Food Allergen ELISA Kit

Cat.#	Products
M2101	Egg (Ovalbumin) ELISA Kit
M2102	Casein ELISA Kit
M2103	Wheat/Gluten (Gliadin) ELISA Kit
M2104	Peanut ELISA Kit

High sensitivity, Fast and Easy

Especially, superior to test for processed food.

V.4/Jun/2017

About Morinaga Institute of Biological Science, Inc. (MIoBS)

Morinaga Institute of Biological Science, Inc. (MIoBS) is a member of Morinaga & Co., Ltd. (Morinaga group), which is a leading confectionary company in Japan,
We are focusing on developing the reagents for food safety and laboratory animals, utilizing immunoassay techniques as ELISA, Western blotting and Lateral Flow device.
We are also responsible for analysis for food safety, quality control and hygiene assurance in Morinaga group.

Intended Use

We offer innovative food allergen ELISA kits which can effectively solubilize and extract proteins from processed and unprocessed food. These kits use an innovative new extraction solution to achieve a high recovery rate of the target protein in both processed and unprocessed food.

Performance

Performance	
Assay range	0.31 - 20 ppm (μg protein /g food)
Limit of detection	0.31 ppm (μg protein /g food)
Limit of quantity	0.31 ppm (μg protein /g food)
Reproducibility	Intra-, Inter, Lot to Lot reproducibility : C.V.<10%
Sample extraction	Heating 10 min or shaking over night (at least 12 hours)
Assay time	120 min (excluding sample preparation/extraction)
Sample number	40 samples (Duplicate)

Egg : ppm (μg egg protein /g food), Casein : ppm (μg milk protein /g food)
Wheat : ppm (μg wheat protein /g food), Peanut : ppm (μg peanut protein /g food)

High light

Innovative extraction method and unique antibodies

Using an novel extraction solution, the allergen is significantly solubilized even after the exposure to extreme processing condition, and our unique antibodies can detect the target. Accordingly, the kits can apply for the examination of highly processed foods, as well as swab samples collected in food processing.

MORINAGA
Morinaga Institute of Biological Science, Inc.
E-mail : info@miobs.com URL : http://www.miobs-e.com

Validation data of Allergen ELISA Kits

Sensitivity

	Egg	Casein	Gluten	Peanut
Limit of detection	0.31 ppm	0.31 ppm	0.31 ppm	0.31 ppm
Limit of quantity	0.31 ppm	0.31 ppm	0.31 ppm	0.31 ppm

Egg : ppm (μg egg protein /g food), Casein : ppm (μg milk protein /g food)
Wheat : ppm (μg wheat protein /g food), Peanut : ppm (μg peanut protein /g food)

Representative test results of commercial foods

Food	Egg (ppm)
Biscuit	21,827
Bread	1,509
Custard pudding	24,038
Ham	36,645
Mayonnaise	3,158

Food	Casein (ppm)
Biscuit	1,338
Bread	228
Custard pudding	11,345
Ham	1,933
Wafers	7,631

Food	Wheat (ppm)
Biscuit	42,625
Bread	140,302
Baby food	1,076
Stew roux	78,449
Fried chicken	14,129

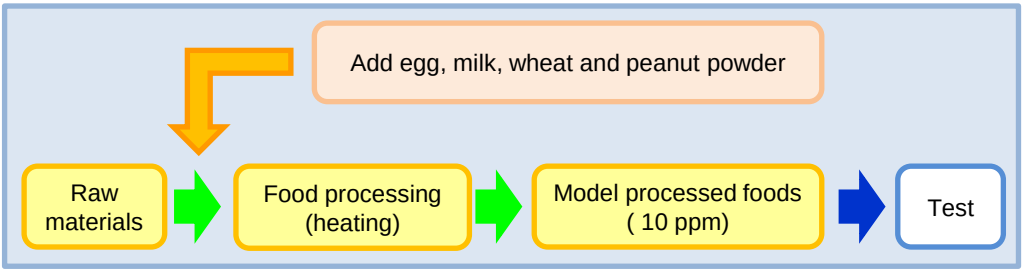
Food	Peanut (ppm)
Biscuit	12,922
Peanut butter	37,151
Peanut soup	5,945
Peanut cream	13,954

Egg : ppm (μg egg protein /g food), Casein : ppm (μg milk protein /g food)
Wheat : ppm (μg wheat protein /g food), Peanut : ppm (μg peanut protein /g food)

Reactivity of model processed foods

Model processed foods were prepared by spiking egg, milk, wheat and peanut powder at **10 ppm (μg protein /g food)** to the food before processing.

Egg : ppm (μg egg protein /g food), Casein : ppm (μg milk protein /g food)
Wheat : ppm (μg wheat protein /g food), Peanut : ppm (μg peanut protein /g food)



Unit : ppm

Food	Heating condition	Egg	Casein	Wheat	Peanut
Sausage	Heated at 80℃ for 20min	7.0	10.9	No test	No test
Beef (retort)	Heated at 121℃ for 1min	7.6	11.5	No test	No test
Biscuit	Heated for 8.5min by oven	5.2	9.7	No test	No test
Orange juice	Heated at 90℃ for 10min	8.1	9.0	11.2	8.5
Strawberry jam	Boiled until it has evaporated	8.7	13.7	No test	13.4
Chicken meatball	Heated at 100℃ for 10min	No test	No test	9.2	8.8
Tomato sauce	Heated at 90℃ for 10min	No test	No test	12.2	11.0
Jelly	Heated up to reach 90℃	8.9	9.5	8.2	9.9
Porridge	Cooked by a rice cooker	8.4	5.5	9.6	9.9

Cross reactivity of Allergen ELISA kits

Unit : ppm (μg protein /g food)

Food	Egg	Casein	Gluten	Peanut
Egg	**>20**	<0.31	<0.31	<0.31
Milk	<0.31	**>20**	<0.31	<0.31
Skim milk	<0.31	**>20**	<0.31	<0.31
Wheat	<0.31	<0.31	**>20**	<0.31
Barley	<0.31	<0.31	**>20**	<0.31
Rye	<0.31	<0.31	**>20**	<0.31
Oats	<0.31	<0.31	**>20**	<0.31
Soy bean	<0.31	<0.31	<0.31	<0.31
Corn flour	<0.31	<0.31	<0.31	<0.31
Buckwheat	<0.31	<0.31	<0.31	<0.31
Peanut	<0.31	<0.31	<0.31	**>20**
Almond (Roasted)	<0.31	<0.31	2.36	<0.31
Cashew (Roasted)	<0.31	<0.31	<0.31	<0.31
Macadamia (Roasted)	<0.31	<0.31	<0.31	<0.31
Pistachio (Roasted)	<0.31	<0.31	<0.31	<0.31
Walnut (Roasted)	<0.31	<0.31	<0.31	<0.31
Sesame (Roasted)	<0.31	<0.31	<0.31	<0.31
Black pepper	<0.31	<0.31	<0.31	<0.31
Red pepper	<0.31	<0.31	0.52	<0.31
Cumin	<0.31	<0.31	1.36	<0.31
Coriander	<0.31	<0.31	1.13	<0.31
Poppy seed	<0.31	<0.31	1.08	<0.31
Shrimp	<0.31	<0.31	<0.31	<0.31
Crab	<0.31	<0.31	0.62	<0.31
Squid	<0.31	<0.31	<0.31	<0.31
Beef	<0.31	<0.31	<0.31	<0.31
Pork	<0.31	<0.31	<0.31	<0.31
Chicken	<0.31	<0.31	<0.31	<0.31

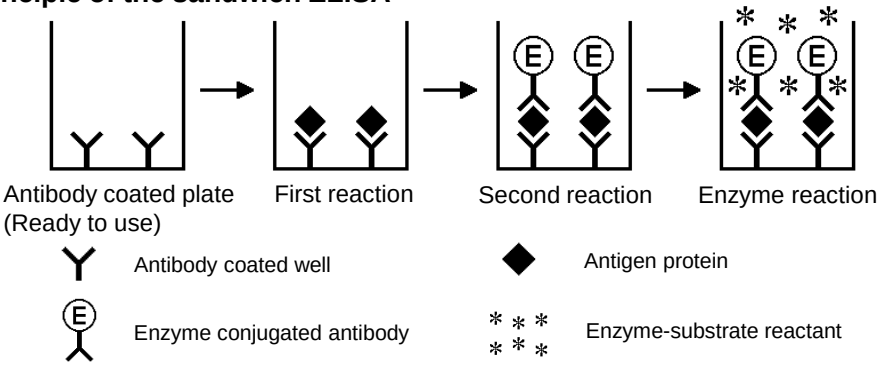
This data is representative. Please contact us when you need lot data you use.

Egg : ppm (μg egg protein /g food), Casein : ppm (μg milk protein /g food)
Wheat : ppm (μg wheat protein /g food), Peanut : ppm (μg peanut protein /g food)

MORINAGA
Morinaga Institute of Biological Science, Inc.
E-mail : info@miobs.com URL : http://www.miobs-e.com

Appendix

Principle of the sandwich ELISA



The Antigen is bound to the polyclonal antibody coated wells of the microplate module. This results in the formation of an antigen-antibody complex in the wells. Unbound materials are removed by washing. Subsequently, the enzyme-conjugated antibody is bound to the already bound antigen-antibody complex, forming an antibody-antigen-antibody sandwich. A second washing step removes the excess conjugated antibody. Addition of enzyme substrate results in color development due to the enzyme bound to the complex. After addition of the stop solution, the color intensity of the solutions can be determined by the absorbance at 450 nm. The intensity of the color developed is directly proportional to the concentration of protein of allergic ingredients in the food. The concentration of its protein corresponding to the measured absorbance is determined by preparing a standard curve, and adjusting for a further dilution factor if necessary.

Related Food Allergen Test Kits

Food Allergen Lateral Flow IIR (qualitative test kit)

Cat.#	Product	Limit of Detection
M2201	Egg (Ovalbumin) Lateral Flow IIR	5 ppm
M2202	Casein Lateral Flow IIR	5 ppm
M2203	Gluten (Gliadin) Lateral Flow IIR	5 ppm
M2204	Buckwheat Lateral Flow IIR	5 ppm
M2205	Peanut Lateral Flow IIR	5 ppm

Egg : ppm (μg egg protein /g food), Casein : ppm (μg milk protein /g food)
Wheat : ppm (μg wheat protein /g food), Buckwheat : ppm (μg buckwheat protein /g food),
Peanut : ppm (μg peanut protein /g food)

MORINAGA

Morinaga Institute of Biological Science, Inc.
E-mail : info@miobs.com
URL : http://www.miobs-e.com