



# SPECIALfinder

Real-Time PCR  
Allergens Detection

In a globalized food market with increasing demand for quality and safety monitoring, allergens are becoming an increasingly important issue for food safety.

**The presence of hidden allergens may be due to two main reasons:**

1. the use of processing lines for multiple products during manufacturing and packaging;
2. the use of proprietary ingredients that were derived from allergenic raw materials (starches, texturants).

Therefore when a food is contaminated by an allergen that was not declared in the label, the market is immediately alerted by the RASFF and the lot is immediately withdrawn from the market.

In Europe, a norm concerning the control of food allergens was issued in 2003 (Dir. 2003/89/CE) and later amended in 2006 (Dir.2006/142/CE). The norm includes a list (Annex IIIa) of ingredients that must be compulsory pointed out in the label as they can elicit allergic syndromes.



Although the dose/response thresholds have not been defined yet (as they may vary among individuals), some individuals are so sensitive to these allergens that even a minimum amount can cause serious problems or even death.

For such variability, it is impossible to base labelling rules on this parameter; nevertheless accuracy of what stated in label is essential for a proper customer information.

Zeroing the risk of the unintentional presence of allergens can be definitely challenging and costly so many companies resorted to the defensive labelling using language like «...might contain traces of...». It's worth noting that defensive labeling cannot relieve from having a control plan for allergens in place. Moreover, although a specific norm is not yet in place, EU commission already pointed out that action will be taken toward the abuse of defensive labeling. This is in fact against the spirit of the norm as it might cause i) a discrimination of allergic consumers ii) unnecessary dietary constraints iii) undervaluation of the risks by vulnerable consumers.

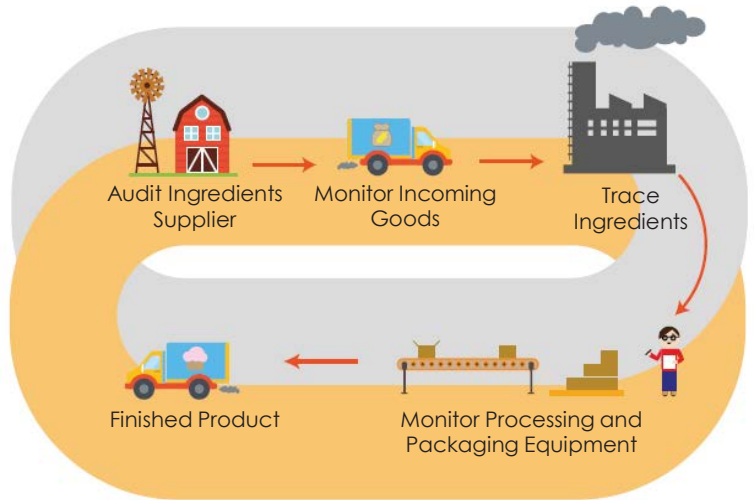
Thanks to the internal R&D activities and to the collaboration with highly qualified technical partners Generon offers clients a comprehensive portfolio of products for the detection of allergens including both immunochemical and molecular kits. Generon catalogue includes also various process controls to increase reliability of the tests.

Food companies must therefore aim for a real and effective control of the allergen contamination through convenient and reliable methods detecting and in case quantifying allergens in order to check effectiveness of cleansing procedures and ingredients segregation. Food industry and inspective agencies require reliable and diverse method for testing the presence of hidden allergens to protect consumers according to the international directives.

ELISA and PCR are the most diffused methods for the detection and quantification of food allergens. Both these methods have analytical limitations, therefore when possible, their combined use is the most appropriate approach according to scientific literature.

PCR is extremely useful to detect allergens in highly processed foods because DNA is less prone to degradation than proteins.

Real-Time PCR is the gold-standard for the detection of DNA of contaminating ingredients as it offers many analytical advantages, for example: the possibility to include a process control and/or a reaction control; the possibility to detect multiple allergens on the same DNA extract.



### SPECIALfinder

Tests developed and validated according to UNI-EN 15634-1: 2009 guidelines to detect the target allergen DNA with high specificity and sensitivity. Absence of cross-reactivity was tested towards a large number of food ingredients to avoid false positives. All the tests are made using prime-quality molecular biology grade reagents. Generon offers all the necessary pre- and post-sales support for the implementation of the methods on customers matrices.

### ION FORCE DNA Extractor FAST and ION SPIN

Combining SPECIALfinder Assays with the DNA extraction kits developed by Generon (provide PCR inhibitors-free DNA from large and representative samples either vegetable or animal), it's possible to perform allergens detection on any kind of matrix: ingredients, semi-finished and finished products environmental swabs.

The portfolio also includes:

### SPECIALfinder DigiCount

Target sequences quantified using Droplet-Digital-PCR technology.

### SPECIALfinder SpyX

Powdered allergen dispersions contaminating corn flour at 1000 ppm.



# Ordering Information

## DNA Extraction

**EXD001** ION Force DNA extractor FAST (100 extractions)

**EXD018** ION Spin DNA Prep One-for-All

## DNA quantification

**ACC2037** QUANTUS DNA Quantification System

**ACC2038** Quantus dsDNA reagent

**ACC2039** Microtubes for Quantus 0,5 ml

## SPECIALfinder Assays (50 Tests)

**PAV01M-50** SPECIALfinder MC Soy (Soia)

**PAV02M-50** SPECIALfinder MC Peanut (Arachide)

**PAV03M-50** SPECIALfinder MC Hazelnut (Nocciola)

**PAV05M-50** SPECIALfinder MC Pecan Nut (Noce di Pecan)

**PAV06M-50** SPECIALfinder MC Walnut (Noce)

**PAV07M-50** SPECIALfinder MC Pistachio Nut (Pistacchio)

**PAV08M-50** SPECIALfinder MC Cashew (Anacardo)

**PAV09M-50** SPECIALfinder MC Almond (Mandorla)

**PAV10A-50** SPECIALfinder Rye (Segale)

**PAV11A-50** SPECIALfinder Oats (Avena)

**PAV13M-50** SPECIALfinder MC Sesame (Sesamo)

**PAV14M-50** SPECIALfinder MC Mustard (Senape)

**PAV15M-50** SPECIALfinder MC Celery (Sedano)

**PAV16M-50** SPECIALfinder MC Brazil nut (Noce Brasiliana)

**PAV17A-50** SPECIALfinder Gluten (Glutine)

**PAV18M-50** SPECIALfinder MC Lupin (Lupino)

**PAV19A-50** SPECIALfinder Crustaceans (Crostacei)

**PAV20A-50** SPECIALfinder Fish (Pesce)

**PAV21M-50** SPECIALfinder MC Macadamia Nut (Noce Macadamia)

**PAV22A-50** SPECIALfinder Mollusks (Molluschi)

**PAV24A-50** SPECIALfinder Buckwheat (Grano saraceno)

**PAV25A-50** SPECIALfinder Barley (Orzo)

**PAV26M-50** SPECIALfinder Tree Nuts and Peanut MC

## SPECIALfinder Assays

according to DIN CEN/TS 15634 design (50 Tests)

**PAV02CEN-50** SPECIALfinder Peanut (Arachide)

**PAV03CEN-50** SPECIALfinder Hazelnut (Nocciola)

**PAV15A-50** SPECIALfinder Celery (Sedano)

## Real-Time PCR Instrument

**BR3594990** Bio-Rad CFX96™ DeepWell

**ACC2000** Notebook PC

## SPECIALfinder DigiCount

(120 µl of DNA >1000 copies/µL)

**PAV01R** SPECIALfinder DigiCount Soy

**PAV02R** SPECIALfinder DigiCount Peanut

**PAV03R** SPECIALfinder DigiCount Hazelnut

**PAV06R** SPECIALfinder DigiCount Walnut

**PAV07R** SPECIALfinder DigiCount Pistachio Nut

**PAV08R** SPECIALfinder DigiCount Cashew

**PAV09R** SPECIALfinder DigiCount Almond

**PAV10R** SPECIALfinder DigiCount Rye

**PAV13R** SPECIALfinder DigiCount Sesame

**PAV15R** SPECIALfinder DigiCount Celery

**PAV16R** SPECIALfinder DigiCount Brazil nut

## SPECIALfinder SpyX

(allergen @1000 ppm in 5 g of corn flour)

**PAV01X** **SPECIALfinder SpyX Soy**

**PAV02X** SPECIALfinder SpyX Peanut

**PAV03X** SPECIALfinder SpyX Hazelnut

**PAV04X** SPECIALfinder SpyX Wheat

**PAV05X** SPECIALfinder SpyX Pecan Nut

**PAV06X** SPECIALfinder SpyX Nut

**PAV07X** SPECIALfinder SpyX Pistachio

**PAV08X** SPECIALfinder SpyX Cashew

**PAV09X** SPECIALfinder SpyX Almond

**PAV10X** SPECIALfinder SpyX Rye

**PAV11X** SPECIALfinder SpyX Oats

**PAV12X** SPECIALfinder SpyX Barley

**PAV13X** SPECIALfinder SpyX Sesame

**PAV14X** SPECIALfinder SpyX Mustard

**PAV15X** SPECIALfinder SpyX Celery

**PAV16X** SPECIALfinder SpyX Brazil nut

**PAV18X** SPECIALfinder SpyX Lupin

**PAV19X** SPECIALfinder SpyX Crustaceans

**PAV20X** SPECIALfinder SpyX Fish

**PAV21X** SPECIALfinder SpyX Macadamia

**PAV22X** SPECIALfinder SpyX Shellfish

**PAV23X** SPECIALfinder SpyX Pinenut

**PAV24X** SPECIALfinder SpyX Buckwheat

Generon can perform custom validations on specific matrices evaluating all the details of clients scenario. Generon can also supply contaminated samples to use as process control.



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