

AgraStrip® Gluten G12 Lateral Flow Test Kit

Recent discussions about celiac disease have led from the concept of “gluten detection” to “detection of potential relative toxicity of gluten” for the safety of celiac food consumers. For this reason the **AgraStrip® Gluten G12** using the G12 antibody was developed to specifically measure the fraction present in gluten which is toxic for celiac disease patients. The **AgraStrip® Gluten G12** is a rapid lateral flow assay test kit for screening food samples for gluten.

The G12 antibody is a next generation antibody that targets a toxic fragment that triggers the auto-immune reaction in celiac patients. The G12 antibody used in AgraStrip® Gluten G12 was raised against the QPQLPY peptide from toxic fragment called 33-mer with peptide structure of LQLQPFQQLPYQPQLPYQPQLPYQPQPF of the gliadin protein present in gluten. This 33-mer is highly resistant to breakdown by digestive enzymes and is, therefore, a suitable molecule for use as an analytical marker.

SUMMARY:

- **G12 antibody was raised against the immunotoxic 33-mer peptide**
- **G12 targets the most immunotoxic proteins for those intolerant to gluten**
- **G12 is capable of detecting potential immunotoxic varieties of oats**

There is an on-going debate whether oats are safe. Several publications conclude that certain oat varieties may cause an auto-immune response in celiac patients. During the validation of AgraStrip® Gluten G12, positive and negative responses to oat varieties were observed. The positive results appear to be a specific reaction of the antibody with the toxic fragment, rather than a non-specific response. Therefore, the G12 antibody may shed



new light on this debate by recognizing oat varieties that trigger a response in celiac patients. The Spanish Celiac Association has recently awarded the 6th National Prize for Research on coeliac disease to a scientific team that used the G12 antibody to identify oat varieties containing low levels of gluten, in this regard.

The **AgraStrip® Gluten G12** (Order No. COKAL0200AS) is a lateral flow test kit containing material to perform 10 tests.

BENEFITS:

- Specific – monoclonal antibody detecting peptide sequences from gluten
- Customized – 3 cutoff levels: 5, 10 and 20 ppm
- Rapid – takes minutes to perform
- Stable – 12 months shelf-life
- Cost Effective – no expensive equipment needed
- User Friendly – easily train technicians in minutes



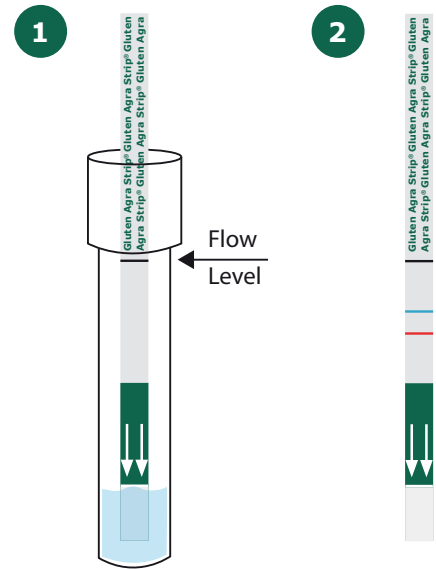
AgraStrip® Gluten G12 Lateral Flow Test Kit
FOOD ALLERGENS

Procedure for AgraStrip® Gluten G12

IMPORTANT: Please read kit insert before running the test.
For sample extraction please refer to package insert.

Assay procedure:

- 1 Place the strip in extraction tube and allow liquid to wick to level shown in the diagram.
- 2 Remove the strip from the extraction tube and place up right into slot of the tube holder provided. Allow the strip to develop for 10 minutes and then read off the result immediately.



Result Interpretation

Negative result:

One single blue line in the central part of the strip.

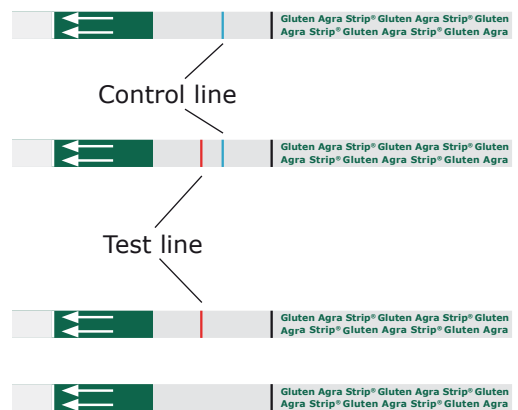
Positive result:

One blue line and one red line in the result zone. The sample contains gluten higher than the cutoff level (variable according to sample dilution)

NOTE: The intensity of the red colored test line may vary depending on the concentration present in the sample.

Invalid result:

No blue line appears.



References:

Structural basis for gluten intolerance in celiac sprue
Shan L, Molbergv Ø, Parrot I, Hausch F, Filiz F, Gray GM, Sollid LM, Khosla C. Science. 2002 Sep 27;297(5590):2275-9.

Toward the assessment of food toxicity for celiac patients: characterization of monoclonal antibodies to a main immunogenic gluten peptide.
Morón B, Bethune MT, Comino I, Manyani H, Ferragud M, López, MC, Cebolla A, Khosla C, Sousa C. PLoS ONE. 2008 May 28;3(5):e2294.

Sensitive detection of cereal fractions that are toxic to celiac disease patients by using monoclonal antibodies to a main immunogenic wheat peptide.

Morón B, Cebolla A, Manyani H, Alvarez-Maqueda M, Megías M, Thomas Mdel C, López MC, Sousa C., Am J Clin Nutr. 2008 Feb;87(2):405-14.

The Molecular Basis for Oat Intolerance in Patients with Celiac Disease
Helene Arentz-Hansen, Burkhard Fleckenstein, Øyvind Molberg, Helge Scott, Frits Koning, Gunther Jung, Peter Roepstorff, Knut E., A. Lundin, Ludvig M. Sollid, PLoS Medicine, 2004 - medicine.plosjournals.org