

## **From Sample to Result**

# Validated PCR Methods for Foodborne Pathogen Detection



Ensuring food quality through  
reliable pathogen detection

Foodborne pathogens are microorganisms that have the potential to cause illnesses when consumed through contaminated food products. The occurrence of foodborne illnesses has become a significant concern for public health globally, leading to extensive efforts to ensure the safety of food. PCR detection for foodborne pathogens has revolutionized food safety by offering a fast, precise, and reliable diagnostic solution. While classical microbiological methods take up to a week, PCR can provide conclusive results within just a few hours. Thus, rapid and accurate PCR testing can prevent foodborne disease outbreaks, increasing quality insurance for food producers as well as consumer confidence in the food supply chain.

## What foods are most likely to be contaminated?

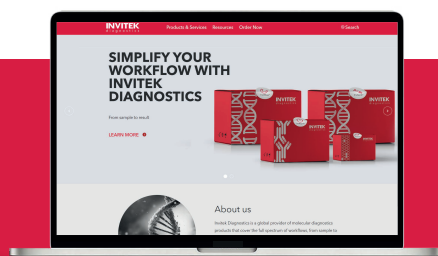
- Raw meat and poultry
- Raw eggs (uncooked brownie, cake, or cookie dough)
- Unpasteurized milk
- Raw shellfish
- Unwashed raw fruits and vegetables
- Unpasteurized fruit juice



## From sample to results

The **InviScreen® kits** for foodborne pathogen detection are developed based on the corresponding ISO standards that define the real-time PCR methods for the detection of the specific microorganisms in food and feed matrices. The kits include internal amplification controls and extraction controls as required by the standards. For DNA/RNA purification prior to testing, the **Invitek extraction kits** offer optimized protocols for various food matrices.

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AND SEE WHAT'S IN FOR YOU

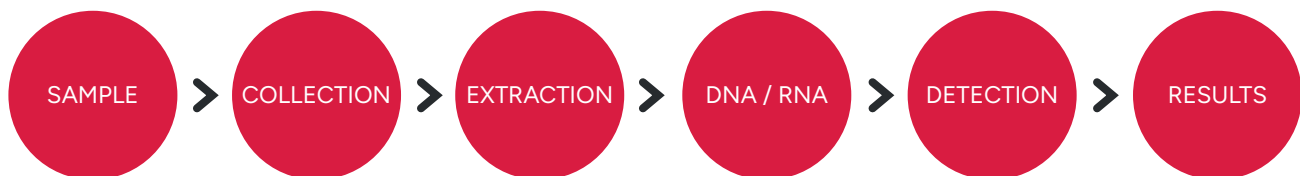


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## Highlights

- Modular system for the end-to-end workflow: combine specific extraction kits with a targeted pathogen detection system
- ISO-compliant validated workflows
- Compatible with open platform thermocyclers
- Premium quality real-time PCR based on Taqman® technology
- User-friendly PCR reaction setup in just 2 pipetting steps

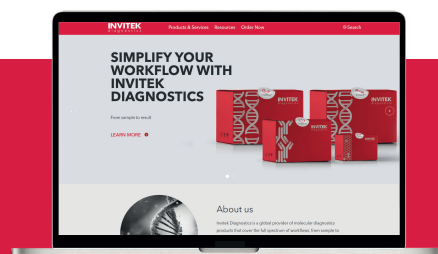
## GET READY TO **SIMPLIFY YOUR WORKFLOW** WITH INVITEK DIAGNOSTICS



## Advantages of PCR over traditional methods

1. **Enhanced Specificity:** Superior specificity for precise species, strain, or variant identification in compliance with regulatory requirements
2. **High Sensitivity:** Detection of trace amounts, only 3-10 genome copies in the food sample are sufficient for the detection of a target pathogen.
3. **Mitigation of false positives and negatives:** Clear results and improved accuracy by targeting specific genetic markers
4. **Multiplexing and high throughput:** Simultaneous detection of multiple targets, improving scalability and cost-effectiveness
5. **Rapid and efficient results:** Fast turnaround times, with results in hours to support timely food safety and quality control decisions

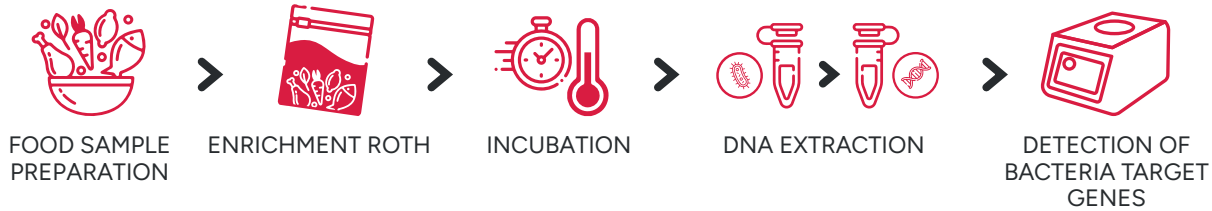
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# Foodborne bacteria detection

**INVITEK**  
diagnostics



## Extraction

### InviPrep® Fast Lysis Buffer

- Isolation of DNA from all bacteria and fungi (gram-positive and gram-negative)
- Enrichment samples from food, bacterial culture, bacterial colonies from plates
- Super-fast technology: 24 samples in less than 20 minutes



## Detection

### InviScreen® STEC Detection PCR Kits

- Easy and ready-to-use kits to screen for the presence of verocytotoxin-producing E.coli in food, feed and environmental samples
- High sensitivity detecting as low as 3 genomic units
- Compliant with ISO/TS 13136
- STEC Serotyping kits available



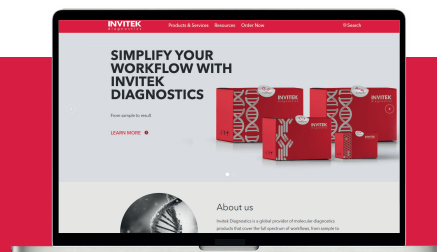
### InviScreen® Clostridium Botulinum Detection Kit

- Easy and ready-to-use kit to screen for the presence of neurotoxin-producing clostridia in food, feed and environmental samples
- Detection of botulinum toxins type A, B, E and F
- High sensitivity detecting as low as 10 genome copies/ $\mu$ l
- Compliant with ISO/TS 17919

### InviScreen® Salmonella spp. Detection Kit

- Fast turnaround time: detect Salmonella spp. in under 10 hours.
- Sensitivity and reliability: subjected to AOAC's PTM thorough scientific and systematic evaluation.
- Highly specific: tested against a panel of more than 100 Salmonella serovars and 30 non-Salmonella species.

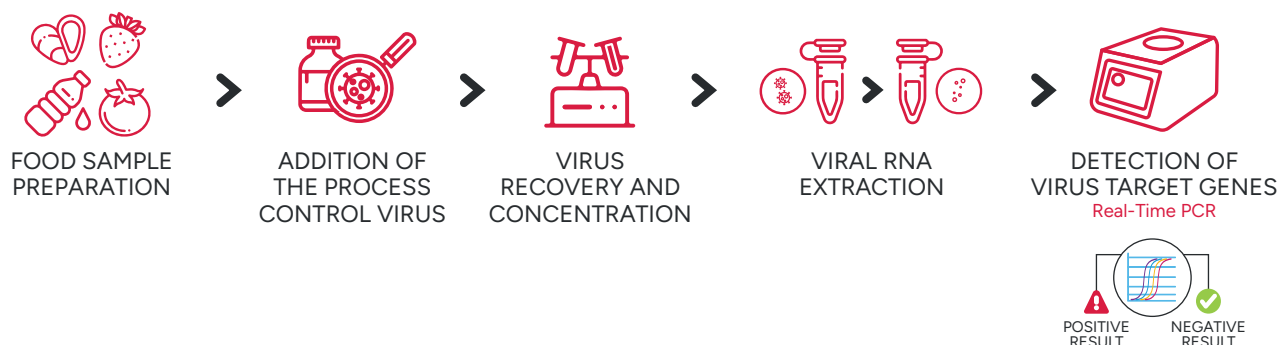
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## Foodborne virus detection



### Extraction



#### RTP® Pathogen (Ready-To-Prep)

- Isolation of viral DNA/RNA, bacterial DNA
- 1-step-lysis with lyophilized extraction buffer (containing Proteinase K, carrier nucleic acids, lysis buffer)
- Classic spin column technology: Highly pure nucleic acids
- Less hands-on time & reduced plastic consumption

### Detection



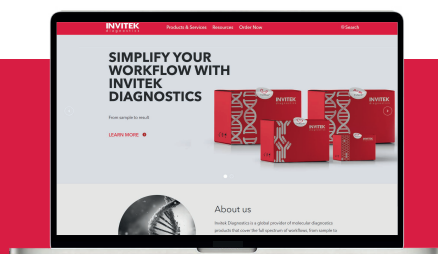
#### InviScreen® Norovirus Detection Kit

- Easy and ready-to-use kits to screen for the presence of Norovirus genogroups GI and GII in foodstuffs and environmental samples
- High sensitivity detecting as low as 10 copies/μl
- Compliant with ISO/TS 15216

#### InviScreen® Hepatitis A Virus Detection Kit

- Easy and ready-to-use kits to detect Hepatitis A virus in foodstuffs and environmental samples
- High sensitivity detecting as low as 10 copies/μl
- Completes the workflow of ISO/TS 15216 in combination with the InviScreen® Norovirus Detection Kit

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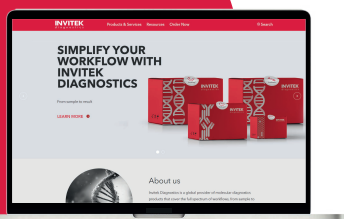
# Ordering information

## EXTRACTION KITS

Product	Package size	Catalogue No.
InviPrep® Fast Lysis Buffer	100 preps	1001136100
InviSorb® RTP Pathogen Kit	50 preps 250 preps	1040500200 1040500300

## DETECTION KITS

Product	Package size	Catalogue No.
InviScreen® <b>STEC</b> Detection Kit	100 tests	6015001200
InviScreen® <b>STEC</b> Serotyping Kit	100 tests	6015004204
InviScreen® <b>O157:H7</b> Detection Kit	100 tests	6015003201
InviScreen® <b>Norovirus</b> Detection Kit	100 tests	6015002200
InviScreen® <b>C. Botulinum</b> Detection Kit	100 tests	6015005200
InviScreen® <b>Hepatitis A Virus</b> Detection Kit	100 tests	6015006200
InviScreen® <b>Salmonella spp.</b> Detection Kit	100 tests	6015004204



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