Minimise risk. Maximise competitive edge.

Innovative food and environmental safety solutions optimised for your unique needs

life technologies™

It's time to put your pathogen testing to the test

When the world's biggest brands can't afford to be wrong, there's one company they consistently turn to—us. That's because our partnerships help provide the competitive edge your company expects, with the risk reduction your lab demands.

From fast, accurate, and intuitive tools built on an open-design platform, to dedicated global service and support, our team specialises in workflows that help labs work smarter. It's all about enabling you to make more informed decisions in the most efficient way.

Understanding your needs

- Rapid time-to-result
- Unquestionable accuracy
- Validated workflows

- Workflow optimisation and customisation
- Open instrumentation and sample preparation
- Scalable, flexible, and easy-to-use platforms

Synthesising the situation

We have leveraged our assay design, high-speed sequencing, and bioinformatics expertise to develop food safety solutions that deliver results you can trust. With customized solutions designed for your specific workflow and food testing requirements, no company is better equipped to respond with answers when you need them most.
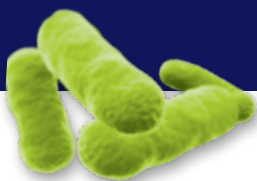
Building a partnership

Our dedicated team of food safety professionals partners with some of the world's most respected labs and food producers to protect their brands and bottom line. We understand the demands on your business and the importance of achieving rapid time-to-results without compromising accuracy.

We have a history of partnering with a variety of food testing labs and brands to help them through critical times.

E. coli O157:H7 outbreak response in record time

Salmonella detection for a leading pet food producer

Rapid recall response for large US turkey producers

In only five days, we sequenced and identified the deadly strain of *E. coli* ravaging Europe, helping to develop a screening test that delivered results within 24 hours.

We designed and validated a complete streamlined workflow to detect *Salmonella* in pet food in less than 14 hours with an automated real-time PCR method, cutting time-to-result by days.

During a recent ground turkey recall, we partnered with two of the largest turkey producers in the US to find a rapid detection solution for the *Salmonella* serovar of interest.
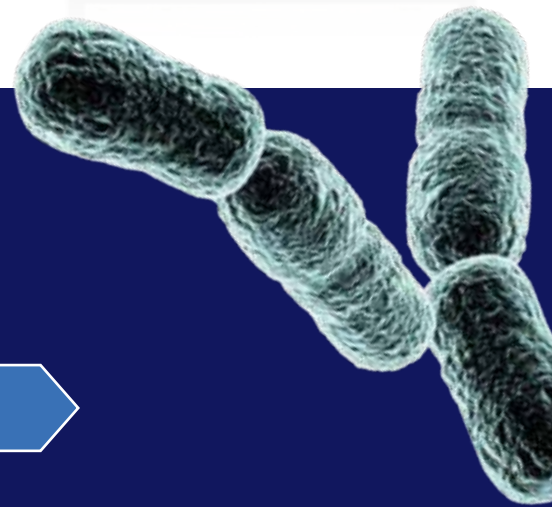
Simplified workflow

From enrichment to analysis, our integrated workflow is optimised to ensure you get the answers you need, when you need them. These flexible sample prep options scale from less than 50 samples to high–throughput runs of 100 or more samples, and the protocols have been tested on a wide variety of food types. And by automating the amplification, detection, data collection, and analysis elements of the molecular detection workflow, we drastically cut hands-on time and time-to-results, which is critical to protecting your brand and your bottom line.
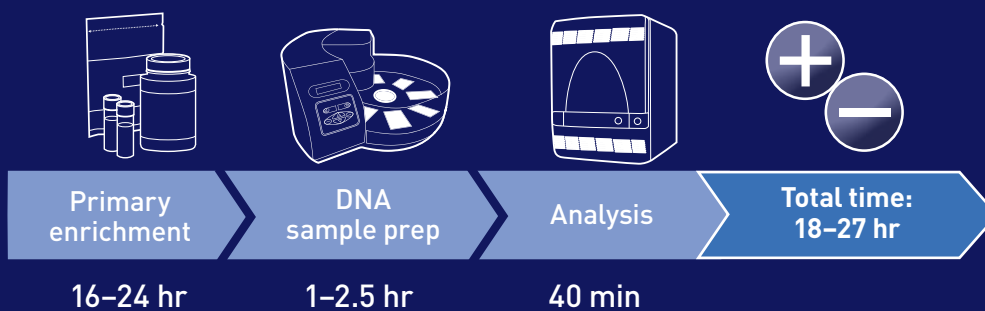
Intuitive software solutions simplify data interpretation

RapidFinder™ Express Software is easy to use and guides you through each step of the assay—from run file setup to final results.

The software utilises flags, notifications and prompts that enable you to quickly interpret data, while a helpful export feature supports convenient data transfers to an Excel® spreadsheet or your lab management system.
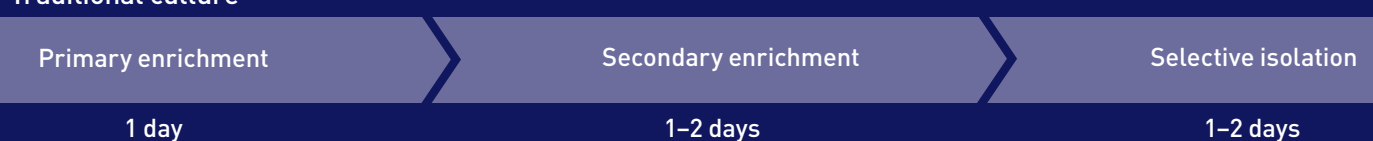
The Life Technologies™ pathogen detection solution

Primary enrichment	DNA sample prep	Analysis	Total time: 18–27 hr
16–24 hr	1–2.5 hr	40 min	

Immunoassays

Primary enrichment	Secondary enrichment	Analysis	Total time: 1.5–2 days
18–24 hr	18–24 hr	10 min–2 hr	

Traditional culture

Primary enrichment	Secondary enrichment	Selective isolation
1 day	1–2 days	1–2 days

Sample prep

Rather than taking a one-size-fits-all approach, we provide multiple validated sample prep options for pathogen testing that easily integrate into laboratory workflows with minimal operator training. The protocols have been tested on a wide range of samples, including environmental, chocolate, infant formula, and soft cheeses. Even samples with difficult-to-lyse bacteria, such as *Listeria monocytogenes*, produce excellent results.

Less than 50 samples

PrepSEQ® Rapid Spin Sample Preparation Kit

- Works on a wide range of sample types
- Reduces pre-enrichment time
- Minimal training required

More than 50 samples

PrepSEQ® Nucleic Acid Extraction Kit and MagMAX™ Express–96 Processor

- Works on a wide range of sample types
- Reduces pre-enrichment time
- Ready for automation—less hands-on time

High throughput

Pathatrix® Auto System and Kits

- Cuts downstream detection costs up to 90%
- 15–minute, fully automated run time for faster time-to-results
- Fully compatible with a wide range of detection methods

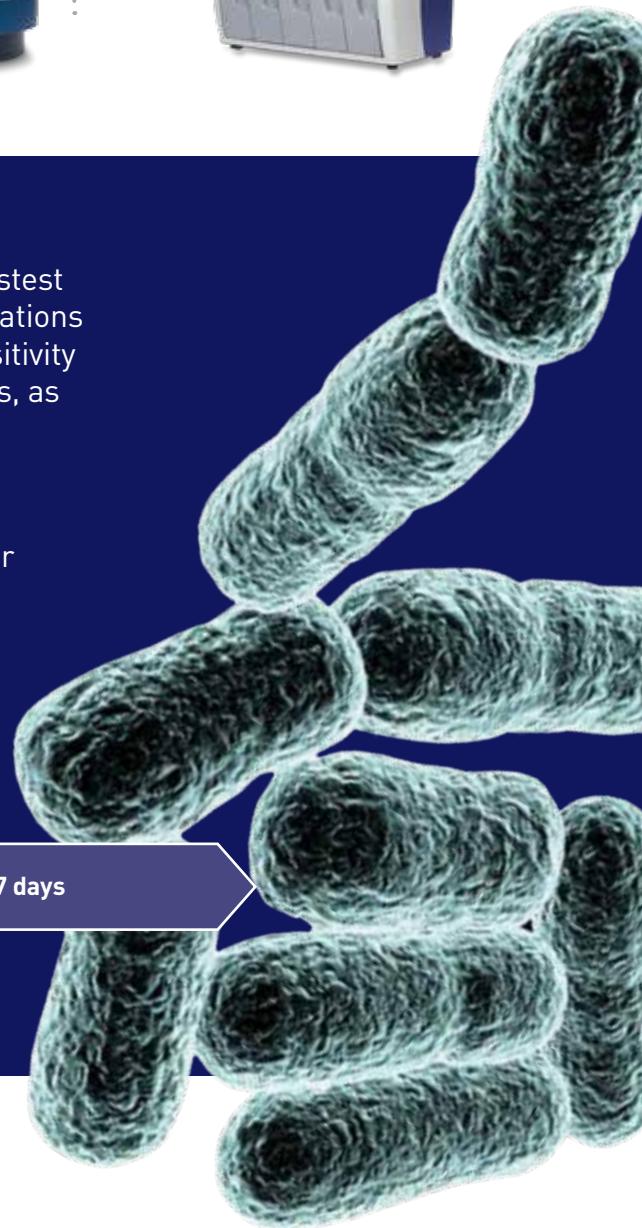## Exceptional speed and sensitivity

Our complete pathogen detection solution offers one of the fastest and most sensitive methods available, detecting cell concentrations as low as 10^3–10^4 CFU/mL after enrichment. This level of sensitivity enables the detection of many pathogens in less than 24 hours, as compared to several days with conventional methods.

Moreover, in cases of emergencies related to new foodborne pathogens, the ultrafast DNA sequencing technologies that are part of our pathogen detection solution, combined with our bioinformatics expertise, allow us to respond quickly to these kinds of crises and design highly specific assays to detect the pathogens that may be involved.

Confirmation	Total time: 4–7 days
1–2 days	

Validated detection kits

Built on years of molecular expertise, Life Technologies™ MicroSEQ® kits deliver exceptional accuracy and time-to-results for the detection of various pathogens in one easy-to-use platform. Selected kits have been validated and certified by the leading global quality assurance organisations including AOAC, AFNOR, and NPIP.

These optimised kits are built with lyophilised reagents into preformatted assay beads with an internal positive control, so no mixing is required. Specially designed reaction tubes remain closed during the assay process until detection is complete, greatly reducing the risk of contamination.

- Internal positive control in every bead minimises false negatives
- Typically 40-minute time-to-results using TaqMan® Fast real-time PCR chemistry
- Universal PCR cycling conditions offer flexibility to run multiple pathogen assays simultaneously
- 100% specificity for confidence in results
- Easy-to-use lyophilised format for testing consistency
- Optimal performance with a wide range of sample types

MicroSEQ® *Salmonella* spp. Detection Kit	MicroSEQ® *E. coli* O157:H7 Detection Kit	MicroSEQ® *Listeria monocytogenes* Detection Kit	MicroSEQ® *Listeria* spp. Detection Kit

The RapidFinder™ STEC Detection Workflow is a complete, validated screening system for *E. coli* O157:H7 and the six non-O157 STECs. Developed in collaboration with the USDA, the RapidFinder™ STEC workflow detects the presence of multiple strains of *E. coli* in raw beef in as little as 10 hours, providing meat producers with a simple, accurate and fast solution for efficiently responding to new screening regulations for these pathogens.

- Low probability for false results through use of high-quality DNA prep and proprietary assay design
- Validated workflow detects as few as 1–5 cfu of pathogenic STEC in a sample

Versatile TaqMan® pathogen detection kits

Our TaqMan® pathogen detection kits offer many of the same features as our lyophilised MicroSEQ® detection kits, including inclusion of an internal positive control to minimise false negatives and universal standard cycling conditions. They are provided in solution with enzyme, primer, and probe sets provided in separate tubes. The growing portfolio of kits includes:

- *Salmonella enterica*—certified by AOAC and AFNOR

- *Campylobacter jejuni*

- *Cronobacter sakazakii*

- *E. coli* O157:H7

- *Listeria monocytogenes*

- *Pseudomonas aeruginosa*

- *Staphylococcus aureus*

- *Salmonella* Enteritidis

For more information on Life Technologies™ solutions for food safety, go to **lifetechnologies.com/foodsafety**

References
Balachandran P, Friberg M et. al. (2012) Rapid Detection of *Salmonella* in Pet Food: Design and Evaluation of Integrated Methods Based on Real-Time PCR Detection. *Journal of Food Protection* 75, 2: 347–352

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