Disp&FLOW® – Peanut

Rapid test for the detection of specific protein

N° cat. : BIO.034.1

Number of test : 1



Rapid immuno-chromatographic test for the qualitative determination of the presence of peanut-specific protein in foodstuffs, kitchen utensils and preparatory surfaces preparatory surfaces of food production or processing food processing facilities.

The test is designed for the detection of target antigen in two sample types:

1. Solid food samples / solid food products food products.
2. Liquid samples of the following types: beverages; rinse water from rinsing water from food preparation tools, kitchen utensils kitchen utensils; washing water from surfaces dedicated to processing and storage of food products. products.

Presentation / How it works

Peanuts (*Arachis hypogaea*) contain certain proteins that are considered major food allergens. Among food allergies, peanut allergy is one of the most dangerous due to the frequency of severe, rapid and even fatal reactions (anaphylaxis, acute bronchial asthma, severe atopic dermatitis and gastroenterocolitis).

Peanut seeds are widely used in the food industry, and small quantities may remain in technological equipment despite washing procedures carried out between production batches.

The Disp&FLOW - Peanut test detects the presence of peanut protein in solid and liquid food samples.

The Disp&FLOW - Peanut test is based on the principle of rapid immuno-chromatography on strips (lateral flow migration). The target antigen present in the sample is absorbed by the strip and then recognized by specific antibodies conjugated to colored, free moving microparticles. Once formed, this complex migrates along the strip to a highly focused area, where it encounters another specific antibody attached to the support. The accumulation of microparticles rapidly forms a coloured line, indicating a positive result. The presence of a second control line ensures that the test works properly.

Test specificity and sensitivity

The Disp&FLOW - Peanut test uses a pair of carefully selected, high-performance monoclonal antibodies to detect an allergenic peanut protein.
The Disp&FLOW - Peanut test does not detect antigens from cereals, vegetables or various nuts such as walnuts, pecans, almonds, hazelnuts, cashews, macadamias, Brazil nuts or coconuts.
In water-based solutions or aqueous food homogenates, the sensitivity of the Disp&FLOW - Peanut test, measured as weight of unprocessed peanut seed per weight of dry food residue tested, is approximately 0.01% (or 100 ppm).
The sensitivity of the Disp&FLOW - Peanut test decreases as the food preparation is modified by heating (cooking) and when mixed with high-fat ingredients (e.g. cream, butter, vegetable oils).
If the test result is a faintly colored line or is difficult to interpret, BIOTEM recommends re-testing the sample with another kit or performing a different method, such as quantitative ELISA or PCR.

Kit contents

The Disp&FLOW – Peanut contains the following components:

- 1 test strip packaged in a hermetically sealed foil pouch containing a desiccant.
- 1 sampling swab.
- 1 polypropylene test tube containing 3 mL of extraction buffer for sample preparation and test migration step.
- 1 transfer pipette.
- 1 instruction for use.

Storage and stability

- The kit should be stored between +2 and +30°C in a dry environment, away from direct sunlight.
- The strip must not be frozen and should be kept in its hermetically sealed foil pouch.
- The kit must be used before the expiration date indicated on the packaging.

Equipment required but not supplied

- Sampling spatula, preferably single use.
- Pair of gloves.
- Weighing tool

Precautions

- Kit components are for *in vitro* use only.
- The kit may be used up to its expiration date if stored under the conditions indicated in this instruction.
- Do not use the test beyond its expiration date.
- Heat-sealed pouch containing test strip should be stored at room temperature (between +2 and +30°C).
- All handling associated with the use of this test must be carried out in strict compliance with the conditions for non-contamination of samples; in particular, gloves must be worn during handling.
- Strip should be handled by its upper colored part. Do not directly touch the central part of the strip or its absorbent end.
- Strip must be kept in its sealed pouch (strip is very sensitive to moisture) - do not use a strip more than 10 minutes after opening the pouch.
- Do not use the test if the foil pouch has been torn.
- Proceed with caution when opening the foil pouch (see the instructions for use), to avoid cutting or damaging the test strip.
- Use only the test tube supplied in the kit. Never use components from different kits.
- Do not immerse the test strip deeper than the line under the arrows.
- The Disp&FLOW - Fat / Blood pork meat test contains only single-use components; do not reuse.

Waste disposal

- Dispose of all used consumables in accordance with food industry or bio-agronomic waste regulations.
- All users are responsible for managing the waste they generate, and for ensuring that it is disposed of in accordance with applicable regulations.

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Sample preparation

Prior to testing, samples should be brought to a temperature of between +18°C and +35°C; analysis of colder samples reduces test sensitivity; analysis of warmer samples is not possible due to the risk of degradation of the antibodies present in the strip.
Ensure that the material to be tested is a mixture of all the ingredients making up the final solid food product.

For testing solid materials, utensils or other surfaces, we recommend the following procedure:

1. Using clean, sharp tools (preferably disposable), cut a small piece (0.1 to 0.5 g) of the test material and place it in the tube containing the dilution/extraction buffer.
2. For utensils or other surface tests, take the swab provided and pass it over the surface of the object to be tested in a criss-cross motion, first in one direction, then in the other, then diagonally. Then insert the swab into the test tube and shake for 10-15 seconds in the extraction buffer.
3. Hermetically seal the tube with the stopper.
4. Vigorously shake the tube manually or vortex at maximum speed for 25-30 seconds.
5. Place tube upright on a stand and allow contents to settle, or centrifuge at low-speed centrifuge at low speed, the supernatant is now ready for ready for testing.

For liquid samples, they can be tested directly. The limitation of test detection for liquid samples depends on viscosity and turbidity (presence of particles).
If the sample is viscous and cannot reach the test zone, it must be diluted in the dilution/extraction buffer.

In this case, the sensitivity of the test must be adjusted by the dilution factor.

Cloudy specimens should be filtered through a textile or paper filter.

6. Using the transfer pipette supplied, insert the liquid sample (1-2mL) into the test tube containing the dilution/extraction buffer.
7. Hermetically seal the tube with the cap.
8. Vigorously shake the tube manually or vortex at maximum speed for 25-30 seconds.
9. Place the tube upright on a stand and allow the contents to settle, or centrifuge at low speed in a centrifuge, the supernatant is then ready for testing.

Test procedure

1. Bring samples to a temperature between +18 and +35°C.
2. Remove the foil pouch (without opening it) and leave at room temperature for 5 to 10 minutes.
3. Open the pouch containing the test strip, taking care not to cut the strip.
4. Grasp the strip by the upper colored part and dip the other end vertically into the test tube supernatant.
   Caution: make sure the strip is not immersed too deeply - see picture opposite →



5. Leave the strip to soak for 20-30 seconds, then place it on a CLEAN, horizontal surface; do not touch or move the strip for 10 minutes, while the sample migrates.

Read the result and interpret it according to the picture and instructions below.

Interpretation of results

The test is positive if 2 red lines appear clearly in the central area of the strip (test line and control line, see below). Disregard the order of appearance of the 2 lines and any nuances in color intensity.



The test is negative if a single red line appears (see below): this is the control line which guarantees that the test is working correctly.



If only the test line appears (see below), the test cannot be interpreted, and no result is validated.



If no line appears (see below), the test cannot be interpreted, and no result is validated.



In the latter two cases, before starting again with another Disp&FLOW – Peanut, make sure that all the test preparation, storage and application instructions have been followed, as well as the expiration date.

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