EZ Gluten®

A Fast, Sensitive, Simple Method for the Detection of Gluten in Foods

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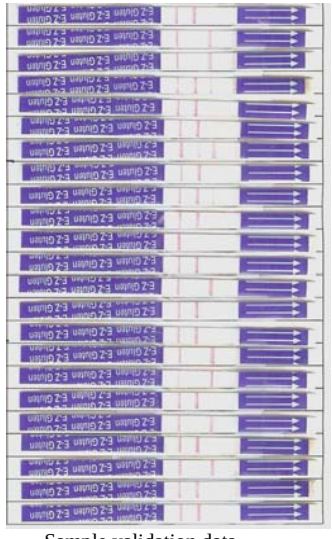
Abstract:

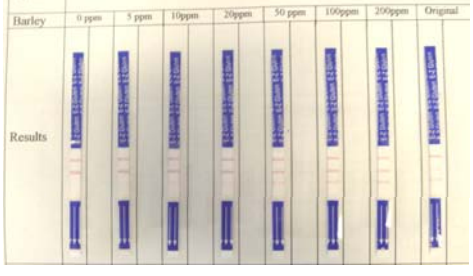
Gluten is the common name for a combination of water-insoluble proteins (gliadin and glutenin) found in the seeds of wheat, rye and barley. Sensitivity to gluten affects nearly 1% of the populations of Europe and North America. Persons with gluten sensitivity have a heightened immunologic response to ingested gliadin and glutenin, resulting in a range of symptoms including anemia, arthralgia, infertility, dermatitis, neurological disorders and celiac disease. For persons with gluten sensitivity the only treatment for these conditions is the adoption of a gluten-free diet, avoiding foods containing wheat, rye, barley and other related cereal grains.

EZ Gluten® provides a highly-sensitive, easy to use method for testing foods for gluten content at home. The test is based on the Skerritt antibody that detects both gliadin and glutenin. EZ Gluten® can detect the presence of gluten in foods in as little as 15 minutes. It has been validated with a limit of detection of 10 parts per million for wheat, rye and barley. EZ Gluten® showed 98% agreement with the HAVen High Sensitivity Gluten assay when testing over 100 common grocery store items. The assay can also be used to test swabs, making it useful for manufacturers as well as consumers.



- Corn meal
+ Spelt flour
+ Rye flour
+ Buckwheat flour
- Soy flour
- Millet flour
+ Barley flour
- Puffed oat cereal
+ Puffed rice cereal
- Puffed corn cereal
+ Puffed wheat cereal (hook effect)
- Gluten-free pasta
+ Whole wheat pasta
- Oat bran flakes
- Cream of rice
+ Pumpernickel bread
+ Cream of wheat
- Rice cakes
+ Soy bread
- GF Biscotti
+ Chocolate grahams
- Bakers chocolate
- Nutrition bar

Sample validation data



EZ Gluten® detection of barley

Results/ Conclusions:

In-house validation studies indicate that the EZ Gluten® assay has 100% sensitivity and specificity for samples containing >10 ppm of gluten.

The EZ Gluten® assay showed 98% correlation with the HAVen High Sensitivity quantitative ELISA assay when comparing sample results for over 100 common grocery store items.

The Hook line the on lateral flow strip allows for accurate interpretation of samples containing high levels (>200 ppm) of gluten.

The EZ Gluten® assay can be used to test swabs, using a slightly modified protocol. This is essential for manufacturers who wish to test their cleaning procedures between gluten-containing and gluten-free batches.

The EZ Gluten® assay is based on the Skerritt antibody, the same antibody used in the AOAC Official Method for detection of gliadin as a measure of gluten in foods (OMA 991.19, Final Action 2001).

The Skerritt antibody is more sensitive to glutenin than the antibody used in the proposed FDA method for gluten detection (R5). Glutenin is also a trigger for the immune response in gluten-sensitive individuals.