Disp&FLOW® – Pork (Fat / Blood)

Rapid lateral flow test for the detection of specific antigen

Cat. No.: **BIO.026.1**

Number of tests per kit: **1**

Rapid immuno-chromatographic test for the qualitative determination of pork in raw materials, in heat-treated pork fat, in blood, in meats, in food and in surface in the meat industry.

The **Disp&FLOW – Pork – Fat / Blood** test has been designed to detect a target antigen in two main types of specimens:

1. Solid food samples / solid food products / kitchen utensils / technical surfaces dedicated to the cutting or processing of foodstuffs.
2. Liquid samples of the following types: soups; sauces; beverages; rinsing water from food preparation tools, rinsing water from kitchen utensils, technical surfaces dedicated to cutting, processing, and storing food products.

Presentation / How it works

The consumption and handling of materials of porcine origin is strictly forbidden by certain religious denominations. Pork components may be used or present in food adulteration, cosmetics and pharmaceuticals.

This test will be used for the qualitative determination of the pork-specific antigen: serum porcine albumin. This protein is a major constituent of animal serum and is widely present in all body tissues, including subcutaneous fats (lard).

The **Disp&FLOW - Fat / Blood pork 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 microparticles that are free to move. Once formed, this complex migrates along the strip to a highly focused area where it meets 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 functions correctly.

Test specificity and sensitivity

In the fat homogenate mixture, the Disp&FLOW - Fat / Blood pork meat test determines the presence of pork fat at 1:1,000 dilution (i.e. 0.1%).

In animal blood mixtures, the Disp&FLOW - Fat / Pork Meat Blood test determines the presence of pork blood at 1:100,000 dilution (i.e. 0.001%). A similar sensitivity is achieved in tests performed on mixtures of viscera (liver). The absolute sensitivity of the test in different samples (food, drugs, cosmetics) is around 0.5 milligrams of pork serum albumin per kg of solid matter (0.5 ppm), but this value depends very much on whether or not the material to be tested has been heated.

The test is unable to detect porcine blood and lipid components if the material has been processed by deep heating (at temperatures above 120 degrees Celsius for more than 30 minutes), as would be the case, for example, after frying or microwaving. The test does not detect porcine collagen (gelatin).

The Disp&FLOW - Pork Fat/Blood test shows no detectable reaction with serum albumin from other animal species than pork, such as: cow, sheep, antelope, horse, caribou and other deer, chicken, turkey, goose, duck, rabbit and kangaroo. The test is also negative for human blood.

If a visual test does not give sufficiently clear indications, we advise you to verify the presence or absence of pork antigen by quantitative laboratory methods, for example ELISA tests or PCR.

Kit contents

The **Disp&FLOW – Pork- Fat / Blood** test kit contains the following components:

- 1 test strip packaged in a hermetically sealed foil pouch containing a desiccant,
- 1 sampling swab (surface test),
- 1 polypropylene test tube,
- 1 transfer pipette
- 1 instructions for use

Storage and stability

- The kit should be stored between +2°C 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

Precautions

- Kit components are for *in vitro* use only. Do not ingest anything.
- Heat-sealed pouches containing the test strips should be **stored between +2°C and +30°C**.
- **Strips must be stored in their hermetically sealed foil pouch** (strips are highly sensitive to moisture) – Do not use a strip more than 10 minutes after opening the pouch.
- The kit may be used until its expiration date if its components have been stored under the recommended conditions until then.
- Do not use the kit beyond its expiration date.
- 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.
- Once the pouch is opened, the strip must be handled by its upper colored part. Do not directly touch the central part of the strip or its absorbent end.
- Do not undertake the test if you find the foil pouch torn when deciding to use the kit.
- Proceed with care when opening the foil pouch (see test procedure) and 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 strip deeper than the line under the arrows.**
- The **Disp&FLOW – Pork-Fat / Blood** test contains only single-use components; do not use again.

Waste disposal

- Dispose of all used consumables in accordance with food industry or bio-agronomic waste regulations.
- Each user is responsible for managing the waste produced by their activity and must ensure that they are disposed of in accordance with current applicable regulations.

Sample preparation

Prior to testing, allow the kit components to reach the room temperature for 5 to 10 minutes. Samples (as well as the test strip) 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 anti-bodies 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 surface testing of solid materials, utensils or other testing from benchtops, we recommend the following:

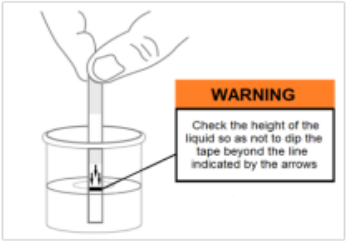
1. Add 1 mL of tap water (+18°C to +25°C) to the test tube.
2. Weigh out 0.5 to 1g of solid material and insert into the sampling tube containing water. The minimum acceptable weight is 0.01g. Note: use only disposable materials and replace them for each new sampling or preparation of a new sample.
3. For utensils or other surface tests, go to using the swab provided and wipe the surface of the object to be tested in a crosswise motion, in one direction, then the other, then diagonally. Then insert the swab into the sampling tube containing the water, and shake for **15 to 30 seconds**.
4. Hermetically seal the tube with the cap.
5. Shake vigorously by hand or use the vortex at maximum speed for 25-30 seconds.
6. Place the tube vertically on a rack and let sediment the contents of the tube or centrifuge at low speed in a centrifuge, the supernatant is then ready for the tests.

Liquid samples we recommend the following procedure:

1. Take 1 mL of liquid sample (using a laboratory pipette) and drop it into the test tube. Use only disposable materials; replace them for each new sample or preparation of a new sample.
2. Add an equal volume of tap water.
3. Hermetically seal the test tube with the cap.
4. Vigorously shake the test tube manually or by vortexing at maximum speed for 20 to 30 seconds.
5. Place the tube upright on a rack and allow the tube contents to settle, or centrifuge at low speed in a centrifuge, leaving the supernatant 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 to 30 seconds**, then place it on a **CLEAN**, horizontal surface; do not touch or move the strip for 10 minutes, while the sample migrates.



6. 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 – Pork-Fat / Blood** test, make sure that all the test preparation, storage and application instructions have been followed, as well as the expiration date.

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