A faster test for the food protein that triggers celiac disease

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Researchers in Spain and the United Kingdom are reporting development of a faster test for identifying the food protein that triggers celiac disease, a difficult-to-diagnose digestive disease involving the inability to digest protein called gluten that occurs in wheat, oats, rye, and barley. The finding could help millions of people avoid diarrhea, bloating, and other symptoms that occur when they unknowingly eat foods containing gluten. The study is scheduled for the December 15 issue of *Analytical Chemistry*.

In the new report, Alex Fragoso, Ciara O'Sullivan and colleagues note that patients with celiac disease can avoid symptoms by avoiding foods that contain gluten. Doing so can be tricky, however, because gluten may be a hidden ingredient in unsuspected foods, such as soy sauce, canned soups, and licorice candy. Some prepared foods list gluten content on package labels, but identifying its presence remains difficult and time-consuming.

The scientists describe development of a new sensor that detects antibodies to the protein gliadin, a component of gluten. Laboratory tests showed that it is superior to the so-called enzyme-linked immunosorbent assay (ELISA), now the standard test for gliadin. It took the new test barely 90 minutes to detect gliadin in the parts per billion range, compared to 8 hours for the ELISA test. Although both tests were equally accurate, the new sensor would be easier to use at food manufacturing plants, the researchers note.

Citation: "Electrochemical Immunosensor for Detection of Celiac Disease Toxic Gliadin in Foodstuff" dx.doi.org/10.1021/ac801620j

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