



Crustacean

Product Code: ESCRURD-48

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

Intended Use

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

Background

Tropomyosin is a major muscle protein in Crustaceans. It has been identified as the major Shrimp allergen. Molecular cloning experiments on lobsters and crabs have characterized this protein as the common allergen in Crustaceans.^{1,2}

Because of its allergenic and heat-stable properties, Tropomyosin was chosen as the protein indicator for the ELISA SYSTEMS Crustacean Residue ELISA.

* This assay has been shown to detect Tropomyosin residues from the following species: *Penaeus esculentus*, *Penaeus semisulcatus*, *Penaeus latisculatus*, *Penaeus monodon*, *Penaeus plebejus*, *Penaeus stylirostris*, *Metapenaeus endeavouri*, *Metapenaeus bennettiae*, *Metapenaeopsis palmensis*, *Cherax quandricarinatus*, *Cherax destructor*, *Scylla serrata*, *Ovalipes australiensis*, *Charybdis natator*, *Charybdis feriata*, *Portunus sanguinolentus*, *Thenus orientalis*, *Panulirus cygnus*. Other Crustacean species not listed here might also be detected with this assay, depending on the level of the Tropomyosin present, the type of the sample and the processing treatments involved.

Controls Supplied

0, 0.05, 0.10, 0.25 and 0.50 ppm (mg/kg) Crustacean Tropomyosin.

1. Leung, Patrick S.C., Chu, Ka-Hou. "Molecular and Immunological characterization of Shrimp allergens". *Frontiers in Bioscience* (3), March 1998. 306-312

2. Ayuso, R., Reese, G., Leong-Kee, S.M., Plante, M.J., Lehrer, S.B. "423 Identification and Mutational Analysis of Major Epitopes of the Shrimp Allergen Pen a 1 (Tropomyosin)". *J. Allergy and Clin Immunol.* Jan 2000. Part two Vol 105 No. 1

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

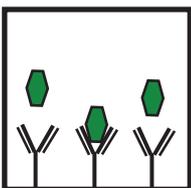
Kits available:

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

How the ELISA SYSTEMS Crustacean Residue test works:

Step 1

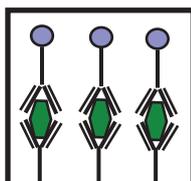
Sample is added



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

Step 2

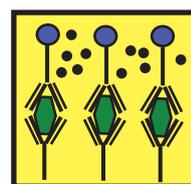
Antigen-Antibody Complex



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

Step 3

Coloured End-Point



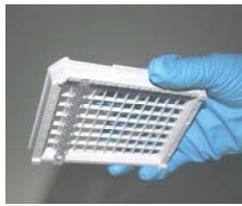
TMB Substrate is added, which is converted in the presence of the Enzyme Conjugate to form a blue colour if Crustacean residue is present in the sample. A yellow colour is formed once Acid is added to stop the reaction.

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

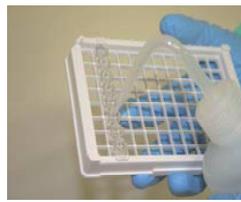
Food Allergen Residue ELISA Protocol



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.



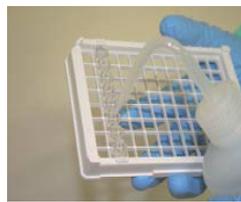
Tap wells firmly onto absorbent paper towel.



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)
ESCRURD-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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