research has focused on marathoners, high-stress individuals, the general population and, most recently, wildland firefighters.

Beta Bounty

For manufacturers of foods, beverages and dietary supplements, there are several viable and qualitative raw material

beta glucans available for new products.

FutureCeuticals manufactures patented oat and barley bran compounds designed by the US Department of Agriculture (USDA). Nutrim and Calorie Control Trim are produced from oat bran through a patented mechanical shearing process. This solvent-less extraction process allows it to concentrate oat soluble fiber and beta glucans from 10 percent up to 55 percent, the company said. BarleyTrim is made from barley bran and uses the same process. They are offered in conventional and organic.

Unlike insoluble fiber that passes through the intestinal tract as bulk, soluble fiber (beta glucan) can interact with other body processes to produce a variety of health benefits such as improved cholesterol, improved glycemic response, glucose management and increase satiety for weight loss formulations

"The Trim line provides a high-tech approach to foods from the heartland," Pond commented. A recent controlled clinical trial conducted by the Agricultural Research Service of the USDA showed that BarleyTrim was significantly more effective than resistant starch in reducing glucose and insulin levels in diabetic people. Additionally, a recent controlled clinical trial using

Nutrim Oat Bran in bread showed not only a significant reduction in total cholesterol, but also significant weight loss in the Nutrim group over the control group.

Nutrim, Calorie Control Trim and BarleyTrim all qualify for a strong FDA health claim for reducing cholesterol and the risk of coronary heart disease at the 0.75g per serving level of soluble fiber/beta-glucan. The Nutrim and Calorie Control Trim products are used in a wide range of meal replacement products. The Calorie Control-Trim is featured in LA Weight Loss products. The Nutrim is used in products like the Shape Works "Cookies and Cream."

Biothera's Wellmune WGP®, which was introduced at IFT last year and won a 2007 IFT Innovation Award, is manufactured using a unique, proprietary strain of baker's yeast that has been selected to produce gluco polysaccharide with the intended immune support benefits. It is Generally Recognized As Safe (GRAS) under the provisions of Food and Drug Administration (FDA) 21CFR170.35; it is also kosher and GMO-free. The compound, said Walsh, has 40 US patents and patents pending, plus additional filings in more than 20 countries.

Biothera's studies have been conducted at such institutions as James Graham Brown Cancer Center at the University of Louisville, the US National Institute of Health, The Mayo Clinic and the US and Canadian Departments of Defense, using this patented and proprietary strain. Results have shown that the beta-glucan ingredient increases the percent of active immune cells available to work, mobilization of innate immune cells to the site of a challenge, enabling faster recognition of an intruder; and inducing phagocytosis (killing) of foreign challenges, resulting in a more complete immune response.

Walsh explained that Wellmune WGP has a completely different mechanism of action on the immune system than do many other immune-targeted supplements; Wellmune WGP does not stimulate or boost the immune system. Immune boosters temporarily increase and stimulate number of certain white blood cells and should only be taken over a short period of time without

(Continued on page 55)

Nutraceuticals

(Continued from page 44)

harming the immune system. Rather, Wellmune WGP is an immune modulating (priming) compound, which makes the existing immune cells "battle ready" without stimulation so when they encounter a foreign challenge they more quickly engage and destroy.

Viscofiber "is a breakthrough oat soluble fiber," said Kristina Williams, vice president of marketing and sales for Natraceutical Canada, Inc. Viscofiber, a GRAS-affirmed, multi-functional ingredient suitable for functional food and dietary supplements, has an enhanced concentration of soluble fiber—up to 12 times more than oat bran. "Concentrated soluble fibers, such as Viscofiber, have opened up the ability to add health benefits to volume restricted applications," she said.

Williams explained that to achieve multiple health benefits viscosity is an important variable. Unlike insoluble fiber that passes through the intestinal tract as bulk, soluble fiber (beta glucan) can interact with other body processes to produce a variety of health benefits such as improved cholesterol, improved

glycemic response, glucose management and increased satiety for weight loss formulations. To achieve these health benefits it is important that the soluble fiber is viscous, i.e. forms a soft gel in the stomach (the fiber combines with water in the stomach and forms into a gel). "The FDA has recognized that the viscosity formation is a key property for the physiological effects of consuming soluble fiber. Not all soluble fibers are viscous, and currently there is only one high concentrate, high viscosity beta glucan ingredient on the market, Viscofiber," she said. "Viscofiber's high concentration in combination with its optimum viscosity results in less ingredient necessary to achieve effectiveness while having minimal impact on taste."

The suite of D-fraction products from Maitake Products contains a standardized maitake mushroom extract that contains a bioactive protein-bound beta glucan (proteoglycan). Recent research has demonstrated that the bioactivities of the proteoglycan are more potent than those of beta glucans extracted from other mushrooms or baker's yeast. Maitake Products, for more than a

decade, has had one of the top branded lines of maitake-derived beta glucan supplements, such as: a standard version of D-fraction for everyday immune maintenance (Grifron Maitake D-Fraction), a more potent form called Grifron-PRO Maitake D-Fraction and the new Grifron-PRO Maitake D-Fraction in a highly concentrated tablet, which contains four times more proteoglycan per tablet compared to Grifron Maitake D-fraction capsule. Maitake D-Fraction raw material is available in the different potencies for other manufacturers.

Overall, immune health, especially in today's increasingly challenging environment and lifestyle, is the key to good health. Beta glucan is not only a premier choice for any immune-support supplement or food, it also has other benefits that millions seek—cholesterol maintenance and weight control. Quite simply, Beta is the New Alpha! **NIE**

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- Natraceutical Canada, (780) 436-6169
- Van Druen Farms/Futureceuticals, (888) 472-3545

Healthy Harvest Returns to Long Beach

Natural products retailers in the West will gather once again in Long Beach for the annual Healthy Harvest Show Sept. 26-28.

The event is the official trade-show and convention of Natural Products Association West and draws attendees from the Southwestern states, Hawaii and California.

Attendance doubled from the previous year despite wildfires that singed Southern California during the 2007 event at the Long Beach Convention Center.

Dan McSweeney, president of TLC Tradeshow Productions which organizes the event, predicted a strong turnout and more exhibitors than any

previous year.

Long Beach is in close proximity to the largest concentration of natural products retailers in the nation, said McSweeney.

"Most of our exhibitors from last year are returning after having an excellent show in 2007," added Ann Tisserand, trade show manager.

"The show's move to Long Beach really had a positive impact on retailer attendance last year," said Pierce Sioussat, president of Bioforce USA who called it one of his company's best regional tradeshow.

The NPA national and regional shows are the major source of funding for the association's political advocacy at the national and state levels.



For more information about the 2008 Healthy Harvest show, contact Ann Tisserand or Sam Jones at (805) 646-4246, visit www.healthyharvestshow.com or e-mail AnnT@healthyharvestshow.com.

