

TECHNICAL DATA SHEET PROTEON CRUSTACEAN EXPRESS

Scope

PROTEON CRUSTACEAN EXPRESS is an immunochromatographic test in the form of rapid strips for the detection of crustacean proteins. These proteins are resistant to heat treatments.

Applicability

The Proteon Crustacean Express test can be applied to detect crustacean proteins in solid and liquid foods, rinse waters and work surfaces.

Test procedure

More detailed information on the procedure is available in the product script. The test procedure is presented schematically below:

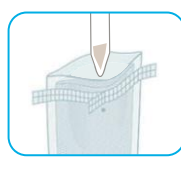
Analysis of food and rinse waters



1g/10 ml AB
1 mL/9 ml AB



Rub the mixture
1-2 min approx

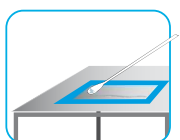


Collect the
filtered sample

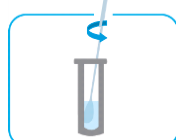
Analysis of surfaces



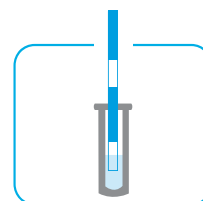
Dip a swab in
0.5 ml of AB



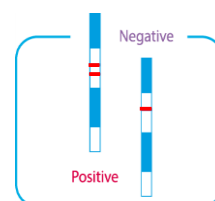
Swab the surface



Stir



Introduce the strip
and wait for 10 min
(15-25 °C)



Results

Analytical parameters of the test

Table 1. Analytical parameters of the Proteon Crustacean Express test

Detection limit in food¹	1 ppm crustacean proteins
Detection limit on surfaces²	4 µg crustacean proteins
Working range³	2-10000 ppm crustacean proteins

¹The detection limit of the test is calculated using the POD (Probability of detection) method.

²In the application of work surfaces the detection limit was calculated by analyzing a stainless steel surface.

³Concentrations above 10 g/kg of protein can give negative results. It is recommended to carry out an additional dilution in the extraction phase of these samples.

Specificity

Specificity was evaluated against a panel of basic ingredients. The results are shown in Table 2.

Table 2. Results of the specificity assays of the Proteon Crustacean Express test

<i>Ingredient</i>	<i>Result</i>
Veal	NEGATIVE
Chicken	NEGATIVE
Pork	NEGATIVE
Hake	NEGATIVE
Mussel	POSITIVE
60 ppm shrimp proteins	POSITIVE
60 ppm red prawn proteins	POSITIVE
60 ppm king shrimp proteins	POSITIVE
2 ppm prawn proteins	POSITIVE

The effect of thermal processing was analyzed by studying the detection of crustacean in matrices cooked at 100 degrees centigrade for 20 minutes.

Conversion factors

Table 3. Conversion factors between crustacean and crustacean proteins.

Crustacean	Crustacean proteins
5 ppm	1 ppm

Bibliography

Appendix F: Guidelines for Standard Method Performance Requirements. Official Methods of Analysis (2016), AOAC INTERNATIONAL, Rockville, MD, USA (http://www.eoma.aoac.org/app_f.pdf)

Appendix M: Validation Procedures for Quantitative Food Allergen ELISA Methods: Community Guidance and Best Practices. Official Methods of Analysis (2012), AOAC INTERNATIONAL, Rockville, MD, USA (http://www.eoma.aoac.org/app_m.pdf)

Guidance on food allergen management for food manufactures (2013), Food and Drink Europe, Brussels, Belgium (http://www.fooddrinkeurope.eu/uploads/press-releases_documents/temp_file_FINAL_Allergen_A4_web1.pdf)

BEDCA. Bases de datos Española de composición de alimentos. <https://www.bedca.net/bdpub/index.php>