



FOR IMMEDIATE RELEASE

## ***Journal of Autoimmunity Publishes Research Supporting Safety of Oats in the Celiac Diet***

### ***Research Offers Benchmark of T Cell Reactivity by Comparing Side-by-Side Reactions to Barley and Oats in Celiac Disease Patients***

CAMBRIDGE, Mass. — Nov. 6, 2014 — [ImmusanT](#), a company focused on restoring tolerance to gluten and overcoming the need for gluten-free diet in patients with celiac disease, today announced that an article published online in the *Journal of Autoimmunity* details new research describing the immune response in celiac disease when oats are ingested. According to researchers, the vast majority of patients with celiac disease can ingest oats without stimulating an immune response, providing further evidence suggesting exclusion of oats from the diet of patients is generally not necessary. The international team who led the study included ImmusanT's collaborators at the Walter and Eliza Hall Institute (WEHI) of Medical Research in Australia: Melinda Hardy, Ph.D., and head celiac disease research Jason Tye-Din, Ph.D. ImmusanT's chief scientific officer, Bob Anderson, M.D., Ph.D., is the senior author of the manuscript published today.

"This study demonstrates that proteins from barley and oats share the ability to activate a distinct subpopulation of gluten-responsive T cells in celiac disease," commented Dr. Anderson. "However, barley is much more efficient in stimulating the same subset of T cells. This is a noteworthy observation because clinicians have generally assumed in the past that gluten from each of the cereals toxic to celiac patients activates the same pool of gluten-reactive T cells in patients. Our study highlights that eating oats can have immune-activating effects similar to barley, and that future treatments for celiac disease will need to address gluten proteins that may not be present in wheat alone. ImmusanT is proud to contribute to the ongoing efforts to fully characterize the immunologic understanding of celiac disease."

Wheat, rye and barley are well known to contain gluten and cause gastrointestinal (GI) symptoms commonly associated with celiac disease. Oats do not contain gluten but instead are comprised of avenins, which are proteins that are considered to be non-toxic and tolerated by most celiac disease patients (source: The University of Chicago Celiac Disease Center). Despite this common knowledge, "the appropriateness of oats in the gluten-free diet has been pondered for over 20 years," according to the Celiac Support Association (CSA).

"ImmusanT is committed to providing therapeutic and diagnostic solutions to people living with celiac disease. Through these published findings, we have provided the first *in vivo* evidence that although ingestion of oats activates avenin-specific T cells in celiac disease patients, the T cell response is rarely sufficient to reactivate celiac disease in the manner that is seen after patients consume wheat, rye or barley," said Leslie Williams, president and chief executive officer of ImmusanT.

Although ingestion of oats alone rarely causes intestinal damage, one in 12 patients with celiac disease in the study showed elevated frequencies of T cells circulating in blood that respond to avenins. The research shows that while gluten-reactive T cells that respond to oats are commonly found in patients with celiac disease, these T cells are activated at higher rates by eating food that contains barley, as opposed to oats.

"This study shows that the peptides included in Nexvax2 that target wheat, rye and barley gluten-reactive T cells also address T cells responding to avenins, and cover the majority of the immune response in celiac disease," continued Williams.

Nexvax2 is a therapeutic vaccine designed to restore immune tolerance to gluten and allow patients to resume an unrestricted diet. ImmusanT is also developing a toolbox of biomarkers including a proprietary, functional T cell test for use both as a standalone diagnostic for celiac disease and as a monitoring tool for Nexvax2.

Visit the [Journal of Autoimmunity website](#) to access the entire article.

### **About Celiac Disease**

Celiac disease is a T cell-mediated autoimmune-like disease triggered by the ingestion of gluten from wheat, rye and barley in genetically susceptible individuals. A gluten-free diet is the only current medical treatment for this disease. The community prevalence of celiac disease is 0.7 percent in the U.S., but over 80 percent of cases go unrecognized. When a person with celiac disease consumes gluten, 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. With no available drug therapy, the only option for the approximately one percent of the global population that has celiac disease is to eliminate gluten from the diet. Compliance is often challenging, and nearly half the people on the strict elimination diet still have residual damage to their small intestine.

Undiagnosed, celiac disease is a major contributor to poor educational performance and failure to thrive in children. Untreated disease in adults is associated with increased risk of fractures and osteoporosis, problems during pregnancy and birth, short stature, dental enamel hypoplasia, dermatitis, recurrent stomatitis and cancer.

### **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 that aim to improve diagnosis and treatment and return patients to a normal diet, good health and improved quality of life. The company is developing [Nexvax2](#)<sup>®</sup>, a therapeutic vaccine 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 may be found at [www.immusanT.com](http://www.immusanT.com), or follow [ImmusanT](#) on Twitter.

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