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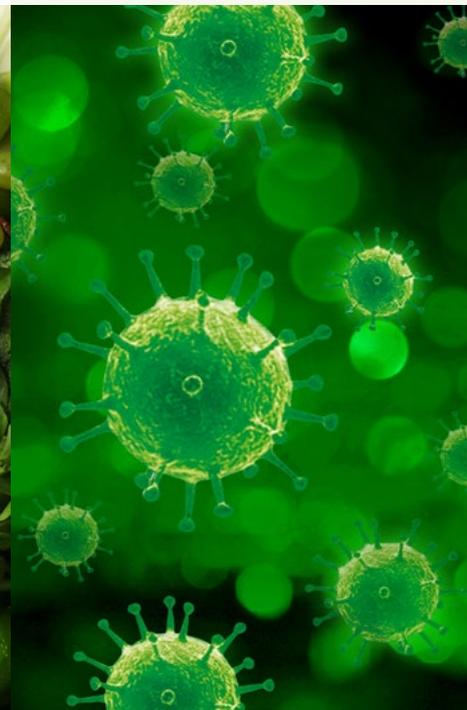


BIOTECON Diagnostics

NEWSLETTER



NEWSLETTER



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

Welcome to our newsletter

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

Topics:

- ▶ **Simultaneous detection of food related *Yersinia* species**
- ▶ **A new multiplex real-time-RT-PCR test for virus detection in food and bottled water**
- ▶ **New Kits for Soya Identification:** Identification of all EU authorized soya events
- ▶ **Meet the Experts:** Join our Workshops & Meetings
- ▶ **Upcoming Events**

#1 2018

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Simultaneous detection of food related *Yersinia* species



Yersinia are Gram-negative, bacillus-shaped bacteria, belonging to the family of *Enterobacteriaceae*. The organism is widespread in nature, being found in intestinal tracts of numerous mammalian, avian and cold-blooded species, as well as terrestrial and aquatic environments.

Infections with *Y. enterocolitica* or *Y. pseudotuberculosis* can cause the disease yersiniosis, which is an animal-borne disease occurring in humans as well as in a wide array of animals. Yersiniosis is, after infections by *Salmonella* and *Campylobacter*, the third most common bacterial gastrointestinal disease in Germany and Europe (e.g. in 2015: 2.590 registered infections in Germany and 6.471 in the EU).

The main reservoir for *Y. enterocolitica* is domesticated pigs, while *Y. pseudotuberculosis* is mainly harbored by wild pigs.

Therefore the biggest risk factor is the consumption of raw pork products e.g. ground pork or minced meat. However, these species can also be found in beef, raw milk, surface water and vegetables.

Y. enterocolitica is responsible for approximately 85 % of all human yersiniosis infections, while *Y. pseudotuberculosis* causes the remaining approximately 15 %. Like often for foodborne diseases, infants and children under 5 years are especially susceptible.

Low temperature of 4 °C do not prevent *Y. enterocolitica* or *Y. pseudotuberculosis* strains from multiplying. This fact increases their disease-causing risk in humans via contaminated food because *Yersinia* can still grow in supermarket multi-deck cabinets or at home in the fridge.



Order No.: F 302 53

foodproof® *Yersinia enterocolitica* plus *Yersinia pseudotuberculosis* Detection Kit

- Two answers in one test: simultaneous detection of the food-related species *Yersinia enterocolitica* and *Y. pseudotuberculosis* in two separate fluorescence channels
- Based on the PCR reference method ISO/TS 18867, but with an improved design
- Time savings of at least 4 days in comparison to cultural methods
- Highly sensitive: detects *Y. enterocolitica* and *Y. pseudotuberculosis* down to 10³ cfu/ml
- Fast and easy DNA extraction protocol using the **foodproof®** StarPrep One Kit
- Optional differentiation between living and dead cells possible using Reagent D

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Therefore, several official regulations for the detection of these pathogenic bacteria exist, such as the ISO 10273:2017: Microbiology of the food chain -- Horizontal method for the detection of pathogenic *Yersinia enterocolitica*, as well as the U.S. FDA's Bacteriological Analytical Manual (BAM), Chapter 8 for *Yersinia enterocolitica*. BIOTECON Diagnostics now offers a solution which provides safe results in 24 hours in comparison to the 5 days or longer necessary with microbiological reference methods. The highly specific kit detects all biotypes and serotypes with pathogenic potential including biotype 4 (serotype O:3) and biotype 2 (serotype O:9) for *Y. enterocolitica* as well as serotypes I, II and III for *Y. pseudotuberculosis*.



BIOTECON Diagnostics' method has been designed according to the real-time PCR based reference method ISO/TS 18867, but with an improved design. False-positive results caused by the closely related but non-pathogenic organism *Y. similis* can occur when using the ISO/TS 18867 method. Our **foodproof**[®] kits guarantee only the pathogenic species *Y. enterocolitica* and *Y. pseudotuberculosis* are detected.

In addition to the real-time PCR kit, BIOTECON Diagnostics offers a fast and easy DNA extraction procedure, the **foodproof**[®] StarPrep One Kit, as well as a unique solution for the differentiation between DNA from living and dead *Yersinia* cells. This product, called Reagent D, penetrates the cell walls of dead organisms and inactivates the DNA by a light induced process. Reagent D does not affect living *Yersinia* cells. The protected DNA of living cells can be amplified and detected in the PCR process like normal.

BIOTECON Diagnostics' method has been thoroughly internally validated in the relevant food matrices e.g. minced meat from pork and other meat matrices.

For more information about the **foodproof**[®] *Yersinia enterocolitica* plus *Yersinia pseudotuberculosis* Detection Kit, please contact:

[Benjamin Junge](#)

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NEWSLETTER

A new multiplex real-time-RT-PCR test for virus detection in food and bottled water



Food- and waterborne outbreaks involving hepatitis A virus (HAV) and norovirus (NoV) have been reported in many countries. Often both viruses appear in conjunction. Different foods have been commonly associated with these virus outbreaks, including berries, fruits (e.g. kiwi, pineapple and dates), vegetables (e.g. onions and tomatoes), seafood (e.g. oysters, mussels, shrimp and tuna steaks) or minced meat. Additionally, outbreaks of gastrointestinal illness caused by viruses in bottled water (e.g. in office water coolers) have occurred.

NoV are considered to be the main agent for gastrointestinal diseases in humans worldwide, causing vomiting. They are a group of single-stranded RNA, non-enveloped viruses belonging to the *Caliciviridae* family. The most common infecting NoV in food is genogroup II genotype 4 (GII.4).

HAV can cause liver infection and is highly contagious. But many cases have few or no symptoms, especially in children. HAV is a species of virus in the family *Picornaviridae*; it is not enveloped and contains a single-stranded RNA packaged in a protein shell. The human-relevant genotypes are numbered I, II and III.

ISO 15216:2017 is the official regulation for the detection of both HAV and NoV: Microbiology of food and animal feed -- Horizontal method for determination of hepatitis A virus and norovirus using real-time RT-PCR.

With the new BIOTECON real-time-RT-PCR-kit, a simultaneous, qualitative detection and differentiation of HAV, NoV (from genogroups I and II) and a process control,



Order No.: R 302 50

foodproof® Norovirus (GI, GII) plus Hepatitis A Virus Detection Kit

- Four answers in one test: simultaneous detection of food and water relevant viruses Norovirus GI, Norovirus GII, Hepatitis A Virus and Process Control in four separate fluorescence channels
- Based on the real-time-RT-PCR reference method ISO/TS 15216
- Bacteriophage MS2 solution (Process Control) is provided with the PCR kit

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bacteriophage MS2, is possible based on the criteria of ISO 15216. The kit allows a one-step-reaction using reverse transcriptase, a polymerase that synthesizes DNA from RNA, and Taq DNA polymerase, an enzyme used in PCR for DNA amplification.

Loss of target virus can occur at several stages during virus extraction from the sample and RNA extraction from the virus. The kit also includes a solution of MS2 bacteriophage as a process control, which can be added to the sample and is treated like the sample. The specific sequence of the process control is later separately detected during the PCR run for each sample. This provides the added benefit of being able to calculate the recovery rate of the bacteriophage MS2 for each sample individually.

For RNA extraction, BIOTECON offers the **foodproof**[®] Sample Preparation Kit IV. It is suitable for manual extraction or semi-automated extraction of 24 samples in parallel with a vacuum manifold. The combination of these kits has been internally validated with the food and water matrices of concern, e.g. shellfish, berries, minced meat and water.



For more information about the **foodproof**[®] Norovirus (GI, GII) plus Hepatitis A Virus Detection Kit or our other real-time-RT-PCR detection kits, please contact:

[Olaf Degen](#)

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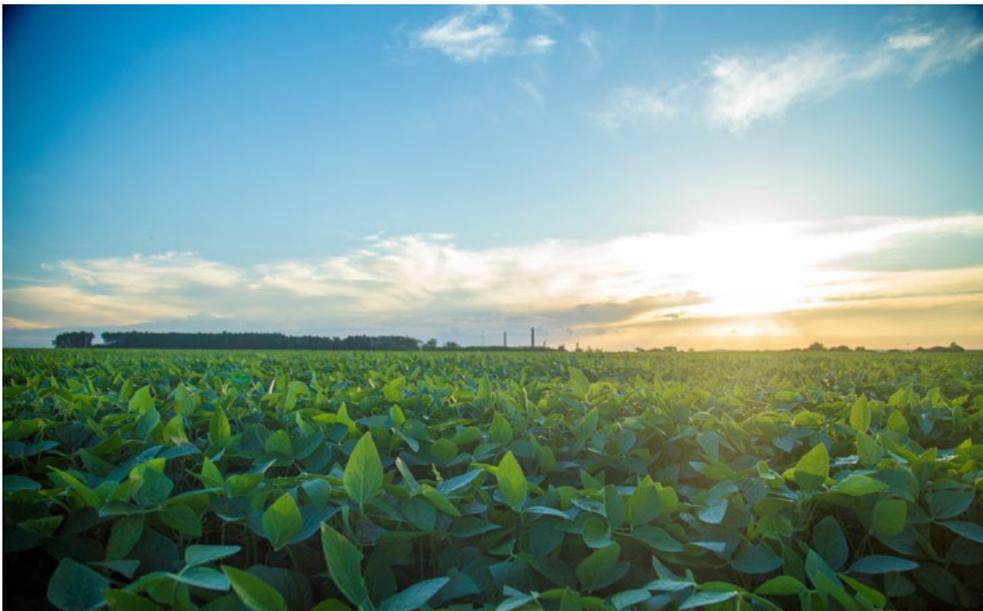
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NEWSLETTER

New Kits for Soya Identification: Identification of all EU authorized soya events



We are proud to present this new set of LyoKits for the identification of nearly all soya events authorized in the European Union for food, feed and/or other uses:

foodproof® GMO Soya Identification 1 LyoKit (R 602 24)

- Identification of DAS-44406-6, MON87701, MON87708 and MON87769

foodproof® GMO Soya Identification 2 LyoKit (R 602 25)

- Identification of BPS-CV127-9, DP-305423-1, DAS-68416-4 and DAS-81419-2

foodproof® GMO Soya Identification 3 LyoKit (R 602 36)

- Identification of FG72, A5547-127, DP-356043 and MON87705

All events included in the **foodproof®** GMO Soya Identification 1 LyoKit and **foodproof®** GMO Soya Identification 2 LyoKit are not detected by regular screening methods. In the past the combined detection of the cauliflower mosaic virus (CaMV) 35S promoter and NOS terminator of the nopaline synthase gene of *Agrobacterium tumefaciens* provided good certainty concerning the presence or absence of GMO in a sample. However, this approach is now outdated because recently developed GMO events do not always contain P-35S or T-NOS. Even with the comprehensive and sophisticated approach of BIOTECON Diagnostics' GMO screening system,

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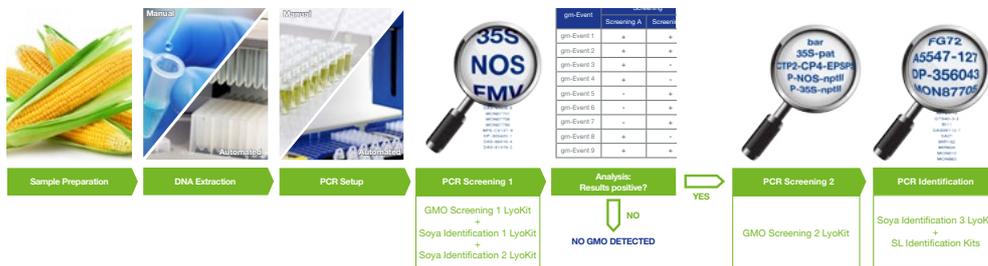


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certain non-marker events like MON87708 or MON87769 are not detected. To close this gap, BIOTECON Diagnostics now offers the new **foodproof**® GMO Soya Identification LyoKits. The events included in the **foodproof**® GMO Soya Identification 3 LyoKit are detected by both screening LyoKits. The assays include the identification of all EU authorized soya events, except A2704-12, MON89788 and GTS 40-3-2.

Workflow



BIOTECON Diagnostics assays for GMO Screening, quantification and identification offer highest sensitivity and flexibility, while being accurately reproducible and easy-to-use.

- Uniquely designed assays enable screening for 8 different GMO target elements
- Additional multiplex-identification assays for 12 soya events close the screening system gap
- In combination, best coverage of genetically modified plants is provided
- Automated DNA extraction with the KingFisher Flex and Magnetic Preparation Kit III (plus validated on the **foodproof**® RoboPrep Fusion)
- Primer and probes in accordance with ISO 21569, ISO 21570, ISO 21571 and the German Food Law § 64 LFGB

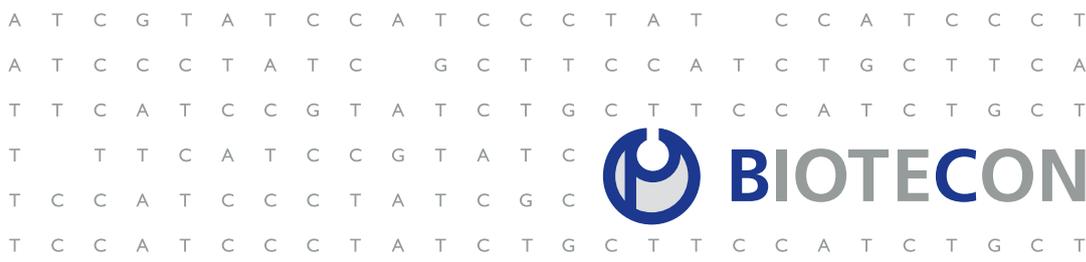
Summary

- Identification of nearly all EU authorized soya events
- Controls are integrated in the kit (positive and negative control)
- UNG minimizing carryover contamination risk
- The assay is compatible with all relevant food matrices
- High sensitivity:
 - LODrel: 0.01 % (6 out of 8 even lower at 0.001 %)
 - LODabs: 1 target copy / µl
- Lyophilized kits:
 - Pre-filled reaction mix, just add DNA
 - Easy storage at 2 - 8 °C – easy transportation at room temperature
 - Less pipetting: reduced risk of cross-contamination
 - Sensitive: use up to 25 µl sample for PCR
- 96 reactions

For more information about the soya identification kits, please contact:

Dr. Ivo Meier-Wiedenbach

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Meet the Experts: Join our Workshops & Meetings

In the second half of 2018, we are offering again a series of workshops as well as industry meetings. The events for 2018 are listed below.

It is a good opportunity for you and your customers to get in-depth information on food and beverage analysis and have hands-on training for our test methods.

We look forward to seeing you at one of our workshops and industry meetings!

Schedule Industry Meetings	
Date	Topic
September 13 - 14	Industry Meetings: Sector Dairy/Infant Formula Sector Confectionary Sector Meat Special: FUSION workshop

Get in contact to learn more!

Schedule Workshops	
Date	Topic
October 18	Beverage Workshop: Detection of <i>Alicyclobacillus</i> and Spoilage Yeast
October 19	Legionella Workshop: Quantification in 4 hours
November 27	Real-time PCR Workshop: Introduction into the technology and hands-on experience
November 28	Salmonella Workshop: <i>Salmonella</i> Detection in Poultry & <i>Salmonella</i> Vaccines

Get in contact to learn more!

General Information

WORKSHOP LANGUAGE:

English

LOCATION:

All workshops will take place in Potsdam - Hermannswerder, Germany.

SAVE YOUR PLACE!

INDUSTRY MEETING FEE: 199 €

WORKSHOP FEE: 129 €

Includes one hotel overnight stay at Inselhotel Hermannswerder or other hotel, workshop documents, catering, certificate of participation.

Not included: other travel costs.

Cancellation up to 7 days before beginning of the seminar will result in cancellation fees of 50 % of the full seminar fee, for later cancellation the full fee of the seminar is due without consideration.

If you and your customers are interested to participate or if you have further questions, please contact:

[Dr. Constanze Klopffleisch](#)



Upcoming Events

Join us at 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
July 2018		
IAFP 2018	July 08 – 11, 2018 in Salt Lake City, USA	Dr. Christina Harzman
August 2018		
Brewing Summit	August 12 – 15, 2018 in San Diego, USA Visit us at our booth 304!	Juliane Kuklinski, Markus Fandke
AOAC 132 st Annual Meeting and Exposition	August 26 – 29, 2018 in Toronto, Canada	Benjamin Junge
September		
Food Micro Conference	September 03 - 06 in Berlin, Germany Our industry workshop: "Virus Detection in Food" on Tuesday, 4th September at 03:00pm.	Olaf Degen
International Symposium Salmonella and Salmonellosis	September 24-26 in Saint-Malo, France	Olaf Degen
Food Technology Summit and Expo 2018	September 26 - 27 in Mexico-City, Mexico	Alberto Skinfill
November		
BrauBeviale*	November 13 - 15 in Nürnberg, Germany	Markus Fandke, Franz Thurmeier
Workshop MRAMA 2018	November 20- 23 in Barcelona, Spain	Alberto Skinfill, Erik Franzke

If you want to meet us at one of these trade shows or need further information please contact Dr. Constanze Klopfleisch.

* At this trade show we are supported by the EU



Impressum

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WORKSHOPS

TOPICS:

BEVERAGE, LEGIONELLA,
 REAL-TIME PCR, SALMONELLA, GMO

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