



ImmusanT's Epitope-Specific Immunotherapy for Celiac Disease Informs the Potential of Vaccines Against Other Autoimmune Diseases

Peer-Reviewed Articles Highlight Advances in Understanding Autoimmune Processes

CAMBRIDGE, Mass., April 19, 2013 – In autoimmune disorders such as celiac disease and Type 1 diabetes, the body's immune system attacks its own cells. Current treatments for many autoimmune disorders are limited to immunosuppressants, but researchers are exploring the possibility of using therapeutic vaccines known as antigen-specific immunotherapy. Currently a vaccine that is designed to allow patients with celiac disease to eat gluten (the antigen) is in clinical trials. ImmusanT, the company developing the celiac vaccine, and its research partners are utilizing their expertise in celiac disease as a model to increase understanding of antigen-specific immunotherapy for autoimmune diseases. Recent review articles highlight advances made in designing immunotherapies and new methods for monitoring celiac disease as well as other autoimmune disorders such as Type 1 diabetes.

Authors Bob Anderson and Bana Jabri describe in [Current Opinion in Immunology](#) how identification of pathogenic T cell epitopes (segment of the antigen) and recent initiatives to optimize immune monitoring have facilitated rational vaccine design in human autoimmune diseases.

“Celiac disease is the first opportunity we have had to design and test epitope-specific immunotherapy with a thorough understanding of disease-causing T cell epitopes. This is truly customized immunotherapy for patients with celiac disease according to their genetics and the molecular specificity of their immune response to gluten,” said Bob Anderson, PhD, MBChB, Chief Scientific Officer of ImmusanT.

In a Perspectives article in [Nature Reviews Immunology](#), Drs. Bana Jabri and Ludvig Sollid describe how celiac disease serves as a model to further understand and explore the triggers and drivers of autoimmunity. Celiac disease shares key features with other autoimmune disorders such as susceptibility genes, presence of autoantibodies and destruction of specific cells. By considering MHC (major histocompatibility complex) association, post-translation modifications, the antigen and the tissue, it is possible to design methods that facilitate the identification of potential drivers of autoimmune disease.

“My hope is that the detailed knowledge we have obtained about the pathogenesis of celiac disease can translate into an effective therapy to benefit celiac disease patients. Given the many commonalities between celiac disease and other autoimmune diseases like Type 1 diabetes and rheumatoid arthritis, maybe the experience we gain in celiac disease will eventually benefit patients with other diseases,” said Ludvig M. Sollid, MD, PhD, Director, Centre for Immune Regulation; Professor of Medicine, Department of Immunology, University of Oslo; Consultant, Oslo University Hospital-Rikshospitalet; and member of ImmusanT's Scientific Advisory Board.

“Peptide-specific therapy targets in a specific manner the immune cells at the center of the disease process. Celiac disease provides a unique opportunity to bring peptide-specific therapy to the next level. It is a therapeutic approach that has the potential to prevent and cure disease, without inducing general immunosuppression,” said Bana Jabri, MD, PhD, Director, University of Chicago Celiac Center; Professor, Department of Medicine, Pathology and Pediatrics, University of Chicago; and Senior Scientific Advisor to ImmusanT.

Dr. Jabri is Co-Chair of the [15th International Celiac Disease Symposium](#) to be hosted by the University of Chicago Celiac Disease Center, September 22 -25, 2013. The meeting will bring together the world’s top scientists and physicians to discuss the most recent scientific advances in managing and treating celiac disease and gluten-related disorders. Dr. Sollid will be presenting on celiac disease during the Scientific Session, and Dr. Anderson will be presenting, “Treatments in Celiac Disease, Today and Tomorrow.”

About Nexvax2®

Nexvax2 is an epitope-specific immunotherapy that combines three proprietary peptides that elicit an immune response in patients with celiac disease who carry the immune recognition gene HLA-DQ2, affecting approximately 90% of all celiac patients. In an approach similar to treatments for allergies to cats and dust mites, Nexvax2 is designed to reprogram gluten-specific T cells triggered by the patient’s immune response to the protein. The goal is for Nexvax2 to restore celiac patients’ immune tolerance to gluten, reduce inflammation in the nutrient-absorbing villi that line the small intestine, return the intestine to a healthy state, and allow patients to eat a normal diet.

About Celiac Disease

Celiac disease is an inherited autoimmune disorder that affects the digestive process of the small intestine. When a person with celiac disease consumes gluten, a protein found in wheat, rye and barley, the individual’s immune system responds by triggering T cells to fight the offending proteins, damaging the small intestine and inhibiting the absorption of important nutrients into the body and causing long term side effects.

About ImmusanT, Inc.

ImmusanT is a privately-held biotechnology company focused on restoring tolerance to gluten in celiac disease by harnessing new discoveries in immunology to improve diagnosis and treatment and return patients to a normal diet, good health and improved quality of life. The company is developing Nexvax2®, an epitope-specific immunotherapy for celiac disease, and a companion diagnostic and monitoring tool to improve celiac disease management. ImmusanT’s targeted immunotherapy discovery platform can be applied to a variety of epitope-specific autoimmune diseases. Founded in 2010, ImmusanT is backed by Vatera Healthcare Partners. More information can be found at www.ImmusanT.com.

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