



EZ GLUTEN®

Instruction Manual

A Fast Sensitive and Simple Test for the Detection of Gluten in Food Samples

INTRODUCTION

Gluten is the common name for a combination of water-insoluble proteins (gliadins and glutenins) found in the seeds of wheat, rye and barley. Sensitivity to gluten affects nearly 1% of the populations of Europe and North America¹. Persons with gluten sensitivity have a heightened immunologic response to ingested gliadin and glutenin², resulting in a range of symptoms including anemia, arthralgia, fatigue, 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. Due to the prevalence of these grains in the food supply, even products that do not contain wheat, rye or barley as ingredients may still contain trace amounts that are significant enough to produce symptoms in gluten-sensitive individuals.

PURPOSE OF THE EZ Gluten® TEST

The EZ Gluten® Test is an easy to use kit that will quickly detect the presence of gluten in foods and beverages. It is sensitive enough to detect levels of gluten as low as 10 ppm. This simple test is small and portable enough for use at restaurants or when traveling, and is sensitive and robust enough for use in industry and food manufacturing. It can be used to test individual ingredients in foods, or test finished, raw or cooked products.

HOW THE EZ Gluten® TEST WORKS

The EZ Gluten® Test uses the anti-omega gliadin antibody developed by Skerritt and Hill³ for detection. This antibody, which detects both gliadins and glutenins, is the basis of the AOAC Official Method for gluten detection at the 200 ppm level⁴. The EZ Gluten® Test has been optimized so that this same antibody can detect gluten at levels as low as 10 ppm.

In the EZ Gluten® Test, a food sample is ground to a fine consistency, added to the gluten extraction solution, and then mixed. A few drops of the sample extract are placed into a test tube. The EZ Gluten® test strip is placed into the test tube and allowed to absorb the sample extract. At 10 minutes, the test strip can be read visually for the presence of gluten in the sample.



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MATERIALS PROVIDED:

Each individual EZ Gluten® Test comes with all of the materials that are required to run one test. The materials provided are:

- 1 - EZ Gluten® Test strip in a silver foil pouch



- 1 - vial of extraction solution (with cap)



- 1 - test tube



- 1 - measuring spoon



- 1 - transfer pipette



Materials which may be used, but are not provided, include:

- A food processor or other means of grinding samples (not needed for flours, smooth pastes or liquids).
- A scale for measuring exactly 0.5g

Instructions for testing samples:

1. Measure out 1 level spoonful of the sample using the spoon provided, or weigh out 0.5 grams of the sample on a scale.



2. Add the spoonful (0.5g) of sample to the vial containing extraction solution

3. Replace the cap on the the extraction solution and mix by inversion for 2 minutes.

4. Set the vial down upright and let the contents settle for 5 minutes.



5. Using the transfer pipette provided, transfer 10 drops of the extraction solution (taken from the top clear layer of the extraction vial) into the test tube. Hold the pipette vertically when transferring the liquid. The cap from the vial of extraction solution may be turned upside-down and used to hold the test tube.

6. Remove the test strip from the silver foil pouch and insert it into the test tube, with arrows pointing down



7. Leave the test strip in the test tube undisturbed for 10 minutes - removing the strip sooner will result in an invalid test.



8. Remove the strip from the test tube and hold it alongside the picture to read your result. For best resolution, lay the strip flat and allow it to dry for 5 minutes before reading results. If the control line is visible, the presence of any visible pink Test line indicates a positive result, no matter how faint the line appears. The intensity of the test line is not an indication of gluten concentration.

PRECAUTIONS

- For food testing only.
- Do not reuse the test stick.
- Do not use any part of the test beyond the expiration date.
- Do not open the foil pouch until just before use.
- Always store the kits between 36° and 77°F (2° to 25°C); avoid freezing.
- The test works only when the instructions are precisely followed.
- In case of contact of any reagent with eyes or skin; rinse immediately with plenty of water.

TEST LIMITATIONS

A negative result does not necessarily indicate a complete absence of gluten in the product being test. It is always possible that gluten is present in a portion of the product that was not sampled, or that the level of gluten in the product is below the limit of detection for the test.

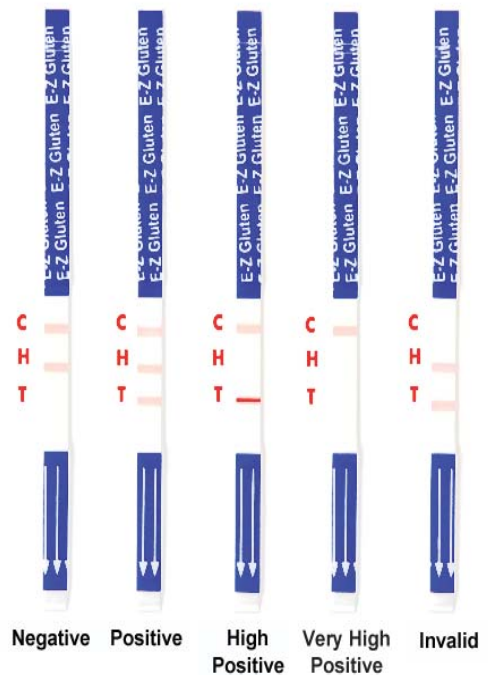
KIT VALIDATION

The EZ Gluten® Test has been validated in a large number of cooked, raw and frozen food matrices including meat, poultry, fish, fruits, vegetables, dairy, baked goods, pet foods, pastas, egg products, flours, spice mixes, dressings, cereals, rice, and beer.

The EZ Gluten® test detects the presence of wheat, rye and barley at 10 ppm.

A copy of the validation report is available upon request.

Test Strip Results:



REFERENCES

- 1 Fasano, A., Berti, I., Gerarduzzi, T., Not, T., Colletti, R.B., Drago, S., Elitsur, Y., Green, P.H.R., Guandalini, S., Hill, I.D., Pietzak, M., Ventura, A., Thorpe, M., Kryszak, D., Fornaroli, F., Wasserman, S.S., Murray, J.A. & Horvath, K. (2003) Arch. Intern. Med. 163, 286-292.
- 2 van de Wal Y, Kooy YM, van Veelen P, Vader W, August SA, Drijfhout JW, Pena SA, Koning F. (1999) Eur. J. Immunol. 29(10):3133-9.
- 3 Skerritt, J.H. & Hill, A.S. (1991) JAOAC 74, 257-264
- 4 Official Methods of Analysis (2006) 18th Ed., AOAC INTERNATIONAL, Gaithersburg, MD, Method 991.19