

Service catalog

Food and feed



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GEN-IAL GmbH is a DIN EN ISO 17025 flexibly accredited laboratory for the analysis of food, feed and beverages with a high level of expertise in contract analysis and the manufacture of DNA extraction and real-time PCR kits for use in testing laboratories. All products and new developments are constantly improved, further developed and adapted to the needs of our customers.



**More
Information**



(Code S G)

Screening of GMO parameters using real-time PCR

The determination of various GMO screening parameters in a product sample serves as evidence of transgenic sequences and thus as a marker for the presence of genetically modified plant components in the product. Depending on the raw materials contained in

the product, different specific screening parameters are used to indicate various GMO elements.

All multiplex-PCR-Systems are also available as single PCR systems

Screening of	REF.
Triplex-Screening	
Parameter p35S, tNOS and EPSPS	SG 01
Parameter p35S, tNOS and pFMV	SG 02
Parameter pat, tNOS and EPSPS	SG 03
Parameter p35S, pat and EPSPS	SG 04
Parameter bar, pat and EPSPS	SG 05
Parameter bar, pat and pFMV	SG 06
Parameter bar, pat and pNOS	SG 07
Duplex-Screening	
Parameter p35S and tNOS	SG 08
Parameter bar and pat	SG 09
Parameter cry and pNOS	SG 10

Screening of	REF.
Detection	
Detection of nptII	SG 11
Detection of pat	SG 12
Detection of bar	SG 13
Detection of cry	SG 14

(Code I G)

Identification of GMO-Events using real-time PCR

Real-time PCR enables the detection of specific genetic markers contained in GMOs. Targeted primers and probes can be used to identify genetic elements of GMOs in order to monitor compliance with regulations regarding the GMO content in food and feed.

All multiplex-PCR-Systems are also available as single PCR systems

Identification of	REF.
Soya	
Roundup Ready (GTS40-3-2)	IG 01
Roundup Ready 2 (MON 89788-1)	IG 02
DAS-44406-6	IG 03
A2704-12	IG 04
A5547-127	IG 05
FG 72	IG 06
MON87751-7	IG 07
A2704-12- and A5547-127 (Duplex-PCR)	IG 08
DP305423-5, CV127-9 and MON87701-2 (Triplex-PCR)	IG 09
MON87708-9, MON87769-7 and DAS68416-4 (Triplex-PCR)	IG 10
MON 87708-9-, MON 87769-7-, DAS 68416-4-, DP 305423-5-, CV 127-9 and MON 87701-2	IG 11
A 2704-12-, A5547-127 and DP 356043-5 (Triplex-PCR)	IG 12

Identification of	REF.
Rape	
GT73 (Roundup Ready)	IG 13
MON 88302-9	IG 14
GT73- and MON 88302-9 (Duplex-PCR)	IG 15
Ms8-, T45- and Rf3 (Triplex-PCR)	IG 16

Identification of	REF.
Maize	
BT11	IG 16
BT176	IG 17
MON 88017	IG 18
MON 810	IG 19
GA21	IG 20
MIR604	IG 21
MIR162	IG 22
NK603	IG 23
MON89034	IG 24
MON863	IG 25
E3272	IG 26
DAS59122	IG 27
T25	IG 28
TC1507	IG 29
MON89034, NK603, TC1507 and MON810 (Multiplex-PCR)	IG 30

Identification of	REF.
Mosaicvirus	
Cauliflower	IG 31
Figwort	IG 32
Einfügen Cauliflower and Figwort (Duplex-PCR) Figwort	IG 33
Potato	
EH92-527-1 Kartoffel (Amflora™)	IG 34
Sugar beet	
H7-1	IG 35
Cotton	
GHB614	IG 36

More available on request

(Code Q G)

Quantification of GMO-Events using real-time PCR

In addition to simply identifying GMOs, real-time PCR also offers the possibility of determining the amount of GMO-DNA in relation to the total-DNA

in the sample. Quantitative PCR therefore makes it possible to provide accurate information about the GMO content in food and feed.

Quantification of	REF.	Quantification of	REF.
Soya		Mais	
Roundup Ready (GTS40-3-2)	QG 01	BT11	QG 17
Roundup Ready 2 (MON 89788)	QG 02	BT176	QG 18
DAS-44406-6	QG 03	MON 810	QG 19
A2704-12	QG 04	GA21	QG 20
A5547-127	QG 05	MIR604	QG 21
MON87701	QG 06	MIR162	QG 22
CV127-9	QG 07	NK603	QG 23
DP305423-5	QG 08	MON89034	QG 24
MON 87708-9	QG 09	MON863	QG 25
MON 87769-7	QG 10	E3272	QG 26
DAS 68416-4	QG 11	DAS59122	QG 27
Rape		T25	QG 28
GT73 (Roundup Ready)	QG 12	TC1507	QG 29
MON 88302	QG 13		
MS8	QG 14		
T45	QG 15		
Rf3	QG 16		

(Code Q P)

Quantification of plant ingredients using real-time PCR

The quantification of botanical contaminants is an indispensable part of food and feed analysis. Botanical contaminants in food and feed can also include genetically modified organisms (GMOs). These contaminants arise when genetically modified plants accidentally or intentionally end up in crops or in the production of plant products that

are not classified as GMOs. Real-time PCR allows contaminants to be detected and quantified quickly, accurately and efficiently. This enables reliable quality control and ensures that products comply with legal requirements to guarantee the safety of food and feed.

Quantification of	REF.
Soya	
DNA in total-DNA	QP 01
Mais	
DNA in total-DNA	QP 02
Wheat	
soft wheat DNA in total wheat DNA	QP 03

(Code I A)

Identification of allergens using real-time PCR

The identification of allergens in food is a key requirement for protecting people with food allergies, as even the smallest amounts of certain substances can trigger severe health reactions. Real-time PCR is highly sensitive and allows detection even in

highly processed or complex foods where proteins may be denatured, as DNA is often more stable than proteins. This contributes to quality assurance in food production and supports the correct declaration of allergenic ingredients.

Detection of	REF.	Detection of	REF.
Cashew	IA 01	Sesame	IA 18
Crustacea	IA 02	Soya	IA 19
Peanut	IA 03	Walnut	IA 20
Gluten	IA 04	Wheat	IA 21
Hazelnut	IA 05	Mustard (white and black-brown mustard, Duplex-PCR)	IA 22
Potato	IA 06	Rape, Soya and Maize (Triplex-PCR)	IA 23
Shells	IA 07	Rice	IA 24
Macadamia	IA 08	Cotton	IA 25
Maize	IA 09		
Almond	IA 10		
Molluscs	IA 11		
Brazil nut	IA 12		
Pecan nut	IA 13		
Pistachio	IA 14		
Plant	IA 15		
Rape	IA 16		
Celery	IA 17		

(Code I TA)

Identification of animal species using real-time PCR

The precise identification of animal species in biological samples is becoming increasingly important in many areas, including food safety, food labeling (e.g. HALAL) and the authentication of animal ingredients in meat products in order to detect

adulteration or fraud (e.g. the horse meat scandal). Specific primers and probes can be used in real-time PCR to accurately identify the target species.

Detection of	REF.
Crustacea	ITA 01
Duck	ITA 02
Donkey	ITA 03
Fish	ITA 04
Goose	ITA 05
Chicken	ITA 06
Meat	ITA 07
Molluscs	ITA 08
Horse	ITA 09
Turkey	ITA 10
Cattle	ITA 11
Ruminant	ITA 12
Sheep	ITA 13
Pig	ITA 14
Vegan-Vertebrate	ITA 15
Goat	ITA 16
Cattle and Pig (Duplex-PCR)	ITA 17

Detection of	REF.
Chicken and Turkey (Duplex-PCR)	ITA 18
Plant, Meat and Human (Triplex-PCR)	ITA 19
Chicken, Turkey, Pig and Cattle (Multiplex-PCR)	ITA 20
Horse and donkey (Duplex-PCR)	ITA 21

(Code Q TA)

Quantification of animal species using real-time PCR

Food fraud is a growing global problem in which animal species are deliberately mislabelled in order to sell lower-quality products as higher-quality ones or to substitute cheaper types of meat. It is particularly important in relation to religious or cultural regulations, such as those laid down

in halal or kosher dietary guidelines. Quantifying animal species in food at the DNA level using real-time PCR enables rapid and accurate determination of the actual species and protects consumers from such deception.

Quantification of	REF.
Duck	QTA 01
Goose	QTA 02
Chicken	QTA 03
Turkey	QTA 04
Cattle	QTA 05
Sheep	QTA 06
Pig	QTA 07
Goat	QTA 08

(Code Seq TA)

Identification of animal species using sequencing

Specific DNA regions of the sample are amplified using the PCR method and sequenced. The DNA sequences obtained are compared with public and in-house databases (BlastN).

Identification of	REF.
fish species	SeqTA 01
crustacean species	SeqTA 02

