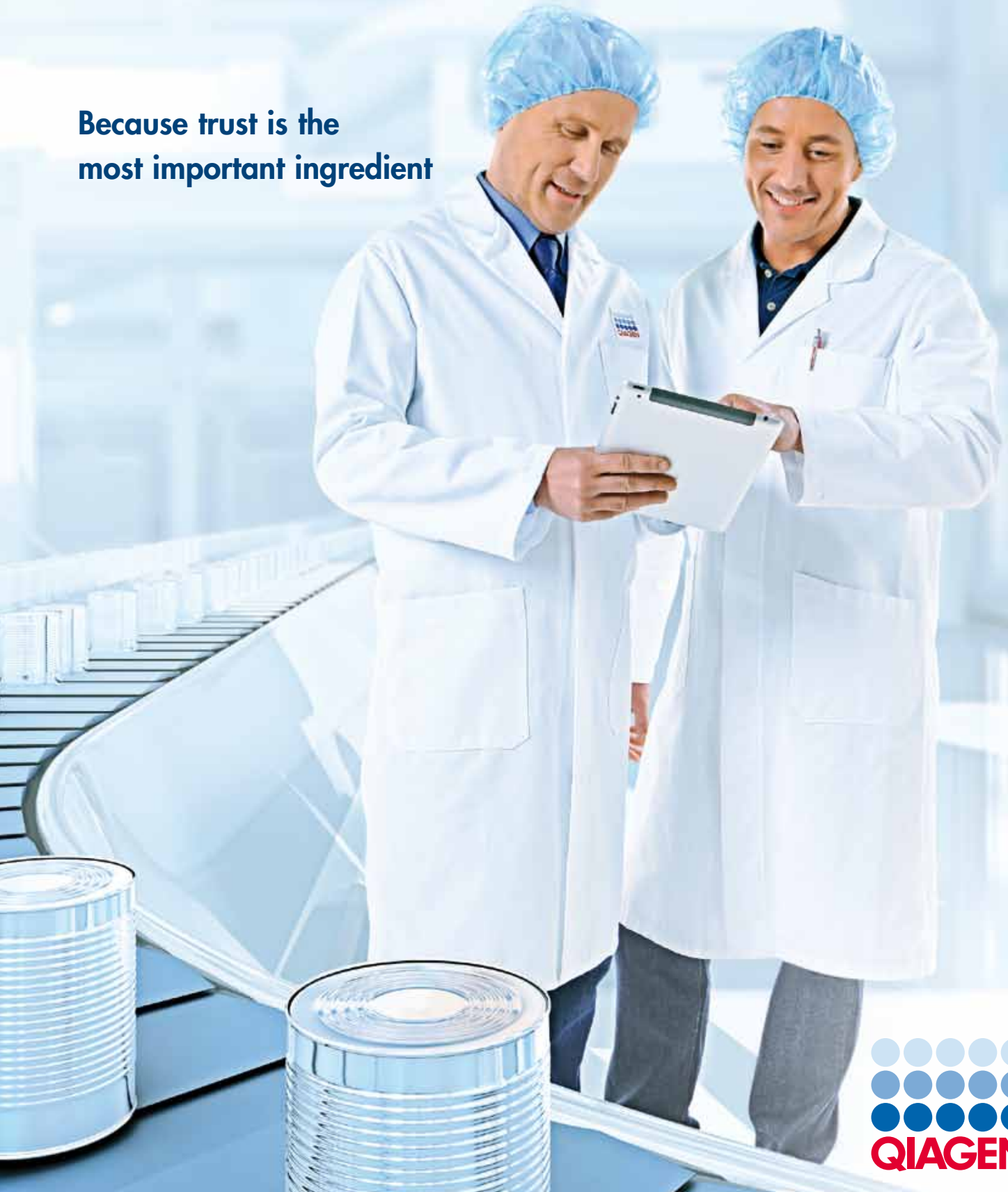


# Food pathogen screening

*mericon*<sup>®</sup> solutions

**Because trust is the  
most important ingredient**



Sample & Assay Technologies

## Think food safety. Think food quality. Trust *mericon*.



QIAGEN's *mericon* portfolio of food safety testing products is one of the broadest on the market. Combining innovative technology with expertise in molecular testing for public safety and quality control, these high-quality solutions yield accurate and sensitive results from a whole range of starting materials.

We offer ready-to-use *mericon* kits for safe and reliable detection of a broad range of commercially significant food pathogens, including *Salmonella* spp., *Listeria* spp., *Campylobacter* spp., verotoxin-producing *Escherichia coli*, *Cronobacter* spp., *Staphylococcus aureus*, *Shigella* spp., and *Yersinia enterocolitica*.

Testing for these pathogens can be automated using our innovative QIASymphony® RGQ system. This unique solution for food safety testing provides standardized analyses and increases your laboratory's throughput, as it takes just a few hours to go from sample to result.

### Benefits of *mericon* food safety testing solutions

#### Accurate

- Highly reliable target detection
- Minimal retesting

#### Rapid

- Results a few hours after enrichment
- Faster product release

#### User-friendly

- Standardized workflows
- One process for testing all pathogens

#### Automatable

- Minimized hands-on time
- Increased productivity

#### Efficient

- Continuous sample-loading function
- Adaptable for different throughput needs





## Proven technology, refined and made easy

Our *mericon* food safety testing solutions are based on real-time PCR. This is a rapid and accurate method for detecting specific pieces of DNA. It is a tried and tested method that yields reliable, easy-to-interpret results.

The food pathogen screening solution is a two-stage process. In the first stage, you isolate pure bacterial DNA from your sample. In the second stage, you run a real-time PCR assay to detect the DNA and analyze the result.

Your sample comes directly from a primary bacterial enrichment culture. You can isolate bacterial DNA from these samples and set up your assay using manual or automated protocols.

The assays in our *mericon* portfolio are specific to a target or group of targets. All of the assays use the same protocol, so you do not have to follow different workflows for different types of pathogens.

## Trust is the most important ingredient

We validate all of our methods in-house and through field testing. Our sample and assay technologies form workflows that have been thoroughly assessed for process safety, accuracy, and ease of use.

In addition, our automated and manual pathogen detection workflows are undergoing validation with external institutions, such as AOAC-RI and AFNOR.



## Support for every stage of your food safety testing work

In addition to our complete, standardized workflows, QIAGEN offers comprehensive support services, including:

- Technical Services in English on call 24 hours a day, 6 days a week
- Technical Services in local languages on call during local business hours
- Instrument installation, training, and validation\*
- Educational webinars and videos on our food testing technology
- Protocol development for special food testing requirements

\* Validation services offered in certain areas; please contact your QIAGEN representative for availability. Contact details on back cover and at [www.qiagen.com](http://www.qiagen.com).

## *mericon* Automated Pathogen Detection Workflow

### Step one: sample preparation

Enrichment

DNA isolation



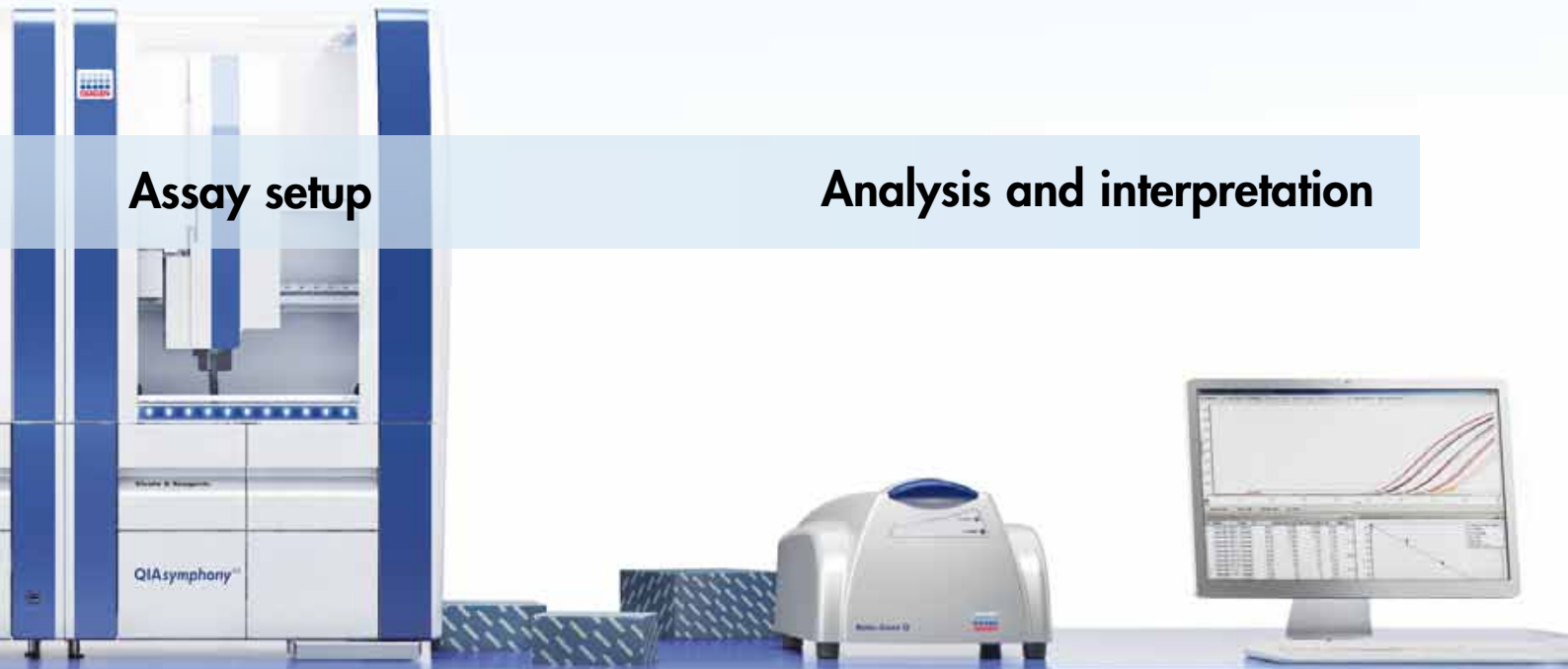
#### QIASymphony SP QIASymphony *mericon* Bacteria Kit

- Take your sample directly from the primary bacterial enrichment culture.
- Fully automate the isolation of food pathogen DNA.
- Process 1–96 samples with volumes up to 400  $\mu$ l.

## Step two: pathogen detection

**Assay setup**

**Analysis and interpretation**



### QIASymphony AS Rotor-Gene® Q *mericon* Pathogen Detection Assays

- Set up complete assays in just 33 minutes.
- Pipette accurately with minimum hands-on time.
- Obtain results in just 73 minutes.
- Release your inventory faster.



## Reliable, specific, and sensitive solutions

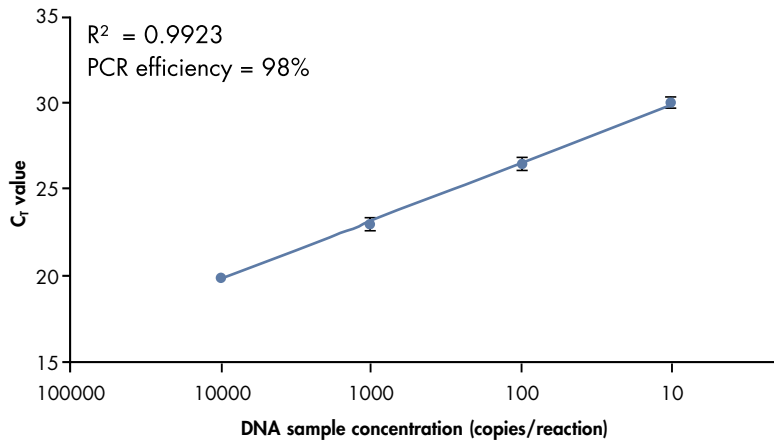


Figure 1. Linear and efficient DNA amplification.

*mericon* Pathogen Detection assays are reliable and precise (Figure 1).

In this study, the *mericon* *Salmonella* spp assay was run on the Rotor-Gene Q to detect different dilutions of *Salmonella* spp. DNA. The DNA was amplified and detected with high precision, linearity, and efficiency.



*mericon* Pathogen Detection assays are specific to a target or group of targets (Table 1).

Samples containing different bacteria were analyzed with the *mericon* *Salmonella* spp Kit on the Rotor-Gene Q. All 109 experimentally verified *Salmonella* spp. strains were successfully detected. There were no false positives — non-salmonella species were not detected.

Table 1. Specific detection of *Salmonella* spp. DNA

Target	Result
109 <i>Salmonella</i> spp. strains	+
<i>Listeria monocytogenes</i>	-
<i>Campylobacter jejuni</i>	-
<i>Yersinia enterocolitica</i>	-
<i>Staphylococcus aureus</i>	-
<i>Escherichia coli</i>	-
<i>Bacillus cereus</i>	-
<i>Shigella flexneri</i>	-
<i>Cronobacter sakazakii</i>	-
<i>Legionella erythra</i>	-

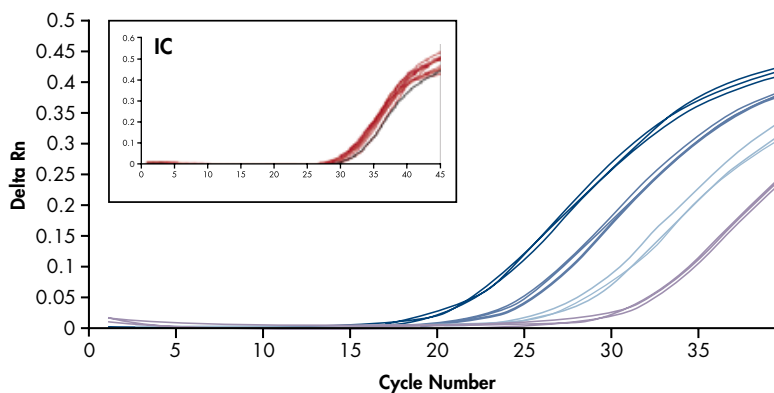


Figure 2. Sensitive detection of DNA.

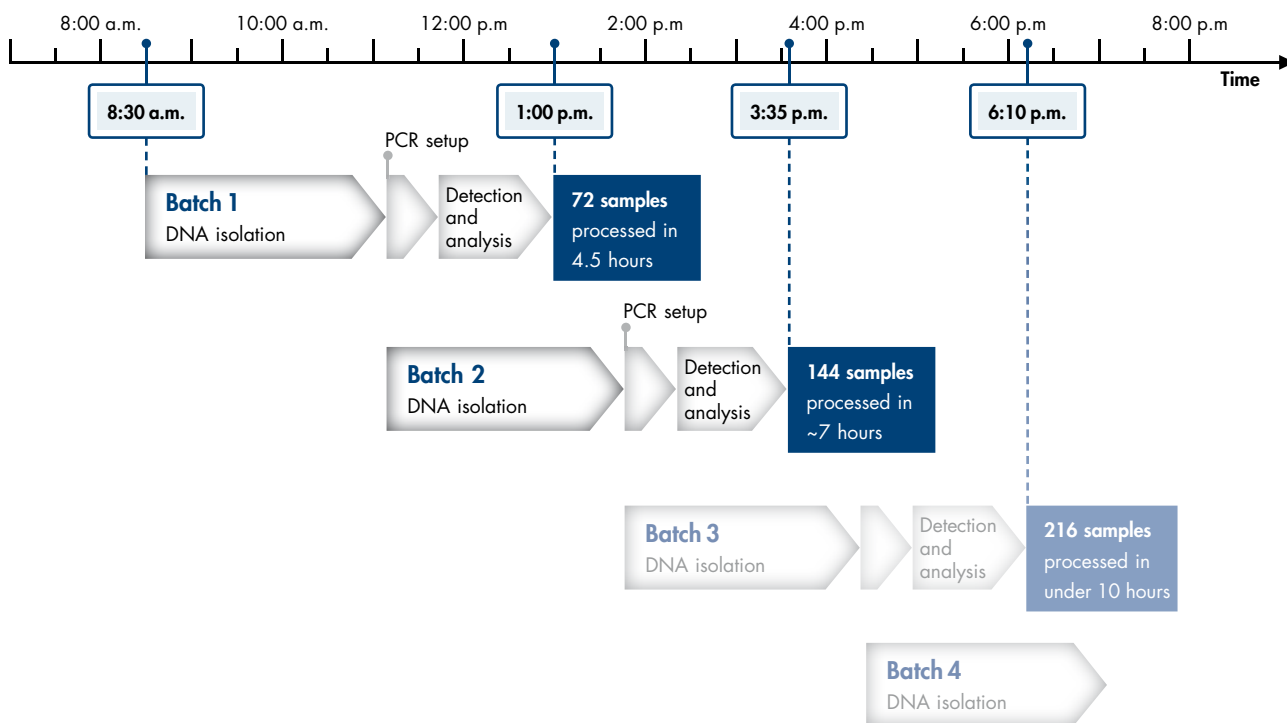
*mericon* Pathogen Detection assays are sensitive (Figure 2).

The *mericon* *Salmonella* spp Kit detects DNA of the genus *Salmonella* over a wide concentration range down to 10 copies per reaction (blue lines).

The internal control (red lines) was simultaneously successfully amplified verifying successful PCR. Internal controls check for false negative results.

## High efficiency. Continuous sample processing.

Using *mericon* food safety testing solutions on the innovative QIA Symphony RGQ system, you can fully process 144 samples in just 7 hours (Figure 3). Thanks to the fully automated sample preparation and assay setup, you also have minimum hands-on time, leaving you free to work on other projects.



**Figure 3. Time-to-result chart for the *mericon* Automated Pathogen Detection Workflow.** Each batch consists of 72 samples. DNA isolation is performed on the QIA Symphony SP using the QIA Symphony *mericon* Bacteria Kit. PCR setup is performed on the QIA Symphony AS and the PCR is run on the Rotor-Gene Q, using *mericon* Pathogen Detection assays.

Discover how *mericon* solutions can revolutionize your food safety testing facility at [www.qiagen.com/foodsafety](http://www.qiagen.com/foodsafety).

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