



# Egg

**Product Code: ESERD-48**

**For the detection of Egg White Residues in Food Products and Environmental samples.**

### Intended Use

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

### Background

Hen's Egg is one of the more frequent causes of food hypersensitivity in infants and young children.<sup>1,2</sup>

Two of the main allergens in Egg White are Ovalbumin (54%) and Ovomuroid (11%).<sup>3</sup> Ovomuroid is not coaguable by heat, whereas the other potential allergenic components of egg are.<sup>4</sup> Ovomuroid appears to be allergenic in minute quantities and because of its hardy physical characteristics, it may remain in the body in an allergenic state for years.<sup>3</sup>

Because of their allergenic properties, Ovomuroid and Ovalbumin were chosen as the egg protein indicators (Egg whites) for the ELISA SYSTEMS Egg Residue ELISA.

This assay is a rapid and reliable test that significantly reduces the time required to screen food products for the presence of Egg White residues.

**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, 1.0, 2.5, 5.0 ppm (mg/kg) Egg White Protein

1 Sampson. H.A., McCakill. C.C. Food hypersensitivity and atopic dermatitis: evaluation of 113 patients. J Pediatr 1985; 107:669-75.

2 Bock. S.A., Atkins.F.M. Patterns of food hypersensitivity during sixteen years of double-blind, placebo controlled food challenges. J Pediatr 1990;117:561-7.

3 Bernhisel-Broadbent J, Dintzis. H.M., Dintzis. R.Z., Sampson.H.A.. Allergenicity and antigenicity of chicken egg ovomucoid (Gal d III) compared with ovalbumin (Gal d I) in children with egg allergy and in mice. J Allergy Clin Immunol 1994;93: 1047-59.

4 Atsuo Urisu, Hitoshi Ando, Yutaka Morita, Eiko Wada, Takehiko Yasaki, Kazue Yamada, Katsuhide Komada, Shimpei Torii, Masahiro Goto, Toshio Wakamatsu. Allergenic activity of heated and ovomucoid-depleted egg white. J Allergy Clin Immunol 1997;100: 171-6

## 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:

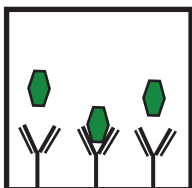
- Cross-contamination of ingredients**
- Food preparation errors**
- Improper cleaning of equipment**

### Kits available:

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

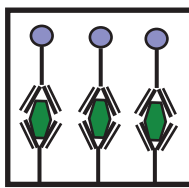
## How the ELISA SYSTEMS Egg White Residue test works:

**Step 1**  
Sample is added



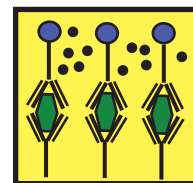
The test sample is added and if Egg White residue is present, it will bind to the specific antibodies.

**Step 2**  
Antigen-Antibody Complex



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

**Step 3**  
Coloured End-Point

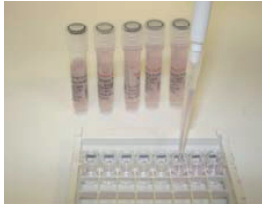


TMB Substrate is added, which is converted in the presence of the Enzyme Conjugate to form a blue colour if Egg White residue is present in the sample.

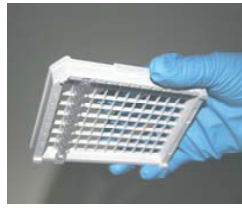
A yellow colour is formed once Acid is added to stop the reaction.

Total test time is approximately 35 minutes on extracted samples. (Three incubation times of 10 minutes each.)

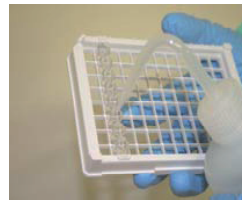
# Food Allergen Residue ELISA Protocol



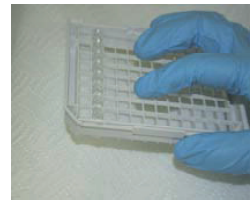
Add 100 microlitres of Standards and Samples to their allocated Antibody-coated wells.  
Mix all wells for 10 seconds by gentle shaking on a flat surface.  
**Incubate for 10 minutes.**



Dump liquid from wells.



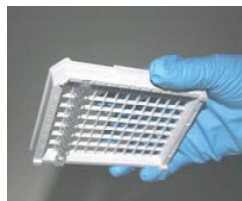
Wash wells thoroughly five times with wash buffer.



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 10 minutes.**



Dump liquid from wells.



Wash wells thoroughly five times with wash buffer.



Tap wells firmly onto absorbent paper towel.



**DO NOT WASH**



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.**

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)
<b>ESERD-48</b>	<b>48</b>	<b>46</b>	as a screening test (a multichannel pipette must be used to achieve maximum sample numbers)
		<b>30+</b>	as Quantitative test

Manufactured by **ELISA SYSTEMS Pty Ltd.**

For all enquiries contact:

**Oxoid Ltd, Wade Road, Basingstoke, Hampshire, RG24 8PW, UK.**

**Tel: +44 (0) 1256 841144**

**Fax: +44 (0) 1256 463388**

**Email: [oxid@oxid.com](mailto:oxid@oxid.com)**