

AlerTox[®] Sticks Sesame | KIT3096

Cat. No.	KIT3096 (10 tests)
Test name	AlerTox [®] Sticks Sesame
Description	Immunochromatographic rapid test for qualitative determination of sesame antigen in foods, kitchen and production facilities.
Sensitivity and Specificity	<p>The LOD (limit of detection) of AlerTox[®] Sticks sesame is 3 ppm of sesame seed protein. The range of detection (ROD) is 3-20,000 ppm. Above this range, the test can present a hook effect. The hook effect can appear as a negative result or as a test line with reduced intensity. If a false negative due to hook effect is suspected, repeat the test on a diluted sample.</p> <p>The LOD of peeled sesame seeds is slightly higher and the ROD is 10-20,000 ppm. On dry surfaces collected by a wet swab, the LOD is approximately 3.5µg of sesame protein/16cm².</p> <p>AlerTox[®] Sticks Sesame uses a combination of monoclonal antibodies against a sesame antigen, the 2S seed storage protein 1 (2S albumin or Beta-globulin) known as allergen Ses i2 that detect antigens in white sesame and black sesame. AlerTox[®] Sesame does NOT detect the antigens of cereals, legumes, nuts and other seeds.</p>
Storage	Store at 10-30 °C (50-86 °F)

Assay Procedure

Solid, liquid and surface samples: according to manual of use INS3031.

Validation Protocol

Food and drinks

26 samples were analyzed separately to determine the correlation between AlerTox Sticks Sesame and AlerTox Sesame ELISA results for the detection of sesame antigen. All results matched each other between the two test methods. The following data was obtained:

	Sample	Brand	AlerTox® Sticks Sesame	Stick/ELISA
1	Nut Sauce	MIDORI	Contains peanuts, sesame seeds.	Positive
2	Sesame Oil	Top Product	Contains sesame seeds.	Negative
3	Mini breadsticks with palm oil and sesame seeds	Roberto	Contains sesame seeds.	Positive
4	Italian bread with black sesame, bran and olive oil	Baker House	Contains sesame seeds.	Positive
5	Granola bar with nuts and honey	Everyday	Contains. walnuts, almonds, hazelnuts and sesame seeds.	Positive
6	Butter cookies	Magic Grain	Contains sesame seeds. May contain traces of nuts.	Positive
7	Soft cakes cherry	Fine Life	May contain traces of nuts and sesame seeds.	Negative
8	4 cereal biscuits	MISURA	May contain traces of soybeans, sesame seeds and nuts.	Positive
9	Dark chocolate and hazelnut cookies	Merba	Contains hazelnuts. May contain traces of other nuts.	Negative
10	Neapolitaner original	Manner	Contains hazelnuts. May contain traces of other nuts.	Negative
11	Hazelnut original	ALPRO	Contains hazelnuts. May contain traces of other nuts.	Negative
12	Pistachio milk	Simple Foods	Contains pistachios.	Negative
13	Pistachio almond ice cream	Baskin-Robbins	Contains almonds.	Negative
14	Activia with nuts, chia seeds and vanilla	DANONE	Contains walnuts, almonds. May contain traces of other nuts.	Negative
15	Monte (milk cream dessert)	Zott	Contains hazelnuts.	Negative
16	Danissimo with the taste of pistachio ice cream	DANONE	Contains pistachios. May contain traces of other nuts.	Negative
17	Snickers	Mars	Contains peanuts. May contain traces of almonds and hazelnuts.	Negative
18	Snickers with hazelnut	Mars	Contains peanuts and hazelnuts. May contain traces of almonds.	Negative
19	Geisha	Fazer	Contains hazelnuts. May contain traces of other nuts.	Negative
20	Picnic	Alpen Gold	Contains peanuts. May contain traces of other nuts.	Negative
21	Milk chocolate	Karl Fazer	May contain traces of nuts.	Negative

	Sample	Brand	AlerTox® Sticks Sesame	Stick/ELISA
22	Tahin helva	Koska	Contains sesame seeds.	Positive
23	Crunchy peanut butter	HY TOP	Contains peanuts.	Negative
24	Cashew coconut butter	Natty's	Contains cashews, coconuts.	Negative
25	Almond slam	O12 Nutrition	Contains almonds. May contain traces of other nuts.	Negative
26	30% protein bars (Stracciatella flavor with chocolate)	Just Loading	Contains milk proteins, soy and egg. May contain sesame, peanut and other nuts.	Negative
27	Almond and banana energy bar	Just Loading	Contains almond and soy. May contain egg, milk, sesame, peanut and other nuts.	Negative
28	Sesame biscuits	Gerble	Contains wheat, sesame, rye, oats and milk.	Positive
29	Seeds and cereal sandwich	Eliges	Contains wheat, sesame and soy. May contain egg, milk and nuts.	Weak positive
30	Breadsticks with sesame	El Guijo	Contains sesame and wheat.	Positive
31	Peeled sesame	BioSprint	Contains sesame.	Positive

According to these results, the correlation between both techniques is 100% in the samples analyzed.

Cross-reactivity study: Cross-reaction, % = $\frac{\text{Analytical sensitivity (ppm)}}{\text{Lowest concentration giving a positive result (ppm)}} \times 100$

Common	Systematic Name	Cross-Reaction %
White sesame seed	<i>Sesamum indicum</i>	100
Black sesame seed	<i>Sesamum radiatum</i>	100
Pecan	<i>Carya illinoensis</i>	n/a
Peanut	<i>Arachis hypogaea</i>	n/a
Hazelnut	<i>Corylus avellana</i>	n/a
Almond	<i>Prunus dulcis</i>	n/a
Pine nut	<i>Pinus sibirica</i>	n/a
Pistachio	<i>Pistacia vera</i>	n/a
Cashew	<i>Anacardium occidentale</i>	n/a
Brazil nut	<i>Bertholletia excelsa</i>	n/a
Coconut	<i>Cocos nucifera</i>	n/a
Walnut	<i>Juglans regia</i>	n/a
Chia seed	<i>Salvia hispanica</i>	n/a
White/yellow mustard seed	<i>Sinapsis alba</i>	n/a
Brown mustard seed	<i>Brassica juncea</i>	n/a
Black mustard seed	<i>Brassica nigra</i>	n/a
Flax seed	<i>Linum usitatissimum</i>	n/a

Rinse water

The impact of highly acidic, alkali and natural conditions were evaluated with negative (distilled water) and positive (distilled water spikes with 100 ppm sesame seeds) samples.

The tests were performed according to the IFU. The results were evaluated according to the kit instruction and the data of the optical analyzer for immunological rapid tests.

These results show that the testing of highly acidic or alkali rinse waters leads to a significant decrease in the sensitivity of the test.

Solution	Result
Water (pH 2) + Buffer	Negative
Water (pH 7) + Buffer	Positive
Water (pH 12) + Buffer	Positive

Surfaces

A surface of stainless steel was thoroughly cleaned with water and soap, then rinsed with 60% ethanol, washed again with water and soap, and finally rinsed with distilled water and left to dry.

Test areas of 4x4 cm (16cm²) were drawn on the surface and spiked with different levels of sesame extract. The amount of sample was dispensed with a micropipette and distributed throughout the whole surface with the micropipette tip. The areas were left to dry at room temperature, covered to avoid dust.

Spiking samples are prepared from a sesame extract and dilutions thereof. Spikings were made at the concentrations shown in the following table (assuming a protein content of 17.7 g/100 g). Each concentration was tested in duplicate.

Amount of Sesame in Test Area (µg/16 cm ²)	Approximate Amount of Sesame Protein in Test Area (µg/16 cm ²)	Result
24.97	4.42	Positive
19.77	3.5	Positive
16.95	3	Low positive
14.24	2.52	Low positive
0	0	Negative

The limit of detection is set to 3.5 µg/16 cm² of sesame protein since is the lowest amount of sesame protein where a clear positive result is obtained.