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# Summary Report

## for the ISO 16140-2 validation of
## Assurance® GDS Listeria *monocytogenes* Tq
## for the detection of *Listeria monocytogenes* in a broad range of foods and environmental samples

| | |
|---|---|
| **MicroVal study number** | **2014LR32** |
| **Method/Kit names** | **Assurance® GDS Listeria *monocytogenes* Tq** |
| **Report version** | **Summary report – Version 1**<br>February 25, 2026 |
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This report consists of 86 pages, including 8 appendices.
Only copies including the totality of this report are authorised.

The results in this report relate only to the item(s) submitted for testing.
Competencies of the laboratory are certified by COFRAC accreditation for the analyses marked with the symbol◆.

*Standardized report - Qualitative methods*

MICROVAL® NEN

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## LIST OF ABBREVIATIONS LISTERIA

**Method & protocol**

| | |
|---|---|
| ALOA or O&A | Agar *Listeria* Ottavani & Agosti |
| BHI | Brain Hear Infusion Broth |
| CFU | Colony Forming Units |
| g | gram |
| h | hour |
| HFB | Half Fraser broth |
| ILS | Interlaboratory Study |
| MCS | Method Comparison Study |
| min | Minute |
| ml | Millilitre |
| RLOD | Relative Level of Detection |
| TSA/YE | Tryptone Soya Agar with Yeast |
| UHT | Ultra Heat Treated |

**Interpretation**

| | |
|---|---|
| AL | Acceptability Limit |
| alt | Alternative method |
| $\overline{D}$ | Average difference |
| FN | False Negative results |
| FNR | False Negative Ratio |
| FP | False Positive |
| FPR | False Positive Ratio |
| LOD | Limit of Detection |
| NA | Negative agreement |
| $NA_{FN\ (alt)}$ | Negative Agreement due to false negative alternative-method results |
| ND | Negative Deviation |
| $ND_{FN\ (alt)}$ | Negative Deviation due to false negative alternative-method results |
| PA | Positive Agreement |
| $PA_{FP\ (alt)}$ | Positive Agreement due to false positive alternative-method results |
| PD | Positive deviation |
| $PD_{FP(alt)}$ | Positive Deviation due to false positive alternative-method results |
| ref | Reference method |
| TNA | Total Negative Agreement |
| TND | Total Negative Deviation |

**Raw data**

| | |
|---|---|
| - or neg(-) | Negative/no growth/no reaction/target not detected |
| (x) | Number of colonies in the plate |
| H+ | Characteristic *Listeria* colonies with halo |
| H- | Characteristic *Listeria* without halo |
| i | Inhibition |
| *L. mono* | *L. monocytogenes* |
| *L. innoc* | *L. innocua* |
| *L. welsh* | *L. welshimeri* |
| *L. seeli* | *L. seeligeri* |
| na | Not applicable |
| ne | New DNA extraction |
| NC or NS | Non-characteristic colony |
| / or nt | Not tested |
| st | Plate without any colony |
| **Bold typing** | **Artificially inoculated samples** |

## Foreword

The technical protocol and the result interpretation were carried out according to the ISO 16140-2:2016, ISO 16140-2/A1:2024 and the MicroVal technical rules. This document is prepared in accordance with ISO 16140-2 and MicroVal technical committee interpretation of ISO 16140-2 v.2.6.

| | |
|---|---|
| **Validation protocol** | ▪ ISO 16140-1:2016 - Microbiology of the food chain - Method validation — *Part 1: Vocabulary*<br>▪ ISO 16140-2:2016 & ISO 16140-2/A1:2024 - Microbiology of the food chain - Method validation — *Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method*<br>▪ MicroVal technical committee interpretation of ISO 16140-2 v.2.6 |
| **Reference method♦** | ISO 11290-1:2017 - Microbiology of the food chain - Horizontal method for the detection and enumeration of *Listeria monocytogenes* and other *Listeria* spp. - Part 1: detection method |
| **Method/Kit name** | **Assurance® GDS *Listeria monocytogenes* Tq** |
| **Scope of validation** | > **Broad range of foods**<br>> **Environmental samples** |
| **Certification organization** | Lloyd's Register |

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

# 1 INTRODUCTION

This document reports a MicroVal validation study, based on ISO 16140-2:2016 and ISO 16140-2/A1:2024, of the Assurance® GDS *Listeria monocytogenes* Tq, alternative method for the detection of *Listeria* species in a broad range of foods and environmental samples. The initial evaluation was carried out by ADRIA in 2014 as the MicroVal Expert Laboratory according to ISO 16140:2003.

In 2018, a renewal and an extension for the addition of Fresh produce and vegetable category was carried out according to ISO 16140-2:2016 by QLaboratories. In 2025, the exclusivity was completed with new *Listeria* spp. strain, and the results were reanalysed according to the ISO 16140-2/A1:2024.
This renewal was carried out by ADRIA.
This report combines all data from the initial validation and extension re-evaluated following ISO 16140-2/A1:2024 criteria.

The Assurance® GDS *Listeria monocytogenes* Tq is an automated nucleic acid amplification system for the detection of Listeria species in a broad range of foods and environmental samples.

The reference method is: ISO 11290-1:2017 - Microbiology of the food chain - Horizontal method for the detection and enumeration of Listeria monocytogenes and other Listeria spp. - Part 1: detection method.

Scope of the validation study is: broad range of foods, and environmental samples.

Categories included:
- Meat products
- Milk and dairy products
- Fish and seafood products
- Fresh produce and vegetables
- Ready-to-eat, ready-to-reheat or ready-to-cook products
- Environmental samples

Criteria to be evaluated during the study:
- Method Comparison Study (MCS)
  - Sensitivity study
  - Relative level of detection
  - Inclusivity and exclusivity study
- Interlaboratory Study (ILS).

# 2 METHOD PROTOCOLS

The Method Comparison Study was carried out using 25 g portions of sample material. For environmental samples, testing was conducted using environmental sponges or 25 g test portions.

## 2.1 Reference method♦

The reference method are the ISO 11290-1:1996/Amd.1:2004 for the initial validaiton study and the ISO 11290-1 (May 2017): Microbiology of the food chain - Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp. - Part 1: detection method for the fresh Produce and Vegetables food types extension study.

See the flow diagram in **Appendix 1**.

Sample preparations used in the reference method and Assurance GDS *Listeria* **species** method was performed according to ISO 6887 – 4, ISO 11290-1:1996/Amd.1:2004 and ISO 11290-1:2017.

25 g test portion were used for the reference method.

## 2.2 Alternative method

See the flow diagram of the alternative method in **Appendix 2** and the kit insert in **Appendix 3**.

### *2.2.1 Principle*

The alternative method principle is based on PCR.
The Assurance® GDS *Listeria monocytogenes* is an automated nucleic acid amplification system for the detection of *Listeria monocytogenes* in a broad range of foods and environmental samples.
The food samples were prepared for analysis following an IMS concentration procedure as outlined in the Assurance GDS *Listeria monocytogenes* package insert

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

and previous MicroVal Validation (MicroVal 2010LR32). Results are available after 26 - 44 h of enrichment.

The alternative method used is:

- Twenty-five (25) gram samples are enriched with 225 mL of Half Fraser Broth (HFB) and environmental sponges are enriched in 90 mL of Half Fraser Broth.
- Test portions are incubated at 30 ± 1°C for 24 ± 2 hours.
- Following enrichment, the sample is concentrated using the Assurance PickPen® device and then transferred into 0.5 mL of Half Fraser Broth.
- The HFB is sealed and incubated at 30 ± 1°C for 4 to 22 hours for all categories except for the meat products category where only a 22h incubation time is possible.
- Following incubation, the sample is concentrated using the PickPen device, lysed and a 30 µL aliquot of lysate is analyzed using the Assurance GDS Rotor-Gene® instrument.
- Confimations following the ISO 11290-1:2017

It is possible to store the enriched samples for 72 h at 5 ± 3°C before performing the IMS step and confirmatory tests.

### 2.2.2 *Protocols applied during the validation study*

#### > ***Enrichment***

The minimum incubation time was applied for the enrichment step: 22 h at 30 ± 1°C.

#### > ***Subculture***

For all categories except meat products category: the IMS and PCR were carried out after the incubation of HFB for 4 and 22 h at 30 ± 1°C.
For meat product categories: the IMS and PCR were carried out after the incubation of HFB for 22 h at 30 ± 1°C.

> ***Confirmations***

For all samples, 10µL of HFB was streaked on O&A and palcam plates. Confirmations of ISO 11290-1:2017 were carried out on typical colonies.

> ***Broth storage for 72h at 5 ± 3°C***

The enrichment broths from positive and discordant samples were tested after 72 h storage at 5 ± 3°C (PCR and confirmatory tests for unpaired with MICROGEN latex test to confirm the colonies and PCR with direct streaking only for paired samples).

## 2.3 Study design

For the 25 g portions, the reference and the alternative method share the initial (pre)-enrichment step, therefore the same test portion (item) was used for the two methods. All resulting data were treated as paired data.

# 3 METHOD COMPARISON STUDY

## 3.1 Sensitivity study

*The sensitivity (SE) is the ability of the method to detect the analyte by either the reference or alternative method.*

### *3.1.3 Categories and sample types*

Five food categories and environmental samples category were included in this validation study. A minimum of 60 items for each category were tested by both the reference method and the alternative method in the sensitivity study, with a minimum of 30 positive samples per category.
Each category was made up of 3 types, with at least 20 items representative for that Type.

400 samples were analysed. The distribution of positive and negative samples per tested category and type is given respectively in Table 1.

**Table 1 – Distribution per tested category and type**

| Categories | Types | | Sample size | Positive sample | Negative samples | Total |
|---|---|---|---|---|---|---|
| **Meat products** | a | Fresh meat (unprocessed) | 25 g | 11 | 11 | 22 |
| | b | Cooked and cured meat products | 25 g | 11 | 18 | 29 |
| | c | Fermented meat products | 25 g | 10 | 14 | 24 |
| | | | *Total* | *32* | *43* | *75* |
| **Milk and dairy products** | a | Thermisation/pasteurized products | 25 g | 12 | 8 | 20 |
| | b | Fermented/acidified products | 25 g | 5 | 13 | 18 |
| | c | Raw milk-based products | 25 g | 14 | 12 | 26 |
| | | | *Total* | *31* | *33* | *64* |
| **Fish and seafood products** | a | Fish and shellfish | 25 g | 12 | 6 | 18 |
| | b | Cooked fishery products | 25 g | 8 | 11 | 19 |
| | c | Smoked products | 25 g | 14 | 13 | 27 |
| | | | *Total* | *34* | *30* | *64* |
| **Ready-to-eat, ready-to-reheat or ready-to-cook products** | a | Substantial raw ingredients | 25 g | 11 | 6 | 17 |
| | b | Processed (cooked) products | 25 g | 7 | 9 | 16 |
| | c | Refrigerated products | 25 g | 13 | 16 | 29 |
| | | | *Total* | *31* | *31* | *62* |
| **Environmental samples** | a | Swabs and sponges | 25 g | 9 | 13 | 22 |
| | b | Process water | 25 g | 11 | 9 | 20 |
| | c | Dusts | 25 g | 12 | 15 | 27 |
| | | | *Total* | *32* | *37* | *69* |
| **Fresh produce and vegetables** | a | Cut-ready-to-eat vegetables | 25 g | 11 | 11 | 22 |
| | b | Produce grown in contact with the ground | 25 g | 11 | 11 | 22 |
| | c | Cut ready-to-eat fruit | 25 g | 11 | 11 | 22 |
| | | | *Total* | *33* | *33* | *66* |
| **ALL CATEGORIES** | | | | **193** | **207** | **400** |

### *3.1.4 Test sample preparation*

Naturally contaminated samples were preferentially analyzed. If necessary, artificial contaminations were obtained by spiking or seeding protocols.

When spiking the strains were stressed using various injury protocols. The injury efficiency was evaluated by comparing enumeration results onto selective and non-selective agars (respectively O&A and TSYEA plates). The artificial contaminations are presented in **Appendix 4.**

For all studies, 126 samples were artificially contaminated, using 41 different strains with seeding or spiking protocols. 109 gave a positive result.
A total of 84 samples were found naturally contaminated samples

The repartition of the positive samples per inoculation protocol and inoculation level is given in **Erreur ! Source du renvoi introuvable.**.

**Table 2 - Repartition of the positive samples per inoculation protocol and inoculation level**

| Study | Naturally contaminated | Artificial contamination | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | | Seeding protocol | | | Spiking protocol | | | |
| | | ≤ 3 CFU | 3 < x ≤ 7.2 CFU | > 10 CFU | ≤ 5 CFU | 5 < x ≤ 6.8 CFU | > 10 CFU | |
| Initial validation study | 81 | 4 | 28 | 0 | 26 | 21 | 0 | 160 |
| Fresh produce and vegetables Extension study | 3 | 0 | 30 | 0 | 0 | 0 | 0 | 33 |
| Total | 84 | 4 | 58 | 0 | 26 | 21 | 0 | 193 |
| % | 43.5% | 2.1% | 30.1% | 0.0% | 13.5% | 10.9% | 0.0% | 98.0% |

**43.5 % of the samples were naturally contaminated.**

### 3.1.5 Sensitivity study results

All raw data per category are given in **Appendix 5**. Sample numbers in **bold** indicate artificial inoculation of the sample (see **Appendix 4** for details on artificial inoculation).

Table 3 shows the summary of results of the reference method and the alternative methods for **all Categories**.

Table 4 shows the Interpretation of sample results between the reference and alternative method (based on the confirmed alternative method).

**Table 3 – Summary of sensitivity study results – *all categories***

| | 22 + 4 h | | 22 + 22 h | |
|---|---|---|---|---|
| **Response** | **Reference method positive (R+)** | **Reference method negative (R-)** | **Reference method positive (R+)** | **Reference method negative (R-)** |
| **Alternative method positive (A+)** | Positive agreement (A+/R+) **PA = 158** | Positive deviation (R-/A+) **PD = 0** | Positive agreement (A+/R+) **PA = 189** | Positive deviation (R-/A+) **PD = 2** |
| **Alternative method negative (A-)** | Total Negative deviation (A-/R+) **TND = 2 (2 $ND_{FN(alt)}$)** | Total Negative agreement (A-/R-) **TNA = 152 (4 $NA_{FN(alt)}$)** | Total Negative deviation (A-/R+) **TND = 2 (2 $ND_{FN(alt)}$)** | Total Negative agreement (A-/R-) **TNA = 194 (3 $NA_{FN(alt)}$)** |

**Table 4 - Summary of results obtained with the reference and alternative methods (after confirmation) of all samples for each category**

| Category | | 4 h | | | | | 22 h | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PA | PD | TND | TNA | Total | PA | PD | TND | TNA | Total |
| 1 | **Meat products** | | | | | | 29 | 0 | 2 | 43 | **75** |
| 2 | **Milk and dairy products** | 30 | 0 | 0 | 34 | **64** | 30 | 0 | 0 | 33 | **64** |
| 3 | **Fish and Seafood products** | 34 | 0 | 0 | 17 | **64** | 34 | 0 | 0 | 17 | **64** |
| 4 | **Ready-to-eat, ready-to-reheat or ready-to-cook products** | 30 | 0 | 1 | 31 | **62** | 31 | 0 | 0 | 31 | **62** |
| 5 | **Production environmental samples** | 31 | 0 | 1 | 37 | **69** | 32 | 0 | 0 | 37 | **69** |
| 6 | **Fresh produce and vegetables** | 33 | 0 | 0 | 33 | **66** | 33 | 0 | 0 | 33 | **66** |
| **TOTAL** | | **158** | **0** | **2** | **152** | **325** | **189** | **0** | **2** | **194** | **400** |

*With for a paired evaluation :* $TND = ND_{FN(alt)}$ $TNA = NA + PD_{FP(alt)}$

### 3.1.6 Sensitivity study calculations

The sensitivity study parameters as specified in Table 5 were calculated for all categories and types, and the overview is given in Table 6.

**Table 5 – Formula to calculate the sensitivity parameters**

| | | 22 + 4 h (except meat products) | 22 + 22 h |
|---|---|---|---|
| **Sensitivity for the alternative method** | $SE_{alt} = \frac{(PA + PD)}{(PA + TND + PD)} \; x \; 100 \; \%$ | 98.8 % | 99.0 % |
| **Sensitivity for the reference method** | $SE_{ref} = \frac{(PA + TND)}{(PA + TND + PD)} \; x \; 100 \; \%$ | 100.0 % | 99. % |
| **Relative trueness** | $RT = \frac{(PA + TNA)}{N} x100 \; \%$ | 95.4 % | 95.8 % |
| **False positive ratio for the alternative method (paired evaluation)** | $FPR = \frac{PD_{FP(alt)}}{TNA} \; x \; 100 \; \%$ | 0.0 % | 0.5 % |
| **False negative ratio for the alternative method (paired evaluation)** | $FNR = \frac{ND_{FN(alt)}}{PA+TND+PD} \; x \; 100 \; \%$ | 3.8 % | 2.6 % |

## Table 6 – Overview calculated sensitivity parameters per category and type

| Category | | Incubation time | Type | | PA | $PA_{FP(alt)}$ | NA | $NA_{FN(alt)}$ | PD | ND | $ND_{FN(alt)}$ | $PD_{FP(alt)}$ | TND | TNA | $SE_{alt}$ % | $SE_{ref}$ % | RT % | FP % | FNR % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Meat products | 22 + 22h | a | Fresh meat (unprocessed) | 11 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 0 | 11 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | b | Cooked and cured meat products | 11 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | c | Fermented meat products | 7 | 0 | 14 | 0 | 1 | 0 | 2 | 0 | 2 | 14 | 80.0 | 90.0 | 87.5 | 0.0 | 20.0 |
| | | | | **Total** | 29 | 0 | 42 | 0 | 1 | 0 | 2 | 1 | 2 | 43 | 93.8 | 96.9 | 96.0 | 2.3 | 6.3 |
| 2 | Milk and dairy products | 22 + 4h | a | Thermisation/pasteurized products | 11 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 100.0 | 100.0 | 100.0 | 0.0 | 9.1 |
| | | | b | Fermented/acidified products | 5 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | c | Raw milk-based products | 14 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | | **Total** | 30 | 0 | 33 | 1 | 0 | 0 | 0 | 0 | 0 | 34 | 100.0 | 100.0 | 100.0 | 0.0 | 3.3 |
| | | 22 + 22h | a | Thermisation/pasteurized products | 11 | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 100.0 | 91.7 | 95.0 | 0.0 | 0.0 |
| | | | b | Fermented/acidified products | 5 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | c | Raw milk-based products | 14 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | | **Total** | 30 | 0 | 33 | 0 | 1 | 0 | 0 | 0 | 0 | 33 | 100.0 | 96.8 | 98.4 | 0.0 | 0.0 |
| 3 | Fish and seafood products | 22 + 4h | a | Fish and shellfish | 12 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | b | Cooked fishery products | 8 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | c | Smoked products | 14 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | | **Total** | 34 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 100.0 | 100.0 | 79.7 | 0.0 | 0.0 |
| | | 22 + 22h | a | Fish and shellfish | 12 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | b | Cooked fishery products | 8 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | c | Smoked products | 14 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | | **Total** | 34 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 100.0 | 100.0 | 79.7 | 0.0 | 0.0 |

| Category | | Incubation time | Type | | PA | $PA_{FP(alt)}$ | NA | $NA_{FN(alt)}$ | PD | ND | $ND_{FN(alt)}$ | $PD_{FP(alt)}$ | TND | TNA | $SE_{alt}$ % | $SE_{ref}$ % | RT % | FP % | FNR % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | Ready-to-eat, ready-to-reheat or ready-to-cook products | 22 + 4h | a | Substantial raw ingredients | 11 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 6 | 100.0 | 100.0 | 100.0 | 0.0 | 18.2 |
| | | | b | Processed (cooked) products | 7 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 100.0 | 100.0 | 100.0 | 0.0 | 14.3 |
| | | | c | Refrigerated products | 12 | 0 | 16 | 0 | 0 | 0 | 1 | 0 | 1 | 16 | 92.3 | 100.0 | 96.6 | 0.0 | 7.7 |
| | | | | **Total** | 30 | 0 | 28 | 3 | 0 | 0 | 1 | 0 | 1 | 31 | 96.8 | 100.0 | 98.4 | 0.0 | 12.9 |
| | | 22 + 22h | a | Substantial raw ingredients | 11 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 6 | 100.0 | 100.0 | 100.0 | 0.0 | 18.2 |
| | | | b | Processed (cooked) products | 7 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 100.0 | 100.0 | 100.0 | 0.0 | 14.3 |
| | | | c | Refrigerated products | 13 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | | **Total** | 31 | 0 | 28 | 3 | 0 | 0 | 0 | 0 | 0 | 31 | 100.0 | 100.0 | 100.0 | 0.0 | 9.7 |
| 5 | Production environmental samples | 22 + 4h | a | Swabs and sponges | 8 | 0 | 13 | 0 | 0 | 0 | 1 | 0 | 1 | 13 | 88.9 | 100.0 | 95.5 | 0.0 | 11.1 |
| | | | b | Process water | 11 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | c | Dusts | 12 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | | **Total** | 31 | 0 | 37 | 0 | 0 | 0 | 1 | 0 | 1 | 37 | 96.9 | 100.0 | 98.6 | 0.0 | 3.1 |
| | | 22 + 22h | a | Swabs and sponges | 9 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | b | Process water | 11 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | c | Dusts | 12 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | | **Total** | 32 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| 6 | Fresh produce and vegetables | 22 + 4h | a | Cut-ready-to-eat vegetables | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | b | Produce grown in contact with the ground | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | c | Cut ready-to-eat fruit | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | | **Total** | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | 22 + 22h | a | Cut-ready-to-eat vegetables | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | b | Produce grown in contact with the ground | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | c | Cut ready-to-eat fruit | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| | | | | **Total** | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 |
| **Total short incubation time (4h) - all categories except meat** | | | | | **158** | **0** | **161** | **4** | **0** | **0** | **2** | **0** | **2** | **152** | **98.8** | **100.0** | **95.4** | **0.0** | **3.8** |
| **Total long incubation time (22h) - all categories** | | | | | **189** | **0** | **204** | **3** | **2** | **0** | **2** | **0** | **2** | **194** | **99.0** | **99.0** | **95.8** | **0.5** | **2.6** |

### 3.1.7 Discordant results

Negative deviations are listed in Table 7 and positive deviations in Table 8.

> ***Negative deviations***

Two negative deviations were observed for both HFB subculture incubation time (4 and 22h). Negative PCR result was obtained while confirmation gave positive result after subculture in Fraser (ISO 11290-1 method) or after 72h storage at 5±3°C (typical colonies on ALOA and Palcam plates). For only one sample (n°6834), few typical colonies were obtained with the direct streaking on O&A and Palcam plates.
For the other samples, before storage, no typical colony was obtained on plates which may indicate a low level of contamination. The level of detection was probably not reached by the alternative method.

For samples in negative agreement with the reference method, four samples (after 4h subculture in HFB) and three samples (after 22h subculture in HFB) gave positive confirmation while negative PCR result was obtained: $NA_{FN(alt)}$ samples. See table 9.
It can be noted that positive confirmation result was obtained only after storage for samples n°4626 and 4771.

> ***Positive deviations***

Two positive deviations were observed after 22h subculture in HFB. One sample was artificially contaminated and one naturally contaminated. See Table 8.

## Table 7 - Negative deviations

| N°Sample | Product | ISO 11290-1/A1 method *L. monocytogenes* result | GDS *Listeria monocytogenes* method Half Fraser 22h 30°C + 4 or 22h subculture | | | | | | | | Category | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PCR Result 4H 30°C | PCR Result 22H 30°C | Confirmations ALOA | Confirmations Palcam | Final confirmation | Final result 4 h | Final result 22 h | Agreement Ref/Alt 4 h | Agreement Ref/Alt 22 h | |
| 3344 | Merguez | + | | - | H- | + | - (+ ref) | | - | | $ND_{FN(alt)}$ | 1 | c |
| **5242** | **Sliced dehydrated sausage** | + | | - | - | st | - (+ ref) | | - | | $ND_{FN(alt)}$ | 1 | c |
| 4624 | Spinach | + | - | + | - | - | - (+ ref and 72h) | - | + | $ND_{FN(alt)}$ | **PA** | 4 | c |
| **6834** | **Wipe (fish industry materials)** | + | - | + | 2H+ | 5+ | + | - | + | $ND_{FN(alt)}$ | **PA** | 5 | a |

ref: reference method

## Table 8 - Positive deviations

| N°Sample | Product | ISO 11290-1/A1 method *L. monocytogenes* result | GDS *Listeria monocytogenes* method HFB 22h 30 ± 1°C with 4 or 22h subculture | | | | | | | | Category | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PCR Result 4H 30°C | PCR Result 22H 30°C | Confirmations ALOA | Confirmations Palcam | Final confirmation | Final result 4 h | Final result 22 h | Agreement Ref/Alt 4 h | Agreement Ref/Alt 22 h | |
| 4771 | Pasteurized fresh cream | - | - | + | st | st | - (+ at 72h) | - | + | $NA_{FN(alt)}$ | **PD** | 2 | a |
| **5244** | **Dehydrated sausage** | - | - | + | H- | st | - (+ at 72h) | - | + | $NA_{FN(alt)}$ | **PD** | 1 | c |

**Table 9 – $NA_{FN(alt)}$ samples**

| N°Sample | Product | ISO 11290-1/A1 method *L. mono* result | GDS Listeria monocytogenes method | | | | | | | | | | | | Category | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Before storage | | | | | | After storage 72h 5 ± 3°C | | | | | | | |
| | | | PCR Result 4h 30°c | PCR Result 22h 30°c | Confirmations | | Agreement Ref/Alt | | PCR Result | | Confirmations | | Agreement Ref/Alt | | | |
| | | | | | ALOA | Palcam | 4 h | 22 h | 4 h 30°C | 22 h 30°C | ALOA | Palcam | 4 h | 22 h | | |
| 4626 | Paella | - | - | - | 1H- (+ at 72h) | - | $NA_{FN(alt)}$ | $NA_{FN(alt)}$ | - | - | H-/1H+ | + | $NA_{FN(alt)}$ | $NA_{FN(alt)}$ | 4 | b |
| 4771 | Pasteurized fresh cream | - | - | + | st (+ at 72h) | st | $NA_{FN(alt)}$ | PD | - | + | 4H+ | + | $NA_{FN(alt)}$ | PD | 2 | a |
| 5179 | Dressing (sorrel) | - | - | - | H+ | + | $NA_{FN(alt)}$ | $NA_{FN(alt)}$ | | | | | | | 4 | a |
| 5180 | Dressing (green pepper) | - | - | - | H+ | + | $NA_{FN(alt)}$ | $NA_{FN(alt)}$ | | | | | | | 4 | a |

The analyses of discordant results according to the ISO 16140-2:2016 and ISO 16140-2/A1:2024 for a paired study is the following (See Table 10):

**Table 10 - Interpretation of the sensitivity study results**

| | | | | | | | Paired | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Category | | Type | | N+ | TND | PD | TND-PD | AL | TND+PD | AL |
| 1 | Meat products 22 + 22h | a | Fresh meat (unprocessed) | 11 | 0 | 0 | 0 | | 0 | |
| | | b | Cooked and cured meat products | 11 | 0 | 0 | 0 | | 0 | |
| | | c | Fermented meat products | 10 | 2 | 1 | 1 | | 3 | |
| | | | **Total** | 32 | 2 | 1 | 1 | 3 | 3 | 3 |
| 2 | Milk and dairy products 22 + 4h | a | Thermisation/pasteurized products | 11 | 0 | 0 | 0 | | 0 | |
| | | b | Fermented/acidified products | 5 | 0 | 0 | 0 | | 0 | |
| | | c | Raw milk-based products | 14 | 0 | 0 | 0 | | 0 | |
| | | | **Total** | 30 | 0 | 0 | 0 | 3 | 0 | 3 |
| | Milk and dairy products 22 + 22h | a | Thermisation/pasteurized products | 12 | 0 | 1 | -1 | | 1 | |
| | | b | Fermented/acidified products | 5 | 0 | 0 | 0 | | 0 | |
| | | c | Raw milk-based products | 14 | 0 | 0 | 0 | | 0 | |
| | | | **Total** | 31 | 0 | 1 | -1 | 3 | 1 | 3 |
| 3 | Fish and seafood products 22 + 4h | a | Fish and shellfish | 12 | 0 | 0 | 0 | | 0 | |
| | | b | Cooked fishery products | 8 | 0 | 0 | 0 | | 0 | |
| | | c | Smoked products | 14 | 0 | 0 | 0 | | 0 | |
| | | | **Total** | 34 | 0 | 0 | 0 | 3 | 0 | 3 |
| | Fish and seafood products 22 + 22h | a | Fish and shellfish | 12 | 0 | 0 | 0 | | 0 | |
| | | b | Cooked fishery products | 8 | 0 | 0 | 0 | | 0 | |
| | | c | Smoked products | 14 | 0 | 0 | 0 | | 0 | |
| | | | **Total** | 34 | 0 | 0 | 0 | 3 | 0 | 3 |
| 4 | Ready-to-eat, ready-to-reheat or ready-to-cook products 22 + 4h | a | Substantial raw ingredients | 11 | 0 | 0 | 0 | | 0 | |
| | | b | Processed (cooked) products | 7 | 0 | 0 | 0 | | 0 | |
| | | c | Refrigerated products | 13 | 1 | 0 | 1 | | 1 | |
| | | | **Total** | 31 | 1 | 0 | 1 | 3 | 1 | 3 |
| | Ready-to-eat, ready-to-reheat or ready-to-cook products 22 + 22h | a | Substantial raw ingredients | 11 | 0 | 0 | 0 | | 0 | |
| | | b | Processed (cooked) products | 7 | 0 | 0 | 0 | | 0 | |
| | | c | Refrigerated products | 13 | 0 | 0 | 0 | | 0 | |
| | | | **Total** | 31 | 0 | 0 | 0 | 3 | 0 | 3 |
| 5 | Production environmental samples 22 + 4h | a | Swabs and sponges | 9 | 1 | 0 | 1 | | 1 | |
| | | b | Process water | 11 | 0 | 0 | 0 | | 0 | |
| | | c | Dusts | 12 | 0 | 0 | 0 | | 0 | |
| | | | **Total** | 32 | 1 | 0 | 1 | 3 | 1 | 3 |
| | Production environmental samples 22 + 22h | a | Swabs and sponges | 9 | 0 | 0 | 0 | | 0 | |
| | | b | Process water | 11 | 0 | 0 | 0 | | 0 | |
| | | c | Dusts | 12 | 0 | 0 | 0 | | 0 | |
| | | | **Total** | 32 | 0 | 0 | 0 | 3 | 0 | 3 |

| Category | | Type | | N+ | TND | PD | Paired TND-PD | Paired AL | Paired TND+PD | Paired AL |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | Fresh produce and vegetables 22 + 4h | a | Cut-ready-to-eat vegetables | 11 | 0 | 0 | 0 | | 0 | |
| | | b | Produce grown in contact with the ground | 11 | 0 | 0 | 0 | | 0 | |
| | | c | Cut ready-to-eat fruit | 11 | 0 | 0 | 0 | | 0 | |
| | | | **Total** | 33 | 0 | 0 | 0 | 3 | 0 | 3 |
| | Fresh produce and vegetables 22 + 22h | a | Cut-ready-to-eat vegetables | 11 | 0 | 0 | 0 | | 0 | |
| | | b | Produce grown in contact with the ground | 11 | 0 | 0 | 0 | | 0 | |
| | | c | Cut ready-to-eat fruit | 11 | 0 | 0 | 0 | | 0 | |
| | | | **Total** | 33 | 0 | 0 | 0 | 3 | 0 | 3 |
| **Total short incubation time (22 + 4h) – all categories except meat** | | | | **160** | **2** | **0** | **2** | **6** | **2** | **16** |
| **Total long incubation time (22 + 22h) – all categories** | | | | **193** | **2** | **2** | **0** | **6** | **4** | **16** |

**The observed values for (TND – PD) and (TND + PD) for the individual categories and for all categories meet the acceptability limits (observed values ≤ AL).**

### 3.1.8 Half Fraser enrichment storage at 5 ± 3 °C for 72 h

The storage of the subculture in HFB broth was done at 5°C ± 3°C for 72 h.

All positive and discordant samples were tested again after enrichment broth storage. For this study, 199 enriched samples were tested again after storage of the enriched broth for 72h at 5 ± 3°C. Changes were observed for five samples. The following changes were observed (See Table 11).

**Table 11 - Observed changes in results before and after storage of the enrichment broth**

| Sample n° | Before storage | | After storage | | Category | Type |
|---|---|---|---|---|---|---|
| | 4 h | 22 h | 4 h | 22 h | | |
| 4624 | $ND_{FN(alt)}$ | PA | PA | PA | 4 | c |
| 4765 | PA | PA | $ND_{FN(alt)}$ | PA | 2 | a |
| 4766 | PA | PA | $ND_{FN(alt)}$ | PA | 2 | a |
| 6843 | NA | NA | $NA_{FN(alt)}$ | PD | 5 | c |
| 6844 | NA | NA | PD | $NA_{FN(alt)}$ | 5 | c |

The analyses of discordant become (See Table 12).

## Table 12 - Interpretation of the sensitivity study results after storage of the enrichment broth at 5°C ± 3°C

| | | | | | | | | Paired | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Category | | Type | | N+ | TND | PD | TND-PD | AL | TND+PD | AL |
| 1 | Meat products 22 + 22h | a | Fresh meat (unprocessed) | 11 | 0 | 0 | 0 | | 0 | |
| | | b | Cooked and cured meat products | 11 | 0 | 0 | 0 | | 0 | |
| | | c | Fermented meat products | 10 | 2 | 1 | 1 | | 3 | |
| | | Total | | 32 | 2 | 1 | 1 | 3 | 3 | 3 |
| 2 | Milk and dairy products 22 + 4h | a | Thermisation/pasteurized products | 11 | 2 | 0 | 2 | | 2 | |
| | | b | Fermented/acidified products | 5 | 0 | 0 | 0 | | 0 | |
| | | c | Raw milk-based products | 13 | 0 | 0 | 0 | | 0 | |
| | | Total | | 29 | 2 | 0 | 2 | 3 | 2 | 3 |
| | Milk and dairy products 22 + 22h | a | Thermisation/pasteurized products | 12 | 0 | 1 | -1 | | 1 | |
| | | b | Fermented/acidified products | 5 | 0 | 0 | 0 | | 0 | |
| | | c | Raw milk-based products | 13 | 0 | 0 | 0 | | 0 | |
| | | Total | | 30 | 0 | 1 | -1 | 3 | 1 | 3 |
| 3 | Fish and seafood products 22 + 4h | a | Fish and shellfish | 12 | 0 | 0 | 0 | | 0 | |
| | | b | Cooked fishery products | 8 | 0 | 0 | 0 | | 0 | |
| | | c | Smoked products | 14 | 0 | 0 | 0 | | 0 | |
| | | Total | | 34 | 0 | 0 | 0 | 3 | 0 | 3 |
| | Fish and seafood products 22 + 22h | a | Fish and shellfish | 12 | 0 | 0 | 0 | | 0 | |
| | | b | Cooked fishery products | 8 | 0 | 0 | 0 | | 0 | |
| | | c | Smoked products | 14 | 0 | 0 | 0 | | 0 | |
| | | Total | | 34 | 0 | 0 | 0 | 3 | 0 | 3 |
| 4 | Ready-to-eat, ready-to-reheat or ready-to-cook products 22 + 4h | a | Substantial raw ingredients | 11 | 0 | 0 | 0 | | 0 | |
| | | b | Processed (cooked) products | 7 | 0 | 0 | 0 | | 0 | |
| | | c | Refrigerated products | 13 | 0 | 0 | 0 | | 0 | |
| | | Total | | 31 | 0 | 0 | 0 | 3 | 0 | 3 |
| | Ready-to-eat, ready-to-reheat or ready-to-cook products 22 + 22h | a | Substantial raw ingredients | 11 | 0 | 0 | 0 | | 0 | |
| | | b | Processed (cooked) products | 7 | 0 | 0 | 0 | | 0 | |
| | | c | Refrigerated products | 13 | 0 | 0 | 0 | | 0 | |
| | | Total | | 31 | 0 | 0 | 0 | 3 | 0 | 3 |
| 5 | Production environmental samples 22 + 4h | a | Swabs and sponges | 9 | 1 | 0 | 1 | | 1 | |
| | | b | Process water | 11 | 0 | 0 | 0 | | 0 | |
| | | c | Dusts | 13 | 0 | 1 | -1 | | 1 | |
| | | Total | | 33 | 1 | 1 | 0 | 3 | 2 | 3 |
| | Production environmental samples 22 + 22h | a | Swabs and sponges | 9 | 0 | 0 | 0 | | 0 | |
| | | b | Process water | 11 | 0 | 0 | 0 | | 0 | |
| | | c | Dusts | 13 | 0 | 1 | -1 | | 1 | |
| | | Total | | 33 | 0 | 1 | -1 | 3 | 1 | 3 |

| Category | | Type | | N+ | TND | PD | Paired TND-PD | Paired AL | Paired TND+PD | Paired AL |
|---|---|---|---|---|---|---|---|---|---|---|
| 6 | Fresh produce and vegetables 22 + 4h | a | Cut-ready-to-eat vegetables | 12 | 0 | 0 | 0 | | 0 | |
| | | b | Produce grown in contact with the ground | 12 | 0 | 0 | 0 | | 0 | |
| | | c | Cut ready-to-eat fruit | 12 | 0 | 0 | 0 | | 0 | |
| | | Total | | 36 | 0 | 0 | 0 | 3 | 0 | 3 |
| | Fresh produce and vegetables 22 + 22h | a | Cut-ready-to-eat vegetables | 12 | 0 | 0 | 0 | | 0 | |
| | | b | Produce grown in contact with the ground | 12 | 0 | 0 | 0 | | 0 | |
| | | c | Cut ready-to-eat fruit | 12 | 0 | 0 | 0 | | 0 | |
| | | Total | | 36 | 0 | 0 | 0 | 3 | 0 | 3 |
| **Total short incubation time (22 + 4h) – All categories except meat** | | | | **163** | **3** | **1** | **2** | **6** | **4** | **16** |
| **Total long incubation time (22 + 22h) – All categories** | | | | **196** | **2** | **3** | **-1** | **6** | **5** | **16** |

**The observed values for TND - PD and TND + PD for the individual categories and for all categories meet the acceptability limits (observed values ≤ AL).**

### 3.1.9 Confirmation

It was impossible to confirm the presence of *Listeria monocytogenes* in the enrichment broth after 22 h HFB subculture for 1 samples ($PD_{FP(alt)}$): n° 3358 (raw ground beef). Positive PCR results were obtained while no typical colonies were recovered (only *Listeria welshimeri* strain).

## 3.2 Relative level of detection

*The relative level of detection is the level of detection at P = 0.50 ($LOD_{50}$) of the alternative (proprietary) method divided by the level of detection at P = 0.50 ($LOD_{50}$) of the reference method.*

The RLOD is defined as the ratio of the alternative and reference methods:

$$RLOD = \frac{LOD_{Alt.}}{LOD_{Ref.}}$$

### 3.2.1 Categories, sample types and strains

Six (matrix/strain) pairs were analyzed by the reference method and by the alternative method (See Table 13):

**Table 13 - List of selected types and strains per category, as tested within the relative level of detection study**

| Category | Type | Strain | Reference number | Strain origin | Seeding procedure |
|---|---|---|---|---|---|
| **Meat products** | Sausage | *L. monocytogenes* | Ad669 | Meat product | 48 h at 5 ± 3°C |
| **Milk and dairy products** | Goat cheese | *L. monocytogenes* | Ad618 | Cheese | |
| **Fish and seafood products** | Smoked salmon | *L. monocytogenes* | Ad670 | Smoked salmon | |
| **Ready-to-eat, ready-to-reheat and ready-to-cook products** | Potatoes | *L. monocytogenes* | Ad279 | Vegetables based, ready-to-eat food | |
| **Environmental samples** | Process water | *L. monocytogenes* | Ad631 | Dairy environment | |
| **Fresh produce and vegetables** | Pre-cut bagged spinach | *L. monocytogenes* | CWD 15554 | Dairy product | |

### 3.2.2 Test sample preparations

Three levels of artificial contamination were prepared for each type:

- Negative control level: one non-inoculated in order to get 5 test portions,
- Low level: one inoculated between 0.2 and 2.0 CFU/sample in order to get 20 test portions providing fractional recovery,
- Higher level: one inoculated between 2.0 and 5.0 CFU/sample in order to get 5 test portions contaminated at a higher level.

A bulk lot of the matrix was inoculated at each level, homogenized and stored as described in Table 13.

### 3.2.3 RLOD study results

The tabulated raw data on the RLOD are given in **Appendix 6**.

The RLOD calculations were performed using the Excel spreadsheet available at http://standards.iso.org/iso/16140 - RLOD version 4 (2024-01-10). The RLOD are given in Table 14.

**Table 14 – Presentation of RLOD before and after confirmation of the alternative method results**

| Catgory | Matrix / strain | AL | RLOD [95% confidence limit] |
|---|---|---|---|
| | | 22 + 4 h incubation | 22 + 22h incubation |
| 1 | Sausage / *L. monocytogenes* Ad669 | / | 1.0 [0.4 ; 2.4] |
| 2 | Goat cheese / *L. monocytogenes* Ad618 | 1.0 [0.5 ; 2.1] | 1.0 [0.5 ; 2.1] |
| 3 | Smoked salmon / *L. monocytogenes* Ad670 | 1.0 [0.4 ; 2.6] | 1.0 [0.4 ; 2.6] |
| 4 | Potatoes / *L. monocytogenes* Ad279 | 1.0 [0.5 ; 2.0] | 1.0 [0.5 ; 2.0] |
| 5 | Process water / *L. monocytogenes* Ad631 | 1.0 [0.4 ; 2.6] | 1.0 [0.4 ; 2.6] |
| 6 | Pre-cut bagged spinach / *L. monocytogenes* CWD 15554 | 1.0 [0.4 ; 2.4] | 1.0 [0.4 ; 2.4] |
| **Combined** | | **1.0 [0.7 ; 1.4]** | **1.0 [0.7 ; 1.4]** |

The $LOD_{50}$ calculations were done using the Excel spreadsheet available at http://standards.iso.org/iso/16140 POD-LOD calculation program - version 12, 2024-03-05. The tests are given in Table 15.

**Table 15 - $LOD_{50}$ results**

| Category | (Strain / matrix) pair | Level of detection at 50% (CFU / test portion) | | | Level of detection at 95% (CFU / test portion) | | |
|---|---|---|---|---|---|---|---|
| | | Reference method | Alternative method | | Reference method | Alternative method | |
| | | | 22 + 4h | 22 + 22h | | 22 + 4h | 22 + 22h |
| 1 | Sausage / *L. monocytogenes* Ad669 | 0.6 [0.3; 1.1] | / | 0.6 [0.3; 1.1] | 2.7 [1.5; 4.9] | / | 2.7 [1.5; 4.9] |
| 2 | Goat cheese / *L. monocytogenes* Ad618 | 0.7 [0.4; 1.3] | 0.7 [0.4; 1.3] | 0.7 [0.4; 1.3] | 3.1 [1.7; 5.7] | 3.1 [1.7; 5.7] | 3.1 [1.7; 5.7] |
| 3 | Smoked salmon / *L. monocytogenes* Ad670 | 0.6 [0.3; 1.1] | 0.6 [0.3; 1.1] | 0.6 [0.3; 1.1] | 2.5 [1.3; 4.5] | 2.5 [1.3; 4.5] | 2.5 [1.3; 4.5] |
| 4 | Potatoes / *L. monocytogenes* Ad279 | 0.8 [0.5; 1.4] | 0.8 [0.5; 1.4] | 0.8 [0.5; 1.4] | 3.6 [2.1; 6.2] | 3.6 [2.1; 6.2] | 3.6 [2.1; 6.2] |
| 5 | Process water / *L. monocytogenes* Ad631 | 0.6 [0.3; 1.2] | 0.6 [0.3; 1.2] | 0.6 [0.3; 1.2] | 2.7 [1.4; 5.0] | 2.7 [1.4; 5.0] | 2.7 [1.4; 5.0] |
| 6 | Bagged spinach / *L. monocytogenes* CWD 15554 | 0.6 [0.3; 1.3] | 0.6 [0.3; 1.3] | 0.6 [0.3; 1.3] | 2.7 [1.3; 5.4] | 2.7 [1.3; 5.4] | 2.7 [1.3; 5.4] |
| **Combined results** | | **0.7 [0.5; 0.9]** | **0.7 [0.5; 0.9]** | **0.7 [0.5; 0.9]** | **2.9 [2.3; 3.8]** | **2.9 [2.3; 3.8]** | **2.9 [2.3; 3.8]** |

### 3.2.4 Conclusion

**The RLOD values (using the confirmed alternative method results) meet the acceptability limit, which is 1.5 for paired, for all categories tested.**

## 3.3 Inclusivity / exclusivity

*The inclusivity is the ability of the alternative method to detect the target analyte from a wide range of strains. The exclusivity is the lack of interference from a relevant range of non-target strains of the alternative method.*

### *3.3.1 Protocols*

- **Inclusivity**

50 *Listeria monocytogenes* strains were freshly cultured in BHI medium at 37 ± 1°C. Dilutions were made in order to inoculate 10 CFU/ 225 ml HFB. The alternative method protocol was then performed considering 4h of subculture. For 2 strains, UHT milk was added to the enrichment broth (25 ml) in order to mimic the real conditions of analysis.

- **Exclusivity**

30 strains were freshly cultured in BHI medium at 37 ± 1°C. Dilutions were made in order to inoculate about $10^5$ CFU/ ml BHI. The alternative method was then performed.

In 2024, It has been required by the MicroVal technical committee to incorporate new *Listeria* strains into the inclusivity / exclusivity list for Listeria spp and Listeria monocytogenes validation study. A ratio of 80% of sensu stricto and 20% of sensu lato must be considered.

Therefore, in order to complete the list of strains tested during the initial validation, the strains described in Table 16 were added for this renewal.

**Table 16 - List of added strains in exclusivity during the renewal in 2025**

| Strain | Species | Classification (Carlin et al. 2021) | Classification (Bouznada et al., 2024) | Reference | Origin |
|---|---|---|---|---|---|
| *Listeria* | *farberi* | Sensu stricto | *Listeria* | LMG 31917 | Soil |
| *Listeria* | *immobilis* | Sensu stricto | *Listeria* | LMG 31920 | Soil |
| *Listeria* | *marthii* | Sensu stricto | *Listeria* | DSM 23813 | Soil |
| *Listeria* | *cornellensis* | Sensu lato | *Paenilisteria* | DSM26689 | water |
| *Listeria* | *fleischmanii subsp fleischmanii* | Sensu lato | *Mesolisteria* | DSM24998 | Hard cheese |
| *Listeria* | *grandensis* | Sensu lato | *Paenilisteria* | DSM26688 | water |
| *Listeria* | *riparia* | Sensu lato | *Paenilisteria* | DSM26685 | Running water |
| *Listeria* | *rocourtiae* | Sensu lato | *Listeria / Paenilisteria* | DSM 22097 | lettuce |
| *Listeria* | *grayi* | Sensu lato | *Murraya* | Ad3288 | Smoked bacon |
| *Listeria* | *grayi* | Sensu lato | *Murraya* | Ad3205 | Chicken nuggets |
| *Listeria* | *grayi* | Sensu lato | *Murraya* | Ad2415 | Rillette |
| *Listeria* | *grayi* | Sensu lato | *Murraya* | Ad1295 | Spinach |

### 3.3.2 Results

Raw data are given in **Appendix 7**.

#### Inclusivity

A total of 50 strains were tested for inclusivity. Forty-nine (49) of these strains showed the expected positive result, with *Listeria monocytogenes* Ad253 producing a negative result following the alternative method but a positive result following the reference method.

#### Exclusivity

30 strains during the initial validation study and 12 strains during this renewal study were tested for exclusivity. All the strains showed the expected negative result.

### 3.3.3 Conclusion

**The alternative Assurance GDS *Listeria monocytogenes* Tq detection method is selective and specific.**

## 3.4 Conclusion Method Comparison Study

Overall, the conclusions for the Method Comparison Study are:

**The observed values for TND-PD and TND+PD for the individual categories and for all categories meet the acceptability limits (observed values ≤ AL). The RLOD values (using the confirmed alternative method results) meet the acceptability limit, which is 1.5 for paired studies for all categories tested. The alternative Assurance GDS Listeria species Tq detection method is selective and specific.**

# 4 INTER-LABORATORY STUDY

***The inter-laboratory study is a study performed by multiple laboratories testing identical samples at the same time, the results of which are used to estimate alternative-method performance parameters.***

During the inter-laboratory study, 4 h incubation time was tested.

## 4.1 Study organisation

> *Collaborators number*

Samples were sent to 7 laboratories gathering 14 collaborators.

> *Matrix and strain used*

Cheese samples were inoculated with *Listeria monocytogenes* 153 strain.

> *Samples*

Samples were inoculated and sent on Monday 13th May 2013, as described below:

- 24 codified samples for *Listeria monocytogenes* research by GDS *Listeria monocytogenes* Tq method and by the reference method (NF EN ISO 11290-1/A1),
- 1 sample for aerobic mesophilic flora enumeration by ISO 4833 method,

- 1 water flask labelled “Temperature Control” with a temperature probe.

The analyses were started on Wednesday 15th May 2013.

> *Inoculation*

The targeted inoculation levels were the following:

- 0 CFU/25 ml,
- 1 – 10 CFU/25 ml,
- 5 – 50 CFU/25 ml.

> *Labelling and shipping*

Blind coded samples were placed in isothermal boxes, which contained cooling blocks, and express-shipped to the different laboratories.

A temperature control flask containing a sensor was added to the package in order to register the temperature profile during the transport, the package delivery and storage until analyses.

Samples were shipped in 24 h to 48 h to the involved laboratories. The temperature conditions had to stay lower or equal to 8°C during transport, and between 0°C – 8°C in the labs.

> *Analyses*

Collaborative study laboratories and the expert laboratory carried out the analyses at Day 2 with the alternative and reference methods.

## 4.2 Experimental parameters controls

### *4.2.1 Detection of Listeria monocytogenes in the matrix before inoculation*

In order to detect the presence of *Listeria monocytogenes*, the reference method was performed on five portions (25 g) before the inoculation. All the results were negative.

### 4.2.2 Strain stability during transport

Sample stability was checked by inoculating the matrix at 100 CFU/g and 5 CFU/g. Enumerations were performed for the high contamination level and detection analyses were performed for the low contamination level. *Triplicates* were analysed. The mesophilic aerobic flora was also enumerated; the results are given in Table 17.

**Table 17 - *Listeria monocytogenes* Sample stability**

| Day | Reference method (detection) | | | CFU/g (O&A) | | | Mesophilic aerobic flora (CFU/g) |
|---|---|---|---|---|---|---|---|
| | Sample 1 | Sample 2 | Sample 3 | Sample 1 | Sample 2 | Sample 3 | |
| Day 0 | + | + | + | 130 | 130 | 130 | $3.3 \times 10^6$ |
| Day 1 | + | + | + | 100 | 150 | 170 | $4.0 \times 10^6$ |
| Day 2 | + | + | + | 160 | 150 | 120 | $2.9 \times 10^6$ |

No evolution was observed during storage at 5°C ± 3°C.

### 4.2.3 Contamination levels

The contamination levels and the sample codification were the following (see Table 18).

**Table 18 - Contamination levels**

| Level | Samples | Theoretical target level (CFU/test portion) | True level (CFU/test portion) | Low limit (CFU/test portion) | High limit (CFU/test portion) |
|---|---|---|---|---|---|
| Level 0 | 3 – 5 – 9 – 13 – 14 – 18 – 22 – 23 | 0 | / | / | / |
| Low level | 2 – 7 – 8 – 11 – 15 – 17 – 21 – 24 | 2 | 1.9 | 1.5 | 2.3 |
| High level | 1 – 4 – 6 – 10 – 12 – 16 – 19 – 20 | 25 | 25.0 | 22.1 | 28.4 |

### 4.2.4 Logistic conditions

The temperatures measured at reception by the collaborators, the temperatures registered by the thermo-probe, and the receipt dates are given in Table 19.

**Table 19 - Sample temperatures at receipt**

| Collaborators | Temperature measured by the sensor (°C) | Temperature measured at receipt (°C) | Receipt date and time | |
|---|---|---|---|---|
| A | *Lost* | 3.9 | 14/05/2013 | 14h15 |
| B | 2.0 | 4.8 | 14/05/2013 | 14h15 |
| C | 1.0 | 2.1 | 14/05/2013 | 15h00 |
| D | 3.5 | 4.4 | 14/05/2013 | 15h00 |
| E | 2.0 | 3.2 | 14/05/2013 | 13h00 |
| F | 3.0 | 3.0 – 4.0 | 14/05/2013 | 09h30 |
| G | *Lost* | 3.0 – 4.0 | 14/05/2013 | 10h00 |
| H | 1.0 | 4.3 | 14/05/2013 | 10h30 |
| I | 2.5 | 5.3 | 14/05/2013 | 10h30 |
| J | 0.5 | 2.5 | 14/05/2013 | 11h00 |
| K | *Lost* | 3.0 | 14/05/2013 | 11h00 |
| L | 1.0 | 2.5 | 14/05/2013 | 11h00 |
| M | *Out of order* | 4.0 | 14/05/2013 | 11h00 |
| N | 2.0 | 5.0 | 14/05/2013 | 11h00 |

No problem was encountered during the transport or at receipt for the 14 collaborators. All the samples were delivered on time and in appropriate conditions. For four collaborators, probe was not available but temperatures during receipt were all correct.

## 4.3 Calculation and summary of data

The raw data are given in **Appendix 8**.

### *4.3.1 MicroVal Expert laboratory results*

The results obtained by the expert laboratory are given in Table 20.

**Table 20 – Results obtained by the expert Lab.**

| Level | Reference method | Alternative method |
|---|---|---|
| L0 | 0/8 | 0/8 |
| L1 | 7/8 | 7/8 |
| L2 | 8/8 | 8/8 |

### 4.3.2 Results observed by the collaborative laboratories

> ***Mesophilic aerobic flora enumeration***

Depending on the Lab results, the enumeration levels varied from 1.7 $10^6$ to 6.0 $10^6$ CFU/g.

> ***Listeria monocytogenes detection***

7 Labs participated in the study, involving at least 14 collaborators. The results obtained by the individual collaborators in the inter-laboratory are summarized in Table 21 (reference method) and Table 22 (alternative method).

**Table 21 - Positive results by the reference method (ALL the collaborators)**

| Collaborators | Contamination level | | |
|---|---|---|---|
| | L0 | L1 | L2 |
| A | 0 | 8 | 8 |
| B | 0 | 7 | 8 |
| C | 0 | 8 | 8 |
| D | 0 | 6 | 8 |
| E | 2 | 8 | 8 |
| F | 0 | 8 | 8 |
| G | 0 | 8 | 8 |
| H | 0 | 7 | 8 |
| I | 0 | 7 | 8 |
| J | 0 | 8 | 8 |
| K | 0 | 8 | 8 |
| L | 0 | 6 | 8 |
| M | 0 | 4 | 8 |
| N | 0 | 7 | 8 |
| Total | $P_0 = 2$ | $P_1 = 100$ | $P_2 = 112$ |

**Table 22 - Positive results (before and after confirmation) by the alternative method (ALL the collaborators)**

| Collaborators | Contamination level | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | L0 | | | L1 | | | L2 | | |
| | PCR result | Confirmation result | Final result | PCR result | Confirmation result | Final result | PCR result | Confirmation result | Final result |
| A | 0 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| B | 0 | 0 | 0 | 7 | 7 | 7 | 8 | 8 | 8 |
| C | 0 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| D | 0 | 0 | 0 | 6 | 6 | 6 | 8 | 8 | 8 |
| E | 0 | 0 | 0 | 7 | 8 | 7 | 8 | 8 | 8 |
| F | 0 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| G | 0 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| H | 0 | 0 | 0 | 7 | 7 | 7 | 7 | 8 | 7 |
| I | 0 | 0 | 0 | 4 | 7 | 4 | 8 | 8 | 8 |
| J | 0 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| K | 1 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| L | 0 | 0 | 0 | 6 | 6 | 6 | 8 | 8 | 8 |
| M | 0 | 0 | 0 | 3 | 4 | 3 | 8 | 8 | 8 |
| N | 0 | 0 | 0 | 7 | 8 | 7 | 8 | 8 | 8 |
| **Total** | **$P_0$ = 1** | **$C_0$ = 0** | **$CP_0$ = 0** | **$P_1$ = 95** | **$C_1$= 101** | **$CP_1$= 95** | **$P_2$ = 112** | **$C_2$= 112** | **$CP_2$ =111** |

One collaborator (E) obtained 2 positive results at Level L0 with the reference method. According to 2023-268 (TC) MVTC interpretation of ISO 16140-2 -6 v2.6, all data from collaborators that found positive results with the blank samples either by the reference or alternative method should not be taken into account. Therefore, the results from the collaborator E were not kept for interpretation.

One collaborator (K) has obtained, at level L1, one positive PCR result with negative confirmation ($PD_{FP(alt)}$ sample). It was decided during the initial validation study to keep this collaborator.

### 4.3.3 Results of the collaborators retained for interpretation

The results obtained with the 13 collaborators kept for interpretation are presented in Table 23 (reference method) and Table 24 (alternative method).

**Table 23 - Positive results by the reference method (Without Lab E)**

| Collaborators | Contamination level | | |
|---|---|---|---|
| | L0 | L1 | L2 |
| A | 0 | 8 | 8 |
| B | 0 | 7 | 8 |
| C | 0 | 8 | 8 |
| D | 0 | 6 | 8 |
| F | 0 | 8 | 8 |
| G | 0 | 8 | 8 |
| H | 0 | 7 | 8 |
| I | 0 | 7 | 8 |
| J | 0 | 8 | 8 |
| K | 0 | 8 | 8 |
| L | 0 | 6 | 8 |
| M | 0 | 4 | 8 |
| N | 0 | 7 | 8 |
| **Total** | **$P_0$ =0** | **$P_1$ = 92** | **$P_2$ = 104** |

**Table 24 - Positive results (before and after confirmation) by the alternative methods (Without Lab E)**

| Collaborators | Contamination level | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | L0 | | | L1 | | | L2 | | |
| | PCR result | Confirmation result | Final result | PCR result | Confirmation result | Final result | PCR result | Confirmation result | Final result |
| A | 0 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| B | 0 | 0 | 0 | 7 | 7 | 7 | 8 | 8 | 8 |
| C | 0 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| D | 0 | 0 | 0 | 6 | 6 | 6 | 8 | 8 | 8 |
| F | 0 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| G | 0 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| H | 0 | 0 | 0 | 7 | 7 | 7 | 7 | 8 | 7 |
| I | 0 | 0 | 0 | 4 | 7 | 4 | 8 | 8 | 8 |
| J | 0 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| K | 1 | 0 | 0 | 8 | 8 | 8 | 8 | 8 | 8 |
| L | 0 | 0 | 0 | 6 | 6 | 6 | 8 | 8 | 8 |
| M | 0 | 0 | 0 | 3 | 4 | 3 | 8 | 8 | 8 |
| N | 0 | 0 | 0 | 7 | 8 | 7 | 8 | 8 | 8 |
| **Total** | **$P_0$ = 1** | **$C_0$ = 0** | **$CP_0$ = 0** | **$P_1$ = 88** | **$C_1$= 93** | **$CP_1$= 88** | **$P_2$ = 103** | **$C_2$= 104** | **$CP_2$ =103** |

### 4.3.4 Calculation of the specificity percentage (SP)

The percentage specificities (SP) of the reference method and of the alternative method, using the data after confirmation, based on the results of level L0, are the following (See Table 25).

**Table 25 - Percentage specificity**

| | | |
|---|---|---|
| **Specificity for the reference method** | $SP_{ref} = \left(1 - \left(\frac{P_0}{N_-}\right)\right) x\ 100\ \% =$ | 100.0 % |
| **Specificity for the alternative method** | $SP_{alt} = \left(1 - \left(\frac{CP_0}{N_-}\right)\right) x\ 100\ \% =$ | 100.0 % |

N: number of all L0 tests
$P_0$ = total number of false-positive results obtained with the blank samples before confirmation
$CP_0$ = total number of false-positive results obtained with the blank samples

### 4.3.5 Calculation of sensitivity ($SE_{alt}$), sensitivity for the reference method ($SE_{ref}$), relative trueness (RT, false positive ratio for the alternative method (FPR) and false negative ratio for the alternative method (FNR)

Partial positive results were obtained for the low level (88.5.0% (L1) for alternative method and 84.6% and for the reference method) but above the range described in the ISO 16140-2 for fractional positive results (25-75%). The interpretation of the data was performed for Level 1 only.

Despite this high percentage of positives, the distribution of results across collaborators indicates that the alternative method was still appropriately challenged. Specifically, 7 out of 13 collaborators obtained at least one negative result: 3 collaborators have obtained 7 positives, 2 have obtained 6 positives, 1 have obtained 4 positives and 1 have 3 positives out of 8 contaminated samples. This variability is typical in low-level contamination studies and confirms that the method was tested under limiting conditions.

A summary of the results of the collaborators retained for interpretation and obtained with the reference and the alternative methods for Level 1 is provided in Table 26.

**Table 26 - Summary of results for all collaborators obtained with the reference and alternative methods for Level 1**

| Level | Response | Reference method positive (R+) | Reference method negative (R-) |
|---|---|---|---|
| L1 | Alternative method positive (A+) | Positive agreement (A+/R+)<br>**PA = 88** | Positive deviation (R-/A+)<br>**PD = 0** |
| | Alternative method negative (A-) | Total Negative deviation (A-/R+)<br>**TND = 4 (4 $ND_{FN(alt)}$)** | Total Negative agreement (A-/R-)<br>**TNA = 12 (1 $NA_{FN(alt)}$)** |

Based on the data summarized in Table 26, the values of sensitivity of the alternative and reference methods, as well as the relative trueness and false positive ratio for the alternative method taking account the confirmations, are the following (See Table 27).

**Table 27 - Sensitivity, relative trueness, false positive ratio and false negative ratio percentages**

| | | Level L1 |
|---|---|---|
| Sensitivity for the alternative method | $SE_{alt} = \frac{(PA + PD)}{(PA + TND + PD)} \; x \; 100\ \%$ | 95.7 % |
| Sensitivity for the reference method | $SE_{ref} = \frac{(PA + TND)}{(PA + TND + PD)} \; x \; 100\ \%$ | 100.0 % |
| Relative trueness | $RT = \frac{(PA + TNA)}{N} x100\ \%$ | 96.2 % |
| False positive ratio for the alternative method (unpaired evaluation) | $FPR = \frac{PA_{FP(alt)} + PD_{FP\,(alt)}}{TNA} \; x \; 100\ \%$ | 0.0 % |
| False positive ratio for the alternative method (paired evaluation) | $FPR = \frac{PA_{FP(alt)}}{TNA} \; x \; 100\ \%$ | 5.4 % |

*Paired study with* $TNA = NA + PD_{FP\,(alt)}$ $TND = ND_{FN\,(alt)}$

### 4.3.6 Interpretation of trueness data

Negative deviations are listed in Table 28 for Level 1. No positive deviation was observed.

All samples with negative deviation have obtained negative PCR result while positive confirmation was obtained ($ND_{FN(alt)}$ samples). Second test was carried out for 3 samples (from collaborator I) and positive PCR result was obtained.

**Table 28 - Negative deviations for Level 1**

| Level | Collaborator | Sample | Reference method result ISO 11290-1 | Alternative method: GDS *Listeria* monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|
| | | | | PCR | OCLA | Palcam | Final result | |
| L1 | I | 2 | + | -/+* | + | + | - | $ND_{FN(alt)}$ |
| | | 7 | + | -/+* | + | + | - | $ND_{FN(alt)}$ |
| | | 11 | + | -/+* | + | + | - | $ND_{FN(alt)}$ |
| | M | 15 | + | - | + | + | - | $ND_{FN(alt)}$ |

* second test

For a **paired study design**, the difference between (TND – PD) and the addition (TND + PD) are calculated for the level(s) where fractional recovery is obtained (so $L_1$ and possibly $L_2$). The observed value found for (TND – PD) and (TND + PD) shall not be higher than the AL.

For 13 collaborators, the limits are the following:

| | Calculated values | AL | Conclusion |
|---|---|---|---|
| | L1 | | L1 |
| TND - PD | 4 | 4 | TND – PD = AL |
| TND + PD | 4 | 5 | TND + PD < AL |

**The ISO 16140-2:2016 & ISO 16140-2/A1:2024 requirements are fulfilled as (TND - PD) and (TND + PD) meet the AL for Level L1.**

### 4.3.7 Evaluation of the LOD $_{50\%}$ and RLOD between laboratories

The LOD $_{50\%}$, was calculated using the EN ISO 16140-2 Excel spreadsheet available at https://standards.iso.org/iso/16140/-2/ed-1/en/amd/1/PODLOD-interlab_ver2.xlsm
The RLOD is defined as the ratio of the LODs of the alternative method and the reference method: **$RLOD = LOD_{alt}/LOD_{ref}$.**

The results are given in Table 29.

**Table 29 - LOD $_{50\%}$ and RLOD**

| Method | LOD 50% | RLOD |
|---|---|---|
| Reference | 0.6 [0.5;0.8] | 1.2 |
| Alternative | 0.7 [0.5;0.9] | |

## 4.4 Conclusion Inter-laboratory study

The observed values for TND-PD and TND+PD are lower than the acceptability limits. The data and interpretations comply with the ISO 16140-2:2016, ISO 16140-2/A1:2024 requirements.
**The Assurance GDS *Listeria monocytogenes* Tq is considered equivalent to the ISO standard.**

# 5 GENERAL CONCLUSION

The **method comparison study conclusions** are:

Overall, the conclusions for the Method Comparison Study are:

The observed values for TND-PD and TND+PD for the individual categories and for all categories meet the acceptability limits (observed values ≤ AL).

The RLOD values (using the confirmed alternative method results) meet the acceptability limit, which is 1.5 for paired studies for all categories tested.

The alternative Assurance® GDS Listeria monocytogenes Tq detection method is selective and specific.

The **inter-laboratory study conclusions** are:

The observed values for TND-PD and TND+PD are lower than the acceptability limits.

The data and interpretations comply with the ISO 16140-2:2016, ISO 16140-2/A1:2024 requirements.

**The Assurance GDS *Listeria monocytogenes* Tq is considered equivalent to the ISO standard.**

Quimper, 25 February 2026

Astrid CARIOU
Manager
Method performance in food microbiology

I hereby attest to the validation of the verification of the conformity of the report (opinion and interpretation).

# 6 REFERENCES

- ISO 4833-1:2013; Microbiology of the food chain -- Horizontal method for the enumeration of microorganisms -- Part 1: Colony count at 30 degrees C by the pour plate technique

- ISO 6887 (all parts); Microbiology of the food chain -- Preparation of test samples, initial suspension and decimal dilutions for microbiological examination – All parts.

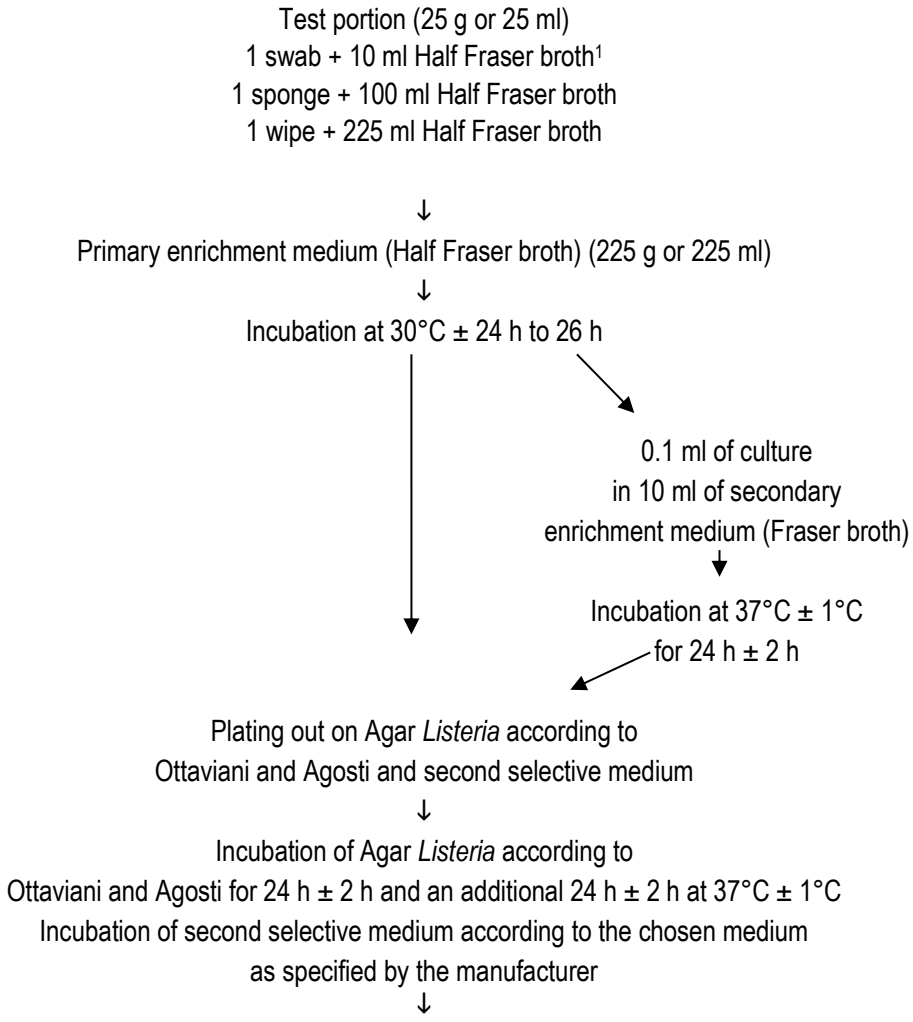
- ISO 7218:2024; Microbiology of food and animal feeding stuffs -- General requirements and guidance for microbiological examinations.

- ISO 16140-2:2016; Microbiology of the food chain -- Method validation -- Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method.

- 2016-028 (GC) Proposed MicroVal Technical committee interpretation of ISO 16140-2 and ISO

- 2017-063 (TC) The MicroVal Process

## Appendix 1 - Flow diagram of the reference method: ISO 11290-1:2017 - Microbiology of the food chain - Horizontal method for the detection and enumeration of *Listeria monocytogenes* and other *Listeria* spp. - Part 1: detection method




| Target | Gram | Catalase | Beta hemolysis | CAMP test | Carbohydrates |
|---|---|---|---|---|---|
| *Listeria monocytogenes* | x | Optional | x | Optional | x |

[1] For sampling after cleaning process pre-moisten
- 1 swab + 1 ml broth universal neutralizing (+ 9 ml Half-Fraser)
- 1 sponge + 10 ml broth universal neutralizing (+ 90 ml Half-Fraser)
- 1 wipe + BPW + 10 % neutralizing agent (+ 225 ml Half-Fraser)

## Appendix 2 - Flow diagram of the alternative method: Assurance GDS *Listeria monocytogenes* Tq

**Food Types**:
25 g + 225 mL Half Fraser Broth
**Environmental samples**:
1 swab + 10 mL Half Fraser Broth
or 1 sponge + 90 mL Half Fraser Broth
or 10 g or 10 mL + 90 mL Half Fraser Broth
↓
Incubation 24 h ± 2 h at 30°C
↓
Concentrate with Pick Pen device. Transfer 0.5 mL Half Fraser Broth
↓
Concentrate with Pick Pen device, lyse and analyze via PCR.
↓
Or
Store IMS Half Fraser Broth at 5 °C ± 3 °C up to 72 h.
Concentrate with PickPen device, **lyse and analyze via PCR**.
↓
CONFIRM PER ISO 11290-1 (ANNEX A)

Streaking onto ALOA (OAA)+ secondary agar (PALCAM) plates
↓
Incubation 48 h ± 2 h at 37°C
(read plates at both 24 and 48 hours)
↓
Confirmatory test on one typical colony, and four other colonies (if the first one is negative)
(typical colony: blue to blue-green – ALOA, gray, flat, dimpled - MOX)
↓
Streaking onto TSA-YE
↓
Incubation 18 h – 24 h at 37°C
↓
Gram Stain, Beta-Hemolysis, L-Rhamnose, D-Xylose

## Appendix 3 - Kit insert(s)

***See attached***

## Appendix 4 - Artificial inoculations

| N° Sample | Product | Artificial contaminations | | | | | Global result |
|---|---|---|---|---|---|---|---|
| | | Strain | Origin | Injury protocol | Injury measurement | Inoculation level/25g | |
| **4777** | **Fermented milk** | *L. monocytogenes* 18024 | Raw milk | pH4 -2 months | 0.43 | 2-5-12-2-3(4.8) | + |
| **4778** | **Fermented milk** | *L. monocytogenes* 18024 | Raw milk | pH4 -2 months | 0.43 | 2-5-12-2-3(4.8) | + |
| **4771** | **Pasteurized fresh cream** | *L. monocytogenes* 18312 | Milk | HT 56°c 10min | 0.38 | 3-5-7-7-6(5.6) | + |
| **4772** | **Pasteurized half skimmed milk** | *L. monocytogenes* 18312 | Milk | HT 56°c 10min | 0.38 | 3-5-7-7-6(5.6) | - |
| **4773** | **Pasteurized milk** | *L. monocytogenes* 18312 | Milk | HT 56°c 10min | 0.38 | 3-5-7-7-6(5.6) | + |
| **265** | **Wipe (ready to eat production)** | *L. monocytogenes* 1973/2400 | Quiche lorraine | 48h 4°C | Seeding | 2-0-2-1-3 (1.6) | - |
| **266** | **Wipe (ready to eat production)** | *L. monocytogenes* 877/113 | Environment | 48h 4°C | Seeding | 1-2-2-1-1 (1.4) | - |
| **267** | **Wipe (ready to eat production)** | *L. monocytogenes* 877/113 | Environment | 48h 4°C | Seeding | 1-2-2-1-1 (1.4) | - |
| **4774** | **Fermented milk** | *L. monocytogenes* 909 | Milk | pH4 -2 months | 0.47 | 3-5-7-4-4(4.6) | + |
| **4760** | **Ready to eat meal (pork meat with dressing)** | *L. monocytogenes* A00C014 | Sausages | HT 56°c 10min | 0.62 | 4-5-9-5-5(5.6) | + |
| **4763** | **Ready to eat meal (beef balls with ketchup)** | *L. monocytogenes* A00C014 | Sausages | HT 56°c 10min | 0.62 | 4-5-9-5-5(5.6) | + |
| **6830** | **Wipe (fish industry materials)** | *L. monocytogenes* AA0E033 | Environment | 4°C/2 days | Seeding | 6-2-4-2-2 (3.2) | - |
| **6831** | **Wipe (fish industry materials)** | *L. monocytogenes* AA0E033 | Environment | 4°C/2 days | Seeding | 6-2-4-2-2 (3.2) | + |
| **6832** | **Wipe (fish industry materials)** | *L. monocytogenes* AA0E033 | Environment | 4°C/2 days | Seeding | 6-2-4-2-2 (3.2) | - |
| **5174** | **Frozen artichokes** | *L. monocytogenes* Ad 1212 | Mushrooms | -20°c-4 days | Seeding | 6-3-11-5-6(6.2) | + |
| **5175** | **Frozen tomatoes** | *L. monocytogenes* Ad 1212 | Mushrooms | -20°c-4 days | Seeding | 6-3-11-5-6(6.2) | + |
| **5176** | **Frozen tomatoes** | *L. monocytogenes* Ad 1212 | Mushrooms | -20°c-4 days | Seeding | 6-3-11-5-6(6.2) | + |
| **5177** | **Frozen zucchini** | *L. monocytogenes* Ad 1212 | Mushrooms | -20°c-4 days | Seeding | 6-3-11-5-6(6.2) | + |
| **5178** | **Frozen peppers** | *L. monocytogenes* Ad 1212 | Mushrooms | -20°c-4 days | Seeding | 6-3-11-5-6(6.2) | + |

| N° Sample | Product | Artificial contaminations | | | | | Global result |
|---|---|---|---|---|---|---|---|
| | | Strain | Origin | Injury protocol | Injury measurement | Inoculation level/25g | |
| **253** | **Process water (tomato production)** | *L. monocytogenes* Ad 634 | Environment | pH10 2 month | 0.14 | 4-5-3-3-1 (3.2) | + |
| **255** | **Process water (fish industry)** | *L. monocytogenes* Ad 634 | Environment | pH10 2 month | 0.14 | 4-5-3-3-1 (3.2) | + |
| **254** | **Process water (cheese production)** | *L. monocytogenes* Ad 635 | Environment | pH10 2 month | 0.14 | 4-5-3-3-1 (3.2) | + |
| **235** | **Prawns** | *L. monocytogenes* Ad1192 | Fish filet | 4°C 2 month | 0.21 | 4-3-9-2-4 (4.4) | + |
| **236** | **Seafood cocktail** | *L. monocytogenes* Ad1192 | Fish filet | 4°C 2 month | 0.21 | 4-3-9-2-4 (4.4) | + |
| **237** | **Fillet of Cod** | *L. monocytogenes* Ad1192 | fish filet | 4°C 2 month | 0.21 | 4-3-9-2-4 (4.4) | + |
| **238** | **Fillet of Cod** | *L. monocytogenes* Ad1192 | Fish filet | 4°C 2 month | 0.21 | 4-3-9-2-4 (4.4) | + |
| **5184** | **Vanilla profiterolles** | *L. monocytogenes* Ad1195 | Omelet | -20°c-4 days | Seeding | 5-9-10-2-10(7.2) | + |
| **5185** | **Pastry (Paris Brest)** | *L. monocytogenes* Ad1195 | Omelet | -20°c-4 days | Seeding | 5-9-10-2-10(7.2) | + |
| **5186** | **Cakes (macaron)** | *L. monocytogenes* Ad1195 | Omelet | -20°c-4 days | Seeding | 5-9-10-2-10(7.2) | + |
| **5187** | **Dairy based dessert** | *L. monocytogenes* Ad1195 | Omelet | -20°c-4 days | Seeding | 5-9-10-2-10(7.2) | + |
| **5188** | **Pastry** | *L. monocytogenes* Ad1195 | Omelet | -20°c-4 days | Seeding | 5-9-10-2-10(7.2) | + |
| **4757** | **Ready to eat meal (beef with dressing)** | *L. monocytogenes* Ad1218 | Ground beef | HT 56°c 10min | 0.5 | 5-3-2-6-7(4.6) | + |
| **4758** | **Ready to eat meal (beef tongue with dressing)** | *L. monocytogenes* Ad1218 | Ground beef | HT 56°c 10min | 0.5 | 5-3-2-6-7(4.6) | + |
| **4759** | **Ready to eat meal (beef balls with dressing)** | *L. monocytogenes* Ad1218 | Ground beef | HT 56°c 10min | 0.5 | 5-3-2-6-7(4.6) | + |
| **4761** | **Ready to eat meal (beef Bourguignon)** | *L. monocytogenes* Ad1218 | Ground beef | HT 56°c 10min | 0.5 | 5-3-2-6-7(4.6) | + |
| **4762** | **Ready to eat meal (beef kidneys with dressing)** | *L. monocytogenes* Ad1218 | Ground beef | HT 56°c 10min | 0.5 | 5-3-2-6-7(4.6) | + |
| **251** | **Process water (ham production)** | *L. monocytogenes* Ad1278 | Environment | pH10 2 month | 0.2 | 6-6-4-7-6 (5.8) | + |
| **252** | **Process water (fish industry)** | *L. monocytogenes* Ad1278 | Environment | pH10 2 month | 0.2 | 6-6-4-7-6 (5.8) | + |
| **245** | **Salmon tartar** | *L. monocytogenes* Ad1279 | Smoked fish | NaCl 10% 2 month | 0.18 | 5-1-1-6-6 (3.8) | + |

| N° Sample | Product | Artificial contaminations | | | | | Global result |
|---|---|---|---|---|---|---|---|
| | | Strain | Origin | Injury protocol | Injury measurement | Inoculation level/25g | |
| **246** | **Smoked salmon** | *L. monocytogenes* Ad1279 | Smoked fish | NaCl 10% 2 month | 0.18 | 5-1-1-6-6 (3.8) | **+** |
| **247** | **Smoked salmon bacon** | *L. monocytogenes* Ad1279 | Smoked fish | NaCl 10% 2 month | 0.18 | 5-1-1-6-6 (3.8) | **+** |
| **243** | **Sliced salmon** | *L. monocytogenes* Ad1412 | Smoked salmon | NaCl 10% 2 month | 0.48 | 9-8-8-1-6 (6.4) | **+** |
| **244** | **Marinated salmon** | *L. monocytogenes* Ad1413 | Smoked salmon | NaCl 10% 2 month | 0.48 | 9-8-8-1-6 (6.4) | **+** |
| **231** | **Prawns** | *L. monocytogenes* Ad1499 | Trout eggs | 4°C 2 month | 0.22 | 9-14-5-6-5 (6.8) | **+** |
| **232** | **Prawns** | *L. monocytogenes* Ad1499 | Trout eggs | 4°C 2 month | 0.22 | 9-14-5-6-5 (6.8) | **+** |
| **233** | **Crayfish** | *L. monocytogenes* Ad1499 | Trout eggs | 4°C 2 month | 0.22 | 9-14-5-6-5 (6.8) | **+** |
| **234** | **Prawns** | *L. monocytogenes* Ad1499 | Trout eggs | 4°C 2 month | 0.22 | 9-14-5-6-5 (6.8) | **+** |
| **6849** | **Process water (vegetables industry)** | *L. monocytogenes* Ad1672 | Environment | 10min 56°C | 0.06 | 3-4-1-3-1 (2.4) | **-** |
| **6850** | **Process water (vegetables industry)** | *L. monocytogenes* Ad1672 | Environment | 10min 56°C | 0.06 | 3-4-1-3-1 (2.4) | **-** |
| **263** | **Wipe (ready to eat production)** | *L. monocytogenes* Ad1678 | Ready-to-eat meal (cheese/spinach) | 48h 4°C | Seeding | 1-0-1-1-0 (0.6) | **+** |
| **264** | **Wipe (ready to eat production)** | *L. monocytogenes* Ad1678 | Ready-to-eat meal (cheese/spinach) | 48h 4°C | Seeding | 1-0-1-1-0 (0.6) | **+** |
| **6837** | **Wipe (fish industry materials)** | *L. monocytogenes* Ad1679 | Environment | 4°C/2 days | Seeding | 4-5-9-3-5 (5.2) | **+** |
| **6855** | **Process water (fish industry)** | *L. monocytogenes* Ad243 | Environment | 10min 56°C | 1.02 | 0-3-5-3-3 (2.8) | **-** |
| **6856** | **Process water (fish industry)** | *L. monocytogenes* Ad243 | Environment | 10min 56°C | 1.02 | 0-3-5-3-3 (2.8) | **-** |
| **5241** | **Dehydrated sausage** | *L. monocytogenes* Ad267 | Sausage | pH3 22 days | 0.28 | 3-2-3-2-4(2.8) | **-** |
| **5242** | **Sliced dehydrated sausage** | *L. monocytogenes* Ad267 | Sausage | pH3 22 days | 0.28 | 3-2-3-2-4(2.8) | **+** |
| **5243** | **Salami** | *L. monocytogenes* Ad267 | Sausage | pH3 22 days | 0.28 | 3-2-3-2-4(2.8) | **+** |
| **5244** | **Dehydrated sausage** | *L. monocytogenes* Ad267 | Sausage | pH3 22 days | 0.28 | 3-2-3-2-4(2.8) | **+** |
| **5245** | **Dehydrated sausage** | *L. monocytogenes* Ad270 | Sausage | pH3 22 days | 0.15 | 4-9-9-8-3(6.6) | **+** |
| **5246** | **Dehydrated sausage** | *L. monocytogenes* Ad270 | Sausage | pH3 22 days | 0.15 | 4-9-9-8-3(6.6) | **-** |

| N° Sample | Product | Artificial contaminations | | | | | Global result |
|---|---|---|---|---|---|---|---|
| | | Strain | Origin | Injury protocol | Injury measurement | Inoculation level/25g | |
| **5247** | **Dehydrated sausage** | *L. monocytogenes* Ad270 | Sausage | pH3 22 days | 0.15 | 4-9-9-8-3(6.6) | - |
| **5248** | **Dehydrated sausage** | *L. monocytogenes* Ad270 | Sausage | pH3 22 days | 0.15 | 4-9-9-8-3(6.6) | + |
| **5169** | **Pizza (cheese)** | *L. monocytogenes* Ad543 | Pepper | -20°c-4 days | Seeding | 2-8-8-5-2(5.0) | + |
| **5170** | **Pizza (ham, cheese)** | *L. monocytogenes* Ad543 | Pepper | -20°c-4 days | Seeding | 2-8-8-5-2(5.0) | + |
| **5171** | **Pizza (tuna, vegetables)** | *L. monocytogenes* Ad543 | Pepper | -20°c-4 days | Seeding | 2-8-8-5-2(5.0) | + |
| **5172** | **Antipasti (artichoke, tomato, olives)** | *L. monocytogenes* Ad543 | Pepper | -20°c-4 days | Seeding | 2-8-8-5-2(5.0) | - |
| **5173** | **Frozen carrots** | *L. monocytogenes* Ad543 | Pepper | -20°c-4 days | Seeding | 2-8-8-5-2(5.0) | + |
| **6833** | **Wipe (fish industry materials)** | *L. monocytogenes* Ad548 | Environment | 4°C/2 days | Seeding | 3-5-2-5-4 (3.8) | + |
| **6834** | **Wipe (fish industry materials)** | *L. monocytogenes* Ad548 | Environment | 4°C/2 days | Seeding | 3-5-2-5-4 (3.8) | + |
| **4764** | **Pasteurized cheese (Gouda)** | *L. monocytogenes* Ad610 | Raw milk | HT 56°c 10min | 0.45 | 4-6-7-5-6(5.6) | + |
| **4765** | **Pasteurized cheese (Gouda)** | *L. monocytogenes* Ad610 | Raw milk | HT 56°c 10min | 0.45 | 4-6-7-5-6(5.6) | + |
| **4768** | **Semolina with milk** | *L. monocytogenes* Ad610 | Raw milk | HT 56°c 10min | 0.45 | 4-6-7-5-6(5.6) | + |
| **4770** | **Pasteurized fresh cream** | *L. monocytogenes* Ad610 | Raw milk | HT 56°c 10min | 0.45 | 4-6-7-5-6(5.6) | + |
| **6841** | **Dusts (fish industry)** | *L. monocytogenes* Ad614 | Environment | 4°C/2 days | Seeding | 4-7-2-5-7 (5.0) | + |
| **6842** | **Dusts (fish industry)** | *L. monocytogenes* Ad614 | Environment | 4°C/2 days | Seeding | 4-7-2-5-7 (5.0) | + |
| **273** | **Dusts (dairy industry)** | *L. monocytogenes* Ad614 | Dairy environment | 48h 4°C | Seeding | 3-3-4-1-1 (2.4) | + |
| **274** | **Dusts (dairy industry)** | *L. monocytogenes* Ad614 | Dairy environment | 48h 4°C | Seeding | 3-3-4-1-1 (2.4) | - |
| **272** | **Dusts (dairy industry)** | *L. monocytogenes* Ad621 | Dairy environment | 48h 4°C | Seeding | 0-0-1-0-1 (0.4) | - |
| **270** | **Dusts (dairy industry)** | *L. monocytogenes* Ad627 | Dairy environment | 48h 4°C | Seeding | 1-0-1-2-2 (1.2) | + |
| **271** | **Dusts (dairy industry)** | *L. monocytogenes* Ad627 | Dairy environment | 48h 4°C | Seeding | 1-0-1-2-2 (1.2) | - |
| **340** | **Dusts (ready to eat production)** | *L. monocytogenes* Ad631 | Dairy environment | 48h 4°C | Seeding | 9-8-5-5-3(6.0) | + |
| **341** | **Dusts (ready to eat production)** | *L. monocytogenes* Ad631 | Dairy environment | 48h 4°C | Seeding | 9-8-5-5-3(6.0) | + |

| N° Sample | Product | Artificial contaminations | | | | | Global result |
|---|---|---|---|---|---|---|---|
| | | Strain | Origin | Injury protocol | Injury measurement | Inoculation level/25g | |
| **342** | **Dusts (ready to eat production)** | *L. monocytogenes* Ad631 | Dairy environment | 48h 4°C | Seeding | 9-8-5-5-3(6.0) | + |
| **337** | **Dusts (ready to eat production)** | *L. monocytogenes* Ad633 | Dairy environment | 48h 4°C | Seeding | 5-2-5-6-4(4.4) | + |
| **338** | **Dusts (ready to eat production)** | *L. monocytogenes* Ad633 | Dairy environment | 48h 4°C | Seeding | 5-2-5-6-4(4.4) | + |
| **339** | **Dusts (ready to eat production)** | *L. monocytogenes* Ad633 | Dairy environment | 48h 4°C | Seeding | 5-2-5-6-4(4.4) | + |
| **6845** | **Dusts (Fish industry)** | *L. monocytogenes* Ad635 | Environment | 4°C/2 days | Seeding | 4-5-6-3-3 (4.2) | + |
| **6846** | **Dusts (Fish industry)** | *L. monocytogenes* Ad635 | Environment | 4°C/2 days | Seeding | 4-5-6-3-3 (4.2) | + |
| **4766** | **Pasteurized cheese (Chaumes)** | *L. monocytogenes* Ad665 | Raw milk | HT 56°c 10min | 0.49 | 1-1-7-3-5(3.4) | + |
| **4767** | **Pasteurized cheese (Brie)** | *L. monocytogenes* Ad665 | Raw milk | HT 56°c 10min | 0.49 | 1-1-7-3-5(3.4) | + |
| **4769** | **Rice with milk** | *L. monocytogenes* Ad665 | Raw milk | HT 56°c 10min | 0.49 | 1-1-7-3-5(3.4) | + |
| **4775** | **Fermented milk** | *L. monocytogenes* Ad665 | Raw milk | pH4 -2 months | 0.65 | 4-4-4-3-8(4.6) | + |
| **4776** | **Fermented milk** | *L. monocytogenes* Ad665 | Raw milk | pH4 -2 months | 0.65 | 4-4-4-3-8(4.6) | + |
| **248** | **Smoked trout** | *L. monocytogenes* Ad996 | Smoked trout | NaCl 10% 2 month | 0.3 | 7-8-7-10-2 (6.8) | + |
| **249** | **Smoked tuna** | *L. monocytogenes* Ad996 | Smoked trout | NaCl 10% 2 month | 0.3 | 7-8-7-10-2 (6.8) | + |
| **250** | **Smoked haddock** | *L. monocytogenes* Ad996 | Smoked trout | NaCl 10% 2 month | 0.3 | 7-8-7-10-2 (6.8) | + |

| Category | Item Type | Sample nº | Strain | Origin | Injury Protocol | Injury Evaluation (Log10) | Inoculation (CFU/Sample) | Alternative Method Result | Reference Method Result |
|---|---|---|---|---|---|---|---|---|---|
| Fresh Produce and Vegetables | Sliced apples | 1 | *L. monocytogenes* ATCC 51780 | Dairy Product | Seeding 48 h at 5 ± 3°C | / | 4.2 | Positive | Positive |
| | Asparagus 8oz | 2 | | | | | | Positive | Positive |
| | Medjool Dates 12 oz | 4 | | | | | | Positive | Positive |
| | Pitted Dates | 6 | | | | | | Positive | Positive |
| | Broccoli 8 oz | 7 | | | | | | Positive | Positive |
| | Broccoli 12 oz | 8 | *L. monocytogenes* QL 030911-10 | Shellfish | Seeding 48 h at 5 ± 3°C | / | 3.3 | Positive | Positive |
| | Squash 8 oz | 9 | | | | | | Positive | Positive |
| | Carrot & Celery | 12 | | | | | | Positive | Positive |
| | Celery Sticks | 14 | | | | | | Positive | Positive |
| | Salad Kit | 19 | | | | | | Positive | Positive |
| | Baby spinach | 20 | *L. monocytogenes* CWD 1609 | Turkey Frankfurter | Seeding 48 h at 5 ± 3°C | / | 4.6 | Positive | Positive |
| | Chopped salad kit | 22 | | | | | | Positive | Positive |
| | Chopped Romaine | 23 | | | | | | Positive | Positive |
| | Classic coleslaw | 25 | | | | | | Positive | Positive |
| | Classic romaine | 26 | | | | | | Positive | Positive |

| Category | Item Type | Sample nº | Strain | Origin | Injury Protocol | Injury Evaluation (Log10) | Inoculation (CFU/Sample) | Alternative Method Result | Reference Method Result |
|---|---|---|---|---|---|---|---|---|---|
| Fresh Produce and Vegetables | Fruit medley 48 oz | 30 | *L. monocytogenes* QL 327429 | Ground Beef | Seeding 48 h at 5 ± 3°C | / | 4.1 | Positive | Positive |
| | Pineapple chunks | 32 | | | | | | Positive | Positive |
| | Fresh Cauliflower | 34 | | | | | | Positive | Positive |
| | Spring mix | 41 | | | | | | Positive | Positive |
| | Garden salad | 43 | | | | | | Positive | Positive |
| | Coleslaw salad | 44 | *L. monocytogenes* QL 327430 | Environmental Sponges | Seeding 48 h at 5 ± 3°C | / | 5.7 | Positive | Positive |
| | Shredded carrots | 48 | | | | | | Positive | Positive |
| | Veggie blend salad | 50 | | | | | | Positive | Positive |
| | Broccoli pearls | 51 | | | | | | Positive | Positive |
| | Brussel sprouts | 52 | | | | | | Positive | Positive |
| | Snap peas | 54 | *L. monocytogenes* QL 313058 | Deli Sandwich | Seeding 48 h at 5 ± 3°C | / | 5.3 | Positive | Positive |
| | Mango chunks | 56 | | | | | | Positive | Positive |
| | Pineapple cored | 58 | | | | | | Positive | Positive |
| | Pineapple chunks | 59 | | | | | | Positive | Positive |
| | Chopped salad | 60 | | | | | | Positive | Positive |

## Appendix 5 - Sensitivity study: raw data

| MEAT PRODUCTS | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N° Sample | Product | Global result | ISO 11290-1/A1 method♦ | | | | | | Alternative method: Assurance GDS *Listeria monocytogenes* Tq | | | | | | | | | | Category |
| | | | Half Fraser | | Fraser 1 | | Identification | Result | Half Fraser 22h 30°C | | | | | Half Fraser 22h 30°C + 72h 4°C / Half Fraser 4h 30°C | | | | | |
| | | | OAA | Palcam | OAA | Palcam | | | PCR Result 22h subculture | Confirmations | | Final result 22 h | Agreement Ref/Alt 22h | PCR Result 22h subculture | Confirmations | | Final result 22 h | Agreement Ref/Alt 22 h | |
| | | | | | | | | | | ALOA | Palcam | | | | ALOA | Palcam | | | |
| 1533 | Poultry meat | + | H+/H- | + | H+ | + | *L.monocytogenes/ L.welshimeri* | + | + | H+/H- | + | + | **PA** | + | H+/H- | + | + | **PA** | 1 |
| 1534 | Sliced beef | - | st | - | st | st | / | - | - | st | st | - | **NA** | | | | | | 1 |
| 1535 | Gizzards | - | st | - | st | st | / | - | - | st | st | - | **NA** | | | | | | 1 |
| 1536 | Smoked pork sausage | + | H- | + | H- | + | *L.welshimeri* | - | - | H- | + | - | **NA** | | | | | | 1 |
| 1537 | Merguez | + | H- | +/-3col (NC on TSYEA) | H- | + | *L.innocua* | - | - | H- | + | - | **NA** | | | | | | 1 |
| 1538 | Pork meat | + | H+/H- | + | H+/H- | + | *L.monocytogenes/ L.innocua* | + | + | H+/H- | + | + | **PA** | + | H+/H- | + | + | **PA** | 1 |
| 1539 | Sweet bread | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| 1805 | Merguez | - | - | - | - | - | / | - | - | +/- 1col | - | - | **NA** | | | | | | 1 |
| 1806 | Raw poultry meat | + | H- | + | H- | + | *L.welshimeri* | - | - | +/- | + | - | **NA** | | | | | | 1 |
| 1807 | Pork meat | - | st | st | - | st | / | - | - | - | - | - | **NA** | | | | | | 1 |
| 1808 | Smoked pork sausage | - | - | - | - | - | / | - | - | - | - | - | **NA** | | | | | | 1 |
| 1809 | Chitterling | - | st | - | - | - | / | - | - | - | - | - | **NA** | | | | | | 1 |
| 1810 | Roasted pork meat | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| 1811 | Raw poultry meat | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| 1949 | Ready to cook poultry dish | + | H- | + | H- | + | *L.innocua* | - | - | H- | - | - | **NA** | | | | | | 1 |
| 2068 | Smoked pork sausage | - | - | - | - | - | / | - | - | - | - | - | **NA** | | | | | | 1 |
| 2069 | Marinated poultry meat | - | - | - | - | - | / | - | - | st | - | - | **NA** | | | | | | 1 |
| 2070 | Ready to eat poultry meat | + | H+ | + | H+/H- | + | *L.monocytogenes/ L.innocua* | + | + | H+/H- | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| 2071 | Marinated poultry meat | + | H+/H- | + | H+/H- | + | *L.monocytogenes/ L.welshimeri* | + | + | H+/H- | + | + | **PA** | + | H+/H- | + | + | **PA** | 1 |
| 2072 | Marinated beef meat | - | st | st | - | st | / | - | - | st | st | - | **NA** | | | | | | 1 |
| 3339 | Smoked cocktail sausages | - | - | - | - | - | / | - | - | - | - | - | **NA** | | | | | | 1 |
| 3340 | Cooked poultry meat | - | st | st | - | - | / | - | - | - | - | - | **NA** | | | | | | 1 |
| 3341 | Marinated beef meat | - | st | - | st | st | / | - | - | st | - | - | **NA** | | | | | | 1 |
| 3342 | Marinated poultry meat | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| 3343 | Stuffed tomatoes | - | st | - | - | - | / | - | - | st | - | - | **NA** | | | | | | 1 |
| 3344 | Merguez | + | 1H+/H- | + | H+/H- | + | *L.monocytogenes/ L.welshimeri* | + | - | H- | + | - | **$ND_{FN(alt)}$** | - | H+/H- | + | - | **$ND_{FN(alt)}$** | 1 |
| 3345 | Raw sausages | + | H+/H- | + | H+ | + | *L.monocytogenes/ L.welshimeri* | + | + | H+/1H- | + | + | **PA** | + | H+/H- | + | + | **PA** | 1 |
| 3346 | Marinated poultry meat | - | - | - | - | - | / | - | - | - | - | - | **NA** | | | | | | 1 |
| 3347 | Chitterlings | - | st | - | st | st | / | - | - | st | - | - | **NA** | | | | | | 1 |
| 3348 | Ham | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| 3349 | Stuff | - | st | - | - | - | / | - | - | st | - | - | **NA** | | | | | | 1 |

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

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| MEAT PRODUCTS | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N° Sample | Product | Global result | ISO 11290-1/A1 method♦ | | | | | | Alternative method: Assurance GDS *Listeria monocytogenes* Tq | | | | | | | | | | Category |
| | | | Half Fraser | | Fraser 1 | | Identification | Result | Half Fraser 22h 30°C | | | | | Half Fraser 22h 30°C + 72h 4°C / Half Fraser 4h 30°C | | | | | |
| | | | OAA | Palcam | OAA | Palcam | | | PCR Result 22h subculture | Confirmations ALOA | Confirmations Palcam | Final result 22 h | Agreement Ref/Alt 22h | PCR Result 22h subculture | Confirmations ALOA | Confirmations Palcam | Final result 22 h | Agreement Ref/Alt 22 h | |
| 3350 | Poultry meat | + | H+ | + | H+/H- | + | *L.monocytogenes/ L.welshimeri* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| 3352 | Ground beef(15% fat) | - | H- | + | H- | + | *L.welshimeri* | - | - | H- | + | - | **NA** | | | | | | 1 |
| 3353 | Delicatessen | - | st | - | - | st | / | - | - | st | - | - | **NA** | | | | | | 1 |
| 3354 | Cooked sausage | + | 1H+/H- | + | H+/H- | + | *L.monocytogenes/ L.welshimeri* | + | + | H+/H- | + | + | **PA** | + | H+/H- | + | + | **PA** | 1 |
| 3355 | Beef meat | + | st | - | H+ | + | *L.monocytogenes* | + | + | H+ | - | + | **PA** | + | H+ | - | + | **PA** | 1 |
| 3356 | Gizzards | - | st | - | - | - | / | - | - | st | - | - | **NA** | | | | | | 1 |
| 3357 | Delicatessen(terrine) | - | st | st | st | st | / | - | - | st | st | - | **NA** | | | | | | 1 |
| 3358 | Ground beef | - | H- | + | H- | + | *L.welshimeri* | - | + | H- | + | - | **$PD_{FP(alt)}$** | - | H- | + | - | **NA** | 1 |
| 3361 | Ground beef | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| 3451 | Precooked ground poultry meat | - | - | - | - | - | / | - | - | - | - | - | **NA** | | | | | | 1 |
| 3452 | Raw pork meat | - | st | st | st | st | / | - | - | st | st | - | **NA** | | | | | | 1 |
| 3453 | Raw turkey meat | - | st | st | st | st | / | - | - | st | st | - | **NA** | | | | | | 1 |
| 3454 | Raw poultry meat | - | st | st | st | st | / | - | - | st | st | - | **NA** | | | | | | 1 |
| 3455 | Raw beef meat | - | st | st | st | st | / | - | - | st | st | - | **NA** | | | | | | 1 |
| 4110 | Dehydrated sausage | - | st | - | st | st | / | - | - | st | - | - | **NA** | | | | | | 1 |
| 4111 | Dehydrated sausage | + | H- | + | H+/H- | + | *L.welshimeri/ L.monocytogenes* | + | + | H+/H- | + | + | **PA** | + | 6H+/H- | + | + | **PA** | 1 |
| 4112 | Dehydrated sausage | - | - | - | st | - | / | - | - | - | - | - | **NA** | | | | | | 1 |
| 4113 | Ready to cook plate (veal) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| 4114 | Roe terrine | - | st | - | - | - | / | - | - | - | - | - | **NA** | | | | | | 1 |
| 4115 | Liver pâté | - | st | st | st | st | / | - | - | st | st | - | **NA** | | | | | | 1 |
| 4116 | Cooked poultry meat with spices | - | st | st | - | - | / | - | - | - | st | - | **NA** | | | | | | 1 |
| 4117 | Pâté | - | st | st | st | st | / | - | - | st | st | - | **NA** | | | | | | 1 |
| 4620 | Ground beef | - | H- | + | H- | + | *L.welshimeri* | - | - | H- | + | - | **NA** | | | | | | 1 |
| 4755 | Delicatessen(rillettes) | + | st | st | H+ | + | *L.monocytogenes* | + | + | 8H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| **4757** | **Ready to eat meal (beef with dressing)** | + | 6H+ | st | H+ | + | *L.monocytogenes* | + | + | 3H+ | 2+ | + | **PA** | + | H+ | + | + | **PA** | 1 |
| **4758** | **Ready to eat meal (beef tongue with dressing)** | + | 3H+ | st | H+ | + | *L.monocytogenes* | + | + | 3H+ | 2+ | + | **PA** | + | H+ | + | + | **PA** | 1 |
| **4759** | **Ready to eat meal (beef balls with dressing)** | + | 7H+ | + | H+ | + | *L.monocytogenes* | + | + | 6H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| **4760** | **Ready to eat meal (pork meat with dressing)** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| **4761** | **Ready to eat meal (beef Bourguignon)** | + | 1H+ | 5+ | H+ | + | *L.monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| **4762** | **Ready to eat meal (beef kidneys with dressing)** | + | 4H+ | 2+ | H+ | + | *L.monocytogenes* | + | + | 1H+ | 1+ | + | **PA** | + | H+ | + | + | **PA** | 1 |
| **4763** | **Ready to eat meal (beef balls with ketchup)** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| **5241** | **Dehydrated sausage** | - | - | st | st | st | / | - | - | - | - | - | **NA** | | | | | | 1 |
| **5242** | **Sliced dehydrated sausage** | + | - | st | H+ | + | *L.monocytogenes* | + | - | - | st | - | **$ND_{FN(alt)}$** | - | - | st | - | **$ND_{FN(alt)}$** | 1 |
| **5243** | **Salami** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| **5244** | **Dehydrated sausage** | + | st | st | H- | + | *L.welshimeri* | - | + | H- | st | + | **PD** | + | H+(L.mono)/H- | + | + | **PD** | 1 |

| MEAT PRODUCTS | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N° Sample | Product | Global result | ISO 11290-1/A1 method♦ | | | | | | Alternative method: Assurance GDS *Listeria monocytogenes* Tq | | | | | | | | | | Category |
| | | | Half Fraser | | Fraser 1 | | Identification | Result | Half Fraser 22h 30°C | | | | | Half Fraser 22h 30°C + 72h 4°C / Half Fraser 4h 30°C | | | | | |
| | | | OAA | Palcam | OAA | Palcam | | | PCR Result 22h subculture | Confirmations | | Final result 22 h | Agreement Ref/Alt 22h | PCR Result 22h subculture | Confirmations | | Final result 22 h | Agreement Ref/Alt 22 h | |
| | | | | | | | | | | ALOA | Palcam | | | | ALOA | Palcam | | | |
| | | | | | | | | | | (H+ at 72H) | (+ at 72H) | | | | | | | | |
| **5245** | **Dehydrated sausage** | **+** | 1H+ | 6+ | H+ | + | *L.monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| **5246** | **Dehydrated sausage** | **-** | st | st | st | st | / | - | - | st | st | - | **NA** | | | | | | 1 |
| **5247** | **Dehydrated sausage** | **-** | st | st | st | st | / | - | - | st | st | - | **NA** | | | | | | 1 |
| **5248** | **Dehydrated sausage** | **+** | - | st | H+ | + | *L.monocytogenes* | + | + | -(+Ref) | -(+Fraser 1 ref) | + | **PA** | + | 2H-(*L.welshimeri*) | 1+ | - | **ND$_{FN(alt)}$** | 1 |
| 5711 | Ground beef | **+** | H+ | + | H+ | + | *L.monocytogenes/ L.innocua* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| 5712 | Ground beef | **+** | H+ | + | H+ | + | L.*monocytogenes* | + | + | H+ | + | + | **PA** | + | H+ | + | + | **PA** | 1 |
| 5713 | Dehydrated sausage | **-** | - | - | - | - | / | - | - | - | - | - | **NA** | | | | | | 1 |
| 5714 | Poultry meat | **-** | - | - | - | - | / | - | - | - | - | - | **NA** | | | | | | 1 |
| 5715 | Turkey meat | **-** | - | st | st | st | / | - | - | - | - | - | **NA** | | | | | | 1 |

MICROVAL® NEN

| MILK AND DAIRY PRODUCTS | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N° Sample | Product | Global result | ISO 11290-1/A1 method♦ | | | | | | Alternative method: Assurance GDS *Listeria monocytogenes* Tq | | | | | | | | | | | | | | | | Category |
| | | | Half Fraser | | Fraser 1 | | | | Half Fraser 22h 30°C | | | | | | | | Half Fraser 22h 30°C + 72h 4°C / Half Fraser 4h 30°C | | | | | | | | |
| | | | | | | | | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | |
| | | | OAA | Palcam | OAA | Palcam | Identification | Result | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | |
| 1602 | Raw milk cheese | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 2 |
| 1603 | Raw milk cheese (cow) | + | H+ | + 2 col | H+ | + | *L.monocytogenes* | + | + | + | H+ 2col | + 3col | + | + | **PA** | **PA** | + | + | H+ 1col | + | + | + | **PA** | **PA** | 2 |
| 1604 | Raw milk cheese (ewe) | - | - | - | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | - | - | - | - | - | - | **NA** | **NA** | 2 |
| 1605 | Raw milk cheese (cow) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 2 |
| 1606 | Raw milk cheese | - | H-? | - | - | - | NC | - | - | - | - | - | - | - | **NA** | **NA** | - | i/- | - | - | - | - | **NA** | **NA** | 2 |
| 1607 | Raw milk cheese | - | - | - | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | - | - | - | - | - | - | **NA** | **NA** | 2 |
| 1608 | Raw milk cheese | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 2 |
| 1884 | Raw milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 1885 | Raw milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 1886 | Raw milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 1887 | Raw milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 1888 | Raw milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 1889 | Raw milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 1890 | Raw milk | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 2 |
| 1943 | Raw milk cheese | + | H+ | - | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 2 |
| 1944 | Raw milk cheese | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 1945 | Raw milk (ewe) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 2 |
| 1946 | Raw milk (ewe) | - | st | st | - | - | / | - | - | - | - | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 1947 | Raw milk (ewe) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 2 |
| 1948 | Raw milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 2066 | Raw milk cheese | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 2 |
| 2067 | Raw milk cheese (ewe) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 2 |
| 3433 | Fermented milk | - | st | st | - | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3434 | Fermented milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3435 | Fermented milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3436 | Fermented milk | - | st | - | st | - | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3437 | Fermented milk | - | st | - | - | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3438 | Fermented milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3439 | Fermented milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3440 | White cheese | - | H- | + | H- | H- | *L.innocua* | - | - | - | H- | + | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3441 | Fermented milk | - | st | - | - | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3442 | Pasteurized whole milk | - | st | st | - | - | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3443 | Pasteurized whole milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3444 | Pasteurized half skimmed milk | - | st | st | - | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3445 | Pasteurized half skimmed milk | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3446 | White cheese | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3447 | White cheese | - | st | - | st | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3448 | Whole fresh cream | - | st | st | - | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 2 |
| 3449 | Pasteurized whole fresh cream | - | st | st | - | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 2 |

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

MICROVAL® NEN

| MILK AND DAIRY PRODUCTS | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N° Sample | Product | Global result | ISO 11290-1/A1 method♦ | | | | | | Alternative method: Assurance GDS *Listeria monocytogenes* Tq | | | | | | | | | | | | | | | | Category |
| | | | Half Fraser | | Fraser 1 | | Identification | Result | Half Fraser 22h 30°C | | | | | | | | Half Fraser 22h 30°C + 72h 4°C / Half Fraser 4h 30°C | | | | | | | | |
| | | | | | | | | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | |
| | | | OAA | Palcam | OAA | Palcam | | | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | |
| 3450 | Dairy based dessert | - | st | st | - | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 2 |
| 4095 | Raw milk cheese | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | | | | | | | | | 2 |
| 4096 | Raw milk cheese | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| 4097 | Raw milk cheese | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| 4098 | Raw milk cheese | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| 4099 | Milk powder | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| 4100 | Milk powder | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| 4101 | Milk powder | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| 4618 | Breaded cheese(camembert) | - | st | - | - | - | / | - | - | - | st | - | - | - | NA | NA | | | | | | | | | 2 |
| 4619 | Butter | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 2 |
| **4764** | **Pasteurized cheese (Gouda)** | + | H+ | 2+ | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | - | + | + | PA | PA | 2 |
| **4765** | **Pasteurized cheese (Gouda)** | + | st | 2+ | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | - | + | 4H+ | - | - | + | $ND_{FN(alt)}$ | PA | 2 |
| **4766** | **Pasteurized cheese (Chaumes)** | + | 1H+ | st | H+ | - | *L.monocytogenes* | + | + | + | 5H+ | 2+ | + | + | PA | PA | - | + | 2H+ | - | - | + | $ND_{FN(alt)}$ | PA | 2 |
| **4767** | **Pasteurized cheese (Brie)** | + | H+ | - | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | +1col | + | + | PA | PA | 2 |
| **4768** | **Semoulina with milk** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| **4769** | **Rice with milk** | + | 7H+ | 8+ | H+ | + | *L.monocytogenes* | + | + | + | 3H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| **4770** | **Pasteurized fresh cream** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| **4771** | **Pasteurized fresh cream** | + | st | st | - | - | / | - | - | + | st (+ at 72H) | st (+ at 72H) | - | + | $NA_{FN(al)}$ | PD | - | + | 4H+ | + | - | + | $NA_{FN(al)}$ | PD | 2 |
| **4772** | **Pasteurized half skimmed milk** | - | st | - | - | - | / | - | - | - | st | - | - | - | NA | NA | | | | | | | | | 2 |
| **4773** | **Pasteurized milk** | + | st | st | H+ | + | *L.monocytogenes* | + | + | + | st (+ Fraser) | st (+ Fraser) | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| **4774** | **Fermented milk** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| **4775** | **Fermented milk** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| **4776** | **Fermented milk** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| **4777** | **Fermented milk** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |
| **4778** | **Fermented milk** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 2 |

MICROVAL® NEN

| FISH AND SEAFOOD PRODUCTS | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N° Sample | Product | Global result | ISO 11290-1/A1 method♦ | | | | | | Alternative method: Assurance GDS *Listeria monocytogenes* Tq | | | | | | | | | | | | | | | | | Category |
| | | | Half Fraser | | Fraser 1 | | Identification | Result | Half Fraser 22h 30°C | | | | | | | | Half Fraser 22h 30°C + 72h 4°C / Half Fraser 4h 30°C | | | | | | | | | |
| | | | | | | | | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | |
| | | | OAA | Palcam | OAA | Palcam | | | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | |
| 5801 | Breaded fish with lemon | - | - | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 3 |
| 5802 | Piece of Salmon and lemon | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 3 |
| 5803 | Cooked shrimp | - | - | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 3 |
| 5804 | Cooked scallops | - | st | st | st | - | / | - | - | - | st | - | - | - | NA | NA | | | | | | | | | 3 |
| 5805 | Cooked ground salmon | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 3 |
| 5806 | Ground fish | + | st | 1+ | H+ | + | *L.monocytogenes* | + | + | + | 2H+ | 4+ | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 3 |
| 5807 | Cooked scallops | + | H+ | - | H+ | + | *L.monocytogenes* | + | + | + | H+ | - | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 3 |
| 5808 | Cooked fillet of fish | - | st | - | - | - | / | - | - | - | st | - | - | - | NA | NA | | | | | | | | | 3 |
| 5809 | Cooked fillet of fish | - | st | - | - | - | / | - | - | - | st | - | - | - | NA | NA | | | | | | | | | 3 |
| 5810 | Cooked fillet of fish | + | H+/H- | + | H- | + | *L.monocytogenes/ L.welhsimeri* | + | + | + | 2H+/H- | + | + | + | PA | PA | + | + | H-(X5 OAA:H+) | + | + | + | PA | PA | 3 |
| 5811 | Salmon puff | - | - | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 3 |
| 5812 | Cooked fillet of fish | + | H+/H- | + | H+/H- | + | *L.monocytogenes/ L.innocua* | + | + | + | H+/H- | + | + | + | PA | PA | + | + | H+/H- | + | + | + | PA | PA | 3 |
| 5813 | Ground salmon | + | st | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | - | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 3 |
| 5814 | Cod salad | - | - | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 3 |
| 5815 | Cooked ground salmon | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 3 |
| 5816 | Raw marinated salmon | - | H- | + | H- | + | *L.welshimeri* | - | - | - | H- | + | - | - | NA | NA | | | H- | + | | | | | 3 |
| 5817 | Raw salmon | - | st | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 3 |
| 5818 | Ready to cook salmon | + | H+/H- | + | H+/H- | + | *L.monocytogenes/ L.innocua* | + | + | + | H+/H- | + | + | + | PA | PA | + | + | H+/H- | + | + | + | PA | PA | 3 |
| 5819 | Cooked fish | + | H- | + | H+/H- | + | *L.monocytogenes /L.welshimeri* | + | + | + | H+/H- | + | + | + | PA | PA | + | + | H+/H- | + | + | + | PA | PA | 3 |
| 5820 | Smoked salmon | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 3 |
| 5821 | Smoked salmon | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 3 |
| 5822 | Salmon puff | - | - | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 3 |
| 5823 | Raw tuna | + | H+/H- | + | H+/H- | + | *L.monocytogenes/ L.welshimeri* | + | + | + | H+/H- | + | + | + | PA | PA | + | + | H+/H- | + | + | + | PA | PA | 3 |
| 6701 | Smoked salmon bacon | - | - | - | st | st | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 3 |
| 6702 | Smoked salmon | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 3 |
| 6703 | Marinated salmon | - | - | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 3 |
| 6704 | Smoked tuna | - | - | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 3 |
| 6705 | Smoked trout | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 3 |
| 6706 | Smoked herring | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 3 |
| 6707 | Marinated smoked salmon | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 3 |
| 6708 | Smoked salmon | - | st | st | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 3 |
| 6709 | Smoked haddock | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 3 |
| 6710 | Smoked sliced salmon | - | H- | + | H- | + | *L.welshimeri* | - | - | - | H- | + | - | - | NA | NA | | | | | | | | | 3 |
| 6711 | Smoked sliced salmon | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 3 |
| 6712 | Salmon smoked tartar | - | - | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 3 |
| 6713 | Cooked fillet of fish | - | st | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 3 |
| 6714 | Fillet of fish | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 3 |

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

MICROVAL® NEN

| FISH AND SEAFOOD PRODUCTS | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N° Sample | Product | Global result | ISO 11290-1/A1 method♦ | | | | | | Alternative method: Assurance GDS *Listeria monocytogenes* Tq | | | | | | | | | | | | | | | | | Category |
| | | | Half Fraser | | Fraser 1 | | Identification | Result | Half Fraser 22h 30°C | | | | | | | | Half Fraser 22h 30°C + 72h 4°C / Half Fraser 4h 30°C | | | | | | | | | |
| | | | | | | | | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | |
| | | | OAA | Palcam | OAA | Palcam | | | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | |
| 6715 | Raw breaded fish | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| 6716 | Salmon tarama | - | st | - | - | - | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 3 |
| 6717 | Salmon tarama | - | st | - | - | - | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 3 |
| 6718 | Smoked salmon | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| 194 | Smoked salmon | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **231** | **Prawns** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **232** | **Prawns** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **233** | **Crayfish** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **234** | **Prawns** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **235** | **Prawns** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **236** | **Seafood cocktail** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **237** | **Fillet of Cod** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **238** | **Fillet of Cod** | + | 1H+ | 6+ | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **243** | **Sliced salmon** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **244** | **Marinated salmon** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **245** | **Salmon tartar** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **246** | **Smoked salmon** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **247** | **Smoked salmon bacon** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **248** | **Smoked trout** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **249** | **Smoked tuna** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| **250** | **Smoked haddock** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| 277 | Smoked salmon | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 3 |
| 343 | Prawns | - | 1H- | - | - | - | | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 3 |
| 344 | Prawns | - | st | st | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 3 |
| 345 | Prawns | - | st | - | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 3 |
| 346 | Prawns | - | st | - | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 3 |
| 347 | Prawns | - | - | - | st | st | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 3 |

MICROVAL® NEN

| READY-TO-EAT, READY-TO-REHEAT OR READY-TO-COOK PRODUCTS | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N° Sample | Product | Global result | ISO 11290-1/A1 method♦ | | | | | | Alternative method: Assurance GDS *Listeria monocytogenes* Tq | | | | | | | | | | | | | | | | | Category |
| | | | Half Fraser | | Fraser 1 | | Identification | Result | Half Fraser 22h 30°C | | | | | | | | Half Fraser 22h 30°C + 72h 4°C / Half Fraser 4h 30°C | | | | | | | | | |
| | | | | | | | | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | |
| | | | OAA | Palcam | OAA | Palcam | | | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | |
| 3351 | Ham and butter sandwich | - | st | - | st | st | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 3359 | Pancake with mushrooms | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 3360 | Croque Kebab | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 4102 | Roll of puff pastry | - | st | - | - | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4103 | Deli salad (vegetables) | - | st | - | - | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4104 | Deli salad(pasta) | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4105 | Cubes of sweet potatoes | + | H+/H- | + | H+/H- | + | L.*innocua*/ *L.monocytogenes* | + | + | + | H+/H- | + | + | + | **PA** | **PA** | + | + | H+/H- | + | + | + | **PA** | **PA** | 4 |
| 4106 | Roll of puff pastry | - | st | - | - | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4107 | Sliced vegetables | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | - | + | + | **PA** | **PA** | + | + | H+ | +1col | + | + | **PA** | **PA** | 4 |
| 4108 | Sandwich (ham, goat cheese) | - | st | - | - | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4109 | Ready to cook plate (poultry) | + | H+/H- | - | H+/H- | + | L.*innocua*/ *L.monocytogenes* | + | + | + | H+/H- | - | + | + | **PA** | **PA** | + | + | H+/H- | + | + | + | **PA** | **PA** | 4 |
| 4617 | Cake with cream | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4621 | Sliced tomatoes | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4622 | Salad | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4623 | Couscous seeds | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 4624 | Spinach | + | - | - | H+ | + | *L.monocytogenes* | + | - | + | -(Few H+ colonies at 72H) | - | - | + | **$ND_{FN(alt)}$** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 4625 | Puck leek and potatoes | - | - | - | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | | | - | - | | | | | 4 |
| 4626 | Paella | - | H-? | - | H- | + | *L.innocua* | - | - | - | 1H-? ( 1col H+ at 72H) | - | - | - | **$NA_{FN(alt)}$** | **$NA_{FN(alt)}$** | - | - | H-/1H+ | + | - | - | **$NA_{FN(alt)}$** | **$NA_{FN(alt)}$** | 4 |
| 4627 | Green pepper dressing | - | st | - | - | - | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4628 | Frozen cauliflower purée | - | st | - | st | st | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4629 | Green beans purée | + | H+ | - | H+ | - | *L.monocytogenes* | + | + | + | H+ | - | + | + | **PA** | **PA** | + | + | H+ | - | + | + | **PA** | **PA** | 4 |
| 4630 | Stuffed tomatoes | - | - | +2col | H- | + | *L.welshimeri* | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4631 | Deli salad (fish) | + | - | +2col | H+ | + | *L.monocytogenes* | + | + | + | H+/H-? | +/- | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 4632 | Sandwich (poultry, tomatoes) | + | H+/1H- | + | H+ | + | *L.welshimeri/ L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 4633 | Pastry with coffee cream | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 4634 | Deli salad (vegetables, egg, ham) | - | - | - | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4635 | Pastry | - | - | - | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4636 | Sandwich (ham, egg) | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4637 | Sandwich (ham, butter) | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4638 | Sandwich (ham, cheese) | - | st | - | - | - | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4639 | Cake | - | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4748 | Toasted croque monsieur | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 4749 | Roll of puff pastry | - | - | - | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 4 |

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

MICROVAL® NEN

| READY-TO-EAT, READY-TO-REHEAT OR READY-TO-COOK PRODUCTS | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N° Sample | Product | Global result | ISO 11290-1/A1 method♦ | | | | | | Alternative method: Assurance GDS *Listeria monocytogenes* Tq | | | | | | | | | | | | | | | | | Category |
| | | | Half Fraser | | Fraser 1 | | Identification | Result | Half Fraser 22h 30°C | | | | | | | | Half Fraser 22h 30°C + 72h 4°C / Half Fraser 4h 30°C | | | | | | | | | |
| | | | | | | | | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | |
| | | | OAA | Palcam | OAA | Palcam | | | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | |
| 4750 | Grated bread with cheese and bacon | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 4751 | Croque Kebab | - | - | - | - | - | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4752 | Green beans | - | - | - | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4753 | Frozen spinach | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 4754 | Frozen vegetables mix | - | - | st | - | - | / | - | - | - | - | st | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 4756 | Frozen vegetables mix | - | st | st | - | - | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 5077 | Sandwich (chicken, vegetables) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 5081 | Sandwich (smoked chicken, goat cheese, vegetables) | - | H- | 3+ | H- | + | *L.welshimeri* | - | - | - | H- | + | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 5083 | Sandwich (ham,egg, tomato) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 5086 | Sliced cooked eggs | + | 1H+ | 2+ | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5169** | **Pizza (cheese)** | + | H+ | - | H+ | - | *L.monocytogenes* | + | + | + | H+ | - | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5170** | **Pizza (ham, cheese)** | + | H++ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5171** | **Pizza (tuna, vegetables)** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5172** | **Antipasti (artichoke, tomato, olives)** | - | st | st | - | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 4 |
| **5173** | **Frozen carrots** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5174** | **Frozen artichokes** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5175** | **Frozen tomatoes** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5176** | **Frozen tomatoes** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5177** | **Frozen zucchini** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5178** | **Frozen peppers** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 5179 | Dressing (sorrel) | - | st | st | - | - | / | - | - | - | H+ | + | - | - | **$NA_{FN(alt)}$** | **$NA_{FN(alt)}$** | | | | | | | | | 4 |
| 5180 | Dressing (green pepper) | - | H+ | + | H+ | + | *L.ivanovii* | - | - | - | H+ | + | - | - | **$NA_{FN(alt)}$** | **$NA_{FN(alt)}$** | | | | | | | | | 4 |
| **5184** | **Vanilla profiteroles** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5185** | **Pastry (Paris-Brest)** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5186** | **Cakes (macaron)** | + | H+ | + | H+ | | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5187** | **Dairy based dessert** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| **5188** | **Pastry** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 4 |
| 5256 | Deli salad (bacon, potatoes) | - | H- | + | H- | + | *L.innocua* | - | - | - | H- | + | - | - | **NA** | **NA** | | | | | | | | | 4 |
| 5257 | Deli salad (tuna, pasta) | - | H- | + | H- | + | *L.seeligeri* | - | - | - | H- | + | - | - | **NA** | **NA** | | | | | | | | | 4 |

| ENVIRONMENTAL SAMPLES | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N° Sample | Product | Global result | ISO 11290-1/A1 method♦ | | | | | | Alternative method: Assurance GDS *Listeria monocytogenes* Tq | | | | | | | | | | | | | | | | | Category |
| | | | Half Fraser | | Fraser 1 | | Identification | Result | Half Fraser 22h 30°C | | | | | | | | Half Fraser 22h 30°C + 72H 4°C / Half Fraser 4h 30°C | | | | | | | | | |
| | | | | | | | | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | |
| | | | OAA | Palcam | OAA | Palcam | | | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | |
| 5261 | Process water (fish industry) | - | - | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 5 |
| 5262 | Process water (fish industry) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 5 |
| 5263 | Process water (fish industry) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 5 |
| 5264 | Process water (fish industry) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 5 |
| 5265 | Process water (fish industry) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 5 |
| 5266 | Wipe (floor) | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 5 |
| 5267 | Wipe (sewer) | + | H+ | + | H+ | + | *L.monocytogenes* / *L.welshimeri* | + | + | + | H+ | + | + | + | PA | PA | + | + | 1H-/H+ | + | + | + | PA | PA | 5 |
| 5268 | Wipe (floor sewer) | - | - | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 5 |
| 5269 | Wipe (floor) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 5 |
| 5270 | Wipe (sewer) | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 5 |
| 5271 | Wipe (floor) | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 5 |
| 5272 | Wipe (floor) | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 5 |
| 5273 | Wipe (sewer) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 5 |
| 5274 | Wipe (floor) | - | H- | + | H- | + | *L.welshimeri* | - | - | - | H- | + | - | - | NA | NA | | | | | | | | | 5 |
| 5275 | Wipe (fridge floor) | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 5 |
| 5276 | Dusts (Fish industry) | - | - | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 5 |
| 5277 | Dusts (Fish industry) | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 5 |
| 5278 | Dusts (Fish industry) | - | - | st | st | st | / | - | - | - | - | st | - | - | NA | NA | | | | | | | | | 5 |
| 5279 | Dusts (Fish industry) | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 5 |
| 5280 | Dusts (Fish industry) | - | st | - | - | - | / | - | - | - | - | - | - | - | NA | NA | | | | | | | | | 5 |
| **6830** | Wipe (fish industry materials) | - | H- | + | H- | + | *L.innocua* | - | - | - | H- | + | - | - | NA | NA | | | H- | + | | | | | 5 |
| **6831** | Wipe (fish industry materials) | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 5 |
| **6832** | Wipe (fish industry materials) | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 5 |
| **6833** | Wipe (fish industry materials) | + | H+/H- | + | H+/H- | + | *L.monocytogenes* /*L.innocua* | + | + | + | H+/H- | + | + | + | PA | PA | + | + | H+/H- | + | + | + | PA | PA | 5 |
| **6834** | Wipe (fish industry materials) | + | st | st | H+ | + | *L.monocytogenes* | + | - | + | 2H+ | 5+ | - | + | $ND_{FN(alt)}$ | PA | - | + | H+ | + | - | + | $ND_{FN(alt)}$ | PA | 5 |
| 6835 | Wipe (fish industry materials) | - | H- | + | H- | + | *L.innocua* | - | - | - | H- | + | - | - | NA | NA | | | H- | + | | | | | 5 |
| **6837** | **Wipe (fish industry materials)** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 5 |
| 6840 | Dusts (Fish industry) | - | H- | + | H- | + | *L.welshimeri* | - | - | - | H- | + | - | - | NA | NA | | | H- | + | | | | | 5 |
| **6841** | **Dusts (Fish industry)** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 5 |
| **6842** | **Dusts (Fish industry)** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 5 |
| 6843 | Dusts (Fish industry) | - | H- | + | H- | + | *L.seeligeri* | - | - | - | H- | 1+ | - | - | NA | NA | - | + | H+ | + | - | + | $NA_{FN(alt)}$ | PD | 5 |
| 6844 | Dusts (Fish industry) | - | st | st | st | st | / | - | - | - | 1H- | st | - | - | NA | NA | + | - | st (+ x5) | st (+ 5x) | +- | - | PD | NA | 5 |
| **6845** | **Dusts (Fish industry)** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 5 |
| **6846** | **Dusts (Fish industry)** | + | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | PA | PA | + | + | H+ | + | + | + | PA | PA | 5 |
| 6847 | Dusts (Fish industry) | - | st | - | H- | + | *L.welshimeri* | - | - | - | 10H- | 3+ | - | - | NA | NA | | | H- | + | | | | | 5 |
| 6848 | Process water (vegetables industry) | - | st | st | st | st | / | - | - | - | st | st | - | - | NA | NA | | | | | | | | | 5 |

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

| ENVIRONMENTAL SAMPLES | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N° Sample | Product | Global result | ISO 11290-1/A1 method♦ | | | | | | Alternative method: Assurance GDS *Listeria monocytogenes* Tq | | | | | | | | | | | | | | | | | Category |
| | | | Half Fraser | | Fraser 1 | | Identification | Result | Half Fraser 22h 30°C | | | | | | | | Half Fraser 22h 30°C + 72H 4°C / Half Fraser 4h 30°C | | | | | | | | | |
| | | | | | | | | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | PCR Result | | Confirmations | | Final result | | Agreement Ref/Alt | | |
| | | | OAA | Palcam | OAA | Palcam | | | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | 4 h subculture | 22 h subculture | ALOA | Palcam | 4 h | 22 h | 4 h | 22 h | |
| **6849** | **Process water (vegetables industry)** | **-** | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 5 |
| **6850** | **Process water (vegetables industry)** | **-** | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 5 |
| 6851 | Process water (vegetables industry) | **-** | st | st | st | st | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 5 |
| 6852 | Process water (vegetables industry) | **-** | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 5 |
| 6853 | Process water (fish industry) | **+** | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| 6854 | Process water (fish industry) | **-** | st | st | st | st | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 5 |
| **6855** | **Process water (fish industry)** | **-** | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 5 |
| **6856** | **Process water (fish industry)** | **-** | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 5 |
| 6857 | Process water (fish industry) | **+** | 1H+ | 2+ | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **251** | **Process water (ham production)** | **+** | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **252** | **Process water (fish industry)** | **+** | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **253** | **Process water (tomato production)** | **+** | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **254** | **Process water (cheese production)** | **+** | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **255** | **Process water (fish industry)** | **+** | 5H+ | 1+ | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **263** | **Wipe (ready to eat production)** | **+** | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **264** | **Wipe (ready to eat production)** | **+** | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **265** | **Wipe (ready to eat production)** | **-** | st | st | st | st | / | - | - | - | st | st | - | - | **NA** | **NA** | | | | | | | | | 5 |
| **266** | **Wipe (ready to eat production)** | **-** | st | st | st | st | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 5 |
| **267** | **Wipe (ready to eat production)** | **-** | st | st | st | st | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 5 |
| 268 | Dusts (ready to eat production) | **-** | - | - | st | st | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 5 |
| 269 | Dusts (ready to eat production) | **-** | - | - | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 5 |
| **270** | **Dusts (dairy industry)** | **+** | H+ | - | H+ | + | *L.monocytogenes* | + | + | + | H+ | - | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **271** | **Dusts (dairy industry)** | **-** | - | - | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 5 |
| **272** | **Dusts (dairy industry)** | **-** | st | st | - | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 5 |
| **273** | **Dusts (dairy industry)** | **+** | H+ | - | H+ | + | *L.monocytogenes* | + | + | + | H+ | 1+ | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **274** | **Dusts (dairy industry)** | **-** | - | - | - | - | / | - | - | - | - | - | - | - | **NA** | **NA** | | | | | | | | | 5 |
| 275 | Dusts (dairy industry) | **-** | st | st | - | - | / | - | - | - | st | - | - | - | **NA** | **NA** | | | | | | | | | 5 |
| **337** | **Dusts (ready to eat production)** | **+** | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | - | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **338** | **Dusts (ready to eat production)** | **+** | H+ | 1+ | H+ | + | *L.monocytogenes* | + | + | + | H+ | 2+ | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **339** | **Dusts (ready to eat production)** | **+** | H+ | 5+ | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **340** | **Dusts (ready to eat production)** | **+** | H+ | 1+ | H+ | + | *L.monocytogenes* | + | + | + | H+ | 1+ | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **341** | **Dusts (ready to eat production)** | **+** | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |
| **342** | **Dusts (ready to eat production)** | **+** | H+ | + | H+ | + | *L.monocytogenes* | + | + | + | H+ | + | + | + | **PA** | **PA** | + | + | H+ | + | + | + | **PA** | **PA** | 5 |

| FRESH PRODUCE AND VEGETABLES | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Item Type** | **Sample nº** | **Reference Method: ISO 11290-1:2017** | | | | **Alternative Method: Assurance GDS *Listeria monocytogenes* Tq** | | | | | | |
| | | MOX | ALOA | Confirm | Final Result | PCR | | 72 Hour Hold PCR | | Confirmation | Final Result | Agreement |
| | | | | | | 4 h | 22 h | 4 h | 22 h | | | |
| Sliced apples | 1 | + | + | + | + | + | + | + | + | + | + | PA |
| Asparagus 8oz | 2 | + | + | + | + | + | + | + | + | + | + | PA |
| Asparagus 8.25 oz | 3 | - | - | - | - | - | - | / | / | - | - | ND |
| Medjool Dates 12 oz | 4 | + | + | + | + | + | + | + | + | + | + | PA |
| Medjool Dates 16 oz | 5 | - | - | - | - | - | - | / | / | - | - | ND |
| Pitted Dates | 6 | + | + | + | + | + | + | + | + | + | + | PA |
| Broccoli 8 oz | 7 | + | + | + | + | + | + | + | + | + | + | PA |
| Broccoli 12 oz | 8 | + | + | + | + | + | + | + | + | + | + | PA |
| Squash 8 oz | 9 | + | + | + | + | + | + | + | + | + | + | PA |
| Cantaloupe 8 oz | 10 | - | - | - | - | - | - | / | / | - | - | ND |
| Cantaloupe12 oz | 11 | - | - | - | - | - | - | / | / | - | - | ND |
| Carrot & Celery | 12 | + | + | + | + | + | + | + | + | + | + | PA |
| Celery Sticks | 13 | - | - | - | - | - | - | / | / | - | - | ND |
| Celery Sticks | 14 | + | + | + | + | + | + | + | + | + | + | PA |
| Diced Red Onions | 15 | - | - | - | - | - | - | / | / | - | - | ND |
| Organic Apple Slices | 16 | - | - | - | - | - | - | / | / | - | - | ND |
| Diced Yellow Onions | 17 | - | - | - | - | - | - | / | / | - | - | ND |
| Blend Salad | 18 | - | - | - | - | - | - | / | / | - | - | ND |
| Salad Kit | 19 | + | + | + | + | + | + | + | + | + | + | PA |
| Baby spinach | 20 | + | + | + | + | + | + | + | + | + | + | PA |
| Salad mix | 21 | - | - | - | - | - | - | / | / | - | - | ND |
| Chopped salad kit | 22 | + | + | + | + | + | + | + | + | + | + | PA |
| Chopped Romaine | 23 | + | + | + | + | + | + | + | + | + | + | PA |
| Asian Salad kit | 24* | + | + | + | + | + | + | + | + | + | + | PA |
| Classic coleslaw | 25 | + | + | + | + | + | + | + | + | + | + | PA |
| Classic romaine | 26 | + | + | + | + | + | + | + | + | + | + | PA |
| Summer salad kit | 27 | - | - | - | - | - | - | / | / | - | - | ND |
| Fruit medley 10 oz | 28 | - | - | - | - | - | - | / | / | - | - | ND |

1. The confirmation procedures included a Gram stain, Beta-Hemolysis, L-Rhamnose and D-Xylose.

*Indicates a naturally contaminated sample

| FRESH PRODUCE AND VEGETABLES | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Item Type** | **Sample nº** | **Reference Method: ISO 11290-1:2017** | | | | **Alternative Method: Assurance GDS *Listeria monocytogenes* Tq** | | | | | | |
| | | MOX | ALOA | Confirm | Final Result | PCR | | 72 Hour Hold PCR | | Confirmation | Final Result | Agreement |
| | | | | | | 4 h | 22 h | 4 h | 22 h | | | |
| Fruit medley 24 oz | 29 | - | - | - | - | - | - | / | / | - | - | ND |
| Fruit medley 48 oz | 30 | + | + | + | + | + | + | + | + | + | + | PA |
| Mixed berries 24 oz | 31 | - | - | - | - | - | - | / | / | - | - | ND |
| Pineapple chunks | 32 | + | + | + | + | + | + | + | + | + | + | PA |
| Fresh Squash | 33 | - | - | - | - | - | - | / | / | - | - | ND |
| Fresh Cauliflower | 34 | + | + | + | + | + | + | + | + | + | + | PA |
| Sweet potato | 35 | - | - | - | - | - | - | / | / | - | - | ND |
| Honeydew chunks | 36 | - | - | - | - | - | - | / | / | - | - | ND |
| Seedless watermelon | 37 | - | - | - | - | - | - | / | / | - | - | ND |
| Jicama sticks | 38 | - | - | - | - | - | - | / | / | - | - | ND |
| Baby spinach | 39 | - | - | - | - | - | - | / | / | - | - | ND |
| Spring mix | 40 | - | - | - | - | - | - | / | / | - | - | ND |
| Spring mix | 41 | + | + | + | + | + | + | + | + | + | + | PA |
| Garden salad | 42 | - | - | - | - | - | - | / | / | - | - | ND |
| Garden salad | 43 | + | + | + | + | + | + | + | + | + | + | PA |
| Coleslaw salad | 44 | + | + | + | + | + | + | + | + | + | + | PA |
| Baby carrots | 45 | - | - | - | - | - | - | / | / | - | - | ND |
| Romaine salad | 46 | - | - | - | - | - | - | / | / | - | - | ND |
| Blended salad | 47 | - | - | - | - | - | - | / | / | - | - | ND |
| Shredded carrots | 48 | + | + | + | + | + | + | + | + | + | + | PA |
| Vegetable medley | 49 | - | - | - | - | - | - | / | / | - | - | ND |
| Veggie blend salad | 50 | + | + | + | + | + | + | + | + | + | + | PA |
| Broccoli pearls | 51 | + | + | + | + | + | + | + | + | + | + | PA |
| Brussel sprouts | 52 | + | + | + | + | + | + | + | + | + | + | PA |
| Cauliflower pearls | 53 | - | - | - | - | - | - | / | / | - | - | ND |
| Snap peas | 54 | + | + | + | + | + | + | + | + | + | + | PA |
| Turnip greens | 55 | - | - | - | - | - | - | / | / | - | - | ND |
| Mango chunks | 56 | + | + | + | + | + | + | + | + | + | + | PA |

1. The confirmation procedures included a Gram stain, Beta-Hemolysis, L-Rhamnose and D-Xylose.

| FRESH PRODUCE AND VEGETABLES | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Item Type** | **Sample nº** | **Reference Method: ISO 11290-1:2017** | | | | **Alternative Method: Assurance GDS *Listeria monocytogenes* Tq** | | | | | | |
| | | MOX | ALOA | Confirm | Final Result | PCR | | 72 Hour Hold PCR | | Confirmation | Final Result | Agreement |
| | | | | | | 4 Hour | 22 Hour | 4 Hour | 22 Hour | | | |
| Sweet peppers | 57 | - | - | - | - | - | - | / | / | - | - | ND |
| Pineapple cored | 58 | + | + | + | + | + | + | + | + | + | + | PA |
| Pineapple chunks | 59 | + | + | + | + | + | + | + | + | + | + | PA |
| Chopped salad | 60 | + | + | + | + | + | + | + | + | + | + | PA |
| Tomatoes | 61 | - | - | - | - | - | - | / | / | - | - | ND |
| Watermelon chunks | 62 | - | - | - | - | - | - | / | / | - | - | ND |
| Mixed berries | 63* | + | + | + | + | + | + | + | + | + | + | PA |
| Squash | 64 | - | - | - | - | - | - | / | / | - | - | ND |
| Zucchini | 65 | - | - | - | - | - | - | / | / | - | - | ND |
| Mixed melon | 66* | + | + | + | + | + | + | + | + | + | + | PA |

1. The confirmation procedures included a Gram stain, Beta-Hemolysis, L-Rhamnose and D-Xylose.
*Indicates a naturally contaminated sample

## Appendix 6 - RLOD: raw data

**Sausage**
*Listeria monocytogenes* Ad669 Total viable count: 2.0 x $10^2$/g

| Sample N° | Level | Inoculation level (cfu/25g) | ISO 11290-1 method♦ | | | | | | Assurance GDS *Listeria monocytogenes* Tq | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Half Fraser | | Fraser | | *Listeria monocytogenes* result | Positive/Total | PCR result-22 h | Confirmation | | Final result | Positive/Total |
| | | | OAA | Palcam | OAA | Palcam | | | | OAA | Palcam | | |
| 3524 | 0 | / | st | st | st | st | - | 0/6 | - | st | st | - | 0/6 |
| 3525 | | | st | - | - | - | - | | - | st | st | - | |
| 3526 | | | - | - | - | - | - | | - | - | - | - | |
| 3527 | | | st | st | st | st | - | | - | st | st | - | |
| 3528 | | | st | st | st | st | - | | - | st | st | - | |
| 3529 | | | st | - | st | st | - | | - | st | st | - | |
| 3664 | 1 | 0.3 | st | st | st | st | - | 0/6 | - | st | st | - | 0/6 |
| 3665 | | | st | st | st | st | - | | - | st | st | - | |
| 3666 | | | st | st | st | st | - | | - | st | st | - | |
| 3667 | | | st | st | st | st | - | | - | st | st | - | |
| 3668 | | | st | st | st | st | - | | - | - | st | - | |
| 3669 | | | st | st | st | st | - | | - | st | st | - | |
| 3670 | 2 | 0.5 | H+ | + | / | / | + | 2/6 | + | H+ | + | + | 2/6 |
| 3671 | | | - | - | - | - | - | | - | - | - | - | |
| 3672 | | | st | st | st | st | - | | - | st | st | - | |
| 3673 | | | st | st | st | st | - | | - | st | st | - | |
| 3674 | | | st | st | st | st | - | | - | st | st | - | |
| 3675 | | | H+ | + | / | / | + | | + | H+ | + | + | |
| 3676 | 3 | 1.1 | H+ | + | / | / | + | 5/6 | + | H+ | + | + | 5/6 |
| 3677 | | | H+ | + | / | / | + | | + | H+ | + | + | |
| 3678 | | | H+ | + | / | / | + | | + | H+ | + | + | |
| 3679 | | | H+ | + | / | / | + | | + | H+ | + | + | |
| 3680 | | | H+ | + | / | / | + | | + | H+ | + | + | |
| 3681 | | | st | st | st | st | - | | - | st | st | - | |
| 3682 | 4 | 2.2 | H+ | + | / | / | + | 6/6 | + | H+ | + | + | 6/6 |
| 3683 | | | H+ | + | / | / | + | | + | H+ | + | + | |
| 3684 | | | H+ | + | / | / | + | | + | H+ | + | + | |
| 3685 | | | H+ | + | / | / | + | | + | H+ | + | + | |
| 3686 | | | H+ | + | / | / | + | | + | H+ | + | + | |
| 3687 | | | H+ | + | / | / | + | | + | H+ | + | + | |

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

**Fresh goat cheese**
Total viable count: 1.8 x $10^7$/g
*Listeria monocytogenes* Ad618

| Sample N° | Level | Inoculation level (cfu/25g) | ISO 11290-1 method♦ | | | | | | Assurance GDS *Listeria monocytogenes* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Half Fraser | | Fraser | | *Listeria monocytogenes* result | Positive/Total | PCR result-4 h | PCR result-22 h | Confirmation | | Final result | Positive/Total |
| | | | OAA | Palcam | OAA | Palcam | | | | | OAA | Palcam | | |
| 3518 | 0 | / | st | - | - | - | - | 0/6 | - | - | - | - | - | 0/6 |
| 3519 | | | - | - | - | - | - | | - | - | - | - | - | |
| 3520 | | | - | - | - | - | - | | - | - | - | - | - | |
| 3521 | | | - | - | - | - | - | | - | - | - | - | - | |
| 3522 | | | - | - | - | - | - | | - | - | - | - | - | |
| 3523 | | | - | - | - | - | - | | - | - | - | - | - | |
| 3576 | 1 | 0.2 | H+ | + | / | / | + | 1/6 | + | + | H+ | + | + | 1/6 |
| 3577 | | | - | - | - | - | - | | - | - | - | - | - | |
| 3578 | | | - | - | - | - | - | | - | - | St | - | - | |
| 3579 | | | - | - | - | - | - | | - | - | - | - | - | |
| 3580 | | | - | - | - | - | - | | - | - | - | - | - | |
| 3581 | | | - | St | - | - | - | | - | - | - | - | - | |
| 3582 | 2 | 0.4 | - | St | - | - | - | 2/6 | - | - | - | - | - | 2/6 |
| 3583 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3584 | | | - | - | - | - | - | | - | - | - | - | - | |
| 3585 | | | - | St | - | - | - | | - | - | - | - | - | |
| 3586 | | | - | - | - | - | - | | - | - | - | - | - | |
| 3587 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3588 | 3 | 0.8 | - | - | - | - | - | 4/6 | - | - | - | - | - | 4/6 |
| 3589 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3590 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3591 | | | - | - | - | - | - | | - | - | St | - | - | |
| 3592 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3593 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3594 | 4 | 1.6 | H+ | + | / | / | + | 4/6 | + | + | H+ | + | + | 4/6 |
| 3595 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3596 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3597 | | | - | - | - | - | - | | - | - | - | - | - | |
| 3598 | | | - | St | - | - | - | | - | - | - | - | - | |
| 3599 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3913 | 5 | 5 | H+ | + | / | / | + | 6/6 | + | + | H+ | + | + | 6/6 |
| 3914 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3915 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3916 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3917 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 3918 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

**Smoked salmon**
Total viable count: 6,0.10²/g
*Listeria monocytogenes*
Ad670

| Sample N° | Level | Inoculation level (cfu/25g) | ISO 11290-1 method♦ | | | | | | GDS *Listeria monocytogenes* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Half Fraser | | Fraser | | *Listeria monocytogenes* result | Positive/ Total | PCR result-4H | PCR result-22H | Confirmation | | Final result | Positive/Total |
| | | | OAA | Palcam | OAA | Palcam | | | | | OAA | Palcam | | |
| 5745 | 0 | 0 | - | - | - | - | - | 0/6 | - | - | - | - | - | 0/6 |
| 5746 | | | - | - | - | - | - | | - | - | - | - | - | |
| 5747 | | | - | - | - | - | - | | - | - | - | - | - | |
| 5748 | | | - | - | st | st | - | | - | - | - | - | - | |
| 5749 | | | - | - | st | st | - | | - | - | - | - | - | |
| 5750 | | | - | - | - | - | - | | - | - | - | - | - | |
| 6151 | 1 | 0.2 | H- | + (L.welshimeri) | H- | + (L.welshimeri) | - | 0/6 | - | - | H- | +(camp-) | - | 0/6 |
| 6152 | | | st | st | H- | + | - | | - | - | st | st | - | |
| 6153 | | | st | st | st | st | - | | - | - | - | - | - | |
| 6154 | | | st | st | st | st | - | | - | - | st | - | - | |
| 6155 | | | st | st | st | st | - | | - | - | - | st | - | |
| 6156 | | | st | st | - | - | - | | - | - | - | - | - | |
| 6157 | 2 | 0.4 | st | st | st | st | - | 1/6 | - | - | st | st | - | 1/6 |
| 6158 | | | st | st | st | st | - | | - | - | - | - | - | |
| 6159 | | | - | - | - | - | - | | - | - | - | 1col +/-(gram-) | - | |
| 6160 | | | - | st | - | - | - | | - | - | - | - | - | |
| 6161 | | | st | 1col (L.welshimeri) | H- | + (L.welshimeri) | - | | - | - | 3H- | +(camp-) | - | |
| 6162 | | | + | + | / | / | + | | + | + | + | + | + | |
| 6163 | 3 | 0.7 | + | + | / | / | + | 4/6 | + | + | + | + | + | 4/6 |
| 6164 | | | + | + | / | / | + | | + | + | + | + | + | |
| 6165 | | | H- | +(L.welshimeri) | H- | +(L.welshimeri) | - | | - | - | H- | +(camp-) | - | |
| 6166 | | | st | st | st | st | - | | - | - | st | st | - | |
| 6167 | | | + | + | / | / | + | | + | + | + | + | + | |
| 6168 | | | + | + | / | / | + | | + | + | + | + | + | |
| 6169 | 4 | 1.4 | + | + | / | / | + | 6/6 | + | + | + | + | + | 6/6 |
| 6170 | | | + | + | / | / | + | | + | + | + | + | + | |
| 6171 | | | + | + | / | / | + | | + | + | + | + | + | |
| 6172 | | | + | + | / | / | + | | + | + | + | + | + | |
| 6173 | | | + | + | / | / | + | | + | + | + | + | + | |
| 6174 | | | + | + | / | / | + | | + | + | + | + | + | |

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

**Potatoes purée**
Total viable count:2.0 x $10^2$ /g
*Listeria monocytogenes* Ad279

| Sample N° | Level | Inoculation level (cfu/25g) | ISO 11290-1 method♦ | | | | | | GDS *Listeria monocytogenes* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Half Fraser | | Fraser | | *Listeria monocytogenes* result | Positive/ Total | PCR result-4H | PCR result-22H | Confirmation | | Final result | Positive/Total |
| | | | OAA | Palcam | OAA | Palcam | | | | | OAA | Palcam | | |
| 4225 | 0 | / | st | - | - | - | - | 0/6 | - | - | st | - | - | 0/6 |
| 4226 | | | st | - | - | - | - | | - | - | st | - | - | |
| 4227 | | | st | - | - | - | - | | - | - | st | - | - | |
| 4228 | | | st | - | - | - | - | | - | - | st | - | - | |
| 4229 | | | st | - | - | - | - | | - | - | st | - | - | |
| 4230 | | | st | - | - | - | - | | - | - | st | - | - | |
| 4231 | 1 | 0.4 | st | - | - | - | - | 1/6 | - | - | st | - | - | 1/6 |
| 4232 | | | st | - | - | - | - | | - | - | st | - | - | |
| 4233 | | | st | - | - | - | - | | - | - | st | - | - | |
| 4234 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 4235 | | | st | - | - | - | - | | - | - | st | - | - | |
| 4236 | | | - | - | - | - | - | | - | - | st | - | - | |
| 4237 | 2 | 0.8 | H+ | + | / | / | + | 5/6 | + | + | H+ | + | + | 5/6 |
| 4238 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 4239 | | | st | - | - | - | - | | - | - | st | - | - | |
| 4240 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 4241 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 4242 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 4243 | 3 | 1.6 | H+ | + | / | / | + | 4/6 | + | + | H+ | + | + | 4/6 |
| 4244 | | | st | - | - | - | - | | - | - | st | - | - | |
| 4245 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 4246 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 4247 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 4248 | | | st | - | - | - | - | | - | - | st | - | - | |
| 4249 | 4 | 3.2 | H+ | + | / | / | + | 5/6 | + | + | H+ | + | + | 5/6 |
| 4250 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 4251 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 4252 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 4253 | | | st | - | - | - | - | | - | - | st | - | - | |
| 4254 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 4396 | 5 | 4.9 | H+ | + | H+ | + | + | 6/6 | + | + | H+ | + | + | 6/6 |
| 4397 | | | H+ | + | H+ | + | + | | + | + | H+ | + | + | |
| 4398 | | | H+ | + | H+ | + | + | | + | + | H+ | + | + | |
| 4399 | | | H+ | + | H+ | + | + | | + | + | H+ | + | + | |
| 4400 | | | H+ | + | H+ | + | + | | + | + | H+ | + | + | |
| 4401 | | | H+ | + | H+ | + | + | | + | + | H+ | + | + | |

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

**Process water**
Total viable count: 460 CFU/g
*Listeria monocytogenes* Ad631

| Sample N° | Level | Inoculation level (cfu/25g) | ISO 11290-1 method♦ | | | | | | Assurance GDS *Listeria monocytogenes* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Half-Fraser | | Fraser | | *Listeria monocytogenes* result | Positive/ Total | PCR result-4 h | PCR result-22 h | Confirmation | | Final result | Positive/Total |
| | | | OAA | Palcam | OAA | Palcam | | | | | OAA | Palcam | | |
| 5751 | 0 | 0 | st | st | st | st | - | 0/6 | - | - | st | st | - | 0/6 |
| 5752 | | | st | st | st | st | - | | - | - | st | st | - | |
| 5753 | | | st | st | st | st | - | | - | - | st | st | - | |
| 5754 | | | st | st | st | st | - | | - | - | st | st | - | |
| 5755 | | | st | st | st | st | - | | - | - | st | st | - | |
| 5756 | | | st | st | st | st | - | | - | - | st | st | - | |
| 6595 | 1 | 0.2 | st | st | st | st | - | 1/6 | - | - | st | st | - | 1/6 |
| 6596 | | | st | st | st | st | - | | - | - | st | st | - | |
| 6597 | | | st | st | st | st | - | | - | - | st | st | - | |
| 6598 | | | st | st | st | st | - | | - | - | st | st | - | |
| 6599 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 6600 | | | st | st | st | st | - | | - | - | st | st | - | |
| 6601 | 2 | 0.4 | st | st | st | st | - | 3/6 | - | - | st | st | - | 3/6 |
| 6602 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 6603 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 6604 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 6605 | | | st | st | st | st | - | | - | - | st | st | - | |
| 6606 | | | st | st | st | st | - | | - | - | st | st | - | |
| 6607 | 3 | 0.7 | st | st | st | st | - | 1/6 | - | - | st | st | - | 1/6 |
| 6608 | | | st | st | - | - | - | | - | - | st | st | - | |
| 6609 | | | st | st | st | st | - | | - | - | st | st | - | |
| 6610 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 6611 | | | st | st | st | st | - | | - | - | st | st | - | |
| 6612 | | | st | st | st | st | - | | - | - | st | st | - | |
| 6613 | 4 | 1.4 | H+ | + | / | / | + | 6/6 | + | + | H+ | + | + | 6/6 |
| 6614 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 6615 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 6616 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 6617 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |
| 6618 | | | H+ | + | / | / | + | | + | + | H+ | + | + | |

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)

| Pre-Cut Bagged Spinach | | | | |
|---|---|---|---|---|
| ***Listeria monocytogenes* CW1554** | | | | |
| **Low Level: 0.37 CFU/25 g** | | | | |
| **Sample #** | **Assurance GDS® *Listeria monocytogenes* Tq** | | | **ISO 11290-1:2017 Result[1]** |
| | **PCR Presumptive Result** | | **Confirmed** | |
| | **4 Hour** | **22 Hour** | **ISO 11290-1:2017 Result** | |
| 1 | + | + | + | + |
| 2 | - | - | - | - |
| 3 | - | - | - | - |
| 4 | + | + | + | + |
| 5 | - | - | - | - |
| 6 | - | - | - | - |
| 7 | + | + | + | + |
| 8 | - | - | - | - |
| 9 | + | + | + | + |
| 10 | - | - | - | - |
| 11 | - | - | - | - |
| 12 | - | - | - | - |
| 13 | + | + | + | + |
| 14 | - | - | - | - |
| 15 | - | - | - | - |
| 16 | - | - | - | - |
| 17 | + | + | + | + |
| 18 | - | - | - | - |
| 19 | - | - | - | - |
| 20 | + | + | + | + |
| **Total** | **7/20** | **7/20** | **7/20** | **7/20** |
| **High Level: 4.1 CFU/25 g** | | | | |
| 1 | + | + | + | + |
| 2 | + | + | + | + |
| 3 | + | + | + | + |
| 4 | + | + | + | + |
| 5 | + | + | + | + |
| **Total** | **5/5** | **5/5** | **5/5** | **5/5** |
| **Uninoculated** | | | | |
| 1 | - | - | - | - |
| 2 | - | - | - | - |
| 3 | - | - | - | - |
| 4 | - | - | - | - |
| 5 | - | - | - | - |
| **Total** | **0/5** | **0/5** | **0/5** | **0/5** |

1. A paired analysis was conducted.
2. APC=1.2 x $10^5$ CFU/g

## Appendix 7 - Inclusivity and exclusivity: raw data

| INCLUSIVITY | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Strain** | **Species** | **Reference** | **Origin** | **Molecular serotypes** | **Enrichment broth** | **Inoculation level (cfu:225ml)** | **PCR** | **Streaking on OAA or Palcam** |
| *Listeria* | *monocytogenes* | 1011/1410 | Frozen broccoli | II a | Half Fraser | 1 | - | - |
| | | | | | | 20 | - | - |
| | | | | | | 54 | - | - |
| | | | | | Half Fraser +milk | 40 | - | + |
| | | | | | Half Fraser (2013) | 13 | - | - |
| | | | | | Half Fraser +milk (2013) | 13 | + | + |
| | | | | | BHI (2013) | 13 | + | / |
| *Listeria* | *monocytogenes* | 153 | Soft cheese (Munster) | VI b | Half Fraser | 4 | + | / |
| *Listeria* | *monocytogenes* | 1972/2399 | Pie with mushrooms | VI b | Half Fraser | 13 | + | / |
| *Listeria* | *monocytogenes* | 1973/2400 | Egg and ham pastry (Quiche Lorraine) | VI b | Half Fraser | 3 | + | / |
| *Listeria* | *monocytogenes* | 2760/3145 | Raw pork meat | II a | Half Fraser | 9 | + | / |
| *Listeria* | *monocytogenes* | 32.183 | Croque Monsieur | II b | Half Fraser | 14 | + | / |
| *Listeria* | *monocytogenes* | 38/181 | Toulouse sausages | II a | Half Fraser | 17 | + | / |
| *Listeria* | *monocytogenes* | 5721/6179 | Smoked bacon | IV b | Half Fraser | 16 | + | / |
| *Listeria* | *monocytogenes* | 7111/7516 | Pâté (Rillettes) | IV b | Half Fraser | 8 | + | / |
| *Listeria* | *monocytogenes* | 850/109 | Nordic salad | II a | Half Fraser | 5 | + | / |
| *Listeria* | *monocytogenes* | 877/113 | Food industry environment | II a | Half Fraser | 10 | + | / |
| *Listeria* | *monocytogenes* | 913/1 048 | Black pudding | IV b | Half Fraser | 2 | + | / |
| *Listeria* | *monocytogenes* | A00C022 | Merguez | II a | Half Fraser | 18 | + | / |
| *Listeria* | *monocytogenes* | A00C036 | Poultry (guinea) | II a | Half Fraser | 7 | + | / |
| *Listeria* | *monocytogenes* | A00C039 | Sausages (Diots de Savoie) | II a | Half Fraser | 8 | + | / |
| *Listeria* | *monocytogenes* | A00C040 | Pâté | IV b | Half Fraser | 11 | + | / |
| *Listeria* | *monocytogenes* | A00C041 | Sausage | La | Half Fraser | 11 | + | / |
| *Listeria* | *monocytogenes* | A00C042 | Toulouse sausage | IV b | Half Fraser | 9 | + | / |
| *Listeria* | *monocytogenes* | A00C043 | Smoked bacon | II a | Half Fraser | 10 | + | / |
| *Listeria* | *monocytogenes* | A00C044 | Poultry (Duck) | II b | Half Fraser | 11 | + | / |
| *Listeria* | *monocytogenes* | A00C052 | Poultry | II b | Half Fraser | 13 | + | / |
| *Listeria* | *monocytogenes* | A00C053 | Poultry | II a | Half Fraser | 9 | + | / |
| *Listeria* | *monocytogenes* | A00E082 | Environment (smocked salmon) | II a | Half Fraser | 23 | + | / |
| *Listeria* | *monocytogenes* | A00L097 | Milk | II a | Half Fraser | 15 | + | / |
| *Listeria* | *monocytogenes* | A00M009 | Smoked salmon | II a | Half Fraser | 14 | + | / |
| *Listeria* | *monocytogenes* | A00M032 | Smoked salmon | IV b | Half Fraser | 7 | + | / |

| INCLUSIVITY | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Strain** | **Species** | **Reference** | **Origin** | **Molecular serotypes** | **Enrichment broth** | **Inoculation level (cfu:225ml)** | **PCR** | **Streaking on OAA or Palcam** |
| *Listeria* | *monocytogenes* | Ad235 | Poultry | II b | Half Fraser | 6 | + | / |
| *Listeria* | *monocytogenes* | Ad249 | Environment (Meat product) | II b | Half Fraser | 11 | + | / |
| *Listeria* | *monocytogenes* | Ad253 | Semi-hard cheese | II b | Half Fraser | 7 | - | - |
| | | | | | | 35 | - | - |
| | | | | | | 25 | - | +1colony |
| | | | | | Half Fraser +milk | 40 | - | + |
| | | | | | Half Fraser (2013) | 14 | - | - |
| | | | | | Half Fraser +milk (2013) | 14 | - | + |
| | | | | | BHI (2013) | 14 | - | / |
| *Listeria* | *monocytogenes* | Ad260 | Semi-hard cheese | II a | Half Fraser | 3 | + | / |
| *Listeria* | *monocytogenes* | Ad265 | Pork | II b | Half Fraser | 14 | + | / |
| *Listeria* | *monocytogenes* | Ad266 | Poultry | II a | Half Fraser | 6 | + | / |
| *Listeria* | *monocytogenes* | Ad267 | Fermented sausage | II b | Half Fraser | 5 | + | / |
| *Listeria* | *monocytogenes* | Ad268 | Cured ham | IV b | Half Fraser | 4 | + | / |
| *Listeria* | *monocytogenes* | Ad270 | Fermented sausage | IV b | Half Fraser | 4 | + | / |
| *Listeria* | *monocytogenes* | Ad273 | Cured delicatessen | II b | Half Fraser | 6 | + | / |
| *Listeria* | *monocytogenes* | Ad274 | Ready-to-eat food (Asiatic meal) | II a | Half Fraser | 4 | + | / |
| *Listeria* | *monocytogenes* | Ad285 | Ready-to-eat food | La | Half Fraser | 15 | + | / |
| *Listeria* | *monocytogenes* | Ad494 | Ready-to-eat food (Piemontaise salad) | II a | Half Fraser | 15 | + | / |
| *Listeria* | *monocytogenes* | Ad534 | Fruits | II b | Half Fraser | 10 | + | / |
| *Listeria* | *monocytogenes* | Ad544 | Cooked vegetables | II a | Half Fraser | 15 | + | / |
| *Listeria* | *monocytogenes* | Ad546 | Flour | II a | Half Fraser | 12 | + | / |
| *Listeria* | *monocytogenes* | Ad548 | Environment (Seafood) | II a | Half Fraser | 14 | + | / |
| *Listeria* | *monocytogenes* | Ad551 | Environment (Pastry environment) | II a | Half Fraser | 9 | + | / |
| *Listeria* | *monocytogenes* | Ad618 | Soft cheese (Munster) | IV b | Half Fraser | 12 | + | / |
| *Listeria* | *monocytogenes* | Ad623 | Bread crumbs | II b | Half Fraser | 12 | + | / |
| *Listeria* | *monocytogenes* | Ad625 | Environment (Dairy industry) | IV b | Half Fraser | 9 | + | / |
| *Listeria* | *monocytogenes* | Ad626 | Gorgonzola | II a | Half Fraser | 4 | + | / |
| *Listeria* | *monocytogenes* | Ad630 | Semi-hard cheese (Cantal) | II a | Half Fraser | 9 | + | / |
| *Listeria* | *monocytogenes* | Ad665 | Raw milk | II a | Half Fraser | 3 | + | / |

| EXCLUSIVITY | | | | | |
|---|---|---|---|---|---|
| **Strain** | **Species** | **Reference** | **Origin** | **Inoculation level (cfu/ml)** | **PCR result** |
| *Listeria* | *grayi* | ATCC19120 | / | 1.00 $10^6$ | - |
| *Listeria* | *grayi* | CIP76124 | / | 4.00 $10^6$ | - |
| *Listeria* | *innocua* | 1 | Smoked salmon | 1.20 $10^5$ | - |
| *Listeria* | *innocua* | Ad 658 | Gorgonzola | 9.20 $10^5$ | - |
| *Listeria* | *ivanovii* | Ad466 | Raw veal meat | 1.10 $10^5$ | - |
| *Listeria* | *ivanovii* | Ad662 | Environment (dairy industry) | 1.50 $10^5$ | - |
| *Listeria* | *seeligeri* | Ad649 | Cheese | 1.20 $10^5$ | - |
| *Listeria* | *seeligeri* | BR1 | Trout | 1.40 $10^5$ | - |
| *Listeria* | *welshimeri* | Ad1276 | Environment (Slaughterhouse) | 1.60 $10^5$ | - |
| *Listeria* | *welshimeri* | Ad1175 | Ready-to-eat-food | 7.20 $10^4$ | - |
| *Bacillus* | *cereus* | Ad 465 | Salmon Terrine | 4.0 $10^5$ | - |
| *Bacillus* | *circulans* | Ad 769 | Vegetables | 6.0 $10^5$ | - |
| *Bacillus* | *coagulans* | Ad 731 | Dairy product | 2.0 $10^5$ | - |
| *Bacillus* | *licheniformis* | Ad 978 | Dairy product | 1.0 $10^5$ | - |
| *Bacillus* | *pumilus* | Ad 284 | Ready-to-eat | 8. 0 $10^4$ | - |
| *Brochrotrix* | *compessis* | CIP 1029205 | Environment | 3.0 $10^5$ | - |
| *Carnobacterium* | *piscicola* | Ad 369 | Raw milk | 4.6 $10^5$ | - |
| *Enterococcus* | *durans* | Ad 149 | Ham | 6.0 $10^3$ | - |
| *Enterococcus* | *faecalis* | 89L326 | Soft cheese (Vacherin) | 4.6 $10^4$ | - |
| *Lactobacillus* | *brevis* | 86L126 | Ham | 2.0 $10^5$ | - |
| *Lactobacillus* | *curvatus* | Ad 380 | Delicatessen | 5.0 $10^4$ | - |
| *Lactobacillus* | *sakei* | Ad 473 | Ham | 2.0 $10^5$ | - |
| *Leuconostoc* | *carnosum* | Ad 411 | Ham | 7.4 $10^4$ | - |
| *Leuconostoc* | *citreum* | Ad 396 | Ham | 4.8 $10^4$ | - |
| *Micrococcus* | *luteus* | Ad 432 | Cocktail | 2.0 $10^5$ | - |
| *Staphylococcus* | *aureus* | Ad 165 | Smoked delicatessen | 2.5 $10^5$ | - |
| *Staphylococcus* | *epidermis* | Ad 931 | Fruits | 7.5 $10^4$ | - |
| *Staphylococcus* | *haemoliticus* | Ad 989 | Dairy product | 2.0 $10^5$ | - |
| *Streptococcus* | *bovis* | 91L518 | Dairy product | 1.2 $10^5$ | - |
| *Streptococcus* | *salivarus* | Ad 441 | Dairy product | 4.0 $10^4$ | - |

| Exclusivity - Renewal study | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Genus | Species | Sensu | Reference | Origin | Level before incubation (CFU/mL) | Assurance® GDS for Listeria *monocytogenes* Tq BPW - 24 h at 37°C | | | | Comment |
| | | | | | | | PCR Assurance GDS *Listeria monocytogenes* Tq | | Direct streaking | | |
| | | | | | | | Target Cq | Result | O&A | Palcam | |
| 1 | *Listeria* | *grayi* | Lato | Ad2415 | Rillette | $6.60x10^4$ | N/A | - | - | - | Troubled enrichment after incubation |
| 2 | *Listeria* | *grayi* | Lato | Ad1295 | Spinach | $6.00x10^4$ | N/A | - | - | st | Troubled enrichment after incubation |
| 3 | *Listeria* | *rocourtiae* | Lato | DSM22097 | Lettuce | $1.40x10^4$ | N/A | - | - | + | / |
| 4 | *Listeria* | *grayi* | Lato | Ad3288 | Smoked bacon | $8.40x10^4$ | N/A | - | H- (light) | - | / |
| 5 | *Listeria* | *grayi* | Lato | Ad3205 | Chicken nuggets | $9.00x10^4$ | N/A | - | H- (light) | + | / |
| 6 | *Listeria* | *fleischmanii* | Lato | DSM24998 | Hard cheese | $6.60x10^4$ | N/A | - | H- | + (light) | / |
| 7 | *Listeria* | *riparia* | Lato | DSM26685 | Running water | $2.00x10^4$ | N/A | - | H- (white center) | + | / |
| 8 | *Listeria* | *farberi* | Stricto | LMG31917 | Soil | $7.60x10^4$ | N/A | - | H- | + | / |
| 9 | *Listeria* | *immobilis* | Stricto | LMG31920 | Soil | $3.00x10^4$ | N/A | - | - | + | / |
| 10 | *Listeria* | *marthii* | Stricto | DSM23813 | Soil | $5.20x10^4$ | N/A | - | H- | + | / |
| 11 | *Listeria* | *cornellensis* | Lato | DSM26689 | Water | $4.60X10^5$ | N/A | - | st | st | Troubled enrichment after incubation |
| 12 | *Listeria* | *grandensis* | Lato | DSM26688 | Water | $6.20X10^5$ | N/A | - | st | st | Troubled enrichment after incubation |

## Appendix 8 - Inter-laboratory study: raw data

**Collaborator** A

Aerobic mesophilic flora: 4,4 $10^6$ cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **A3** | - | - | - | - | - | - | - | - | - | **NA** |
| **A5** | - | - | - | - | - | - | - | - | - | **NA** |
| **A9** | - | - | - | - | - | - | - | - | - | **NA** |
| **A13** | - | - | - | - | - | - | - | - | - | **NA** |
| **A14** | - | - | - | - | - | - | - | - | - | **NA** |
| **A18** | - | - | - | - | - | - | - | - | - | **NA** |
| **A22** | - | - | - | - | - | - | - | - | - | **NA** |
| **A23** | - | - | - | - | - | - | - | - | - | **NA** |
| **A2** | + | + | + | + | + | + | + | + | + | **PA** |
| **A7** | + | + | + | + | + | + | + | + | + | **PA** |
| **A8** | + | + | + | + | + | + | + | + | + | **PA** |
| **A11** | + | + | + | + | + | + | + | + | + | **PA** |
| **A15** | + | + | + | + | + | + | + | + | + | **PA** |
| **A17** | + | + | + | + | + | + | + | + | + | **PA** |
| **A21** | + | + | + | + | + | + | + | + | + | **PA** |
| **A24** | + | + | - | - | + | + | + | + | + | **PA** |
| **A1** | + | + | + | + | + | + | + | + | + | **PA** |
| **A4** | + | + | + | + | + | + | + | + | + | **PA** |
| **A6** | + | + | + | + | + | + | + | + | + | **PA** |
| **A10** | + | + | + | + | + | + | + | + | + | **PA** |
| **A12** | + | + | + | + | + | + | + | + | + | **PA** |
| **A16** | + | + | + | + | + | + | + | + | + | **PA** |
| **A19** | + | + | + | + | + | + | + | + | + | **PA** |
| **A20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** B

Aerobic mesophilic flora: 5,0 $10^6$ cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **B3** | - | - | - | - | - | - | - | - | - | **NA** |
| **B5** | - | - | - | - | - | - | - | - | - | **NA** |
| **B9** | - | - | - | - | - | - | - | - | - | **NA** |
| **B13** | - | - | - | - | - | - | - | - | - | **NA** |
| **B14** | - | - | - | - | - | - | - | - | - | **NA** |
| **B18** | - | - | - | - | - | - | - | - | - | **NA** |
| **B22** | - | - | - | - | - | - | - | - | - | **NA** |
| **B23** | - | - | - | - | - | - | - | - | - | **NA** |
| **B2** | + | + | + | + | + | + | + | + | + | **PA** |
| **B7** | + | + | + | + | + | + | + | + | + | **PA** |
| **B8** | - | - | - | - | - | - | - | - | - | **NA** |
| **B11** | + | + | + | + | + | + | + | + | + | **PA** |
| **B15** | + | + | + | + | + | + | + | + | + | **PA** |
| **B17** | + | + | + | + | + | + | + | + | + | **PA** |
| **B21** | + | + | + | + | + | + | + | + | + | **PA** |
| **B24** | + | + | + | + | + | + | + | + | + | **PA** |
| **B1** | + | + | + | + | + | + | + | + | + | **PA** |
| **B4** | + | + | + | + | + | + | + | + | + | **PA** |
| **B6** | + | + | + | + | + | + | + | + | + | **PA** |
| **B10** | + | + | + | + | + | + | + | + | + | **PA** |
| **B12** | + | + | + | + | + | + | + | + | + | **PA** |
| **B16** | + | + | + | + | + | + | + | + | + | **PA** |
| **B19** | + | + | + | + | + | + | + | + | + | **PA** |
| **B20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** C

Aerobic mesophilic flora: 1,7 $10^6$ cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **C3** | - | - | - | - | - | - | / | / | - | **NA** |
| **C5** | - | - | - | - | - | - | / | / | - | **NA** |
| **C9** | - | - | - | - | - | - | / | / | - | **NA** |
| **C13** | - | - | - | - | - | - | / | / | - | **NA** |
| **C14** | - | - | - | - | - | - | / | / | - | **NA** |
| **C18** | - | - | - | - | - | - | / | / | - | **NA** |
| **C22** | - | - | - | - | - | - | / | / | - | **NA** |
| **C23** | - | - | - | - | - | - | / | / | - | **NA** |
| **C2** | + | + | + | + | + | + | + | + | + | **PA** |
| **C7** | + | + | + | + | + | + | + | + | + | **PA** |
| **C8** | + | + | + | + | + | + | + | + | + | **PA** |
| **C11** | + | + | + | + | + | + | + | + | + | **PA** |
| **C15** | + | + | + | + | + | + | + | + | + | **PA** |
| **C17** | + | + | + | + | + | + | + | + | + | **PA** |
| **C21** | + | + | + | + | + | + | + | + | + | **PA** |
| **C24** | + | + | + | + | + | + | + | + | + | **PA** |
| **C1** | + | + | + | + | + | + | + | + | + | **PA** |
| **C4** | + | + | + | + | + | + | + | + | + | **PA** |
| **C6** | + | + | + | + | + | + | + | + | + | **PA** |
| **C10** | + | + | + | + | + | + | + | + | + | **PA** |
| **C12** | + | + | + | + | + | + | + | + | + | **PA** |
| **C16** | + | + | + | + | + | + | + | + | + | **PA** |
| **C19** | + | + | + | + | + | + | + | + | + | **PA** |
| **C20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** D

Aerobic mesophilic flora: 5,6 $10^6$ cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **D3** | - | - | - | - | - | - | / | / | - | **NA** |
| **D5** | - | - | - | - | - | - | / | / | - | **NA** |
| **D9** | - | - | - | - | - | - | / | / | - | **NA** |
| **D13** | - | - | - | - | - | - | / | / | - | **NA** |
| **D14** | - | - | - | - | - | - | / | / | - | **NA** |
| **D18** | - | - | - | - | - | - | / | / | - | **NA** |
| **D22** | - | - | - | - | - | - | / | / | - | **NA** |
| **D23** | - | - | - | - | - | - | / | / | - | **NA** |
| **D2** | - | - | - | - | - | - | / | / | - | **NA** |
| **D7** | - | - | - | - | - | - | / | / | - | **NA** |
| **D8** | + | + | + | + | + | + | + | + | + | **PA** |
| **D11** | + | + | + | + | + | + | + | + | + | **PA** |
| **D15** | + | + | + | + | + | + | + | + | + | **PA** |
| **D17** | + | + | + | + | + | + | + | + | + | **PA** |
| **D21** | + | + | + | + | + | + | + | + | + | **PA** |
| **D24** | + | + | + | + | + | + | + | + | + | **PA** |
| **D1** | + | + | + | + | + | + | + | + | + | **PA** |
| **D4** | + | + | + | + | + | + | + | + | + | **PA** |
| **D6** | + | + | + | + | + | + | + | + | + | **PA** |
| **D10** | + | + | + | + | + | + | + | + | + | **PA** |
| **D12** | + | + | + | + | + | + | + | + | + | **PA** |
| **D16** | + | + | + | + | + | + | + | + | + | **PA** |
| **D19** | + | + | + | + | + | + | + | + | + | **PA** |
| **D20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** E

Aerobic mesophilic flora: 3,4 $10^6$ cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **E3** | - | - | - | - | - | - | / | / | - | **NA** |
| **E5** | - | - | - | - | - | - | / | / | - | **NA** |
| **E9** | - | - | - | - | - | - | / | / | - | **NA** |
| **E13** | + (L.monocy-togenes) ADRIA:- | + | + (L.seeligeri) | + | - | - | / | / | - | **NA** |
| **E14** | + (L.seeligeri) | - | - | - | - | - | / | / | - | **NA** |
| **E18** | - | - | - | - | - | - | / | / | - | **NA** |
| **E22** | + (L.seeligeri) | - | + (L.monocy-togenes) | + | + | - | / | / | - | **ND** |
| **E23** | - | - | | + (L.monocy-togenes) | + | - | / | / | - | **ND** |
| **E2** | + | + | + | + | + | + | + | + | + | **PA** |
| **E7** | + | + | + | + | + | + | + | + | + | **PA** |
| **E8** | + | + | + | + | + | + | + | + | + | **PA** |
| **E11** | + | + | + | + | + | + | + | + | + | **PA** |
| **E15** | + | + | + | + | + | + | + | + | + | **PA** |
| **E17** | + | + | + | + | + | -/+* | + | + | - | **$ND_{FN(alt)}$** |
| **E21** | + | + | + | + | + | + | + | + | + | **PA** |
| **E24** | + | + | + | + | + | + | + | + | + | **PA** |
| **E1** | + | + | + | + | + | + | + | + | + | **PA** |
| **E4** | + | + | + | + | + | + | + | + | + | **PA** |
| **E6** | + | + | + | + | + | + | + | + | + | **PA** |
| **E10** | + | + | + | + | + | + | + | + | + | **PA** |
| **E12** | + | + | + | + | + | + | + | + | + | **PA** |
| **E16** | + | + | + | + | + | + | + | + | + | **PA** |
| **E19** | + | + | + | + | + | + | + | + | + | **PA** |
| **E20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** F

Aerobic mesophilic flora: 4,2 $10^6$ cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **F3** | - | - | - | - | - | - | / | / | - | **NA** |
| **F5** | - | - | - | - | - | - | / | / | - | **NA** |
| **F9** | - | - | - | - | - | - | / | / | - | **NA** |
| **F13** | - | - | - | - | - | - | / | / | - | **NA** |
| **F14** | - | - | - | - | - | - | / | / | - | **NA** |
| **F18** | - | - | - | - | - | - | / | / | - | **NA** |
| **F22** | - | - | - | - | - | - | / | / | - | **NA** |
| **F23** | - | - | - | - | - | - | / | / | - | **NA** |
| **F2** | + | + | + | + | + | + | + | + | + | **PA** |
| **F7** | + | + | + | + | + | + | + | + | + | **PA** |
| **F8** | + | + | + | + | + | + | + | + | + | **PA** |
| **F11** | + | + | + | + | + | + | + | + | + | **PA** |
| **F15** | + | + | + | + | + | + | + | + | + | **PA** |
| **F17** | + | + | + | + | + | + | + | + | + | **PA** |
| **F21** | + | + | + | + | + | + | + | + | + | **PA** |
| **F24** | + | + | + | + | + | + | + | + | + | **PA** |
| **F1** | + | + | + | + | + | + | + | + | + | **PA** |
| **F4** | + | + | + | + | + | + | + | + | + | **PA** |
| **F6** | + | + | + | + | + | + | + | + | + | **PA** |
| **F10** | + | + | + | + | + | + | + | + | + | **PA** |
| **F12** | + | + | + | + | + | + | + | + | + | **PA** |
| **F16** | + | + | + | + | + | + | + | + | + | **PA** |
| **F19** | + | + | + | + | + | + | + | + | + | **PA** |
| **F20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** G

Aerobic mesophilic flora: 3.7 x $10^6$ cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **G3** | - | - | - | - | - | - | - | - | - | **NA** |
| **G5** | - | - | - | - | - | - | / | / | - | **NA** |
| **G9** | - | - | - | - | - | - | / | / | - | **NA** |
| **G13** | - | - | - | - | - | - | / | / | - | **NA** |
| **G14** | - | - | - | - | - | - | / | / | - | **NA** |
| **G18** | - | - | - | - | - | - | / | / | - | **NA** |
| **G22** | - | - | - | - | - | - | / | / | - | **NA** |
| **G23** | - | - | - | - | - | - | / | / | - | **NA** |
| **G2** | + | + | + | + | + | + | + | + | + | **PA** |
| **G7** | + | + | + | + | + | + | + | + | + | **PA** |
| **G8** | + | + | + | + | + | + | + | + | + | **PA** |
| **G11** | + | + | + | + | + | + | + | + | + | **PA** |
| **G15** | + | + | + | + | + | + | + | + | + | **PA** |
| **G17** | + | + | + | + | + | + | + | + | + | **PA** |
| **G21** | + | + | + | + | + | + | + | + | + | **PA** |
| **G24** | + | + | + | + | + | + | + | + | + | **PA** |
| **G1** | + | + | + | + | + | + | + | + | + | **PA** |
| **G4** | + | + | + | + | + | + | + | + | + | **PA** |
| **G6** | + | + | + | + | + | + | + | + | + | **PA** |
| **G10** | + | + | + | + | + | + | + | + | + | **PA** |
| **G12** | + | + | + | + | + | + | + | + | + | **PA** |
| **G16** | + | + | + | + | + | + | + | + | + | **PA** |
| **G19** | + | + | + | + | + | + | + | + | + | **PA** |
| **G20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** H
Aerobic mesophilic flora: 3.3 x $10^6$
cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **H3** | - | - | - | - | - | - | / | / | - | **NA** |
| **H5** | - | - | - | - | - | - | / | / | - | **NA** |
| **H9** | - | - | - | - | - | - | / | / | - | **NA** |
| **H13** | - | - | - | - | - | - | / | / | - | **NA** |
| **H14** | - | - | - | - | - | - | / | / | - | **NA** |
| **H18** | - | - | - | - | - | - | / | / | - | **NA** |
| **H22** | - | - | - | - | - | - | / | / | - | **NA** |
| **H23** | - | - | - | - | - | - | / | / | - | **NA** |
| **H2** | + | + | + | + | + | + | + | + | + | **PA** |
| **H7** | + | + | + | + | + | + | + | + | + | **PA** |
| **H8** | + | + | + | + | + | + | + | + | + | **PA** |
| **H11** | + | + | + | + | + | + | + | + | + | **PA** |
| **H15** | + | + | + | + | + | + | + | + | + | **PA** |
| **H17** | + | + | + | + | + | + | + | + | + | **PA** |
| **H21** | - | - | - | - | - | - | / | / | - | **NA** |
| **H24** | + | + | + | + | + | + | + | + | + | **PA** |
| **H1** | + | + | + | + | + | -/+* | + | + | - | **$ND_{FN(alt)}$** |
| **H4** | + | + | + | + | + | + | + | + | + | **PA** |
| **H6** | + | + | + | + | + | + | + | + | + | **PA** |
| **H10** | + | + | + | + | + | + | + | + | + | **PA** |
| **H12** | + | + | + | + | + | + | + | + | + | **PA** |
| **H16** | + | + | + | + | + | + | + | + | + | **PA** |
| **H19** | + | + | + | + | + | + | + | + | + | **PA** |
| **H20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** I

Aerobic mesophilic flora: 2,6 $10^6$ cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.spp | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **I3** | - | - | - | - | - | - | / | / | - | **NA** |
| **I5** | - | - | - | - | - | - | / | / | - | **NA** |
| **I9** | - | - | - | - | - | - | / | / | - | **NA** |
| **I13** | - | - | - | - | - | - | / | / | - | **NA** |
| **I14** | - | - | - | - | - | - | / | / | - | **NA** |
| **I18** | - | - | - | - | - | - | / | / | - | **NA** |
| **I22** | - | - | - | - | - | - | / | / | - | **NA** |
| **I23** | - | - | - | - | - | - | / | / | - | **NA** |
| **I2** | + | + | + | + | + | -/+* | + | + | - | **$ND_{FN(alt)}$** |
| **I7** | - | - | + | + | + | -/+* | + | + | - | **$ND_{FN(alt)}$** |
| **I8** | + | + | + | + | + | + | + | + | + | **PA** |
| **I11** | - | - | + | + | + | -/* | + | + | - | **$ND_{FN(alt)}$** |
| **I15** | - | - | - | - | - | - | / | / | - | **NA** |
| **I17** | + | + | + | + | + | + | + | + | + | **PA** |
| **I21** | + | + | + | + | + | + | + | + | + | **PA** |
| **I24** | + | + | + | + | + | + | + | + | + | **PA** |
| **I1** | + | + | + | + | + | + | + | + | + | **PA** |
| **I4** | + | + | + | + | + | + | + | + | + | **PA** |
| **I6** | + | + | + | + | + | + | + | + | + | **PA** |
| **I10** | + | + | + | + | + | + | + | + | + | **PA** |
| **I12** | + | + | + | + | + | + | + | + | + | **PA** |
| **I16** | + | + | + | + | + | + | + | + | + | **PA** |
| **I19** | + | + | + | + | + | + | + | + | + | **PA** |
| **I20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** J

Aerobic mesophilic flora: 5.9 x $10^6$ cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **J3** | - | - | - | - | - | - | - | - | - | **NA** |
| **J5** | - | - | - | - | - | - | - | - | - | **NA** |
| **J9** | - | - | - | - | - | - | - | - | - | **NA** |
| **J13** | - | - | - | - | - | - | - | - | - | **NA** |
| **J14** | - | - | - | - | - | - | - | - | - | **NA** |
| **J18** | - | - | - | - | - | - | - | - | - | **NA** |
| **J22** | - | - | - | - | - | - | - | - | - | **NA** |
| **J23** | - | - | - | - | - | - | - | - | - | **NA** |
| **J2** | + | + | + | + | + | + | + | + | + | **PA** |
| **J7** | + | + | + | + | + | + | + | + | + | **PA** |
| **J8** | + | + | + | + | + | + | + | + | + | **PA** |
| **J11** | + | + | + | + | + | + | + | + | + | **PA** |
| **J15** | + | + | + | + | + | + | + | + | + | **PA** |
| **J17** | + | + | + | + | + | + | + | + | + | **PA** |
| **J21** | + | + | + | + | + | + | + | + | + | **PA** |
| **J24** | + | + | + | + | + | + | + | + | + | **PA** |
| **J1** | + | + | + | + | + | + | + | + | + | **PA** |
| **J4** | + | + | + | + | + | + | + | + | + | **PA** |
| **J6** | + | + | + | + | + | + | + | + | + | **PA** |
| **J10** | + | + | + | + | + | + | + | + | + | **PA** |
| **J12** | + | + | + | + | + | + | + | + | + | **PA** |
| **J16** | + | + | + | + | + | + | + | + | + | **PA** |
| **J19** | + | + | + | + | + | + | + | + | + | **PA** |
| **J20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** K

Aerobic mesophilic flora: 6,0 $10^6$ cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **K3** | - | - | - | - | - | + | - | - | - | **$PD_{FP(alt)}$** |
| **K5** | - | - | - | - | - | - | - | - | - | **NA** |
| **K9** | - | - | - | - | - | - | - | - | - | **NA** |
| **K13** | - | - | - | - | - | - | - | - | - | **NA** |
| **K14** | - | - | - | - | - | - | - | - | - | **NA** |
| **K18** | - | - | - | - | - | - | - | - | - | **NA** |
| **K22** | - | - | - | - | - | - | - | - | - | **NA** |
| **K23** | - | - | - | - | - | - | - | - | - | **NA** |
| **K2** | + | + | + | + | + | + | + | + | + | **PA** |
| **K7** | + | + | + | + | + | + | + | + | + | **PA** |
| **K8** | + | + | + | + | + | + | + | + | + | **PA** |
| **K11** | + | + | + | + | + | + | + | + | + | **PA** |
| **K15** | + | + | + | + | + | + | + | + | + | **PA** |
| **K17** | + | + | + | + | + | + | + | + | + | **PA** |
| **K21** | + | + | + | + | + | + | + | + | + | **PA** |
| **K24** | + | + | + | + | + | + | + | + | + | **PA** |
| **K1** | + | + | + | + | + | + | + | + | + | **PA** |
| **K4** | + | + | + | + | + | + | + | + | + | **PA** |
| **K6** | + | + | + | + | + | + | + | + | + | **PA** |
| **K10** | + | + | + | + | + | + | + | + | + | **PA** |
| **K12** | + | + | + | + | + | + | + | + | + | **PA** |
| **K16** | + | + | + | + | + | + | + | + | + | **PA** |
| **K19** | + | + | + | + | + | + | + | + | + | **PA** |
| **K20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** L
Aerobic mesophilic flora: 5.6 x $10^6$
cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **L3** | - | - | - | - | - | - | / | / | - | **NA** |
| **L5** | - | - | - | - | - | - | / | / | - | **NA** |
| **L9** | - | - | - | - | - | - | / | / | - | **NA** |
| **L13** | - | - | - | - | - | - | / | / | - | **NA** |
| **L14** | - | - | - | - | - | - | / | / | - | **NA** |
| **L18** | - | - | - | - | - | - | / | / | - | **NA** |
| **L22** | - | - | - | - | - | - | / | / | - | **NA** |
| **L23** | - | - | - | - | - | - | / | / | - | **NA** |
| **L2** | - | - | - | - | - | - | / | / | - | **NA** |
| **L7** | + | + | + | + | + | + | + | + | + | **PA** |
| **L8** | + | + | + | + | + | + | + | + | + | **PA** |
| **L11** | + | + | + | + | + | + | + | + | + | **PA** |
| **L15** | + | + | + | + | + | + | + | + | + | **PA** |
| **L17** | + | + | + | + | + | + | + | + | + | **PA** |
| **L21** | - | - | - | - | - | - | / | / | - | **NA** |
| **L24** | + | + | + | + | + | + | + | + | + | **PA** |
| **L1** | + | + | + | + | + | + | + | + | + | **PA** |
| **L4** | + | + | + | + | + | + | + | + | + | **PA** |
| **L6** | + | + | + | + | + | + | + | + | + | **PA** |
| **L10** | + | + | + | + | + | + | + | + | + | **PA** |
| **L12** | + | + | + | + | + | + | + | + | + | **PA** |
| **L16** | + | + | + | + | + | + | + | + | + | **PA** |
| **L19** | + | + | + | + | + | + | + | + | + | **PA** |
| **L20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** M

Aerobic mesophilic flora: 4.0 x $10^6$ cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **M3** | - | - | - | - | - | - | / | / | - | **NA** |
| **M5** | - | - | - | - | - | - | / | / | - | **NA** |
| **M9** | - | - | - | - | - | - | / | / | - | **NA** |
| **M13** | - | - | - | - | - | - | / | / | - | **NA** |
| **M14** | - | - | - | - | - | - | / | / | - | **NA** |
| **M18** | - | - | - | - | - | - | / | / | - | **NA** |
| **M22** | - | - | - | - | - | - | / | / | - | **NA** |
| **M23** | - | - | - | - | - | - | / | / | - | **NA** |
| **M2** | - | - | - | - | - | - | / | / | - | **NA** |
| **M7** | - | - | - | - | - | - | / | / | - | **NA** |
| **M8** | + | + | + | + | + | + | + | + | + | **PA** |
| **M11** | - | - | - | - | - | - | / | / | - | **NA** |
| **M15** | - | - | + | + | + | - | + | + | - | **$ND_{FN(alt)}$** |
| **M17** | + | + | + | + | + | + | + | + | + | **PA** |
| **M21** | - | - | - | - | - | - | / | - | - | **NA** |
| **M24** | + | + | + | + | + | + | + | + | + | **PA** |
| **M1** | + | + | + | + | + | + | + | + | + | **PA** |
| **M4** | + | + | + | + | + | + | + | + | + | **PA** |
| **M6** | + | + | + | + | + | + | + | + | + | **PA** |
| **M10** | - | - | + | + | + | + | + | + | + | **PA** |
| **M12** | + | + | + | + | + | + | + | + | + | **PA** |
| **M16** | + | + | + | + | + | + | + | + | + | **PA** |
| **M19** | + | + | + | + | + | + | + | + | + | **PA** |
| **M20** | + | + | + | + | + | + | + | + | + | **PA** |

**Collaborator** N
Aerobic mesophilic flora: 3.6 x $10^6$
cfu/g

| Sample N° | Reference method ISO 11290-1 | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **N3** | - | - | - | - | - | - | / | / | - | **NA** |
| **N5** | - | - | - | - | - | - | / | / | - | **NA** |
| **N9** | - | - | - | - | - | - | / | / | - | **NA** |
| **N13** | - | - | - | - | - | - | / | / | - | **NA** |
| **N14** | - | - | - | - | - | - | / | / | - | **NA** |
| **N18** | - | - | - | - | - | - | / | / | - | **NA** |
| **N22** | - | - | - | - | - | - | / | / | - | **NA** |
| **N23** | - | - | - | - | - | - | / | / | - | **NA** |
| **N2** | + | + | + | + | + | + | + | + | + | **PA** |
| **N7** | + | + | + | + | + | + | + | + | + | **PA** |
| **N8** | - | - | - | - | - | - | + | + | - | **$NA_{FN(alt)}$** |
| **N11** | + | + | + | + | + | + | + | + | + | **PA** |
| **N15** | + | + | + | + | + | + | + | + | + | **PA** |
| **N17** | + | d | + | + | + | + | + | + | + | **PA** |
| **N21** | + | + | + | + | + | + | + | + | + | **PA** |
| **N24** | + | + | + | + | + | + | + | + | + | **PA** |
| **N1** | + | + | + | + | + | + | + | + | + | **PA** |
| **N4** | + | + | + | + | + | + | + | + | + | **PA** |
| **N6** | + | + | + | + | + | + | + | + | + | **PA** |
| **N10** | + | + | + | + | + | + | + | + | + | **PA** |
| **N12** | + | + | + | + | + | + | + | + | + | **PA** |
| **N16** | + | + | + | + | + | + | + | + | + | **PA** |
| **N19** | + | + | + | + | + | + | + | + | + | **PA** |
| **N20** | + | + | + | + | + | + | + | + | + | **PA** |

**d: doubtful colonies**

**Collaborator** O (ADRIA)
Aerobic mesophilic flora: 2,9 $10^6$ cfu/g

| Sample N° | Reference method ISO 11290-1♦ | | | | | Alternative method: Assurance GDS Listeria monocytogenes | | | | Agreement |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fraser 1/2 | | Fraser 1 | | Final result | PCR GDS L.monocytogenes | OCLA | Palcam | Final result | |
| | OAA | Palcam | OAA | Palcam | | | | | | |
| **O3** | - | - | - | - | - | - | - | - | - | **NA** |
| **O5** | - | - | - | - | - | - | - | - | - | **NA** |
| **O9** | - | - | - | - | - | - | - | - | - | **NA** |
| **O13** | - | - | - | - | - | - | - | - | - | **NA** |
| **O14** | - | - | - | - | - | - | - | - | - | **NA** |
| **O18** | - | - | - | - | - | - | - | - | - | **NA** |
| **O22** | - | - | - | - | - | - | - | - | - | **NA** |
| **O23** | - | - | - | - | - | - | - | - | - | **NA** |
| **O2** | + | + | + | + | + | + | + | + | + | **PA** |
| **O7** | + | + | + | + | + | + | + | + | + | **PA** |
| **O8** | + | + | + | + | + | + | + | + | + | **PA** |
| **O11** | + | + | + | + | + | + | + | + | + | **PA** |
| **O15** | + | + | + | + | + | + | + | + | + | **PA** |
| **O17** | + | + | + | + | + | + | + | + | + | **PA** |
| **O21** | - | - | - | - | - | - | - | - | - | **NA** |
| **O24** | + | + | + | + | + | + | + | + | + | **PA** |
| **O1** | + | + | + | + | + | + | + | + | + | **PA** |
| **O4** | + | + | + | + | + | + | + | + | + | **PA** |
| **O6** | + | + | + | + | + | + | + | + | + | **PA** |
| **O10** | + | + | + | + | + | + | + | + | + | **PA** |
| **O12** | + | + | + | + | + | + | + | + | + | **PA** |
| **O16** | + | + | + | + | + | + | + | + | + | **PA** |
| **O19** | + | + | + | + | + | + | + | + | + | **PA** |
| **O20** | + | + | + | + | + | + | + | + | + | **PA** |

♦ Analyses performed according to the COFRAC accreditation (Accreditation Testing n°1-0144, scope available on www.cofrac.fr)