

New Research on Biothera Beta Glucans is Published in *Nature*

EAGAN, MN — April 27, 2011 — A new study published today as the cover story in the journal *Nature* features Biothera’s beta glucans and new discoveries about how these unique immunomodulating compounds prime the innate immune system to protect the body.

This research confirmed that not all beta glucans are alike. Researchers led by David Underhill, Ph.D. demonstrated that beta glucan size and molecular structure is critical to receptor binding and the resulting innate immune cell response. Dr. Underhill and his research team found that specific beta glucan structures bind to a particular receptor (Dectin-1) while other beta glucans structures did not.



“This research demonstrates that the structure of beta glucans matters,” said William Grossman, M.D., Ph.D., Biothera senior vice president of Research & Development. “Even slight molecular differences in beta glucans affect the signaling pathways used to induce different killing mechanisms. These data expand on our previous research showing that some of our other beta glucan structures bind to CR3, inducing separate and unique mechanisms.”

The study shows that Dectin-1 distinguishes between direct microbial contact and detection of microbes at a distance, a distinction that enables effective microbial killing responses. When bound to Biothera’s Wellmune WGP®, Dectin-1 signaling primed immune cells for phagocytosis, a mechanism used to recognize and destroy pathogens.

“This research was possible because of Biothera’s capability to isolate, modify and characterize these beta glucan compounds,” said Dr. Underhill, associate professor, IBD and Immunobiology Research Institute, Cedars-Sinai Medical Center.

Biothera is a U.S. biotechnology company that is pioneering beta glucan research. The company has developed glucans as both pharmaceutical applications and immune health ingredients for foods, beverages and supplements. The company’s Imprime PGG® is an injectable drug that is currently in a Phase III clinical trial for colorectal cancer and multiple Phase II trials for non small cell lung cancer. Biothera’s Wellmune WGP® is a food-grade, immune-health ingredient for functional foods, beverages and supplements in more than 30 countries.

“We’re pleased to be able to contribute to the growing body of research surrounding beta glucan structures and their relationship to functional mechanisms,” said Don Cox, Ph.D., senior vice president, Biothera Healthcare Research & Development.

The title of the *Nature* paper is “Activation of the Innate Immune Receptor Dectin-1 upon Formation of a ‘Phagocytic Synapse.’” The paper is accessible on the *Nature* website (<http://www.nature.com/nature/journal/v472/n7344/full/nature10071.html>).

About Biothera, the Immune Health Company

Biothera is a biotechnology company dedicated to improving immune health. The company is commercializing its unique technology platform through two business groups. Biothera’s Pharmaceutical Group is conducting multiple clinical trials for the development of an immune modulating drug that mobilizes the innate immune system to fight most types of cancer. The company’s Healthcare Group is a leading provider of natural immune health ingredients for the functional food and beverage, dietary supplement, cosmetic and animal nutrition markets. www.biothera.com.

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