

Food testing

Isolation, enumeration, and identification of *Listeria* species and *Listeria monocytogenes* in 2 days

Thermo Scientific Listeria Precip Methods

The NEW standard for culture based *Listeria* testing

Culture media-based detection and enumeration of *Listeria* in foods, and environmental samples can be challenging and time-consuming. Traditional and reference culture-based detection methods take a dual-enrichment and dual-plating approach to try to ensure recovery of all strains, but this delays critical time-to-result.

The introduction of chromogenic agars in recent years has made it possible to simplify the workflow to a single enrichment and single plating step, however, this is often at the expense of test sensitivity and specificity.

Thermo Scientific™ *Listeria* Precis™ Methods are rapid culture-based methods for the isolation, enumeration, and

identification of *Listeria* spp. and *L. monocytogenes* from food and environmental samples.

Expertly designed to overcome sensitivity and specificity issues, the workflows offer benefits in handling, performance, and a quicker time to result - without the need to carry out non-standard handling steps.

Thermo Scientific™ Oxoid™ *Brilliance*™ *Listeria* Agar (ISO) plates may also be used as part of the ISO 11290-1:2017 and ISO 11290-2:2017 horizontal methods for the detection and enumeration of *L. monocytogenes* and *Listeria* spp. in food and environmental samples.

Listeria Precis Detection Method



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

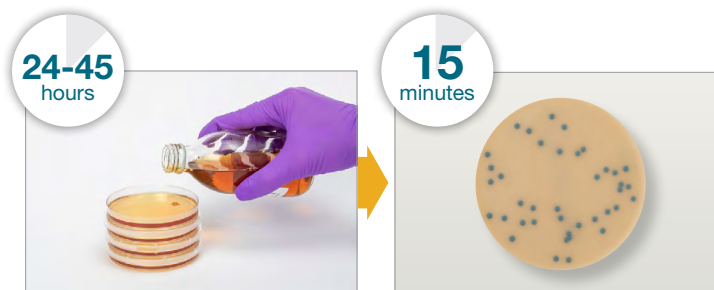
Samples are incubated overnight.

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*.

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.

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

Key benefits of Listeria Precis workflows:

Listeria Precis Methods deliver up to one third faster time to result (for detection compared to other validated rapid culture media-based methods) and dramatically simplified workflows for streamlined laboratory operations. Coupled with our approach to error reduction, the performance of Listeria Precis Methods offer significant resource savings and efficiency:

- Validated for all human food products, and environmental samples by NF Validation (AFNOR) following the ISO 16140-2:2016 study requirements. AFNOR Certification validation certificates No. UNI 03/04-04/05 and UNI 03/05-09/06 are available in PDF format from the AFNOR website <https://nf-validation.afnor.org/en/food-industry/listeria-monocytogenes/>
- 10 µL loop inoculation of plates for all detection Precis Methods reducing contamination risk when using disposable loops compared to transferring larger inoculation volumes using a pipette and disposable tips.

- 33% reduction in plate inoculation time compared to other, rapid, validated culture-based methods by using a disposable loop, rather than a pipette and tip.
- All testing completed within 48 hours thanks to 15 minute rapid confirmation options, which can confirm presumptive positive colonies directly from the *Brilliance* Listeria plate -enabling rapid action and faster product release.



Feedback from our blind, third-party laboratory study participants:

“Marked contrast of the halo; very little additional flora; size of the halo is more pronounced than the other media from 22 hours”

“Correct growth, very little interfering flora, correct colony size”

“Characteristic colonies and halo visible on the plate from 22 hours”

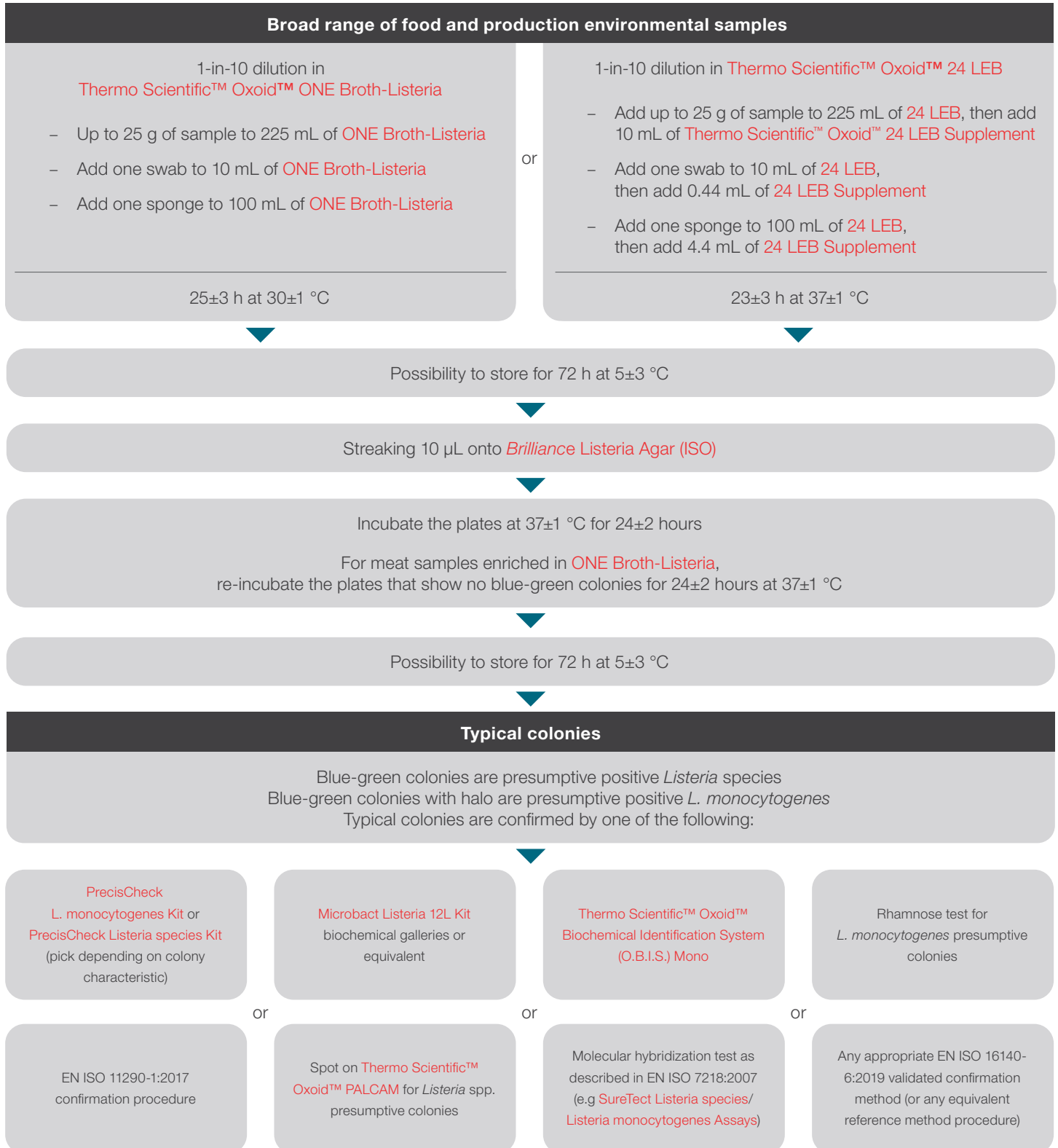
“Impressive confirmation method – truly exciting”

Rapid, simple, and robust culture-based workflows

Identify *Listeria* spp. and *L. monocytogenes* in foods and environmental samples with the Listeria Precis Detection Method.

Blind, external laboratory studies demonstrated growth within 22 hours or under for all *Listeria* strains tested with the Listeria Precis Detection Method, meaning a single plate delivers right first-time results.

Listeria Precis Detection Method Workflow

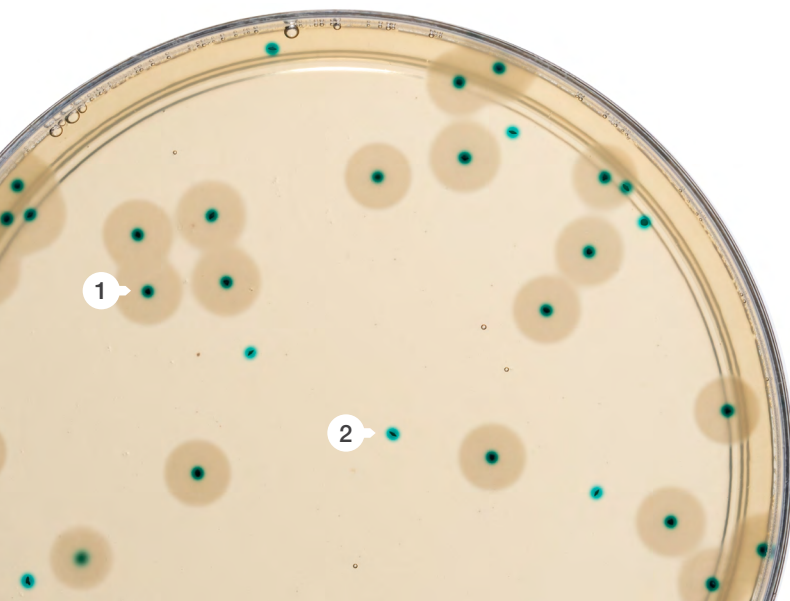
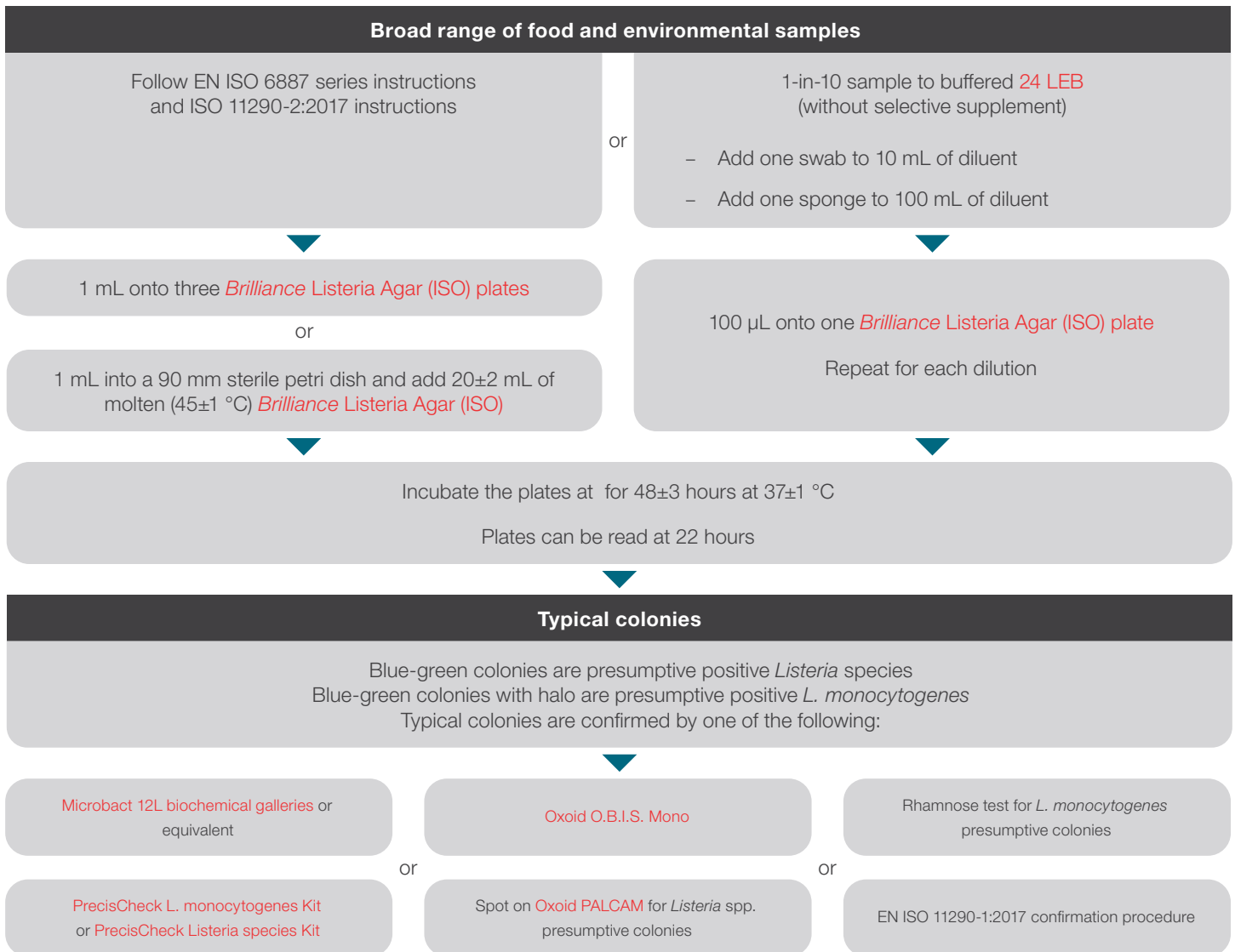


Some *L. ivanovii* strains can as well show a typical halo due to a positive lecithinase activity, but these halos are smaller than the halos around *L. monocytogenes* colonies.

The *Listeria* Precis Enumeration Method offers a single workflow for simultaneous enumeration of *Listeria* species and *L. monocytogenes* in foods and environmental samples.

Validated options for both surface or pour plate inoculation offer flexibility and facilitate the testing of low contamination levels.

Listeria Precis Enumeration Method Workflow



Example – Mixed culture

1. *Listeria monocytogenes*
2. *Listeria* species (non-*L. monocytogenes*)

Ordering information

Product description		Format	Order code
Oxoid Culture Media	24 Listeria Enrichment Broth (24 LEB)	24 LEB Base (dehydrated culture medium)	500 g (makes 7 L) CM1107B
			5 kg (makes 70 L) CM1107T
		24 LEB Selective Supplement (Listeria PreciS Detection Method only)	10 vials (each for 500 mL) SR0243E
		24 LEB Buffer Supplement (added to all formats of 24 LEB)	24 bottles of 10 mL (each for 225 mL) BO1339E
	ONE Broth Listeria	ONE Broth Listeria Base (dehydrated culture medium)	500 g (makes 11.3 L) CM1066B
			5 Kg (makes 113 L) CM1066R
		ONE Broth Listeria Selective Supplement	10 vials (each for 500 mL) SR0234E
	Brilliance Listeria Agar (ISO)	Brilliance Listeria Agar (ISO) Base (dehydrated culture medium)	10 vials (each for 2.25 L) SR0243B
			500 g (makes 7 L) CM1212B
		Brilliance Listeria Agar (ISO) Selective Supplement	5 Kg (makes 70 L) CM1212T
10 vials (each for 500 mL) SR0257E			
10 vials (each for 200 mL) SR0257B			
Brilliance Listeria Agar (ISO) Differential Supplement			10 vials (each for 500 mL) SR0258E
	10 vials (each for 200 mL) SR0258B		
PrecisCheck Listeria species Kit	45 test strips	LF0100A	
PrecisCheck Listeria monocytogenes Kit	50 test strips	LF0200A	
Microbact Listeria 12L Kit	20 tests	MB1128A	
O.B.I.S. Mono (Differentiates <i>L. mono</i> from other <i>Listeria</i> species)	60 tests	ID0600M	
SureTect Listeria Species Assay	96 tests	A56842	
SureTect Listeria Monocytogenes PCR Assay	96 tests	A56843	

Please note that a range of alternative formats of culture media, such as Bagged Enrichment Media and Prepared Plate Media, are available. Please contact your local representative or technical services to find out more.

For more information about the Thermo Scientific Listeria PreciS Methods and other rapid culture media methods for detecting foodborne pathogens visit thermofisher.com/precis