



Lupin

Product Code: ESLFP-48

For the detection of Lupin Residues in Food Products and Environmental samples.

Intended Use

The **ELISA Systems Lupin Residue** assay is an enzyme-linked immunosorbent assay (ELISA) that may be used to screen food products for the presence of lupin material.

Background

Lupin refers to a range of plants in the genus *Lupinus* which are members of the legume (Fabaceae) family. Lupins have been commonly used as food throughout Europe since the Roman Age. In recent years, flour produced from lupin seeds has become increasingly popular as an ingredient in a wide variety of foods as an alternative to wheat flour. Lupins are also commonly grown for use in stock feed. The most commonly cultivated lupins for food use are the white lupin (*L. albus*), the blue lupin (*L. angustifolius*) and the yellow lupin (*L. luteus*).

The incidence of lupin allergy is significantly higher in individuals with peanut allergy¹, but may also be present in individuals with no sensitivity to peanut^{2,3}. Allergic reaction to lupin ranges from oral allergy syndrome to severe anaphylactic reactions. Lupin and products thereof are declarable allergens in the EU according to directive 2006/142/EC.

This kit detects the three most common species used in food production - *L. albus*, *L. angustifolius*, and *L. luteus*.

Please note: A special extraction solution is required for samples containing Polyphenols, including Dark Chocolate, Wine, Fruit Juices, Herbs, and Tannins. (Product code: ESADDSOL)

Controls Supplied

0, 0.50, 1.0, 2.5, 5.0 ppm (mg/kg) Lupin Flour Protein.

1. Shaw, J., Roberts, G., Grimshaw, K., White, S., and Hourihane, J. Lupin allergy in peanut allergic children and teenagers. *Allergy* 2008; 63: 370-373

2. Brennecke, S., Becker, W.M., Lepp, U., and Jappe, U. Anaphylactic reaction to lupine flour. *J. Dtsch. Dermatol. Ges.* 2007; 5: 774-776

3. Smith, W.B., Gillis, D., and Kette, F.E. Lupin: a new hidden food allergen. *Medical J. Aust.* 181: 219-220

Why test for Food Allergens?

- ✓ Brand Name Protection
- ✓ Prevent Costly Product Recalls
- ✓ Ensure Consumer Confidence
- ✓ Duty of Care
- ✓ Comply with Product Labelling Requirements.

Allergens may occur unintentionally in foods for several reasons including:

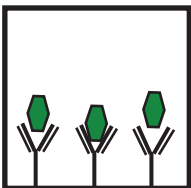
Cross-contamination of ingredients
Food preparation errors
Improper cleaning of equipment

Kits available:

Almond, Buckwheat, Beta-Lactoglobulin, Casein, Crustacean, Egg, Gliadin, Hazelnut, Lupin, Mustard, Peanut, Sesame, Soy

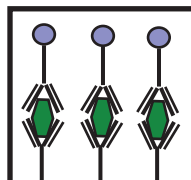
How the ELISA SYSTEMS Lupin Residue test works:

Step 1
Sample is added



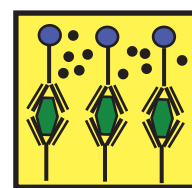
The test sample is added and if Lupin residue is present, it will bind to the specific antibodies.

Step 2
Antigen-Antibody Complex



Enzyme-labelled Conjugate is added and binds to the captured Lupin residue to form a "Sandwich".

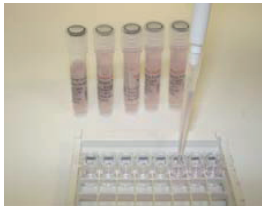
Step 3
Coloured End-Point



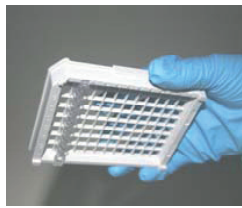
TMB Substrate is added, which is converted in the presence of the Enzyme Conjugate to form a blue colour if Lupin residue is present in the sample. A yellow colour is formed once Acid is added to stop the reaction.

Total test time is approximately 60 minutes on extracted samples. (Three incubation steps of 30, 15, 10 minutes each.)

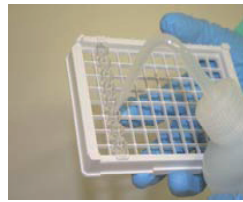
Food Allergen Residue ELISA Protocol



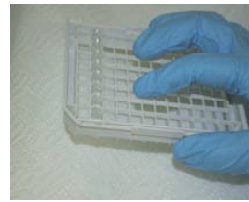
Add 100 microlitres of Standards and Samples to their allocated Antibody-coated wells.
Mix all wells for 10 seconds by gentle shaking on a flat surface.
Incubate for 30 minutes.



Dump liquid from wells.



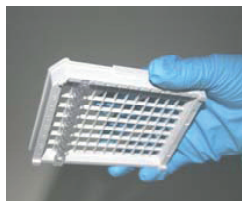
Wash wells thoroughly five times with wash buffer.



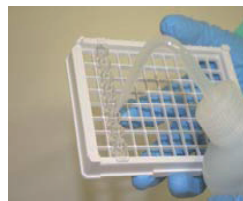
Tap wells firmly onto absorbent paper towel.



Add 100 microlitres of the Green Conjugate Solution to each well.
Mix all wells for 10 seconds by gentle shaking on a flat surface.
Incubate for 15 minutes.



Dump liquid from wells.



Wash wells thoroughly five times with wash buffer.



Tap wells firmly onto absorbent paper towel.



Add 100 microlitres of the Substrate Solution to each well.
Mix all wells for 10 seconds by gentle shaking on a flat surface.
Incubate for 10 minutes.

DO NOT WASH



Add 100 microlitres of the Stop Solution to each well.
Mix all wells for 10 seconds by gentle shaking on a flat surface.



Read results visually, comparing with the colour of the Standards. The results can be read on a microplate/strip reader. Results must be read within 30 minutes.

Interpretation of Results

Interpretation is based on the suggested extraction/dilution protocol. Results are for screening purposes. All results should be interpreted as part of a HACCP plan for Food Allergens. Any sample returning a positive result should be regarded as a presumptive result and confirmation or further testing should be performed.



Product Code	No. of Wells	Max No. of Tests	(Depending on the number of samples and controls per run)
ESLFP-48	48	46	as a screening test (a multichannel pipette must be used to achieve maximum sample numbers)
		30+	as Quantitative test

Manufactured by ELISA SYSTEMS Pty Ltd.

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