Detection of Foodborne Pathogens

qPCR-based screening of food contaminations

High Sensitivity

- qPCR-based assay for fast and reliable detection of foodborne pathogens via qPCR, down to 10 bacterial DNA copies per reaction.
- Optimized bacterial DNA extraction from a broad range of enrichment broths as starting material.

Simple and Rapid Procedures for Reliable Results

- Quick and parallel analysis of multiple foodborne microorganisms from the same extract.
- Lyophilized, temperature-stable components components to simplify logistics and storage.
- Ready-to-use products, straightforward protocols, easily interpretable results.

MB minerva biolabs®

Background

Detecting bacterial contaminations is a key aspect in food safety testing that minimizes the risk of intoxicating consumers. In this context, reliability, speed, and robustness of a test system to detect the presence or absence, or even the degree of contamination with pathogens, becomes increasingly important.

Food Control™ qPCR kits ensure fast and reliable detection of foodborne pathogens via real-time PCR, for the easy determination of contamination degree in agricultural or food industry. Food Control™ qPCR kits should be used in combination with our optimized DNA extraction system ExtractNow™ Food Control.

ExtractNow™ Food Control

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.

Principle

Spin filter columns

Type of Sample

ExtractNow™ Food Control can be used for extraction of gram+ and gram- bacterial DNA after pre-culture in appropriate food pathogen enrichment media. The kit is suitable for isolation of DNA from up to $1x10^9$ bacterial cells.

Content

Spin filter columns, collection and lysis tubes, different buffers, proteinase K.

Specifications

Time for extraction: approx. 60 minutes (excl. pre-culture time)
Column binding capacity: > 50 µg DNA
Average Yield: Depending on type and cell number
Average purity: 1.7 - 2.0

Required Consumables & Lab Devices

Ethanol > 96 % abs., ddH_2O, microcentrifuge, heat block, pipettes and filter tips.

Storage and Shelf Life

Store the proteinase K at +2 to +8 °C and the rest of the components at room temperature until the expiry date indicated on the label.

Ordering Information

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

Benefits

Very sensitive
Detection down to 10 DNA copies/assay.

Easy to use
A 2-steps-procedure:
- DNA isolation from potentially contaminated food serves as starting material, typically after pre-cultivation in a suitable growth medium.
- Detection by qPCR.

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.

Easy results interpretation
A clear and easily interpretable result is obtained with one PCR reaction. No additional 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.

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

Instrument Compatibility
Food Control™ qPCR works on cyclers with FAM™ and HEX™ filters.

Food Control™ qPCR

qPCR kits for fast and reliable detection of a broad selection of relevant foodborne pathogens in food-derived samples.

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

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.

Sample Requirements
Isolated total DNA from potentially contaminated food serves here as starting material, typically after food sample pre-culture in growth medium.

Recommended Use
For research use only!

Content
qPCR mix, Rehydration Buffer, Internal Control DNA, Positive Control DNA, PCR grade Water

Time to Result
ca. 120 minutes

Ordering Information

Cat. No.	Species	25 Reactions Each
360-1025	*Salmonella enterica*	
360-2025	*Yersinia enterocolitica*	
360-3025	*Shigella* spp.	
360-4025	*Campylobacter* spp.	
360-5025	*Clostridium perfringens*	
360-6025	Shiga Toxin 1	
360-7025	Shiga Toxin 2	
360-8025	*Escherichia coli* O157	
360-9025	*Escherichia coli* O104	
361-1025	*Listeria* spp.	
361-2025	*Listeria monocytogenes*	
361-3025	*Salmonella* spp.	

How to order

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