



Should Celiacs Eat Oats? Depends on the Oat

Diana Gitig Ph.D.



Diana received her B.A. in Biochemistry from the University of Pennsylvania, and then a Ph.D. in Cell Biology and Genetics from Cornell. Now she is a freelance science writer and editor in White Plains, New York. Her son was diagnosed with celiac disease in 2006, at the age of five, and she has been keeping her family healthy by feeding them gluten free treats ever since.

Celiac.com 03/14/2011 - It is still a matter of controversy whether or not oats are safe for people with celiac disease. The general consensus at this point seems to be that pure oats are safe for most, but not all, people with celiac. Since oats can easily be contaminated with wheat during harvest, storage, or other stages of processing, it has been stressed that the oats be certified as pure. Although the classic 33-amino acid long oligopeptide that acts as the immunogenic stimulus in gliadin had not yet been found in oats, other peptides isolated from oats do activate T-cells isolated from celiac patients. A new study performed in Spain by Isabel Comino et al. suggests that it is not that some celiac patients can't tolerate all oats, but rather that all celiac patients can't tolerate some oats. Their results are reported in the January 2011 issue of *GUT: An International Journal of Gastroenterology and Hepatology*.

Dr. Comina and her colleagues examined nine different cultivars of oats. They exposed each of them to a sensitive monoclonal antibody generated to recognize the toxic 33-mer from gliadin, and also measured if each of the oat varieties could elicit an immune response in peripheral blood mononuclear cells from celiac patients. They wanted to see if they could correlate recognition by the monoclonal antibody to induction of a T-cell response, and found that they certainly could.

The nine varieties of oats segregated neatly into three groups of three varieties each: those for which the antibody had high affinity, low affinity, and no affinity. This affinity was validated by two different experimental methods, so was not an artifact of the technique chosen. When T cells from patients with celiac were exposed to extracts of the oat variety the antibody bound to strongest, they proliferated the most and released interferon-gamma, an immunostimulatory cytokine whose aberrant expression is associated with autoinflammatory disease. In contrast, the oats that didn't react with the antibody did not elicit these immune responses. The authors note that the avenin – the storage protein in oats – from even the most immunogenic oats they saw bound to this antibody with 40-400 fold less affinity than gliadin (from gluten – the storage protein in wheat).

This study thus leaves us with two valuable conclusions. One is that some oats are more toxic than others, regardless of their purity. And the other is that reactivity with this antibody can be correlated to toxicity, making it a potential tool for evaluating the toxic gluten content of other food.

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