ADRIA FOOD EXPERTISE

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NF VALIDATION - Validation of alternative analytical methods

Application in food microbiology

Summary Report

Validation study according to the NF EN ISO 16140-2:2016

Listeria spp. Detection

☒ **BACGene *Listeria* Multiplex** - Test Kit for qualitative real-time PCR detection of *Listeria monocytogenes* and *Listeria spp.*
(Certificate number: EGS 38/05 - 03/17)

☒ **BACGene *Listeria spp.*** - Test Kit for qualitative real-time PCR detection of *Listeria spp.*
(Certificate number: EGS 38/02 - 03/17)

in all human food products and environmental samples

Qualitative method

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This report consists of 121 pages, including 8 appendices.
Only copies including the totality of this report are authorised.
Competencies of the laboratory are certified by COFRAC accreditation for the analyses marked with the symbol◆.

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1 INTRODUCTION 5

2 METHOD PROTOCOLS 5

2.1 Reference method 5

2.2 Alternative methods 5

2.2.1 Principle 5

2.2.2 Protocol 6

2.2.3 Restrictions 7

2.3 Study design 7

3 METHOD COMPARISON STUDY 7

3.1 Sensitivity study 7

3.1.1 Number and nature of samples 7

3.1.2 Artificial contamination of samples 9

3.1.3 Confirmation protocols 11

3.1.4 Test results 11

3.1.5 Calculation of the relative trueness (RT), the relative sensitivity (SE) and the false positive ratio (FPR) 13

3.1.6 Analysis of discordants 18

3.1.7 Enrichment broth storage at 2 - 8°C for 72 h 27

3.1.8 Confirmation 31

3.1.9 PCR inhibitions 33

3.2 Relative level of detection 34

3.2.1 Experimental design 34

3.2.2 Calculation and interpretation of the RLOD 34

3.3 Inclusivity / exclusivity 35

3.3.1 Test protocols 35

3.3.2 Results 36

3.4 Practicability 37

4 INTER-LABORATORY STUDY 38

4.1 Study organisation 38

4.2 Experimental parameters control 39

4.2.1 Strain stability and background microflora stability 39

4.2.2 Contamination levels 40

4.2.3 Logistic conditions 40

4.3 Result analysis 41

4.3.1 Expert laboratory results 41

4.3.2 Results observed by the collaborative laboratories 41

4.3.3 Results of the collaborators retained for interpretation 43

4.4 Calculation and interpretation 45

4.4.1 Calculation of the specificity percentage (SP) 45

4.4.2 Calculation of the sensitivity (SE_{alt}), the sensitivity for the reference method (SE_{ref}), the relative trueness (RT) and the false positive ratio for the alternative method (FPR) 45

4.4.3 Interpretation of data 47

4.4.4 Evaluation of the RLOD between laboratories 51

5 GENERAL CONCLUSION 52

- *Appendix 1 – Flow diagram of the reference method EN ISO 11290-1/A1 (February 2005) - Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of Listeria monocytogenes - Part 1: detection method 54*
- *Appendix 2 – Flow diagram of the BACGene Listeria Multiplex and the BacGene Listeria spp. Test Kits 55*
- *Appendix 3 - Protocols used for Listeria genus and Listeria monocytogenes confirmation (MALDI-TOF) 56*
- *Appendix 4 – Artificial contamination of samples 58*
- *Appendix 5 – Sensitivity study: raw data 64*
- *Appendix 6 – Relative level of detection study: raw data 93*
- *Appendix 7 – Inclusivity and exclusivity study: raw data 99*
- *Appendix 8 - Results obtained by the collaborative laboratories and the expert laboratory 104*

Quality Assurance documents related to this study can be consulted upon request from Eurofins GeneScan GmbH.
The technical protocol and the result interpretation were realised according to the EN ISO 16140-2:2016 and the AFNOR technical rules (Revision 6).

Validation protocols	▪ ISO 16140-1 (2016): Microbiology of the food chain - Method validation — *Part 1: Vocabulary* ▪ 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* ▪ AFNOR Technical Rules (Revision n° 6)
Reference method♦	NF EN ISO 11290-1/A1 (February 2005): Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of *Listeria monocytogenes* - Part 1: detection of *Listeria monocytogenes* in foods
Alternative methods	**BAC*Gene Listeria* Multiplex** - Test Kit for qualitative real-time PCR detection of *Listeria monocytogenes* and *Listeria spp.* **BAC*Gene Listeria spp.*** - Test Kit for qualitative real-time PCR detection of *Listeria spp.*
Scope	**All human food products and environmental samples (excluding primary production samples)**
Certification organism	AFNOR Certification (http://nf-validation.afnor.org/)

♦ Analyses performed according to the COFRAC accreditation

1 INTRODUCTION

The BAC*Gene Listeria* Multiplex - Test Kit for qualitative real-time PCR detection of *Listeria monocytogenes* and *Listeria spp.* and the BAC*Gene Listeria spp.*- Test Kit for qualitative real-time PCR detection of *Listeria spp.* was validated in January 2017 according to the EN ISO 16140-2:2016 and the AFNOR Certification Technical Rules (revision 5).

The certificate references for this study are the following:

- ☒ BAC*Gene Listeria* Multiplex: EGS 38/05 - 03/17;
- ☒ BAC*Gene Listeria* spp.: EGS 38/02 - 01/17.

An extension was obtained on 30th January 2020 to extend the scope of the alternative method for the use of FastFinder software for interpretation of data generated by AriaMx from Agilent and CFX96 Touch™ Deep Well from Bio-Rad. The data corresponding to this study are available from the Eurofins GeneScan Technologies GmbH.

2 METHOD PROTOCOLS

2.1 Reference method ♦

The reference method corresponds to the ISO 11290-1/A1 (February 2005) standard: Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of *Listeria monocytogenes* – Part 1: detection method (See **Appendix 1**).

2.2 Alternative methods

2.2.1 Principle

BACGene Listeria Multiplex

DNA amplification and detection methods take advantage of the nucleotide sequence conservation found in bacterial genomes that ensures the potential for high specificity and sensitivity in detection of food-borne, pathogenic bacteria.

♦ Analyses performed according to the COFRAC accreditation

After enrichment, the microbial DNA is extracted by a simple thermal/ enzymatic lysis step and rapidly analysed by real time PCR.
Specific nucleotide sequences of the genus *Listeria* and of the species *Listeria monocytogens* are amplified during PCR.

- ***BACGene Listeria spp.***

After enrichment, the microbial DNA is extracted by a simple thermal/enzymatic lysis step and rapidly analysed by real time PCR.
Specific nucleotide sequence of the genus *Listeria* is amplified during PCR.

2.2.2 Protocol

The flow diagram is provided in **Appendix 2**. The protocol is the following:

- Enrichment step: 21 ± 3 h at 37°C ± 1°C in pre-warmed (37°C ± 1°C) Actero™ *Listeria* Enrichment media.
- Lysis step: 70 µl lysis buffer + 30 µl enrichment broth, heat treatment for 20 min at 37°C ± 2°C, and 10 min at 95°C ± 2°C;
- PCR test using the CFX96 from Bio-Rad (deep-well) and the AriaMx from Agilent with 5 µl lysate + 20 µl MasterMix;
- Confirmation by streaking 10 µl of Actero™ *Listeria* Enrichment media onto O&A and Palcam plates.

The typical colonies are confirmed by:

- The tests described in the reference method (gram, catalase, Camp test, and biochemical galleries);
- The MALDI Biotyper of Bruker (Software versions: Flex control 3.4, Flex analysis 3.4, MBT Compass explorer 4.1): colonies were confirmed from O&A, Palcam and TSYEA plates. The protocols used for *Listeria* genus confirmation are described in **Appendix 3**. This method is dedicated to the confirmation of *Listeria* spp.. The identification of colonies is not part of the NF VALIDATION scope.

It is possible to store the Actero™ *Listeria* Enrichment media for 72 h at 2 - 8°C to offer sufficient practicability to the users.

Note that for the inter-laboratory study, 8 collaborators used the AriaMx from Agilent and 8 collaborators used the CFX96 from Bio-Rad.

2.2.3 Restrictions

Neutralizing buffers containing arylsulfonate (sodium dodecylbenzene-sulfonate) are not recommended to be used for environmental samples with this kit.

2.3 Study design

The study is an unpaired data study design, as the reference and the alternative methods have different primary enrichment procedures.

3 METHOD COMPARISON STUDY

The Method Comparison Study is a study performed by the expert laboratory to compare the alternative method with the reference method.

The following criteria were evaluated:

- Sensitivity study,
- Relative level of detection,
- Inclusivity and exclusivity,
- Practicability.

3.1 Sensitivity study

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

3.1.1 Number and nature of samples

426 samples were analysed.

The distribution per tested category and type is given in Table 1.
The distribution per target analytes is given in Table 2.

Table 1 – Distribution per tested category and type

Category		Type	BAC*Gene Listeria* Multiplex						BAC*Gene Listeria* spp.					
			CFX96			AriaMx			CFX96			AriaMx		
			Positive	Negative	Total	Positive	Negative	Total	Positive	Negative	Total	Positive	Negative	Total
1	Composite foods / Ready-to-eat and ready-to-reheat	a: Ready-to-eat	10	10	20	10	10	20	10	10	20	10	10	20
		b:Ready-to-reheat	10	10	20	10	10	20	10	10	20	10	10	20
		c: Confectionaries, pastries and egg products	11	10	21	11	10	21	11	10	21	11	10	21
		Total	31	30	61	31	30	61	31	30	61	31	30	61
2	Meat Products	a: Raw products (frozen or fresh)	12	9	21	12	9	21	12	9	21	12	9	21
		b: Meat based products ready to reheat	11	10	21	11	10	21	11	10	21	11	10	21
		c: Raw and cooked delicatessen	8	12	20	8	12	20	8	12	20	8	12	20
		Total	31	31	62	31	31	62	31	31	62	31	31	62
3	Milk & Dairy products	a: Raw milk cheeses	9	16	25	9	16	25	9	16	25	9	16	25
		b: Other products based on raw milk	13	8	21	13	8	21	13	8	21	13	8	21
		c: Heat treated products	16	8	24	15	9	24	16	8	24	16	8	24
		Total	38	32	70	37	33	70	38	32	70	38	32	70
4	Vegetables	a: Raw products (fresh and frozen)	15	17	32	15	17	32	15	17	32	15	17	32
		b: Pre-cooked vegetables, vegetables under modified atmosphere	15	20	35	15	20	35	15	20	35	15	20	35
		c: Ready to eat	10	11	21	10	11	21	10	11	21	10	11	21
		Total	40	48	88	40	48	88	40	48	88	40	48	88
5	Seafood and fishery products	a: Raw products (fresh and frozen)	16	11	27	16	11	27	16	11	27	16	11	27
		b: Cured & smoked	14	11	25	14	11	25	14	11	25	14	11	25
		c: Ready to eat, Ready to reheat	23	9	32	23	9	32	23	9	32	23	9	32
		Total	53	31	84	53	31	84	53	31	84	53	31	84
6	Environmental Samples	a: Dusts and Residues	10	10	20	10	10	20	10	10	20	10	10	20
		b:Cleaning and Process Waters	10	11	21	10	11	21	10	11	21	10	11	21
		c: Surface samples	10	10	20	10	10	20	10	10	20	10	10	20
		Total	30	31	61	30	31	61	30	31	61	30	31	61
All categories			**223**	**203**	**426**	**222**	**204**	**426**	**223**	**203**	**426**	**223**	**203**	**426**

Table 2 – Distribution per target analytes

Category	*Listeria spp* (A)		*Listeria spp* + *Listeria monocytogenes* (B)		Total (A+B)		*Listeria monocytogenes* (C)		Total positive samples
	Number of samples	%	Number of samples	%	Number of samples	%	Number of samples	%	
1	6	19.4%	9	29.0%	15	48.4%	16	51.6%	31
2	13	41.9%	7	22.6%	20	64.5%	11	35.5%	31
3	10	26.3%	9	23.7%	19	50.0%	19	50.0%	38
4	8	20.0%	13	32.5%	21	52.5%	19	47.5%	40
5	7	13.2%	7	13.2%	14	26.4%	39	73.6%	53
6	18	60.0%	7	23.3%	25	83.3%	5	16.7%	30
Total	**62**	**27.8%**	**52**	**23.3%**	**114**	**51.1%**	**109**	**48.9%**	**223**

According to the AFNOR technical rules, the number of samples contaminated with *Listeria* spp. and *Listeria monocytogenes* per category has to be comprised between 15 and 25 samples; it was the case for all the categories, except for seafood and fishery products category.

3.1.2 Artificial contamination of samples

Artificial contaminations were done using the seeding protocol (storage for 48 h at 2 - 8°C). The same strain was not used to inoculate more than 6 samples.

The artificial contaminations are presented in **Appendix 4**.

The repartition of the positive samples per contamination level (natural and artificial) is provided in Table 3.

Table 3 - Repartition of the positive samples per contamination level (natural and artificial)

Thermo-cycler	Kit		Naturally contaminated	Artificially contaminated		Total
				< 3 CFU/ sample	3 < x ≤ 10 CFU/ sample	
CFX96	BAC*Gene Listeria* Multiplex	Number of samples	116	102	5	223
		%	52.0 %	43.9 %	4.0 %	100.0 %
	BAC*Gene Listeria* spp.	Number of samples	116	102	5	223
		%	52.0 %	45.7 %	2.2 %	100.0 %
AriaMx	BAC*Gene Listeria* Multiplex	Number of samples	115	102	5	222
		%	51.8 %	45.9 %	2.3 %	100.0 %
	BAC*Gene Listeria* spp.	Number of samples	116	102	5	223
		%	52.0 %	45.7 %	2.2 %	100.0 %

120 samples were artificially contaminated, using 46 different strains. Taking into account the 2 thermocyclers and the 2 kits tested, 107 gave a positive result. 102 samples were inoculated at level ≤ 3 CFU and 5 samples were inoculated between 3.4 and 4.8 CFU.

52 % of the samples were naturally contaminated.

3.1.3 Confirmation protocols

During the validation study (sensitivity and RLOD), all the samples (positive and negative) were confirmed by streaking 10 µl of Actero™ *Listeria* Enrichment media onto O&A and Palcam plates.

The samples which gave a negative PCR test and a negative confirmation test using the protocol of the alternative method, were confirmed as negative using the ISO 11290-1/A1 protocol: a subculture from Actero™ *Listeria* Enrichment media was run in Fraser broth (0.1 ml + 10 ml) for 48 h at 37°C before streaking onto O&A and Palcam plates.

3.1.4 Test results

Raw data per category is given in **Appendix 5**. The results are given in the following table.

Table 4 – Summary of results obtained with the reference and the alternative method

Category		Kit	Thermocyler	PA	NA	PD	ND	PPNA	PPND	Total
1	Composite foods / Ready-to-eat and ready-to-reheat	BAC*Gene Listeria* Multiplex	CFX96	20	30	5	6	0	0	61
			AriaMx	20	29	5	6	1	0	61
		BAC*Gene Listeria* spp.	CFX96	20	28	5	6	2	0	61
			AriaMx	20	28	5	6	2	0	61
2	Meat Products	BAC*Gene Listeria* Multiplex	CFX96	14	31	12	5	0	0	62
			AriaMx	14	29	12	5	2	0	62
		BAC*Gene Listeria* spp.	CFX96	14	31	12	5	0	0	62
			AriaMx	14	31	12	5	0	0	62
3	Milk & Dairy products	BAC*Gene Listeria* Multiplex	CFX96	26	30	8	4	2	0	70
			AriaMx	26	32	7	3	1	1	70
		BAC*Gene Listeria* spp.	CFX96	26	32	8	3	0	1	70
			AriaMx	26	31	8	4	1	0	70
4	Vegetables	BAC*Gene Listeria* Multiplex	CFX96	24	46	9	7	2	0	88
			AriaMx	24	46	9	7	2	0	88
		BAC*Gene Listeria* spp.	CFX96	24	47	9	7	1	0	88
			AriaMx	24	47	9	7	1	0	88
5	Seafood and fishery products	BAC*Gene Listeria* Multiplex	CFX96	35	29	9	7	2	2	84
			AriaMx	35	29	9	8	2	1	84
		BAC*Gene Listeria* spp.	CFX96	35	31	9	7	0	2	84
			AriaMx	35	31	9	8	0	1	84
6	Environmental Samples	BAC*Gene Listeria* Multiplex	CFX96	18	29	7	5	2	0	61
			AriaMx	18	29	7	5	2	0	61
		BAC*Gene Listeria* spp.	CFX96	18	30	7	5	1	0	61
			AriaMx	18	30	7	5	1	0	61
All categories		**BAC*Gene Listeria* Multiplex**	**CFX96**	**137**	**195**	**50**	**34**	**8**	**2**	**426**
			Aria Mx	**137**	**194**	**49**	**34**	**10**	**2**	**426**
		BAC*Gene Listeria* spp.	**CFX96**	**137**	**199**	**50**	**33**	**4**	**3**	**426**
			Aria Mx	**137**	**198**	**50**	**35**	**5**	**1**	**426**

PP: positive presumptive non confirmed samples

PD = positive deviation (R-/A+) ND = negative deviation (R+/A-)

PA = positive agreeement (R+/A+) NA = negative agreement (R-/A-)

3.1.5 Calculation of the relative trueness (RT), the relative sensitivity (SE) and the false positive ratio (FPR)

The calculations are presented in Table 5.

- 5.1: CFX96 - BAC*Gene Listeria* Multiplex (target: *Listeria* spp.*)*
- 5.2: AriaMx - BAC*Gene Listeria* Multiplex (target: *Listeria* spp.*)*
- 5.3: CFX96 - BAC*Gene Listeria* spp.
- 5.4: AriaMx - BAC*Gene Listeria* spp.

Table 5 – Calculation of the relative trueness (RT), the relative sensitivity (SE) and the false positive ratio (FPR)

Table 5.1: CFX96 - BAC*Gene Listeria* Multiplex (target: *Listeria spp.)*

Category		Type		PA	NA	PD	ND	PPND	PPNA	SE_{alt} %	SE_{ref} %	RT %	FPR %
1	Composite foods / Ready-to-eat and ready-to-reheat	a	Ready-to-eat	3	10	2	5	0	0	50.0	80.0	65.0	0
		b	Ready-to-reheat	9	10	1	0	0	0	100.0	90.0	95.0	0.0
		c	Confectionaries, pastries and egg products	8	10	2	1	0	0	90.9	81.8	85.7	0.0
		Total		20	30	5	6	0	0	80.6	83.9	82.0	0.0
2	Meat Products	a	Raw products (frozen or fresh)	6	9	4	2	0	0	83.3	66.7	71.4	0.0
		b	Meat based products ready to reheat	6	10	4	1	0	0	90.9	63.6	76.2	0.0
		c	Raw and cooked delicatessen	2	12	4	2	0	0	75.0	50.0	70.0	0.0
		Total		14	31	12	5	0	0	83.9	61.3	72.6	0.0
3	Milk & Dairy products	a	Raw milk cheeses	4	15	3	2	0	1	77.8	66.7	80.0	6.7
		b	Other products based on raw milk	12	8	0	1	0	0	92.3	100.0	95.2	0.0
		c	Heat treated products	10	7	5	1	0	1	93.8	68.8	75.0	14.3
		Total		26	30	8	4	0	2	89.5	78.9	82.9	6.3
4	Vegetables	a	Raw products (fresh and frozen)	10	17	3	2	0	0	86.7	80.0	84.4	0.0
		b	Pre-cooked vegetables, vegetables under modified atmosphere	7	18	5	3	0	2	80.0	66.7	77.1	11.1
		c	Ready to eat	7	11	1	2	0	0	80.0	90.0	85.7	0.0
		Total		24	46	9	7	0	2	82.5	77.5	81.8	4.2
5	Seafood and fishery products	a	Raw products (fresh and frozen)	7	9	5	4	0	2	75.0	68.8	66.7	22.2
		b	Cured & smoked	10	11	0	3	1	0	71.4	100.0	84.0	9.1
		c	Ready to eat, Ready to reheat	18	9	4	0	1	0	95.7	82.6	84.4	11.1
		Total		35	29	9	7	2	2	83.0	83.0	78.6	12.9
6	Environmental Samples	a	Dusts and Residues	7	10	3	0	0	0	100.0	70.0	85.0	0.0
		b	Cleaning and Process Waters	6	9	3	1	0	2	90.0	70.0	81.0	22.2
		c	Surface samples	5	10	1	4	0	0	60.0	90.0	75.0	0.0
		Total		18	29	7	5	0	2	83.3	76.7	80.3	6.5
All categories				**137**	**195**	**50**	**34**	**2**	**8**	**83.9**	**77.6**	**79.8**	**4.9**

Table 5.2: AriaMx - BAC*Gene Listeria* Multiplex (target: *Listeria spp.)*

Category		Type		PA	NA	PD	ND	PPND	PPNA	SE alt %	SE ref %	RT %	FPR %
1	Composite foods / Ready-to-eat and ready-to-reheat	a	Ready-to-eat	3	10	2	5	0	0	50.0	80.0	65.0	0
		b	Ready-to-reheat	9	9	1	0	0	1	100.0	90.0	95.0	11.1
		c	Confectionaries, pastries and egg products	8	10	2	1	0	0	90.9	81.8	85.7	0.0
		Total		20	29	5	6	0	1	80,6	83.9	82.0	3.3
2	Meat Products	a	Raw products (frozen or fresh)	6	9	4	2	0	0	83.3	66.7	71.4	0.0
		b	Meat based products ready to reheat	6	8	4	1	0	2	90.9	63.6	76.2	25.0
		c	Raw and cooked delicatessen	2	12	4	2	0	0	75.0	50.0	70.0	0.0
		Total		14	29	12	5	0	2	83,9	61.3	72.6	6.5
3	Milk & Dairy products	a	Raw milk cheeses	4	16	3	2	0	0	77.8	66.7	80.0	0.0
		b	Other products based on raw milk	12	7	0	1	0	1	92.3	100.0	95.2	14.3
		c	Heat treated products	10	9	4	0	1	0	93.3	73.3	79.2	11.1
		Total		26	32	7	3	1	1	89,2	81.1	84.3	6.1
4	Vegetables	a	Raw products (fresh and frozen)	10	17	3	2	0	0	86.7	80.0	84.4	0.0
		b	Pre-cooked vegetables, vegetables under modified atmosphere	7	18	5	3	0	2	80.0	66.7	77.1	11.1
		c	Ready to eat	7	11	1	2	0	0	80.0	90.0	85.7	0.0
		Total		24	46	9	7	0	2	82,5	77.5	81.8	4.2
5	Seafood and fishery products	a	Raw products (fresh and frozen)	7	9	5	4	0	2	75.0	68.8	66.7	22.2
		b	Cured & smoked	10	11	0	4	0	0	71.4	100.0	84.0	0.0
		c	Ready to eat, Ready to reheat	18	9	4	0	1	0	95.7	82.6	84.4	11.1
		Total		35	29	9	8	1	2	83.0	83.0	78.6	9.7
6	Environmental Samples	a	Dusts and Residues	7	9	3	0	0	1	100.0	70.0	85.0	11.1
		b	Cleaning and Process Waters	6	10	3	1	0	1	90.0	70.0	81.0	10.0
		c	Surface samples	5	10	1	4	0	0	60.0	90.0	75.0	0.0
		Total		18	29	7	5	0	2	83.3	76.7	80.3	6.5
All categories				**137**	**194**	**49**	**34**	**2**	**10**	**83.8**	**77.9**	**80.0**	**5.9**

Table 5.3: CFX96 - BAC*Gene Listeria* spp.

Category		Type		PA	NA	PD	ND	PPND	PPNA	SE alt %	SE ref %	RT %	FPR %
1	Composite foods / Ready-to-eat and ready-to-reheat	a	Ready-to-eat	3	10	2	5	0	0	50.0	80.0	65.0	0
		b	Ready-to-reheat	9	8	1	0	0	2	100.0	90.0	95.0	25.0
		c	Confectionaries, pastries and egg products	8	10	2	1	0	0	90.9	81.8	85.7	0.0
		Total		20	28	5	6	0	2	80.6	83.9	82.0	6.7
2	Meat Products	a	Raw products (frozen or fresh)	6	9	4	2	0	0	83.3	66.7	71.4	0.0
		b	Meat based products ready to reheat	6	10	4	1	0	0	90.9	63.6	76.2	0.0
		c	Raw and cooked delicatessen	2	12	4	2	0	0	75.0	50.0	70.0	0.0
		Total		14	31	12	5	0	0	83.9	61.3	72.6	0.0
3	Milk & Dairy products	a	Raw milk cheeses	4	16	3	2	0	0	77.8	66.7	80.0	0.0
		b	Other products based on raw milk	12	8	0	1	0	0	92.3	100.0	95.2	0.0
		c	Heat treated products	10	8	5	0	1	0	93.8	68.8	75.0	12.5
		Total		26	32	8	3	1	0	89.5	78.9	82.9	3.1
4	Vegetables	a	Raw products (fresh and frozen)	10	17	3	2	0	0	86.7	80.0	84.4	0.0
		b	Pre-cooked vegetables, vegetables under modified atmosphere	7	19	5	3	0	1	80.0	66.7	77.1	5.3
		c	Ready to eat	7	11	1	2	0	0	80.0	90.0	85.7	0.0
		Total		24	47	9	7	0	1	82.5	77.5	81.8	2.1
5	Seafood and fishery products	a	Raw products (fresh and frozen)	7	11	5	4	0	0	75.0	68.8	66.7	0.0
		b	Cured & smoked	10	11	0	3	1	0	71.4	100.0	84.0	9.1
		c	Ready to eat, Ready to reheat	18	9	4	0	1	0	95.7	82.6	84.4	11.1
		Total		35	31	9	7	2	0	83.0	83.0	78.6	6.5
6	Environmental Samples	a	Dusts and Residues	7	10	3	0	0	0	100.0	70.0	85.0	0.0
		b	Cleaning and Process Waters	6	10	3	1	0	1	90.0	70.0	81.0	10.0
		c	Surface samples	5	10	1	4	0	0	60.0	90.0	75.0	0.0
		Total		18	30	7	5	0	1	83.3	76.7	80.3	3.2
All categories				**137**	**199**	**50**	**33**	**3**	**4**	**83.9**	**77.6**	**79.8**	**3.4**

Table 5.4: AriaMx - BAC*Gene Listeria* spp. (target: *Listeria spp.)*

Category		Type		PA	NA	PD	ND	PPND	PPNA	SE $_{alt}$ %	SE $_{ref}$ %	RT %	FPR %
1	Composite foods / Ready-to-eat and ready-to-reheat	a	Ready-to-eat	3	10	2	5	0	0	50.0	80.0	65.0	0
		b	Ready-to-reheat	9	8	1	0	0	2	100.0	90.0	95.0	25.0
		c	Confectionaries, pastries and egg products	8	10	2	1	0	0	90.9	81.8	85.7	0.0
		Total		20	28	5	6	0	2	80.6	83.9	82.0	6.7
2	Meat Products	a	Raw products (frozen or fresh)	6	9	4	2	0	0	83.3	66.7	71.4	0.0
		b	Meat based products ready to reheat	6	10	4	1	0	0	90.9	63.6	76.2	0.0
		c	Raw and cooked delicatessen	2	12	4	2	0	0	75.0	50.0	70.0	0.0
		Total		14	31	12	5	0	0	83.9	61.3	72.6	0.0
3	Milk & Dairy products	a	Raw milk cheeses	4	16	3	2	0	0	77.8	66.7	80.0	0.0
		b	Other products based on raw milk	12	7	0	1	0	1	92.3	100.0	95.2	14.3
		c	Heat treated products	10	8	5	1	0	0	93.8	68.8	75.0	0.0
		Total		26	31	8	4	0	1	89.5	78.9	82.9	3.1
4	Vegetables	a	Raw products (fresh and frozen)	10	17	3	2	0	0	86.7	80.0	84.4	0.0
		b	Pre-cooked vegetables, vegetables under modified atmosphere	7	19	5	3	0	1	80.0	66.7	77.1	5.3
		c	Ready to eat	7	11	1	2	0	0	80.0	90.0	85.7	0.0
		Total		24	47	9	7	0	1	82.5	77.5	81.8	2.1
5	Seafood and fishery products	a	Raw products (fresh and frozen)	7	11	5	4	0	0	75.0	68.8	66.7	0.0
		b	Cured & smoked	10	11	0	4	0	0	71.4	100.0	84.0	0.0
		c	Ready to eat, Ready to reheat	18	9	4	0	1	0	95.7	82.6	84.4	11.1
		Total		35	31	9	8	1	0	83.0	83.0	78.6	3.2
6	Environmental Samples	a	Dusts and Residues	7	10	3	0	0	0	100.0	70.0	85.0	0.0
		b	Cleaning and Process Waters	6	10	3	1	0	1	90.0	70.0	81.0	10.0
		c	Surface samples	5	10	1	4	0	0	60.0	90.0	75.0	0.0
		Total		18	30	7	5	0	1	83.3	76.7	80.3	3.2
All categories				**137**	**198**	**50**	**35**	**1**	**5**	**83.9**	**77.6**	**79.8**	**3.0**

The following results were observed:

Table 6 - Summary of results

		BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp	
		CFX96	AriaMx	CFX96	AriaMx
Sensitivity for the alternative method	$SE_{alt} = \frac{(PA+PD)}{(PA+ND+PD)} \times 100\%$	83.9 %	83.8 %	83.9 %	83.9 %
Sensitivity for the reference method	$SE_{ref} = \frac{(PA+ND)}{(PA+ND+PD)} \times 100\%$	77.6 %	77.9 %	77.6 %	77.6 %
Relative trueness	$RT = \frac{(PA+NA)}{N} \times 100\%$	79.8 %	80. 0%	79.8 %	79.8 %
False positive ratio for the alternative method* **FP = PPNA + PPND**	$FPR = \frac{(FP)}{NA} \times 100\%$	4.9 %	5.9 %	3.4 %	3.0 %

** With ND = ND + PPND NA = NA + PPNA*

Only a fraction of the FP results were reproduced after storage for 72h at 2-8°C. Please see the table below for FP results before and after storage:

	BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.	
Number of FP samples	CFX96	AriaMx	CFX96	AriaMx
Before enrichment storage	10	12	7	6
After enrichment storage	2	2	3	3

3.1.6 Analysis of discordants

The negative deviations are given in Table 7 and the positive deviations in Table 8.

Negative deviations

36 negative deviations were observed for both kits tested and on both thermocyclers used for running the PCR. None of these samples were confirmed positive using the tests of the alternative method and the tests of the reference method (subculture in Fraser broth and streaking onto O&A and Palcam plates). These results were probably due to the unpaired data study design.

13 samples were artificially contaminated and 23 naturally contaminated.

Positive deviations

50 positive deviations were observed using the CFX96 (both kits) and for AriaMx with the *Listeria* spp. kit. For the BAC*Gene Listeria* Multiplex 49 positive deviations were obtained on the AriaMx. Sample 4330 gave a negative result (NA) in this case. Note that 3 PCR replicates were run for this sample and one positive result was obtained (Ct = 37.27). The positive deviations concern 21 artificially contaminated samples and 29 naturally contaminated samples.

Table 7 - Negative deviations

N° Sample	Product	Artificial contaminations		Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp													Category	Type
				Actero™ Listeria Enrichment Media for 18H at 37°C														
				BAC*Gene* *Listeria* Multiplex		BAC*Gene* *Listeria* spp.		All confirmatory tests	BAC*Gene* *Listeria* Multiplex				BAC*Gene* *Listeria* spp.				Subculture in Fraser (48h at 37°C)		
		Strain	Inoculation level/ sample	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)		Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
3989	Ready to eat surimi	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	1	a
4112	Sandwich	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	1	a
4288	Guacamole	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	1	a
4293	Salad	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	1	a
5023	**Ham and cheese sandwich**	*L.monocytogenes* Ad273	0,6	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	1	a
4192	**Omelette**	*L.monocytogenes* Ad1195	0,8	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	1	c
3722	Chicken meat	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	2	a
4109	Poultry meat	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	2	a
4200	**Meat based products ready to reheat**	*L.monocytogenes* Ad1206	2,4	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	2	b
4544	**Smoked bacon**	*L.welshimeri* Ad1204 / *L.monocytogenes* Ad267	2,0 / 1,8	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	2	c
4684	Ham	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	2	c
3342	**Raw milk cheese**	*L.monocytogenes* Ad664	0,4	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	3	a
4526	**Raw goat's milk cheese**	*L.monocytogenes* Ad613	1	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	3	a
4537	**Fermented milk**	*L.monocytogenes* Ad665	0,6	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	3	b
4309	**Pasteurised milk cheese**	*L.innocua* Ad657	1,4	-	+(36.55)/-/ +(38.82)	+(39.18)/ +(39.70)/ +(39.23)	-	-	-	ND	-	PPND	-	PPND	-	ND	-	3	c
3743	Corn	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	4	a
6716	Zucchini	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	4	a
4299	Tajine	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	4	b
4680	Pre-fried onions	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	4	b
6722	Vegetables RTRH preparation	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	4	b
4203	**Seasoned sliced carots**	*L.welshimeri* Ad1668	0,6	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	4	c
4740	**Deli salad**	*L.monocytogenes* Ad1719	1,8	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	4	c
3000	Scallops	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	5	a
3729	Fish filet	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	5	a
4130	Fish filet	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	5	a
5801	White piece of fish	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	5	a
3728	Smoked salmon	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	5	b
4963	Smoked trout	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	5	b
4964	Smoked salmon	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	5	b
4966	Smoked salmon	/	/	+(39.69)/-/ +(39.16)	-	+(39.85)/-/ +(38.73)	-	-	-	PPND	-	ND	-	PPND	-	ND	-	5	b
3988	RTR fish	/	/	+(39.50)/ +(37.55)/ +(37.71)	+(37.80)/-/ +38.89	+(38.66)/-/-	+(36.27)/-/-	-	-	PPND	-	PPND	-	PPND	-	PPND	-	5	c
6771	**Rinsing water**	*L.innocua* Ad1253	2,4	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	6	b
3358	**Wipe (fish production)**	*L.monocytogenes* Ad1272	2,8	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	6	c
3361	**Wipe (fish production)**	*L.innocua* Ad1266	0,5	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	6	c
5442	Wipe (Fish industry)	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	6	c
5445	Wipe (Fish industry)	/	/	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	-	6	c
								Total	**36**		**36**		**36**		**36**			

Table 8 - Positive deviations

N° Sample	Product	Artificial contaminations		Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp Actero™ Listeria Enrichment Media for 18H at 37°C					BAC*Gene* *Listeria* Multiplex				BAC*Gene* *Listeria* spp.				Category	Type
		Strain	Inoculation level /sample	BAC*Gene* *Listeria* Multiplex CFX96 PCR result (Ct)	BAC*Gene* *Listeria* Multiplex AriaMx PCR result (Ct)	BAC*Gene* *Listeria* spp. CFX96 PCR result (Ct)	BAC*Gene* *Listeria* spp. AriaMx PCR result (Ct)	All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h		
3985	Delicatessen	/	/	+(33.75)	+(32.58)	+(34.11)	+(32.61)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	1	a
4121	Sandwich	/	/	+(35.49)	+(34.65)	+(34.37)	+(32.84)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	1	a
5033	**Ham and cheese pizza**	*L.welshimeri* Ad1175/*L.monocytogenes* Ad279	0,2/1,0	+(27.11)	+(28.60)	+(30.37)	+(28.63)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	1	b
4748	**Pastry**	*L.monocytogenes* JL2862/*L.innocua* Ad644	1,2/0,8	+(22.47)	+(21.12)	+(22.78)	+(22.01)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	1	c
4750	**Pastry**	*L.monocytogenes* JL2862	1,2	+(28.46)	+(26.83)	+(29.50)	+(28.05)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	1	c
3007	Meat product	/	/	+(37.44)	+(35.39)	+(38.27)	+(34.51)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	2	a
3011	Meat product	/	/	+(29.01)	+(27.26)	+(29.24)	+(26.58)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	2	a
3735	Ground beef	/	/	+(27.80)	+(26.53)	+(31.50)	+(26.75)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	2	a
6841	Raw meat (veal)	/	/	+(22.35)	+(23.33)	+(26.09)	+(24.73)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	2	a
3737	Seasoned pork meat	/	/	+(28.28)	+(27.21)	+(29.02)	+(27.05)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	2	b
4124	Meat based products ready to reheat	/	/	+(33.42)	+(31.01)	+(31.98)	+(30.46)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	2	b
4197	**Meat based products ready to reheat**	*L.innocua* 17765	0,6	+(24.72)	+(24.69)	+(26.61)	+(25.88)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	2	b
4198	**Meat based products ready to reheat**	*L.welshimeri* Ad1221	4,8	+(26.00)	+(24.74)	+(27.19)	+(25.55)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	2	b
3008	Merguez	/	/	+(33.44)	+(31.92)	+(34.04)	+(31.17)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	2	c
3725	Delicatessen	/	/	+(29.72)	+(28.64)	+(30.39)	+(28.77)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	2	c
4541	**Salami**	*L.monocytogenes* Ad267	1,8	+(32.31)	+(29.84)	+(39.18)	+(31.37)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	2	c
4545	**Cured ham**	*L.welshimeri* Ad1204 / *L.monocytogenes* Ad267	2,0 / 1,8	+(31.24)	+(29.21)	+(24.33)	+(29.80)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	2	c
3340	**Raw milk cheese**	*L.monocytogenes* Ad664	0,4	+(34.26)	+(32.59)	+(33.86)	+(31.71)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	a
3990	Raw milk cheese	/	/	+(37.10)	+(36.85)	+(39.88)	+(35.90)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	a
4529	**Raw milk cheese**	*L.monocytogenes* Ad613 / *L.welshimeri* Ad1667	1,0/1,4	+(31.25)	+(29.27)	+(31.69)	+(30.07)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	a
3006	Butter	/	/	+(30.18)	+(28.29)	+(30.00)	+(27.46)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	c
3349	**Pasteurised milk cheese**	*L.innocua* Ad657	0,2	+(38.15)	+(36.20)	+(39.10)	+(35.84)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	c
4330	Pasteurised milk cheese	/	/	+(38.77)	-/-/+(37.27)	+(40.15)	+(39.00)	+	+	**PD**	-	**NA**	**+**	**PD**	**+**	**PD**	3	c
5960	**Pasteurised fermented milk**	*L.monocytogenes* Ad610	3,4	+(23.13)	+(21.03)	+(25.07)	+(24.12)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	c
5961	**Pasteurised fermented milk**	*L.monocytogenes* Ad611	1,6	+(22.00)	+(20.00)	+(21.91)	+(21.18)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	c
3003	Carrots	/	/	+(27.26)	+(25.73)	+(27.28)	+(24.73)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	4	a
4676	Broccoli	/	/	+(22.96)	+(21.26)	+(23.19)	+(21.94)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	4	a
6717	Parsley	/	/	+(37.43)	+(34.41)	+(36.51)	+(35.41)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	4	a
3740	Pre-cooked vegetables	/	/	+(39.16)	+(37.97)	+(40.61)	+(40.62)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	4	b
3741	Pre-cooked mushrooms	/	/	+(31.13)	+(29.89)	+(31.91)	+(30.11)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	4	b
6615	Vegetables preparation	/	/	+(35.54)	+(33.68)	+(36.99)	+(33.07)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	4	b
6719	Vegetables RTRH preparation	/	/	+(30.91)	+(27.90)	+(30.47)	+(29.16)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	4	b
6720	Vegetables RTRH preparation	/	/	+(39.78)	+(35.22)	+(39.42)	+(35.84)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	4	b
4202	**Seasoned grated carrots**	*L.monocytogenes* Ad1719	1,2	+(31.38)	+(30.08)	+(32.30)	+(31.31)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	4	c
4110	Fish product	/	/	+(39.78)	+(37.33)	+(38.00)	+(36.83)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	5	a
4685	Fish fillet	/	/	+(28.11)	+(26.36)	+(27.90)	+(27.00)	+	+	**PD**	+	**PD**	**+**	**PD**	**+**	**PD**	5	a
4969	Scalops	/	/	+(34.73)	+(33.29)	+(35.68)	+(33.75)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	5	a
5790	Salmon	/	/	+(23.88)	+(21.25)	+(25.10)	+(24.01)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	5	a
5964	**Raw peeled shrimp**	*L.monocytogenes* Ad299	0,6	+(22.50)	+(20.34)	+(23.82)	+(22.60)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	5	a

N° Sample	Product	Artificial contaminations		Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp Actero™ Listeria Enrichment Media for 18H at 37°C												Category	Type
				BAC*Gene* *Listeria* Multiplex		BAC*Gene* *Listeria* spp.		All confirmatory tests	BAC*Gene* *Listeria* Multiplex				BAC*Gene* *Listeria* spp.				
		Strain	Inoculation level /sample	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)		Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	
3732	RTR Fish	/	/	+(29.35)	+(27.94)	+(30.11)	+(27.91	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	5	c
4292	RTR fish product	/	/	+(31.99)	+(30.31)	+(33.21)	+(32.29)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	5	c
4315	**Salmon rillettes**	*L.monocytogenes* Ad888	2,6	+(19.27)	+(17.79)	+(19.95)	+(20.62)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	5	c
5969	**Surimi**	*L.monocytogenes* Ad2522	3	+(16.14)	+(14.67)	+(17.69)	+(16.73)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	5	c
3353	**Dust (fish)**	*L.seeligeri* Ad1267	0,4	+(37.69)	+(36.35)	+(39.83)	+(37.00)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	a
4326	**Waste (pork)**	*L.innocua* Ad1251	1,6	+(34.40)	+(33.30)	+(36.73)	+(34.66)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	a
6762	**Waste (vegetables)**	*L.welshimeri* Ad1668	2	+(38.42)	+(36.33)	+(39.61)	+(38.45)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	a
3354	**Process water (Pork and fish production)**	*L.monocytogenes* Ad548	0,4	+(28.24)	+(26.51)	+(28.01)	+(25.82)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	b
6685	Process water (fish industry)	/	/	+(20.53)	+(18.53)	+(20.22)	+(19.61)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	b
6773	**Rinsing water**	*L.welshimeri* Ad1668	2	+(26.15)	+(23.42)	+(26.13)	+(24.97)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	b
5452	Wipe after cleaning (Fish industry)	/	/	+(31.18)	+(29.71)	+(31.61)	+(30.51)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	c
								Total	**50**		**49**		**50**		**50**			

The analyses of discordant results according to the EN ISO 16140-2:2016 is given in the Table 9.

- Table 9.1: CFX96 - BAC*Gene Listeria* Multiplex
- Table 9.2: AriaMx - BAC*Gene Listeria* Multiplex
- Table 9.3: CFX96 - BAC*Gene Listeria* spp.
- Table 9.4: AriaMx - BAC*Gene Listeria* spp.

Table 9 - Analyses of discordant results

Table 9.1: CFX96 - BAC*Gene Listeria* Multiplex

Category		Type	PD	ND	PPND	(ND+PPND)-PD	AL
1	Composite foods / Ready-to-eat and ready-to-reheat	a	2	5	0	3	
		b	1	0	0	-1	
		c	2	1	0	-1	
		Total	5	6	0	1	3
2	Meat Products	a	4	2	0	-2	
		b	4	1	0	-3	
		c	4	2	0	-2	
		Total	12	5	0	-7	3
3	Milk & Dairy products	a	3	2	0	-1	
		b	0	1	0	1	
		c	5	1	0	-4	
		Total	8	4	0	-4	3
4	Vegetables	a	3	2	0	-1	
		b	5	3	0	-2	
		c	1	2	0	1	
		Total	9	7	0	-2	3
5	Seafood and fishery products	a	5	4	0	-1	
		b	0	3	1	4	
		c	4	0	1	-3	
		Total	9	7	2	0	3
6	Environmental Samples	a	3	0	0	-3	
		b	3	1	0	-2	
		c	1	4	0	3	
		Total	7	5	0	-2	3
All categories			**50**	**34**	**2**	**-14**	**6**

Table 9.2: AriaMx - BAC*Gene Listeria* Multiplex

Category		Type	PD	ND	PPND	(ND+PPND)-PD	AL
1	Composite foods / Ready-to-eat and ready-to-reheat	a	2	5	0	3	
		b	1	0	0	-1	
		c	2	1	0	-1	
		Total	5	6	0	1	3
2	Meat Products	a	4	2	0	-2	
		b	4	1	0	-3	
		c	4	2	0	-2	
		Total	12	5	0	-7	3
3	Milk & Dairy products	a	3	2	0	-1	
		b	0	1	0	1	
		c	4	0	1	-3	
		Total	7	3	1	-3	3
4	Vegetables	a	3	2	0	-1	
		b	5	3	0	-2	
		c	1	2	0	1	
		Total	9	7	0	-2	3
5	Seafood and fishery products	a	5	4	0	-1	
		b	0	4	0	4	
		c	4	0	1	-3	
		Total	9	8	1	0	3
6	Environmental Samples	a	3	0	0	-3	
		b	3	1	0	-2	
		c	1	4	0	3	
		Total	7	5	0	-2	3
All categories			**49**	**34**	**2**	**-13**	**6**

Table 9.3: CFX96 - BAC*Gene Listeria* spp.

Category		Type	PD	ND	PPND	(ND+PPND)-PD	AL
1	Composite foods / Ready-to-eat and ready-to-reheat	a	2	5	0	3	
		b	1	0	0	-1	
		c	2	1	0	-1	
		Total	5	6	0	1	3
2	Meat Products	a	4	2	0	-2	
		b	4	1	0	-3	
		c	4	2	0	-2	
		Total	12	5	0	-7	3
3	Milk & Dairy products	a	3	2	0	-1	
		b	0	1	0	1	
		c	5	0	1	-4	
		Total	8	3	1	-4	3
4	Vegetables	a	3	2	0	-1	
		b	5	3	0	-2	
		c	1	2	0	1	
		Total	9	7	0	-2	3
5	Seafood and fishery products	a	5	4	0	-1	
		b	0	3	1	4	
		c	4	0	1	-3	
		Total	9	7	2	0	3
6	Environmental Samples	a	3	0	0	-3	
		b	3	1	0	-2	
		c	1	4	0	3	
		Total	7	5	0	-2	3
All categories			**50**	**33**	**3**	**-14**	**6**

Table 9.4: AriaMx - BAC*Gene Listeria* spp.

Category		Type	PD	ND	PPND	(ND+PPND)-PD	AL
1	Composite foods / Ready-to-eat and ready-to-reheat	a	2	5	0	3	
		b	1	0	0	-1	
		c	2	1	0	-1	
		Total	5	6	0	1	3
2	Meat Products	a	4	2	0	-2	
		b	4	1	0	-3	
		c	4	2	0	-2	
		Total	12	5	0	-7	3
3	Milk & Dairy products	a	3	2	0	-1	
		b	0	1	0	1	
		c	5	1	0	-4	
		Total	8	4	0	-4	3
4	Vegetables	a	3	2	0	-1	
		b	5	3	0	-2	
		c	1	2	0	1	
		Total	9	7	0	-2	3
5	Seafood and fishery products	a	5	4	0	-1	
		b	0	4	0	4	
		c	4	0	1	-3	
		Total	9	8	1	0	3
6	Environmental Samples	a	3	0	0	-3	
		b	3	1	0	-2	
		c	1	4	0	3	
		Total	7	5	0	-2	3
All categories			**50**	**35**	**1**	**-14**	**6**

The observed values for ND - PD are below the acceptability limit for each category and for all the categories for both thermocyclers and kits tested.

3.1.7 Enrichment broth storage at 2 - 8°C for 72 h

247 samples were tested again after storage of Actero™ *Listeria* Enrichment media at 2 - 8°C for 72 h. The following changes were observed (See Table 10).

Table 10 - Changes after storage for 72 h at 2 - 8°C

	CFX96: BAC*Gene Listeria* Multiplex			
Sample	Before storage	After storage 72h at at 2 - 8°C	Category	Type
4535	PA	**ND**	3	b
4964	**ND**	PA	5	b
5954	**NA**	**PD**	3	b

	CFX96: BAC*Gene Listeria* spp			
Sample	Before storage	After storage 72h at at 2 - 8°C	Category	Type
4535	PA	**ND**	3	b
4964	**ND**	PA	5	b
5954	**NA**	PD	3	b

	AriaMx: BAC*Gene Listeria* Multiplex			
Sample	Before storage	After storage 72h at 2 - 8°C	Category	Type
3740	**PD**	**NA**	4	b
4330	**NA**	PD	3	c
4535	PA	**ND**	3	b
4964	**ND**	PA	5	b
5954	**PPNA**	PD	3	b
6720	PD	**NA**	4	b

	AriaMx: BAC*Gene Listeria* spp			
Sample	Before storage	After storage 72h at 2 - 8°C	Category	Type
4535	PA	**ND**	3	b
4964	**ND**	PA	5	b
5954	**PPNA**	**PD**	3	b
6720	PD	**NA**	4	b

Taking into account the results observed after storage of Actero™ *Listeria* Enrichment media for 72 h at 2 - 8°C, the analysis of discordants become (See Table 11).

- Table 11.1: CFX96 - BAC*Gene Listeria* Multiplex
- Table 11.2: AriaMx - BAC*Gene Listeria* Multiplex
- Table 11.3: CFX96 - BAC*Gene Listeria* spp.
- Table 11.4: AriaMx - BAC*Gene Listeria* spp.

Table 11 - Analysis of discordants

Table 11.1: CFX96 - BAC*Gene Listeria* Multiplex

Category			Type	PD	ND	PPND	(ND+PPND)-PD	AL
1	Composite foods / Ready-to-eat and ready-to-reheat	a	Ready-to-eat	2	5	0	3	
		b	Ready-to-reheat	1	0	0	-1	
		c	Confectionaries, pastries and egg products	2	1	0	-1	
			Total	5	6	0	1	3
2	Meat Products	a	Raw products (frozen or fresh)	4	2	0	-2	
		b	Meat based products ready to reheat	4	1	0	-3	
		c	Raw and cooked delicatessen	4	1	1	-2	
			Total	12	4	1	-7	3
3	Milk & Dairy products	a	Raw milk cheeses	3	2	0	-1	
		b	Other products based on raw milk	1	1	1	1	
		c	Heat treated products	5	1	0	-4	
			Total	9	4	1	-4	3
4	Vegetables	a	Raw products (fresh and frozen)	3	2	0	-1	
		b	Pre-cooked vegetables, vegetables under modified atmosphere	5	3	0	-2	
		c	Ready to eat	1	2	0	1	
			Total	9	7	0	-2	3
5	Seafood and fishery products	a	Raw products (fresh and frozen)	5	3	1	-1	
		b	Cured & smoked	0	2	1	3	
		c	Ready to eat, Ready to reheat	4	1	0	-3	
			Total	9	6	2	-1	3
6	Environmental Samples	a	Dusts and Residues	3	0	0	-3	
		b	Cleaning and Process Waters	3	1	0	-2	
		c	Surface samples	1	4	0	3	
			Total	7	5	0	-2	3
All categories				**51**	**32**	**4**	**-15**	**6**

Table 11.2: AriaMx - BAC*Gene Listeria* Multiplex

Category			Type	PD	ND	PPND	(ND+PPND)-PD	AL
1	Composite foods / Ready-to-eat and ready-to-reheat	a	Ready-to-eat	2	5	0	3	
		b	Ready-to-reheat	1	0	0	-1	
		c	Confectionaries, pastries and egg products	2	1	0	-1	
			Total	5	6	0	1	3
2	Meat Products	a	Raw products (frozen or fresh)	4	2	0	-2	
		b	Meat based products ready to reheat	4	0	1	-3	
		c	Raw and cooked delicatessen	4	1	1	-2	
			Total	12	3	2	-7	3
3	Milk & Dairy products	a	Raw milk cheeses	3	2	0	-1	
		b	Other products based on raw milk	1	2	0	1	
		c	Heat treated products	5	1	0	-4	
			Total	9	5	0	-4	3
4	Vegetables	a	Raw products (fresh and frozen)	3	2	0	-1	
		b	Pre-cooked vegetables, vegetables under modified atmosphere	3	3	0	0	
		c	Ready to eat	1	2	0	1	
			Total	7	7	0	0	3
5	Seafood and fishery products	a	Raw products (fresh and frozen)	5	3	1	-1	
		b	Cured & smoked	0	3	0	3	
		c	Ready to eat, Ready to reheat	4	1	0	-3	
			Total	9	7	1	-1	3
6	Environmental Samples	a	Dusts and Residues	3	0	0	-3	
		b	Cleaning and Process Waters	3	1	0	-2	
		c	Surface samples	1	4	0	3	
			Total	7	5	0	-2	3
All categories				**49**	**33**	**3**	**-13**	**6**

Table 11.3: CFX96 - BAC*Gene Listeria* spp.

Category			Type	PD	ND	PPND	(ND+PPND)-PD	AL
1	Composite foods / Ready-to-eat and ready-to-reheat	a	Ready-to-eat	2	5	0	3	
		b	Ready-to-reheat	1	0	0	-1	
		c	Confectionaries, pastries and egg products	2	1	0	-1	
			Total	5	6	0	1	3
2	Meat Products	a	Raw products (frozen or fresh)	4	2	0	-2	
		b	Meat based products ready to reheat	4	1	0	-3	
		c	Raw and cooked delicatessen	4	1	1	-2	
			Total	12	4	1	-7	3
3	Milk & Dairy products	a	Raw milk cheeses	3	2	0	-1	
		b	Other products based on raw milk	1	1	1	1	
		c	Heat treated products	5	1	0	-4	
			Total	9	4	1	-4	3
4	Vegetables	a	Raw products (fresh and frozen)	3	2	0	-1	
		b	Pre-cooked vegetables, vegetables under modified atmosphere	5	3	0	-2	
		c	Ready to eat	1	2	0	1	
			Total	9	7	0	-2	3
5	Seafood and fishery products	a	Raw products (fresh and frozen)	5	3	1	-1	
		b	Cured & smoked	0	2	1	3	
		c	Ready to eat, Ready to reheat	4	1	0	-3	
			Total	9	6	2	-1	3
6	Environmental Samples	a	Dusts and Residues	3	0	0	-3	
		b	Cleaning and Process Waters	3	1	0	-2	
		c	Surface samples	1	4	0	3	
			Total	7	5	0	-2	3
All categories				**51**	**32**	**4**	**-15**	**6**

Table 11.4: AriaMx - BAC*Gene Listeria* spp.

Category			Type	PD	ND	PPND	(ND+PPND)-PD	AL
1	Composite foods / Ready-to-eat and ready-to-reheat	a	Ready-to-eat	2	5	0	3	
		b	Ready-to-reheat	1	0	0	-1	
		c	Confectionaries, pastries and egg products	2	1	0	-1	
			Total	5	6	0	1	3
2	Meat Products	a	Raw products (frozen or fresh)	4	2	0	-2	
		b	Meat based products ready to reheat	4	1	0	-3	
		c	Raw and cooked delicatessen	4	1	1	-2	
			Total	12	4	1	-7	3
3	Milk & Dairy products	a	Raw milk cheeses	3	2	0	-1	
		b	Other products based on raw milk	1	1	1	1	
		c	Heat treated products	5	1	0	-4	
			Total	9	4	1	-4	3
4	Vegetables	a	Raw products (fresh and frozen)	3	2	0	-1	
		b	Pre-cooked vegetables, vegetables under modified atmosphere	4	3	0	-1	
		c	Ready to eat	1	2	0	1	
			Total	8	7	0	-1	3
5	Seafood and fishery products	a	Raw products (fresh and frozen)	5	3	1	-1	
		b	Cured & smoked	0	3	0	3	
		c	Ready to eat, Ready to reheat	4	1	0	-3	
			Total	9	7	1	-1	3
6	Environmental Samples	a	Dusts and Residues	3	0	0	-3	
		b	Cleaning and Process Waters	3	1	0	-2	
		c	Surface samples	1	4	0	3	
			Total	7	5	0	-2	3
All categories				**50**	**33**	**3**	**-14**	**6**

The observed values for ND - PD are below the acceptability limit for each category and for all the categories for both thermocyclers and kits tested.

3.1.8 Confirmation

Streaking onto selective agar plates

The positive BAC*Gene* results were confirmed by streaking 10 µl of Actero™ *Listeria* Enrichment media onto O&A and Palcam plates.

For 39 samples, no typical colony was observed on Palcam plates while typical *Listeria* colonies grew on O&A plates (See Table 12).

Table 12 - Differences observed between streaking onto O&A and Palcam plates

Samples No	O&A	Identification	Palcam
3006	H-d/H+ (after subculture in Fraser)	*L.monocytogenes*	-
3340	H+	*L. monocytogenes*	-
3353	+(1)	*L.seeligeri*	st
3727	H-	*L.innocua*	-
3732	H+	*L.monocytogenes*	-
3736	H-/H+	*L.welshimeri/L.monocytogenes*	-
3740	H-d	*L.seeligeri*	-
3745	H+	*L.monocytogenes*	-
3994	H+/H-	*L.monocytogenes/L.innocua*	-
4114	H+	*L.monocytogenes*	-
4116	H+	*L.monocytogenes*	-
4117	H+	*L.monocytogenes*	-
4118	H-	*L.innocua*	-
4124	H-/H+	*L.welshimeri/L.monocytogenes*	-
4128	H+/H-	*L.monocytogenes/L.welshimeri*	-
4291	1H+	*L.monocytogenes*	-
4295	H+	*L.monocytogenes*	-
4528	H-	No identification	-
4529	H+	No identification	-
4530	H-	No identification	-
4750	H+	*L.monocytogenes*	-
5030	- (H- after subculture in Fraser)	*L.welshimeri*	-
5033	H+	*L.monocytogenes*	-
5800	H+	*L.monocytogenes*	-
5803	H+	*L.monocytogenes*	-
5953	H+	*L.monocytogenes*	-
5965	H+	*L.monocytogenes*	-
5968	H+	*L.monocytogenes*	-
6615	H+(1)	*L.monocytogenes*	-
6685	H-	*L.innocua*	-
6713	H+	*L.monocytogenes*	-
6714	H-d	*L.innocua*	-
6717	-(H- after subculture in Fraser)	*L.innocua*	-
6719	H+	*L.monocytogenes*	-
6720	-(H- after subculture in Fraser)	*L.welshimeri*	-
6721	-(H- after subculture in Fraser)	*L.monocytogenes*	-
6724	H+	*L.monocytogenes*	-
6728	H+d	*L.monocytogenes*	-
6762	-(H- after subculture in Fraser)	*L.welshimeri*	-
		Result after 48h at 37°C	

Note that in 7 cases, a subculture of Actero™ *Listeria* Enrichment media was necessary to recover the *Listeria* strains.

Confirmation of the typical colonies

The typical colonies isolated on O&A, Palcam and TSYEA plates were confirmed using the tests of the reference method and the MALDI Biotyper of Bruker.

220 colonies were tested from O&A, 150 from Palcam and 220 from TSYEA using the tests of the reference method and MALDI-TOF tests. A summary of the results observed is provided in Table 13.

Table 13 - Confirmation of colonies isolated from O&A and Palcam

		Total colonies tested	Tests of the reference method		MALDI-TOF			
			Listeria spp +	NI or NC	*Total colonies tested*	*Listeria* spp +	NI or NC	Not tested (1)
Typical colonies	O&A	220	207	13	211	211	0	9
	Palcam	150	148	2	149	149	0	1
	TSYEA (Typical colonies isolated from O&A or Palcam)	220	212	8	211	211	0	9
Total		**590**	**567**	**23**	**571**	**571**	**0**	**19**

NI: no identification NC: non characteristic colony

(1) Some colonies were not tested as they were isolated from samples giving negative PCR tests.

The confirmation results provided by the MALDI Biotyper of Bruker were in agreement with those observed by the tests of the reference method for the colonies isolated from the 3 plates (O&A, Palcam and TSYEA).

Note that in 7 cases, it was necessary to analyse the colonies again as no peak was observed during the tests; this was due to a lack of biological material on the slide (“No result” in the raw data tables).

3.1.9 PCR inhibitions

673 DNA extracts were tested with the CFX96 and the AriaMx using 2 different kits, representing a total of 2692 PCR tests.

The PCR was inhibited for one sample only using both thermocyclers (BAC*Gene* Listeria Multiplex kit). The DNA extract was tested again without applying any dilution and a negative result was then observed (See Table 14).

Table 14 - Sample with PCR inhibition

Sample No	Product	BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.	
		CFX96	AriaMx	CFX96	AriaMx
5794	Artichoke puree	i/-	i/-	-	-

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 Experimental design

Six (matrix/strain) pairs were analysed by the reference method and by the alternative method using the 2 thermocyclers (CFX96 and AriaMx) and the 2 kits (BAC*Gene Listeria* Multiplex and BAC*Gene Listeria* spp.) (See Table 15):

Table 15 - Defined (matrix/strain) pairs for RLOD determination

Matrix and related category number	Inoculated strain	Origin	Inoculation protocol
❶ - Deli-salad (Piémontaise)	*Listeria monocytogenes* Ad494	Deli salad	Seeding protocol Storage for 48h at 2-8°C
❷ - Frankfurters	*Listeria monocytogenes* Ad669	Rillettes	
❸ - Soft white cheese	*Listeria ivanovii* Ad1337	Cheese	
❹ - Cantaloupe (frozen balls)	*Listeria seeligeri* Ad1754	Zucchini	Seeding protocol Storage for 2 weeks at - 20°C
❺ - Frozen shrimp	*Listeria innocua* Ad1200	Pollock	Seeding protocol Storage for 2 weeks at - 20°C
❻ - Process water	*Listeria monocytogenes* Ad551	Environmental sample	Seeding protocol Storage 48h at 2 - 8°C

3.2.2 Calculation and interpretation of the RLOD

The raw data are given in **Appendix 6**.

The RLOD calculations were performed using the Excel spreadsheet of the international standard (ISO 16140), as described in the EN ISO 16140-2:2016 (http://standards.iso.org/iso/16140). The RLOD values are shown in Table 16.
The same results were observed with the 2 thermocyclers and the 2 kits.

Table 16 – Presentation of RLOD before and after confirmation of the alternative method results using the 2 thermocyclers (CFX96 and AriaMx) and the 2 kits (BAC*Gene Listeria* Multiplex and BAC*Gene Listeria* spp.)

Category	Name	RLOD	RLODL	RLODU	b=ln(RLOD)	sd(b)	z-Test statistic	p-value
1	Ready to eat Deli salad/ *Listeria monocytogenes* Ad494	0.748	0.338	1.655	-0.290	0.397	0.731	1.535
2	Frankfurter/ *Listeria monocytogenes* Ad669	0.888	0.439	1.795	-0.119	0.352	0.339	1.265
3	Soft white cheese/ *Listeria ivanovii* Ad1337	1.314	0.576	2.996	0.273	0.412	0.663	0.508
4	Cantaloupe/ *Listeria seeligeri* Ad1754	0.437	0.208	0.914	-0.829	0.370	2.243	1.975
5	Shrimp/ *Listeria innocua* Ad1200	1.513	0.668	3.429	0.414	0.409	1.012	0.312
6	Process water/ *Listeria monocytogenes* Ad551	0.569	0.233	1.389	-0.563	0.446	1.263	1.793
	Combined	0.843	0.625	1.138	-0.170	0.150	1.138	1.745

The RLOD values are below the AL fixed at 2.5 for an unpaired study design for all the tested matrix/strain pairs and for the alternative method for both thermocyclers and kits 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 Test protocols

53 targeted strains (20 *Listeria monocytogenes* and 33 *Listeria spp*. different from *Listeria monocytogenes*) and 31 non targeted strains were tested. 32 additional *Listeria monocytogenes* strains were tested with only the BAC*Gene Listeria* Multiplex (target: *Listeria* spp.).

❒ **Inclusivity**

Listeria spp. strain cultures were performed in BHI medium at 37°C. Dilutions were done in order to inoculate 10 to 100 cells/225 ml Actero™ *Listeria* Enrichment media. The broths were incubated for 18 h at 37°C. The alternative method protocol was then performed using the two kits and two thermocyclers. Confirmation tests were run by streaking the Actero™ *Listeria* Enrichment media onto O&A and Palcam plates, and TSYEA. The colonies were confirmed by the MALDI Biotyper of Bruker.

❒ **Exclusivity**

Negative strain cultures were performed in BHI at 37°C. Dilutions were carried out in order to inoculate around 10^5 cells/ml BPW. BPW was incubated for 24 h at 37°C. The alternative protocol was then performed using the two kits and the two thermocyclers.

3.3.2 Results

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

❒ **Inclusivity**

All tested strains gave positive PCR results. The strains showed typical colonies on selective agar plates. All colonies were confirmed as *Listeria* spp. using the MALDI Biotyper of Bruker independent from the plate of origin.

❒ **Exclusivity**

No cross reaction was observed with the 31 non target strains tested.

3.4 Practicability

The alternative method practicability was evaluated according to the AFNOR criteria relative to method comparison study.

Storage conditions. shelf-life and modalities of utilisation after first use	The storage temperature is 2 - 8°C. The shelf-life is given on the package. All the reagents shall be stored at the temperature mentioned on the package.		
Time to result	Steps	**Reference method**	**Alternative method**
	Negative samples		
	Sampling enrichment	Day 0	Day 0
	Subculture in Fraser 1	Day 1	/
	Lysate	/	Day 1
	PCR test	/	Day 1
	Streaking onto plates (O1/P1)	Day 1	/
	Second streaking (O2/P2)	Day 3	/
	Reading plates (O1/P1)	Day 2 - Day 3	/
	Reading plates (O2/P2)	Day 4 - Day 5	/
	Results	Day 5	Day 1
	Presumptive positive or positive results		
	Subculture of typical colonies	Day 3 - Day 5	/
	Streaking onto plates	/	Day1
	Reading plates	/	Day 2 - Day 3
	Confirmatory tests	Day 4 - Day 6	Day 2 - Day 3
	Results	Day 5 - Day 7 Day 8 - Day 11 (1)	Day 2 - Day 3
	(1) In the case of rhamnose and xylose tests are carried out in tubes.		
Common step with the reference method	Sampling enrichment		

The negative results are available in 1 day and the positive results in 2 or 3 days.

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.

4.1 Study organisation

- *Collaborators number*

Samples were sent to 16 collaborators.

- *Matrix and strain used*

Pasteurised cheese samples (31 % fat, 1.4 % NaCl) were contaminated by *Listeria monocytogenes* 153 isolated from raw milk cheese.

- *Samples*

Samples were prepared and inoculated on Monday 5th December 2016, as described below:

- 24 blind coded samples for detection of *Listeria monocytogenes* by the ISO 11290-1/A1 reference method which included the detection of *Listeria spp.;*
- 24 blind coded samples for *Listeria spp*. and *Listeria monocytogenes* detection by the BAC*Gene Listeria* spp. and the BAC*Gene Listeria* Multiplex methods;
- 1 sample for aerobic mesophilic flora enumeration by ISO 4833-1 method,
- 1 water flask labelled “Temperature Control” with a temperature probe.

- *Inoculation*

The targeted inoculation levels were the following:

- 0 CFU/25 g,
- 1 CFU/25 g (level providing fractional positive results);
- 5 CFU/25 g.

- *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 on Tuesday the 6th of December 2016 or Wednesday the 7th of December 2016 with the alternative and reference methods. T**he analyses by the reference method and the alternative method were performed on the same day.**

4.2 Experimental parameters control

4.2.1 Strain stability and background microflora stability

Strain stability was checked by inoculating the matrix at 100 CFU/g and 1 CFU/g. Enumerations were performed for the high contamination level and detection analyses were performed for the low contamination level after 24 h and 48 h storage at 2 - 8°C. *Triplicates* were analysed. The aerobic mesophilic flora was also enumerated; the results are given in Table 17.

Table 17 - Sample stability

Day	Reference method (research)			CFU/g (XLD)			Aerobic mesophilic flora (CFU/g)
	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3	
Day 0	-	+	+	115.4	100.9	103.6	$5.1\ 10^8$
Day 1	+	-	+	89.1	95.5	88.2	$5.7\ 10^8$
Day 2	+	+	-	95.5	100.9	106.4	$5.5\ 10^8$

No evolution was observed during storage at 2 - 8°C.

4.2.2 Contamination levels

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

Table 18 - Contamination levels

Level	Samples	Theoretical target level (b/25 g)	True level (b/25 g sample)	Low limit / 25 g sample	High limit / 25 g sample
Level 0	3 - 5 - 10 - 13 - 17 - 18 - 21 - 24	0	/	/	/
Low level	1 - 4 - 7 - 9 - 11 - 16 - 20 - 23	1	0.9	0.6	1.2
High level	2 - 6 - 8 - 12 - 14 - 15 - 19 - 22	5	3.7	2.6	5.1

4.2.3 Logistic conditions

Temperature conditions are given in Table 19.

Table 19 - Sample temperatures at receipt

Laboratories	Temperature measured by the probe (°C)	Temperature measured at receipt (°C)	Receipt date and time	
A	2.0	3.5	06/12/2016	*10:00 PM*
B	1.5	4.1	06/12/2016	*12:00 PM*
C	2.0	3.8	06/12/2016	*11:00 AM*
D	5.0	2.4	06/12/2016	*01:00 PM*
E	3.5	4.5	06/12/2016	*02:00 PM*
F	3.0	2.7	06/12/2016	*03:00 AM*
G	2.0	3.9	06/12/2016	*10:00 AM*
H	2.0	3.6	06/12/2016	*09:30 AM*
I	2.0	5.9	06/12/2016	*01:30 PM*
J	3.0	4.7	06/12/2016	*12:30 AM*
K	1.5	3.4	06/12/2016	*10:00 AM*
L	3.5	3.6	06/12/2016	*01:00 PM*
M	*Not received*	2.5	06/12/2016	*09:30 AM*
N	3.0	2.7	06/12/2016	*Morning*
O	4.5	5.0	06/12/2016	*12:00 AM*
P	2.5	2.5	06/12/2016	*10:00 AM*

No problem was encountered during the transport or at receipt for the 16 collaborators. All the samples were delivered on time and in appropriate conditions. Temperatures during shipment and at receipt were all correct.

4.3 Result analysis

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

4.3.1 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	5/8	3/8
L2	8/8	8/8

Fractional recovery was observed at Level 1 for both methods.

4.3.2 Results observed by the collaborative laboratories

- ***Aerobic mesophilic flora enumeration***

Depending on the Lab results, the enumeration levels varied from 1.4 10^7 to > 10^8 CFU/g.

- ***Listeria* spp. *detection***

16 collaborators participated to the study. The results obtained for the reference method are provided in Table 21; the results obtained for the alternative methods (BAC*Gene Listeria* Multiplex and BAC*Gene Listeria* spp.) are given in Table 22.

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

Collaborator	Contamination level		
	L0	L1	L2
A	0	4	8
B	0	4	8
C	0	6	8
D	0	3	7
E	0	6	8
F	0	7	8
G	0	5	8
H	0	5	8
I	0	8	8
J	0	4	8
K	0	5	8
L	0	5	7
M	2	7	8
N	0	7	8
O	0	6	8
P	0	8	8
Total	$P_0 = 2$	$P_1 = 90$	$P_2 = 126$

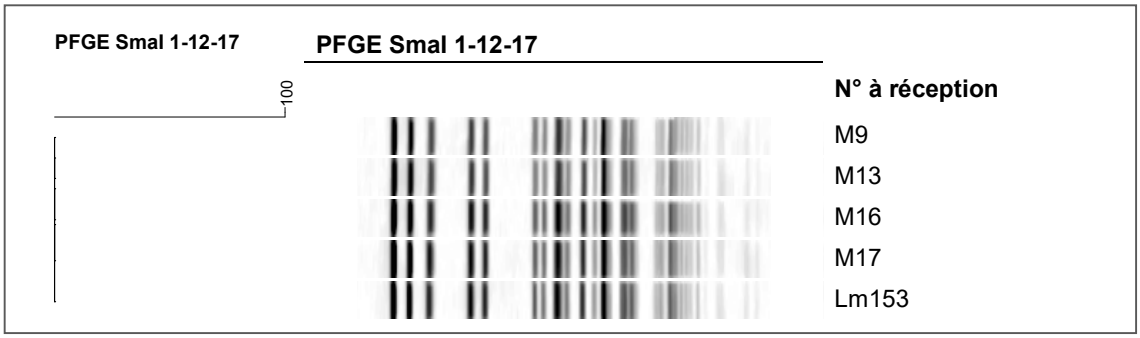
Table 22 - Positive results (before and after confirmation) by the alternative methods (ALL the collaborators)

Colla-borators	BAC*Gene Listeria* Multiplex						BAC*Gene Listeria* spp.					
	Contamination level						Contamination level					
	L0		L1		L2		L0		L1		L2	
	Before confir-mation	*After confir-mation*	*Before confir-mation*	*After confir-mation*	*Before confir-mation*	*After confir-mation*	*Before confir-mation*	*After confir-mation*	*Before confir-mation*	*After confir-mation*	*Before confir-mation*	*After confir-mation*
A	0	0	3	3	8	8	0	0	3	3	8	8
B	0	0	4	4	7	7	0	0	4	4	7	7
C	0	0	5	5	5	5	0	0	6	6	8	8
D	0	0	6	5	8	8	0	0	5	5	8	8
E	0	0	6	6	8	8	0	0	6	6	8	8
F	0	0	7	7	8	8	0	0	7	7	8	8
G	0	0	6	6	7	7	0	0	6	6	6	6
H	0	0	2	2	8	8	0	0	2	2	8	8
I	0	0	5	5	8	8	0	0	5	5	8	8
J	0	0	5	5	8	8	0	0	5	5	8	8
K	0	0	5	5	8	8	0	0	5	5	8	8
L	0	0	5	5	8	8	0	0	5	5	8	8
M	0	0	5	5	8	8	0	0	5	5	8	8
N	1	0	6	6	8	8	1	0	6	6	8	8
O	1	0	4	4	8	8	1	0	4	4	8	8
P	0	0	4	4	8	8	0	0	4	4	8	8
Total	$P_0 = 2$	$CP_0 = 0$	$P_1 = 78$	$CP_1 = 77$	$P_2 = 123$	$CP_2 = 123$	$P_0 = 2$	$CP_0 = 0$	$P_1 = 78$	$CP_1 = 78$	$P_2 = 125$	$CP_2 = 125$

According to the AFNOR technical rules, it is possible to include the results from a collaborator with maximum one cross contamination at Level 0 for the reference and/or the alternative method. For this study, this rule was applied and results from one collaborator were not kept: Lab M. This Lab obtained two positive results with the reference method on control samples.

It was asked to this Lab (M) to send the plates with typical colonies to ADRIA for the un-spiked samples (M13 - M17) as well as for samples M9 and M16 for which only one plate allowed to recover *Listeria* strains. A fingerprinting using *Sma*I restriction enzyme was run on the strains isolated from the unspiked samples in order to compare their profiles to the profile of the inoculated strain (*Listeria monocytogenes* 153). The following results were observed (See Figure 1).

Figure 1 - Fingerprinting



The strains isolated from the 4 samples were clearly the same as the inoculated one.

4.3.3 Results of the collaborators retained for interpretation

The results obtained with the 15 labs (Lab M excluded) kept for interpretation are presented in Table 23 (reference method) and Table 24 (alternative methods).

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

Collaborator	Contamination level		
	L0	L1	L2
A	0	4	8
B	0	4	8
C	0	6	8
D	0	3	7
E	0	6	8
F	0	7	8
G	0	5	8
H	0	5	8
I	0	8	8
J	0	4	8
K	0	5	8
L	0	5	7
N	0	7	8
O	0	6	8
P	0	8	8
Total	$P_0 = 0$	$P_1 = 83$	$P_2 = 118$

Table 24 - Positive results (before and after confirmation) by the alternative method (Without Lab M)

Collaborators	BAC*Gene Listeria* Multiplex						BAC*Gene Listeria* spp.					
	Contamination level						Contamination level					
	L0		L1		L2		L0		L1		L2	
	Before confirmation	*After confirmation*	*Before confirmation*	*After confirmation*	*Before confirmation*	*After confirmation*	*Before confirmation*	*After confirmation*	*Before confirmation*	*After confirmation*	*Before confirmation*	*After confirmation*
A	0	0	3	3	8	8	0	0	3	3	8	8
B	0	0	4	4	7	7	0	0	4	4	7	7
C	0	0	5	5	5	5	0	0	6	6	8	8
D	0	0	6	5	8	8	0	0	5	5	8	8
E	0	0	6	6	8	8	0	0	6	6	8	8
F	0	0	7	7	8	8	0	0	7	7	8	8
G	0	0	6	6	7	7	0	0	6	6	6	6
H	0	0	2	2	8	8	0	0	2	2	8	8
I	0	0	5	5	8	8	1	0	5	5	8	8
J	0	0	5	5	8	8	0	0	5	5	8	8
K	0	0	5	5	8	8	0	0	5	5	8	8
L	0	0	5	5	8	8	0	0	5	5	8	8
N	1	0	6	6	8	8	1	0	6	6	8	8
O	1	0	4	4	8	8	1	0	4	4	8	8
P	0	0	4	4	8	8	0	0	4	4	8	8
Total	$P_0 = 2$	$CP_0 = 0$	$P_1 = 73$	$CP_1 = 72$	$P_2 = 115$	$CP_2 = 115$	$P_0 = 2$	$CP_0 = 0$	$P_1 = 73$	$CP_1 = 73$	$P_2 = 117$	$CP_2 = 117$

4.4 Calculation and interpretation

4.4.1 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

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

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

Fractional positive results were obtained for the low and the high inoculation levels (L1 + L2). The two inoculation levels were retained for calculation.

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

Table 26 - Summary of the obtained results with the reference method and the alternative method for both levels

		BAC*Gene Listeria* Multiplex (target: *Listeria* spp.)		BAC*Gene Listeria* spp.	
Level	**Response**	**Reference method positive (R+)**	**Reference method negative (R-)**	**Reference method positive (R+)**	**Reference method negative (R-)**
1	**Alternative method positive (A+)**	Positive agreement (A+/R+) **PA = 49**	Positive deviation (R-/A+) **PD = 23**	Positive agreement (A+/R+) **PA = 50**	Positive deviation (R-/A+) **PD = 23**
	Alternative method negative (A-)	Negative deviation (A-/R+) **ND = 34 (PPND = 1)**	Negative agreement (A-/R-) **NA = 14 (PPNA = 0)**	Negative deviation (A-/R+) **ND = 33 (PPND = 0)**	Negative agreement (A-/R-) **NA = 14 (PPNA = 0)**
2	**Alternative method positive (A+)**	Positive agreement (A+/R+) **PA = 113**	Positive deviation (R-/A+) **PD = 2**	Positive agreement (A+/R+) **PA = 115**	Positive deviation (R-/A+) **PD = 2**
	Alternative method negative (A-)	Negative deviation (A-/R+) **ND = 5 (PPND = 0)**	Negative agreement (A-/R-) **NA = 0 (PPNA = 0)**	Negative deviation (A-/R+) **ND = 3 (PPND = 0)**	Negative agreement (A-/R-) **NA = 0 (PPNA = 0)**

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 and false positive ratio percentages

		Level 1		Level 2	
		BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.
Sensitivity for the alternative method:	$SE_{alt} = \frac{(PA+PD)}{(PA+PD+ND)} \; x \; 100\% =$	67.9 %	68.9 %	95.8 %	97.5 %
Sensitivity for the reference method:	$SE_{ref} = \frac{(PA+ND)}{(PA+PD+ND)} \; x \; 100\% =$	78.3 %	78.3 %	98.3 %	98.3 %
Relative trueness	$RT = \frac{(PA+NA)}{N} \; x \; 100\% =$	52.5 %	53.3 %	94.2 %	95.8 %
False positive ratio for the alternative method	$FPR = \frac{FP}{NA} \; x \; 100\% =$	7 %	0.0 %	/	/

4.4.3 Interpretation of data

The negative deviations are listed in Table 28 for Level 1 and in Table 29 for Level 2.

Among the 40 negative deviations obtained taking into account the two inoculation levels using the BAC*Gene Listeria* Multiplex kit, the presence of *Listeria* spp. was confirmed for 5 samples (C20, C15, C19, C22 and G6). The two collaborators involved in these results run again PCR tests on the DNA extracts in triplicate and obtained then positive results.
Note that for all these samples (except sample No G6), positive PCR results were obtained with the BAC*Gene Listeria* spp. kit for the first PCR run.

The positive deviations are listed in Table 30 for Level 1 and in Table 31 for Level 2. The same results were observed with both kits.

For Lab C, we might suspect a pipetting error: 4 negative deviations linked to this Lab.

Table 28 - Negative deviations for Level 1 with the two kits

Colla-borator	Sample N°	BACGene Listeria spp.						
		BAC*Gene* *Listeria* Multiplex	BAC*Gene* *Listeria* spp.	Confir-mation	Final result BAC*Gene* *Listeria* Multiplex	Agreement BAC*Gene* *Listeria* Multiplex	Final result BAC*Gene* *Listeria* spp.	Agreement BAC*Gene* *Listeria* spp.
		Ct	Ct	O&A				
A	A4	-	-	-	-	ND	-	ND
	A7	-	-	-	-	ND	-	ND
	A20	-	-	-	-	ND	-	ND
	A23	-	-	-	-	ND	-	ND
B	B1	-	-	-	-	ND	-	ND
	B11	-	-	-	-	ND	-	ND
C	C20	-/+(26.76)/ +(26.76)/ +(25.91)	+(23.85)	+	-	ND	+	PA
	C23	-	-	-	-	ND	-	ND
D	D16	-	-	-	-	ND	-	ND
E	E16	-	-	-	-	ND	-	ND
	E23	-	-	-	-	ND	-	ND
F	F20	-	-	-	-	ND	-	ND
H	H7	-	-	-	-	ND	-	ND
	H11	-	-	-	-	ND	-	ND
	H16	-	-	-	-	ND	-	ND
	H23	-	-	-	-	ND	-	ND
I	I1	-	-	-	-	ND	-	ND
	I4	-	-	-	-	ND	-	ND
	I16	-	-	-	-	ND	-	ND
J	J16	-	-	-	-	ND	-	ND
K	K16	-	-	-	-	ND	-	ND
L	L4	-	-	-	-	ND	-	ND
	L7	-	-	-	-	ND	-	ND
	L23	-	-	-	-	ND	-	ND
N	N1	-	-	-	-	ND	-	ND
	N9	-	-	-	-	ND	-	ND
O	O1	-	-	-	-	ND	-	ND
	O7	-	-	-	-	ND	-	ND
	O9	-	-	-	-	ND	-	ND
	O23	-	-	-	-	ND	-	ND
P	P1	-	-	-	-	ND	-	ND
	P4	-	-	-	-	ND	-	ND
	P9	-	-	-	-	ND	-	ND
	P20	-	-	-	-	ND	-	ND

Table 29 - Negative deviations for Level 2 with the two kits

Colla-borator	Sample N°	BAC*Gene Listeria* spp.						
		BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confir-mations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
		Ct	Ct	O&A				
B	**B15**	-	-	-	-	**ND**	-	**ND**
C	**C15**	-/+(33.72)/ +(32.97)/ +(33.17)	+(32.45)	+	-	**ND**	+	**PA**
	C19	-/+(20.75)/ +(20.99)/ +(21.25)	+(19.25)	+	-	**ND**	+	**PA**
	C22	-/+(20.13)/ +(20.28)/ +(20.53)	+(18.81)	+	-	**ND**	+	**PA**
G	**G2**	-	-	-	-	**ND**	-	**ND**
	G6	+(22.45)	-/+(26.96)/ +(27.09)/ +(26.70)	+	+	**PA**	-	**ND**

Table 30 - Positive deviations for Level 1 with the two kits

Colla-borator	Sample N°	BAC*Gene Listeria* spp.						
		BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confir-mations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
		Ct	Ct	O&A				
A	**A1**	+(27.20)	+(27.02)	+	+	**PD**	+	**PD**
	A9	+(24.24)	+(24.22)	+	+	**PD**	+	**PD**
	A11	+(24.14)	+(24.07)	+	+	**PD**	+	**PD**
B	**B7**	+(27.75)	+(26.01)	+	+	**PD**	+	**PD**
	B16	+(24.35)	+(23.69)	+	+	**PD**	+	**PD**
C	**C9**	+(20.91)	+(17.92)	+	+	**PD**	+	**PD**
D	**D1**	+(30.96)	+(32.62)	+	+	**PD**	+	**PD**
	D7	+(28.94)	+(30.60)	+	+	**PD**	+	**PD**
	D20	+(35.01)	+(37.85)	+	+	**PD**	+	**PD**
E	**E1**	+(28.92)	+(29.09)	+	+	**PD**	+	**PD**
	E9	+(27.09)	+(27.41)	+	+	**PD**	+	**PD**
F	**F11**	+(26.6)	+(26.6)	+	+	**PD**	+	**PD**
G	**G23**	+(28.90)	+(31.41)	+	+	**PD**	+	**PD**
H	**H1**	+(25.57)	+(23.90)	+	+	**PD**	+	**PD**
J	**J7**	+(26.90)	+-(26.63)	+	+	**PD**	+	**PD**
	J11	+(21.97)	+(22.05)	+	+	**PD**	+	**PD**
K	**K11**	+(26.12)	+(26.43)	+	+	**PD**	+	**PD**
L	**L1**	+(29.86)	+(30.57)	+	+	**PD**	+	**PD**
	L9	+(34.68)	+(35.00)	+	+	**PD**	+	**PD**
	L16	+(23.24)	+(23.01)	+	+	**PD**	+	**PD**
N	**N11**	+(27.18)	+(27.63)	+	+	**PD**	+	**PD**
O	**O4**	+(24.41)	+(24.22)	+	+	**PD**	+	**PD**
	O11	+(24.82)	+(25.00)	+	+	**PD**	+	**PD**

Table 31 - Positive deviations for Level 2 with the two kits

Colla-borator	Sample N°	BAC*Gene Listeria* spp.						
		BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confir-mations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
		Ct	Ct	O&A				
D	**D15**	+(37.40)	+(41.05)	- (+ after subculture in Fraser)	+	**PD**	+	**PD**
L	**L15**	+(25.38)	+(25.06)	+	+	**PD**	+	**PD**

For an **unpaired study design**, the difference between (ND – PD) is calculated for the level(s) where fractional recovery is obtained (so L_1 and possibly L_2). The observed value found for (ND – PD) shall not be higher than the AL. The AL is defined as $[(ND - PD)_{max}]$ and calculated per level where fractional recovery is obtained as described below using the following three parameters:

$$(p+)_{ref} = \frac{P_x}{N_x}$$

where

P_x = number of samples with a positive result obtained with the reference method at level x (L_1 or L_2) for all the collaborators

N_x = number of samples tested at level x (L_1 or L_2) with the reference method by all laboratories.

$$(p+)_{alt} = \frac{CP_x}{N_x}$$

where

CP_x = number of samples with a confirmed positive result obtained with the alternative method at level x (L_1 or L_2) for all the collaborators;

N_x = number of samples tested at level x (L_1 or L_2) with the alternative method by all the collaborators.

$$(\text{ND-PD})_{max} = \sqrt{3N_x \times \left((p+)_{ref} + (p+)_{alt} - 2\left((p+)_{ref} \times (p+)_{alt}\right)\right)}$$

where

N_x = the total number of samples tested for level x (L_1 or L_2) with the reference method by all the collaborators.

The AL is not met when the observed value is higher than the AL. When the AL is not met, investigations should be made (e.g. root cause analysis) in

order to provide an explanation of the observed results. Based on the AL and the additional information, it is decided whether the alternative method is regarded as not fit for purpose. The reasons for acceptance of the alternative method when the AL is not met shall be stated in the study report.

In this study, fractional recovery was observed at Level 1 and Level 2. The calculations are the following, according to the EN ISO 16140-2:2016 (See Table 32).

Table 32 - Calculations

	Level 1		Level 2	
	BAC*Gene* *Listeria* Multiplex	BAC*Gene* *Listeria* spp	BAC*Gene* *Listeria* Multiplex	BAC*Gene* *Listeria* spp.
N_X	120	120	120	120
$(p+)_{ref}$	0.7	0.7	1.0	1.0
$(p+)_{alt}$	0.6	0.6	1.0	1.0
AL = (ND - PD) max	12.89	12.85	4.53	3.83
ND - PD	11	10	3	1
Conclusion	ND - PD < AL	ND - PD < AL	ND - PD < AL	ND - PD < AL

The ISO 16140-2 (2016) requirements are fulfilled as (ND - PD) is lower than the AL.

4.4.4 *Evaluation of the RLOD between laboratories*

The RLOD was calculated using the EN ISO 16140-2:2016 Excel spreadsheet available at http://standards.iso.org/iso/16140 - RLOD (clause 5-1-4-2 Calculation and interpretation of RLOD) version 06.07.2015. The results are used only for information (see Table 33).

Table 33 - RLOD

	RLOD	RLODL	RLODV	b=ln(RLOD)	sd(b)	z Test statistic	p.value
BAC*Gene* *Listeria* Multiplex	1.286	0.984	1.680	0.251	0.134	1.879	0.060
BAC*Gene* *Listeria* spp.	1.203	0.916	1.581	0.185	0.136	1.355	0.175

5 GENERAL CONCLUSION

The **method comparison study conclusions** are:

☒ The method comparison study scheme corresponds to an unpaired study design as the reference and the alternative methods have different primary enrichment procedures.

☒ In the Sensitivity Study, 6 categories were tested: 5 human food categories and environmental samples. The protocol of the alternative method shows for all the categories:

Thermocycler	Kit	Positive deviation	Negative deviation
BAC*Gene Listeria* Multiplex	CFX96	50	36
	AriaMx	49	36
BAC*Gene Listeria* spp.	CFX96	50	36
	AriaMx	50	36

The (ND - PD) values are below the acceptability limits (AL) for each category, and for the 6 tested categories.

☒ The Relative Levels of Detection (RLOD) are all below the AL fixed at 2.5 for the unpaired study design for all matrix/strain pairs.

☒ The inclusivity and exclusivity testing gave the expected results for the 53 target strains and the 31 non target strains.

☒ It is possible to store the primary enrichment broth for 72 h at 2-8°C.

☒ The negative results are available in 1 day and the positive results in 2 or 3 days.

☒ The alternative method fulfils all the requirements of EN ISO 16140-2:2016 and the AFNOR technical rules.

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

☒ The data and interpretations comply with the EN ISO 16140-2:2016 requirements. The **BAC*Gene Listeria* Multiplex and & BAC*Gene Listeria* spp. are considered equivalent to the ISO standard**.

Quimper, 02 April 2020

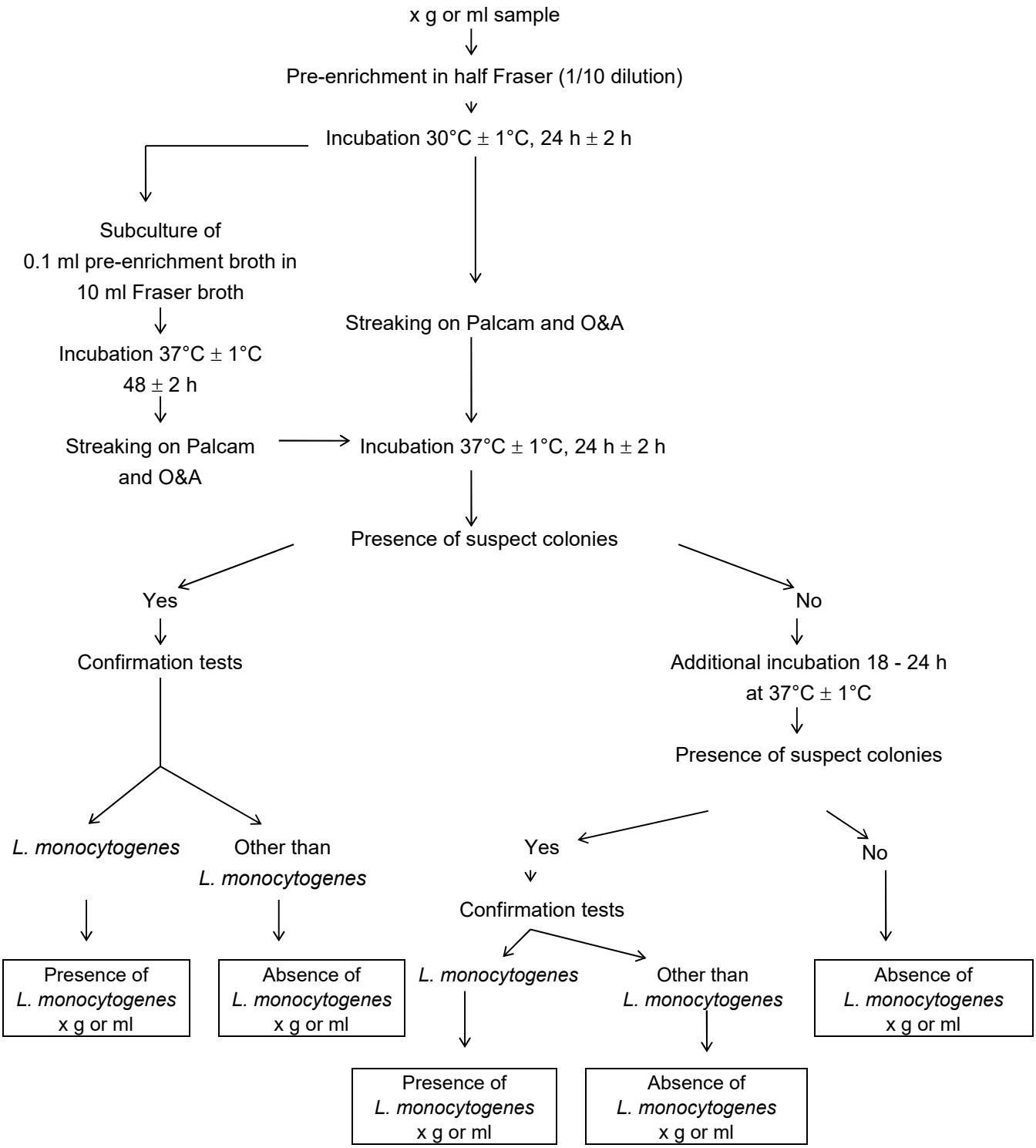
Lizaïg GOUGUET
Technical Study Manager
Validation of Alternative methods
Food Safety & Quality

I hereby attest to the validation of the results of the analyses carried out under the COFRAC accreditation.

Maryse RANNOU
Project Manager
Validation of Alternative methods
Food Safety & Quality

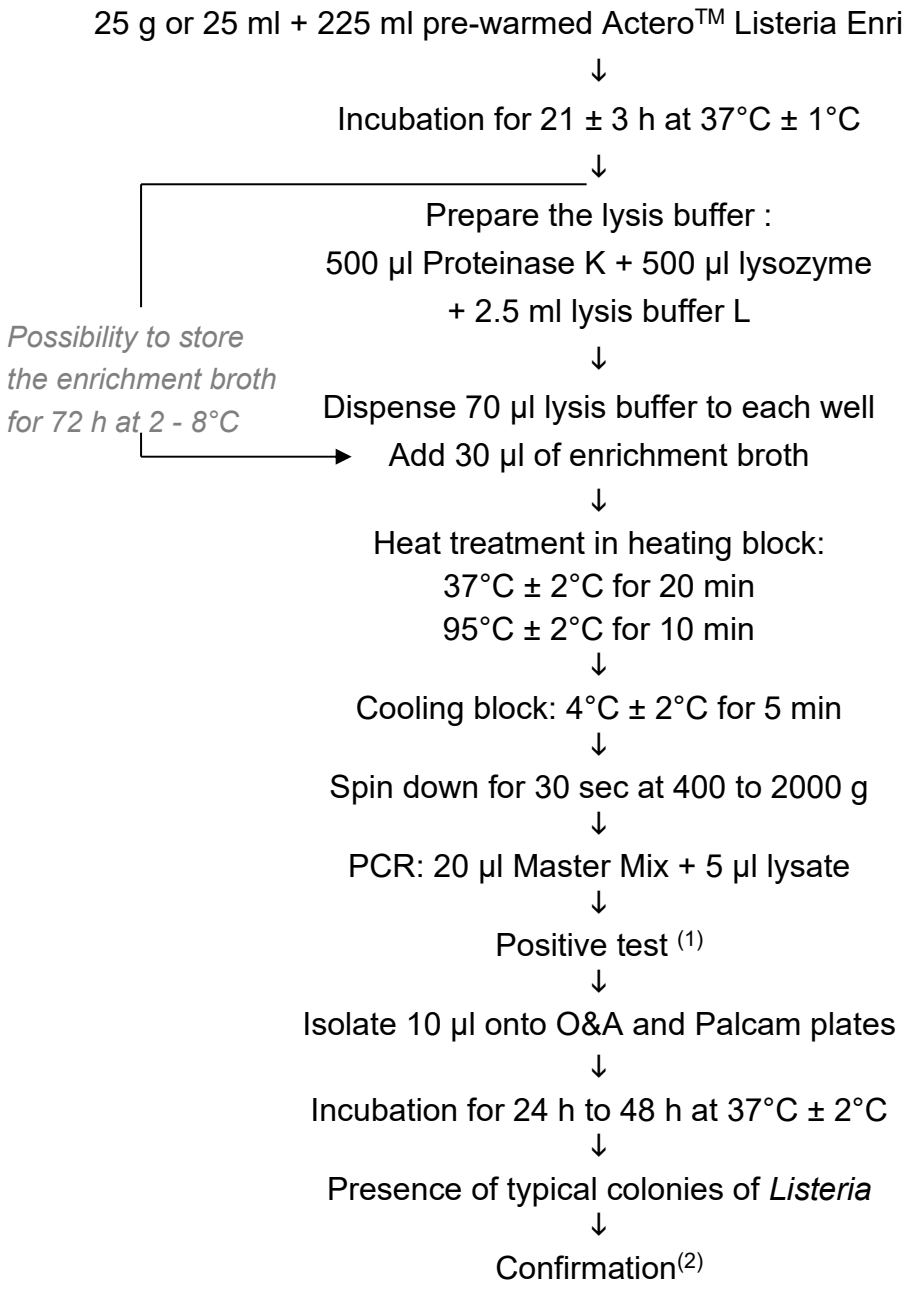
I hereby attest to the validation of the verification of the conformity of the report (opinion and interpretation).

Appendix 1 – Flow diagram of the reference method EN ISO 11290-1/A1 (February 2005 - Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of *Listeria monocytogenes* - Part 1: detection method



Confirmation tests: Gram, Catalase, Haemolysis, Camp Test, API *Listeria* Gallery

Appendix 2 – Flow diagram of the BACGene *Listeria* Multiplex and the BacGene *Listeria spp.* Test Kits



(1) During the validation study, all the enrichment broths were submitted to confirmatory tests.

(2) During the validation study, the typical colonies were confirmed by:
- The tests described in the reference method;
- Using the MALDI Biotyper of Bruker on isolated colonies on O&A, Palcam and TSYEA plates

During the validation, all the negative results were confirmed by proceeding to a subculture in Fraser broth incubated for 48 h at 37°C, prior to streaking onto O&A and Palcam plates in order to have the total duration of incubation of the reference method (Half Fraser: 24 h ± 2 h at 37°C + Fraser: 48 h ± 2 h at 37°C).

Appendix 3 - Protocols used for *Listeria* genus and *Listeria monocytogenes* confirmation (MALDI-TOF)

Extraction procedure

(confirmation to the *Listeria monocytogenes* species*)*

↓

300 µl deionized water into an Eppendorf tube

↓

Add 1 colony to test, mix thoroughly

↓

Add 900 µl EtOH, mix thoroughly

↓

Centrifuge at maximum speed (1300 to 1500 rpm) for 2 min.
Decant supernatant, centrifuge again and remove EtOH

↓

Allow EtOH pellet to dry at room temperature for at least 5 min

↓

Add 70 % formic acid (1 to 80 µl depending on the size of the pellet)
to the pellet and mix

↓

Add pure acetonitrile (1 to 80 µl depending on the size of the pellet)
and mix carefully

↓

Centrifuge 2 min. at maximum speed

↓

Pipette 1 µl of supernatant onto a Maldi target plate
and allow it to dry at room temperature

Direct transfer procedure → (Confirmation of *Listeria* genus) 1 colony

↓

Overlay the entire spot
with 1 µl HCCA solution
within 1 hour and allow it to dry
at room temperature

↓

MALDI-TOF

MALDI-TOF

Results interpretation

Extraction procedure	Confirmation to *Listeria* spp.	Confirmation to *Listeria monocytogenes*
No	Yes	No
Yes	Yes	Yes

Value	Description	Symbols	Color
2.00 – 3.00	High confidence identification	(+++)	Green
1.70 – 1.99	Low confidence identification	(+)	Yellow
0.00 – 1.69	No possible identification	(-)	Red

Examples of results and interpretation

Extraction procedure	First choice		Second choice		*Listeria* spp.	*Listeria monocytogenes*
No	*L. monocytogenes*	2.02	*L. monocytogenes*	1.92	+	/
No	*L. monocytogenes*	1.97	*L. monocytogenes*	1.78	+	/
No	No peak or no possible identification	0.00	No peak or no possible identification	0.00	Test again	Test again
No	L.Seeligeri	2.28	L.Seeligeri	2.24	+	/
Yes	*L. monocytogenes*	2.20	*L. monocytogenes*	2.16	+	+
No	*L. welshimeri*	1.80	*L. welshimeri*	1.72	+	/
No	*L. innocua*	1.71	No possible identification	1.66	+	/
Yes	*L. monocytogenes*	2.02	*L. monocytogenes*	1.92	+	+

Appendix 4 – Artificial contamination of samples

N° Sample	Product (french name)	Product	Artificial contaminations				Global result
			Strain	Origin	Injury protocol	Inoculation level/sample	
3339	Abondance lait cru	Raw milk cheese	*L.monocytogenes* Ad664	Raw milk cheese	Seeding 48h 4°C	0-1-0-1-0 (0.4)	-
3340	Comte lait cru	Raw milk cheese	*L.monocytogenes* Ad664	Raw milk cheese	Seeding 48h 4°C	0-1-0-1-0 (0.4)	+
3342	Grana padano lait cru	Raw milk cheese	*L.monocytogenes* Ad664	Raw milk cheese	Seeding 48h 4°C	0-1-0-1-0 (0.4)	+
3343	Rocamadour lait cru	Raw goat's milk cheese	*L.monocytogenes* Ad1236	Raw milk cheese	Seeding 48h 4°C	2-1-1-3-0 (1.4)	-
3344	Roquefort lait cru	Raw ewe's milk cheese	*L.monocytogenes* Ad1236	Raw milk cheese	Seeding 48h 4°C	2-1-1-3-0 (1.4)	-
3345	Morbier lait cru	Raw milk cheese	*L.monocytogenes* Ad1236	Raw milk cheese	Seeding 48h 4°C	2-1-1-3-0 (1.4)	-
3346	Crème au lait cru 1	Raw milk cream	*L.monocytogenes* Ad665	Raw milk	Seeding 48h 4°C	0-0-0-1-1 (0.4)	+
3347	Crème au lait cru 2	Raw milk cream	*L.ivanovii* L41	Raw milk	Seeding 48h 4°C	0-0-1-1-0 (0.4)	+
3348	Crème au lait cru 6	Raw milk cream	*L.ivanovii* L41	Raw milk	Seeding 48h 4°C	0-0-1-1-0 (0.4)	+
3349	Bleu des causses lait pasteurisé	Pasteurised milk cheese	*L.innocua* Ad657	Pasteurised cheeses	Seeding 48h 4°C	0-1-0-0-0 (0.2)	+
3352	Déchet poudre de lait	Dust (milk powder)	*L.monocytogenes* Ad627	Environmental samples (milk industry)	Seeding 48h 4°C	0-1-1-0-1 (0.6)	-
3353	Déchet poissons	Dust (fish)	*L.seeligeri* Ad1267	Environmental samples (fish industry)	Seeding 48h 4°C	1-0-0-1-0 (0.4)	+
3354	Eau rinçage poussoir (production saucisson poisson)	Process water (Pork and fish production)	*L.monocytogenes* Ad548	Environmental samples (fish industry)	Seeding 48h 4°C	0-1-0-0-1 (0.4)	+
3356	Eau rinçage cutter (production chair saumon)	Process water (fish production)	*L.monocytogenes* Ad548	Environmental samples (fish industry)	Seeding 48h 4°C	0-1-0-0-1 (0.4)	+
3357	Lingette planche découpe poisson (thon saumon)	Wipe (fish production)	*L.monocytogenes* Ad1272	Environmental samples	Seeding 48h 4°C	2.8	+
3358	Lingette lave botte	Wipe (fish production)	*L.monocytogenes* Ad1272	Environmental samples	Seeding 48h 4°C	2.8	+
3359	Lingette bac stockage poisson	Wipe (fish production)	*L.monocytogenes* Ad1272	Environmental samples	Seeding 48h 4°C	2.8	+
3360	Lingette bac stockage épices (production poisson)	Wipe (fish production)	*L.innocua* Ad1266	Environmental samples	Seeding 48h 4°C	0.5	+
3361	Lingette Multivac conditionneuse	Wipe (fish production)	*L.innocua* Ad1266	Environmental samples	Seeding 48h 4°C	0.5	+
3362	Lingette Hall techno table production	Wipe (fish production)	*L.innocua* Ad1266	Environmental samples	Seeding 48h 4°C	0.5	-
4188	Eclair vanille	Pastry	*L.innocua* Ad644	Pastries	Seeding 48h 4°C	1-1-2-1-0 (1.0)	+

N° Sample	Product (french name)	Product	Artificial contaminations				Global result
			Strain	Origin	Injury protocol	Inoculation level/sample	
4189	Eclair vanille	Pastry	*L.monocytogenes* Ad551	Pastries	Seeding 48h 4°C	1-1-0-1-1 (0.8)	+
4190	Millefeuille	Pastry	*L.innocua* Ad644	Pastries	Seeding 48h 4°C	1-1-2-1-0 (1.0)	+
4191	Millefeuille	Pastry	*L.monocytogenes* Ad551	Pastries	Seeding 48h 4°C	1-1-0-1-1 (0.8)	+
4192	Omelette Tortilla nature	Omelette	*L.monocytogenes* Ad1195	Omelette	Seeding 48h 4°C	1-1-0-1-1 (0.8)	+
4193	Omelette Tortilla nature	Omelette	*L.monocytogenes* Ad1757	Omelette	Seeding 48h 4°C	3-3-0-0-1 (1.4)	+
4194	Omelette tortilla oignons	Omelette	*L.monocytogenes* Ad1195	Omelette	Seeding 48h 4°C	1-1-0-1-1 (0.8)	-
4195	Coq au vin	Meat based products ready to reheat	*L.monocytogenes* Ad666	Poultry product	Seeding 48h 4°C	1-1-0-1-1 (0.8)	+
4196	Porc sauce aigre douce	Meat based products ready to reheat	*L.welshimeri* Ad1221	Pork product	Seeding 48h 4°C	5-2-6-4-7 (4.8)	+
4197	Porc sauce aigre douce	Meat based products ready to reheat	*L.innocua* 17765	Pork product	Seeding 48h 4°C	1-1-0-1-0 (0.6)	+
4198	Fricadelles sauce tomate	Meat based products ready to reheat	*L.welshimeri* Ad1221	Pork product	Seeding 48h 4°C	5-2-6-4-7 (4.8)	+
4199	Fricadelles sauce tomate	Meat based products ready to reheat	*L.innocua* 17765	Pork product	Seeding 48h 4°C	1-1-0-1-0 (0.6)	+
4200	Bœuf aux oignons	Meat based products ready to reheat	*L.monocytogenes* Ad1206	Beef product	Seeding 48h 4°C	5-2-1-1-3 (2.4)	+
4201	Bœuf aux oignons	Meat based products ready to reheat	*L.welshimeri* Ad1235	Beef product	Seeding 48h 4°C	1-2-0-3-6 (1.2)	+
4202	Carottes râpées assaisonnées	Seasoned grated carrots	*L.monocytogenes* Ad1719	Vegetables	Seeding 48h 4°C	2-1-2-1-0 (1.2)	+
4203	Carottes râpées assaisonnées	Seasoned grated carrots	*L.welshimeri* Ad1668	Vegetables	Seeding 48h 4°C	1-0-0-1-1 (0.6)	+
4204	Concombre au fromage blanc et ciboulette	Seasoned cucumber	*L.monocytogenes* Ad1719	Vegetables	Seeding 48h 4°C	2-1-2-1-0 (1.2)	+
4206	Macédoine de légumes avec mayonnaise	Macédoine	*L.monocytogenes* Ad1719	Vegetables	Seeding 48h 4°C	2-1-2-1-0 (1.2)	+
4208	Céleri rémoulade	Grated celery	*L.welshimeri* Ad1668	Vegetables	Seeding 48h 4°C	1-0-0-1-1 (0.6)	-
4306	Brique brebis au lait pasteurisé	Pasteurised ewe's milk cheese	*L.monocytogenes* 153	Cheese	Seeding 48h 4°C	2-5-1-3-4 (3.0)	+
4307	Fromage au lait pasteurisé	Pasteurised milk cheese	*L.monocytogenes* 153	Cheese	Seeding 48h 4°C	2-5-1-3-4 (3.0)	+
4308	Tomme des Pyrénées au lait pasteurisé	Pasteurised milk cheese	*L.monocytogenes* 153	Cheese	Seeding 48h 4°C	2-5-1-3-4 (3.0)	+

N° Sample	Product (french name)	Product	Artificial contaminations				Global result
			Strain	Origin	Injury protocol	Inoculation level/sample	
4309	Bleu d'auvergne au lait pasteurisé	Pasteurised milk cheese	*L.innocua* Ad657	Cheese	Seeding 48h 4°C	2-2-2-0-1 (1.4)	+
4310	Emmental français au lait pasteurisé	Pasteurised milk cheese	*L.innocua* Ad657	Cheese	Seeding 48h 4°C	2-2-2-0-1 (1.4)	+
4311	Saint Paulin au lait pasteurisé	Pasteurised milk cheese	*L.innocua* Ad657	Cheese	Seeding 48h 4°C	2-2-2-0-1 (1.4)	+
4312	Camembert au lait pasteurisé	Pasteurised milk cheese	*L.innocua* Ad657	Cheese	Seeding 48h 4°C	2-2-2-0-1 (1.4)	+
4313	Bâtonnets crabe	Surimi	*L.monocytogenes* Ad888	Surimi	Seeding 48h 4°C	4-1-3-1-4 (2.6)	+
4314	Terrine de saumon aneth	Salmon terrine	*L.monocytogenes* Ad888	Surimi	Seeding 48h 4°C	4-1-3-1-4 (2.6)	+
4315	Rillettes saumon	Salmon rillettes	*L.monocytogenes* Ad888	Surimi	Seeding 48h 4°C	4-1-3-1-4 (2.6)	+
4316	Rillettes crabe tourteau	Crab rillettes	*L.monocytogenes* Ad888	Surimi	Seeding 48h 4°C	4-1-3-1-4 (2.6)	+
4317	Rillettes crabe tourteau	Crab rillettes	*L.innocua* Ad1675	Fish product	Seeding 48h 4°C	0-3-1-2-3 (1.8)	+
4320	Déchet saucisse 1	Waste (pork)	*L.innocua* Ad1251	Environmental sample (pork)	Seeding 48h 4°C	1-1-2-2-2 (1.6)	+
4321	Déchet saucisse 1	Waste (pork)	*L.monocytogenes* Ad1255	Environmental sample (pork)	Seeding 48h 4°C	2-1-1-1-1 (1.2)	+
4322	Déchet saucisse 2	Waste (pork)	*L.innocua* Ad1251	Environmental sample (pork)	Seeding 48h 4°C	1-1-2-2-2 (1.6)	+
4323	Déchet saucisse 2	Waste (pork)	*L.monocytogenes* Ad1255	Environmental sample (pork)	Seeding 48h 4°C	2-1-1-1-1 (1.2)	-
4324	Déchet porc	Waste (pork)	*L.innocua* Ad1251	Environmental sample (pork)	Seeding 48h 4°C	1-1-2-2-2 (1.6)	+
4325	Déchet porc	Waste (pork)	*L.monocytogenes* Ad1255	Environmental sample (pork)	Seeding 48h 4°C	2-1-1-1-1 (1.2)	+
4326	Déchet saucisson	Waste (pork)	*L.innocua* Ad1251	Environmental sample (pork)	Seeding 48h 4°C	1-1-2-2-2 (1.6)	+
4327	Déchet saucisson	Waste (pork)	*L.monocytogenes* Ad1255	Environmental sample (pork)	Seeding 48h 4°C	2-1-1-1-1 (1.2)	-
4526	Rocamadour au lait cru	Raw goat's milk cheese	*L.monocytogenes* Ad613	Cheese	Seeding 48h 4°C	1-0-0-4-0 (1.0)	+
4527	Roquefort au lait cru de brebis	Raw ewe's milk cheese	*L.monocytogenes* Ad613	Cheese	Seeding 48h 4°C	1-0-0-4-0 (1.0)	+
4528	Tomme des bauges au lait cru	Raw milk cheese	*L.monocytogenes* Ad613	Cheese	Seeding 48h 4°C	1-0-0-4-0 (1.0)	+
4529	Saint Nectaire fermier au lait cru	Raw milk cheese	*L.monocytogenes* Ad613 / *L.welshimeri* Ad1667	Cheese / Raw milk cheese	Seeding 48h 4°C	1-0-0-4-0 (1.0)/ 0-3-2-2-0 (1.4)	+

N° Sample	Product (french name)	Product	Artificial contaminations				Global result
			Strain	Origin	Injury protocol	Inoculation level/sample	
4530	Comte 12 mois au lait cru	Raw milk cheese	*L.monocytogenes* Ad613 / *L.welshimeri* Ad1668	Cheese / Raw milk cheese	Seeding 48h 4°C	1-0-0-4-0 (1.0) /0-3-2-2-0 (1.4)	+
4531	Beaufort au lait cru	Raw milk cheese	*L.monocytogenes* Ad613 / *L.welshimeri* Ad1669	Cheese / Raw milk cheese	Seeding 48h 4°C	1-0-0-4-0 (1.0)/ 0-3-2-2-0 (1.4)	-
4532	Lait fermenté	Fermented milk	*L.innocua* Ad1786	Cheese / Raw milk cheese	Seeding 48h 4°C	2-3-2-2-1 (2.0)	+
4533	Lait fermenté	Fermented milk	*L.monocytogenes* Ad665	Raw milk	Seeding 48h 4°C	0-1-1-0-1 (0.6)	+
4534	Lait ribot lait fermenté maigre	Fermented milk	*L.innocua* Ad1786	Cheese / Raw milk cheese	Seeding 48h 4°C	2-3-2-2-1 (2.0)	+
4535	Lait ribot lait fermenté maigre	Fermented milk	*L.monocytogenes* Ad665	Raw milk	Seeding 48h 4°C	0-1-1-0-1 (0.6)	+
4536	Lait cru de vache	Raw milk	*L.monocytogenes* Ad1781 / *L.innocua* Ad1786	Raw milk	Seeding 48h 4°C	3-1-3-3-2 (2.4) / 2-3-2-2-1 (2.0)	+
4537	Lait ribot	Fermented milk	*L.monocytogenes* Ad665	Raw milk	Seeding 48h 4°C	0-1-1-0-1 (0.6)	+
4538	Lait fermenté	Fermented milk	*L.monocytogenes* Ad665	Raw milk	Seeding 48h 4°C	0-1-1-0-1 (0.6)	+
4539	Lait fermenté	Fermented milk	*L.monocytogenes* Ad1781 / *L.innocua* Ad1786	Raw milk	Seeding 48h 4°C	3-1-3-3-2 (2.4) / 2-3-2-2-1 (2.0)	+
4541	Salami	Salami	*L.monocytogenes* Ad267	Pork meat	Seeding 48h 4°C	4-3-2-0-0 (1.8)	+
4542	Jambon de Paris	Ham	*L.monocytogenes* Ad267	Pork meat	Seeding 48h 4°C	4-3-2-0-0 (1.8)	+
4544	Bacon fumé	Smoked bacon	*L.welshimeri* Ad1204 / *L.monocytogenes* Ad267	Pork meat	Seeding 48h 4°C	0-3-2-2-3 (2.0) / 4-3-2-0-0 (1.8)	+
4545	Jambon serrano	Cured ham	*L.welshimeri Ad1204 / L.monocytogenes Ad267*	Pork meat	Seeding 48h 4°C	0-3-2-2-3 (2.0) / 4-3-2-0-0 (1.8)	+
4740	Champignons à la grecque	Deli salad	*L.monocytogenes* Ad1719	Vegetables	Seeding 48h 4°C	1-1-2-0-5 (1.8)	+
4741	Tri choux jambon comte	Deli salad	*L.monocytogenes* Ad1498/ *L.innocua* Ad1176	Macedoine/Vegetables	Seeding 48h 4°C	1-0-0-0-2 (0.6)/ 1-3-0-0-2 (1.2)	+
4742	Piémontaise	Deli salad	*L.monocytogenes* Ad1498/ *L.innocua* Ad1176	Macedoine/Vegetables	Seeding 48h 4°C	1-0-0-0-2 (0.6)/ 1-3-0-0-2 (1.2)	+
4743	Jardinière de légumes et mayonnaise	Deli salad	*L.monocytogenes* Ad1498/ *L.innocua* Ad1176	Macedoine/Vegetables	Seeding 48h 4°C	1-0-0-0-2 (0.6)/ 1-3-0-0-2 (1.2)	+
4744	Tartare de tomates	Seasoned tomatoes	*L.monocytogenes* Ad1498/ *L.innocua* Ad1176	Macedoine/Vegetables	Seeding 48h 4°C	1-0-0-0-2 (0.6)/ 1-3-0-0-2 (1.2)	+
4745	Carottes râpées assaisonnées	Seasoned grated carrots	*L.monocytogenes* Ad1498/ *L.innocua* Ad1176	Macedoine/Vegetables	Seeding 48h 4°C	1-0-0-0-2 (0.6)/ 1-3-0-0-2 (1.2)	+
4746	Religieuse café	Pastry	*L.monocytogenes* JL2862/ *L.innocua* Ad644	Ovoproducts/Pastries	Seeding 48h 4°C	1-0-2-3-0 (1.2)/ 1-1-0-2-0 (0.8)	+
4747	Pêche melba	Pastry	*L.monocytogenes* JL2862/ *L.innocua* Ad644	Ovoproducts/Pastries	Seeding 48h 4°C	1-0-2-3-0 (1.2)/1 -1-0-2-0 (0.8)	+

N° Sample	Product (french name)	Product	Artificial contaminations				Global result
			Strain	Origin	Injury protocol	Inoculation level/sample	
4748	Tutti frutti	Pastry	*L.monocytogenes* JL2862/ *L.innocua* Ad644	Ovoproducts/Pastries	Seeding 48h 4°C	1-0-2-3-0 (1.2)/ 1-1-0-2-0 (0.8)	+
4749	Eclair chocolat	Pastry	*L.monocytogenes* JL2862/ *L.innocua* Ad644	Ovoproducts/Pastries	Seeding 48h 4°C	1-0-2-3-0 (1.2)/1 -1-0-2-0 (0.8)	+
4750	Choux caramel	Pastry	*L.monocytogenes* JL2862	Ovoproducts	Seeding 48h 4°C	1-0-2-3-0 (1.2)	+
4754	Feuilleté au jambon champignons	Ready to reheat	*L.monocytogenes* 1973/2400 / *L.innocua* Ad1676	RTR	Seeding 48h 4°C	3-4-1-0-0 (1.6)/ 2-3-1-0-1 (1.40)	+
4755	Friands à la viande	Ready to reheat	*L.monocytogenes* 1973/2400 / *L.innocua* Ad1676	RTR	Seeding 48h 4°C	3-4-1-0-0 (1.6)/ 2-3-1-0-1 (1.40)	+
4756	Quiche lorraine	Ready to reheat	*L.monocytogenes* 1973/2400 / *L.innocua* Ad1676	RTR	Seeding 48h 4°C	3-4-1-0-0 (1.6)/ 2-3-1-0-1 (1.40)	+
4758	Tarte au tomates	Ready to reheat	*L.monocytogenes* 1973/2400 / *L.innocua* Ad1676	RTR	Seeding 48h 4°C	3-4-1-0-0 (1.6)/ 2-3-1-0-1 (1.40)	+
5023	Minis jambon emmental	Ham and cheese sandwich	*L.monocytogenes* Ad273	Pork meat	Seeding 48h 4°C	1-2-0-0-0 (0.6)	+
5024	Simple et bon jambon emmental	Ham and cheese sandwich	*L.monocytogenes* Ad273	Pork meat	Seeding 48h 4°C	1-2-0-0-0 (0.6)	-
5030	Sandwich poulet rôti	Chicken sandwich	*L.monocytogenes* Ad266	Chicken meat	Seeding 48h 4°C	1-0-0-0-0 (0.2)	+
5033	Pizza pate fine jambon fromage	Ham and cheese pizza	*L.welshimeri* Ad1175/ *L.monocytogenes* Ad279	Ready to reheat	Seeding 48h 4°C	1-0-0-0-0 (0.2)/ 2-2-1-0-0 (1.0)	+
5231	Sandwich jambon beurre	Ham and butter sandwich	*L.monocytogenes* Ad273	Pork meat	Seeding 48h 4°C	2-2-2-1-1 (1.6)	+
5232	Sandwich jambon beurre	Ham and butter sandwich	*L.monocytogenes* Ad273	Pork meat	Seeding 48h 4°C	2-2-2-1-1 (1.6)	+
5953	Lait cru fermier	Raw milk	*L.monocytogenes* Ad665	Raw milk	Seeding 48h 4°C	3-0-2-0-2 (1.4)	+
5954	Lait cru de vache	Raw milk	*L.monocytogenes* Ad665	Raw milk	Seeding 48h 4°C	3-0-2-0-2 (1.4)	-
5958	Petit suisse lait pasteurisé	Pasteurised fermented milk	*L.monocytogenes* Ad610	Milk	Seeding 48h 4°C	4-5-2-4-2 (3.4)	+
5959	Yaourt nature lait pasteurisé	Pasteurised fermented milk	*L.monocytogenes* Ad610	Milk	Seeding 48h 4°C	4-5-2-4-2 (3.4)	+
5960	Yaourt au lait entier lait pasteurisé	Pasteurised fermented milk	*L.monocytogenes* Ad610	Milk	Seeding 48h 4°C	4-5-2-4-2 (3.4)	+
5961	Fromage frais lait pasteurisé	Pasteurised fermented milk	*L.monocytogenes* Ad611	Milk	Seeding 48h 4°C	4-1-2-0-1 (1.6)	+
5962	Crème dessert saveur chocolat lait pasteurisé	Dairy based dessert	*L.monocytogenes* Ad611	Milk	Seeding 48h 4°C	4-1-2-0-1 (1.6)	+
5964	Crevettes décortiquées crues	Raw peeled shrimp	*L.monocytogenes* Ad299	Seafood	Seeding 48h 4°C	1-1-1-0-0 (0.6)	+

N° Sample	Product (french name)	Product	Artificial contaminations				Global result
			Strain	Origin	Injury protocol	Inoculation level/sample	
5965	Blanc de calmar	Calmar	*L.monocytogenes* Ad299	Seafood	Seeding 48h 4°C	1-1-1-0-0 (0.6)	+
5966	Lardons saumon fumé	Smoked salmon	*L.monocytogenes* Ad1279	Smoked fish	Seeding 48h 4°C	1-1-3-3-2 (2.0)	+
5967	Filets de harengs fumés	Smoked herring	*L.monocytogenes* Ad1279	Smoked fish	Seeding 48h 4°C	1-1-3-3-2 (2.0)	+
5968	Mini tranche de truite fumée	Smoked trout	*L.monocytogenes* Ad1279	Smoked fish	Seeding 48h 4°C	1-1-3-3-2 (2.0)	+
5969	Bâtonnets saveur crabe	Surimi	*L.monocytogenes* Ad2522	Fish	Seeding 48h 4°C	2-3-3-3-4 (3.0)	+
5970	Terrine de saumon aneth	Salmon terrine	*L.monocytogenes* Ad2522	Fish	Seeding 48h 4°C	2-3-3-3-4 (3.0)	+
5971	Terrine aux saint jacques	Scallops terrine	*L.monocytogenes* Ad2522	Fish	Seeding 48h 4°C	2-3-3-3-4 (3.0)	+
6762	Saucisse végétale déchet 1	Waste (vegetables)	*L.welshimeri* Ad1668	Vegetables	Seeding 48h 4°C	2-0-1-2-5 (2.0)	+
6765	Eau process lavage carcasse poulet	Process water	*L.innocua* Ad1253	Environmental sample	Seeding 48h 4°C	5-2-1-0-4 (2.4)	+
6767	Eau rinçage mélangeur ferments	Rinsing water	*L.welshimeri* Ad1668	Vegetables	Seeding 48h 4°C	2-0-1-2-5 (2.0)	+
6769	Eau process rinçage robot coupe fabrication appâts	Rinsing water	*L.welshimeri* Ad642	Fish	Seeding 48h 4°C	3-2-1-3-3 (2.4)	+
6771	Eau rinçage fabrication biscuits	Rinsing water	*L.innocua* Ad1253	Environmental sample	Seeding 48h 4°C	5-2-1-0-4 (2.4)	+
6773	Eau rinçage fabrication riz cuit	Rinsing water	*L.welshimeri* Ad1668	Vegetables	Seeding 48h 4°C	2-0-1-2-5 (2.0)	+
6777	Eau process fabrication chipolatas	Process water	*L.innocua* Ad1253	Environmental sample	Seeding 48h 4°C	5-2-1-0-4 (2.4)	+

Appendix 5 – Sensitivity study: raw data

Bold typing : artificially inoculated samples

***Listeria* detection results:**

H-:	characteristic *Listeria* colonies without halo
H+:	characteristic *Listeria* colonies with halo
-:	no typical colonies but presence of background microflora
st:	plate without any colony
i:	PCR inhibition
PA:	positive agreement
NA:	negative agreement
ND:	negative deviation
PD:	positive deviation
PPNA:	positive presumptive negative agreement
PPND :	positive presumptive negative deviation
NC:	non characteristic colony on TSYEA
d:	doubtful colony
L.mono:	*Listeria monocytogenes*
L.welsh:	Listeria welshimeri
L.innoc:	*Listeria innocua*
L.seeli:	*Listeria seeligeri*
L.iva:	*Listeria ivanovii*
NI:	no identification
No result:	not enough biologicial material on the slide to get a result
(*):	result after subculture in Fraser for 48 h at 37°C
RTE	ready to eat
RTRH	ready to reheat

Typical colonies observed on O&A plates after 48 h incubation

COMPOSITE FOODS / READY TO EAT AND READY TO REHEAT

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																			
									Actero™ Listeria Enrichment Media for 18H at 37°C																			
			Half Fraser		Fraser 1				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.						
													O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)												
			O&A	Palcam	O&A	Palcam	Identification	L.spp. result	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF	All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Fraser 1 (48h at 37°C)	Category	Type
3739	Pain surprise Marin	RTE sandwich	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	a
3985	Saucisson bœuf volaille	Delicatessen	st	st	st	st	/	-	+(33.75)	+(32.58)	+(34.11)	+(32.61)	H+	+	+	+	*L.mono*	+	+	+	PD	+	PD	+	PD	+	PD		1	a
3987	Sandwich thon tomates œufs	RTE sandwich	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	a
3989	Brin surimi	RTE surimi	H+/H-	+	H+/H-	+	*L.mono/ L.innoc*	+	-	-	-	-	st	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	1	a
3995	Rillette de poulet rôti	RTE rillettes	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	a
4111	Taboulé poisson fumé	RTE tabbouleh	st	-	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	a
4112	Sandwich poulet tomate œuf	Sandwich	H+	+	-	-	*L.mono*	+	-	-	-	-	-	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	1	a
4120	Emincés de poulet rôti	RTE chicken meat	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	a
4121	Sandwich jambon salami emmental	Sandwich	-	st	-	-	/	-	+(35.49)	+(34.65)	+(34.37)	+(32.84)	H+	+	+	+	*L.mono*	+	+	+	PD	+	PD	+	PD	+	PD		1	a
4125	Salade du pêcheur	Salad	H-d (1)	-	-	-	NC	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	a
4288	Guacamole	Guacamole	st	-	H+	+	*L.mono*	+	-	-	-	-	-	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	1	a
4293	Salade camarguaise	Salad	H-	+	H-	+	*L.innoc*	+	-	-	-	-	-	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	1	a
4671	Duo saumon sandwich	Salmon sandwich	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	a
5022	Minis jambon emmental	Ham and cheese sandwich	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	a
5023	**Minis jambon emmental**	**Ham and cheese sandwich**	H+	+	H+	+	*L.mono*	+	-	-	-	-	-	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	1	a
5024	**Simple et bon jambon emmental**	**Ham and cheese sandwich**	-	-	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	a
5025	Simple et bon jambon emmental	Ham and cheese sandwich	-	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	a
5030	**Sandwich poulet rôti**	**Chicken sandwich**	H-	+	H-	+	*L.welsh*	+	+(29.08)	+(31.36)	+(39.42)	+(35.36)	- /H- (*)	+	-	/	*L.welsh*	No result;+	+	+	PA	+	PA	+	PA	+	PA	**H-**	1	a
5231	**Sandwich jambon beurre**	**Ham and butter sandwich**	H+	+	H+	+	*L.mono*	+	+(20.68)	+(18.40)	+(21.07)	+(19.10)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		1	a
5232	**Sandwich jambon beurre**	**Ham and butter sandwich**	H+	+	H+	+	*L.mono*	+	+(20.19)	+(16.98)	+(21.50)	+(18.70)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		1	a
3012	Escalope milanaise	Cooked meat	H+	+	H+	+d	*L.mono*	+	+(29.48)	+(27.23)	+(29.22)	+(26.69)	H+	+	+ (*)	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		1	b
3014	Bol de soupe moulinée	RTR soup	-	st	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	b
3015	Mélange poulet fresh, tomates cubes, tomates marinées	RTR chicken	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	b
3978	Sauce	Sauce	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	1	b
3980	Cordon bleu de dinde	RTR poultry meat	H+	+	H+	+	*L.mono*	+	+(21.05)	+(20.60)	+(22.32)	+(20.70)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		1	b
3983	Cordon bleu de dinde	RTR poultry meat	-	-	H+	+	*L.mono*	+	+(22.58)	+(21.91)	+(23.76)	+(21.99)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		1	b

♦ Analyses performed according to the COFRAC accreditation

COMPOSITE FOODS / READY TO EAT AND READY TO REHEAT

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																				
									Actero™ Listeria Enrichment Media for 18H at 37°C																				
			Half Fraser		Fraser 1				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.						
													O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)												
			O&A	Palcam	O&A	Palcam	Identification	L.spp. result	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF	All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Fraser 1 (48h at 37°C)	Category	Type
3986	Pâte feuilleté beurre	Puff pastry	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	b
4115	Sauce	Sauce	st	st	st	st	/	-	-	-	+(38.30)/-/-	+(37.04)/+(34.42)/-	st	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**PPNA**	-	**PPNA**	**-**	1	b
4116	Plaque à croissant	RTR croissant	H+	-	H+/H-	+	*L.mono/ L.welsh*	+	+(38.46)	+(36.73)	+(36.87)	+(34.97)	H+	+	-	/	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	b
4127	Paëlla	Paella	-	-	-	-	/	-	-	+(37.16)/+(31.14)/+(30.61)	+(33.02)/+(31.83)/+(33.16)	+(31.20)/+(29.17)/+(28.98)	- (*)	/	- (*)	/	/	/	-	-	**NA**	-	**PPNA**	-	**PPNA**	-	**PPNA**	**-**	1	b
4286	Pâte brisée au beurre	Short pastry	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	b
4289	Poêlée Pommes de terre	Pre-cooked potatoes	st	st	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	b
4294	Raviolis	Raviolis	H-	+	H-	+d	*L.welsh*	+	+(23.85)	+(22.55)	+(25.71	+(24.54)	H-	+	+	+	*L.innoc*	No result;+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	b
4754	**Feuilleté au jambon champignons**	**Ready to reheat**	H-	+	H-	+	*L.innoc*	+	+(20.83)	+(21.07)	+(22.37)	+(21.19)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	**H-**	1	b
4755	**Friands à la viande**	**Ready to reheat**	H+	+	H+/H-	+	*L.mono/ L.innoc*	+	+(17.95)	+(16.95)	+(18.79)	+(17.34)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	b
4756	**Quiche lorraine**	**Ready to reheat**	H+	+	H+/H-	+	*L.mono/ L.innoc*	+	+(17.88)	+(16.61)	+(18.27)	+(17.34)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+/+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	b
4758	**Tarte au tomates**	**Ready to reheat**	H-	+	H-	+	*L.innoc*	+	+(19.61)	+(18.85)	+(20.29)	+(19.22)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	b
5033	**Pizza pate fine jambon fromage**	**Ham and cheese pizza**	st	-	-	-	/	-	+(27.11)	+(28.60)	+(30.37)	+(28.63)	H+	+	-	/	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		1	b
5034	Pizza pate fine jambon fromage	Ham and cheese pizza	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	b
5036	Pizza pâte fine jambon chèvre	Ham and goat's cheese pizza	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	b
3013	Mille feuille	Pastry	st	st	st	st	/	-	-	-	-	-	-	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	c
4188	**Eclair vanille**	**Pastry**	H-	+	H-	+	*L.innoc*	+	+(25.60)	+(25.05)	+(27.27)	+(25.67)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	c
4189	**Eclair vanille**	**Pastry**	H+	+	H+	+	*L.mono*	+	+(25.34)	+(24.32)	+(26.60)	+(24.89)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	c
4190	**Millefeuille**	**Pastry**	H-	+	H-	+	*L.innoc*	+	+(24.23)	+(24.42)	+(26.16)	+(24.72)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	c
4191	**Millefeuille**	**Pastry**	H+	+	H+	+	*L.mono*	+	+(26.45)	+(25.50)	+(27.58)	+(25.90)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	c
4192	**Omelette Tortilla nature**	**Omelette**	H+	+	H+	+	*L.mono*	+	-	-	-	-	st	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	**-**	1	c
4193	**Omelette Tortilla nature**	**Omelette**	H+	+	H+	+	*L.mono*	+	+(21.95)	+(21.46)	+(23.68)	+(22.48)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	c
4194	**Omelette tortilla oignons**	**Omelette**	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	c
4746	**Religieuse café**	**Pastry**	H+/H-	+	H+/H-	+	*L.mono/ L.innoc*	+	+(23.78)	+(19.84)	+(21.80)	+(20.89)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+ /No result;+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	c
4747	**Pêche melba**	**Pastry**	H-	+	H-	+	*L.innoc*	+	+(22.66)	+(21.02)	+(22.82)	+(21.93)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+ /+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	c
4748	**Tutti frutti**	**Pastry**	st	st	-	-	/	-	+(22.47)	+(21.12)	+(22.78)	+(22.01)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+ /+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		1	c
4749	**Eclair chocolat**	**Pastry**	H+	+	H+/H-	+	*L.mono/ L.innoc*	+	+(26.53)	+(25.27)	+(27.42)	+(28.07)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+ /+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		1	c
4750	**Choux caramel**	**Pastry**	st	st	st	st	/	-	+(28.46)	+(26.83)	+(29.50)	+(28.05)	H+	+	-	/	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		1	c
5038	Eclair vanille	Pastry	st	-	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	c
5039	Eclair chocolat	Pastry	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	c
5040	Tortilla omelette oignons	Tortilla with onions	st	st	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	c
5041	Tortilla omelette nature	Tortilla	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	c
5042	Crème pâtissière	Custard	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	c
5043	Coupe profiterole	Pastry	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	1	c

COMPOSITE FOODS / READY TO EAT AND READY TO REHEAT																																			
N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp Actero™ Listeria Enrichment Media for 18H at 37°C																								Category	Type
			Half Fraser		Fraser 1		Identification	L.spp. result	BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Fraser 1 (48h at 37°C)		
			O&A	Palcam	O&A	Palcam			CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
													Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF												
5044	Tartelette fraise avec crème pâtissière	Pastry	st	st	-	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	-	-	**-**	1	c
5045	Coupe bavaroise	Pastry	st	-	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	-	-	**-**	1	c

MEAT PRODUCTS

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																			
									Actero™ Listeria Enrichment Media for 18H at 37°C																			
			Half Fraser		Fraser 1				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.						
													O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)												
			O&A	Palcam	O&A	Palcam	Identification	L.spp. result	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF	All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Fraser 1 (48h at 37°C)	Category	Type
3007	Trime abime silver skinne	Meat product	st	st	st	st	/	-	+(37.44)	+(35.39)	+(38.27)	+(34.51)	H+	+	+d	+	*L.mono*	+	+	+	PD	+	PD	+	PD		2	a
3009	Lardons fumés	Meat product	H-d(1)	+(2)	H-	+	*L.welsh*	+	+(33.30)	+(31.23)	+(33.18)	+(31.33)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA		2	a
3010	Gésiers	Meat product	H+	+	H+	+	*L.mono*	+	+(30.59)	+(28.29)	+(31.12)	+(27.79)	H+	+	+ (*)	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	2	a
3011	Paupiette	Meat product	-	-	-	-	/	-	+(29.01)	+(27.26)	+(29.24)	+(26.58)	H-	+	+	+	*L.innoc*	+	+	+	PD	+	PD	+	PD		2	a
3722	VSM Poulet	Chicken meat	H-	-	H-	+	*L.innoc*	+	-	-	-	-	-	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	2	a
3723	Escalope dinde crue	Poultry meat	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	2	a
3724	Filet de poulet	Chicken meat	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	2	a
3726	Filet dinde	Poultry meat	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	2	a
3735	Viande hachée	Ground beef	-	-	H-d	+d	NC	-	+(27.80)	+(26.53)	+(31.50)	+(26.75)	H-	+	+1	+	*L.welsh*	+	+	+	PD	+	PD	+	PD		2	a
3736	Viande poulet	Chicken meat	H+/H-	+	H+/H-	+	*L.mono/ L.welsh*	+	+(33.96)	+(30.34)	+(32.71)	+(29..95)	H-/H+	+/+	-	/	*L.welsh/ L.mono*	+/+	+	+	PA	+	PA	+	PA		2	a
4109	Escalope de dinde	Poultry meat	H-	+	H-	+	*L.welsh*	+	-	-	-	-	-	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	2	a
4117	Suprême poulet	Chicken meat	H+	-	H+	+	*L.mono*	+	+(31.29)	+(30.06)	+(30.65)	+(29.82)	H+	+	-	/	*L.mono*	+	+	+	PA	+	PA	+	PA		2	a
4118	Cuisse de poule	Poultry meat	H+	-	H+	+	*L.mono*	+	+(28.69)	+(26.07)	+(27.39)	+(26.12)	H-	+	-	/	*L.innoc* at 72h	No result;+	+	+	PA	+	PA	+	PA		2	a
4128	Haché d'agneau	Lamb meat	H+	-	H+/H-	+	*L.mono/ L.welsh*	+	+(36.54)	+(32.19)	+(34.29)	+(33.26)	H+/H-	+/+	-	/	*L.mono/ L.welsh*	+/+	+	+	PA	+	PA	+	PA		2	a
6840	Côte à griller	Raw meat (beef)	st	-	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	2	a
6841	Pavés de veau	Raw meat (veal)	st	st	-	st	/	-	+(22.35)	+(23.33)	+(26.09)	+(24.73)	H+	+	+	+	*L.mono*	+	+	+	PD	+	PD	+	PD		2	a
6842	Côtes de porc	Raw meat (pork)	st	-	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	2	a
6843	Effeuillés de charolais	Raw meat (beef)	st	-	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	2	a
6844	Steak haché	Raw meat (beef)	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	2	a
6845	Agneau sauté	Raw meat (lamb)	-	-	st	-	/	-	-	-	-	-	st	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	2	a
7046	Steak haché 15%MG	Ground beef	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	2	a
3737	Côte de porc Miel moutarde	Seasoned pork meat	st	st	-	st	/	-	+(28.28)	+(27.21)	+(29.02)	+(27.05)	H+	+	+1	+	*L.mono*	+	+	+	PD	+	PD	+	PD		2	b
3994	Blanquette	RTR Blanquette	H-	+	H-	+	*L.innoc*	+	+(19.72)	+(19.19)	+(20.67)	+(19.45)	H+/H-	+/+	-	/	*L.mono/ L.innoc*	+/+	+	+	PA	+	PA	+	PA		2	b
4114	Côte de porc thym romarin	Meat based products ready to reheat	H+	+	H+	+	*L.mono*	+	+(31.20)	+(30.27)	+(31.18)	+(30.11)	H+	+	-	/	*L.mono*	+	+	+	PA	+	PA	+	PA		2	b
4124	Côte de porc thym romarin	Meat based products ready to reheat	-	-	-	-	/	-	+(33.42)	+(31.01)	+(31.98)	+(30.46)	H-/H+	+/+	-	/	*L.mono/ L.welsh*	+/+	+	+	PD	+	PD	+	PD		2	b
4195	**Coq au vin**	**Meat based products ready to reheat**	H+	+	H+	+	*L.mono*	+	+(25.40)	+(24.46)	+(27.62)	+(26.21)	H+	+	+	No result;+	*L.mono*	+	+	+	PA	+	PA	+	PA		2	b
4196	**Porc sauce aigre douce**	**Meat based products ready to reheat**	H-	+	H-	+	*L.welsh*	+	+(26.61)	+(25.62)	+(28.82)	+(27.50)	H-	+	+	+	*L.welsh*	+	+	+	PA	+	PA	+	PA		2	b
4197	**Porc sauce aigre douce**	**Meat based products ready to reheat**	st	st	st	st	/	-	+(24.72)	+(24.69)	+(26.61)	+(25.88)	H-	+	+	+	*L.innoc*	+	+	+	PD	+	PD	+	PD		2	b
4198	**Fricadelles sauce tomate**	**Meat based products ready to reheat**	st	st	st	st	/	-	+(26.00)	+(24.74)	+(27.19)	+(25.55)	H-	+	+	+	*L.welsh*	+	+	+	PD	+	PD	+	PD		2	b

♦ Analyses performed according to the COFRAC accreditation

MEAT PRODUCTS

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																			
									Actero™ Listeria Enrichment Media for 18H at 37°C																			
			Half Fraser		Fraser 1		Identification	L.spp. result	BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Fraser 1 (48h at 37°C)	Category	Type
			O&A	Palcam	O&A	Palcam			CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
													Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF											
4199	**Fricadelles sauce tomate**	**Meat based products ready to reheat**	H-	+	H-	+	*L.innoc*	+	+(21.35)	+(20.78)	+(22.71)	+(20.89)	H-	+	+	+	*L.innoc*	+	+	+	PA	+	PA	+	PA			2	b
4200	**Bœuf aux oignons**	**Meat based products ready to reheat**	H+	+	H+	+	*L.mono*	+	-	-	-	-	st	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	2	b
4201	**Bœuf aux oignons**	**Meat based products ready to reheat**	H-	+	H-	+	*L.welsh*	+	+(24.16)	+(23.34)	+(25.45)	+(24.35)	H-	+	+	+	*L.welsh*	+	+	+	PA	+	PA	+	PA	+	PA		2	b
7032	Tomates facies au bœuf	RTRH (tomatoes, beef)	st	st	st	st	/	-	-	+39.77/-/-	-	-	st	/	-	/	/	/	-	-	NA	-	PPNA	-	NA	-	NA	-	2	b
7033	Escalope de dinde milanaise	RTRH (turkey)	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	b
7034	Gratin d'endives au jambon	RTRH (Ham, endives)	st	st	st	st	/	-	-	+(34.92)/-/-	-	-	st	/	-	/	/	/	-	-	NA	-	PPNA	-	NA	-	NA	-	2	b
7035	Poulet à la moutarde et au riz	RTRH (Chicken)	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	b
7036	Bœuf à la bolognaise et pâtes	RTRH (Beef, pasta)	st	st	st	-	/	-	-	-	-	-	st	/	st	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	b
7037	Poulet à la crème	RTRH (Chicken)	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	b
7038	Poulet à la tomate et purée de courgettes	RTRH (chicken)	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	b
7039	Porc grillé purée	RTRH (pork)	st	st	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	b
7040	Hachis Parmentier	RTHR (Purée, meat)	st	st	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	b
7041	Petit salé aux lentilles	RTRH (pork)	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	b
3008	Merguez volaille	Merguez	-	-	-	-	/	-	+(33.44)	+(31.92)	+(34.04)	+(31.17)	H-	+	+d	+	*L.innoc*	No result;+	+	+	PD	+	PD	+	PD	+	PD		2	c
3725	Saucisse sèche volaille bœuf	Delicatessen	H-d	+d	H-d	+d	NC	-	+(29.72)	+(28.64)	+(30.39)	+(28.77)	H+/H-	+/+	+1	+	*L.mono* /NC	+/+	+	+	PD	+	PD	+	PD	+	PD		2	c
3727	Saucisson à l'oignon de Roscoff	Delicatessen	st	-	H-	+	*L.innoc*	+	+(39.50)	+(35.83)	+(38.12)	+(36.17)	H-	+	-	/	*L.innoc*	+	+	+	PA	+	PA	+	PA	+	PA		2	c
3992	Rosette	Delicatessen	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	c
3996	Jambon	Ham	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	c
4113	Jambon à l'ancienne	Ham	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	c
4541	**Salami**	**Salami**	-	st	-	-	/	-	+(32.31)	+(29.84)	+(39.18)	+(31.37)	H+	+	+	+	*L.mono*	+	+	+	PD	+	PD	+	PD	+	PD		2	c
4542	**Jambon de Paris**	**Ham**	st	1+	H+	+	*L.mono*	+	+(21.46)	+(19.41)	+(32.40)	+(20.21)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		2	c
4544	**Bacon fumé**	**Smoked bacon**	H+	+	H+/H-		*L.mono/ L.welsh*	+	-	-	-	-	st	/	st	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	2	c
4545	**Jambon serrano**	**Cured ham**	st	st	st	-	/	-	+(31.24)	+(29.21)	+(24.33)	+(29.80)	H-	+	+	+	*L.welsh*	+	+	+	PD	+	PD	+	PD	+	PD		2	c
4679	Fromage de tête aux herbes	Delicatessen	st	st	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	c
4684	Jambon à l'ancienne	Ham	H-d(1)	+(1)	H-	+	*L.innoc*	+	-	-	-	-	st	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	2	c
7048	Bacon fumé	Smoked bacon	-	st	-	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	c
7049	Terrine de campagne	Pâté	-	st	-	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	c
7050	Salami fumé	Smoked salami	-	st	-	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	2	c

MEAT PRODUCTS																																
N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																								Category	Type
			Half Fraser		Fraser 1		Identification	L.spp. result	Actero™ Listeria Enrichment Media for 18H at 37°C																									
									BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Fraser 1 (48h at 37°C)		
													O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests													
			O&A	Palcam	O&A	Palcam			CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF		Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
7051	Jambon cru	Low moisture ham	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	2	c
7052	Rillettes	Rillettes	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	2	c
7053	Mortadelle	Delicatessen	st	st	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	2	c
7054	Rosette	Mow moisture sausage	st	st	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	2	c
7055	Jambon de paris	Ham	st	st	-	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	2	c

MILK AND DAIRY PRODUCTS

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																			
									Actero™ Listeria Enrichment Media for 18H at 37°C																			
			Half Fraser		Fraser 1		Identification	L.spp. result	BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Fraser 1 (48h at 37°C)	Category	Type
			O&A	Palcam	O&A	Palcam			CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
													Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF											
3016	Petit reblochon au lait cru	Raw milk cheese	-	-	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
3017	Rocamadour AOP lait cru	Raw goat's milk cheese	st	-	-	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
3339	**Abondance lait cru**	**Raw milk cheese**	st	st	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
3340	**Comte lait cru**	**Raw milk cheese**	st	st	-	-	/	-	+(34.26)	+(32.59)	+(33.86)	+(31.71)	H+	+	-	/	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		3	a
3342	**Grana padano lait cru**	**Raw milk cheese**	-	-	H+	+	*L.mono*	+	-	-	-	-	-	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	-	3	a
3343	**Rocamadour lait cru**	**Raw goat's milk cheese**	st	st	-	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
3344	**Roquefort lait cru**	**Raw ewe's milk cheese**	st	-	-	-	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
3345	**Morbier lait cru**	**Raw milk cheese**	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
3990	Maroilles	Raw milk cheese	st	st	st	st	/	-	+(37.10)	+(36.85)	+(39.88)	+(35.90)	H-	+	+	+	*L.innoc*	No result;+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		3	a
3991	Fromage affiné brebis	Raw ewe's milk cheese	st	st	st	st	/	-	+(35.31)/ -/-	-	-	-	-	/	- (*)	/	/	/	-	-	**PPNA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
3993	Morbier lait cru	Raw milk cheese	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
4526	**Rocamadour au lait cru**	**Raw goat's milk cheese**	st	st	H+	+	*L.mono*	+	-	-	-	-	st	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	-	3	a
4527	**Roquefort au lait cru de brebis**	**Raw ewe's milk cheese**	H+	+	H+	+	*L.mono*	+	+(36.84)	+(34.60)	+(37.47)	+(35.75)	H+d/H-	+	+	+	NC/ *L.innoc*	Not tested /+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	a
4528	**Tomme des bauges au lait cru**	**Raw milk cheese**	H+(1)	+(1)	H+	+	*L.mono*	+	+(37.15)	+(38.39)	+(39.99)	+(36.04)	H-	+	-	/	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	a
4529	**Saint Nectaire fermier au lait cru**	**Raw milk cheese**	-	-	-	-	/	-	+(31.25)	+(29.27)	+(31.69)	+(30.07)	H+	+	-	/	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		3	a
4530	**Comte 12 mois au lait cru**	**Raw milk cheese**	H-(2)	+(1)	H-	+	*L.welsh*	+	+(38.35)	+(37.25)	+(40.61)	+(40.12)	H-	+	-	/	*L.welsh*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	a
4531	**Beaufort au lait cru**	**Raw milk cheese**	-	-	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**H-**	3	a
5945	Brie de Meaux lait cru	Raw milk cheese	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
5946	Comté lait cru	Raw milk cheese	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
5947	Saint Nectaire lait cru	Raw milk cheese	-	-	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
5948	Roquefort lait cru	Raw ewe's milk cheese	st	-	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
5949	Crottin chavignol lait cru	Raw goat's milk cheese	-	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
5950	Picodon lait cru	Raw goat's milk cheese	st	st	-	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
5951	Salers lait cru	Raw milk cheese	-	-	st	-	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	a
5952	Munster lait cru	Raw milk cheese	H-	+	H-	+	*L.innoc*	+	+(22.02)	+(20.22)	+(22.74)	+(21.49)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	a
3018	Lait cru	Raw milk	st	st	st	st	/	-	-	-	-	-	-	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	b
3019	Lait cru fermier	Raw milk	st	-	-	-	/	-	-	-	-	-	H-d	Not tested	-	/	NC	Not tested		-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	b
3346	**Crème au lait cru 1**	**Raw milk cream**	H+	+	H+	+	*L.mono*	+	+(27.51)	+(25.50)	+(26.98)	+(24.87)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	b
3347	**Crème au lait cru 2**	**Raw milk cream**	H+	+	H+	+	*L.mono*	+	+(25.96)	+(24.06)	+(25.84)	+(23.72)	H+ (RLM - iva)	+	+	+	*L.mono/ L.iva* at 72h	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	b

♦ Analyses performed according to the COFRAC accreditation

MILK AND DAIRY PRODUCTS

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																					
									Actero™ Listeria Enrichment Media for 18H at 37°C																					
			Half Fraser		Fraser 1		Identification	L.spp. result	BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Fraser 1 (48h at 37°C)	Category	Type
			O&A	Palcam	O&A	Palcam			CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
													Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF											
3348	**Crème au lait cru 6**	**Raw milk cream**	H+(4)	+	H+/H-	+	*L.mono/ L.innoc*	+	+(28.48)	+(26.71)	+(28.20)	+(26.25)	H+ (RLM - iva)	+	+	+	*L.mono/ L.iva* at 72h	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	b
3745	Lait brebis	Raw ewe's milk	H+	-	H+	+	*L.mono*	+	+(34.53)	+(33.32)	+(33.78)	+(32.20)	H+	+	-	/	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	b
3997	Lait brebis	Raw ewe's milk	st	-	st	-	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	b
4532	**Lait fermenté**	**Fermented milk**	H-	+	H-	+	*L.innoc*	+	+(19.65)	+(17.25)	+(19.81)	+(18.76)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	b
4533	**Lait fermenté**	**Fermented milk**	H+	+	H+	+	*L.mono*	+	+(24.10)	+(21.67)	+(24.34)	+(22.43)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+/+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	b
4534	**Lait ribot lait fermenté maigre**	**Fermented milk**	H-	+	H-	+	*L.innoc*	+	+(23.02)	+(21.06)	+(23.17)	+(21.78)	H-	+	+	+	*L.innoc*	No result;+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	b
4535	**Lait ribot lait fermenté maigre**	**Fermented milk**	H+	+	H+	+	*L.mono*	+	+(31.06)	+(29.01)	+(31.24)	+(29.57)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+/+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	b
4536	**Lait cru de vache**	**Raw milk**	H+	+	H+	+	*L.mono*	+	+(30.79)	+(28.99)	+(30.97)	+(29.44)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+/+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	b
4537	**Lait ribot**	**Fermented milk**	H+	+	H+	+	*L.mono*	+	-	-	-	-	st	/	st	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	**-**	3	b
4538	**Lait fermenté**	**Fermented milk**	H+	+	H+	+	*L.mono*	+	+(24.86)	+(22.69)	+(25.17)	+(23.50)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	b
4539	**Lait fermenté**	**Fermented milk**	H+/H-	+	H+/H-	+	*L.mono/ L.innoc*	+	+(22.72)	+(20.63)	+(22.97)	+(21.37)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+/No result;+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	b
5953	**Lait cru fermier**	**Raw milk**	H+	+	H+	+	*L.mono*	+	+(26.72)	+(24.15)	+(27.97)	+(25.93)	H+	+	-	/	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	b
5954	**Lait cru de vache**	**Raw milk**	-	-	-	-	/	-	-	+(35.83)/ +(39.08)/-	-	+(37.91)/ -/-	-	/	-	/	/	/	-	-	**NA**	-	**PPNA**	**-**	**NA**	**-**	**PPNA**	**-**	3	b
6836	lait cru	Raw milk	-	-	-	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	3	b
6837	Lait cru fermier	Raw milk	st	-	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	3	b
6838	Beurre de baratte au lait cru	Raw milk butter	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	3	b
6839	Beurre de baratte cru demi-sel	Raw milk butter	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	3	b
3006	Beurre	Butter	H-d	-	-	-	NC	-	+(30.18)	+(28.29)	+(30.00)	+(27.46)	H-d/ H+ (*)	Not tested/+	-	/	*L.mono/ L.seeli* at 72h	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	**H+**	3	c
3349	**Bleu des causses lait pasteurisé**	**Pasteurised milk cheese**	st	-	st	-	/	-	+(38.15)	+(36.20)	+(39.10)	+(35.84)	H-d	+	+d	+	*L.seeli*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		3	c
4306	**Brique brebis au lait pasteurisé**	**Pasteurised ewe's milk cheese**	H+	+	H+	+	*L.mono*	+	+(21.16)	+(19.16)	+(21.61)	+(20.63)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	c
4307	**Fromage au lait pasteurisé**	**Pasteurised milk cheese**	H+	+	H+	+	*L.mono*	+	+(25.78)	+(24.19)	+(27.32)	+(26.55)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	c
4308	**Tomme des Pyrénées au lait pasteurisé**	**Pasteurised milk cheese**	H+	+	H+	+	*L.mono*	+	+(20.68)	+(19.34)	+(21.35)	+(20.48)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	c
4309	**Bleu d'auvergne au lait pasteurisé**	**Pasteurised milk cheese**	H-(4)	+(2)	H-	+	*L.innoc*	+	-	+(36.55)/ -/+(38.82)	+(39.18)/ +(39.70)/ +(39.23)	-	- (*)	/	- (*)	/	/	/	-	-	**ND**	-	**PPND**	**-**	**PPND**	**-**	**ND**	**-**	3	c
4310	**Emmental français au lait pasteurisé**	**Pasteurised milk cheese**	H-	+	H-	+	*L.innoc*	+	+(24.90)	+(23.62)	+(24.78)	+(24.48)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	c
4311	**Saint Paulin au lait pasteurisé**	**Pasteurised milk cheese**	H-	+	H-	+	*L.innoc*	+	+(21.11)	+(19.19)	+(22.68)	+(21.22)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	c
4312	**Camembert au lait pasteurisé**	**Pasteurised milk cheese**	H-	+	H-	+	*L.innoc*	+	+(23.45)	+(20.65)	+(23.78)	+(22.86)	H-	+	+	+	*L.innoc*	No result;+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	c
4328	Fromage au lait pasteurisé	Pasteurised milk cheese	st	st	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	3	c
4329	Tomme des Pyrénées au lait pasteurisé	Pasteurised milk cheese	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	3	c
4330	Brique brebis au lait pasteurisé	Pasteurised milk cheese	st	st	st	st	/	-	+(38.77)	-/-/+(37.27)	+(40.15)	+(39.00)	- (H+ at 72h)	+ at 72h	- (+ at 72h)	+ at 72h	*L.mono* at 72h	+ at 72h	+	+	**PD**	-	**NA**	+	**PD**	+	**PD**	**H+**	3	c

MILK AND DAIRY PRODUCTS

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									Actero™ Listeria Enrichment Media for 18H at 37°C																				
			Half Fraser		Fraser 1		Identification	L.spp. result	BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Fraser 1 (48h at 37°C)	Category	Type
			O&A	Palcam	O&A	Palcam			CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
													Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF											
4331	Camembert au lait pasteurisé	Pasteurised milk cheese	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	c
4332	Saint Paulin au lait pasteurisé	Pasteurised milk cheese	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	c
5958	**Petit suisse lait pasteurisé**	**Pasteurised fermented milk**	H+	+	H+	+	*L.mono*	+	+(20.92)	+(19.25)	+(24.60)	+(23.49)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	c
5959	**Yaourt nature lait pasteurisé**	**Pasteurised fermented milk**	H+(4)	+(2)	H+	+	*L.mono*	+	+(21.24)	+(19.52)	+(23.46)	+(21.96)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	c
5960	**Yaourt au lait entier lait pasteurisé**	**Pasteurised fermented milk**	-	-	-	-	/	-	+(23.13)	+(21.03)	+(25.07)	+(24.12)	H+	+	+	+	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		3	c
5961	**Fromage frais lait pasteurisé**	**Pasteurised fermented milk**	-	-	-	-	/	-	+(22.00)	+(20.00)	+(21.91)	+(21.18)	H+	+	+	+	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		3	c
5962	**Crème dessert saveur chocolat lait pasteurisé**	**Dairy based dessert**	H+	+	H+	+	*L.mono*	+	i/23.55	+(23.91)	+(26.84)	+(29.12)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	c
6671	Fromage trois laits	Pasteurised three milk cheese	-	-	-	-	/	-	+(40.30)/ +(39.72)/ +(38.93)	-/-/-	-	-	- (*)	/	-	/	/	/	-	-	**PPNA**	-	**NA**	-	**NA**	-	**NA**	-	3	c
6674	Forêt noire	Pastry	H+	+	H+	+	*L.mono*	+	+(19.17)	+(17.41)	+(18.83)	+(18.10)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		3	c
6833	Sauce béchamel au lait entier	Heat treated product	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	c
6834	Crème fraiche d'Isigny	Béchamel sauce	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	c
6835	Panna cotta	Pasteurised dessert (Panna cotta)	st	st	st	-	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	3	c

VEGETABLES

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																					
									Actero™ Listeria Enrichment Media for 18H at 37°C																					
			Half Fraser		Fraser 1				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation								BACGene *Listeria* Multiplex				BACGene *Listeria* spp.						
													O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)													
			O&A	Palcam	O&A	Palcam	Identification	L.spp. result	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF	All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Fraser 1 (48h at 37°C)	Category	Type
3003	Jeunes carottes surgelées	Carrots	-	-	-	-	/	-	+(27.26)	+(25.73)	+(27.28)	+(24.73)	H+	+	+	+	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		4	a
3004	Courgettes émincées	Zucchini	-	-	-	-	/	-	-	-	-	-	H-d	Not tested	+d	Not tested	NC	Not tested	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
3005	Ciboulette	Chive	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
3734	Pousses haricot mungo	Vegetables	H+	+	H+/H-d (NC)	+	*L.mono*	+	+(27.02)	+(26.54)	+(27.50)	+(26.00)	H-	+	+d	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	a
3742	Courgettes bio	Zucchini	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
3743	Maïs	Corn	H+	+	H+	+	*L.mono*	+	-	-	-	-	-	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	-	4	a
3744	Aubergines	Eggplant	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
3979	Petits pois	Peas	H-	+	H-	+	*L.innoc*	+	+(19.74)	+(19.15)	+(20.67)	+(18.98)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	a
4296	Persil plat	Parsley	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
4298	Ciboulette	Chive	st	-	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
4300	Pommes	Apples	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
4302	Grain de maïs	Corn	H+/H-	+	H+/H-	+	*L.mono./ L.innoc*	+	+(35.27)/ +(36.34)/ +(37.55)	+(35.17)/ +(34.82)/ +(34.75)	+(37.11)	+(34.35)	- /H(*)	+	- /+ (*)	+	*L.innoc*	+ at 72h	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	**+**	4	a
4305	Pousses de haricots mungo	Vegetables	H-d	-	H+/H-	+	*L.mono/ L.innoc*	+	+(25.48)	+(24.71)	+(27.22)	+(26.67)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+/+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	a
4669	Poivrons jaunes crus	Yellow peppers	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
4672	Persil plat	Parsley	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
4674	Ciboulette	Chive	st	-	1H-d	-	NC	-	-	-	-	-	H-d	Not tested	-	/	NC	Not tested	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
4676	Brocolis	Broccoli	-	st	-	-	/	-	+(22.96)	+(21.26)	+(23.19)	+(21.94)	H+	+	+	+	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		4	a
4677	Brocolis	Broccoli	-	-	-	-	/	-	-	-	-	-	H-d	Not tested	-	/	NC	Not tested	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
5788	Poivrons rouges	Red pepper	st	st	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
5795	Poivrons jaunes	Yellow pepper	st	st	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
5797	Champignons	Mushrooms	H-(3)	+(2)	H-	+	*L.innoc*	+	+(27.16)	+(25.32)	+(28.85)	+(27.43)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	**+**	4	a
5799	Ciboulette	Chive	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
6607	Haricots verts	Beans	H-d	+	H-	+	*L.innoc*	+	+(24.08)	+(22.37)	+(24.16)	+(21.81)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+/+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	a
6608	Choux fleurs	Cauliflower	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
6610	Haricots verts	Beans	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
6611	Carottes crues émincées	Sliced carrots	H+	+	H+	+	*L.mono*	+	+(25.37)	+(23.35)	+(24.18)	+(23.41)	H+	+	+d	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	a
6614	Courgettes	Zucchini	H+/H-	+	H+/H-	+	*L.mono/ L.innoc*	+	+(32.57)	+(30.86)	+(32.62)	+(31.39)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	a
6713	Persil	Parsley	-	st	H+d	+	*L.mono*	+	+(35.71)	+(32.58)	+(35.03)	+(33.52)	H+	+	-	/	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	a
6714	Ciboulette	Chive	-	-	H-	+	*L.innoc*	+	+(35.46)	+(34.06)	+(36.03)	+(34.58)	H-d	No result;+	-	/	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	-	4	a
6715	Courgettes en rondelles	Zucchini	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	a
6716	Courgettes en rondelles	Zucchini	H+(2)	+	H+	+	*L.mono*	+	-	-	-	-	-	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	-	4	a
6717	Persil	Parsley	-	-	-	-	/	-	+(37.43)	+(34.41)	+(36.51)	+(35.41)	-/H(*)	+	-	/	*L.innoc*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	**H-d**	4	a
3001	Poêlée Pommes de terre	Cooked potatoes	st	st	st	st	/	-	-	-	-	-	H+d/-	No t tested	-	/	/	Not tested	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
3002	Oignons préfrits	Cooked onions	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
3733	Carottes pré-cuites	Pre-cooked carrot	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
3740	Tajine de légumes	Pre-cooked vegetables	st	-	-	-	/	-	+(39.16)	+(37.97)	+(40.61)	+(40.62)	H-d	+	-	/	*L.seeli*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		4	b

♦ Analyses performed according to the COFRAC accreditation

VEGETABLES

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																					
									Actero™ Listeria Enrichment Media for 18H at 37°C																					
			Half Fraser		Fraser 1		Identification	L.spp. result	BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Fraser 1 (48h at 37°C)	Category	Type
			O&A	Palcam	O&A	Palcam			CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
													Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF											
3741	Champignons émincés	Pre-cooked mushrooms	st	-	-	-	/	-	+(31.13)	+(29.89)	+(31.91)	+(30.11)	H+	+	+	+	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		4	b
4119	Pomme de terre lamelles	Pre-cooked potatoes	st	st	st	-	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
4123	Oignons préfrits	Pre-cooked onions	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
4287	Matières premières saupoudreur tomates		-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
4297	Purée de carottes	carrot purée	H+	+	H+	+	*L.mono*	+	+(16.80)	+(15.51)	+(18.00)	+(17.46)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	b
4299	Tajine	Tajine	H+	+	H+	+	*L.mono*	+	-	-	-	-	-	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	-	4	b
4301	Courgettes bio	Zucchini	-	st	H-	+	*L.innoc*	+	+(33.45)	+(33.25)	+(35.47)	+(34.85)	H+	+	+d	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	b
4304	Oignons préfrits	Pre-cooked onions	st	st	-	-	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
4673	Tomates quartier	Tomatoes	-	-	-	-	/	-	-	-	-	-	H-d	Not tested	-	/	NC	Not tested	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
4675	Courgettes rondes lisses	Zucchini	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
4678	Jeunes carottes surgelées	Frozen carrots	-	-	-	-	/	-	-	-	-	-	H-d	Not tested	-	/	NC	Not tested	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
4680	Oignons préfrits	Pre-fried onions	H+/H-	+(2)	H+	+	*L.mono/ L.innoc*	+	-	-	-	-	st	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	-	4	b
4681	Courgettes précuites	Precooked zucchini	-	-	-	-	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
4682	Poêlée de pommes de terre précuites	Precooked potatoes	st	st	st	st	/	-	+(40.67)/ +(41.12)/-	+(37.61)/ +(38.41)/-	-	-	- (*)	/	- (*)	/	/	/	-	-	**PPNA**	-	**PPNA**	-	**NA**	-	**NA**	-	4	b
4683	Champignons émincés surgelés	Frozen mushrooms	st	st	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
5789	Farce pour wrap	Stuffing for wrap	-	-	H+	+	*L.mono*	+	+(26.37)	+(24.49)	+(27.19)	+(25.28)	H+d (1)	+	+d(1)	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	b
5793	Julienne de légumes	Sliced vegetables	-	-	H+	+	*L.mono*	+	+(24.85)	+(21.86)	+(24.34)	+(22.70)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	b
5794	Purée d'artichaut	Artichoke purée	-	-	-	-	/	-	i/-	i/-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
5796	Préparation provençale	Vegetables based preparation	-	-	-	-	/	-	+(39.43)/ +(39.34)/ +(40.15)	+(37.40)/ +(36.93)/ +(37.06)	+(40.42)/ +(35.25)/ +(38.62)	+(38.38)/ +(37.51)/ +(39.12)	H-d / (*)	Not tested	-	/	/	Not tested	-	-	**PPNA**	-	**PPNA**	-	**PPNA**	-	**PPNA**	-	4	b
5798	Petits pois	Beans	H+	+	H+	+	*L.mono*	+	+(25.91)	+(23.51)	+(26.43)	+(24.88)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+/+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	b
6609	Riz tomates oignons pommes de terre poivrons	Rice based preparation	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
6612	Légumes pour potager	Vegetables	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
6613	Julienne de légumes	Sliced vegetables	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
6615	Légumes parisienne	Vegetables preparation	st	st	-	-	/	-	+(35.54)	+(33.68)	+(36.99)	+(33.07)	H+(1)	+	-	/	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		4	b
6718	Courgettes farcies	RTRH zucchini	H-d	+	H-	+	*L.innoc*	+	+(30.50)	+(28.26)	+(30.75)	+(29.10)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	b
6719	Galettes soja tomates	Vegetables RTRH preparation	-	-	-	-	/	-	+(30.91)	+(27.90)	+(30.47)	+(29.16)	H+	+	-	/	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	-	4	b
6720	Galettes quinoa provençale	Vegetables RTRH preparation	-	-	-	-	/	-	+(39.78)	+(35.22)	+(39.42)	+(35.84)	-/H (*)	+	-	/	*L.welsh*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	**H-**	4	b
6721	Galettes soja tomates	Vegetables RTRH preparation	H-d	+d	H+d	-	*L.mono*	+	+(32.32)	+(30.23)	+(32.51)	+(30.94)	H+ at 72 h	+	-	/	*L.mono* at 72h	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	-	4	b
6722	Galettes boulgour lentilles	Vegetables RTRH preparation	H-d	-	H-	+	*L.innoc*	+	-	-	-	-	-	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	-	4	b

VEGETABLES

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																			
									Actero™ Listeria Enrichment Media for 18H at 37°C																			
			Half Fraser		Fraser 1		Identification	L.spp. result	BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Fraser 1 (48h at 37°C)	Category	Type
			O&A	Palcam	O&A	Palcam			CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
													Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF											
6723	Brunoise méridionale	Vegetables preparation	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
6725	Brunoise méridionale	Vegetables preparation	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	b
3746	Piémontaise	Piémontaise	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	c
4202	**Carottes râpées assaisonnées**	**Seasoned grated carrots**	st	st	st	st	/	-	+(31.38)	+(30.08)	+(32.30)	+(31.31)	H+	+	+	+	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		4	c
4203	**Carottes râpées assaisonnées**	**Seasoned grated carrots**	H-d	+(5)	H-	+	*L.welsh*	+	-	-	-	-	st	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	-	4	c
4204	**Concombre au fromage blanc et ciboulette**	**Seasoned cucumber**	H+	+	H+	+	*L.mono*	+	+(27.34)	+(26.41)	+(29.06)	+(27.49)	H+	+	+(1)	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	c
4206	**Macédoine de légumes avec mayonnaise**	**Macédoine**	H+	+	H+	+	*L.mono*	+	+(24.41)	+(23.42)	+(25.39)	+(24.08)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	c
4208	**Céleri rémoulade**	**Grated celery**	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	c
4303	Macédoine	Macedoine	st	st	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	c
4740	**Champignons à la grecque**	**Deli salad**	H+	+(5)	H+	+	*L.mono*	+	-	-	-	-	-	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	-	4	c
4741	**Tri choux jambon comte**	**Deli salad**	st	-	H+	+	*L.mono*	+	+(19.94)	+(19.57)	+(21.38)	+(21.13)	H-	+	+	+	*L.innoc*	No result;+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	c
4742	**Piémontaise**	**Deli salad**	H-	+	H+/H-	+	*L.mono/ L.innoc*	+	+(18.32)	+(16.79)	+(19.60)	+(18.25)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	**H-**	4	c
4743	**Jardinière de légumes et mayonnaise**	**Deli salad**	H+/H-	+	H-	+	*L.mono/ L.innoc*	+	+(20.82)	+(19.27)	+(21.81)	+(20.45)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	c
4744	**Tartare de tomates**	**Seasoned tomatoes**	H+/H-	+	H-	+	*L.mono/ L.innoc*	+	+(21.98)	+(21.77)	+(23.36)	+(22.29)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	**H-**	4	c
4745	**Carottes râpées assaisonnées**	**Seasoned grated carrots**	H-	+(1)	H-	+	*L.innoc*	+	+(24.44)	+(23.22)	+(25.06)	+(23.86)	H+	+	+d	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		4	c
6822	Macédoine de légumes	Vegetables mix	-	st	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	c
6823	Piémontaise jambon	Deli salad	-	-	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	c
6824	Piémontaise jambon	Deli salad	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	c
6825	Macédoine de légumes	Vegetables mix	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	c
7042	Céleri rémoulade	RTE vegetables	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	c
7043	Coleslaw	RTE vegetables	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	c
7044	Carottes râpées	RTE vegetables	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	c
7045	Betteraves cuites	RTE vegetables	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	4	c

SEAFOOD AND FISHERY PRODUCTS

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp Actero™ Listeria Enrichment Media for 18H at 37°C																					
			Half Fraser		Fraser 1		Identification	L.spp. result	BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Fraser 1 (48h at 37°C)	Category	Type
			O&A	Palcam	O&A	Palcam			CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
													Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF											
2996	Filet de Hoki meunière	Fish filet	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	a
2999	Crevettes grises	Shrimps	-	-	st	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	a
3000	Noix de Saint Jacques	Scallops	H+	+	H+	+	*L.mono*	+	-	-	-	-	st	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	5	a
3729	Filet de Hoki meunière	Fish filet	H-	-	H-	+	*L.welsh*	+	-	-	-	-	-	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	5	a
3730	Meunière poisson blanc	Fish filet	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	a
3981	Tranche pané merlu blanc	RTR fish	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	a
3982	Filet de Panga	Fish filet	H+	+	H+	+	*L.mono*	+	+(23.38)	+(22.48)	+(24.36)	+(22.83)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	a
3984	Moules déco cuites	Mussels	H-	st	H-d	st	NC	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	a
4110	Pavé merlu	Fish product	st	st	-	st	/	-	+(39.78)	+(37.33)	+(38.00)	+(36.83)	H+	+	+	+	*L.mono*	+	+	+	PD	+	PD	+	PD	+	PD		5	a
4130	Cœur de filet de Merlu blanc du cap	Fish filet	H+	+	H+	+1	*L.mono*	+	-	-	-	-	-	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	5	a
4131	Aile de raie	Fish product	H+	+	H+	+	*L.mono*	+	+(29.32)	+(26.80)	+(28.81)	+(27.47)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	a
4685	Ailes de raie	Fish fillet	st	st	st	st	/	-	+(28.11)	+(26.36)	+(27.90)	+(27.00)	H+	+	+	+	*L.mono*		+	+	PD	+	PD	+	PD	+	PD		5	a
4967	Saumon	Salmon fillet	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	a
4968	Colin Alaska	Hake fillet	st	-	-	-	/	-	+(40.62)/ +(39.50)/ +(38.64)	+(37.08)/ +(39.44)/ +(37.39)	-	-	- (*)	/	- (*)	/	/	/	-	-	PPNA	-	PPNA	-	NA	-	NA	-	5	a
4969	Noix de saint jacques	Scallops	st	-	st	st	/	-	+(34.73)	+(33.29)	+(35.68)	+(33.75)	H+(7)	+	+(1)	+	*L.mono*	+	+	+	PD	+	PD	+	PD	+	PD		5	a
4970	Pavé poisson blanc	Fish fillet	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	a
4971	Duo saumon	Salmon fillet	-	st	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	a
4972	Filet de Hoki meunière	Fish fillet	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	a
4973	Nacette de saumon cru	Salmon fillet	H+	+	H+	+	*L.mono*	+	+(23.97)	+(23.01)	+(26.13)	+(24.03)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	a
5790	Chair de saumon	Salmon	-	st	st	-	/	-	+(23.88)	+(21.25)	+(25.10)	+(24.01)	H-	+	+	+	*L.welsh*	+	+	+	PD	+	PD	+	PD	+	PD		5	a
5791	Poisson Panga	Fish fillet	H+	+	H+/H-	+	*L.mono/ L.innoc*	+	+(24.31)	+(22.29)	+(24.99)	+(23.86)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+/+	+	+	PA	+	PA	+	PA	+	PA		5	a
5801	Poisson blanc tranché nature	White piece of fish	H+	+	H+	+	*L.mono*	+	-	-	-	-	st	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	5	a
5802	Filet de cabillaud	Cod fillet	-	-	-	-	/	-	+(40.25)/ +(34.95)/ +(37.75)	+(36.46)/ +(32.14)/ +(32.60)	-	-	- (*)	/	- (*)	/	/	/	-	-	PPNA	-	PPNA	-	NA	-	NA	-	5	a
5964	**Crevettes décortiquées crues**	**Raw peeled shrimp**	-	-	-	-	/	-	+(22.50)	+(20.34)	+(23.82)	+(22.60)	H+	+	+	+	*L.mono*	+	+	+	PD	+	PD	+	PD	+	PD		5	a
5965	**Blanc de calmar**	**Calmar**	H+	+	H+	+	*L.mono*	+	+(21.93	+(20.36)	+(23.47)	+(22.06)	H+	+	-	/	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	a
6618	Poisson blanc	White fish	H+	+	H+	+	*L.mono*	+	+(23.67)	+(21.19)	+(23.07)	+(20.89)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	a
6729	Saumon atlantique	Salmon	H+	-	H+	+	*L.mono*	+	+(26.53)	+(24.62)	+(27.21)	+(26.28)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	a
2998	Filet de bar sauce iodée	Seasoned fish	H+	+	H+	+	*L.mono*	+	+(29.10)	+(27.27)	+(28.88)	+(26.32)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	b
3728	Pulpe saumon fumé	Smoked salmon	H+	+	H+	+	*L.mono*	+	-	-	-	-	-	/	-	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	5	b
3998	Saumon fumé	Smoked salmon	H+(2)	+(3)	H+	+	*L.mono*	+	+(26.46)	+(25.64)	+(27.16)	+(25.75)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	b
3999	Saumon fumé	Smoked salmon	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	b

♦ Analyses performed according to the COFRAC accreditation

SEAFOOD AND FISHERY PRODUCTS

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp Actero™ Listeria Enrichment Media for 18H at 37°C																				Category	Type
			Half Fraser		Fraser 1				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation						BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Fraser 1 (48h at 37°C)		
			O&A	Palcam	O&A	Palcam	Identification	L.spp. result	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
													Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF											
4000	Truite fumée Norvège	Smoked trout	H-	+	H-	+	*L.welsh*	+	+(21.34)	+(20.00)	+(21.98)	+(20.32)	H+/H-	+/+	+	+	*L.mono/ L.welsh*	+/+	+	+	PA	+	PA	+	PA	+	PA		5	b
4001	Truite fumée Norvège	Smoked trout	H+/H-	+	H+/H-	+	*L.mono/ L.welsh*	+	+(18.67)	+(17.62)	+(18.97)	+(17.44)	H+/H-	+/+	+	+	*L.mono/ L.welsh*	+/+	+	+	PA	+	PA	+	PA	+	PA		5	b
4002	Saumon fumé	Smoked salmon	H-	+	H-	+	*L.welsh*	+	+(24.84)	+(23.72)	+(25.55)	+(23.62)	H-	+	+	+	*L.welsh*	+	+	+	PA	+	PA	+	PA	+	PA		5	b
4670	Saumon fumé	Smoked salmon	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	b
4960	Saumon atlantique fumé	Smoked salmon	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	b
4961	Saumon fumé	Smoked salmon	st	st	st	-	/	-	-	-	-	-	st	/	st	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	b
4962	Saumon atlantique fumé	Smoked salmon	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	b
4963	Truite fumée Norvège	Smoked trout	1H+	st	H+	+	*L.mono*	+	-	-	-	-	st	/	st	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	5	b
4964	Saumon atlantique fumé	Smoked salmon	st	st	H+	+	*L.mono*	+	-	-	-	-	st	/	st	/	/	/	-	-	ND	-	ND	-	ND	-	ND	-	5	b
4965	Truite fumée	Smoked trout	H-	+	H-	+	*L.welsh*	+	+(25.29)	+(24.22)	+(27.92)	+(25.30)	H+/H-	+/+	+	+	*L.mono/ L.welsh*	+/+	+	+	PA	+	PA	+	PA	+	PA		5	b
4966	Saumon atlantique fumé	Smoked salmon	H+(3)	+(1)	H+	+	*L.mono*	+	+(39.69)/- / +(39.16)	-	+(39.85)/- / +(38.73)	-	- (*)	/	- (*)	/	/	/	-	-	PPND	-	ND	-	PPND	-	ND	-	5	b
5966	**Lardons saumon fumé**	**Smoked salmon**	H+	+	H+	+	*L.mono*	+	+(22.43)	+(20.95)	+(22.93)	+(22.79)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	b
5967	**Filets de harengs fumés**	**Smoked herring**	H+	+	H+	+	*L.mono*	+	+(29.20)	+(27.98)	+(29.19)	+(30.32)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	b
6727	Chaire de saumon fumé	Smoked salmon	H+	+	H+	+	*L.mono*	+	+(24.86)	+(22.06)	+(24.25)	+(23.16)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	b
6731	Bloc saumon fumé	Smoked salmon	H+/H-	+	H+/H-	+	*L.mono/ L.innoc*	+	+(23.46)	+(21.64)	+(25.06)	+(22.44)	H+/H-	+/+	+	+	*L.mono/ L.welsh*	+/+	+	+	PA	+	PA	+	PA	+	PA		5	b
6826	Lardons saumon atlantique	Smoked salmon	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	b
6827	Tranches de truite fumée	Smoked trout	st	-	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	b
6828	Petites tranches de saumon fumé	Smoked salmon	st	-	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	b
6829	Harengs fumés	Smoked herrings	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	b
6830	Harengs fumés	Smoked herrings	H-	+	H-	+	*L.innoc*	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	b
7047	Saumon fumé	Smoked salmon	st	st	-	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	b
2997	Pané poisson blanc cuit	Breaded fish	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	c
3731	Portion Merlu pané	Fish filet	H-d/ H+d	-	H-d	-	NC	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	c
3732	Filet de colin Fish and chips	RTR Fish	-	-	-	-	/	-	+(29.35)	+(27.94)	+(30.11)	+(27.91	H+	+	-	/	*L.mono*	+	+	+	PD	+	PD	+	PD	+	PD		5	c
3738	Salade du pêcheur	Seafood Salad	-	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	c
3988	Poisson pané	RTR fish	H+d /H-	+	H+d /H-	+	H+NC/ *L.welsh*	+	+(39.50)/ +(37.55)/ +(37.71)	+(37.80)/-/ +38.89	+(38.66)/- /-	+(36.27)/- /-	- (*)	/	- (*)	/	/	/	-	-	PPND	-	PPND	-	PPND	-	PPND	-	5	c
4122	Pané de poisson blanc cuit	RTR fish product	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	c
4126	Nacette de saumon	RTR Salmon	H+	+	H+	-	*L.mono*	+	+(24.08)	+(22.37)	+(23.56)	+(22.10)	H+	+	+	+	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	c
4129	Pané Hoki	RTR Fish product	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	c
4290	Cœur cabillaud sauce provençale	RTR fish product	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	NA	-	NA	-	NA	-	NA	-	5	c
4291	Filet merlu sauce vierge	RTR fish product	H+d	-	H+	+	*L.mono*	+	+(32.99)	+(31.13)	+(34.79)	+(34.29)	H+(1)	+	-	/	*L.mono*	+	+	+	PA	+	PA	+	PA	+	PA		5	c

SEAFOOD AND FISHERY PRODUCTS

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																					
									Actero™ Listeria Enrichment Media for 18H at 37°C																					
			Half Fraser		Fraser 1		Identification	L.spp. result	BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Fraser 1 (48h at 37°C)	Category	Type
			O&A	Palcam	O&A	Palcam			CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
													Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF												
4292	Dos de cabillaud sauce provençale	RTR fish product	st	-	-	-	/	-	+(31.99)	+(30.31)	+(33.21)	+(32.29)	H- (*)	+	-/+ (*)	+	*L.innoc*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	**H-d**	5	c
4295	Hoki pané	RTR fish product	H+	-	H+	+	*L.mono*	+	+(31.09)	+(29.14)	+(31.98)	+(30.93)	H+	+	-	/	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
4313	**Bâtonnets crabe**	**Surimi**	H+	+	H+	+	*L.mono*	+	+(18.20)	+(16.11)	+(18.50)	i/+(17.73) / +(19.21)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
4314	**Terrine de saumon aneth**	**Salmon terrine**	H+	+	H+	+	*L.mono*	+	+(19.64)	+(17.82)	+(20.30)	+(19.58)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
4315	**Rillettes saumon**	**Salmon rillettes**	-	-	st	st	/	-	+(19.27)	+(17.79)	+(19.95)	+(20.62)	H+	+	+	+	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		5	c
4316	**Rillettes crabe tourteau**	**Crab rillettes**	H+	+	H+	+	*L.mono*	+	+(19.30)	+(17.98)	+(20.69)	+(19.72)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
4317	**Rillettes crabe tourteau**	**Crab rillettes**	H-	+	H-	+	*L.innoc*	+	+(21.91)	+(19.75)	+(23.12)	+(22.57)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
5792	Farce de tartare de saumon	Salmon tartar	H-	+	H+/H-	+	*L.mono/ L.wels*	+	+(23.06)	+(21.27)	+(24.77)	+(23.86)	H+	+	+(2)	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
5800	Filet de hoki pané	Breaded fish	H+	+	H+	+	*L.mono*	+	+(28.84)	+(27.00)	+(29.69)	+(29.19)	H+	+	-	/	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
5803	Américain thon	Sandwich (tuna)	H+	+	H+	+	*L.mono*	+	+(30.56)	+(29.49)	+(31.27)	+(29.84)	H+	+	-	/	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
5804	Hoki pané	Breaded fish	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	5	c
5968	**Mini tranche de truite fumée**	**Smoked trout**	H+	+	H+	+	*L.mono*	+	+(21.81)	+(21.06)	+(23.57)	+(22.71)	H+	+	-	/	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
5969	**Bâtonnets saveur crabe**	**Surimi**	-	-	-	-	/	-	+(16.14)	+(14.67)	+(17.69)	+(16.73)	H+	+	+	+	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		5	c
5970	**Terrine de saumon aneth**	**Salmon terrine**	H+	+	H+	+	*L.mono*	+	+(19.16)	+(16.56)	+(22.21)	+(20.25)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
5971	**Terrine aux saint jacques**	**Scallops terrine**	H+	+	H+	+	*L.mono*	+	+(17.98)	+(15.82)	+(18.87)	+(19.71)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
6724	Pommes de terre au thon	Deli salad (tuna, potatoes)	H+	+	H+	+	*L.mono*	+	+(29.21)	+(26.87)	+(29.43)	+(27.70)	H+	+	-	/	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
6726	Filet de cabillaud au beurre	RTRH fish	H+	+	H+	+	*L.mono*	+	+(24.45)	+(21.89)	+(23.86)	+(22.79)	H+	+	+	No result;+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
6728	Pavé poisson blanc provençale	RTRH fish	H+/H-	+	H+/H-	+	*L.mono/ L.innoc*	+	+(32.01)	+(29.43)	+(32.50)	+(30.92)	H+d	+	-	/	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
6730	Filet cabillaud au beurre	RTRH fish	H+	+	H+	-	*L.mono*	+	+(29.48)	+(26.90)	+(29.86)	+(28.02)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
6732	Salade de riz au crabe	Deli salad	H-	+	H-	+	*L.welsh*	+	+(29.03)	+(26.52)	+(29.31)	+(27.62)	H-d	+	+1	+	*L.welsh*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		5	c
6831	Rillettes de saumon	RTE fish (salmon rillettes)	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	5	c
6832	Saumon fumé citron ciboulette	RTRH (Fish	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	5	c

ENVIRONMENTAL SAMPLES																																			
N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp Actero™ Listeria Enrichment Media for 18H at 37°C																								Fraser 1 (48h at 37°C)	Category	Type
			Half Fraser		Fraser 1		Identification	L.spp. result	BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.											
			O&A	Palcam	O&A	Palcam			CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h					
													Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF																
3352	**Déchet poudre de lait**	**Dust (milk powder)**	st	-	-	-	/	-	-/-/-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	a
3353	**Déchet poissons**	**Dust (fish)**	st	-	-	-	/	-	+(37.69)	+(36.35)	+(39.83)	+(37.00)	H-(1)	+	st	/	*L.seeli*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		6	a
4320	**Déchet saucisse 1**	**Waste (pork)**	H-	+	H-	+	*L.innoc*	+	+(17.32)	+(15.65)	+(17.78)	+(17.39)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	a
4321	**Déchet saucisse 1**	**Waste (pork)**	H+	+	H+	+	*L.mono*	+	+(21.35)	+(19.73)	+(22.20)	+(21.06)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	a
4322	**Déchet saucisse 2**	**Waste (pork)**	H-	+	H-	+	*L.innoc*	+	+(17.32)	+(15.63)	+(18.08)	+(17.33)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	a
4323	**Déchet saucisse 2**	**Waste (pork)**	st	st	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	a
4324	**Déchet porc**	**Waste (pork)**	H-	+	H-	+	*L.innoc*	+	+(17.85)	+(16.37)	+(18.81)	+(17.73)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	a
4325	**Déchet porc**	**Waste (pork)**	H+/H-	+	H+/H-	+	*L.mono/ L.welsh*	+	+(19.99)	+(18.73)	+(20.89)	+(20.04)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	a
4326	**Déchet saucisson**	**Waste (pork)**	st	st	st	st	/	-	+(34.40)	+(33.30)	+(36.73)	+(34.66)	H-(4)	+	+	+	*L.innoc*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		6	a
4327	**Déchet saucisson**	**Waste (pork)**	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	a
5437	Matières premières à réception	Residues (Fish industry)	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	a
5438	Déchets de sol	Residues (Fish industry)	H-d	-	-	-	NC	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	a
5439	Déchets de sol étêteuse	Residues (Fish industry)	H+	+	H+/H-	+	*L.mono/ L.innoc*	+	+(22.88)	+(21.24)	+(23.07)	+(22.24)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+/+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	a
5440	Déchets de sol	Residues (Fish industry)	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	a
5441	Déchets purage	Residues (Fish industry)	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	a
5447	Déchets de sol	Residues (Fish industry)	st	st	H-	+	*L.innoc*	+	+(32.62)	+(30.96)	+(33.47)	+(31.82)	H+/H-	+/+	+	+	*L.mono/ L.innoc*	+ /+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	a
6762	**Saucisse végétale déchet 1**	**Waste (vegetables)**	-	-	-	-	/	-	+(38.42)	+(36.33)	+(39.61)	+(38.45)	-/H (*)	+	-	/	*L.welsh*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	**H-**	6	a
7027	Saucisse végétale déchet	Waste (vegetables)	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	a
7028	Déchet porc	Waste (pork)	st	st	st	st	/	-	-	+35.73/-/-	-	-	st	/	st	/	/	/	-	-	**NA**	-	**PPNA**	-	**NA**	-	**NA**	**-**	6	a
7029	Déchet saucisse	Waste (pork)	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	a
3354	**Eau rinçage poussoir (production saucisson poisson)**	**Process water (Pork and fish production)**	st	st	st	-	/	-	+(28.24)	+(26.51)	+(28.01)	+(25.82)	H+	+	+	+	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		6	b
3356	**Eau rinçage cutter (production chair saumon)**	**Process water (fish production)**	H+/H-	+	H+/H-	+	*L.mono/ L.welsh*	+	+(23.08)	+(21.80)	+(23.29)	+(21.47)	H-	+	+	+	*L.welsh*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	b
4686	Eau de process Fabrication chipolatas	Process water	st	st	st	st	/	-	+(39.84)/- /+(34.92)	-/-/-	-	-	- (*)	/	- (*)	/	/	/	-	-	**PPNA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	b
5431	Eau rinçage filets peleuse	Cleaning water (Fish industry)	H+/H-	+	H+/H-	+	*L.mono/ L.innoc*	+	+(26.03)	+(24.47)	+(26.10)	+(24.65)	H+/H-	+/+	+	+/+	*L.mono/ L.innoc*	+/+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	b
5432	Eau rampe de dessalage	Process water (Fish industry)	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	b

♦ Analyses performed according to the COFRAC accreditation

ENVIRONMENTAL SAMPLES

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																			
									Actero™ Listeria Enrichment Media for 18H at 37°C																			
			Half Fraser		Fraser 1		Identification	L.spp. result	BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Fraser 1 (48h at 37°C)	Category	Type
			O&A	Palcam	O&A	Palcam			CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h			
													Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF											
5433	Eau lave-main	Cleaning water (Fish industry)	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	-	6	b
5434	Eau rinçage après décaissage	Cleaning water (Fish industry)	st	st	st	st	/	-	+(39.76)/ -/-	-	+(38.58)/- /-	-	st	/	st	/	/	/	-	-	**PPNA**	-	**NA**	-	**PPNA**	**-**	**NA**	**-**	6	b
5435	Eau rinçage bac inox	Cleaning water (Fish industry)	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	b
5436	Eau local taux de sel	Process water (Fish industry)	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	b
6682	Eau parage n°1 (industrie de poissons)	Process water (fish industry)	st	st	st	st	/	-	-/-/-	+(37.52)/ +(37.66)/-	-	+(37.16)/ +(32.77)/ +(35.58)	- (*)	/	st	/	/	/	-	-	**NA**	-	**PPNA**	**-**	**NA**	**-**	**PPNA**	**-**	6	b
6683	Eau sortie épineuse (industrie de poissons)	Process water (fish industry)	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	b
6684	Eau égout maturation salage (industrie de poissons)	Sewer water (fish industry)	st	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	b
6685	Eau peleuse (industrie de poissons)	Process water (fish industry)	st	st	st	st	/	-	+(20.53)	+(18.53)	+(20.22)	+(19.61)	H-	+	-	/	*L.innoc*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		6	b
6765	**Eau process lavage carcasse poulet**	**Process water**	H-	+	H-	+	*L.innoc*	+	+(18.42)	+(16.18)	+(18.97)	+(17.70)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	b
6767	**Eau rinçage mélangeur ferments**	**Rinsing water**	H-	+	H-	+	*L.welsh*	+	+(22.10)	+(19.40)	+(23.41)	+(20.61)	H-	+	+	+	*L.welsh*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	b
6769	**Eau process rinçage robot coupe fabrication appâts**	**Rinsing water**	H-	+	H-	+	*L.welsh*	+	+(17.88)	+(15.48)	+(17.64)	+(16.07)	H-	+	+	+	*L.welsh*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	b
6771	**Eau rinçage fabrication biscuits**	**Rinsing water**	H-	+	H-	+	*L.innoc*	+	-	-	-	-	st	/	st	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	**-**	6	b
6773	**Eau rinçage fabrication riz cuit**	**Rinsing water**	-	st	st	st	/	-	+(26.15)	+(23.42)	+(26.13)	+(24.97)	H-	+	+	No result;+	*L.welsh*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		6	b
6777	**Eau process fabrication chipolatas**	**Process water**	H-	+	H-	+	*L.innoc*	+	+(20.47)	+(18.48)	+(20.88)	+(20.94)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	b
7025	Eau de process fabrication saucisse végétale	Process water	st	-	-	-	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	b
7026	Eau de rinçage production poisson	Rinsing water	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	b
3357	**Lingette planche découpe poisson (thon saumon)**	**Wipe (fish production)**	H-	+	H-	+	*L.welsh*	+	+(26.53)	+(24.83)	+(27.12)	+(24.66)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	c
3358	**Lingette lave botte**	**Wipe (fish production)**	H+	+	H+	+	*L.mono*	+	-	-	-	-	st	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	**-**	6	c

ENVIRONMENTAL SAMPLES

N° Sample	Product (french name)	Product	Reference method:ISO 11290-1/A1♦						Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp																			
									Actero™ Listeria Enrichment Media for 18H at 37°C																			
			Half Fraser		Fraser 1				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmation							BACGene *Listeria* Multiplex				BACGene *Listeria* spp.						
													O&A		Palcam 48h		After purification step on TSYEA (from O&A or Palcam)		All confirmatory tests									
			O&A	Palcam	O&A	Palcam	Identification	L.spp. result	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	CFX96 PCR result (Ct)	AriaMx PCR result (Ct)	Result 24h	MALDI-TOF	Result 48h	MALDI-TOF	Reference tests	MALDI-TOF		Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Final result **CFX96**	Agreement **CFX96** Ref/Alt 18h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h	Fraser 1 (48h at 37°C)	Category	Type
3359	**Lingette bac stockage poisson**	**Wipe (fish production)**	st	st	st	st	/	+	+(24.67)	+(22.98)	+(24.71)	+(22.60)	H+	+	+	+	*L.mono*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	c
3360	**Lingette bac stockage épices (production poisson)**	**Wipe (fish production)**	H+	+	H+	+	*L.mono*	+	+(27.14)	+(25.10)	+(27.05)	+(24.86)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	c
3361	**Lingette Multivac conditionneuse**	**Wipe (fish production)**	H-	+	H-	+	*L.innoc*	+	-	-	-	-	st	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	**-**	6	c
3362	**Lingette Hall techno table production**	**Wipe (fish production)**	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	c
5442	Lingette roue chariot	Wipe (Fish industry)	H-(2)	-	H-	+	*L.innoc*	+	-	-	-	-	st	/	-	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	**-**	6	c
5443	Lingette tapis sortie Boader	Wipe (Fish industry)	H-	+	H-	+	*L.innoc*	+	+(20.45)	+(18.85)	+(21.27)	+(18.80)	H-	+	+	+	*L.innoc*	No result;+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	c
5444	Lingette sol frigo	Wipe (Fish industry)	st	st	st	-	/	-	-	-	-	-	st	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	c
5445	Lingette peau de saumon	Wipe (Fish industry)	H-(4)	+(5)	H-	+	*L.innoc*	+	-	-	-	-	st	/	st	/	/	/	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	**-**	6	c
5446	Lingette paroi surgélation	Wipe (Fish industry)	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	c
5448	Lingette tapis parage après nettoyage	Wipe after cleaning (Fish industry)	H-	+	H-	+	*L.innoc*	+	+(25.39)	+(23.69)	+(25.79)	+(24.27)	H-	+	+	+	*L.innoc*	+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**		6	c
5449	Lingette tapis étêteuse après nettoyage	Wipe after cleaning (Fish industry)	st	st	st	-	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	c
5450	Lingette balance après nettoyage	Wipe after cleaning (Fish industry)	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	c
5451	Lingette égout yakitori après nettoyage	Wipe after cleaning (Fish industry)	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	c
5452	Lingette darfresh après nettoyage	Wipe after cleaning (Fish industry)	st	st	-	-	/	-	+(31.18)	+(29.71)	+(31.61)	+(30.51)	H+	+	+	+	*L.mono*	+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**		6	c
6686	Chiffonnette sol dessale (industrie de poissons)	Wipe (Fish industry)	st	st	st	st	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	c
6687	Chiffonnette fin tapis parage (industrie de poissons)	Wipe (Fish industry)	-	-	-	-	/	-	-	-	-	-	-	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	c
7030	Chiffonnette riz cuit	Wipe	st	st	st	st	/	-	-	-	-	-	st	/	st	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	c
7031	Chiffonnette riz au lait	Wipe	st	st	st	st	/	-	-	-	-	-	st	/	-	/	/	/	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	**-**	6	c

COMPOSITE FOODS / READY TO EAT AND READY TO REHEAT																					
N° Sample	Product (french name)	Product	Reference method: ISO 11290-1/A1♦ *Listeria spp.* result	Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp Actero™ Listeria Enrichment Media for 18H 37°C + 72h at 2-8°C						BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Cate-gory	Type
				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmations											
				CFX96-PCR result	AriaMx -PCR result	CFX96 -PCR result	Aria Mx-PCR result			Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h	Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h		
				(Ct)	(Ct)	(Ct)	(Ct)	O&A 24h	Palcam 48h										
3985	Saucisson bœuf volaille	Delicatessen	-	+(34.22)	+(32.81)	+(35.87)	+(33.98)	H+	-	+	**PD**	+	**PD**	+	**PD**	+	**PD**	1	a
3989	Brin surimi	RTE surimi	+	-	-	-	-	-	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	1	a
4112	Sandwich poulet tomate œuf	Sandwich	+	-	-	-	-	-	st	-	**ND**	-	**ND**	-	**ND**	-	**ND**	1	a
4121	Sandwich jambon salami emmental	Sandwich	-	+(20.32)	+(19.56)	+(21.09)	+(19.51)	H+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	1	a
4288	Guacamole	Guacamole	+	-	-	-	-	/	/	-	**ND**	-	**ND**	-	**ND**	-	**ND**	1	a
4293	Salade camarguaise	Salad	+	-	-	-	-	-	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	1	a
5023	**Minis jambon emmental**	**Ham and cheese sandwich**	+	-	-	-	-	-	-	-	**ND**	-	**ND**	**-**	**ND**	**-**	**ND**	1	a
5024	**Simple et bon jambon emmental**	**Ham and cheese sandwich**	-	-	-			-	-	-	**NA**	-	**NA**					1	a
5030	**Sandwich poulet rôti**	**Chicken sandwich**	+	+(28.61)	+(27.60)	+(30.55)	+(28.84)	H-	+	+	**PA**	+	**PA**	**+**	**PA**	**+**	**PA**	1	a
5231	**Sandwich jambon beurre**	**Ham and butter sandwich**	+	+(21.60)	+(18.57)	+(20.50)	+(19.32)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	a
5232	**Sandwich jambon beurre**	**Ham and butter sandwich**	+	+(22.17)	+(18.81)	+(20.83)	+(18.54)	H+	+	+	**PA**	+	**PA**	**+**	**PA**	**+**	**PA**	1	a
3012	Escalope milanaise	Cooked meat	+	+(26.36)	+(24.42)	+(24.97)	+(23.17)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	b
3980	Cordon bleu de dinde	RTR poultry meat	+	+(22.16)	+(20.78)	+(22.76)	+(21.49)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	b
3983	Cordon bleu de dinde	RTR poultry meat	+	+(23.59)	+(22.05)	+(24.92)	+(23.46)	H+	-	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	b
4115	Sauce	Sauce	-	-	-	-	-	-	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	1	b
4116	Plaque à croissant	RTR croissant	+	+(27.18)	+(26.70)	+(28.31)	+(27.04)	H+	+d	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	b
4127	Paëlla	Paella	-	-	+(18.87)/ +(20.83)	+(22.10)/ +(21.92)	+(19.07)/ +(19.92)	- (*)	- (*)	-	**NA**	-	**PPNA**	-	**PPNA**	-	**PPNA**	1	b
4294	Raviolis	Raviolis	+	+(23.63)	+(21.61)	+(24.48)	+(24.07)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	b
4754	**Feuilleté au jambon champignons**	**Ready to reheat**	+	+(20.58)	+(20.00)	+(21.06)	+(19.91)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	b
4755	**Friands à la viande**	**Ready to reheat**	+	+(17.04)	+(15.58)	+(17.84)	+(15.89)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	b
4756	**Quiche lorraine**	**Ready to reheat**	+	+(17.98)	+(17.44)	+(18.98)	+(17.41)	H+/H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	b
4758	**Tarte au tomates**	**Ready to reheat**	+	+(19.48)	+(18.06)	+(20.13)	+(18.49)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	b
5033	**Pizza pate fine jambon fromage**	**Ham and cheese pizza**	-	+(26.83)	+(26.05)	+(28.16)	+(26.65)	H+	+	+	**PD**	+	**PD**	**+**	**PD**	**+**	**PD**	1	b
4188	**Eclair vanille**	**Pastry**	+	+(23.80)	+(21.60)	+(24.04)	+(23.36)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	c
4189	**Eclair vanille**	**Pastry**	+	+(22.25)	+(20.24)	+(22.45)	+(21.53)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	c
4190	**Millefeuille**	**Pastry**	+	+(21.01)	+(19.42)	+(22.43)	+(20.40)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	c
4191	**Millefeuille**	**Pastry**	+	+(22.82)	+(20.46)	+(23.13)	+(21.19)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	c
4192	**Omelette Tortilla nature**	**Omelette**	+	-	-	-	-	st	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	1	c
4193	**Omelette Tortilla nature**	**Omelette**	+	+(17.25)	+(15.74)	+(17.92)	+(16.61)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	c
4746	**Religieuse café**	**Pastry**	+	+(19.80)	+(17.34)	+(19.27)	+(18.58)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	c
4747	**Pêche melba**	**Pastry**	+	+(22.00)	+(19.95)	+(22.57)	+(21.48)	H+/H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	c
4748	**Tutti frutti**	**Pastry**	-	+(22.08)	+(20.64)	+(23.22)	+(21.94)	H+/H-	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	1	c
4749	**Eclair chocolat**	**Pastry**	+	+(22.46)	+(22.54)	+(28.28)	+(27.91)	H+/H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	1	c
4750	**Choux caramel**	**Pastry**	-	+(24.31)	+(22.40)	+(25.30)	+(24.71)	H+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	1	c
5039	Eclair chocolat	Pastry	-	-	-			-	-	-	**NA**	-	**NA**					1	c

♦ Analyses performed according to the COFRAC accreditation

MEAT PRODUCTS																					
N° Sample	Product (french name)	Product	Reference method: ISO 11290-1/A1♦ *Listeria spp.* result	Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp Actero™ Listeria Enrichment Media for 18H 37°C + 72h at 2-8°C														Cate-gory	Type
				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmations		BACGene *Listeria* Multiplex				BACGene *Listeria* spp.					
				CFX96-PCR result (Ct)	AriaMx -PCR result (Ct)	CFX96 -PCR result (Ct)	Aria Mx-PCR result (Ct)	O&A 24h	Palcam 48h	Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h	Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h		
3007	Trime abime silver skinne	Meat product	-	+(33.16)	+(30.12)	+(32.44)	+(30.08)	H+	-	+	PD	+	PD	+	PD	+	PD	2	a
3009	Lardons fumés	Meat product	+	+(32.20)	+(29.50)	+(31.40)	+(29.58)	H+	+	+	PA	+	PA	+	PA	+	PA	2	a
3010	Gésiers	Meat product	+	+(26.64)	+(24.36)	+(25.82)	+(23.88)	H+	-	+	PA	+	PA	+	PA	+	PA	2	a
3011	Paupiette	Meat product	-	+(25.69)	+(23.26)	+(25.77)	+(22.86)	H-	+	+	PD	+	PD	+	PD	+	PD	2	a
3722	VSM Poulet	Chicken meat	+	-	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	2	a
3735	Viande hachée	Ground beef	-	+(22.92)	+(21.89)	+(23.28)	+(21.63)	H-	-	+	PD	+	PD	+	PD	+	PD	2	a
3736	Viande poulet	Chicken meat	+	+(25.32)	+(24.59)	+(25.93)	+(24.04)	H-/H+	+	+	PA	+	PA	+	PA	+	PA	2	a
4109	Escalope de dinde	Poultry meat	+	-	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	2	a
4117	Suprême poulet	Chicken meat	+	+(25.23)	+(24.35)	+(29.06)	+(24.74)	H+	+	+	PA	+	PA	+	PA	+	PA	2	a
4118	Cuisse de poule	Poultry meat	+	+(23.02)	+(22.10)	+(24.18)	+(22.51)	H- (*L.innocua*)	+	+	PA	+	PA	+	PA	+	PA	2	a
4128	Haché d'agneau	Lamb meat	+	+(20.62)	+(19.88)	+(21.57)	+(19.93)	H+	+	+	PA	+	PA	+	PA	+	PA	2	a
6840	Côte à griller	Raw meat (beef)	-															2	a
6841	Pavés de veau	Raw meat (veal)	-	+(18.27)	+(15.67)	+(18.91)	+(18.86)	H+	+	+	PD	+	PD	+	PD	+	PD	2	a
7046	Steak haché 15%MG	Ground beef	-															2	a
3737	Côte de porc Miel moutarde	Seasoned pork meat	-	+(24.38)	+(23.44)	+(25.44)	+(23.30)	H+	+	+	PD	+	PD	+	PD	+	PD	2	b
3994	Blanquette	RTR Blanquette	+	+(25.44)	+(23.80)	+(23.43)	+(22.62)	H+/H-	+	+	PA	+	PA	+	PA	+	PA	2	b
4114	Côte de porc thym romarin	Meat based products ready to reheat	+	+(21.34)	+(20.89)	+(23.15)	+(21.85)	H+	+	+	PA	+	PA	+	PA	+	PA	2	b
4124	Côte de porc thym romarin	Meat based products ready to reheat	-	+(19.12)	+(18.03)	+(19.90)	+(18.91)	H+	+	+	PD	+	PD	+	PD	+	PD	2	b
4195	**Coq au vin**	**Meat based products ready to reheat**	+	+(22.08)	+(19.87)	+(21.92)	+(20.07)	H+	+	+	PA	+	PA	+	PA	+	PA	2	b
4196	**Porc sauce aigre douce**	**Meat based products ready to reheat**	+	+(23.26)	+(21.70)	+(24.56)	-/+(23.46)/+(22.97)	H-	+	+	PA	+	PA	+	PA	+	PA	2	b
4197	**Porc sauce aigre douce**	**Meat based products ready to reheat**	-	+(21.34)	+(20.66)	+(22.01)	+(19.90)	H-	+	+	PD	+	PD	+	PD	+	PD	2	b
4198	**Fricadelles sauce tomate**	**Meat based products ready to reheat**	-	+(22.67)	+(20.84)	+(22.74)	+(27.37)	H-	+	+	PD	+	PD	+	PD	+	PD	2	b
4199	**Fricadelles sauce tomate**	**Meat based products ready to reheat**	+	+(20.60)	+(18.83)	+(21.48)	+(20.48)	H-	+	+	PA	+	PA	+	PA	+	PA	2	b
4200	**Bœuf aux oignons**	**Meat based products ready to reheat**	+	-	+(38.78)/ +(38.26)/-	-	-	st (*)	st (*)	-	ND	-	PPND	-	ND	-	ND	2	b
4201	**Bœuf aux oignons**	**Meat based products ready to reheat**	+	+(21.11)	+(18.87)	+(21.41)	+(19.72)	H-	+	+	PA	+	PA	+	PA	+	PA	2	b
3008	Merguez volaille	Merguez	-	+(31.80)	+(29.82)	+(31.27)	+(28.94)	H-	-	+	PD	+	PD	+	PD	+	PD	2	c
3725	Saucisse sèche volaille bœuf	Delicatessen	-	+(26.27)	+(25.28)	+(26.98)	+(25.65)	H+	+	+	PD	+	PD	+	PD	+	PD	2	c
3727	Saucisson à l'oignon de Roscoff	Delicatessen	+	+(34.44)	+(33.17)	+(34.72)	+(32.81)	H-	-	+	PA	+	PA	+	PA	+	PA	2	c
4541	**Salami**	**Salami**	-	+(28.68)	+(28.76)	+(29.34)	+(27.79)	H+	+	+	PD	+	PD	+	PD	+	PD	2	c
4542	**Jambon de Paris**	**Ham**	+	+(17.19)	+(18.17)	+(18.79)	+(17.47)	H+	+	+	PA	+	PA	+	PA	+	PA	2	c
4544	**Bacon fumé**	**Smoked bacon**	+	+(38.55)/ +(35.0)/ +(35.95)	+(36.79)/ +(33.61)/ +(34.76)	+(35.67)/ +(36.77)/ +(37.72)	+(34.89)/ +(34.49)/ +(34.55)	st (*)	st (*)	-	PPND	-	PPND	-	PPND	-	PPND	2	c
4545	**Jambon serrano**	**Cured ham**	-	+(26.36)	+(26.02)	+(28.00)	+(26.19)	H-/H+	+	+	PD	+	PD	+	PD	+	PD	2	c
4684	Jambon à l'ancienne	Ham	+	-	-	-	-	st	-	-	ND	-	ND	-	ND	-	ND	2	c

♦ Analyses performed according to the COFRAC accreditation

MILK AND DAIRY PRODUCTS																					
N° Sample	Product (french name)	Product	Reference method: ISO 11290-1/A1♦ *Listeria spp.* result	Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp Actero™ Listeria Enrichment Media for 18H 37°C + 72h at 2-8°C						BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Cate-gory	Type
				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmations		Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h	Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h		
				CFX96-PCR result (Ct)	AriaMx -PCR result (Ct)	CFX96 -PCR result (Ct)	Aria Mx-PCR result (Ct)	O&A 24h	Palcam 48h										
3340	**Comte lait cru**	**Raw milk cheese**	-	+(24.82)	+(21.29)	+(22.73)	+(20.84)	H+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	a
3342	**Grana padano lait cru**	**Raw milk cheese**	+	-	-	-	-	-	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	3	a
3990	Maroilles	Raw milk cheese	-	+(37.17)	+(36.74)	+(36.62)	+(34.64)	H-	-	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	a
3991	Fromage affiné brebis	Raw ewe's milk cheese	-	-	-			-	-	-	**NA**	-	**NA**					3	a
4526	**Rocamadour au lait cru**	**Raw goat's milk cheese**	+	-	-	-	-	st	st	-	**ND**	-	**ND**	-	**ND**	-	**ND**	3	a
4527	**Roquefort au lait cru de brebis**	**Raw ewe's milk cheese**	+	+(34.59)	+(33.59)	+(33.25)	+(32.53)	H+d/H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	a
4528	**Tomme des bauges au lait cru**	**Raw milk cheese**	+	+(35.83)	+(34.79)	+(36.44)	+(36.47)	H+d (NC)/H-	-	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	a
4529	**Saint Nectaire fermier au lait cru**	**Raw milk cheese**	-	+(29.90)	+(29.47)	+(30.56)	+(29.62)	H+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	a
4530	**Comte 12 mois au lait cru**	**Raw milk cheese**	+	+(33.97)	+(33.26)	+(32.84)	+(31.36)	H-	-	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	a
5952	Munster lait cru	Raw milk cheese	+	+(20.07)	+(18.17)	+(21.59)	+(19.81)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	a
3346	**Crème au lait cru 1**	**Raw milk cream**	+	+(24.01)	+(21.87)	+(22.82)	+(20.34)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	b
3347	**Crème au lait cru 2**	**Raw milk cream**	+	+(20.73)	+(19.30)	+(20.46)	+(18.15)	H+ (*L.iva/ L.mono*)	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	b
3348	**Crème au lait cru 6**	**Raw milk cream**	+	+(21.84)	+(20.90)	+(22.05)	+(19.78)	H+ (*L.iva/ L.mono*)	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	b
3745	Lait brebis	Raw ewe's milk	+	+(30.17)	+(28.32)	+(30.70)	+(29.18)	H+	-	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	b
4532	**Lait fermenté**	**Fermented milk**	+	+(17.06)	+(16.30)	+(18.52)	+(16.72)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	b
4533	**Lait fermenté**	**Fermented milk**	+	+(19.22)	+(19.66)	+(21.34)	+(19.63)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	b
4534	**Lait ribot lait fermenté maigre**	**Fermented milk**	+	+(20.66)	+(20.12)	+(21.88)	+(20.53)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	b
4535	**Lait ribot lait fermenté maigre**	**Fermented milk**	+	-	-	-	-	-	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	3	b
4536	**Lait cru de vache**	**Raw milk**	+	+(26.46)	+(25.78)	+(28.09)	+(26.47)	H+/H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	b
4537	**Lait ribot**	**Fermented milk**	+	+(37.55)/-/ +(37.56)	-/-/+(35.98)	+(38.60)/ +(38.23)/ +(38.53)	+(36.72)/ +(35.44)/ +(35.09)	st (*)	st (*)	-	**PPND**	-	**ND**	-	**PPND**	-	**PPND**	3	b
4538	**Lait fermenté**	**Fermented milk**	+	+(20.14)	+(19.37)	+(21.46)	+(20.31)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	b
4539	**Lait fermenté**	**Fermented milk**	+	+(19.08)	+(18.60)	+(20.57)	+(18.91)	H+/H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	b
5953	**Lait cru fermier**	**Raw milk**	+	+(21.08)	+(19.22)	+(22.82)	+(20.39)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	b
5954	**Lait cru de vache**	**Raw milk**	-	+(33.02)	+(30.33)	+(33.57)	+(31.71)	H+	-	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	b
3006	Beurre	Butter	-	+(26.45)	+(23.87)	+(26.02)	+(23.86)	H-d (*L.seeli*)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	c
3349	**Bleu des causses lait pasteurisé**	**Pasteurised milk cheese**	-	+(29.82)	+(28.61)	+(29.75)	+(27.85)	H-	+d	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	c
4306	**Brique brebis au lait pasteurisé**	**Pasteurised ewe's milk cheese**	+	+(19.32)	+(16.96)	+(18.81)	+(18.17)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	c
4307	**Fromage au lait pasteurisé**	**Pasteurised milk cheese**	+	+(19.94)	+(18.14)	+(19.81)	+(19.26)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	c
4308	**Tomme des Pyrénées au lait pasteurisé**	**Pasteurised milk cheese**	+	+(20.29)	+(18.90)	+(20.72)	+(20.62)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	c
4309	**Bleu d'auvergne au lait pasteurisé**	**Pasteurised milk cheese**	+	-	-	-	-	st	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	3	c
4310	**Emmental français au lait pasteurisé**	**Pasteurised milk cheese**	+	+(23.16)	+(21.80)	+(22.85)	+(21.93)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	c
4311	**Saint Paulin au lait pasteurisé**	**Pasteurised milk cheese**	+	+(21.21)	+(19.92)	+(22.16)	+(21.53)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	c
4312	**Camembert au lait pasteurisé**	**Pasteurised milk cheese**	+	+(21.40)	+(18.97)	+(21.67)	+(20.62)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	c
4330	Brique brebis au lait pasteurisé	Pasteurised milk cheese	-	+(32.51)	+(31.08)	+(33.05)	+(33.06)	H+ (*L.mono*)	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	c

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				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmations		BACGene *Listeria* Multiplex				BACGene *Listeria* spp.					
				CFX96-PCR result	AriaMx -PCR result	CFX96 -PCR result	Aria Mx-PCR result			Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h	Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h		
				(Ct)	(Ct)	(Ct)	(Ct)	O&A 24h	Palcam 48h										
4331	Camembert au lait pasteurisé	Pasteurised milk cheese	-															3	c
4332	Saint Paulin au lait pasteurisé	Pasteurised milk cheese	-															3	c
5958	**Petit suisse lait pasteurisé**	**Pasteurised fermented milk**	+	+(23.36)	+(18.00)	+(25.70)	+(21.88)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	c
5959	**Yaourt nature lait pasteurisé**	**Pasteurised fermented milk**	+	+(20.22)	+(17.72)	i/+(25.16)	+(22.59)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	c
5960	**Yaourt au lait entier lait pasteurisé**	**Pasteurised fermented milk**	-	+(21.50)	+(18.72)	+(22.29)	+(21.56)	H+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	c
5961	**Fromage frais lait pasteurisé**	**Pasteurised fermented milk**	-	+(20.19)	+(18.54)	+(21.59)	+(20.39)	H+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	3	c
5962	**Crème dessert saveur chocolat lait pasteurisé**	**Dairy based dessert**	+	+(24.98)	+(18.59)	+(24.04)	+(24.06)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	c
6671	Fromage trois laits	Pasteurised three milk cheese	-	-	-	-	-	-	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	3	c
6674	Forêt noire	Pastry	+	+(16.84)	+(14.52)	+(16.56)	+(17.07)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	3	c

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				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmations		BACGene *Listeria* Multiplex				BACGene *Listeria* spp.					
				CFX96-PCR result	AriaMx -PCR result	CFX96 -PCR result	Aria Mx-PCR result			Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h	Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h		
				(Ct)	(Ct)	(Ct)	(Ct)	O&A 24h	Palcam 48h										
3003	Jeunes carottes surgelées	Carrots	-	+(24.41)	+(21.68)	+(23.95)	+(21.75)	H+	+	+	PD	+	PD	+	PD	+	PD	4	a
3734	Pousses haricot mungo	Vegetables	+	+(23.31)	+(22.53)	+(23.77)	+(22.10)	H-	+	+	PA	+	PA	+	PA	+	PA	4	a
3743	Maïs	Corn	+	-	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	4	a
3979	Petits pois	Peas	+	+(17.42)	+(16.93)	+(18.57)	+(16.96)	H-	+	+	PA	+	PA	+	PA	+	PA	4	a
4302	Grain de maïs	Corn	+	+(35.12)	+(33.44)	+(36.29)	+(35.51)	H+/H- (*)	+ (*)	+	PA	+	PA	+	PA	+	PA	4	a
4305	Pousses de haricots mungo	Vegetables	+	+(22.93)	+(20.75)	+(23.69)	+(22.91)	H-/H+	+	+	PA	+	PA	+	PA	+	PA	4	a
4676	Brocolis	Broccoli	-	+(20.71)	+(18.96)	+(21.28)	+(20.33)	H+	+	+	PD	+	PD	+	PD	+	PD	4	a
5797	Champignons	Mushrooms	+	+(20.89)	+(19.98)	+(23.50)	+(21.28)	H+	+	+	PA	+	PA	+	PA	+	PA	4	a
6607	Haricots verts	Beans	+	+(30.28)	+(28.10)	+(32.58)	+(32.60)	H-	+	+	PA	+	PA	+	PA	+	PA	4	a
6611	Carottes crues émincées	Sliced carrots	+	+(25.37)	+(23.24)	+(26.67)	+(25.36)	H+	+	+	PA	+	PA	+	PA	+	PA	4	a
6614	Courgettes	Zucchini	+	+(28.19)	+(25.95)	+(29.61)	+(28.39)	H-	+	+	PA	+	PA	+	PA	+	PA	4	a
6713	Persil	Parsley	+	+(32.14)	+(29.60)	+(32.74)	+(31.16)	H+	+	+	PA	+	PA	+	PA	+	PA	4	a
6714	Ciboulette	Chive	+	+(35.41)	+(33.14)	+(37.02)	+(34.35)	H-d	-	+	PA	+	PA	+	PA	+	PA	4	a
6716	Courgettes en rondelles	Zucchini	+	-	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	4	a
6717	Persil	Parsley	-	+(36.07)	+(32.76)	+(36.57)	+(34.80)	H-d (*)	-	+	PD	+	PD	+	PD	+	PD	4	a
3740	Tajine de légumes	Pre-cooked vegetables	-	+(39.05)	-/+(32.81)/+(36.28)	+(36.24)	+(34.81)	H-	-	+	PD	-	NA	+	PD	+	PD	4	b
3741	Champignons émincés	Pre-cooked mushrooms	-	+(28.15)	+(27.25)	+(28.46)	+(26.77)	H+	+	+	PD	+	PD	+	PD	+	PD	4	b
4297	Purée de carottes	carrot purée	+	+(14.59)	+(12.81)	+(15.73)	+(14.90)	H+	+	+	PA	+	PA	+	PA	+	PA	4	b
4299	Tajine	Tajine	+	-	-	-	-	st	-	-	ND	-	ND	-	ND	-	ND	4	b
4301	Courgettes bio	Zucchini	+	+(32.28)	+(31.03)	+(33.33)	+(32.57)	H+	+	+	PA	+	PA	+	PA	+	PA	4	b
4680	Oignons préfrits	Pre-fried onions	+	-	-	-	-	st	-	-	ND	-	ND	-	ND	-	ND	4	b
4682	Poêlée de pommes de terre précuites	Precooked potatoes	-	-	-	-	-	st	-	-	NA	-	NA	-	NA	-	NA	4	b
5789	Farce pour wrap	Stuffing for wrap	+	+(24.91)	+(22.21)	+(25.13)	+(23.59)	H+	+	+	PA	+	PA	+	PA	+	PA	4	b
5793	Julienne de légumes	Sliced vegetables	+	+(18.94)	+(16.64)	+(19.41)	+(17.96)	H+	+	+	PA	+	PA	+	PA	+	PA	4	b
5796	Préparation provençale	Vegetables based preparation	-	+(40.46)/-/ +(39.05)	+(38.38)/ +(37.85) /+(37.79)	+(40.58)/ +(40.57) /+(40.28)	+(38.57)/ +(38.09) /+(39.25)	-(*)	- (*)	-	PPNA	-	PPNA	-	PPNA	-	PPNA	4	b
5798	Petits pois	Beans	+	+(25.38)	+(23.35)	+(25.22)	+(23.76)	H+/H-	+	+	PA	+	PA	+	PA	+	PA	4	b
6612	Légumes pour potager	Vegetables	-	-	-	-	-	st	st	-	NA	-	NA	-	NA	-	NA	4	b
6615	Légumes parisienne	Vegetables preparation	-	+(37.68)	+(36.16)	-/-/-	-/-/-	H+	st	+	PD	+	PD	+	PD	+	PD	4	b
6718	Courgettes farcies	RTRH zucchini	+	+(26.04)	+(23.59)	+(26.28)	+(30.54)	H-	+	+	PA	+	PA	+	PA	+	PA	4	b
6719	Galettes soja tomates	Vegetables RTRH preparation	-	+(28.44)	+(26.63)	+(28.62)	+(27.02)	H+ (*)	-	+	PD	+	PD	+	PD	+	PD	4	b
6720	Galettes quinoa provençale	Vegetables RTRH preparation	-	+(40.24)	-/-/-	+(40.16)	-/-/-	H-d (*)	-	+	PD	-	NA	+	PD	-	NA	4	b
6721	Galettes soja tomates	Vegetables RTRH preparation	+	+(28.95)	+(26.95)	+(29.09)	+(27.59)	1H+d (*L.mono*)	+1d	+	PA	+	PA	+	PA	+	PA	4	b
6722	Galettes boulgour lentilles	Vegetables RTRH preparation	+	-	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	4	b
6723	Brunoise méridionale	Vegetables preparation	-															4	b
6725	Brunoise méridionale	Vegetables preparation	-															4	b
3746	Piémontaise	Piémontaise	-															4	c
4202	**Carottes râpées assaisonnées**	**Seasoned grated carrots**	-	+(28.20)	+(26.37)	+(28.55)	+(27.15)	H+	+	+	PD	+	PD	+	PD	+	PD	4	c
4203	**Carottes râpées assaisonnées**	**Seasoned grated carrots**	+	-	-	-	-	st	st	-	ND	-	ND	-	ND	-	ND	4	c
4204	**Concombre au fromage blanc et ciboulette**	**Seasoned cucumber**	+	+(24.38)	+(23.19)	+(24.84)	+(23.47)	H+	+	+	PA	+	PA	+	PA	+	PA	4	c

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N° Sample	Product (french name)	Product	Reference method: ISO 11290-1/A1♦ *Listeria spp. result*	Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp Actero™ Listeria Enrichment Media for 18H 37°C + 72h at 2-8°C						BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Cate-gory	Type
				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmations											
				CFX96-PCR result	AriaMx -PCR result	CFX96 -PCR result	Aria Mx-PCR result			Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h	Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h		
				(Ct)	(Ct)	(Ct)	(Ct)	O&A 24h	Palcam 48h										
4206	**Macédoine de légumes avec mayonnaise**	**Macédoine**	+	+(20.62)	+(20.13)	+(20.82)	+(19.93)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	4	c
4208	**Céleri rémoulade**	**Grated celery**	-	-	-	-	-	st	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	4	c
4740	**Champignons à la grecque**	**Deli salad**	+	-	-	-	-	-	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	4	c
4741	**Tri choux jambon comte**	**Deli salad**	+	+(19.08)	+(19.10)	+(21.22)	+(20.76)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	4	c
4742	**Piémontaise**	**Deli salad**	+	+(18.37)	+(17.07)	+(19.93)	+(19.52)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	4	c
4743	**Jardinière de légumes et mayonnaise**	**Deli salad**	+	+(21.00)	+(19.08)	+(22.16)	+(20.36)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	4	c
4744	**Tartare de tomates**	**Seasoned tomatoes**	+	+(22.05)	+(19.65)	+(23.00)	+(20.72)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	4	c
4745	**Carottes râpées assaisonnées**	**Seasoned grated carrots**	+	+(22.43)	+(20.77)	+(23.03)	+(21.76)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	4	c

SEAFOOD AND FISHERY PRODUCTS																					
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				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmations											
				CFX96-PCR result	AriaMx -PCR result	CFX96 -PCR result	Aria Mx-PCR result			Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h	Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h		
				(Ct)	(Ct)	(Ct)	(Ct)	O&A 24h	Palcam 48h										
3000	Noix de Saint Jacques	Scallops	+	-	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	5	a
3729	Filet de Hoki meunière	Fish filet	+	-	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	5	a
3982	Filet de Panga	Fish filet	+	+(27.12)	+(24.54)	+(27.26)	+(25.60)	H+	+	+	PA	+	PA	+	PA	+	PA	5	a
3984	Moules déco cuites	mussels	-	-	-			-	-	-	NA	-	NA					5	a
4110	Pavé merlu	Fish product	-	+(22.86)	+(22.83)	+(24.18)	+(22.72)	H+	+	+	PD	+	PD	+	PD	+	PD	5	a
4130	Cœur de filet de Merlu blanc du cap	Fish filet	+	+(38.68)/ +(33.02)/ +(32.92)	+(39.12)/ +(33.32)/ +(32.91)	+(23.64)/ +(34.23)/ +(33.74)	+(37.39)/ +(30.18)/ +(30.98)	- (*)	- (*)	-	PPND	-	PPND	-	PPND	-	PPND	5	a
4131	Aile de raie	Fish product	+	+(17.50)	+(17.12)	+(19.13)	+(17.65)	H+	+	+	PA	+	PA	+	PA	+	PA	5	a
4685	Ailes de raie	Fish fillet	-	+(22.90)	+(21.96)	+(23.79)	+(22.93)	H+	+	+	PD	+	PD	+	PD	+	PD	5	a
4968	Colin Alaska	Hake fillet	-	-	-	-	-	-	-	-	NA	-	NA	-	NA	-	NA	5	a
4969	Noix de saint jacques	Scallops	-	+(29.18)	+(28.72)	+(29.87)	+(28.46)	H+	+	+	PD	+	PD	+	PD	+	PD	5	a
4973	Nacette de saumon cru	Salmon fillet	+	+(21.93)	+(20.87)	+(23.22)	+(21.55)	H+	+	+	PA	+	PA	+	PA	+	PA	5	a
5790	Chair de saumon	Salmon	-	+(16.56)	+(14.15)	+(22.26)	+(18.30)	H-	+	+	PD	+	PD	+	PD	+	PD	5	a
5791	Poisson Panga	Fish fillet	+	+(23.14)	+(21.13)	+(23.97)	+(23.22)	H+/H-	+	+	PA	+	PA	+	PA	+	PA	5	a
5801	Poisson blanc tranché nature	White piece of fish	+	-	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	5	a
5802	Filet de cabillaud	Cod fillet	-	-	-	-	-	-	-	-	NA	-	NA	-	NA	-	NA	5	a
5964	**Crevettes décortiquées crues**	**Raw peeled shrimp**	-	+(21.98)	+(19.64)	+(22.90)	+(22.72)	H+	+	+	PD	+	PD	+	PD	+	PD	5	a
5965	**Blanc de calmar**	**Calmar**	+	+(20.41)	+(17.97)	+(21.12)	+(19.90)	H+	+	+	PA	+	PA	+	PA	+	PA	5	a
6618	Poisson blanc	White fish	+	+(25.62)	+(25.19)	+(31.99)	+(29.48)	H+	+	+	PA	+	PA	+	PA	+	PA	5	a
6729	Saumon atlantique	Salmon	+	+(25.06)	+(23.81)	+(25.57)	+(24.75)	H+	+	+	PA	+	PA	+	PA	+	PA	5	a
2998	Filet de bar sauce iodée	Seasoned fish	+	+(23.54)	+(20.91)	+(23.15)	+(20.76)	H+	+	+	PA	+	PA	+	PA	+	PA	5	b
3728	Pulpe saumon fumé	Smoked salmon	+	-	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	5	b
3998	Saumon fumé	Smoked salmon	+	+(28.62)	+(26.71)	+(28.33)	+(26.78)	H+	+	+	PA	+	PA	+	PA	+	PA	5	b
3999	Saumon fumé	Smoked salmon	-	-	-	-	-	-	st	-	NA	-	NA	-	NA	-	NA	5	b
4000	Truite fumée Norvège	Smoked trout	+	+(21.73)	+(19.66)	+(21.98)	+(20.26)	H+ni/H-	+	+	PA	+	PA	+	PA	+	PA	5	b
4001	Truite fumée Norvège	Smoked trout	+	+(19.72)	+(18.16)	+(19.28)	+(17.86)	H+	+	+	PA	+	PA	+	PA	+	PA	5	b
4002	Saumon fumé	Smoked salmon	+	+(26.44)	+(24.53)	+(23.55)	+(24.65)	H-	+	+	PA	+	PA	+	PA	+	PA	5	b
4963	Truite fumée Norvège	Smoked trout	+	-	-	-	-	st	st	-	ND	-	ND	-	ND	-	ND	5	b
4964	Saumon atlantique fumé	Smoked salmon	+	+(36.84)	+(36.07)	+(37.80)	+(37.68)	3H+	1+	+	PA	+	PA	+	PA	+	PA	5	b
4965	Truite fumée	Smoked trout	+	+(19.70)	+(18.53)	+(21.30)	+(19.61)	H+/H-	+	+	PA	+	PA	+	PA	+	PA	5	b
4966	Saumon atlantique fumé	Smoked salmon	+	+(38.64)/-/ +(39.49)	-	+(39.91)/ +(41.32)/ +(38.13)	-	st	st	+	PPND	-	ND	+	PPND	-	ND	5	b
5966	**Lardons saumon fumé**	**Smoked salmon**	+	+(19.35)	+(17.55)	+(21.17)	+(20.09)	H+	+	+	PA	+	PA	+	PA	+	PA	5	b
5967	**Filets de harengs fumés**	**Smoked herring**	+	+(25.90)	+(23.54)	+(27.22)	+(29.36)	H+	+	+	PA	+	PA	+	PA	+	PA	5	b
6727	Chaire de saumon fumé	Smoked salmon	+	+(18.56)	+(16.43)	+(18.89)	+(17.66)	H+	+	+	PA	+	PA	+	PA	+	PA	5	b
6731	Bloc saumon fumé	Smoked salmon	+	+(19.35)	+(18.17)	+(19.15)	+(18.05)	H+/H-	+	+	PA	+	PA	+	PA	+	PA	5	b
6830	Harengs fumés	Smoked herrings	-	-	-	-	-	st	st	-	NA	-	NA	-	NA	-	NA	5	b
7047	Saumon fumé	Smoked salmon	-															5	b
3731	Portion Merlu pané	Fish filet	-	-	+(38.51) /+(40.04)/-	+(39.90)/-/-	-	-(*)	- (*)	-	NA	-	PPNA	-	PPNA	-	NA	5	c
3732	Filet de colin Fish and chips	RTR Fish	-	+(28.12)	+(30.83)	+(28.27)	+(26.36)	H+	+	+	PD	+	PD	+	PD	+	PD	5	c
3988	Poisson pané	RTR fish	+	-	-	-	-	-	-	-	ND	-	ND	-	ND	-	ND	5	c
4126	Nacette de saumon	RTR Salmon	+	+(17.45)	+(17.24)	+(18.59)	+(17.17)	H+	+	+	PA	+	PA	+	PA	+	PA	5	c
4291	Filet merlu sauce vierge	RTR fish product	+	+(31.36)	+(29.13)	+(32.06)	+(31.11)	H+	-	+	PA	+	PA	+	PA	+	PA	5	c

♦ Analyses performed according to the COFRAC accreditation

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				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmations		BACGene *Listeria* Multiplex				BACGene *Listeria* spp.							
				CFX96-PCR result	AriaMx -PCR result	CFX96 -PCR result	Aria Mx-PCR result			Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h	Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h		
				(Ct)	(Ct)	(Ct)	(Ct)	O&A 24h	Palcam 48h										
4292	Dos de cabillaud sauce provençale	RTR fish product	-	+(32.59)	+(31.07)	+(33.92)	+(32.98)	-/H- (*)	- (*)	+	**PD**	+	**PD**	+	**PD**	+	**PD**	5	c
4295	Hoki pané	RTR fish product	+	+(27.61)	+(25.46)	+(28.04)	+(27.22)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
4313	**Bâtonnets crabe**	**Surimi**	+	+(16.10)	+(14.20)	+(15.98)	+(15.40)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
4314	**Terrine de saumon aneth**	**Salmon terrine**	+	+(17.67)	+(15.47)	+(17.82)	+(17.20)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
4315	**Rillettes saumon**	**Salmon rillettes**	-	+(16.03)	+(14.30)	+(17.06)	+(16.53)	H+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	5	c
4316	**Rillettes crabe tourteau**	**Crab rillettes**	+	+(15.81)	+(13.80)	+(17.12)	+(16.55)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
4317	**Rillettes crabe tourteau**	**Crab rillettes**	+	+(18.15)	+(16.28)	+(21.13)	+(19.75)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
5792	Farce de tartare de saumon	Salmon tartar	+	+(22.68)	+(19.87)	+(23.57)	+(22.63)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
5800	Filet de hoki pané	Breaded fish	+	+(22.63)	+(20.45)	+(22.85)	+(21.08)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
5803	Américain thon	Sandwich (tuna)	+	+(26.95)	+(24.04)	+(27.12)	+(26.57)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
5968	**Mini tranche de truite fumée**	**Smoked trout**	+	+(18.97)	+(16.54)	+(20.90)	+(20.26)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
5969	**Bâtonnets saveur crabe**	**Surimi**	-	+(15.47)	+(13.15)	+(16.52)	+(17.40)	H+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	5	c
5970	**Terrine de saumon aneth**	**Salmon terrine**	+	+(15.62)	+(15.22)	+(20.45)	+(19.33)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
5971	**Terrine aux saint jacques**	**Scallops terrine**	+	+(16.33)	+(14.27)	+(18.33)	+(17.03)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
6724	Pommes de terre au thon	Deli salad (tuna, potatoes)	+	+(27.88)	+(25.33)	+(28.29)	+(26.69)	H+	-	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
6726	Filet de cabillaud au beurre	RTRH fish	+	+(20.09)	+(18.14)	+(20.31)	+(17.91)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
6728	Pavé poisson blanc provençale	RTRH fish	+	+(27.77)	+(25.52)	+(28.25)	+(26.54)	H+	-	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
6730	Filet cabillaud au beurre	RTRH fish	+	+(24.00)	+(22.86)	+(23.89)	+(22.27)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c
6732	Salade de riz au crabe	Deli salad	+	+(26.00)	+(23.88)	+(26.28)	+(25.04)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	5	c

ENVIRONMENTAL SAMPLES																					
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				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmations		BACGene *Listeria* Multiplex				BACGene *Listeria* spp.					
				CFX96-PCR result	AriaMx -PCR result	CFX96 -PCR result	Aria Mx-PCR result			Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h	Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h		
				(Ct)	(Ct)	(Ct)	(Ct)	O&A 24h	Palcam 48h										
3353	**Déchet poissons**	**Dust (fish)**	-	+(31.37)	+(30.04)	+(31.29)	+(29.60)	H-	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	a
4320	**Déchet saucisse 1**	**Waste (pork)**	+	+(16.60)	+(15.41)	+(17.03)	+(15.86)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	a
4321	**Déchet saucisse 1**	**Waste (pork)**	+	+(17.04)	+(16.46)	+(18.24)	+(16.43)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	a
4322	**Déchet saucisse 2**	**Waste (pork)**	+	+(16.46)	+(15.36)	+(16.45)	+(15.85)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	a
4323	**Déchet saucisse 2**	**Waste (pork)**	-															6	a
4324	**Déchet porc**	**Waste (pork)**	+	+(17.39)	+(16.12)	+(18.56)	+(17.29)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	a
4325	**Déchet porc**	**Waste (pork)**	+	+(18.10)	+(16.54)	+(19.28)	+(17.65)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	a
4326	**Déchet saucisson**	**Waste (pork)**	-	+(35.07)	+(32.34)	+(34.48)	+(33.70)	H-	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	a
5438	Déchets de sol	Residues (Fish industry)	-	-	-	-	-	-	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	6	a
5439	Déchets de sol étêteuse	Residues (Fish industry)	+	+(22.03)	+(19.75)	+(23.41)	+(21.31)	H+/H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	a
5447	Déchets de sol	Residues (Fish industry)	+	+(30.55)	+(28.61)	+(31.96)	+(30.26)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	a
6762	**Saucisse végétale déchet 1**	**Waste (vegetables)**	-	+(19.19)	+(16.03)	+(39.33)	+(37.64)	H-	-	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	a
3354	**Eau rinçage poussoir (production saucisson poisson)**	**Process water (Pork and fish production)**	-	+(19.52)	+(17.94)	+(19.31)	+(17.45)	H+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	b
3356	**Eau rinçage cutter (production chair saumon)**	**Process water (fish production)**	+	+(16.75)	+(15.40)	+(17.09)	+(15.14)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	b
4686	Eau de process Fabrication chipolatas	Process water	-	-	-	-	-	st	-	-	**NA**	-	**NA**	-	**NA**	-	**NA**	6	b
5431	Eau rinçage filets peleuse	Cleaning water (Fish industry)	+	+(24.79)	+(21.94)	+(25.09)	+(24.34)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	b
5434	Eau rinçage après décaissage	Cleaning water (Fish industry)	-	-	-	-	-	st	st	-	**NA**	-	**NA**	-	**NA**	-	**NA**	6	b
6682	Eau parage n°1 (industrie de poissons)	Process water (fish industry)	-	-	-	+(33.02)/ +(38.55)/ +(38.86)	+(38.59)/ +(35.79)/-	st	st	-	**NA**	-	**NA**	-	**PPNA**	-	**PPNA**	6	b
6685	Eau peleuse (industrie de poissons)	Process water (fish industry)	-	+(17.74)	+(15.38)	+(17.25)	+(15.69)	H-	-	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	b
6765	**Eau process lavage carcasse poulet**	**Process water**	+	+(16.09)	+(15.24)	+(17.15)	+(16.27)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	b
6767	**Eau rinçage mélangeur ferments**	**Rinsing water**	+	+(19.35)	+(17.20)	+(19.75)	+(18.54)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	b
6769	**Eau process rinçage robot coupe fabrication appâts**	**Rinsing water**	+	+(14.42)	+(13.00)	+(15.10)	+(13.97)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	b
6771	**Eau rinçage fabrication biscuits**	**Rinsing water**	+	-	-	-	-	-	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	6	b
6773	**Eau rinçage fabrication riz cuit**	**Rinsing water**	-	+(20.60)	+(18.88)	+(21.19)	+(19.95)	H-	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	b
6777	**Eau process fabrication chipolatas**	**Process water**	+	+(17.41)	+(16.51)	+(18.46)	+(17.16)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	b
3357	**Lingette planche découpe poisson (thon saumon)**	**Wipe (fish production)**	+	+(23.01)	+(21.65)	+(23.05)	+(20.64)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	c
3358	**Lingette lave botte**	**Wipe (fish production)**	+	-	-	-	-	-	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	6	c
3359	**Lingette bac stockage poisson**	**Wipe (fish production)**	+	+(17.42)	+(15.95)	+(17.49)	+(15.21)	H+	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	c
3360	**Lingette bac stockage épices (production poisson)**	**Wipe (fish production)**	+	+(18.52)	+(17.55)	+(18.58)	+(16.55)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	c
3361	**Lingette Multivac conditionneuse**	**Wipe (fish production)**	+	-	-	-	-	-	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	6	c

♦ Analyses performed according to the COFRAC accreditation

ENVIRONMENTAL SAMPLES																					
N° Sample	Product (french name)	Product	Reference method: ISO 11290-1/A1♦ *Listeria spp.* result	Alternative method: BAC*Gene Listeria* -Detection of *Listeria* spp Actero™ Listeria Enrichment Media for 18H 37°C + 72h at 2-8°C						BACGene *Listeria* Multiplex				BACGene *Listeria* spp.				Cate-gory	Type
				BACGene *Listeria* Multiplex		BACGene *Listeria* spp.		Confirmations		Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h	Final result 72H **CFX96**	Agreement **CFX96** Ref/Alt 18h +72h	Final result **AriaMx**	Agreement **AriaMx** Ref/Alt 18h+72h		
				CFX96-PCR result (Ct)	AriaMx -PCR result (Ct)	CFX96 -PCR result (Ct)	Aria Mx-PCR result (Ct)	O&A 24h	Palcam 48h										
5442	Lingette roue chariot	Wipe (Fish industry)	+	-	-	-	-	-	-	-	**ND**	-	**ND**	-	**ND**	-	**ND**	6	c
5443	Lingette tapis sortie Boader	Wipe (Fish industry)	+	+(18.03)	+(16.10)	+(19.15)	+(20.24)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	c
5445	Lingette peau de saumon	Wipe (Fish industry)	+	-	-	-	-	st	st	-	**ND**	-	**ND**	-	**ND**	-	**ND**	6	c
5448	Lingette tapis parage après nettoyage	Wipe after cleaning (Fish industry)	+	+(23.64)	+(21.04)	+(24.29)	+(22.44)	H-	+	+	**PA**	+	**PA**	+	**PA**	+	**PA**	6	c
5452	Lingette darfresh après nettoyage	Wipe after cleaning (Fish industry)	-	+(25.22)	+(22.99)	+(25.98)	+(24.37)	H+	+	+	**PD**	+	**PD**	+	**PD**	+	**PD**	6	c

Appendix 6 – Relative level of detection study: raw data

Matrix : Deli-salad Aerobic mesophilic flora: 8.0 10^2 CFU/g

Strain : *Listeria monocytogenes* Ad494

N° sample	Level	Inoculation level (cfu/sample) MPN	Reference method: ISO 11290-1/A1♦						Alternative method : BAC*Gene Listeria* Actero™ Listeria Enrichment media for 18h at 37°C											
			Half Fraser		Fraser		Final Result	Number positive samples/ Total	BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Confirmation		BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Fraser 1 48h	Number positive samples/ Total
			O&A	Palcam	O&A	Palcam			PCR CFX96	PCR AriaMx	PCR CFX96	PCR AriaMx	Tests of the reference method	MALDI-TOF tests	Final result CFX96	Final result AriaMx	Final result CFX96	Final result AriaMx		
5381	0	/	-	-	-	-	-	0/5	-	-	-	-	-	/	-	-	-	-	-	0/5
5382			-	-	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
5383			-	-	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
5384			-	-	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
5385			-	st	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
5386	Low	1,1	H+	+	H+	+	+	14/20	+(24.82)	+(23.25)	+(25.16)	+(23.41)	+	+	+	+	+	+		16/20
5387			H+	+	H+	+	+		-	-	-	-	-	/	-	-	-	-	-	
5388			H+	+	H+	+	+		-	-	-	-	-	/	-	-	-	-	-	
5389			H+	+	H+	+	+		i/+(24.25)	+(22.30)	+(24.25)	+(22.68)	+	+	+	+	+	+		
5390			-	-	-	-	-		+(27.19)	+(25.54)	+(27.97)	+(25.88)	+	+	+	+	+	+		
5391			-	-	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
5392			H+	+	H+	+	+		+(24.21)	+(22.74)	+(24.76)	+(23.09)	+	+	+	+	+	+		
5393			H+	+	H+	+	+		+(26.90)	+(25.22)	+(27.18)	+(25.31)	+	+	+	+	+	+		
5394			-	st	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
5395			H+	+	H+	+	+		+(28.14)	+(25.83)	+(28.55)	+(26.04)	+	+	+	+	+	+		
5396			-	-	-	-	-		+(27.23)	+(25.45)	+(27.55)	+(25.69)	+	+	+	+	+	+		
5397			H+	+	H+	+	+		+(25.94)	+(23.97)	+(26.16)	+(24.25)	+	+	+	+	+	+		
5398			H+	+	H+	+	+		+(25.45)	+(23.63)	+(25.88)	+(24.13)	+	+	+	+	+	+		
5399			H+	+	H+	+	+		+(25.74)	+(24.12)	+(26.16)	+(24.65)	+	+	+	+	+	+		
5400			-	-	-	-	-		+(24.96)	+(23.33)	+(25.39)	+(23.62)	+	+	+	+	+	+		
5401			H+	+	H+	+	+		+(27.53)	+(26.08)	+(28.16)	+(26.38)	+	+	+	+	+	+		
5402			-	-	-	-	-		+(27.26)	+(25.55)	+(27.33)	+(25.82)	+	+	+	+	+	+		
5403			H+	+	H+	+	+		+(26.71)	+(25.00)	+(27.30)	+(25.52)	+	+	+	+	+	+		
5404			H+	+	H+	+	+		+(27.08)	+(24.91)	+(26.79)	+(24.87)	+	+	+	+	+	+		
5405			H+	+	H+	+	+		i/+(27.48)	+(25.58)	+(27.69)	+(25.90)	+	+	+	+	+	+		
5406	High	3,1	H+	+	H+	+	+	5/5	+(24.54)	+(22.85)	+(24.81)	+(23.26)	+	+	+	+	+	+		5/5
5407			H+	+	H+	+	+		+(24.37)	+(22.54)	+(24.72)	+(23.00)	+	+	+	+	+	+		
5408			H+	+	H+	+	+		+(22.95)	+(21.31)	+(23.34)	+(21.55)	+	+	+	+	+	+		
5409			H+	+	H+	+	+		+(23.56)	+(22.17)	+(24.21)	+(22.34)	+	+	+	+	+	+		
5410			H+	+	H+	+	+		+(23.26)	+(22.00)	+(23.68)	+(22.19)	+	+	+	+	+	+		

♦ Analyses performed according to the COFRAC accreditation

Matrix : Frankfurters Aerobic mesophilic flora: 8.1 10^6 CFU/g

Strain : *Listeria monocytogenes Ad 669*

N° sample	Level	Inoculation level (cfu/sample) MPN	Reference method: ISO 11290-1/A1♦						Alternative method : BAC*Gene Listeria*											
									Actero™ Listeria Enrichment media for 18h at 37°C											
			Half Fraser		Fraser		Final Result	Number positive samples/ Total	BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Confirmation		BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Fraser 1 48h	Number positive samples/ Total
			O&A	Palcam	O&A	Palcam			PCR CFX96	PCR AriaMx	PCR CFX96	PCR AriaMx	Tests of the reference method	MALDI-TOF tests	Final result CFX96	Final result AriaMx	Final result CFX96	Final result AriaMx		
5497	0	/	st	st	st	st	-	0/5	-	-	-	-	-	/	-	-	-	-	-	0/5
5498			st	st	st	st	-		-	-	-	-	-	/	-	-	-	-	-	
5499			st	st	st	st	-		-	-	-	-	-	/	-	-	-	-	-	
5500			-	st	st	st	-		-	-	-	-	-	/	-	-	-	-	-	
5501			st	st	st	st	-		-	-	-	-	-	/	-	-	-	-	-	
5905	Low	0,9	st	st	st	st	-	15/20	+(27.11)	+(25.15)	+(27.74)	+(25.97)	+	+	+	+	+	+		16/20
5906			H+	+	H+	+	+		+(23.44)	+(21.78)	+(24.34)	+(22.81)	+	+	+	+	+	+		
5907			st	st	st	st	-		+(25.04)	+(23.40)	+(26.06)	+(23.95)	+	+	+	+	+	+		
5908			H+	+	H+	+	+		+(23.77)	+(21.93)	+(24.10)	+(22.46)	+	+	+	+	+	+		
5909			H+	+	H+	+	+		+(25.13)	+(23.62)	+(25.84)	+(24.10)	+	+	+	+	+	+		
5910			H+	+	H+	+	+		-	-	-	-	-	/	-	-	-	-	-	
5911			H+	+	H+	+	+		+(25.23)	+(24.17)	+(25.78)	+(24.20)	+	+	+	+	+	+		
5912			-	st	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
5913			H+	+	H+	+	+		+(24.32)	+(21.94)	+(24.39)	+(22.75)	+	+	+	+	+	+		
5914			st	-	st	st	-		+(24.71)	+(22.55)	+(25.26)	+(23.64)	+	+	+	+	+	+		
5915			st	st	st	st	-		+(22.80)	+(20.90)	+(23.21)	+(21.27)	+	+	+	+	+	+		
5916			H+	+	H+	+	+		+(24.12)	+(22.81)	+(24.83)	+(23.12)	+	+	+	+	+	+		
5917			H+	+	H+	+	+		+(23.22)	+(21.527)	+(23.69)	+(21.80)	+	+	+	+	+	+		
5918			H+	+	H+	+	+		+(24.07)	+(22.72)	+(24.63)	+(22.76)	+	+	+	+	+	+		
5919			H+	+	H+	+	+		+(26.53)	+(25.78)	+(27.15)	+(25.21)	+	+	+	+	+	+		
5920			H+	+	H+	+	+		-	-	-	-	-	/	-	-	-	-	-	
5921			H+	+	H+	+	+		-	-	-	-	-	/	-	-	-	-	-	
5922			H+	+	H+	+	+		+(22.80)	+(20.04)	+(22.59)	+(21.13)	+	+	+	+	+	+		
5923			H+	+	H+	+	+		+(22.44)	+(20.03)	+(22.23)	+(20.63)	+	+	+	+	+	+		
5924			H+	+	H+	+	+		+(26.49)	+(25.02)	+(27.05)	+(25.13)	+	+	+	+	+	+		
5522	High	1,8	st	st	st	st	-	4/5	+(26.73)	+(24.83)	+(26.70)	+(24.75)	+	+	+	+	+	+		4/5
5523			H+	+	H+	+	+		+(26.32)	+(25.57)	+(27.09)	+(25.26)	+	+	+	+	+	+		
5524			H+	+	H+	+	+		+(27.27)	+(26.11)	+(27.65)	+(25.90)	+	+	+	+	+	+		
5525			H+	+	H+	+	+		-	-	-	-	-	/	-	-	-	-	-	
5526			H+	+	H+	+	+		+(31.47)	+(31.49)	+(32.00)	+(30.69)	+	+	+	+	+	+		

♦ Analyses performed according to the COFRAC accreditation

Matrix : Soft white cheese Aerobic mesophilic flora: 9.2 10^5 CFU/g

Strain : *Listeria ivanovii Ad1337*

N° sample	Level	Inoculation level (cfu/sample) MPN	Reference method: ISO 11290-1/A1♦						Alternative method : BAC*Gene Listeria* Actero™ Listeria Enrichment media for 18h at 37°C											
			Half Fraser		Fraser		Final Result	Number positive samples/ Total	BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Confirmation		BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Fraser 1 48h	Number positive samples/Total
			O&A	Palcam	O&A	Palcam			PCR CFX96	PCR AriaMx	PCR CFX96	PCR AriaMx	Tests of the reference method	MALDI-TOF tests	Final result CFX96	Final result AriaMx	Final result CFX96	Final result AriaMx		
6144	0	0	st	st	st	-	-	0/5	-	-	-	-	-	/	-	-	-	-	-	0/5
6145			st	st	st	-	-		-	i/-	-	-	-	/	-	-	-	-	-	
6146			st	st	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
6147			st	st	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
6148			st	st	-	-	-		-	i/-	-	-	-	/	-	-	-	-	-	
6149	Low	1,0	H+	+	H+	+	+	14/20	-	-	-	-	-	/	-	-	-	-	-	12/20
6150			H+	+	H+	+	+		+(28.35)	+(26.39)	+(34.11)	+(30.67)	+	+	+	+	+	+		
6151			H+	+	H+	+	+		+(26.55)	+(25.01)	+(29.20)	+(27.96)	+	+	+	+	+	+		
6152			st	-	st	-	-		-	-	i/-	-	-	/	-	-	-	-	-	
6153			H+	+	H+	+	+		+(26.73)	+(24.94)	+(28.02)	+(28.72)	+	+	+	+	+	+		
6154			H+	+	H+	+	+		+(26.88)	+(25.26)	+(27.31)	+(27.87)	+	+	+	+	+	+		
6155			H+	+	H+	+	+		+(24.94)	+(23.52)	+(27.78)	+(27.20)	+	+	+	+	+	+		
6156			H+	+	H+	+	+		-	-	-	-	-	/	-	-	-	-	-	
6157			H+	+	H+	+	+		+(27.10)	+(26.02)	+(30.57)	+(27.76)	+	+	+	+	+	+		
6158			st	st	st	st	-		-	i/-	-	-	-	/	-	-	-	-	-	
6159			st	st	st	st	-		-	-	-	-	-	/	-	-	-	-	-	
6160			st	st	st	-	-		+(25.72)	+(24.74)	+(26.55)	+(25.35)	+	+	+	+	+	+		
6161			H+	+	H+	+	+		+(26.09)	+(29.01)	+(27.23)	+(27.45)	+	+	+	+	+	+		
6162			H+	+	H+	+	+		-	-	-	-	-	/	-	-	-	-	-	
6163			st	st	-	-	-		+(25.40)	+(26.83)	+(27.47)	+(25.99)	+	+	+	+	+	+		
6164			H+	+	H+	+	+		-	-	-	-	-	/	-	-	-	-	-	
6165			st	st	st	-	-		-	-	-	-	-	/	-	-	-	-	-	
6166			H+	+	H+	+	+		+(26.70)	+(24.75)	+(27.16)	+(26.96)	+	+	+	+	+	+		
6167			H+	+	H+	+	+		+(27.29)	+(24.98)	+(27.55)	+(27.90)	+	+	+	+	+	+		
6168			H+	+	H+	+	+		+(26.02)	+(23.40)	+(26.41)	+(26.09)	+	+	+	+	+	+		
6169	High	2,7	H+	+	H+	+	+	5/5	+(23.94)	+(22.01)	+(26.67)	+(25.00)	+	+	+	+	+	+		5/5
6170			H+	+	H+	+	+		+(24.72)	+(22.72)	+(28.90)	+(26.80)	+	+	+	+	+	+		
6171			H+	+	H+	+	+		+(24.62)	+(22.15)	+(25.51)	+(25.63)	+	+	+	+	+	+		
6172			H+	+	H+	+	+		+(25.10)	+(23.02)	+(26.11)	+(25.84)	+	+	+	+	+	+		
6173			H+	+	H+	+	+		+(26.07)	+(24.40)	+(27.30)	+(28.30)	+	+	+	+	+	+		

♦ Analyses performed according to the COFRAC accreditation

Matrix : Cantaloupe frozen balls Aerobic mesophilic flora: 2.0 10^5 CFU/g

Strain : *Listeria seeligeri Ad1754*

N° sample	Level	Inoculation level (cfu/sample) MPN	Reference method: ISO 11290-1/A1♦						Alternative method : BAC*Gene Listeria* Actero™ Listeria Enrichment media for 18h at 37°C											
			Half Fraser		Fraser		Final Result	Number positive samples/ Total	BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Confirmation		BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Fraser 1 48h	Number positive samples/Total
			O&A	Palcam	O&A	Palcam			PCR CFX96	PCR AriaMx	PCR CFX96	PCR AriaMx	Tests of the reference method	MALDI-TOF tests	Final result CFX96	Final result AriaMx	Final result CFX96	Final result AriaMx		
5330	0	/	st	st	st	-	-	0/5	-	-	-	-	-	/	-	-	-	-	-	0/5
5331			st	st	st	-	-		-	-	-	-	-	/	-	-	-	-	-	
5332			st	-	st	-	-		-	-	-	-	-	/	-	-	-	-	-	
5333			st	-	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
5334			st	-	st	-	-		-	-	-	-	-	/	-	-	-	-	-	
5860	Low	0,83	H-	+	H-	+	+	11/20	+(26.01)	+(24.75)	+(26.61)	+(24.91)	+	+	+	+	+	+		18/20
5861			st	st	H-	+	+		+(26.55)	+(24.63)	+(27.07)	+(25.40)	+	+	+	+	+	+		
5862			st	st	st	st	-		+(28.09)	+(26.31)	+(28.78)	+(27.39)	+	+	+	+	+	+		
5863			1H-	+	H-	+	+		+(26.94)	+(25.20)	+(27.89)	+(26.05)	+	+	+	+	+	+		
5864			H-	+	H-	+	+		+(25.09)	+(23.26)	+(25.67)	+(23.99)	+	+	+	+	+	+		
5865			st	st	st	-	-		+(26.33)	+(24.63)	+(27.19)	+(25.52)	+	+	+	+	+	+		
5866			st	st	st	st	-		+(26.40)	+(24.33)	+(26.94)	+(25.39)	+	+	+	+	+	+		
5867			st	st	st	st	-		+(28.42)	+(26.79)	+(29.07)	+(27.29)	+	+	+	+	+	+		
5868			H-	+	H-	+	+		+(27.03)	+(25.72)	+(27.48)	+(25.72)	+	+	+	+	+	+		
5869			H-	+	H-	+	+		+(27.74)	+(25.66)	+(28.17)	+(26.54)	+	+	+	+	+	+		
5870			H-	+	H-	+	+		+(24.70)	+(24.49)	+(25.08)	+(23.79)	+	+	+	+	+	+		
5871			st	-	st	-	-		+(26.50)	+(24.59)	+(27.34)	+(25.51)	+	+	+	+	+	+		
5872			H-	+	H-	+	+		+(26.39)	+(24.78)	+(27.21)	+(25.68)	+	+	+	+	+	+		
5873			H-	+	H-	+	+		-	-	-	-	-	/	-	-	-	-	-	
5874			-	-	-	-	-		+(26.09)	+(24.12)	+(26.62)	+(24.93)	+	+	+	+	+	+		
5875			st	-	st	-	-		+(25.20)	+(23.56)	+(25.47)	+(24.01)	+	+	+	+	+	+		
5876			st	st	st	st	-		+(26.41)	+(24.90)	+(26.85)	+(25.16)	+	+	+	+	+	+		
5877			st	-	-	-	-		+(25.29)	+(23.86)	+(25.98)	+(24.53)	+	+	+	+	+	+		
5878			st	+	H-	+	+		+(25.48)	+(23.40)	+(26.01)	+(24.58)	+	+	+	+	+	+		
5879			1H-	+	H-	+	+		-	-	-	-	-	/	-	-	-	-	-	
5880	High	2,4	H-	+	H-	+	+	4/5	-	-	-	-	-	/	-	-	-	-	-	4/5
5881			-	-	-	-	-		+(24.41)	+(22.71)	+(25.39)	+(23.70)	+	+	+	+	+	+		
5882			H-	+	H-	+	+		+(24.07)	+(22.51)	+(25.00)	+(2.29)	+	+	+	+	+	+		
5883			H-	+	H-	+	+		+(24.03)	+(22.27)	+(24.77)	+(23.05)	+	+	+	+	+	+		
5884			1H-	+	H-	+	+		+(24.20)	+(22.80)	+(24.82)	+(23.37)	+	+	+	+	+	+		

♦ Analyses performed according to the COFRAC accreditation

Matrix : Frozen cooked shrimp Aerobic mesophilic flora: 1.6 10^3CFU/g

Strain : *Listeria innocua Ad 1200*

N° sample	Level	Inoculation level (cfu/sample) MPN	Reference method: ISO 11290-1/A1♦						Alternative method : BAC*Gene Listeria* Actero™ Listeria Enrichment media for 18h at 37°C											
			Half Fraser		Fraser		Final Result	Number positive samples/ Total	BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Confirmation		BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Fraser 1 48h	Number positive samples/Total
			O&A	Palcam	O&A	Palcam			PCR CFX96	PCR AriaMx	PCR CFX96	PCR AriaMx	Tests of the reference method	MALDI-TOF tests	Final result CFX96	Final result AriaMx	Final result CFX96	Final result AriaMx		
5940	0	0	st	-	-	-	-	0/5	-	-	-	-	-	/	-	-	-	-	-	0/5
5941			-	-	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
5942			st	-	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
5943			st	st	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
5944			st	st	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
6306	Low	0,99	H-	+	H-	+	+	15/20	+(24.70)	+(24.70)	+(25.29)	+(24.02)	+	+	+	+	+	+		12/20
6307			H-	+	H-	+	+		-	-	-	-	-	/	-	-	-	-	-	
6308			-	-	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
6309			-	-	-	-	-		+(24.11)	+(23.67)	+(25.61)	+(24.24)	+	+	+	+	+	+		
6310			H-	+	H-	+	+		+(21.59)	+(20.88)	+(22.62)	+(21.26)	+	+	+	+	+	+		
6311			H-	+	H-	+	+		+(19.69)	+(18.91)	+(20.57)	+(19.37)	+	+	+	+	+	+		
6312			H-	+	H-	+	+		+(20.07)	+(18.81)	+(21.02)	+(19.89)	+	+	+	+	+	+		
6313			H-	+	H-	+	+		+(21.38)	+(19.99)	+(22.53)	+(21.13)	+	+	+	+	+	+		
6314			H-	+	H-	+	+		-	-	-	-	-	/	-	-	-	-	-	
6315			H-	+	-	-	+		-	-	-	-	-	/	-	-	-	-	-	
6316			H-	+	H-	+	+		-	-	-	-	-	/	-	-	-	-	-	
6317			H-	+	H-	+	+		-	-	-	-	-	/	-	-	-	-	-	
6318			-	-	st	st	-		+(22.29)	+(20.94)	+(22.91)	+(21.43)	+	+	+	+	+	+		
6319			-	-	st	-	-		-	-	-	-	-	/	-	-	-	-	-	
6320			H-	+	H-	+	+		+(21.41)	+(21.63)	+(21.93)	+(21.35)	+	+	+	+	+	+		
6321			st	-	st	-	-		+(28.71)	+(27.51)	+(29.98)	+(29.29)	+	+	+	+	+	+		
6322			H-	+	H-	+	+		+(22.50)	+(21.49)	+(23.86)	+(22.22)	+	+	+	+	+	+		
6323			H-	+	H-	+	+		+(21.05)	+(20.13)	+(22.56)	+(20.64)	+	+	+	+	+	+		
6324			H-	+	H-	+	+		-		-	-	-	/	-	-	-	-	-	
6325			H-	+	H-	+	+		+(20.13)	+(19.38)	+(21.38)	+(19.70)	+	+	+	+	+	+		
6326	High	2,5	H-	+	H-	+	+	5/5	+(19.74)	+(18.88)	+(20.75)	+(18.97)	+	+	+	+	+	+		5/5
6327			H-	+	H-	+	+		+(23.06)	+(22.16)	+(24.06)	+(22.28)	+	+	+	+	+	+		
6328			H-	+	H-	+	+		+(22.03)	+(22.33)	+(22.94)	+(22.91)	+	+	+	+	+	+		
6329			H-	+	H-	+	+		+(19.06)	+(19.49)	+(20.58)	+(20.62)	+	+	+	+	+	+		
6330			H-	+	H-	+	+		+(21.47)	+(19.47)	+(21.45)	+(20.12)	+	+	+	+	+	+		

♦ Analyses performed according to the COFRAC accreditation

Matrix: Process water Aerobic mesophilic flora: 1.2 10^3 CFU/ml

Strain : *Listeria monocytogenes Ad 551*

N° sample	Level	Inoculation level (cfu/sample) MPN	Reference method: ISO 11290-1/A1♦						Alternative method : BAC*Gene Listeria* Actero™ Listeria Enrichment media for 18h at 37°C											
			Half Fraser		Fraser		Final Result	Number positive samples/ Total	BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Confirmation		BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Fraser 1 48h	Number positive samples/ Total
			O&A	Palcam	O&A	Palcam			PCR CFX96	PCR AriaMx	PCR CFX96	PCR AriaMx	Tests of the reference method	MALDI-TOF tests	Final result CFX96	Final result AriaMx	Final result CFX96	Final result AriaMx		
6907	0	0	st	-	st	-	-	0/5	-	-	-	-	-	/	-	-	-	-	-	0/5
6908			st	-	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
6909			st	-	st	-	-		-	-	-	-	-	/	-	-	-	-	-	
6910			st	-	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
6911			st	-	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
6976	Low	0,6	st	-	-	-	-	9/20	+(22.21)	+(21.86)	+(23.94)	+(21.42)	+	+	+	+	+	+		13/20
6977			st	st	st	st	-		-	-	-	-	-	/	-	-	-	-	-	
6978			st	st	st	st	-		+(23.59)	+(22.85)	+(24.88)	+(22.96)	+	+	+	+	+	+		
6979			H+	+	H+	+	+		-	-	-	-	-	/	-	-	-	-	-	
6980			H+	+	H+	+	+		+(22.36)	+(22.13)	+(23.36)	+(22.26)	+	+	+	+	+	+		
6981			H+	+	H+	+	+		+(23.41)	+(21.88)	+(24.00)	+(21.83)	+	+	+	+	+	+		
6982			st	st	st	st	-		+(21.60)	+(20.66)	+(22.77)	+(20.36)	+	+	+	+	+	+		
6983			H+	+	H+	+	+		+(22.93)	+(22.19)	+(40.56)	+(22.00)	+	+	+	+	+	+		
6984			H+	+	H+	+	+		-	-	-	-	-	/	-	-	-	-	-	
6985			st	st	st	st	-		-	-	-	-	-	/	-	-	-	-	-	
6986			st	st	st	st	-		+(22.02)	+(21.44)	+(34.00)	+(21.12)	+	+	+	+	+	+		
6987			H+	+	H+	+	+		+(22.32)	+(22.94)	+(26.45)	+(22.42)	+	+	+	+	+	+		
6988			st	-	-	-	-		-	-	-	-	-	/	-	-	-	-	-	
6989			H+	+	H+	+	+		-	-	-	-	-	/	-	-	-	-	-	
6990			st	-	-	-	-		+(22.31)	+(21.49)	+(28.40)	+(21.16)	+	+	+	+	+	+		
6991			H+	+	H+	+	+		+(34.28)	+(33.48)	+(36.59)	+(35.13)	+	+	+	+	+	+		
6992			H+	+	H+	+	+		+(21.02)	+(20.71)	+(33.69)	+(20.31)	+	+	+	+	+	+		
6993			st	st	st	st	-		+(33.39)/+(36.30)/ +(36.31)	-	-	-	-	/	-	-	-	-	-	
6994			st	-	-	st	-		+(23.19)	+(22.75)	+(39.21)	+(22.09)	+	+	+	+	+	+		
6995			st	st	-	-	-		+(21.72)	+(22.76)	+(26.25)	+(22.14)	+	+	+	+	+	+		
6996	High	1,9	H+	+	H+	+	+	5/5	+(23.14)	+(23.57)	+(25.00)	+(23.54)	+	+	+	+	+	+		5/5
6997			H+	+	H+	+	+		+(21.59)	+(21.72)	+(22.78)	+(20.72)	+	+	+	+	+	+		
6998			H+	+	H+	+	+		+(23.76)	+(22.33)	+(24.78)	+(21.91)	+	+	+	+	+	+		
6999			H+	+	H+	+	+		+(21.11)	+(19.82)	+(21.14)	+(19.56)	+	+	+	+	+	+		
7000			H+	+	H+	+	+		+(20.02)	+(18.92)	+(20.44)	+(18.44)	+	+	+	+	+	+		

♦ Analyses performed according to the COFRAC accreditation

Appendix 7 – Inclusivity and exclusivity study: raw data

Additional strain not required

INCLUSIVITY (Pre-warmed Actero™ Listeria Enrichment media for 18 h at 37°C)																
Strains						Inoculation level /225 ml Actero Listeria Enrichment media	BACGene *Listeria Multiplex* PCR		BACGene *Listeria spp* PCR		Confirmation				
													MALDI-TOF		
No	Genus	Species	Reference	Molecular serotypes	Origin		CFX96	AriaMx	CFX96	AriaMx	O&A	Palcam	O&A	Palcam	TSYEA
1	*Listeria*	*monocytogenes*	1011/1410	II a	Frozen broccoli	37	+(17.25)	+(15.50)	+(17.83)	+(14.83)	H+	+	+	+	+
2	*Listeria*	*monocytogenes*	Adria 153	VI b	Soft cheese (Munster)	28	+(17.65)	+(15.36)	+(17.96)	+(15.76)	H+	+	+	+	+
3	*Listeria*	*monocytogenes*	1973/2400	VI b	Egg and ham pastry (Quiche Lorraine)	21	+(18.17)	+(16.25)	+(17.97)	+(15.60)	H+	+	+	+	+
4	*Listeria*	*monocytogenes*	38/181	II a	Toulouse sausages	20	+(18.30)	+(16.45)	+(18.45)	+(15.56)	H+	+	+	+	+
5	*Listeria*	*monocytogenes*	7111/7516	IV b	Pâté (Rillettes)	16	+(17.27)	+(25.49)	+(17.58)	+(15.13)	H+	+	+	+	+
6	*Listeria*	*monocytogenes*	913/1048	IV b	Black pudding	32	+(17.33)	+(15.95)	+(17.89)	+(15.67)	H+	+	+	+	+
7	*Listeria*	*monocytogenes*	A00C036	II a	Poultry (guinea)	20	+(18.27)	+(16.49)	+(19.19)	+(16.22)	H+	+	+	+	+
8	*Listeria*	*monocytogenes*	A00C041	L a	Sausage	14	+(18.23)	+(16.56)	+(19.13)	+(16.05)	H+	+	+	+	+
9	*Listeria*	*monocytogenes*	A00C044	II b	Poultry (Duck)	32	+(18.87)	+(16.32)	+(18.58)	+(15.41)	H+	+	+	+	+
10	*Listeria*	*monocytogenes*	A00L097	II a	Milk	71	+(19.43)	+(17.03)	+(18.62)	+(16.08)	H+	+	+	+	+
11	*Listeria*	*monocytogenes*	A00M009	II a	Smoked salmon	37	+(18.65)	+(16.83)	+(18.72)	+(16.11)	H+	+	+	+	+
12	*Listeria*	*monocytogenes*	Ad253	II b	Semi-hard cheese	69	+(20.20)	+(18.67)	+(20.60)	+(18.12)	H+	+	+	+	+
13	*Listeria*	*monocytogenes*	Ad266	II a	Poultry	35	+(18.24)	+(16.60)	+(18.72)	+(16.27)	H+	+	+	+	+
14	*Listeria*	*monocytogenes*	Ad270	IV b	Fermented sausage	73	+(17.79)	+(14.91)	+(17.46)	+(15.43)	H+	+	+	+	+
15	*Listeria*	*monocytogenes*	Ad273	II b	Cured delicatessen	64	+(17.90)	+(15.62)	+(18.30)	+(15.31)	H+	+	+	+	+
16	*Listeria*	*monocytogenes*	Ad274	II a	Ready-to-eat food (Asiatic meal)	49	+(18.25)	+(15.95)	+(18.02)	+(15.64)	H+	+	+	+	+
17	*Listeria*	*monocytogenes*	Ad534	II b	Fruits	69	+(17.51)	+(15.51)	+(17.45)	+(15.14)	H+	+	+	+	+
18	*Listeria*	*monocytogenes*	Ad548	II a	Environment (Seafood)	48	+(18.24)	+(15.57)	+(17.39)	+(15.27)	H+	+	+	+	+
19	*Listeria*	*monocytogenes*	Ad623	II b	Bread crumbs	52	+(17.92)	+(15.19)	+(17.56)	+(15.16)	H+	+	+	+	+
20	*Listeria*	*monocytogenes*	Ad665	II a	Raw milk	50	+(17.38)	+(15.10)	+(17.27)	+(14.81)	H+	+	+	+	+
21	*Listeria*	*monocytogenes*	1972/2399	VI b	Puff pastry with mushrooms	17	+(17.79)	+(15.52)	/	/	H+	+	+	+	+
22	*Listeria*	*monocytogenes*	2407/3139	IV b	Tripes with tomatoes	24	+(18.11)	+(16.33)	/	/	H+	+	+	+	+
23	*Listeria*	*monocytogenes*	2760/3145	II a	Raw bacon	19	+(18.14)	+(16.64)	/	/	H+	+	+	+	+
24	*Listeria*	*monocytogenes*	32.183	II b	Croque-Monsieur	19	+(18.87)	+(16.56)	/	/	H+	+	+	+	+
25	*Listeria*	*monocytogenes*	5721/6179	IV b	Smoked bacon	40	+(19.10)	+(17.04)	/	/	H+	+	+	+	+

INCLUSIVITY (Pre-warmed Actero™ Listeria Enrichment media for 18 h at 37°C)																
Strains						Inoculation level /225 ml Actero Listeria Enrichment media	BAC*Gene* *Listeria Multiplex* PCR		BAC*Gene* *Listeria spp* PCR		Confirmation				
													MALDI-TOF		
No	Genus	Species	Reference	Molecular serotypes	Origin		CFX96	AriaMx	CFX96	AriaMx	O&A	Palcam	O&A	Palcam	TSYEA
26	*Listeria*	*monocytogenes*	850/109	II a	RTE food (deli salad with seafood)	11	+(17.24)	+(19.64)	/	/	H+	+	+	+	+
27	*Listeria*	*monocytogenes*	877/113	II a	Environmental sample (pastry)	10	+(18.18)	+(16.39)	/	/	H+	+	+	+	+
28	*Listeria*	*monocytogenes*	A00C014	II a	Sausage	24	+(18.33)	+(16.47)	/	/	H+	+	+	+	+
29	*Listeria*	*monocytogenes*	A00C022	II a	Merguez	27	+(19.39)	+(15.93)	/	/	H+	+	+	+	+
30	*Listeria*	*monocytogenes*	A00C024	II a	Sausage	34	+(18.78)	+(16.44)	/	/	H+	+	+	+	+
31	*Listeria*	*monocytogenes*	A00C039	II a	Sausages	14	+(18.05)	+(16.29)	/	/	H+	+	+	+	+
32	*Listeria*	*monocytogenes*	A00C040	IV b	Cooked delicatessen (Museau)	57	+(17.56)	+(16.00)	/	/	H+	+	+	+	+
33	*Listeria*	*monocytogenes*	A00C042	IV b	Raw sausage	49	+(19.03)	+(17.29)	/	/	H+	+	+	+	+
34	*Listeria*	*monocytogenes*	A00C043	II a	Smoked Bacon	30	+(21.18)	+(17.28)	/	/	H+	+	+	+	+
35	*Listeria*	*monocytogenes*	A00C052	II b	RTE food (Osso bucco with turkey)	34	+(17.68)	+(15.65)	/	/	H+	+	+	+	+
36	*Listeria*	*monocytogenes*	A00C053	II a	Gizzards	68	+(19.14)	+(17.29)	/	/	H+	+	+	+	+
37	*Listeria*	*monocytogenes*	A00C054	IV b	Beef hart	43	+(17.14)	+(15.51)	/	/	H+	+	+	+	+
38	*Listeria*	*monocytogenes*	A00C055	II a	Raw sausages	45	+(17.27)	+(15.27)	/	/	H+	+	+	+	+
39	*Listeria*	*monocytogenes*	A00E008	II a	Environmental sample	43	+(18.07)	+(16.29)	/	/	H+	+	+	+	+
40	*Listeria*	*monocytogenes*	A00E049	II a	Environmental sample (smoked salmon)	27	+(22.83)	+(20.98)	/	/	H+	+	+	+	+
41	*Listeria*	*monocytogenes*	A00E082	II a	Environmental sample (smoked salmon)	44	+(18.33)	+(16.80)	/	/	H+	+	+	+	+
42	*Listeria*	*monocytogenes*	A00M032	IV b	Smoked salmon	56	+(17.24)	+(15.39)	/	/	H+	+	+	+	+
43	*Listeria*	*monocytogenes*	A00M045	II a	Smoked salmon	32	+(17.13)	+(15.38)	/	/	H+	+	+	+	+
44	*Listeria*	*monocytogenes*	A00M088	II a	Smoked salmon	33	+(19.90)	+(18.09)	/	/	H+	+	+	+	+
45	*Listeria*	*monocytogenes*	Ad235	II b	Poultry	46	+(17.69)	+(15.98)	/	/	H+	+	+	+	+
46	*Listeria*	*monocytogenes*	Ad260	II a	Semi hard cheese	33	+(17.49)	+(15.98)	/	/	H+	+	+	+	+
47	*Listeria*	*monocytogenes*	Ad265	II b	Tong	26	+(17.33)	+(15.52)	/	/	H+	+	+	+	+
48	*Listeria*	*monocytogenes*	Ad267	II b	Dry sausage	23	+(18.18)	+(16.62)	/	/	H+	+	+	+	+
49	*Listeria*	*monocytogenes*	Ad268	IV b	Cured ham	75	+(17.59)	+(15.27)	/	/	H+	+	+	+	+
50	*Listeria*	*monocytogenes*	Ad272	IV b	Fermented sausage	47	+(16.97)	+(14.91)	/	/	H+	+	+	+	+
51	*Listeria*	*monocytogenes*	Ad544	II a	Onion	52	+(18.17)	+(15.71)	/	/	H+	+	+	+	+
52	*Listeria*	*monocytogenes*	Ad546	II a	Flour	43	+(18.88)	+(16.61)	/	/	H+	+	+	+	+
53	*Listeria*	*grayi*	Ad1198	/	Smoked salmon	17	+(33.92)	+(31.62)	+(34.01)	+(31.15)	H-	st	+	+	+
54	*Listeria*	*grayi*	Ad1443	/	Pork meat sausages	24	+(29.92)	+(27.66)	+(30.22)	+(27.41)	H-	st	+	No result/+	+
83	*Listeria*	*grayi*	Ad1295	/	Spinach	29	+(26.24)	+(23.96)	+(26.88)	+(25.63)	H-	st	+	+	+

INCLUSIVITY (Pre-warmed Actero™ Listeria Enrichment media for 18 h at 37°C)															
Strains						Inoculation level /225 ml Actero Listeria Enrichment media	BAC*Gene* *Listeria Multiplex* PCR		BAC*Gene* *Listeria spp* PCR		Confirmation				
													MALDI-TOF		
No	Genus	Species	Reference	Molecular serotypes	Origin		CFX96	AriaMx	CFX96	AriaMx	O& A	Palcam	O& A	Palcam	TSYE A
84	*Listeria*	*grayi*	Ad1490	/	Salmon terrine	31	+(20.74)	+(18.41)	+(21.59)	+(19.52)	H-	st	+	+	+
85	*Listeria*	*grayi*	Ad2148	/	Pork rillettes	11	+(28.43)	+(25.86)	+(29.41)	+(26.19)	H-	st	+	+	+
55	*Listeria*	*innocua*	Adria 1	/	Smoked salmon	18	+(19.30)	+(16.84)	+(20.21)	+(17.39)	H-	+	+	No result/+	+
56	*Listeria*	*innocua*	Ad658	/	Gorgonzola	61	+(18.07)	+(15.46)	+(17.52)	+(15.47)	H-	+	+	+	+
57	*Listeria*	*innocua*	Ad655	/	Brine	21	+(19.36)	+(17.00)	+(19.92)	+(17.93)	H-	+	+	+	+
58	*Listeria*	*innocua*	Ad660	/	Bread crumbs	48	+(17.08)	+(14.58)	+(16.97)	+(15.23)	H-	+	+	+	+
59	*Listeria*	*innocua*	Ad663	/	Environment (dairy industry)	33	+(19.27)	+(17.21)	+(19.53)	+(18.22)	H-	+	+	+	+
60	*Listeria*	*innocua*	Ad671	/	Smocked bacon	36	+(19.29)	+(17.49)	+(19.67)	+(17.80)	H-	+	+	+	+
61	*Listeria*	*innocua*	Ad661	/	Soft cheese (Pont L'Evêque)	29	+(19.68)	+(17.43)	+(20.53)	+(18.32)	H-	+	+	+	+
62	*Listeria*	*innocua*	Ad659	/	Environment (dairy industry)	69	+(17.74)	+(15.82)	+(17.77)	+(15.63)	H-	+	+	+	+
63	*Listeria*	*ivanovii*	Ad466	/	Raw veal meat	32	+(24.34)	+(21.83)	+(23.72)	+(20.90)	H+	+	+	+	+
64	*Listeria*	*ivanovii*	Ad662	/	Environment (dairy industry)	17	+(23.45)	+(20.76)	+(23.63)	+(21.96)	H+	No result/+	+	+	+
65	*Listeria*	*ivanovii*	BR11	/	Environment (fish)	35	+(22.74)	+(20.52)	+(23.19)	+(21.11)	H+	No result/+	+	No result/+	+
66	*Listeria*	*ivanovii*	Ad1289	/	Raw milk cheese	30	+(22.39)	+(19.80)	+(21.59)	+(19.06)	H+	+	+	+	+
67	*Listeria*	*ivanovii*	Ad1290	/	Milk powder	19	+(16.52)	+(14.47)	+(16.35)	+(14.41)	H+	+	+	+	+
68	*Listeria*	*ivanovii*	Ad1291	/	Poultry	38	+(26.33)	+(23.99)	+(26.03)	+(23.49)	H+	+	+	+	+
69	*Listeria*	*ivanovii*	Ad1288	/	Sheep milk	84	+(21.59)	+(19.31)	+(21.31)	+(19.06)	H+	+	+	+	+
70	*Listeria*	*ivanovii londoniensis*	CIP103466	/	/	11	+(27.82)	+(25.67)	+(28.36)	+(26.11)	H+	+	+	+	+
71	*Listeria*	*seeligeri*	Ad649	/	Cheese	47	+(17.23)	+(15.28)	+(17.39)	+(14.90)	H-	+	+	+	+
72	*Listeria*	*seeligeri*	Ad651	/	Environment	43	+(19.76)	+(17.27)	+(19.30)	+(17.14)	H-	+	+	+	+
73	*Listeria*	*seeligeri*	Ad652	/	Environment (dairy industry)	34	+(18.94)	+(16.83)	+(18.91)	+(16.61)	H-	+	+	+	+
74	*Listeria*	*seeligeri*	Ad674	/	Soft cheese (Munster)	23	+(17.77)	+(15.72)	+(17.97)	+(15.58)	H-	+	+	+	+
75	*Listeria*	*seeligeri*	BR1	/	Trout	41	+(17.80)	+(15.77)	+(17.80)	+(15.75)	H-	+	+	+	+
76	*Listeria*	*seeligeri*	BR18	/	Environment (fish)	42	+(17.51)	+(15.54)	+(17.45)	+(15.55)	H-	+	+	+	+
77	*Listeria*	*seeligeri*	CIP100100	/	/	8	+(26.61)	+(24.22)	+(26.90)	+(24.26)	H-	+	+	+	+
78	*Listeria*	*welshimeri*	Ad1276	/	Environment (Slaughterhouse)	63	+(19.03)	+(16.96)	+(18.98)	+(16.86)	H-	+	+	+	+
79	*Listeria*	*welshimeri*	Ad1235	/	Beef meat	43	+(21.24)	+(19.36)	+(21.20)	+(18.79)	H-	+	+	+	+
80	*Listeria*	*welshimeri*	191424	/	Poultry	35	+(22.36)	+(19.80)	+(21.87)	+(19.47)	H-	+	+	+	+

INCLUSIVITY (Pre-warmed Actero™ Listeria Enrichment media for 18 h at 37°C)															
Strains						Inoculation level /225 ml Actero Listeria Enrichment media	BAC*Gene* *Listeria Multiplex* PCR		BAC*Gene* *Listeria spp* PCR		Confirmation				
													MALDI-TOF		
No	Genus	Species	Reference	Molecular serotypes	Origin		CFX96	AriaMx	CFX96	AriaMx	O& A	Palcam	O& A	Palcam	TSYE A
81	*Listeria*	*welshimeri*	Ad1175	/	Ready-to-eat-food	34	+(21.13)	+(18.94)	+(21.12)	+(18.78)	H-	+	+	+	+
82	*Listeria*	*welshimeri*	A 650	/	Poultry	39	+(19.98)	+(17.95)	+(20.01)	+(17.56)	H-	+	+	+	+

EXCLUSIVITY(BPW for 24h at 37°C)												
No	Strains				Inoculation level/ml	BAC*Gene* Multiplex				BAC*Gene* *Listeria* spp.	
	Genus	Species	Reference	Origin		PCR spp. Results		PCR L.mono Results		CFX96	AriaMx
						CFX96	AriaMx	CFX96	AriaMx		
1	*Bacillus*	*cereus*	Ad465	Salmon Terrine	$2.6\ 10^5$	-	-	-	-	-	-
2	*Bacillus*	*circulans*	Ad760	Vegetables	$2.6\ 10^4$	-	-	-	-	-	-
3	*Bacillus*	*coagulans*	Ad731	Dairy product	$2.0\ 10^4$	-	-	-	-	-	-
4	*Bacillus*	*licheniformis*	Ad978	Dairy product	$1.0\ 10^5$	-	-	-	-	-	-
5	*Bacillus*	*mycoïdes*	Ad762	Milk	$4.4\ 10^5$	-	-	-	-	-	-
6	*Bacillus*	*pseudomycoides*	Ad765	Vegetables	$6.0\ 10^4$	-	-	-	-	-	-
7	*Bacillus*	*pumilus*	Ad284	Ready-to-eat	$5.0\ 10^5$	-	-	-	-	-	-
8	*Bacillus*	*weihenstephanensis*	Ad726	Egg product	$6.6\ 10^4$	-	-	-	-	-	-
9	*Brochothrix*	*thermosphacta*	EN 15129	Trout	$2.6\ 10^4$	-	-	-	-	-	-
10	*Brochrotrix*	*campestris*	CIP 102920T	Environment	$6.0\ 10^4$	-	-	-	-	-	-
11	*Carnobacterium*	*divergens*	CIP 101029^T	/	$3.0\ 10^4$	-	-	-	-	-	-
12	*Carnobacterium*	*piscicola*	Ad369	Raw milk	$9.2\ 10^4$	-	-	-	-	-	-
13	*Enterococcus*	*durans*	Ad149	Ham	$4.6\ 10^4$	-	-	-	-	-	-
14	*Enterococcus*	*faecalis*	Adria 89L326	Soft cheese (Vacherin)	$3.4\ 10^6$	-	-	-	-	-	-
15	*Lactobacillus*	*brevis*	Adria 86L126	Ham	$8.0\ 10^5$	-	-	-	-	-	-
16	*Lactobacillus*	*curvatus*	Ad380	Delicatessen	$5.0\ 10^5$	-	-	-	-	-	-
17	*Lactobacillus*	*fermentum*	Ad482	Tomatoe juice	$9.9\ 10^6$	-	-	-	-	-	-
18	*Lactobacillus*	*sakei*	Ad473	Ham	$4.2\ 10^4$	-	-	-	-	-	-
19	*Lactococcus*	*lactis subsp cremoris*	Ad137	Dairy product	$6.0\ 10^5$	-	-	-	-	-	-
20	*Leuconostoc*	*carnosum*	Ad411	Ham	$2.2\ 10^5$	-	-	-	-	-	-
21	*Leuconostoc*	*citreum*	Ad396	Ham	$4.8\ 10^4$	-	-	-	-	-	-
22	*Micrococcus*	*luteus*	Ad432	Cocktail	$5.0\ 10^5$	-	-	-	-	-	-
23	*Pediococcus*	*pentosaceus*	ATCC 33316	/	$8.3\ 10^5$	-	-	-	-	-	-
24	*Propionibacterium*	*freundenreichii*	CNRZ 725	Dairy product	$1.0\ 10^4$	-	-	-	-	-	-
25	*Staphylococcus*	*aureus*	Ad165	Smoked delicatessen	$1.2\ 10^5$	-	-	-	-	-	-
26	*Staphylococcus*	*aureus*	Ad902	Nems	$3.8\ 10^5$	-	-	-	-	-	-
27	*Staphylococcus*	*epidermidis*	Ad931	Fruits	$2.0\ 10^4$	-	-	-	-	-	-
28	*Staphylococcus*	*haemoliticus*	Ad989	Dairy product	$8.0\ 10^4$	-	-	-	-	-	-
29	*Streptococcus*	*bovis*	Adria 92L622	Dairy product	$8.0\ 10^5$	-	-	-	-	-	-
30	*Streptococcus*	*salivarius sps thermophilus*	Ad441	Dairy product	$4.8\ 10^4$	-	-	-	-	-	-
31	*Macrococcus*	*caseolyticus*	CIP100755	Milk	$8.3\ 10^5$	-	-	-	-	-	-

Appendix 8 - Results obtained by the collaborative laboratories and the expert laboratory

Laboratory A

Aerobic mesophilic flora: 4,4.10^{8}CFU/g

Thermocycler: AriaMx

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
A3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
A5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
A10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
A13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
A17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
A18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
A21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
A24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
A1	-	-	-	-	-	+(27.20)	+(27.02)	+	+	**PD**	+	**PD**
A4	-	-	+	+	+	-	-	-	-	**ND**	-	**ND**
A7	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
A9	-	-	-	-	-	+(24.24)	+(24.22)	+	+	**PD**	+	**PD**
A11	-	-	-	-	-	+(24.14)	+(24.07)	+	+	**PD**	+	**PD**
A16	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
A20	-	+	+	+	+	-	-	-	-	**ND**	-	**ND**
A23	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
A2	+	+	+	+	+	+(25.21)	+(25.03)	+	+	**PA**	+	**PA**
A6	+	+	+	+	+	+(25.96)	+(25.77)	+	+	**PA**	+	**PA**
A8	+	+	+	+	+	+(25.27)	+(25.32)	+	+	**PA**	+	**PA**
A12	+	+	+	+	+	+(24.92)	+(25.20)	+	+	**PA**	+	**PA**
A14	+	+	+	+	+	+(25.08)	+(25.14)	+	+	**PA**	+	**PA**
A15	+	+	+	+	+	+(24.50)	+(24.45)	+	+	**PA**	+	**PA**
A19	+	+	+	+	+	+(32.16)	+(31.96)	+	+	**PA**	+	**PA**
A22	+	+	+	+	+	+(24.73)	+(24.63)	+	+	**PA**	+	**PA**

Laboratory **B**

Aerobic mesophilic flora: >1.10^{7}CFU/g

Thermocycler: AriaMx

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
B3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
B5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
B10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
B13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
B17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
B18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
B21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
B24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
B1	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
B4	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
B7	-	-	-	-	-	+(27.75)	+(26.01)	+	+	**PD**	+	**PD**
B9	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
B11	-	-	+	+	+	-	-	-	-	**ND**	-	**ND**
B16	-	-	-	-	-	+(24.35)	+(23.69)	+	+	**PD**	+	**PD**
B20	-	-	+	+	+	+(26.63)	+(25.64)	+	+	**PA**	+	**PA**
B23	+	+	+	+	+	+(24.61)	+(23.69)	+	+	**PA**	+	**PA**
B2	+	+	+	+	+	+(33.05)	+(34.71)	+	+	**PA**	+	**PA**
B6	+	+	+	+	+	+(33.60)	+(33.33)	+	+	**PA**	+	**PA**
B8	+	+	+	+	+	+(25.98)	+(25.14)	+	+	**PA**	+	**PA**
B12	+	+	+	+	+	+(32.24)	+(31.94)	+	+	**PA**	+	**PA**
B14	-	-	+	+	+	+(26.55)	+(26.55)	+	+	**PA**	+	**PA**
B15	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
B19	+	+	+	+	+	+(24.54)	+(23.98)	+	+	**PA**	+	**PA**
B22	-	-	+	+	+	+(24.75)	+(24.39)	+	+	**PA**	+	**PA**

Laboratory **C**

Aerobic mesophilic flora: 1,2.10^{9}CFU/g

Thermocycler: AriaMx

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
C3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
C5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
C10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
C13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
C17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
C18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
C21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
C24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
C1	-	+	+	+	+	+(20.35)	+(18.55)	+	+	**PA**	+	**PA**
C4	+	-	+	+	+	+(22.73)	+(21.35)	+	+	**PA**	+	**PA**
C7	+	+	+	+	+	+(22.81)	+(19.57)	+	+	**PA**	+	**PA**
C9	-	-	-	-	-	+(20.91)	+(17.92)	+	+	**PD**	+	**PD**
C11	+	+	+	+	+	+(27.45)	+(24.32)	+	+	**PA**	+	**PA**
C16	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
C20	+	+	+	+	+	-/+(26.76)/+(26.76)/+(25.91)	+(23.85)	+	-	**ND**	+	**PA**
C23	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
C2	+	+	+	+	+	+(21.60)	+(18.77)	+	+	**PA**	+	**PA**
C6	+	+	+	+	+	+(20.12)	+(18.89)	+	+	**PA**	+	**PA**
C8	+	+	+	+	+	+(22.50)	+(19.45)	+	+	**PA**	+	**PA**
C12	+	+	+	+	+	+(33.73)	+(29.50)	+	+	**PA**	+	**PA**
C14	+	+	+	+	+	+(32.99)	+(31.17)	+	+	**PA**	+	**PA**
C15	+	+	+	+	+	-/+(33.72)/+(32.97)/+(33.17)	+(32.45)	+	-	**ND**	+	**PA**
C19	+	+	+	+	+	-/+(20.75)/+(20.99)/+(21.25)	+(19.25)	+	-	**ND**	+	**PA**
C22	+	+	+	+	+	-/+(20.13)/+(20.28)/+(20.53)	+(18.81)	+	-	**ND**	+	**PA**

Laboratory **D**

Aerobic mesophilic flora: 3,7.10^{7}CFU/g

Thermocycler: Bio-Rad CFX96

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
D3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
D5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
D10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
D13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
D17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
D18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
D21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
D24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
D1	-	-	-	-	-	+(30.96)	+(32.62)	+	+	**PD**	+	**PD**
D4	+	+	+	+	+	+(28.65)	+(30.19)	+	+	**PA**	+	**PA**
D7	-	-	-	-	-	+(28.94)	+(30.60)	+	+	**PD**	+	**PD**
D9	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
D11	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
D16	+	+	+	+	+	+(39.11)/+(38.01)/ +(39.99)/+(39.21)	-	-	-	**PPND**	-	**ND**
D20	-	-	-	-	-	+(35.01)	+(37.85)	+	+	**PD**	+	**PD**
D23	+	+	+	+	+	+(34.24)	+(36.42)	+	+	**PA**	+	**PA**
D2	+	+	+	+	+	+(25.78)	+(27.27)	+	+	**PA**	+	**PA**
D6	+	+	+	+	+	+(27.58)	+(29.14)	+	+	**PA**	+	**PA**
D8	+	+	+	+	+	+(25.98)	+(27.42)	+	+	**PA**	+	**PA**
D12	+	+	+	+	+	+(26.29)	+(27.84)	+	+	**PA**	+	**PA**
D14	+	+	+	+	+	+(30.30)	+(31.88)	+	+	**PA**	+	**PA**
D15	-	-	-	-	-	+(37.40)	+(41.05)	- (+ after subculture in fraser)	+	**PD**	+	**PD**
D19	+	+	+	+	+	+(37.42)	+(41.67)	- (+ after subculture in fraser)	+	**PA**	+	**PA**
D22	+	+	+	+	+	+(29.03)	+(30.74)	+	+	**PA**	+	**PA**

Laboratory **E**

Aerobic mesophilic flora: 1,7.10^{7}CFU/g

Thermocycler: Bio-Rad CFX96

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
E3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
E5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
E10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
E13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
E17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
E18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
E21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
E24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
E1	-	-	-	-	-	+(28.92)	+(29.09)	+	+	**PD**	+	**PD**
E4	+	+	+	+	+	+(29.03)	+(29.84)	+	+	**PA**	+	**PA**
E7	-	-	+	+	+	+(35.54)	+(35.21)	+	+	**PA**	+	**PA**
E9	-	-	-	-	-	+(27.09)	+(27.41)	+	+	**PD**	+	**PD**
E11	+	+	+	+	+	+(29.08)	+(29.08)	+	+	**PA**	+	**PA**
E16	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
E20	+	+	+	+	+	+(25.07)	+(26.53)	+	+	**PA**	+	**PA**
E23	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
E2	+	+	+	+	+	+(26.93)	+(27.34)	+	+	**PA**	+	**PA**
E6	+	+	+	+	+	+(26.30)	+(27.07)	+	+	**PA**	+	**PA**
E8	+	+	+	+	+	+(23.41)	+(24.42)	+	+	**PA**	+	**PA**
E12	+	+	+	+	+	+(22.46)	+(22.45)	+	+	**PA**	+	**PA**
E14	+	+	+	+	+	+(24.87)	+(24.86)	+	+	**PA**	+	**PA**
E15	+	+	+	+	+	+(24.01)	+(24.66)	+	+	**PA**	+	**PA**
E19	+	+	+	+	+	+(24.27)	+(24.66)	+	+	**PA**	+	**PA**
E22	+	+	+	+	+	+(22.54)	+(22.78)	+	+	**PA**	+	**PA**

Laboratory **F**

Aerobic mesophilic flora: 3,56.10^{7}CFU/g

Thermocycler: Bio-Rad CFX96

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
F3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
F5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
F10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
F13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
F17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
F18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
F21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
F24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
F1	-	+	-	-	+	+(34.0)	+(32.9)	+	+	**PA**	+	**PA**
F4	+	+	+	+	+	+(26.2)	+(26.5)	+	+	**PA**	+	**PA**
F7	+	+	+	+	+	+(27.4)	+(27.6)	+	+	**PA**	+	**PA**
F9	-	+	+	+	+	+(29.0)	+(29.4)	+	+	**PA**	+	**PA**
F11	-	-	-	-	-	+(26.6)	+(26.6)	+	+	**PD**	+	**PD**
F16	+	+	+	+	+	+(27.3)	+(27.2)	+	+	**PA**	+	**PA**
F20	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
F23	+	+	+	+	+	+(26.5)	+(26.7)	+	+	**PA**	+	**PA**
F2	+	+	+	+	+	+(24.7)	+(24.5)	+	+	**PA**	+	**PA**
F6	+	+	+	+	+	+(33.0)	+(32.5)	+	+	**PA**	+	**PA**
F8	+	+	+	+	+	+(31.0)	+(31.0)	+	+	**PA**	+	**PA**
F12	+	+	+	+	+	+(35.7)	+(35.9)	+	+	**PA**	+	**PA**
F14	+	+	+	+	+	+(25.0)	+(24.9)	+	+	**PA**	+	**PA**
F15	+	+	+	+	+	+(24.0)	+(24.1)	+	+	**PA**	+	**PA**
F19	+	+	+	+	+	+(26.2)	+(26.8)	+	+	**PA**	+	**PA**
F22	+	+	+	+	+	+(23.6)	+(23.7)	+	+	**PA**	+	**PA**

Laboratory **G**

Aerobic mesophilic flora: 3,9.10^{8}CFU/g

Thermocycler: Bio-Rad CFX96

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
G3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
G5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
G10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
G13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
G17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
G18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
G21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
G24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
G1	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
G4	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
G7	+	+	+	+	+	+(30.04)	+(34.35)	+	+	**PA**	+	**PA**
G9	+	+	+	+	+	+(27.40)	+(30.67)	+	+	**PA**	+	**PA**
G11	+	+	+	+	+	+(25.79)	+(29.81)	+	+	**PA**	+	**PA**
G16	+	+	+	+	+	+(24.40)	+(27.53)	+	+	**PA**	+	**PA**
G20	+	+	+	+	+	+(25.83)	+(28.15)	+	+	**PA**	+	**PA**
G23	-	-	-	-	-	+(28.90)	+(31.41)	+	+	**PD**	+	**PD**
G2	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
G6	+	+	+	+	+	+(22.45)	-/+(26.96)/ +(27.09)/+(26.70)	+	+	**PA**	-	**ND**
G8	+	+	+	+	+	+(22.17)	+(25.68)	+	+	**PA**	+	**PA**
G12	+	+	+	+	+	+(24.19)	+(27.11)	+	+	**PA**	+	**PA**
G14	+	+	+	+	+	+(21.26)	+(23.85)	+	+	**PA**	+	**PA**
G15	+	+	+	+	+	+(33.96)	+(37.10)	+	+	**PA**	+	**PA**
G19	+	+	+	+	+	+(28.22)	+(31.14)	+	+	**PA**	+	**PA**
G22	+	+	+	+	+	+(23.43)	+(25.67)	+	+	**PA**	+	**PA**

Laboratory **H**

Aerobic mesophilic flora: 7,5.10^{8}CFU/g

Thermocycler: AriaMx

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
H3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
H5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
H10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
H13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
H17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
H18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
H21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
H24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
H1	-	-	-	-	-	+(25.57)	+(23.90)	+	+	**PD**	+	**PD**
H4	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
H7	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
H9	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
H11	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
H16	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
H20	+	+	+	+	+	+(21.89)	+(22.08)	+	+	**PA**	+	**PA**
H23	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
H2	+	+	+	+	+	+(22.40)	+(21.07)	+	+	**PA**	+	**PA**
H6	+	+	+	+	+	+(24.92)	+(23.75)	+	+	**PA**	+	**PA**
H8	+	+	+	+	+	+(25.00)	+(24.15)	+	+	**PA**	+	**PA**
H12	+	+	+	+	+	+(21.92)	+(20.76)	+	+	**PA**	+	**PA**
H14	+	+	+	+	+	+(22.83)	+(20.96)	+	+	**PA**	+	**PA**
H15	+	+	+	+	+	+(26.77)	+(25.96)	+	+	**PA**	+	**PA**
H19	+	+	+	+	+	+(20.70)	+(20.69)	+	+	**PA**	+	**PA**
H22	+	+	+	+	+	+(22.95)	+(22.96)	+	+	**PA**	+	**PA**

Laboratory **I**

Aerobic mesophilic flora: 1,4.10^{7}CFU/g

Thermocycler: AriaMx

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
I3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
I5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
I10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
I13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
I17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
I18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
I21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
I24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
I1	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
I4	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
I7	+	+	+	+	+	+(27.61)	+(27.29)	+	+	**PA**	+	**PA**
I9	+	+	+	+	+	+(20.19)	+(19.84)	+	+	**PA**	+	**PA**
I11	-	+	+	+	+	+(22.77)	+(22.74)	+	+	**PA**	+	**PA**
I16	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
I20	+	+	+	+	+	+(22.30)	+(22.06)	+	+	**PA**	+	**PA**
I23	+	+	+	+	+	+(22.32)	+(21.95)	+	+	**PA**	+	**PA**
I2	+	+	+	+	+	+(20.29)	+(19.93)	+	+	**PA**	+	**PA**
I6	+	+	+	+	+	+(27.41)	+(27.33)	+	+	**PA**	+	**PA**
I8	+	+	+	+	+	+(22.27)	+(22.05)	+	+	**PA**	+	**PA**
I12	+	+	+	+	+	+(21.84)	+(21.83)	+	+	**PA**	+	**PA**
I14	+	+	+	+	+	+(21.01)	+(20.84)	+	+	**PA**	+	**PA**
I15	+	+	+	+	+	+(25.00)	+(24.81)	+	+	**PA**	+	**PA**
I19	+	+	+	+	+	+(21.61)	+(21.49)	+	+	**PA**	+	**PA**
I22	+	+	+	+	+	+(21.87)	+(21.56)	+	+	**PA**	+	**PA**

Laboratory **J**

Aerobic mesophilic flora: 6,6.10^{8}CFU/g

Thermocycler: AriaMx

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
J3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
J5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
J10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
J13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
J17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
J18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
J21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
J24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
J1	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
J4	+	+	+	+	+	+(23.17)	+(22.78)	+	+	**PA**	+	**PA**
J7	-	-	-	-	-	+(26.90)	+-(26.63)	+	+	**PD**	+	**PD**
J9	+	+	+	+	+	+(29.81)	+(29.72)	+	+	**PA**	+	**PA**
J11	-	-	-	-	-	+(21.97)	+(22.05)	+	+	**PD**	+	**PD**
J16	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
J20	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
J23	+	+	+	+	+	+(20.70)	+(20.41)	+	+	**PA**	+	**PA**
J2	+	+	+	+	+	+(22.34)	+(21.92)	+	+	**PA**	+	**PA**
J6	+	+	+	+	+	+(26.90)	+(26.59)	+	+	**PA**	+	**PA**
J8	+	+	+	+	+	+(29.87)	+(29.48)	+	+	**PA**	+	**PA**
J12	+	+	+	+	+	+(22.23)	+(22.16)	+	+	**PA**	+	**PA**
J14	+	+	+	+	+	+(28.39)	+(28.06)	+	+	**PA**	+	**PA**
J15	+	+	+	+	+	+(24.78)	+(24.42)	+	+	**PA**	+	**PA**
J19	+	+	+	+	+	+(22.73)	+(23.27)	+	+	**PA**	+	**PA**
J22	+	+	+	+	+	+(21.86)	+(21.47)	+	+	**PA**	+	**PA**

Laboratory **K**

Aerobic mesophilic flora: >10^8CFU/g (~8.10^8CFU/g)

Thermocycler: Bio-Rad CFX96

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
K3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
K5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
K10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
K13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
K17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
K18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
K21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
K24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
K1	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
K4	+	+	+	+	+	+(29.31)	+(29.55)	+	+	**PA**	+	**PA**
K7	+	+	+	+	+	+(35.29)	+(35.58)	+	+	**PA**	+	**PA**
K9	+	+	+	+	+	+(27.62)	+(27.70)	+	+	**PA**	+	**PA**
K11	-	-	-	-	-	+(26.12)	+(26.43)	+	+	**PD**	+	**PD**
K16	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
K20	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
K23	+	+	+	+	+	+(30.72)	+(30.67)	+	+	**PA**	+	**PA**
K2	+	+	+	+	+	+(30.06)	+(29.95)	+	+	**PA**	+	**PA**
K6	+	+	+	+	+	+(30.56)	+(30.44)	+	+	**PA**	+	**PA**
K8	+	+	+	+	+	+(27.32)	+(27.36)	+	+	**PA**	+	**PA**
K12	+	+	+	+	+	+(27.43)	+(27.02)	+	+	**PA**	+	**PA**
K14	+	+	+	+	+	+(26.72)	+(26.44)	+	+	**PA**	+	**PA**
K15	+	+	+	+	+	+(27.15)	+(27.06)	+	+	**PA**	+	**PA**
K19	+	+	+	+	+	+(25.56)	+(25.76)	+	+	**PA**	+	**PA**
K22	+	+	+	+	+	+(25.01)	+(24.89)	+	+	**PA**	+	**PA**

Laboratory **L**

Aerobic mesophilic flora: 8,7.10^{7}CFU/g

Thermocycler: Bio-Rad CFX96

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
L3	-	-	-	nd	-	-	-	-	-	**NA**	-	**NA**
L5	-	-	-	nd	-	-	-	-	-	**NA**	-	**NA**
L10	-	-	-	nd	-	-	-	-	-	**NA**	-	**NA**
L13	-	-	-	nd	-	-	-	-	-	**NA**	-	**NA**
L17	-	-	-	nd	-	-	-	-	-	**NA**	-	**NA**
L18	-	-	-	nd	-	-	-	-	-	**NA**	-	**NA**
L21	-	-	-	nd	-	-	-	-	-	**NA**	-	**NA**
L24	-	-	-	nd	-	-	-	-	-	**NA**	-	**NA**
L1	-	-	-	nd	-	+(29.86)	+(30.57)	+	+	**PD**	+	**PD**
L4	-	-	+	nd	+	-	-	-	-	**ND**	-	**ND**
L7	-	+	+	nd	+	-	-	-	-	**ND**	-	**ND**
L9	-	-	-	nd	-	+(34.68)	+(35.00)	+	+	**PD**	+	**PD**
L11	+	+	+	nd	+	+(23.35)	+(22.78)	+	+	**PA**	+	**PA**
L16	-	-	-	nd	-	+(23.24)	+(23.01)	+	+	**PD**	+	**PD**
L20	+	-	+	nd	+	+(22.32)	+(21.74)	+	+	**PA**	+	**PA**
L23	-	-	+	nd	+	-	-	-	-	**ND**	-	**ND**
L2	+	+	+	nd	+	+(29.99)	+(29.34)	+	+	**PA**	+	**PA**
L6	-	-	+	nd	+	+(21.61)	+(21.46)	+	+	**PA**	+	**PA**
L8	+	+	+	nd	+	+(25.41)	+(25.46)	+	+	**PA**	+	**PA**
L12	+	+	+	nd	+	+(23.33)	+(23.07)	+	+	**PA**	+	**PA**
L14	+	+	+	nd	+	+(23.08)	+(23.07)	+	+	**PA**	+	**PA**
L15	-	-	-	nd	-	+(25.38)	+(25.06)	+	+	**PD**	+	**PD**
L19	-	+	+	nd	+	+(29.25)	+(28.76)	+	+	**PA**	+	**PA**
L22	+	+	+	nd	+	+(31.24)	+(30.87)	+	+	**PA**	+	**PA**

Laboratory **M**

Aerobic mesophilic flora: 1,7.10⁹CFU/g

Thermocycler: Bio-Rad CFX96

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
M3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
M5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
M10	-	-	-	-	-	-	-/i	-	-	**NA**	-	**NA**
M13	-	-	+	-	+	-	-/i	-	-	**ND**	-	**ND**
M17	-	-	+	-	+	-	i/i	-	-	**ND**	-	**ND**
M18	-	-	-	-	-	-	i/i	-	-	**NA**	-	**NA**
M21	-	-	-	-	-	-	i/i	-	-	**NA**	-	**NA**
M24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
M1	-	-	-	-	-	-	-/-	-	-	**NA**	-	**NA**
M4	+	+	+	+	+	-	-/i	-	-	**ND**	-	**ND**
M7	+	+	+	+	+	+(22.62)	+(30.12)/+(22.04)	+	+	**PA**	+	**PA**
M9	-	-	+	-	+	-	-/i	-	-	**ND**	-	**ND**
M11	+	+	+	+	+	+(22.72)	+(24.43)/+(23.75)	+	+	**PA**	+	**PA**
M16	-	-	+	-	+	+(27.84)	+(35.53)/+(28.35)	+	+	**PA**	+	**PA**
M20	+	+	+	+	+	+(29.32)	+(31.65)/+(29.45)	+	+	**PA**	+	**PA**
M23	+	+	+	+	+	+(21.76)	+(25.21)/+(22.76)	+	+	**PA**	+	**PA**
M2	+	+	+	+	+	+(23.42)	+(24.58)/+(23.24)	+	+	**PA**	+	**PA**
M6	+	+	+	+	+	+(22.46)	+(22.94)/+(23.23)	+	+	**PA**	+	**PA**
M8	+	+	+	+	+	+(22.23)	+(23.69)/+(21.88)	+	+	**PA**	+	**PA**
M12	+	+	+	+	+	+(21.81)	+(22.08)/+(22.07)	+	+	**PA**	+	**PA**
M14	+	+	+	+	+	+(23.22)	+(24.66)/+(22.40)	+	+	**PA**	+	**PA**
M15	+	+	+	+	+	+(25.02)	+(29.61)/+(26.01)	+	+	**PA**	+	**PA**
M19	+	+	+	+	+	+(22.22)	+(26.57)/+(25.55)	+	+	**PA**	+	**PA**
M22	+	+	+	+	+	+(28.69)	+(31.95)/+(28.68)	+	+	**PA**	+	**PA**

Laboratory **N**

Aerobic mesophilic flora: 2,09.10^{7}CFU/g

Thermocycler: Bio-Rad CFX96

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
N3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
N5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
N10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
N13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
N17	-	-	-	-	-	+(39.39)/-/-	+(40.24)/-/-	-	-	**PPNA**	-	**PPNA**
N18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
N21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
N24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
N1	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
N4	+	+	+	+	+	+(23.64)	+(23.88)	+	+	**PA**	+	**PA**
N7	+	+	+	+	+	+(24.14)	+(24.56)	+	+	**PA**	+	**PA**
N9	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
N11	-	-	-	-	-	+(27.18)	+(27.63)	+	+	**PD**	+	**PD**
N16	+	+	+	+	+	+(24.08)	+(24.19)	+	+	**PA**	+	**PA**
N20	+	+	+	+	+	+(24.16)	+(24.39)	+	+	**PA**	+	**PA**
N23	+	+	+	+	+	+(23.87)	+(24.13)	+	+	**PA**	+	**PA**
N2	+	+	+	+	+	+(22.31)	+(22.53)	+	+	**PA**	+	**PA**
N6	+	+	+	+	+	+(28.71)	+(29.02)	+	+	**PA**	+	**PA**
N8	+	+	+	+	+	+(19.89)	+(20.11)	+	+	**PA**	+	**PA**
N12	+	+	+	+	+	+(21.96)	+(22.49)	+	+	**PA**	+	**PA**
N14	+	+	+	+	+	+(24.32)	+(24.33)	+	+	**PA**	+	**PA**
N15	+	+	+	+	+	+(24.98)	+(25.00)	+	+	**PA**	+	**PA**
N19	+	+	+	+	+	+(26.58)	+(26.56)	+	+	**PA**	+	**PA**
N22	+	+	+	+	+	+(24.92)	+(24.95)	+	+	**PA**	+	**PA**

Laboratory **O**

Aerobic mesophilic flora: 1,6.10^{8}CFU/g

Thermocycler: AriaMx

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
O3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
O5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
O10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
O13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
O17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
O18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
O21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
O24	-	-	-	-	-	+(36.92)/-/-	+(35.71)/-/-	-	-	**PPNA**	-	**PPNA**
O1	-	-	+	+	+	-	-	-	-	**ND**	-	**ND**
O4	-	-	-	-	-	+(24.41)	+(24.22)	+	+	**PD**	+	**PD**
O7	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
O9	-	+	+	+	+	-	-	-	-	**ND**	-	**ND**
O11	-	-	-	-	-	+(24.82)	+(25.00)	+	+	**PD**	+	**PD**
O16	+	+	+	+	+	+(20.17)	+(19.91)	+	+	**PA**	+	**PA**
O20	+	+	+	+	+	+(22.80)	+(22.29)	+	+	**PA**	+	**PA**
O23	+	+	+	+	+	-	-	-	-	**ND**	-	**ND**
O2	-	-	+	+	+	+(22.82)	+(22.64)	+	+	**PA**	+	**PA**
O6	-	+	+	+	+	+(20.50)	+(20.26)	+	+	**PA**	+	**PA**
O8	+	+	+	+	+	+(18.96)	+(19.45)	+	+	**PA**	+	**PA**
O12	+	+	+	+	+	+(22.44)	+(22.67)	+	+	**PA**	+	**PA**
O14	+	+	+	+	+	+(19.01)	+(19.19)	+	+	**PA**	+	**PA**
O15	+	+	+	+	+	+(26.40)	+(26.72)	+	+	**PA**	+	**PA**
O19	+	+	+	+	+	+(19.43)	+(19.44)	+	+	**PA**	+	**PA**
O22	-	+	+	+	+	+(23.50)	+(22.32)	+	+	**PA**	+	**PA**

Laboratory **P**

Aerobic mesophilic flora: >10^8CFU/g (>2,1.10^8CFU/g)

Thermocycler: AriaMx

N°Sample	Reference method: ISO 11290-1/A1					Alternative method : BAC*Gene Listeria* spp.						
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex	BAC*Gene Listeria* spp.	Confirmations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
	O&A	Palcam	O&A	Palcam		Ct	Ct	O&A				
P3	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
P5	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
P10	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
P13	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
P17	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
P18	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
P21	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
P24	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
P1	+	-	-	-	+	-	-	-	-	**ND**	-	**ND**
P4	+	-	+	+	+	-	-	-	-	**ND**	-	**ND**
P7	+	+	+	+	+	+(26.85)	+(25.71)	+	+	**PA**	+	**PA**
P9	-	-	+	+	+	-	-	-	-	**ND**	-	**ND**
P11	+	+	+	+	+	+(25.40)	+(24.46)	+	+	**PA**	+	**PA**
P16	+	-	+	+	+	+(27.19)	+(25.58)	+	+	**PA**	+	**PA**
P20	+	-	+	+	+	-	-	-	-	**ND**	-	**ND**
P23	+	+	+	+	+	+(22.60)	+(21.31)	+	+	**PA**	+	**PA**
P2	+	+	+	+	+	+(23.85)	+(22.71)	+	+	**PA**	+	**PA**
P6	+	+	+	+	+	+(24.04)	+(22.70)	+	+	**PA**	+	**PA**
P8	+	+	+	+	+	+(23.52)	+(22.36)	+	+	**PA**	+	**PA**
P12	+	+	+	+	+	+(22.17)	+(21.25)	+	+	**PA**	+	**PA**
P14	+	+	+	+	+	+(26.44)	+(25.39)	+	+	**PA**	+	**PA**
P15	+	+	+	+	+	+(31.78)	+(29.89)	+	+	**PA**	+	**PA**
P19	+	+	+	+	+	+(29.73)	+(21.49)	+	+	**PA**	+	**PA**
P22	+	+	+	+	+	+(27.06)	+(25.76)	+	+	**PA**	+	**PA**

Laboratory Z (Adria)

Aerobic mesophilic flora: 5,5.10^{8}CFU/g

Thermocyclers: AriaMx and CFX96

N° Sample	Reference method: ISO 11290-1/A1♦					Alternative method: BAC*Gene Listeria* spp.								
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Confir-mations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
						Ct		Ct						
	O&A	Palcam	O&A	Palcam		CFX96	AriaMx	CFX96	AriaMx	O&A				
Z3	-	-	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
Z5	-	-	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
Z10	-	-	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
Z13	-	-	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
Z17	-	-	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
Z18	-	-	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
Z21	-	-	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
Z24	-	-	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
Z1	-	-	-	-	-	-	-	-	-	-	-	**NA**	-	**NA**
Z4	+	+	+	+	+	-	+(36.30)/-/+(36.30)/-/+(34.72)/-/+(36.48)/+(33.67)/+(35.37)/-/-	-	-	-	-	**PPNA**	-	**ND**
Z7	-	-	-	-	-	+(27.04)	+(23.66)	+(27.46)	+(25.51)	+	+	**PD**	+	**PD**
Z9	+	+	+	+	+	+(24.84)	+(21.49)	+(25.12)	+(23.69)	+	+	**PA**	+	**PA**
Z11	+	+	+	+	+	-	-	-	-	-	-	**ND**	-	**ND**
Z16	+	+	+	+	+	+(25.26)	+(21.83)	+(25.27)	+(23.74)	+	+	**PA**	+	**PA**
Z20	-	-	-	-	-	+(36.99)/+(34.69)/-/+(36.48)/-/+(37.34)/-/-/+(37.49)/-/-	-	-	-	-	-	**PPNA**	-	**NA**
Z23	+	+	+	+	+	-	-	-	-	-	-	**ND**	-	**ND**
Z2	+	+	+	+	+	+(24.73)	+(21.62)	+(24.92)	+(23.61)	+	+	**PA**	+	**PA**
Z6	+	+	+	+	+	+(27.16)	+(24.16)	+(27.43)	+(26.36)	+	+	**PA**	+	**PA**
Z8	+	+	+	+	+	+(26.02)	+(22.77)	+(26.25)	+(24.73)	+	+	**PA**	+	**PA**

♦ Analyses performed according to the COFRAC accreditation

N° Sample	Reference method: ISO 11290-1/A1♦					Alternative method: BAC*Gene Listeria* spp.								
	Half Fraser		Fraser		Final result	BAC*Gene Listeria* Multiplex		BAC*Gene Listeria* spp.		Confir-mations	Final result BAC*Gene Listeria* Multiplex	Agreement BAC*Gene Listeria* Multiplex	Final result BAC*Gene Listeria* spp.	Agreement BAC*Gene Listeria* spp.
						Ct		Ct						
	O&A	Palcam	O&A	Palcam		CFX96	AriaMx	CFX96	AriaMx	O&A				
Z12	+	+	+	+	+	+(27.69)	+(24.48)	+(27.71)	+(26.49)	+	+	**PA**	+	**PA**
Z14	+	+	+	+	+	+(24.98)	+(21.83)	+(25.05)	+(24.16)	+	+	**PA**	+	**PA**
Z15	+	+	+	+	+	+(27.78)	+(24.13)	+(28.11)	+(26.56)	+	+	**PA**	+	**PA**
Z19	+	+	+	+	+	+(25.37)	+(22.06)	+(25.38)	+(24.20)	+	+	**PA**	+	**PA**
Z22	+	+	+	+	+	+(27.45)	+(24.50)	+(40.25)	+(27.24)	+	+	**PA**	+	**PA**