Food Control™

- Highly sensitive system for the fast and reliable detection of foodborne pathogens via real-time PCR or our proprietary Lateral Flow Assay (LFA) technology
- Optimized DNA extraction system for the extraction of bacterial DNA from a broad range of enrichment broths as starting material
- No need for gel-electrophoresis
- Quick and parallel analysis of multiple microorganisms from the same extract
- Clear and easily interpretable results
- Lyophilized temperature-stable components
- Easy to use

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Background

Bacterial detection is a key aspect in food microbiology. Consequently, microbiological quality control programs are intensified throughout the food chain production in order to minimize the risk of intoxicating consumers. Thus, the reliability, speed and robustness of a test system to detect the presence, absence or even the degree of contamination of pathogens becomes increasingly important. Based on PCR, Food Control™ product series provides diagnostic tools for the agricultural and food industry, using lateral flow hybridization for easy presence or absence evaluation or based on real-time qPCR for semi-quantitative interpretation.

Food Control™ kit series includes Food Control™ qPCR, Food Control™ LFA and Food Control™ LFA+ PCR kits for fast and reliable detection of foodborne pathogens via real-time PCR or our proprietary Lateral Flow Assay (LFA) technology. Food Control™ qPCR is a diagnostic system for the easy determination of contamination degree in agricultural or food industry via real-time PCR. LFA technology provides stripes as an easy read-out making DNA gels obsolete and in combination with our LFA+ cartridges and pre-cast chambers provide maximum contamination prevention. Food Control™ kits should be used in conjunction with our optimized DNA extraction system ExtractNow™ Food Control.

Benefits

Very sensitive
Detection accomplished down to 10 DNA copies/assay.

Easy to use
Isolated total DNA from potentially contaminated food serves as starting material, typically after pre-cultivation in a suited sample growth medium. Detection is done via qPCR or via conventional PCR plus Lateral Flow Assay (LFA) technology, making gels unnecessary and if combined with pre-cast hybridization cartridges and chamber significantly reduces carry-over.

Instrument Compatibility
Food Control™ qPCR works on cyclers with FAM™ and HEX™ filters.
Food Control™ LFA requires any conventional PCR cycler.

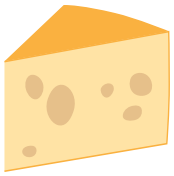
One extract – multiple parameters
One extract can be used for PCR reactions with different specificities, so that multiple microorganisms can be analyzed in parallel and at user's choice.

Clear
A clear and easily interpretable result is obtained with one PCR reaction. No subsequent and laborious detection or cost-intensive devices are required.

Stable
All master mixes are freeze-dried and need to be rehydrated with a supplied buffer to reduce shipping costs and increase product stability.

Contamination prevention
All PCR kits can also be used with UNG for carry-over prevention (UNG is not included).

ExtractNow™ Food Control



Features

Type of Sample	ExtractNow™ Food Control can be used for extraction of gram+ and gram- bacterial DNA after pre-cultivation in suited food pathogen enrichment media. Kit is suited for isolation of DNA from up to $1x10^9$ bacterial cells.
Separation principle	Spin filter columns
Shelf Life and Storage	Components can be stored at room temperature for at least 12 months.
Description	Spin column based DNA extraction method for a broad range of different enrichment broths as starting material. Using a cutting-edge chemistry, the duration of the DNA purification is reduced to a minimum.
Specifications	Time for extraction: approx. 45 minutes Column binding capacity: > 50 µg DNA Average Yield: Depending on type and cell number Average purity: 1.7 - 2.0

Ordering Information

Cat. No. 609-1010	10 extractions
Cat. No. 609-1050	50 extractions

Food Control™ qPCR

Features

Target

- *Salmonella enterica* – invasion protein (invA) gene
- *Yersinia enterocolitica* – heat-stable enterotoxin A gene
- *Shigella spp.* – invasion plasmid antigen (ipaH6) gene
- *Campylobacter spp.* – acyl-[acyl-carrier-protein]–UDP-N-acetylglucosamine O-acyltransferase (lpxA) gene
- *Clostridium perfringens* – phospholipase C alpha toxin (plc) gene
- *Shiga Toxin 1* – stx1 gene
- *Shiga Toxin 2* – stx2 gene
- *Escherichia coli O157* – wbdR gene
- *Escherichia coli O104* – wckD gene
- *Listeria spp.* – invasion associated protein p60 (iap) gene
- *Listeria monocytogenes* – listeriolysin O (hly) gene
- *Salmonella spp.* – spacer-region between 16S and 23S RNA genes

Sensitivity

Down to 10 DNA copies/assay.

Principle

TaqMan® assay based on FAM™ and HEX™ labeled probes.

Content

qPCR mix, rehydration buffer, PCR grade water, internal control, positive control

Sample Requirements

Isolated total DNA from potentially contaminated food serves here as starting material, typically after pre-cultivation of the sample in growth medium.

Intended Use

For research use only!

Time to Result

150 minutes

Cycler

Compatible cyclers with HEX™ and FAM™ filters.

Ordering Information

Cat. No.	Species
11-02-01-025	*Salmonella enterica*
11-02-02-025	*Yersinia enterocolitica*
11-02-03-025	*Shigella spp.*
11-02-04-025	*Campylobacter spp.*
11-02-05-025	*Clostridium perfringens*
11-02-06-025	*Shiga Toxin 1*

Cat. No.	Species
11-02-07-025	*Shiga Toxin 2*
11-02-08-025	*Escherichia coli O157*
11-02-09-025	*Escherichia coli O104*
11-02-10-025	*Listeria spp.*
11-02-11-025	*Listeria monocytogenes*
11-02-12-025	*Salmonella spp.*

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Food Control™ LFA

Features

Target

- *Salmonella enterica* – invasion protein (invA) gene
- *Yersinia enterocolitica* – heat-stable enterotoxin A gene
- *Shigella spp.* – invasion plasmid antigen (ipaH6) gene
- *Campylobacter spp.* – acyl-[acyl-carrier-protein]–UDP-N-acetylglucosamine O-acyltransferase (lpxA) gene
- *Clostridium perfringens* – phospholipase C alpha toxin (plc) gene
- *Shiga Toxin 1* – stx1 gene
- *Shiga Toxin 2* – stx2 gene
- *Escherichia coli O157* – wbdR gene
- *Escherichia coli O104* – wckD gene
- *Listeria spp.* – invasion associated protein p60 (iap) gene
- *Listeria monocytogenes* – listeriolysin O (hly) gene
- *Salmonella spp.* – spacer-region between 16S and 23S RNA genes

Sensitivity

Down to 10 DNA copies/assay.

Principle

The assay is based on a one tube amplification with a conventional PCR cycler and a subsequent probe specific hybridization technique. The resulting interpretation is a simple readout of coloured bars on a lateral flow stripe.

Content

PCR Mix
Rehydration Buffer
PCR Grade Water
Positive Control
Species Primer
Species Probe
LFA Stripe
LFA Running Buffer

Sample Requirements

The Food Control™ kits are designed for the PCR based detection of bacterial DNA. Isolated total DNA from potentially contaminated food serves here as starting material, typically after pre-cultivation of the sample in growth medium.

Intended Use

For research use only!

Time to result

150 minutes

Cycler

Any conventional PCR cycler

Food Control™ LFA+

Features

Food Control™ LFA+ is based on the regular Food Control™ LFA design, but provides additionally a convenient pre-casted hybridisation cartridge. This system allows the single-use, cross-contamination safe reading of the PCR result for each sample individually.

The cartridge provides the lateral flow stripe and the running buffer required to complete the hybridization and staining process. The PCR tube is inserted into the cartridge. By closing the system a needle taps the tube and the buffer reservoir, instantly starting the flow and the hybridization transferring the PCR amplicons onto the stripe. This one step system reduces preparation and handling steps. The result is easily visible through the sight funnel.

Ordering Information

Cat. No.		Species	
LFA 11-03-	LFA+ 11-04-		
		...01-025	*Salmonella enterica*
		...02-025	*Yersinia enterocolitica*
		...03-025	*Shigella spp.*
		...04-025	*Campylobacter spp.*
		...05-025	*Clostridium perfringens*
		...06-025	*Shiga Toxin 1*
		...07-025	*Shiga Toxin 2*

Cat. No.		Species	
LFA 11-03-	LFA+ 11-04-		
		...08-025	*Escherichia coli 0157*
		...09-025	*Escherichia coli 0104*
		...10-025	*Listeria spp.*
		...11-025	*Listeria monocytogenes*
		...12-025	*Salmonella spp.*

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