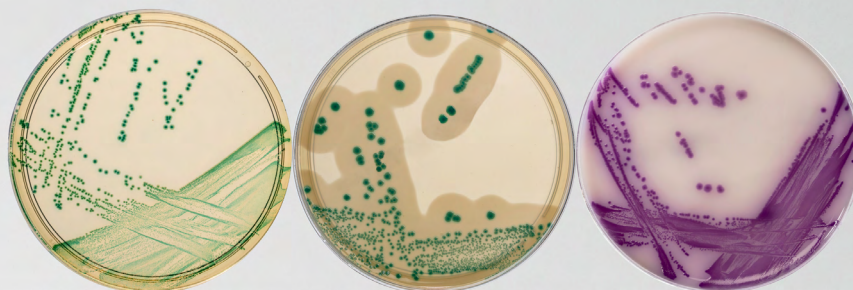


Food testing

# Thermo Scientific Precis Methods

More precise foodborne pathogen detection and enumeration with next generation culture media



# Reinventing the standard for culture-based foodborne pathogen testing

Reliable detection of pathogens in human foods, ingredients, pet food, and from production environmental samples, using culture media-based methods, can be challenging and time-consuming.

Traditional and reference culture-based methods take a dual-enrichment and dual-plating approach to try to ensure recovery of all strains, including those that are more sensitive to certain selective agents or that don't give typical biochemical reactions, as well as those competing to grow in high levels of background flora.

The introduction of chromogenic agars in recent years has made it possible to simplify the workflow to a single enrichment followed by a single plating step, but this has generally been at the expense of the test sensitivity and specificity. Laboratories running these methods may be conducting more confirmatory tests than necessary and potentially putting their brand and consumers at risk.





## Testing challenges

The performance of chromogenic agar media can be greatly impacted by multiple factors such as the quality of chromogens, target substrates, and selective agents. However, the biggest factor is the health and concentration of the target bacteria in comparison to the other organisms present in the enrichment used to inoculate the chromogenic agar plates.

Many proprietary culture-based methods take established enrichment media and try to overcome the issue of reduced sensitivity and specificity through mitigating steps such as:

- Increasing the volume of plate inoculant from 10  $\mu\text{L}$  to 100  $\mu\text{L}$ . This creates an increased risk for cross-contamination between samples as it necessitates the use of a pipette to take the aliquot from the enrichment bag onto the plate.
- Increasing the incubation temperature for the enrichment step to increase specificity, requiring labs to remember non-standard steps and maintain multiple incubators.

# Introducing Thermo Scientific Precis Methods

Each component of the Thermo Scientific™ Precis™ Methods has been expertly designed to overcome sensitivity and specificity issues without the need to carry out non-standard handling steps.

## Precis Detection Methods

Simple workflows for detection of:

- *Salmonella* species
- *Cronobacter* species
- *Listeria* species/*Listeria monocytogenes*

20  
hours



Enrich sample in a single, optimized broth overnight.

22  
hours



Inoculate a single Thermo Scientific™ Oxoid™ *Brilliance*™ chromogenic agar plate with 10 µL and incubate overnight.

from  
10  
minutes



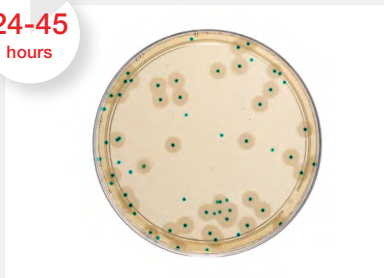
Confirm typical colonies directly from Brilliance agar plates using a single rapid test, or other certified confirmation procedure.

## Precis Enumeration Method

Single workflow for simultaneous enumeration of:

- *Listeria* species
- *L. monocytogenes*

24-45  
hours



Dilution followed by surface or pour inoculation of *Brilliance* Listeria Agar (ISO)

15  
minutes



Count and confirm typical colonies

# Can Precis Methods really offer faster results, better value, and comparable accuracy?

Precis Methods are the next generation in culture media-based testing with a simplified workflow compared to other culture media methods. Superior performing culture media provide a simpler workflow, easier to read plates, and fewer presumptive-positive colonies to confirm.

## One plate delivering right first-time results

Each workflow uses a single *Brilliance* chromogenic agar plate with optimized selectivity and easy-to-read, highly distinguishable, colored colonies. Precis method chromogenic *Brilliance* Agar plates can also be used for their counter ISO method workflows.

## One enrichment step for all Precis Methods

Precis Methods and corresponding Thermo Scientific™ SureTect™ PCR Methods each start with the same enrichment medium to help streamline lab workflows when running both tests.

## One loop for all sample types

Single 10 µL microbiological loop inoculation of plates for all Precis Detection Methods.

## One third reduced plate inoculation time

Compared to other 'rapid' culture-based methods that require pipette inoculation.

## One incubation temperature

A single incubator temperature for enrichment and plate for streamlined laboratory operations.

## Flexible confirmation options

A range of certified confirmation tests for presumptive-positive colonies, with rapid methods for *Salmonella* species and *Listeria* species/*L. monocytogenes*. Confirmation can also be completed using the appropriate ISO standard method confirmation options or any alternative validated method.

## Harmonized enrichment protocols

Harmonized enrichment protocols for relevant matrices including powdered infant formula and environmental samples. This allows the preparation of one sample to test for both *Salmonella* and *Cronobacter*.



# More accurate pathogen testing? Precisely

## Key benefits



### Faster time to results

Results in as little as 42 hours with typical *Salmonella* and *Listeria* colonies confirmed in a few minutes



### Accurate first-time results

Enrichment media and *Brilliance* agar plates designed to work together for optimum results



### 10 µL plate inoculation using single loop

More efficient, with reduced handling, while also reducing the possibility of cross contamination.



### Reduce waste

Fewer consumables are required for the Precis Methods meaning less waste is produced

## Listeria Precis Detection Method



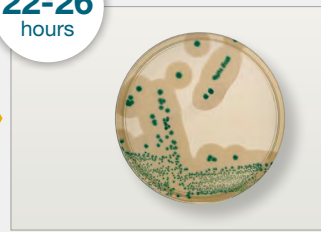
20-26  
hours



Samples are incubated overnight.

Samples are diluted 1-in-10 in single, optimized enrichment medium, enabling *Listeria* to recover and multiply rapidly.

22-26  
hours



A single *Brilliance* Listeria Agar plate is inoculated using a 10 µL disposable loop, before incubating overnight.

Blue colonies are presumptive-positive *Listeria* species, blue colonies with white halos are presumptive-positive *L. monocytogenes*.

from  
15  
minutes



Confirm presumptive-positive colonies with a choice of a 15-minute lateral flow Thermo Scientific™ PrecisCheck™ Listeria Kits, biochemical gallery (Thermo Scientific™ Microbact™ 12L or equivalent), PCR test (Thermo Scientific™ SureTect™ Listeria species / *Listeria monocytogenes* PCR Assays) or ISO 16140-6 validated method among other validated procedures.

## Listeria Precis Enumeration Method

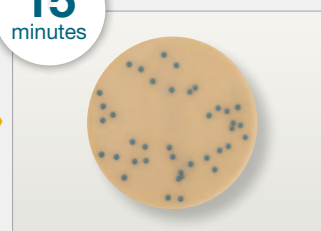
Sample dilution, followed by surface or pour plate inoculation of *Brilliance* Listeria Agar (ISO).

Pour plating is particularly of interest to enumerate low contamination levels.

24-45  
hours



15  
minutes



Count and confirm typical colonies with a choice of confirmation options.

# More accurate pathogen testing? Precisely

## Salmonella Precis Method



Samples are diluted 1-in-10 in BPW and can be used for quality indicator testing prior to addition of a selective supplement.

16-22  
hours



Samples are incubated overnight in a single, optimized enrichment medium.

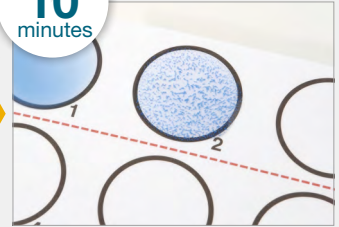
24  
hours



A single *Brilliance* Salmonella Agar plate is inoculated using a 10  $\mu$ L loop, before incubating overnight.

Purple-colored colonies are presumptive-positive for *Salmonella* species.

from  
10  
minutes



Confirm presumptive-positive colonies with a choice of a 10-minute latex test (Thermo Scientific™ Oxoid™ Salmonella Latex Test), PCR test (Thermo Scientific™ SureTect™ Salmonella species PCR Assay) or ISO 16140-6 validated method.

## Cronobacter Precis Method



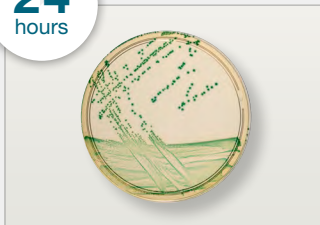
Samples of up to 375 g are diluted in the specified media for the matrix of interest and can be used for quality indicator testing prior to the addition of selective supplement.

16-26  
hours



Samples are incubated overnight in a single, optimized enrichment medium at 34-38°C.

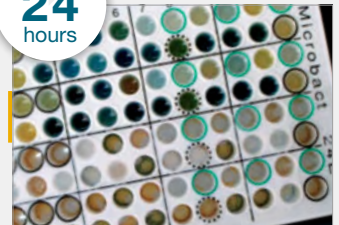
24  
hours



A single *Brilliance* CCI Agar plate is inoculated using a 10  $\mu$ L loop, before incubating overnight.

Blue-green colonies are presumptive-positive for *Cronobacter* species.

from  
24  
hours



Confirm presumptive-positive colonies with a choice of biochemical gallery (Thermo Scientific™ Oxoid™ Microbact™ GNB 24E or equivalent), PCR test (Thermo Scientific™ SureTect™ Cronobacter species PCR Assay) or ISO 16140-6 validated method.

# Thermo Scientific *Brilliance* Agar Enumeration Methods

Explore our complete range of alternative enumeration solutions for food microbiology testing:

The Thermo Scientific™ *Brilliance*™ chromogenic agar enumeration methods are equally simple. They replace standard methods, that require multiple dilution and plating steps, with a single dilution and single plating step, followed by simple confirmation.



## Easy-to-read

The transparency of the mediums makes identification and enumeration significantly easier than with many traditional formulations.



## Rapid results

Results in just 24 hours for coagulase-positive staphylococci, compared to the 48 hours required for Baird-Parker Egg Yolk Tellurite Agar (BP-EYT). Confirmed count in as little as 72 hours for *Campylobacter*.



## Ready-to-use

The convenience of prepared media simplifies lab workflows.



## *Brilliance* CampyCount Agar

Accurately, specifically, and easily enumerate *Campylobacter jejuni* and *C. coli* from poultry and related samples using Thermo Scientific™ *Brilliance*™ CampyCount Agar. The transparent medium, on which *Campylobacter* produce distinct dark red colonies, makes identification and enumeration significantly easier than on traditional charcoal or blood-containing agar. The transparency of the medium also allows enumeration using plate readers for even greater efficiency.



## *Brilliance* Staph 24 Agar

Isolate and enumerate coagulase-positive staphylococci in food or clinical samples in just 24 hours with selective, chromogenic Thermo Scientific™ *Brilliance*™ Staph 24 Agar. Coagulase-positive staphylococci (CPS) grow as dark blue colonies on a clear background, making results much easier to read than traditional Baird-Parker Agar formulations.

Learn more about our range of rapid culture media solutions for food microbiology testing at [thermofisher.com/rapid-culture-methods](https://thermofisher.com/rapid-culture-methods)