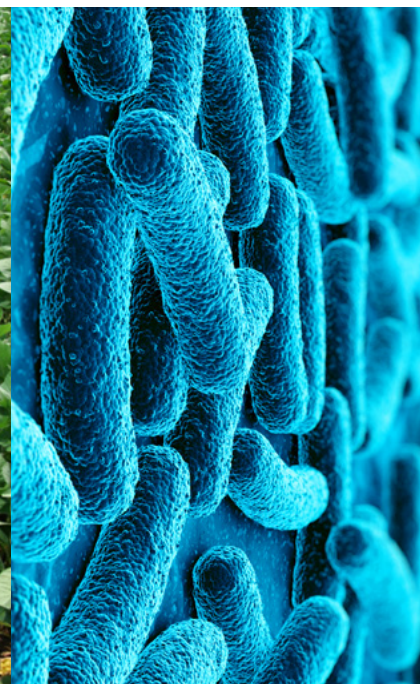


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BIOTECON Diagnostics



NEWSLETTER

**For safer food – BIOTECON Diagnostics –
simply builds up trust!**

Welcome to our newsletter

Our new regular newsletters are an easy way to keep up-to-date with all our new developments and interesting scientific research in the field of rapid tests. With contributions from our in-house experts, our newsletters contain quarterly highlights, news pieces, and keep you informed of all our upcoming events and activities.

Topics:

- *New **foodproof**[®] GMO Screening LyoKits*
- *Portfolio LyoKits*
- *New **foodproof**[®] Clostridium botulinum LyoKit*
- *Schedule for Trade Fairs*

May
2015

**BIOTECON
Diagnostics GmbH**

Hermannswerder 17
14473 Potsdam
Germany

Phone: +49 (0)331-2300-200
Fax: +49 (0)331-2300-299

bcd@bc-diagnostics.com
www.bc-diagnostics.com

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BIOTECON Diagnostics

NEWSLETTER

BIOTECON Diagnostics introduces the new GMO screening panel

Worldwide cultivation of genetically modified organisms (GMOs) is approaching 10% of global agricultural area. Different transgenic crops are grown commercially on more than 175 million hectares in over 30 countries such as the USA, Brazil, Argentina, India and China. According to EU law, foods and additives with more than 0.9% relative amount of genetically modified organisms must be labelled as GMO products. Other countries have similar regulations or draft guidelines. Thus, reliable methods for GMO screening in plant-containing products are required. The **foodproof®** GMO Screening LyoKits are based on the real-time PCR technology with multiple fluorescence channels for multiplexing.



Genetically modified maize is the only GM crop being commercially grown in the EU

The **foodproof®** *GMO Screening 1 LyoKit* detects and differentiates the 35S-promoter (P-35S) of the cauliflower mosaic virus (CaMV), the 3'-untranslated terminator region of the nopaline synthase gene (T-NOS) of *Agrobacterium tumefaciens* and the figwort mosaic virus promoter (P-FMV). This multiplex real-time PCR LyoKit was developed for the detection of genetically modified plants in food and animal feed. The assays comply with ISO 21569 and the German Food Law § 64 LFGB for the detection of genetically modified DNA sequences. An internal amplification control is also included and detected in a separate channel. The procedure is optimized for a real-time PCR instrument with four fluorescence channels: a FAM (for P-35S), HEX (for T-NOS), ROX (for P-FMV), and Cy5 (for Internal Control) detection channel.

The **foodproof®** *GMO Screening 2 LyoKit* – 5'Nuclease – is intended for the rapid detection of one or more of the five inserted primary control sequences (bar, P-35S-pat, CTP2-CP4-EPSPS, P-NOS-nptII or P-35S-nptII) in genetically modified plants from preparations of raw material and processed food as well as feed and seed samples. The procedure is optimized for a real-time PCR instrument with four fluorescence channels: a FAM (for bar), HEX (for P-35S-pat), ROX (for CTP2-CP4-EPSPS), and Cy5 (for P-NOS-nptII and P-35S-nptII) detection channel. A positive Cy5 signal could signalize a positive P-NOS-nptII or positive P-35S-nptII element. If you need detailed differentiation we recommend further kits.

In addition, the **foodproof®** *Plant Detection LyoKit* – 5'Nuclease – is intended for the rapid detection of plant DNA from preparations of raw material and processed food as well as feed and seed samples.

NEW KITS!

- **foodproof®** *GMO Screening 1 LyoKit, 3 Targets*
- **foodproof®** *GMO Screening 2 LyoKit, 5 Targets*
- **foodproof®** *Plant Detection LyoKit*



Equipment necessary:

- Real-time PCR cycler suitable for detection of FAM-, HEX-, ROX- and Cy5-labeled probes as well as for using low or regular profile strip tubes

Application and highlights:

- Broad GMO screening with 8 targets
- Very sensitive test kits
- Direct-to-plate: No master mix preparations. Add the DNA sample direct to the pre-filled reaction well
- Automated DNA purification sample systems for plant DNA tested
- Full quality control by a German manufacturer

**AVAILABLE:
Since March 2015**



NEWSLETTER

*Plant DNA can be analyzed with the **foodproof**[®] GMO Screening 1/2 LyoKits. Different genetically modified soya, maize, cotton, sugar beet, canola, rice plants reveal positive results for one or more than one target*

Name of plant and event	plant	Parameters included in the foodproof [®] GMO Screening 1 LyoKit			Parameters included in the foodproof [®] GMO Screening 2 LyoKit				
		P-35S [FAM]	T-NOS [HEX]	FMV-35S [ROX]	bar [FAM]	35S-pat [HEX]	CTP2-CP4EPSPS [ROX]	P-NOS-nptII [Cy5]	P-35S-nptII [Cy5]
Soy									
GTS 40-3-2 (Roundup Ready)	soya	+	+	-	-	-	-	-	-
W62, W98 (Liberty Link)	soya	+	+	-	+	-	-	-	-
MON 89788 (Roundup Ready 2 Yield)	soya	-	-	+	-	-	+	-	-
GU262 (LibertyLink)	soya	+	-	-	-	+	-	-	-
Maize									
MON 810	maize	+	-	-	-	-	-	-	-
Bt176 (176; Maximizer)	maize	+	-	-	+	-	-	-	-
TC1507 (Herculex)	maize	+	-	-	-	+	-	-	-
MON 863 (YieldGard)	maize	+	+	-	-	-	-	-	+
MS3 (SeedLink)	maize	+	+	-	+	-	-	-	-
MON 832 (Roundup Ready)	maize	+	+	-	-	-	+	-	+
Other plants									
MON 15985	cotton	+	+	-	-	-	+	+	+
T120-7 (LibertyLink)	sugar beet	+	-	-	-	+	-	+	-
Topas19/2 (HCN 10, HCN 92 LibertyLink)	canola	+	-	-	-	+	-	+	-
LL62 (LibertyLink)	rice	+	-	-	+	-	-	-	-

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BIOTECON Diagnostics

NEWSLETTER

foodproof® LyoKits

BIOTECON Diagnostics has extended its product range by convenient and safe lyophilized real-time PCR kits, the **foodproof®** LyoKits. The following LyoKits have been launched already, many more will follow soon.

foodproof® Clostridium botulinum Detection LyoKit, 5'Nuclease (NEW)

foodproof® STEC Screening LyoKit, 5'Nuclease

foodproof® STEC Identification LyoKit, 5'Nuclease (NEW)

Learn more about our STEC LyoKits in the next newsletter in September

foodproof® Porcine LyoKit, 5'Nuclease (R&D)

foodproof® GMO Screening 1 LyoKit, 5'Nuclease (NEW)

foodproof® GMO Screening 2 LyoKit, 5'Nuclease (NEW)

foodproof® Plant Detection LyoKit, 5'Nuclease (NEW)

foodproof® Listeria monocytogenes Detection LyoKit, 5'Nuclease

foodproof® Salmonella Detection LyoKit, 5'Nuclease

foodproof® Salmonella Enteritidis & Typhimurium Detection LyoKit

BIOTECON Diagnostics introduces the new **foodproof® Clostridium botulinum Detection LyoKit**

The traditional botulinum neurotoxin identification is based on a mouse bioassay that detects biologically active toxin. The assay requires a three part approach: toxin screening, toxin titer, and finally toxin neutralization using monovalent antitoxins. Cross-neutralization of a specific toxin by heterologous antitoxins does not occur or is minimal. In the mouse lethality test toxins will be detected by intraperitoneally treated mice with enriched and diluted samples. Then mice will be screened by counting how fast and how much of them die. The process requires at least four to six days including repetitions. In today's time, there is an increasing pressure to replace mammalian bioassays, not only because they are considered less suitable for quantitative purposes, but also because of ethical reasons.

Clostridium botulinum is an anaerobic, endospore-forming, Gram-positive bacterium, which can cause botulism. Botulinum toxins are the most potent bacterial toxins known. Although this food illness is rare, its mortality rate is high.

Why Lyophilisation?

- Market expects an easy-to-use and time-saving solution
- Pre-filled reaction mix, just add DNA sample preparation
- Less pipetting steps: reduced risk of cross-contamination
- Easy storage (2 - 8 °C) – transportation possible at room temperature, no more cooling chain challenges
- Better handling: sample volume can be up to 25 µl instead of 5 µl

**AVAILABLE:
Since 2014**

Short facts

for the new **foodproof® Clostridium botulinum Detection LyoKit:**

DNA Extraction:

- Use **foodproof® ShortPrep II Kit** or **foodproof® StarPrep Two Kit**

PCR setup:

- Ready-to-use master mix: multiplex pre-mixed primers and probes (5' Nuclease) + all necessary reagents
- Easy: add 25 µl DNA sample in one step to the lyophilized master mix
- Prevention of false-negative results by internal control and prevention of carry-over contamination using UNG

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BIOTECON Diagnostics

NEWSLETTER



*Honey is a known dietary reservoir of *C. botulinum* spores linked to infant botulism. WHO warns parents and caregivers not to feed honey to the infants before the age of one year.*

The botulinum neurotoxins are classified into eight serotypes designated A–H, of which A, B, E, and F have been shown to be toxic to humans. Types A and B are most commonly encountered in foods associated with soil contamination, and may occur in inadequately preserved foods, such as canned or cured meat. Honey, a known source of *C. botulinum* spores, has been implicated in some cases of infant botulism. The finding of type E in aquatic environments by many investigators correlates with cases of type E botulism that were traced to contaminated fish or other seafoods.

The development of rapid methods allows the fast detection of pathogens in food samples: The **foodproof® *Clostridium botulinum* Detection LyoKit** is a molecular method, based on PCR technology and has been demonstrated to detect neurotoxin genes in a highly specific manner. The **foodproof® *Clostridium botulinum* Detection LyoKit** detects all human-relevant toxins – types A, B, E and F – in a single multiplex real-time PCR reaction. The kit includes an internal positive control, and in addition a positive and negative control. A PCR device with three fluorescence channels (FAM, HEX, ROX) is necessary to detect and differentiate the four types (A, B, E, F) and IPC in parallel. This method detects the genes and not the toxins, therefore a positive result does not necessarily mean the presence of these toxins in the sample investigated according to ISO/TS 17919:2013.

Application and highlights:

- Detection of neurotoxin genes A, B, E and F (comprising *C. botulinum*, *C. butyricum*, *C. baratii*)
- Detection in 3 separate channels and by melting curve analysis: Channel 1 (FAM): A, E; channel 2 (HEX): B,F; channel 3 (ROX): IPC
- Based on ISO/TS 17919 method, with improved design
- Storage: At 2 °C to 8 °C
- Licensed: Fully licensed technology

**AVAILABLE:
End of May 2015**



Upcoming Events

Join us at the upcoming events to share insights and best practices with colleagues, connect and form new collaborations and discover new product launches.

Event	Date and Location	Contact
May		
GMO Free European Conference	06th - 08th of May 2015 in Berlin, Germany	Olaf Degen, MBA
5th Food Safety Congress	07th - 08th of May 2015 in Istanbul, Turkey	Dr. Jawaid Baig
Food Ingredients Istanbul	13th - 15th of May 2015 in Istanbul, Turkey	Altigen
BIONNALE in Berlin	27th of May 2015 in Berlin, Germany	Olaf Degen, MBA Alois Schneiderbauer Dr. Kornelia Berghof-Jäger
June		
Campden BRI day 2015	3rd - 4th of June 2015 in Gloucestershire, UK	Oxford Biosystems, Dr. Cordt Grönewald
July		
BrasilBrau 2015	15th -18th of July 2015 in Sao Paulo, Brazil	Tobias Haug, Markus Fandke,
IAFP	25th - 28th of July 2015 in Portland, Oregon, USA	Dr. Christina Harzman, Dr. Julia Hoffmann
September		
International Dairy Show + Process Expo + Beverage Expo	15th-18th of September 2015 in Chicago, USA	Dr. Christina Harzman
October		
Efsa Expo2015, Shaping the Future of Food Safety	14th -16th of October in Milano, Italy	Olaf Degen, MBA Alois Schneiderbauer

Impressum

Editorial contact: Olaf Degen

BIOTECON Diagnostics GmbH

Hermannswerder 17
14473 Potsdam
Germany

Phone: +49 (0)331-2300-200
Fax: +49 (0)331-2300-299

bcd@bc-diagnostics.com
www.bc-diagnostics.com