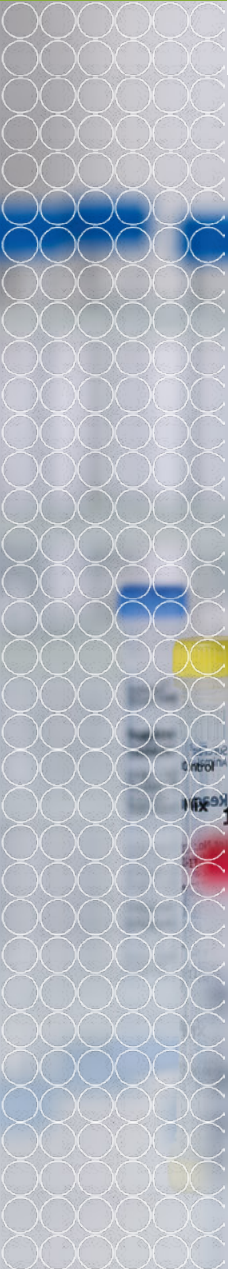


SureFood® ALLERGEN kits

Qualitative and quantitative real-time PCR analysis



Automated DNA preparation



Multiplex allergen test kits



Qualitative detection and quantification

More information:



<https://r-b.io/fdallrgns>

Allergen analysis with real-time PCR

Food allergies are specific food intolerances, that can cause an immunological reaction. This can even lead to an anaphylactic shock which can prove fatal in some cases.

In accordance to REGULATION (EU) No 1169/2011 the food **ingredient** needs to be declared for consumer protection.



Labelling obligation in the EU:

1. Cereals containing gluten (i.e. wheat, rye, barley, oats, spelt, kamut) and products thereof*
2. Crustaceans and products thereof*
3. Eggs and products thereof*
4. Fish and products thereof*
5. Peanuts and products thereof*
6. Soya beans and products thereof*
7. Milk and products thereof (including lactose)*
8. Nuts, i.e. almond, hazelnuts, walnuts, cashews, pecan nuts, brazil nuts, pistachio nuts, macadamia nuts and queensland nuts and products thereof*
9. Celery and products thereof*
10. Mustard and products thereof *
11. Sesame seeds and products thereof *
12. Sulphur dioxide and sulphites at concentrations of more than 10 mg/kg or 10 mg/litre expressed as SO₂
13. Lupin and products thereof *
14. Molluscs and products thereof *

Reference:

Appendix 2 of EU Directive 2011/1169/EC

* Exception: certain matrices

Thus, different analytical methods can be used. With the detection of a listed ingredient, the food product needs to be labelled. Exceptionally, this is not necessary if the ingredient is largely removed during the production process (e.g. distillates or extracts).



Labelling obligation in the US:

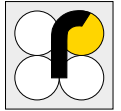
In other countries, however, different regulations apply such as in the USA: crustaceans, eggs, milk, peanuts, tree nuts, wheat soya, sulfur dioxide.

And since April 2021:

almond, beech nut, brazil nut, butternut, cashew, chestnut, chinquapin, coconut, hazelnut, ginko nut, hickory nut, lichee nut, macadamia nut, pecan, pine nut, pistachio, sesame, sheanut, walnut.



Eggs and milk cannot be analyzed with the real-time PCR, but immunological methods can be used for that. Barely suitable or even unsuitable for the PCR analysis are highly processed and/or purified products as no more or very little DNA is present, e.g. vegetable oil, gelatin, lecithin or starch.



Real-time PCR workflow



Uniform DNA preparation

Manual – Spin filter based

SureFood® PREP Advanced

Semi-automated – Magnetic beads based

TANBead/SureFast® Mag PREP Food



qPCR – Standardized PCR set-up & thermal profiles

Qualitative

- Multiplex – up to nine targets and internal control
- Duplex – kits include an internal amplification control (IAC; FAM/HEX)

Quantitative

Duplex in combination with SureFood® QUANTARD Allergen 40

Table 1: Composition of SureFood® QUANTARD Allergen 40 adapted to EU Directive 2007/68/EC. It is based on corn flour material and the following potentially allergenic food ingredients in a concentration of 40 mg/kg.

Allergen	Food	Allergen	Food
Gluten containing cereals	Wheat flour type 405	Nuts	Hazelnuts, almonds, walnuts, cashew nuts, pecan nuts, brazil nuts, pistachio, macadamia nuts
Crustaceans	Black tiger shrimps	Celery	Celery seeds
Egg	Egg powder (hen)	Mustard	Mustards seeds, yellow
Fish	Salmon	Sesame	Sesame seeds
Peanut	Peanuts	Lupin	Lupin seeds
Soy	Soybeans	Buckwheat	Buckwheat
Milk	Milk powder (cow)	Molluscs	Sea scallop

Your advantages



User-friendly:

Standardized sample prep, qPCR set-up & thermal profiles



Time saving:

Walk-away semi-automated DNA preparation & multiplex qPCR kits



Everything from a single source:

kits, accessories, equipment, support

Allergen analysis with real-time PCR

Multiplex kits are ideal for food screening

In the different channels up to nine parameters can be analyzed simultaneously.

Channel	S3401	S3404	S7006
FAM	Mustard	Almond, cashew, pistachio	Wheat
Cy5	Soya	Pecan, brazil nut, macadamia	Rye
ROX	Celery	Peanut, hazelnut, walnut	Barley
VIC/HEX	IAC	IAC	IAC

SureFood® ALLERGEN kits

Product	Description	No. of test/amount	Art. No.
SureFood® PREP			
Advanced	For highly processed matrices (food and feed)	50 preparations	S1053
Extraction control detection kit			
SureFast® Animal+Plant Control 3plex	Extraction control for plant or animal matrix including internal control DNA (ICD)	100 reactions	F4053
SureFood® ALLERGEN – qualitative and/or quantitative real-time PCR			
Almond	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3604
Brazil nut	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3617
Buckwheat	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3620
Cashew	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3615
Celery	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3605
New Coconut	LOD ≤ 1.0 mg/kg (ppm)	100 reactions	S3621
Crustaceans	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3612
Fish	LOD ≤ 1.0 mg/kg (ppm)	100 reactions*	S3610
Gluten	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3606
Hazelnut	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3602
Lupin	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3611
Macadamia	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3616
Molluscs	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3613
Mustard	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3609
Peanut	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3603
Pecan	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3618
Pistachio	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3614
Sesame	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3608
Soya	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3601
Walnut	LOD ≤ 0.4 mg/kg (ppm)	100 reactions*	S3607
SureFood® ALLERGEN – qualitative real-time PCR			
4plex Cereals (wheat/barley/rye)	LOD ≤ 1.0 mg/kg (ppm)	100 reactions	S7006
4plex Macadamia/Brazil nut/Pecan + IAC	LOD ≤ 0.4 mg/kg (ppm)	100 reactions	S3403
4plex Peanut/Hazelnut/Walnut + IAC	LOD ≤ 1.0 mg/kg (ppm)	100 reactions	S3402
4plex Soya/Celery/Mustard + IAC	LOD ≤ 0.4 mg/kg (ppm)	100 reactions	S3401
4plex EU NUTS	LOD ≤ 1.0 mg/kg (ppm)	100 reactions	S3404
4plex Almond/Pistachio/Cashew+IAC	LOD ≤ 0.4 mg/kg (ppm)	100 reactions	S3406
Beechnut	LOD ≤ 1.0 mg/kg (ppm)	100 reactions	S3628
Insects	LOD ≤ 1.0 mg/kg (ppm)	100 reactions	S3626
Oat	LOD ≤ 1.0 mg/kg (ppm)	100 reactions	S7004
Pine	LOD ≤ 1.0 mg/kg (ppm)	100 reactions	S3624
Shea nuts	LOD ≤ 1.0 mg/kg (ppm)	100 reactions	S3622
Laboratory reference material for quantification			
SureFood® QUANTARD Allergen 40	Corn flour containing potential allergens in food except sulphite and lactose with concentration of 40 mg/kg. The material has been developed for PCR quantification of allergens in food	2 grams	S3301
New SureFood® QUANTARD Allergen 1 ppm	Corn flour containing potential allergens in food except sulphite and lactose with concentration of 1mg/kg. The material has been developed for PCR quantification of allergens in food	2 grams	S3305
SureFood® – qualitative real-time PCR			
Apricot	LOD ≤ 5 DNA copies	100 reactions	S7007

* SureFood® QUANTARD Allergen 40 must be used for quantification.