

AlerTox® Sticks

Peanut

Rapid immunochromatographic test for qualitative detection of peanut antigen in food, kitchens and production facilities.

REF KIT3094

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1. Intended Use

AlerTox® Sticks Peanut is a rapid, immunochromatographic, lateral flow test for the qualitative detection of peanut antigens in food, kitchens and production facilities. Samples that are prepared following the instructions below can only be analyzed using test strips (sticks) from the AlerTox Sticks Peanut Kit and not with other AlerTox Sticks kits.

2. Introduction

Peanut (*Arachis hypogaea*) is a legume of the Fabaceae (also known as Leguminosae) family, which includes beans, peas, chickpeas, alfalfa and lupine.

Peanut allergy can display a variety of symptoms, from mild oral allergies or hives to severe life-threatening systemic reactions, i.e., anaphylactic shock or bronchial asthma. Peanut-induced anaphylaxis is considered the most fatal among all food allergies. Allergy to peanuts affects more than 0.5% of children in the general population.

In the US, the Food Allergen Labeling and Consumer Protection Act (FALCPA) identified peanut allergy as one of the major food allergies, and the presence of peanuts must be labeled on the package. In the EU, peanuts are included in the list of allergens established by the European Food Safety Authority (EFSA), whose presence must be indicated on the label according to Regulation (EU) No. 1169/2011 Annex II.

3. Test Applications, Specificity and Sensitivity

AlerTox Sticks Peanut uses a monoclonal antibody against a major peanut antigen and is suitable for the following applications:

- Food samples
- Rinse water testing
- Surface testing

The limit of detection (LOD) of AlerTox Sticks Peanut is 1 ppm of roasted or raw peanut protein (1 mg of peanut protein per kg or L of sample).

For roasted peanuts, the range of detection (ROD) is 1 – 250,000 ppm of peanut protein. Overloading (signal decrease) may be seen at 2,500 – 250,000 ppm; however, no pure hook effect (false negative) is observed.

For raw peanuts, the ROD is 1 – 150,000 ppm of peanut protein. Overloading (signal decrease) may be seen at 500 – 150,000 ppm. Above 150,000 ppm, a hook effect appears as a negative result (false negative). If a false negative due to the hook effect is suspected, repeat the test using a diluted sample.

For surface analysis, the LOD of AlerTox Sticks Peanut is approximately 4 µg of peanut protein/16 cm² on a model, dry surface (stainless steel), sampled with a wet swab.

If you need to quantify the amount of antigen, use the AlerTox ELISA Peanut Kit (Product No. KIT3048).

4. Kit Contents

Component	KIT3094
Peanut immunochromatographic test strips in a sealed container	10 (1 container)
Sample collection tubes with yellow caps	10
Sample extraction buffer in tubes with blue caps, 9 mL	10
Spoons	10
Small pipettes	10
Pipettes, 3 mL (only for testing liquid samples)	10
Swabs (only for testing surfaces)	10

5. Other Materials Not Supplied

- AlerTox Polyphenol Additive (Product No. ASY3213) (only for samples containing polyphenols, e.g., cocoa, chocolate or cocoa liquor)
- Disposable, laboratory gloves
- Grinder, mortar or any other manual or automatic homogenization system to crush the sample
- Vortex mixer/shaker (recommended, not required)
- Scissors (only for surface sampling)
- Digital scale sensitive to 0.1 g (optional)

6. Precautions

- All kit components should be stored at 10 to 30 °C (50 to 86°F).
- Wear clean, disposable laboratory gloves when using AlerTox Sticks kits.
- When opening the container of test strips, only remove the necessary number of test strips and close the container immediately.
- Do **not** touch the white end of the test strip.
- Use the test strip within 10 minutes after removal from the container.
- Do not use the test strip if it is broken or damaged.
- Do not use the test strips beyond the expiration date.
- All test kit components are disposable; do not reuse them.
- Do not combine components from different kits.

7. Sample Handling

All samples must be at 18 to 35 °C (64.4 to 95 °F) before testing.

The test is designed to detect the target antigen in:

- Solid food
- Liquid samples:
 - Beverages
 - Wash water from cutting equipment
- Surfaces

8. Test Procedure for Solid Food Samples

Important: If the sample contains polyphenols (e.g., cocoa), add 1 spoonful of the AlerTox Polyphenol Additive (ASY3213) to the yellow-capped tube and proceed with Step 8.1.

8.1 Mash or crush the sample to obtain the finest crumbs possible. Use a mortar or a grinder if possible.

8.2 Add 1 g of the sample to a yellow-capped tube.

Alternatively, follow the chart below to add an equivalent amount of sample, using one of the single-use spoons provided.

Food Type	Examples	Spoonfuls
Flours, fine powders	Corn flour, rice flour, milk powder, spices	2
Fine crumbs	Bread, cookies, cakes, snacks	2
Meat, fish and cured meat	Meat, fish, sausage, black pudding, pâté, canned meat and fish	1

8.3 Pour the entire contents of a blue-capped tube (9 mL) into the yellow-capped tube.

Important: Keep the blue cap, as it will be used later.

8.4 Close the yellow-capped tube and shake the sample for at least 20 seconds using a vortex mixer to ensure homogenization. Alternatively, shake the tube vigorously by hand.

8.5 Let it rest for 2 minutes so the solids settle.

8.6 Use a small pipette to fill the blue cap with supernatant.

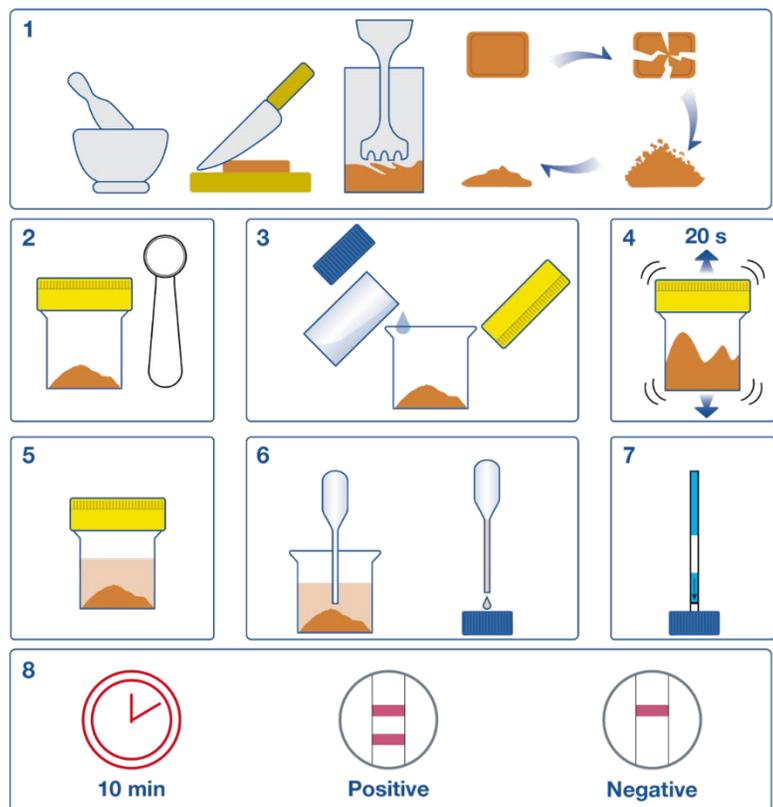
8.7 Open the container of test strips, carefully remove the needed number of strips by holding the BLUE end of the strip and close the container immediately. Then, place the white end of the strip in the blue cap.

Note: Do NOT touch the white end of the test strip.

8.8 Wait 10 minutes to read the result.

Note: Do not read results after more than 10 minutes, as results may vary. Do not touch the test strip while waiting.

Workflow for Solid Food Samples



9. Test Procedure for Liquid Samples

Liquid samples – beverages, rinse water from kitchen dishes, technological surfaces or cutting machines – may be tested directly. Turbid samples should be filtered (paper or textile filter) or allowed to settle.

Important: If the sample contains polyphenols (e.g., chocolate or cocoa liquor), add 1 spoonful of the AlerTox Polyphenol Additive (ASY3213) to the yellow-capped tube and proceed with Step 9.1.

9.1 Using a provided 3 mL pipette, carefully transfer **1 mL** of your liquid sample to a yellow-capped tube. If the sample is thick (e.g., yogurt, sauce), follow the chart below to add an equivalent amount of sample to the yellow-capped tube, using one of the single-use spoons provided.

Food Type	Examples	Spoonfuls
Liquid and sauces	Milk, juice, condensed milk, yogurt, soup, gravy, sauce, cream	1

Note: Shake the sample to ensure it is homogeneous and that you are taking a representative test portion.

9.2 Pour the entire contents of a blue-capped tube (9 mL) into the yellow-capped tube.

Important: Keep the blue cap, as it will be used later.

9.3 Close the yellow-capped tube and shake the sample for at least 20 seconds using a vortex mixer to ensure homogenization. Alternatively, shake the tube vigorously by hand.

9.4 If the liquid is cloudy, let it settle for 2 minutes.

9.5 Use a small pipette to fill the blue cap with supernatant.

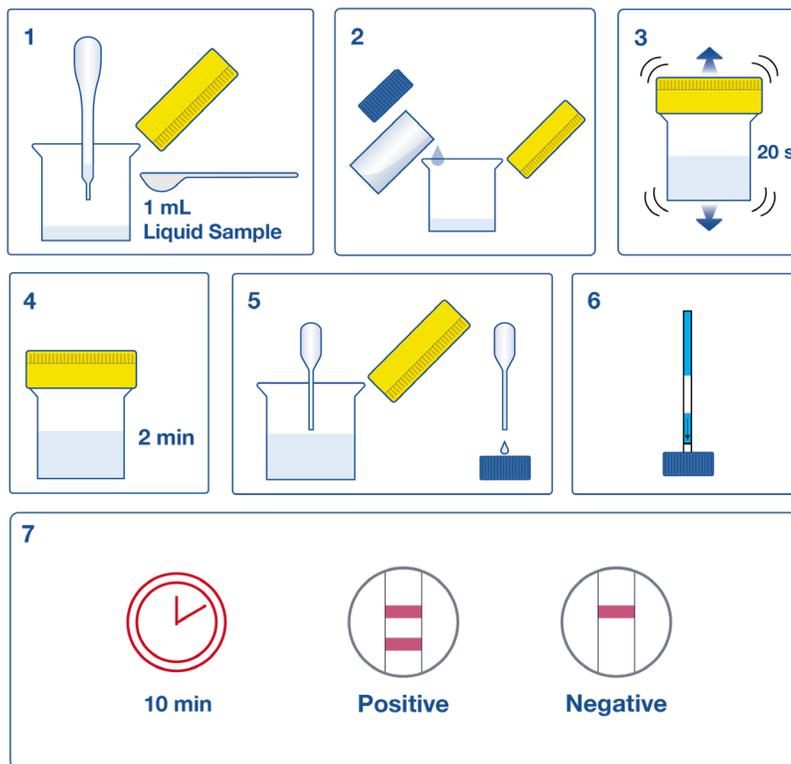
9.6 Open the container of test strips, carefully remove the needed number of strips by holding the BLUE end of the strip and close the container immediately. Then, place the white end of the strip in the blue cap.

Note: Do NOT touch the white end of the test strip.

9.7 Wait 10 minutes to read the result.

Note: Do not read results after more than 10 minutes, as results may vary. Do not touch the test strip while waiting.

Workflow for Liquid Samples



10. Test Procedure for Surface Analysis

Use a clean, unused swab for every sample. The swab can be used on working surfaces or equipment.

10.1 Wet the swab by dipping it in the blue-capped tube. Then, firmly rub and rotate the swab on the testing surface using a zigzag pattern (at least 4 x 4 cm²/1.6 x 1.6 in²) or a line of 40 cm/15.6 in.

Note: The area selected for analysis must be representative of the total area of interest.

10.2 Place the swab into the sample collection tube and trim it using scissors. **Note:** The swab should fit in the yellow-capped tube when the cap is closed.

10.3 Pour the entire contents of a blue-capped tube (9 mL) into the yellow-capped tube. Then, press the swab tip against the inside wall of the yellow-capped tube to facilitate sample extraction into the buffer.

Important: Keep the blue cap, as it will be used later.

10.4 Close the yellow-capped tube and shake the sample for at least 20 seconds using a vortex mixer to ensure homogenization. Alternatively, shake the tube vigorously by hand.

10.5 Use a small pipette to fill the blue cap with supernatant.

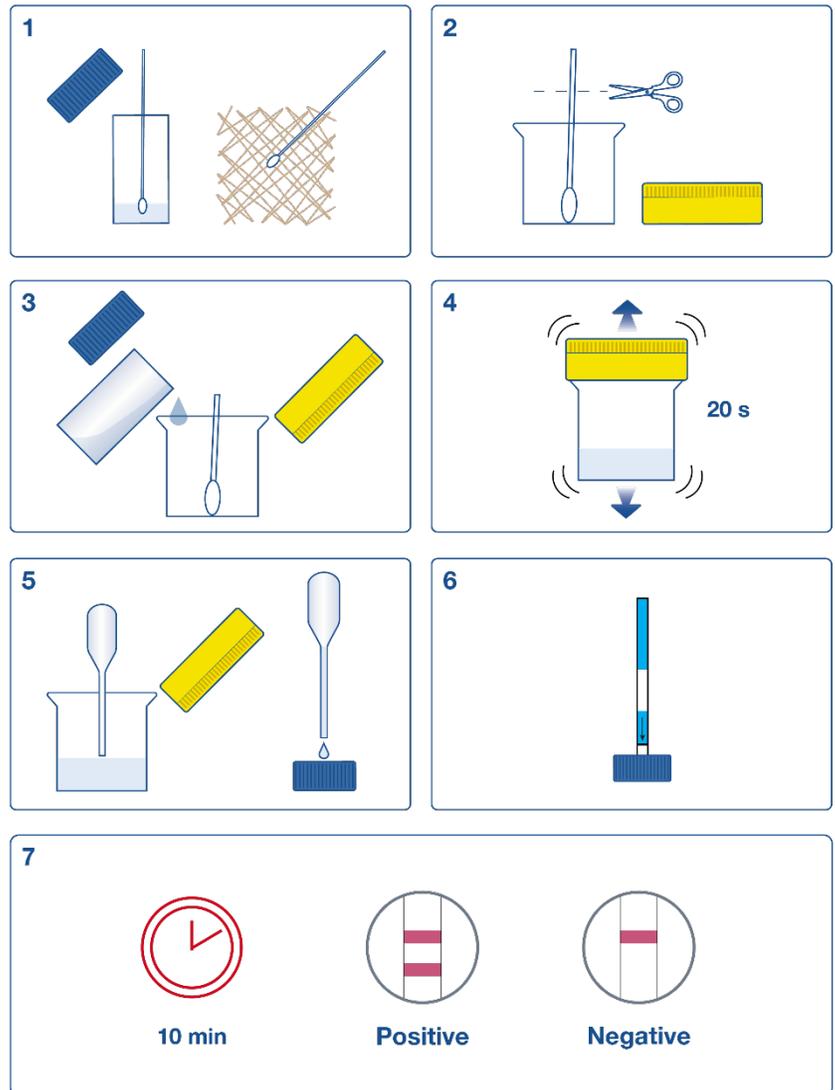
10.6 Open the container of test strips, carefully remove the needed number of strips by holding the BLUE end of the strip and close the container immediately. Then, place the white end of the strip in the blue cap.

Note: Do NOT touch the white end of the test strip.

10.7 Wait 10 minutes to read the result.

Note: Do not read results after more than 10 minutes, as results may vary. Do not touch the test strip while waiting.

Workflow for Surface Analysis



11. Interpretation of Results

The test result is POSITIVE if TWO colored lines appear: one in the control zone (C) and one in the test zone (T). The color intensity of the test line may vary but is not necessarily proportional to the concentration of peanut antigen in the sample.



The test result is NEGATIVE if only ONE colored line is clearly visible in the control zone (C).



If NO red line appears in the control zone (C), the test is INVALID.



If the test is invalid, repeat it with another strip and check for correct specimen handling and test procedure, expiration date and storage conditions. For further assistance, contact Hygiena® at www.hygiena.com/support.

IMPORTANT NOTE!

AlerTox Sticks is a qualitative test intended to screen samples for internal quality control. Under no circumstances can it replace laboratory analysis testing for quantification.

12. Validation

Matrices should be validated before use with AlerTox Sticks Peanut. For additional information about matrix validation, contact Hygiena at www.hygiena.com/support.

AlerTox Sticks Peanut showed no detectable cross-reactivity with the following complex, peanut-free food matrices:

No Cross Reactivity: Complex Matrices	
Cheese breadsticks	Corn cakes
Chocolate bars	Integral oat flour
Cocoa liquor	Protein bars
Coconut macaroon	Rice cakes
Coconut milk	Soy flour
Cookies	Teriyaki sauce
Yogurt	

AlerTox Sticks Peanut showed no detectable cross-reactivity or interference with the following commodities, when present at 100,000 ppm in the extracted sample:

No Cross Reactivity: Commodities	
Cereals:	Barley, buckwheat, corn, oat, rye, wheat, white rice
Fruits:	Dry coconuts
Legumes and vegetables:	Chickpeas, green peas, kidney beans, lentils, lima (butter) beans, lupine, soybeans
Seeds:	Cocoa, poppy, pumpkin, sesame, sunflower
Tree nuts:	Almonds, Brazil nuts, cashews, chestnuts, hazelnuts, macadamias, pecans, pine nuts, pistachios, walnuts
Spices:	Annatto, garlic, paprika

13. Disclaimer

Field of use: Use the Hygiena product for research and development, quality assurance and quality control under supervision of technically qualified persons. The information generated from the Hygiena product is only to be used in conjunction with the user's regular quality assurance program. The Hygiena product should not be used as the sole basis for assessing the safety of products for release to consumers. Data obtained from the Hygiena product must not be used for human diagnostic or human treatment purposes. Before using product, read the *Limitation of Warranty and Liability* (available in the *Hygiena General Terms and Conditions* at www.hygiena.com/terms-and-conditions).

These products are made from high-quality raw materials. No warranty of any kind is made, either expressed or implied, as to their suitability other than to measure the target antigen content when used exactly in accordance with these instructions, except regarding the quality of these materials.

Use of the kit for any other purpose is outside its intended use. For matrices that have not been previously validated, Hygiena cannot guarantee that the kit is fit for purpose and that the results obtained for these matrices are accurate. Customers may choose to use the product on unvalidated food or surface matrices; however, Hygiena strongly recommends that users perform their own fit-for-use testing to confirm suitability and performance in their specific application. Any damages, including consequential or special damage or expense arising directly or indirectly from using this product, are limited to the replacement value of the kit.

For additional information or assistance with matrix validation, contact Hygiena at www.hygiena.com/support. All Hygiena Terms and Conditions apply and can be found at: www.hygiena.com/terms-and-conditions.

14. Contact Information

For more information, visit www.hygiena.com/contact. For technical support, visit www.hygiena.com/support.

15. Change Index

INS-KIT3094-001-REVA, February 2025

Minor editorial updates to standardize AlerTox Sticks instructions. Updates to branding/layout, document ID number and some graphic workflows to better align with numbered steps and the Validation section.

INS-KIT3094-001-REVB, April 2025

Use of the AlerTox Polyphenol Additive included for some solid and liquid sample preparations. Range of detection, non-cross reactivity and minor editorial updates.

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