Inovalys Tours

bioMérieux

NF VALIDATION - Validation of alternative method of analysis
Application to food microbiology

SUMMARY REPORT

Study conducted according to EN ISO 16140-2 : 2016

« Gene-Up® Listeria monocytogenes 2»
BIO 12/40-11/16
(Ref. 423107)
for the detection of *Listeria monocytogenes*
Protocol for a broad range of foods and environmental samples (excluding primary production samples)

Qualitative method

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Inovalys_GENE-UP®_LMO2_Summary_Rapport_V0_13/12/2021

SUMMARY

Preamble

Validation protocol :

EN ISO 16140-2 (September 2016): Food chain microbiology. Validation of methods - Part 2: Protocol for the validation of alternative (commercial) methods compared with a reference method.

Supplemented by the "Specific requirements of the Food Microbiology Technical Office" of the NF VALIDATION mark (PR Revision 7).

Reference method :

EN ISO 11290-1 (May 2017)

Scope :

All human food products (by validation tests on a wide range of foods) and environmental samples (excluding primary production samples).

Certification organism:

AFNOR Certification (http://nf-validation.afnor.org/)

1. Introduction

The GENE UP® *Listeria monocytogenes* 2 (LMO2) method was certified by AFNOR Certification according to the ISO 16140-2 standard under the certification number BIO 12/40-11/16.
The validation stages, the expert laboratory and the standards used during the studies are presented in the table below.

Date	Purpose	Mix PCR and software	Expert Laboratory	Standards
November 2016	Initial validation in Meat products and dairy products (general protocol)	Multi doses and software 1.1	ISHA	- ISO 16140-2:2016 (preliminary study) - AFNOR requirements : v5.1 (November 2015) - ISO 11290-1/A1 (2005)
January 2017	First extension in seafood products, vegetal products, composite food (general protocol) and environmental samples with general and specific protocol	Multi doses and software 1.1		- ISO 16140-2:2016 (preliminary study) - AFNOR requirements : v5.1 (November 2015) - ISO 11290-1/A1 (2005)
July 2017	Modification for use of software version 2.0	Multi doses and software 2.0		- AFNOR requirements : v6 (mai 2017)
December 2018	Second extension for the new kit PCR	Unit dose and software 3.0		- AFNOR requirements : v6 (mai 2017)
May 2020	Modification for use of software version 3.1	Unit dose and software 3.1	BioMérieux	- Minor modification
October 2020	Renewal study	Unit dose and software 3.1	INOVALYS	- ISO 16140-2:2016 - AFNOR requirements : v6 - ISO 11290-1 (2017)
October 2021	Extension study : new protocol for dairy products	Unit dose and software 3.1	INOVALYS	- ISO 16140-2:2016 - AFNOR requirements : PR7 - ISO 11290-1 (2017)

2. Method protocols

2.1. Alternative method

Principle of the method :

The GENE-UP® *L. monocytogenes* 2 kit is to be used with compatible PCR strip tubes in the GENE-UP Thermocycler. Each reaction vial in the GENE-UP *L. monocytogenes 2* kit contains all of the necessary components for PCR, including sample-specific primers and probes and an internal amplification control.
The GENE-UP Thermocycler detects fluorescence at several wavelengths (channels) to allow multi-target detection in the same reaction vessel. The fluorescent signal from a sample is recorded in channel 640, while the fluorescent signal for an internal amplification control is recorded in channel 705. The software automatically interprets the results for both fluorescence channel and determines the sample result based on the outcome of the control.

Both the assay for the sample and the internal amplification control utilize dual Fluorescence Resonance Energy Transfer (FRET) hybridization probes. These probes consist of two different short oligonucleotides that hybridize to an internal sequence of the amplified fragment during the annealing phase of the reaction cycle. The first probe for the sample assay is labeled at the 3' end with fluorescein; the second probe is labeled at the 5' end with LC Red 640. FRET occurs only after the two probes come in close proximity from hybridizing to the template DNA.

The resulting fluorescent signal from the FRET interaction, which forms a real-time amplification curve, is how the amplified target is detected by the GENE-UP Thermocycler. After the PCR cycling program finishes, the PCR product(s) are melted to determine the presence of the target DNA. The software interprets data for each sample and gives a positive, negative, or inhibited result.

The internal amplification control, contained in the reconstitution buffer, validates that the reaction conditions are sustainable for PCR to take place, thus validating a negative outcome for the sample. The internal amplification control is amplified by the same primer set but uses a different set of hybridization FRET probes to allow detection in the 705 channel.

PCR results interpretation :

A sample is declared negative if no melt peak is detected or if the peak is outside of a defined range of TM values, or if the height of the peak is lower than a negative threshold value.
A sample is declared positive if the melt peak is inside the TM range of values and if the peak is higher than the previous threshold.

Alternative method protocol :

Protocols available and associated categories are described in table 1.

Table 1 : Protocols

Category	Test	Dilution	Enrichment	Protocol
Meat products	25 g	1/10	LPT broth 22 - 28 h at 37 ± 1°C	①
Dairy products	25 g	1/10	LPT broth 22 - 28 h at 37 ± 1°C	①
	25 g	1/10	LX broth 22 - 28 h at 37 ± 1°C	③
Seafood products	25 g	1/10	LPT broth 22 - 28 h at 37 ± 1°C	①
Vegetal products	25 g	1/10	LPT broth 22 - 28 h at 37 ± 1°C	①
Composite foods	25 g	1/10	LPT broth 22 - 28 h at 37 ± 1°C	①
Environmental samples	25 g or sample device	1/10 or 10 mL or 100 mL	LPT broth 22 - 28 h at 37 ± 1°C	① Except surface samples
			LPT broth 18 - 24 h at 37 ± 1°C	② Surface samples

The enrichment is followed by a lysis step on 20 µL enrichment and a detection step in the GENE-UP thermocycler on 10µL lysate.

Results are interpreted and shown in the GENE-UP Routine software.

Presumptive positive results are confirmed by streaking 10 µL of the enriched LPT or LX broth on a chromogenic agar according to the definition of ISO 11290 (Ottaviani Agosti formulation type) or forming part of an ISO 16140-2 certified method, followed by a single reading or biochemical tests.

Protocol of the alternative method, including the confirmation steps, is shown in appendix 1.

It is possible to store the enrichment broth and the lysates for 72h at 5°C ± 3°C.

Restriction :

There is no restriction.

2.2. Reference method

In the previous validations, the reference method used was the one described in the standard ISO 11290-1/A1 (2005), "Horizontal method for the detection and enumeration of *Listeria monocytogenes* - Part 1: Detection method".

For the last extension study, the reference method was the ISO 11290-1 (May 2017) : Microbiology of the food chain - Horizontal method for the detection and enumeration of *Listeria monocytogenes* and of *Listeria spp.* - Part 1: Detection method".
The workflow of the method is set out in appendix 2.

2.3. Study design

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

3. Initial validation and extension/renewal studies : results

3.1. Method comparison study

The study was conducted on a variety of samples and strains representative of agri-food products. This is not an exhaustive list of the different matrixes included in the scope.

3.1.1. Sensitivity study

The relative sensitivity (SE) is the ability of the alternative method to detect the analyte when it is detected by the reference method.

3.1.1.1. Number and nature of samples

Combining the different studies, 572 samples were analysed, 247 positive samples and 325 negative samples.
The repartition of samples per category and type is presented in table 2.

Table 2 : Number and nature of samples

Category		Type	Protocol	Negative samples	Positive samples	Total
Meat products	a	Raw products (including deep-frozen, fresh, seasoned)	①	**28**	**13**	**41**
	b	Ready-to-eat and processed meat products		**14**	**11**	**25**
	c	Fermented or dried meat products (raw and cooked)		**12**	**8**	**20**
		Total		**54**	**32**	**86**
Dairy products	a	Raw milk cheese	①	**23**	**12**	**35**
	b	Other raw milk products		**10**	**10**	**20**
	c	Heat-processed milk and dairy products		**30**	**11**	**41**
		Total ①		**63**	**33**	**96**
	a	Raw milk cheese	③	**10**	**12**	**22**
	b	Other raw milk products		**10**	**12**	**22**
	c	Heat-processed milk and dairy products		**13**	**7**	**20**
		Total ③		**33**	**31**	**64**
		Total Dairy products		**96**	**64**	**160**
Seafood products	a	Raw products	①	**12**	**15**	**27**
	b	Smoked, marinated products		**9**	**12**	**21**
	c	Processed products		**12**	**8**	**20**
		Total		**33**	**35**	**68**
Vegetal products	a	Raw vegetal products	①	**15**	**10**	**25**
	b	Ready-to-eat and ready-to-cook raw vegetal products, precooked vegetal products		**15**	**9**	**24**
	c	Processed vegetal products		**12**	**12**	**24**
		Total		**42**	**31**	**73**
Composite foods	a	Ready-to-eat foods	①	**13**	**11**	**24**
	b	Ready-to-reheat foods		**10**	**12**	**22**
	c	Pastries, egg products		**12**	**10**	**22**
		Total		**35**	**33**	**68**
Environmental samples	a	Process waters	①	**10**	**15**	**25**
	b	Dusts and residues		**14**	**7**	**21**
	c	Sponges and swabs	②	**41**	**30**	**71**
		Total		**65**	**52**	**117**
Total all categories				**325**	**247**	**572**
Total protocol ①				**251**	**186**	**437**
Total protocol ②				**41**	**30**	**71**
Total protocol ③				**33**	**31**	**64**

3.1.1.2. Artificial contamination of samples

Artificial contaminations were performed using the seeding protocol.
No more than six positive results were obtained using the same strain.

Considering all the categories of the application scope, 247 samples gave a positive result by at least one of the method and 44.1 % of them were naturally contaminated.

Table 3 : Repartition of the positive samples

Naturally contaminated	Artificially contaminated			Total
	Seeding			
	≤3	3<x ≤10	>10	
109	118	20	0	247
44.1%	47.8%	8.1 %	0%	100%

3.1.1.3. Protocols applied during the study

During the validation study, only the minimal incubation time of the broth of the alternative method was tested, namely: 22 hours for protocols ① and ③, and 18 hours for protocol ②.

All samples of the alternative method were confirmed by direct streaking of 10 µL of the enriched LPT broth on an ALOA petri dish.
Typical colonies were confirmed by :

- the observation of the presence of typical colonies,
- the tests of the EN ISO 11290-1/A1 method including the purification step,
- a Rapidec L.mono test from an isolated colony,
- a Fast Rhamnose test from an isolated colony,
- an API Listeria gallery from an isolated colony.

In case of absence of typical colonies after a direct streaking from the enriched LPT broth, a subculture in 10 mL of Fraser broth was performed from 0.1 mL of the enriched LPT broth. This broth was incubated for 22 h at 37±1°C, then streaked on ALOA and PALCAM. Typical colonies were confirmed by the tests described above.
For samples found negative with the Gene-UP Listeria monocytogenes 2 test, a subculture of 0.1 ml of the LPT broth was performed into 10 mL of Fraser broth incubated for 48 hours and then streaked onto an ALOA Petri dish to apply the extended confirmation protocol of the ISO 16140-2 standard for negative samples.

A storage of the DNA extracts for 72 h at 5±3°C was performed for all samples.
A storage of the enriched LPT broth for 72 h at 5±3°C was also performed for positive and discordant results. Results were confirmed by streaking on ALOA agar media, followed by a rapid test. In case of discordance in the confirmation result with the results obtained in first analysis, all kinds of confirmation of the alternative method were applied.

3.1.1.4. Results

Raw data are shown in appendix 4.
The results are given in the following table 4.

Table 4 : Summary of results obtained with reference method and alternative method (PA : positive agreement, NA : negative agreement, PD : positive deviation, ND : negative deviation, PP : positive presomptive non confirmed)

Category	PA	NA	PD	ND	PPNA*	PPND*	TOTAL
Meat products	25	54	4	3	1	0	86
Dairy products	47	96	10	7	0	1	160
Seafood products	20	33	7	8	1	0	68
Vegetal products	24	42	3	4	1	0	73
Composite foods	19	35	6	8	4	0	68
Environmental samples	37	65	9	6	3	0	117
All categories	172	325	39	36	10	1	572
Total protocol ①	121	251	33	32	8	1	437
Total protocol ②	27	41	1	2	2	0	71
Total protocol ③	24	33	5	2	0	0	64

* : PPNA are already included in NA and PPND in ND

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

The results are given in Table 5.

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

Category	Type	PA	NA	PD	ND	PPNA*	PPND*	SE alt %	SE réf %	RT %	FPR %
Meat products	a	9	28	2	2	1	0	84,6%	84,6%	90,2%	3,6%
	b	11	14	0	0	0	0	100,0%	100,0%	100,0%	0,0%
	c	5	12	2	1	0	0	87,5%	75,0%	85,0%	0,0%
	Total	25	54	4	3	1	0	90,6%	87,5%	91,9%	1,9%
Dairy products	a	10	23	1	1	0	0	91,7%	91,7%	94,3%	0,0%
	b	5	10	4	1	0	0	90,0%	60,0%	75,0%	0,0%
	c	8	30	0	3	0	1	72,7%	100,0%	92,7%	3,3%
	Total ①	23	63	5	5	0	1	84,8%	84,8%	89,6%	1,6%
	a	9	10	2	1	0	0	91,7%	83.3%	86.4%	0,0%
	b	10	10	2	0	0	0	100,0%	83,3%	90,9%	0,0%
	c	5	13	1	1	0	0	85,7%	85,7%	90,0%	0,0%
	Total ③	24	33	5	2	0	0	93,5%	83,9%	89,1%	0,0%
	Total	47	96	10	7	0	1	89,1%	84,4%	89,4%	1,0%
Seafood products	a	9	12	5	1	0	0	93,3%	66,7%	77,8%	0,0%
	b	6	9	1	5	0	0	58,3%	91,7%	71,4%	0,0%
	c	5	12	1	2	1	0	75,0%	87,5%	85,0%	8,3%
	Total	20	33	7	8	1	0	77,1%	80,0%	77,9%	3,0%
Vegetal products	a	7	15	1	2	1	0	80,0%	90,0%	88,0%	6,7%
	b	8	15	1	0	0	0	100,0%	88,9%	95,8%	0,0%
	c	9	12	1	2	0	0	83,3%	91,7%	87,5%	0,0%
	Total	24	42	3	4	1	0	87,1%	90,3%	90,4%	2,4%

Category	Type	PA	NA	PD	ND	PPNA*	PPND*	SE alt %	SE réf %	RT %	FPR %
Composite foods	a	7	13	2	2	2	0	81,8%	81,8%	83,3%	15,4%
	b	7	10	3	2	2	0	83,3%	75,0%	70,8%	20,0%
	c	5	12	1	4	0	0	60,0%	90,0%	77,3%	0,0%
	Total	19	35	6	8	4	0	75,8%	81,8%	79,4%	11,4%
Environmental samples	a	8	10	4	3	1	0	80,0%	73,3%	72,0%	10,0%
	b	2	14	4	1	0	0	85,7%	42,9%	76,2%	0,0%
	c	27	41	1	2	2	0	93,3%	96,7%	95,8%	4,9%
	Total	37	65	9	6	3	0	88,5%	82,7%	87,2%	4,6%
TOTAL ALL CATEGORIES		172	325	39	36	10	1	85,4%	84,2%	86,9%	3,4%
Total protocol ①		121	251	33	32	8	1	82,8%	82,3%	85,1%	3,6%
Total protocol ②		27	41	1	2	2	0	93,3%	96,7%	95,8%	4,9%
Total protocol ③		24	33	5	2	0	0	93,5%	83,9%	89,1%	0,0%

* : PPNA are already included in NA and PPND in ND

A summary of the results is given in Table 6.

Table 6 : Summary of results

	EN ISO 16140-2 Formula	All categories
Sensitivity for the alternative method	$SE_{alt} = \frac{(PA + PD)}{(PA + ND + PD)} \times 100\ \%$	**85.4%**
Sensitivity for the reference method	$SE_{ref} = \frac{(PA + ND)}{(PA + ND + PD)} \times 100\ \%$	**84,2%**
Relative trueness (RT)	$RT = \frac{(PA + NA)}{N} \times 100\ \%$	**86,9%**
False positive ratio for the alternative method (FPR)	$FPR = \frac{FP}{NA} \times 100\ \%$	**3,4%**

3.1.1.6. Analysis of discordant results

Positive deviations

A positive result is obtained by the alternative method whereas a negative result is obtained by the reference method.

Positive deviations are listed in Table 7.

39 positive deviations were observed, 14 on naturally contaminated samples and 25 on artificially samples.
Due to the difference of sampling between both methods, no cell of *L. monocytogenes* may have been taken in the sampling for the reference method.

Negative deviations

A positive result is obtained by the reference method whereas a negative result is obtained by the alternative method.

Negative deviations are listed in Table 8.

36 negative deviations were observed, 15 on naturally contaminated samples and 21 on artificially contaminated samples.

For 35 samples, the presence of *Listeria monocytogenes* strains was not confirmed. Due to the difference of sampling between both methods, and the use of contaminated samples with low levels of contamination, no cell of *Listeria monocytogenes* may have been present in the sampling of the alternative method.

For 1 sample: GL297 (composite foods), a negative result is obtained by the alternative method. However the confirmation protocols allowed finding typical colonies which were confirmed as *Listeria monocytogenes*.
For this sample, it is probable that the enrichment did not allow to reach the threshold of the GENE-UP method.

11 samples found positive with the Gene-UP Listeria monocytogenes 2 method were not confirmed.
9 samples showed an absence of CP but the presence of a MP. These samples may correspond to a false detection by the software. The curves obtained for such samples are displayed in appendices 5a and 5b. For one sample (GL206, chive), a clear positive signal was obtained but it was not possible to confirm the presence of *L. monocytogenes* in the LPT broth.
All the DNA lysates from these eleven samples were re-analyzed. They became negative (CP and MP equal to 0.00), except samples GL48 and GL206 which remained positive.

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

Table 7 : Positive deviations

Sample N°	Category	Products	Contamination strain or serovar, type (nc,sp,se or cm) and level (CFU/25 g)			RM: ISO 11290-1		AM: GENE UP									Concordance RM /AM
						Confirmation	Final result	CP	MP	Gene up result	Conf. 1 ALOA	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	Final result
GL141	Meat products	Raw chicken cutlet	/	nc	/	- (L. w)	A	25,00	65,18	+	4h+ Ø	+ (L. w + L. m)	L. m	L. m	+ (L. w + L. m)	P	PD
GL159		Raw beef tenderloin	LIS.4.11	se	1,6	-	A	23,96	64,94	+	4h+ Ø	+ (L. m)	L. m	L. m	+ (L. m)	P	PD
GL19		Garlic sausage	/	nc	/	-	A	32,03	64,73	+	2h+ L	+ (L. m)	L. m	L. m	+ (L. m)	P	PD
GL163		Ham without rind	LIS.4.26	se	2,8	-	A	24,86	64,91	+	3h+ Ø	+ (L. m)	L. m	L. m	+ (L. m)	P	PD
GL167	Dairy products	Emmental cheese (cow raw milk)	/	nc	/	-	A	26,63	64,36	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL124		Raw milk butter	LIS.4.23	se	3,3	-	A	23,72	65,10	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL125		Soft churned raw milk butter	LIS.4.23	se	3,3	-	A	25,68	65,26	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL128		Fermented ribot milk	LIS.4.4	se	2,3	-	A	23,79	64,99	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL130		Micro-filtered skimmed milk	LIS.4.46	se	0,3	-	A	25,92	65,05	+	2h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL378	Sea food products	Monkfish fillet	LIS.4.12	se	1.6	-	A	29.44	64.85	+	4h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL383		Plaice fillet	LIS.4.15	se	0.8	-	A	25.49	64.92	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL402		Trout fillet	/	nc	/	-	A	30.62	65.10	+	3h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL406		Swordfish	/	nc	/	-	A	24.87	65.12	+	4h-/1h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL408		Monkfish fillet	/	nc	/	-	A	24.56	64.73	+	4h-/1h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL388		Smoked trout offcuts	LIS.4.25	se	0.4	-	A	23.84	64.74	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL368		Fricassee	/	nc	/	-	A	0.00	65.47	+	1h- H	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL 358	Vegetal products	Cherry tomatoes	LIS.4.76	se	0.6	-	A	23.67	62.13	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL201		Pre-cooked cauliflower	LIS.4.17	se	1.4	-	A	26.79	64.97	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL 349		Ratatouille	/	nc	/	-	A	23.27	65.01	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL319	Composite foods	Salad pineapple, carrot, surimi	LIS.4.7	se	0.6	-	A	26.31	62.16	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL322		Chicken tabouleh	LIS.4.8	se	1.8	-	A	24.70	64.95	+	2h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL266		Pizza 4 cheese	LIS.4.46	se	2.2	-	A	23.12	64.74	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL294		Chicken burger	/	nc	/	-	A	26.02	62.11	+	1h-3h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL302		Minced meat sandwich	/	nc	/	-	A	23.84	62.14	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL259		Mirabelle pie	LIS.4.20	se	0.6	-	A	27.52	65.36	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	PD
GL567		Washing water	LIS.4.68	se	2.8	/	A	17.52	64.84	+	4h+Ø	+ (L.m)	+ (L.m)	/	/	P	PD

Sample N°	Category	Products	Contamination strain or serovar, type (nc,sp,se or cm) and level (CFU/25 g)			RM: ISO 11290-1		AM: GENE UP									Concordance RM /AM	
						Confirmation	Final result	CP	MP	Gene up result	Conf. 1 ALOA	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	Final result	
GL568	Environ. Samples	Water nursing home	LIS.4.68	se	2.8	/	A	18.45	65.68	+	4h+Ø	+ (L.m)	+ (L.m)	/	/	P	PD	
GL570		Rinsing water daycare	LIS.4.68	se	2.8	/	A	19.31	64.93	+	4h+Ø	+ (L.m)	+ (L.m)	/	/	P	PD	
GL573		Washing chlorinated water kitchen	/	nc	/	/	A	27.29	62.54	+	2h+Ø	+ (L.m)	+ (L.m)	/	/	P	PD	
GL498		Residu dessication dairy 4	/	nc	/	/	A	29.50	64.97	+	0M	+ (L.m)	+ (L.m)	/	/	P	PD	
GL500		Residu peparation milk powder 2	/	nc	/	/	A	22.64	64.43	+	3h+Ø	+ (L.m)	+ (L.m)	/	/	P	PD	
GL575		Dusts kitchen	LIS.4.57	se	6.4	/	A	24.29	62.02	+	2h+Ø	+ (L.m)	+ (L.m)	/	/	P	PD	
GL589		Dusts kitchen	LIS.4.57	se	6.4	/	A	18.84	61.6	+	1h+L	+ (L.m)	+ (L.m)	/	/	P	PD	
GL513		swab utensil hot preparation	/	nc	/	/	A	21.95	64.48	+	3h+Ø	+ (L.m)	+ (L.m)	/	/	P	PD	
1	Dairy product (protocol③)	Raw milk cheese	AFNL88	se	4,0	/	A	35,82	64,72	+	-	/	/	/	/	P	PD	
12		Raw milk cheese	AFNL87	se	2,9	L. innocua	A	34,59	61,35	+	+	L.mono	+	+	+	P	PD	
23		Cow raw milk	AFNL178	se	2,8	/	A	33,72	60,92	+	+	L.mono	+	+	+	P	PD	
64		Raw ewe milk	AFNL180	se	2,8	/	A	26	61,09	+	+	L.mono	+	+	+	P	PD	
48		Pasteurised milk cheese	AFNL183	se	1,8	/	A	20,21	61,28	+	+	L.mono	+	+	+	P	PD	/

Table 8 : Negative deviations

Sample N°	Category	Products	Contamination strain or serovar, type (nc,sp,se or cm) and level (CFU/25 g)			RM: ISO 11290-1		AM: GENE UP									Concordance RM /AM
						Confirmation	Final result	CP	MP	GENE UP result	Conf. 1 ALOA	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	Final result
GL25	Meat products	Raw boneless leg of lamb	/	nc	/	+ (L. m)	P	0,00	0,00	-	4h- Ø	/	/	/	/	A	ND
GL149		Sliced raw horse	/	nc	/	+ (L. in + L. m)	P	0,00	0,00	-	3h- Ø	- (L. in)	/	/	- (L. in)	A	ND
GL161		Speck	LIS.4.11	se	1,6	+ (L. m)	P	0,00	0,00	-	2h- L	- (L. in)	/	/	- (L. in)	A	ND
GL171	Dairy product	Goat raw milk cheese	/	nc	/	+ (L. m)	P	0,00	0,00	-	0 L	/	/	/	/	A	ND
GL126		Salted churned raw milk butter	LIS.4.4	se	2,3	+ (L. m)	P	0,00	0,00	-	0 H	/	/	/	/	A	ND
GL129		Pasteurized skimmed milk	LIS.4.46	se	0,3	+ (L. m)	P	0,00	0,00	-	0 Ø	/	/	/	/	A	ND
GL132		Raw milk	LIS.4.7	se	3,0	+ (L. m)	P	0,00	51,32	+	0 Ø	/	/	/	/	A (FP)	ND (PP)
										Fraser⇨	0 Ø	/	/	/	/		
GL173		Ewe pasteurized milk cheese	/	nc	/	+ (L. m)	P	0,00	0,00	-	0 H	/	/	/	/	A	ND
GL382	Sea food products	Cod fillet	LIS.4.15	se	0.8	+ (L. m)	P	0.00	0.00	-	0 L	/	/	/	/	A	ND
GL366		Smoked salmon	/	nc	/	+ (L. m)	P	0.00	0.00	-	0 M	/	/	/	/	A	ND
GL371		Smoked salmon	/	nc	/	+ (L. m)	P	0.00	0.00	-	0 Ø	/	/	/	/	A	ND
GL375		Marinated tuna carpaccio	LIS.4.8	se	1.2	+ (L. m)	P	0.00	0.00	-	0 M	/	/	/	/	A	ND
GL387		Smoked trout	LIS.4.25	se	0.4	+ (L. m)	P	0.00	0.00	-	3h- L	/	/	/	/	A	ND
GL390		Shrimp tails marinated with garlic and parsley	/	nc	/	+ (L. m)	P	0.00	0.00	-	0 H	/	/	/	/	A	ND
GL393		Tuna à la catalane	LIS.4.42	se	0.2	+ (L. m)	P	0.00	0.00	-	0 Ø	/	/	/	/	A	ND
GL394		Salmon rillettes	LIS.4.42	se	0.2	+ (L. m)	P	0.00	0.00	-	0 Ø	/	/	/	/	A	ND
GL199	Vegetal products	Frozen entire porcini mushrooms	LIS.4.20	se	1.2	+ (L. in + L. m)	P	0.00	0.00	-	1h- L	/	/	/	/	A	ND
GL204		Basil	LIS.4.18	se	0.8	+ (L. m)	P	0.00	0.00	-	0 L	/	/	/	/	A	ND
GL346		Pesto	/	nc	/	+ (L. m)	P	0.00	0.00	-	0 M	/	/	/	/	A	ND
GL353		Carrot purée	/	nc	/	+ (L. m)	P	0.00	0.00	-	0 L	/	/	/	/	A	ND
GL262		Salad chicken vegetables	LIS.4.39	se	2.4	+ (L. m)	P	0.00	0.00	-	0 H	/	/	/	/	A	ND
GL320	Composite foods	Prawn salad with mandarins	LIS.4.8	se	1.8	+ (L. m)	P	0.00	0.00	-	0 M	/	/	/	/	A	ND
GL296		Quiche lorraine	/	nc	/	+ (L. m)	P	0.00	0.00	-	0 M	/	/	/	/	A	ND
GL297		Tomatoes chorizo tart	/	nc	/	+ (L. m)	P	0.00	0.00	-	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	A (FN)	ND
GL255		Apricot pie	LIS.4.20	se	0.6	+ (L. m)	P	0.00	0.00	-	0 L	/	/	/	/	A	ND

Sample N°	Category	Products	Contamination strain or serovar, type (nc,sp,se or cm) and level (CFU/25 g)			RM: ISO 11290-1		AM: GENE UP									Concordance RM /AM
						Confirmation	Final result	CP	MP	GENE UP result	Conf. 1 ALOA	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	Final result
GL257		Apple pie	LIS.4.20	se	0.6	+ (L. m)	**P**	8.64	0.00	-	0 Ø	/	/	/	/	**A**	ND
GL258		Flan	LIS.4.20	se	0.6	+ (L. m)	**P**	0.00	0.00	-	0 L	/	/	/	/	**A**	ND
GL298		Chocolate cake	/	nc	/	+ (L. m)	**P**	0.00	0.00	-	0 L	/	/	/	/	**A**	ND
GL467	Environ. Samples	Restaurant washing water	LIS.4.50	se	2.1	+ (L.m)	**P**	0.00	0.00	-	0Ø	/	/	/	/	**A**	ND
GL569		Rinsing water	LIS.4.68	se	2.8	+(L.m)	**P**	7.85	0.00	-	0L	/	/	/	/	**A**	ND
GL574		Washing water	/	nc	/	+(L.m)	**P**	10.59	0.00	-	0Ø	/	/	/	/	**A**	ND
GL499		Residu peparation milk powder 1	/	nc	/	+(L.m)	**P**	0.00	0.00	-	0L	/	/	/	/	**A**	ND
GL462		Sponge kitchen wall, cold preparation	LIS.4.16	se	1.7	+ (L.m)	**P**	0.00	0.00	-	0H	/	/	/	/	**A**	ND
GL525		Sponge wall 1	/	nc	/	+(L.m)	**P**	0.00	0.00	-	0L	/	/	/	/	**A**	ND
8	Dairy product (protocol③)	Raw milk cheese	AFNL87	se	2,9	L.mono	**P**	/	/	-	-	/	/	/	/	**A**	ND
41		Grated cheese	AFN182	se	3,0	L.mono	**P**	/	/	-	-	/	/	/	/	**A**	ND

Table 9 : Analysis of discordant results

Category	Type		PD	ND	PPND	(ND+PPND)-PD	AL
Meat products	a	Raw products (including deep-frozen, fresh, seasoned)	2	2	0	0	
	b	Ready-to-eat and processed meat products	0	0	0	0	
	c	Fermented or dried meat products (raw and cooked)	2	1	0	-1	
	Total		4	3	0	-1	3
Dairy products	a	Raw milk cheese	1	1	0	0	
	b	Other raw milk products	4	1	0	-3	
	c	Heat-processed milk and dairy products	0	3	1	4	
	Total ①		5	5	1	1	3
	a	Raw milk cheese	2	1	0	-1	
	b	Other raw milk products	2	0	0	-2	
	c	Heat-processed milk and dairy products	1	1	0	0	
	Total ③		5	2	0	-3	3
	Total		10	7	1	-2	4
Seafood products	a	Raw vegetal products	5	1	0	-4	
	b	Smoked, marinated products	1	5	0	4	
	c	Processed products	1	2	0	1	
	Total		7	8	0	1	3
Vegetal products	a	Raw vegetal products	1	2	0	1	
	b	Ready-to-eat and ready-to-cook raw vegetal products, precooked vegetal products	1	0	0	-1	
	c	Processed vegetal products	1	2	0	1	
	Total		3	4	0	1	3
Composite foods	a	Ready-to-eat foods	2	2	0	0	
	b	Ready-to-reheat foods	3	2	0	-1	
	c	Pastries, egg products	1	4	0	3	
	Total		6	8	0	2	3
Environmental samples	a	Process waters	4	3	0	-1	
	b	Dusts and residues	4	1	0	-3	
	c	Sponges and swabs	1	2	0	1	
	Total		9	6	0	-3	3
TOTAL ALL CATEGORIES			39	36	1	-2	7
Total protocol ①			33	32	1	0	6
Total protocol ②			1	2	0	1	3
Total protocol ③			5	2	0	-3	3

The observed values ((ND+PPND)– PD) are below the acceptability limit for each category and for all categories.

3.1.1.7. Confirmations

Confirmations were carried out by streaking 10 µL of the enriched broth on an ALOA petri dish.

For samples GL5, GL12, GL21 and GL23, the result of the confirmation using a RAPIDEC L. mono test was *Listeria ivanovii* whereas all other confirmations indicated the presence of *Listeria monocytogenes*. This result was probably due to a low quantity of biomass for the realization of the test. A new test after a streaking of a typical colony on an ALOA agar media gave the result *Listeria monocytogenes*.

3 samples were confirmed positive after the application of the extended confirmation procedure: GL228, GL356 and 1.

For four samples: GL297 and GL318 (composite foods) and GL228 and GL356 (vegetal products), a negative result is obtained by the alternative method. However the confirmation protocols allowed finding typical colonies which were confirmed as *Listeria monocytogenes*.
For these samples, it is probable that the enrichment did not allow to reach the threshold of the GENE-UP method.
It's important to note that the result of the reference method for samples GL228, GL318 and GL356 showed also an absence of *Listeria monocytogenes*.

3.1.1.8. Study of storage at 5°C

Study of storage of the DNA extracts

A stability study of the DNA lysates stored at 5±3°C for 72 hours was performed on all samples. After storage, the lysates were re-analyzed.
8 modifications appeared between the analysis just after the lysis step and after three days of storage: they concern false positive results that became negative after three days of storage for 7 samples: GL425 (seafood), GL275, GL276, GL283 (composite foods), GL481, GL545 and GL562 (environment).
Sample GL356 (vegetables), found positive after storage of the DNA, was confirmed positive after the extended confirmation procedure only (positive deviation).

Study of storage of the enriched broths

A stability study of the enriched LPT broths stored at 5±3°C for 72 hours was performed on all positive and discordant samples. After storage, the broths were re-analyzed and confirmed with an isolation on ALOA and PALCAM agar media (results in appendix 4 and analysis of discordant results in table 10).

7 modifications appeared, they are presented in Table 10.
6 false positive results became negative after three days of storage and one sample, found positive after enrichment and after storage of the LPT broth for 72 hours at 2-8°C, was unable to be confirmed after the storage of the LPT broth, even after a subculture of the LPT broth in Fraser broth.

Table 10 : Modifications observed after enriched broth and lysate storage for 72h at 5°C

Category	Type	Sample N°	Sample	Result before storage	Result after broth storage	Result after lysate storage
Dairy product	a+	GL106	raw goat's cheese	PA	ND (PP)	PA
Vegetables		GL356	Chives	NA	NA	PD
Composite	a-	GL276	Piemontaise	NA (PP)	NA	NA
	c-	GL425	Tuna flakes with tomatoes	NA (PP)	NA	NA
	b-	GL267	Pizza ham & emmental	NA (PP)	NA	PD
	a-	GL275	Torti surimi	NA (PP)	NA (PP)	NA
	b-	GL283	Bolognese penne	NA (PP)	NA	NA
Environmental samples	a-	GL481	Rinsing water	NA (PP)	NA	NA
	c-	GL545	Swab sink 1	NA (PP)	NA	NA
	c-	GL562	Swab	NA (PP)	NA (PP)	NA

Table 11 : Analysis of discordant results after 72h of storage at 5±3°C of the enriched broth

Category	Type		PD	ND	PPND	(ND+PPND)-PD	AL
Meat products	**a**	Raw products (including deep-frozen, fresh, seasoned)	**2**	**2**	**0**	0	
	b	Ready-to-eat and processed meat products	**0**	**0**	**0**	0	
	c	Fermented or dried meat products (raw and cooked)	**2**	**1**	**0**	-1	
	Total		**4**	**3**	**0**	**-1**	**3**
Dairy products	**a**	Raw milk cheese	**1**	**1**	**1**	1	
	b	Other raw milk products	**4**	**1**	**0**	-3	
	c	Heat-processed milk and dairy products	**0**	**3**	**1**	4	
	Total ①		**5**	**5**	**2**	**2**	**3**
	a	Raw milk cheese	**2**	**1**	**0**		
	b	Other raw milk products	**2**	**0**	**0**		
	c	Heat-processed milk and dairy products	**1**	**1**	**0**		
	Total ③		**5**	**2**	**0**	**-3**	**3**
	Total		**10**	**7**	**2**	**-1**	**4**
Seafood products	**a**	Raw vegetal products	**5**	**1**	**0**	-4	
	b	Smoked, marinated products	**1**	**5**	**0**	4	
	c	Processed products	**1**	**2**	**0**	1	
	Total		**7**	**8**	**0**	**1**	**3**
Vegetal products	**a**	Raw vegetal products	**1**	**2**	**0**	1	
	b	Ready-to-eat and ready-to-cook raw vegetal products, precooked vegetal products	**1**	**0**	**0**	-1	
	c	Processed vegetal products	**1**	**2**	**0**	1	
	Total		**3**	**4**	**0**	**1**	**3**
Composite foods	**a**	Ready-to-eat foods	**2**	**2**	**0**	0	
	b	Ready-to-reheat foods	**3**	**2**	**0**	-1	
	c	Pastries, egg products	**1**	**4**	**0**	3	
	Total		**6**	**8**	**0**	**2**	**3**
Environmental samples	**a**	Process waters	**4**	**3**	**0**	-1	
	b	Dusts and residues	**4**	**1**	**0**	-3	
	c	Sponges and swabs	**1**	**2**	**0**	1	
	Total		**9**	**6**	**0**	**-3**	**3**
Total all categories			**39**	**36**	**2**	**-1**	**7**
Total protocol ①			**33**	**32**	**2**	**1**	**6**
Total protocol ②			**1**	**2**	**0**	**1**	**3**
Total protocol ③			**5**	**2**	**0**	**-3**	**3**

The observed values ((ND+PPND) – PD) are below the acceptability limit for each category and for all categories. The alternative method produces results comparable to the reference method. These results did not modify the conclusion for the conservation of the broths.

3.1.1.9. Inhibition

One inhibition was observed with sample GL270 (noodles chicken vegetables). The workflow to remove the inhibition has been applied successfully.

3.1.2. Relative level of detection

The relative level of detection (RLOD) is defined as the level of detection at P = 0.50 (LOD50) of the alternative (proprietary) method divided by the level of detection at P = 0.50 (LOD50) of the reference method.

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

$$RLOD = \frac{LOD_{alt}}{LOD_{ref}}$$

3.1.2.1. Experimental design

8 matrix-strain couples were studied in parallel by both methods. For each category of the scope, one relevant type of food product is selected. Three levels of contamination per type were prepared consisting of a negative control level, a low level, and a higher level. Only one strain of the target analyte is used to contaminate the low and the high level.

The negative control level shall not produce positive results. Five replicates are tested for this level.

The low level shall be the theoretical detection level, providing fractional recovery results. Twenty replicates are tested for this level.

The higher level shall be just above the theoretical detection level. Five replicates are tested for this level.

Food products were contaminated using the seeding protocol. Bulk contaminations were performed on the matrices for the different levels of contamination, then the matrices were stored at 5±3°C for two or three days before analysis. Samples were then analyzed by the reference and the alternative method.

For the alternative method, only the minimal incubation time of the broth of the alternative method was tested, namely 22 hours for protocols ① and ③, and 18 hours for the protocol ②. Results were obtained using the Gene-UP Routine software version 1.1 (previous validartions) or 3.1 (extension study).

Simultaneously, a total viable count was performed on a portion of non-contaminated matrix to estimate the concentration of mesophilic aerobic flora. A detection of *Listeria monocytogenes* using the reference method was also performed to check the absence of the target analyte in the matrix.

Table 12 details the couples matrix-strain tested.

Table 12 : couples matrix-strain used for the determination of the RLOD of the method

Category	Matrix type	Strain	Code	Strain origin	Protocol
Meat products	Pork rillettes	*Listeria monocytogenes 1/2c*	LIS.4.33	Minced meat	①
Dairy products	Raw milk	*Listeria monocytogenes 1/2b*	LIS.4.32	Raw milk	①
Dairy products	Raw cow milk	*Listeria monocytogenes 2a*	AFNL102	Milk	③
Seafood products	Salmon offcuts	*Listeria monocytogenes* 4b	LIS.4.50	Swab on salmon	①
Vegetal products	Precooked vegetables	*Listeria monocytogenes* 1/2a	LIS.4.10	Salad	①
Composite foods	Mixed salad	*Listeria monocytogenes* 1/2c	LIS 4.35	Vegetables sandwich	①
Environmental samples	Swab on a surface	*Listeria monocytogenes* 3a	LIS.4.44	Surface control	②
Environmental samples	Process water	*Listeria monocytogenes* 1/2a	LIS.4.16	Surface control drainage point	①

3.1.2.2. Results and calculation of the RLODs

Raw results are shown in appendix 5.
The RLODs calculations were performed according to the standard ISO 16140-2: 2016 using the Excel spreadsheet available for download at http://standards.iso.org/iso/16140. Values of the RLODs are presented in table 13.

Table 13 : RLODs values for the six categories
(RLOD: the estimated relative level of detection value, RLODU: the upper limit of the 95% confidence interval for RLOD, RLODL: the lower limit of the 95% confidence interval for RLOD, b=ln(RLOD): logarithm of the RLOD value, sd(b): standard deviation of b, z-Test statistic: absolute value of the test statistic of the z-Test with the null hypothesis H0: b=0, p-value: p-value of the z-Test)

Matrix	Protocol	AL	RLOD	RLODL	RLODU	b=ln (RLOD)	sd(b)	z-Test statistic	p-value
Pork rillettes	①	2.5	0.678	0.275	1.668	-0.389	0.450	0.864	1.612
Raw milk	①		1.313	0.527	3.271	0.272	0.457	0.596	0.551
Raw milk	③		0.401	0.183	0.875	-0.914	0.391	2.341	1.981
Salmon offcuts	①		1.533	0.686	3.424	0.427	0.402	1.063	0.288
Mix of precooked vegetables	①		0.565	0.241	1.322	-0.572	0.426	1.344	1.821
Mixed salad	①		0.667	0.320	1.390	-0.404	0.367	1.103	1.730
Swab on a surface	②		0.756	0.291	1.969	-0.279	0.478	0.584	1.441
Process water	①		1.146	0.498	2.636	0.136	0.417	0.327	0.744
Combined			0.816	0.620	1.074	-0.203	0.137	1.478	1.861

The RLODs values are below the acceptability limit set at 2.5, meaning that alternative and reference methods show similar LODs values for the detection of *Listeria monocytogenes* in the tested categories.

3.1.2.3. Calculation of the $LOD_{50\%}$

The $LOD_{50\%}$ calculations according to the Wilrich & Wilrich POD-LOD calculation program – version 10, 2021-03-02 test are given in table 14.

Table 14 : LOD_{50} results

Category	Strain/matrix pair	Protocol	Level of detection at 50% (CFU/sample size) according to Wilrich & Wilrich	
			Reference method	Alternative method
Meat products	Pork rillettes/*Listeria monocytogenes* 1/2c	①	0,90 [0,49-1,68]	0,67 [0,38-1,19]
Dairy products	Raw milk/*Listeria monocytogenes 1/2b*	①	0,88 [0,49-1,58]	1,05 [0,57-1,96]
	Raw milk /*Listeria monocytogenes 2a*	③	1,22 [0,70-2,12]	0,47 [0,27-0,81]
Seafood products	Salmon offcuts/*Listeria monocytogenes 4b*	①	0,38 [0,22-0,66]	0,57 [0,33-0,97]
Vegetal products	Precooked vegetables/*Listeria monocytogenes 1/2a*	①	0,98 [0,51-1,90]	0,55 [0,31-0,99]
Composite foods	Mixed salad/*Listeria monocytogenes 1/2c*	①	0,70 [0,41-1,21]	0,44 [0,26-0,75]
Environmental samples	Swab on a surface/*Listeria monocytogenes 3a*	②	0,68 [0,40-1,16]	0,77 [0,45-1,31]
	Process water/*Listeria monocytogenes 1/2a*	①	3,81 [1,85-7,86]	2,91 [1,51-5,63]
Combined			1,02 [0,83-1,25]	0,82 [0,67-1,00]

3.1.3. Inclusivity / Exclusivity

Inclusivity is the capacity of the alternative method to detect the target analyte from a wide range of strains. Exclusivity is the absence of interferences by an appropriate range of untargeted strains from the alternative method.

3.1.3.1. Tests protocols

Initial validation study

Fifty target strains and thirty non-target strains were analyzed by the alternative method.

For target strains, 225 mL of LPT broth were inoculated with 10 to 50 cells of *Listeria monocytogenes* The complete protocol of the alternative method was then applied after an incubation at the minimum enrichment time of the alternative method (22 h). Results were obtained using the Gene-UP Routine software version 1.0.

Positive results were confirmed by streaking of the enriched broth on ALOA agar media, incubated for 24 to 48 h at 37±1°C.

For non-target strains, cells were cultivated first overnight in a non-selective broth (BHI) at 10^5 CFU/mL. The protocol of the alternative method was then applied.

2021 Extension study

The new protocol ③ of this extension study considered as more selective than the protocol ①, it was proposed to proceed to a new inclusivity study only.

Fifty target strains were analyzed by the alternative method with the new protocol ③.

225 mL of LX broth were inoculated with 10 to 100 cells of *Listeria monocytogenes* The complete protocol of the alternative method was then applied after an incubation at the minimum enrichment time of the alternative method (22 h).

Positive results were confirmed by streaking of the enriched broth on ALOA agar media, incubated for 24 to 48 h at 37±1°C.

3.1.3.2. Results

The raw data are shown in appendix 6.

All target strains were detected by the alternative method.
None of the non-target strains showed a cross reaction with the alternative method.

3.1.4. Praticability

The practicability of the alternative method was informed according to the criteria defined by the Technical Committee.

1. Storage conditions, shelf-life and modalities of utilization after first use

The GENE-UP kits are stored at room temperature (15-25°C) and have not to be refrigerated.
After opening a kit, the pouches have to be correctly sealed and undamaged. If not, they have not to be used.
Once pouches are opened, freeze-dried pellets should be reconstituted and used within 2 months.
Freeze-dried pellets should be stored in original sealed pouch (with lab adhesive or bag clip).
Once freeze-dried pellets are reconstituted, testing on the GENE-UP Thermocycler should be initiated as soon as possible. Storage conditions for vials are the following: 2 hours at ambient temperature, 2 days at 2 – 8°C, 8 days at -20°C.

2. Time-to-result

Negative results are obtained in one day.
Positive results are obtained in two to three days.

3. Common step with the reference method

The alternative method has no common step with the reference method.

3.2. Extension study results for the unit dose kit

An extension study was carried out on december 2018 for a new format of the kit.

- Summary of the difference between the two PCR assays :

	Multi-Dose	**Unit-Dose**
Name	GENE-UP® *L. monocytogenes*	GENE-UP® *L. monocytogenes* 2
Kit reference	414058	423107
Kit insert reference	43-04322	050568
Mix PCR	Freeze dried reagent for 8 reactions - Reconstitution with 45 µl of buffer, then distribution of 5µL in each PCR tube	Freeze dried reagent for 1 reaction in each PCR tube
Volume of lysate	5 µl	10 µl
Software version	2.0	3.0 and following

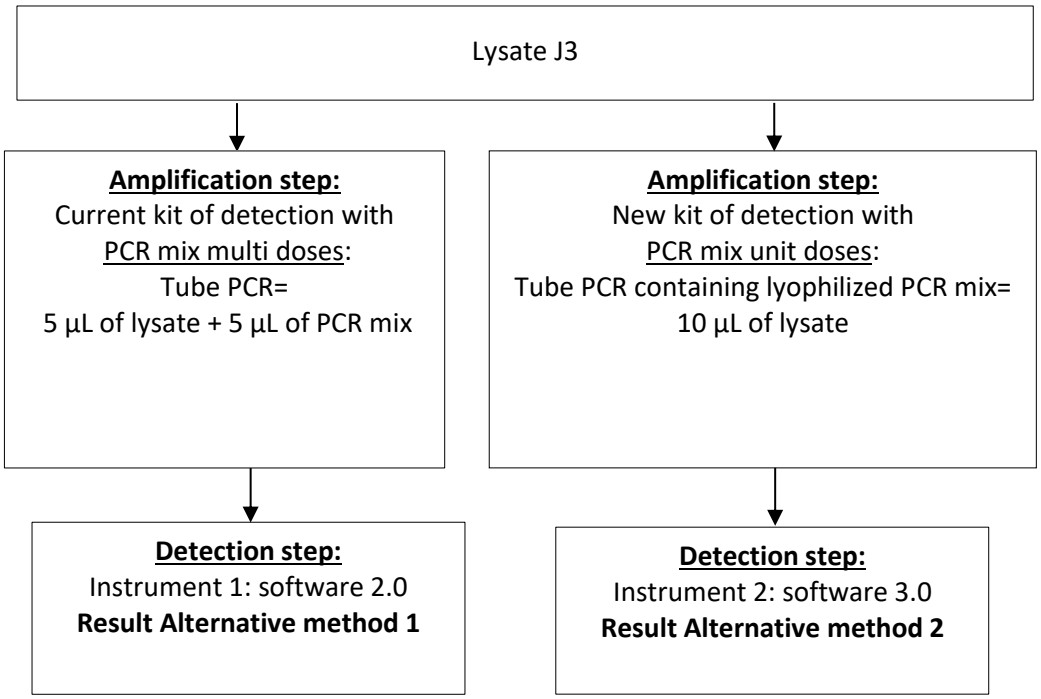
- Interpretation of both software versions :

PCR result determination with software 2.0
A sample is declared negative if no melt peak is detected or if the peak is outside of a defined range of TM values, or if the height of the peak is lower than a negative threshold value.
A sample is declared positive if the melt peak is inside the TM range of values and if the peak is higher than the negative threshold.

PCR result determination with software 3.0
A sample is declared negative if no melt peak is detected or if the peak is outside of a defined range of TM values, or if the height of the peak is lower than a negative threshold value. The negative threshold is the same as in version 2.0.
A sample is declared positive if the melt peak is inside the TM range of values and if the peak is higher than the negative threshold, or if the curve crosses a new positive threshold. This positive threshold is the main difference between version 2.0 and 3.0.
In version 3.0, the threshold for the internal control has been increased to better detect inhibitions.
Version 3.0, also allows a specific access to individual assays, which provides more flexibility.

3.2.1. Analysis

For the GENE-UP® LMO method, during the initial validation the lysates were analyzed at the end of the incubation time, then after storage for 72 hours at 2-8°C and they were then stored at -25± 6°C.
As only the PCR step is concerned by the changes, the comparison study was performed using the lysates J3 as described below.



All lysates generated during the validation studies (508 lysates) were tested with the multi dose and the unit dose kits using the software 2.0 and 3.0 respectively. The results of the unit dose format/software 3.0 were compared to the results of the multi doses format/ software version 2.0.

As agreed by the AFNOR Technical Committee, only the lysates from the sensitivity study were retested.

3.2.2. Results

The results of the comparison between both kits using respectively the software 2.0 and 3.0, are shown in appendix 7.

Difference observed between the two protocols are presented in the table 15.

Table 15. Difference observed between the multi dose and the unit dosekits using respectively the software 2.0 and 3.0

SN	Sample	Previous validation study			1) AM: GENE UP Current kit/software 2.0			2) AM: GENE UP New kit/software 3.0			Concordance between 1) and 2)
		CP	MP	Result	CP	MP	Result	CP	MP	Results	
GL141	Raw chicken cutlet	23,64	64,76	+	0.00/25.00/24.56	0.00/64.91/64.78	-/+/+	27.74	64.47	+	≠/=/=
GL108	Neuchâtel cheese (raw milk)	30,60	65,37	+	0.00/31.25/31.84	0.00/65.42/65.39	-/+/+	27.90	64.69	+	≠/=/=

All samples called “negative”” gave negative results after analysis with both kits.

All samples called “positive” gave also positive results after analysis with both kits except for two of them.
Samples GL108 and GL141, found positive and confirmed positive during the initial validation study, were found positive with the new PCR assay and negative with the current PCR assay. These two samples were retested two times with the current kit and gave positives results. As attested by the high CP values, a concentration of *Listeria monocytogenes* close to the threshold of the tests may explain the difference between the two assays.
For the sample called “positives” some slight differences in the TM values were observed between the two kits tested without change in the test interpretation.

Six inhibitions were observed among the 508 PCR reactions performed (two with the current kit, GL70 and GL85, and four with the new kit, GL4, GL28, GL48 and GL70). These inhibitions are presented in table 16.

Table 16. Inhibitions observed with the multi dose and the unit dose kits using respectively the software 2.0 and 3.0 (I: inhibition ; (1/3): dilution 1/3 of the lysate).

SN	Sample	Previous validation study			1) AM: GENE UP Current kit/software 2.0			2) AM: GENE UP New kit/software 3.0			Concordance between 1) and 2)
		CP	MP	Result	CP	MP	Result	CP	MP	Results	
GL28	Raw boneless pork tenderloin	0,00	0,00	-	0.00	0.00	-	I/0.00	I/0.00	I/- (1/3)	=
GL70	Goat cheese Cœur de chèvre (raw milk)	0,00	0,00	-	I/0.00	I/0.00	I/-(1/3)	I/0.00	I/0.00	I/- (1/3)	=
GL85	Organic Cabécou cheese 1 (raw milk)	0,00	0,00	-	I/0.00	I/0.00	I/- (1/3)	0.00	0.00	-	=
GL4	Chinese cooked duck	25,63	61,99	+	25.96	62.03	+	I/26.77	I/61.87	I/+ (1/3)	=
GL48	Raw chicken cutlet	30,62	65,26	+	31.17	64.75	+	I/32.85	I/64.56	I/+ (1/3)	=

As described by the supplier, the lysates were diluted at 1/3 and analyzed again. Finally the analysis of the diluted lysates gave the results expected with the two tested kits. The negative samples remained negative and the positive samples remained positive.

3.2.3. Conclusion

In conclusion, among the 508 lysates tested only two differences between the 2 kit formats and the software 2.0 and 3.0, were observed. The observed values ((ND+PPND)– PD) are the same as during the previous validation study and are below the acceptability limit for each category and for all categories.
The performance obtained during the extension study are not modified and the results allowed to conclude to equivalency of the unit doses format associated to software version 3.0 with the multi doses PCR format associated to software version 2.0.

3.3. Inter-laboratory study

The purpose of the interlaboratory studies is to determine the difference in sensitivity between the reference method and the alternative method when tests are performed by different collaborators using identical samples (reproducibility conditions).

3.3.1. Inter-laboratory study organization

A first session was realized in April 2016. Its results were presented at the Technical Board meetings of June and September 2016. After removal of 6 data sets as explained below, less than 10 data sets were available for the statistical interpretation of the results.
An additional interlaboratory study, including 4 collaborators was realized in September 2016 in the same conditions.

The two studies were combined for the final interpretation.

3.3.1.1. Collaborators

The first interlaboratory study was realized by the expert laboratory and fifteen collaborators coming from fourteen different organizations.
The second interlaboratory study was realized by the expert laboratory and four collaborators coming from four different organizations.

Each laboratory received the instructions relative to the organization of the study a week before its beginning.

3.3.1.2. Matrix and strain of *Listeria spp.*

A full-cream goat milk cottage cheese was used as test matrix for the two studies. Its ingredients are the following: pasteurized full-cream goat milk, milk enzymes, rennet. Its fat content is 8.4%. It was contaminated by a strain of *Listeria monocytogenes* 1/2 b, isolated from a raw milk (LIS.4.67).

The absence of *Listeria monocytogenes* in the matrix before contamination was checked using the reference method.

3.3.1.3. Matrix Stability of the strain in the test matrix

The stability of the strain in the matrix was evaluated for 4 days at 5±3°C before the interlaboratory study. Samples for enumeration were contaminated at a level close to 100 CFU/g. Samples for detection were inoculated at a level from 1 to 3 CFU/25 g. Results of the analyses are presented in table 17. No significant variation of the *L. monocytogenes* count was observed until Day 3.

Table 17 : determination of the stability of the strain of *L. monocytogenes*

Day	Enumeration CFU/g	Alternative method	Reference method
D0	160	Presence in 25 g	Presence in 25 g
D1	200	Presence in 25 g	Presence in 25 g
D2	140	Presence in 25 g	Presence in 25 g
D3	210	Presence in 25 g	Presence in 25 g

3.3.1.4. Preparation and contamination of the sample

The matrix was inoculated with the target strain suspension to obtain 3 contamination levels:

- L0 : 0 cell in 25 g,
- L1 : 0.7 – 1 cells in 25 g,
- L2 : 10 cells in 25 g.

Twenty-five grams of matrix were distributed in sterile bags. Each bag was individually contaminated and homogenized. Eight samples per level, per collaborator and per method were prepared. Each collaborator received 48 samples to analyze, one sample to perform the total viable count (TVC) and one water sample containing a temperature probe.
The results of the TVC, the target levels and the real levels of contamination are presented in table 18.

Table 18 : target level, real level and endogenous flora of the matrix

Matrix	TVC (CFU/g)	Target level (cells/25 g)	Real level (cells/25 g)	Confidence interval
Cottage cheese	$3{,}0.10^6$	0	/	/
		0.7 – 1	1.9	[1.5 ; 2.4]
		10	9.2	[7.2 ; 11.4]

3.3.1.5. Labelling of the samples

Labelling of the bags was realized as follows:

- a code to identify the laboratory: from A to O.
- and a code to identify each sample, only known by the expert laboratory.

The samples and the temperature control vials (water sample with a temperature probe) were stored at 5±3°C before shipping.

3.3.1.6. Shipping and receipt of the samples, analyses by the collaborators

The samples were shipped in a coolbox.
The control temperature was recorded upon receipt of the package and the temperature probe sent to the expert laboratory.

The samples had to be analyzed one or two days after the shipping.

The expert laboratory concurrently analyzed a set of samples under the same conditions with both methods.

For the first study, it is important to note that two series of analyses were realized by the collaborators for the detection with the alternative method:

- one at the following of the lysis step for the regular workflow of the method but with a detection kit which should not have been used after an error in the delivery of the kits,
- the other after storage of the DNA a few days at -20°C with a kit capable of being used.

For all collaborators except one, samples which were presumed positive not confirmed or inhibited with the first detection kit were found negative with the second detection kit.

Only collaborator C obtained four samples inhibited with the second detection kit, when it had only one sample presumed positive not confirmed with the first detection kit. This laboratory did

not preserve lysates and was not thus able to re-test the inhibited samples. That's why the results of this collaborator are not kept in the statistical analysis, because no answer is obtained for four samples. Results of this collaborator are presented only in appendices.
Only analyses performed with the second detection kit (the valid kit) were taken into account for the compilation of the data.

3.3.2. Results

3.3.2.1. Shipping Temperature and state of the samples at receipt

The temperature readings upon reception and the state of the samples are shown in table 19.

Table 19 : temperature and state of the samples at reception (/: data unable to be gathered)

Colla-borator	Date and time of receipt	Temperature (°C) determined by the collaborator	Mean temperature (°C) during the shipping given by the probe	State of the samples	Date of analysis
A	04/26/2016 at 11:30	3.8	2.4	Correct	04/26/2016
B	04/26/2016 at 12:30	2.8	/	Correct	04/27/2016
C	04/26/2016 at 11:45	3.6	2.0	Correct	04/26/2016
D	04/26/2016 at 11:35	5.2	2.5	Correct	04/27/2016
E	04/26/2016 at 10:05	2.6	/	Correct	04/26/2016
F	04/26/2016 at 12:30	7.3	/	Correct	04/27/2016
G	04/26/2016 at 11:00	6.6	4.8	Correct	04/26/2016
H	04/27/2016 at 10:30	3.0	2.9	Correct	04/27/2016
I	04/27/2016 at 10:00	6.5	2.0	Correct	04/28/2016
J	04/26/2016 at 09:35	4.0	3.9	Correct	04/26/2016
K	04/26/2016 at 07:30	2.9	3.7	2 samples leaky	/
L	04/26/2016 at 11:15	4.0	3.5	Correct	04/26/2016
M	04/26/2016 at 10:00	2.9	4.9	Correct	04/26/2016
N	04/26/2016 at 10:20	2.8	1.4	Correct	04/26/2016
O	04/26/2016 at 11:35	5.3	2.5	Correct	04/27/2016
P	06/09/2016 at 11:00	7.8	6.1	Correct	07/09/2016
Q	06/09/2016 at 10:30	2.6	1.9	Correct	06/09/2016
R	06/09/2016 at 11:00	5.0	2.5	Correct	06/09/2016
S	06/09/2016 at 12:00	1.5	-0.8	Correct	07/09/2016

- **<u>First interlaboratory study</u>**

Only laboratory K didn't receive the sample in adequate conditions: two samples were leaky. This collaborator did not thus realize the analyses. All other laboratories received the samples in appropriate conditions.
Temperatures during the shipping and upon receipt were correct for all laboratories.

Collaborator I realized the analyses (alternative and reference method) the 28th of April 2016, so three days after shipping, because of a late delivery of the reagents of the methods.

The stability of the strain in the matrix was tested for four days (from D0 to D3) by the expert laboratory and was correct. Moreover the samples of this collaborator were kept cold after reception. The request from the expert laboratory to keep the results of this collaborator in the final data was not accepted by the Technical Board of September 2016.
The results of collaborator I are thus excluded from the final set of data.
The results of collaborator C were already excluded from the statistical analysis of the data because of incomplete results (see § 3.2.1.6).

So fourteen collaborators realized the analyses and the results of only twelve can be taken into account.

- **Second interlaboratory study**

The temperature is found slightly inferior to 0°C for a part of the shipping of the collaborator S package. This may be due to a bad positioning of the thermal probe vial after the packaging, which has probably moved beside a -20°C ice pack. Collaborator S didn't report that the samples were frozen at reception.

Temperatures during the shipping for the other collaborators were correct. Temperatures at reception for all collaborators were correct.

3.3.2.2. Expert laboratory results

The results obtained by the expert laboratory are summarized in table 20.

Raw results are presented in appendix 9.

Table 20 : positive results obtained by expert laboratory by both methods

Interlaboratory study	Contamination level	Alternative method	Reference method
April 2016	L0	0/8	0/8
	L1	3/8	1/8
	L2	8/8	8/8
September 2016	L0	0/8	0/8
	L1	7/8	6/8
	L2	8/8	8/8

The enumeration of the TVC by the expert laboratory gave the result of 4.7 x 10^8 CFU/g for the first interlaboratory study and 2.3 x 10^5 CFU/g for the second interlaboratory study.

3.3.2.3. Collaborators results

Raw results are presented in appendix10 and 11.

Mesophilic aerobic flora

- **First interlaboratory study**

For the whole laboratories, the total viable count varied between 6.6 x 10^2 CFU/g and 4.8 x 10^8 CFU/g.

It is important to note that only two collaborators from the same laboratory found a TVC below 3.0 x 10^7 CFU/g. This laboratory indicated that the readings of the Petri dishes were performed by technicians not familiar with enumeration techniques which have probably counted only the colonies at the surface of the agar media for the first dilutions of the sample.

The TVCs observed by all other collaborators and by the expert laboratory are between 3.0 x 10^7 CFU/g and 4.8 x 10^8 CFU/g.

- **Second interlaboratory study**

For all laboratories, the total viable count varied between 2.0 x 10^3 CFU/g and 1.4 x 10^5 CFU/g.

Results of the reference method

Positive results of the collaborators for the reference method are presented in the table 21.

Table 21 : positive results of the reference method for all laboratories

Collaborator	Contamination level		
	L0	L1	L2
A	0 / 8	8 / 8	8 / 8
B	0 / 8	8 / 8	8 / 8
D	0 / 8	8 / 8	8 / 8
E	0 / 8	8 / 8	8 / 8
F	0 / 8	7 / 8	8 / 8
G	0 / 8	8 / 8	8 / 8
H	2 / 8	2 / 8	8 / 8
I	0 / 8	2 / 8	8 / 8
J	0 / 8	4 / 8	8 / 8
L	0 / 8	8 / 8	8 / 8
M	0 / 8	8 / 8	8 / 8
N	0 / 8	8 / 8	8 / 8
O	0 / 8	8 / 8	8 / 8
P	0 / 8	6 / 8	8 / 8
Q	0 / 8	5 / 8	8 / 8
R	0 / 8	7 / 8	8 / 8
S	0 / 8	5 / 8	8 / 8
TOTAL	**2 / 136**	**110 / 136**	**136 / 136**

Results of the alternative method

Positive results of the collaborators for the alternative method are presented in the table 22.

Table 22 : positive results of the alternative method for all laboratories (BC / AC: before / after confirmation)

Collaborator	Contamination level					
	L0		L1		L2	
	BC	AC	BC	AC	BC	AC
A	0 / 8	0 / 8	8 / 8	8 / 8	8 / 8	8 / 8
B	0 / 8	0 / 8	7 / 8	7 / 8	8 / 8	8 / 8
D	0 / 8	0 / 8	8 / 8	8 / 8	8 / 8	8 / 8
E	0 / 8	0 / 8	8 / 8	8 / 8	8 / 8	8 / 8
F	3 / 8	2 / 8	7 / 8	7 / 8	8 / 8	8 / 8
G	0 / 8	0 / 8	5 / 8	5 / 8	8 / 8	8 / 8
H	0 / 8	0 / 8	2 / 8	2 / 8	8 / 8	8 / 8
I	0 / 8	0 / 8	1 / 8	1 / 8	8 / 8	8 / 8
J	0 / 8	0 / 8	4 / 8	4 / 8	8 / 8	8 / 8
L	0 / 8	0 / 8	6 / 8	6 / 8	8 / 8	8 / 8
M	0 / 8	0 / 8	7 / 8	7 / 8	8 / 8	8 / 8
N	0 / 8	0 / 8	8 / 8	8 / 8	8 / 8	8 / 8
O	0 / 8	0 / 8	8 / 8	8 / 8	8 / 8	8 / 8
P	0 / 8	0 / 8	5 / 8	5 / 8	8 / 8	8 / 8
Q	1 / 8	0 / 8	7 / 8	7 / 8	8 / 8	8 / 8
R	0 / 8	0 / 8	4 / 8	4 / 8	8 / 8	8 / 8
S	0 / 8	0 / 8	4 / 8	4 / 8	8 / 8	8 / 8
TOTAL	4 / 136	2 / 136	99 / 136	99 / 136	136 / 136	136 / 136

3.3.3. Analys of the Results

3.3.3.1. Level 0

According to the specific requirements of the Technical Board linked to the standard ISO 16140-2 : 2016, collaborators who obtained more than one positive result at level 0 (confirmed or not) per method must be excluded from the statistical analysis of the results.
This case happens, only during the first interlaboratory study, for:

- collaborator F: 1 presumptive positive result not confirmed and 2 confirmed positive results with the alternative method,
- collaborator H: 2 positive results obtained with the reference method.

3.3.3.2. Level 1

- **<u>First interlaboratory study</u>**

The results shown by the alternative method for all negative deviations observed at level 1 is: CT: 0,00 / MP: 0,00, so an absence of amplification and no detection of a melting peak.

For collaborators B, F and M, the presence of one non-detection at the level 1 could be due to the absence of *Listeria monocytogenes* in the sample analyzed because of the low inoculation level.

For collaborators who obtained a lot of negative results by any method at the level 1, an investigation was performed by the expert laboratory to try to explain deviations between the two methods.

Laboratory G prepared the initial suspensions for the alternative method with refrigerated LPT broths (not warmed to ambient temperature). This way to perform the analyses doesn't meet the requirements of the user guide and can delay the growth of *Listeria monocytogenes*. The proposal of the expert laboratory to exclude this collaborator from the statistical analysis was accepted by the Technical Board.

Laboratory L also used LPT broths not fully warmed to ambient temperature. Investigations showed that the LPT broths were at a 12°C when the initial suspensions were prepared. The Technical Board accepted the proposal of the Expert Laboratory to keep this collaborator for the statistical analysis.

For collaborators H, I and J, numbers of PD and ND were well balanced at level L1 between alternative method and reference method.

- **Second interlaboratory study**

The results shown by the alternative method for all negative deviations observed at level 1 were: CT: 0,00 / MP: 0,00, so an absence of amplification and no detection of a melting peak.

For collaborators P, Q and S, negative samples clearly came from an absence of *Listeria monocytogenes* in the samples as the confirmations were negative. Moreover, considering these three collaborators, positive and negative deviations were well balanced.

For collaborator R, four samples (3 / 8 / 15 / 16) were not detected by the alternative method despite the presence of *Listeria monocytogenes* in the broth.
It seems that the protocol of the alternative method has been correctly applied.
A second analysis of these samples using the lysates stored at -20°C gave three positive results and one negative result.

A summary of these deviations for this collaborator are presented in the table below:

Sample	Gene-UP result / first analysis			Gene-UP result / second analysis from the lysate stored at -20°C			Confirmation
	CP	MP	Result	CP	MP	Result	
3	0.00	0.00	-	27.16	66.69	+	Positive
8	0.00	0.00	-	24.93	66.28	+	Positive
15	0.00	0.00	-	0.00	0.00	-	Positive
16	0.00	0.00	-	25.36	66.26	+	Positive

For three samples out of four, a clear positive result is obtained for the re-test, which indicates the presence of the DNA target in the lysate. That's why, for this collaborator, a manipulation issue during the analysis is suspected, like an error of pipetting.

3.3.3.3. Level 2

For the level 2, all results are consistent with those expected for all collaborators, namely a detection of all samples of the level by the two methods.

3.3.3.4. Conclusion

After having removed collaborators C, F, G, H, I and K from the results of the first interlaboratory study, nine sets of data were available for the statistical analysis.

As the standard ISO 16140-2: 2016 requires at least 10 valid data sets, the data from the second interlaboratory study was taken into account. For this second study, following the decision of the Technical Board of November 2016, the interpretation of the results was performed with the results of the first analysis of collaborator R.

3.3.3.5. Results kept for the statistical interpretation

Results kept are presented in tables below.

Table 23 : positive results of the reference method for laboratories kept for the statistical analysis

Interlaboratory study	Collaborator	Contamination level		
		L0	L1	L2
April	A	0 / 8	8 / 8	8 / 8
	B	0 / 8	8 / 8	8 / 8
	D	0 / 8	8 / 8	8 / 8
	E	0 / 8	8 / 8	8 / 8
	J	0 / 8	4 / 8	8 / 8
	L	0 / 8	8 / 8	8 / 8
	M	0 / 8	8 / 8	8 / 8
	N	0 / 8	8 / 8	8 / 8
	O	0 / 8	8 / 8	8 / 8
	TOTAL	**0 / 72**	**68 / 72**	**72 / 72**
September	P	0 / 8	6 / 8	8 / 8
	Q	0 / 8	5 / 8	8 / 8
	R	0 / 8	7 / 8	8 / 8
	S	0 / 8	5 / 8	8 / 8
	TOTAL	**0 / 32**	**23 / 32**	**32 / 32**
TOTAL		**0 / 104**	**91 / 104**	**104 / 104**

Table 24 : positive results of the alternative method for laboratories kept for the statistical analys

Inter-laboratory study	Colla-borator	Contamination level					
		L0		L1		L2	
		Before confir-mation	After confir-mation	Before confir-mation	After confir-mation	Before confir-mation	After confir-mation
April	A	0 / 8	0 / 8	8 / 8	8 / 8	8 / 8	8 / 8
	B	0 / 8	0 / 8	7 / 8	7 / 8	8 / 8	8 / 8
	D	0 / 8	0 / 8	8 / 8	8 / 8	8 / 8	8 / 8
	E	0 / 8	0 / 8	8 / 8	8 / 8	8 / 8	8 / 8
	J	0 / 8	0 / 8	4 / 8	4 / 8	8 / 8	8 / 8
	L	0 / 8	0 / 8	6 / 8	6 / 8	8 / 8	8 / 8
	M	0 / 8	0 / 8	7 / 8	7 / 8	8 / 8	8 / 8
	N	0 / 8	0 / 8	8 / 8	8 / 8	8 / 8	8 / 8
	O	0 / 8	0 / 8	8 / 8	8 / 8	8 / 8	8 / 8
	TOTAL	0 / 72	0 / 72	64 / 72	64 / 72	72 / 72	72 / 72
September	P	0 / 8	0 / 8	5 / 8	5 / 8	8 / 8	8 / 8
	Q	1 / 8	0 / 8	7 / 8	7 / 8	8 / 8	8 / 8
	R	0 / 8	0 / 8	4 / 8	4 / 8	8 / 8	8 / 8
	S	0 / 8	0 / 8	4 / 8	4 / 8	8 / 8	8 / 8
	TOTAL	1 / 32	0 / 32	20 / 32	20 / 32	32 / 32	32 / 32
TOTAL		1 / 104	0 / 104	84 / 104	84 / 104	104 /104	104 /104

3.3.4. Interpretation of the results

3.3.4.1. Summary of the results

The global results are presented in the table below.

Table 25 : tests results for the two methods (PA: positive agreement, NA: negative agreement, ND: negative deviation, PD: positive deviation, PP: presumed positive before confirmation)

Level	Alternative method	Reference method	
		Reference method positive (RM+)	Reference method negative (RM-)
L0	Alternative method positive (AM+)	PA = 0	PD = 0
	Alternative method negative (AM-)	ND = 0 including 0 PPND	NA = 104 including 1 PPNA
L1	Alternative method positive (AM+)	PA = 74	PD = 10
	Alternative method negative (AM-)	ND = 17 including 0 PPND	NA = 3 including 0 PPNA
L2	Alternative method positive (AM+)	PA = 104	PD = 0
	Alternative method negative (AM-)	ND = 0 including 0 PPND	NA = 0 including 0 PPNA
L0+L1+L2	Alternative method positive (AM+)	**PA = 178**	**PD = 10**
	Alternative method negative (AM-)	**ND = 17 including 0 PPND**	**NA = 107 including 1 PPNA**

3.3.4.2. Calculation of sensitivities, relative accuracy and false positive ratio

Based on the three different data sets, the following parameters are calculated:

- Sensitivity for the alternative method: $SE_{alt} = \frac{(PA+PD)}{(PA+ND+PD)} \times 100\%$

- Sensitivity for the reference method: $SE_{ref} = \frac{(PA+ND)}{(PA+ND+PD)} \times 100\%$

- Relative accuracy: $AC = \frac{(PA+NA)}{N} \times 100\%$
- False positive ratio for the alternative method: $FP = \frac{(FP)}{NA} \times 100\%$

where N is the total number of samples (NA + PA + PD + ND) and FP is false positive results.

Results are presented in the table below.

Table 26 : values of sensitivities, relative accuracy and false positive ratio for the three data sets

Data set	Parameter			
	SE_{alt}	SE_{ref}	RT	FPR
Interlaboratory study 10 collaborators	91.7%	95.1%	91.3%	0.9%

3.3.4.3. Determination of the acceptability limit and conclusion

The difference between (ND – PD) for the level where fractional recovery was obtained (L1) is calculated. The observed value found for (ND – PD) shall not be higher than the acceptability limit (AL). The AL is defined as [$(ND – PD)_{max}$] and calculated per level where fractional recovery was obtained as described below using the following three parameters:

- $(p+)_{ref} = \frac{P_x}{N_x}$, where
  Px = number of samples with a positive result obtained with the reference method at level x, (L1 or L2) for all laboratories;
  Nx = number of samples tested at level x (L1 or L2) with the reference method by all laboratories.

- $(p+)_{alt} = \frac{CP_x}{N_x}$, where
  CPx = number of samples with a confirmed positive result obtained with the alternative method at level x (L1 or L2) for all laboratories;
  Nx = number of samples tested at level x (L1 or L2) with the alternative method by all laboratories.

- $(ND - PD)_{max} = \sqrt{3N_x \times ((p+)_{ref} + (p+)_{alt} - 2((p+)_{ref} \times (p+)_{alt}))}$, where
  Nx = the total number of samples tested for level x (L1 or L2) by all laboratories.

The AL is not met when the observed value is higher than the A*L.* 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 in case the AL is not met shall be stated in the study report.

In this study, fractional positive results are observed at level L1 only. The different parameters obtained by the calculation are detailed in the table below:

Table 27 : values obtained for the determination of the acceptability limit

Parameter	Value
N_x	104
$(p+)_{ref}$	0.875
$(p+)_{alt}$	0.808
$(ND\text{-}PD)_{max}$	9.17
(ND-PD)	7

The value (ND-PD) is inferior to the AL in all cases, so the requirements of the standard ISO 16140-2 : 2016 are fulfilled.

The performance of the alternative method and the reference method can be considered as equivalent.

3.3.4.4. Determination of the relative level of detection

This evaluation is performed according to the EN ISO 16140-2 : 2016 Excel spreadsheet available at https://standards.iso.org/iso/16140/-2/ed-1/en/RLOD_inter-lab-study_16140-2_AnnexF_ver1_28-06-2017.xls.
As there is limited experience with the interpretation of this approach, the results are used only for information. Results are shown in the table below :

Table 28 : values obtained for the determination of the relative level of detection

Method	LOD50%	LOD95%	RLOD
Reference	0,73 [0,57 ; 0,93]	3,14 [2,46 ; 4,00]	1,1 [0,83 ; 1,45]
Alternative	0,80 [0,63 ; 1,01]	3,44 [2,70 ; 4,37]	

3.4. Conclusion

Overall, the study concerned 508 samples from six categories: meat products, dairy products, seafood products, vegetal products, composite foods and environmental samples.

The sensitivity of the alternative method was 84.3% and the sensitivity of the reference method was 84.3%.
The observed values ((ND+PPND) – PD) were below or equal to the acceptability limit for each category and for all categories.

The RLODs values were below the acceptability limits set at 2.5, meaning that, as stated in ISO 16140-2: 2016, the maximum increase in LOD of the alternative versus the reference method is not considered as relevant in consideration of the fitness for purpose of the method.
The GENE-UP *Listeria monocytogenes* 2 method and the reference method showed similar LODs values for the detection of *Listeria monocytogenes* in the categories tested.

The inclusivity and the exclusivity of the method showed that the method GENE-UP Listeria monocytogenes 2 is specific and selective.

The practicability of the method highlighted a method quick and easy to apply.

It is possible to store the enrichment broth and the lysates for 72 h at 5°C ± 3°C.

The unit dose kit gave reliable results compared to the multi doses kit.

The interlaboratory study concerned thirteen collaborators for the analysis of a goat milk cottage cheese contaminated with a strain of *Listeria monocytogenes*. The interpretation of the results showed that the performance of the alternative method can be considered as equivalent to the performance of the reference method.

Considering all the categories of the application scope, namely a broad range of foods and environmental samples, the GENE-UP® LMO2 method produces results comparable to the reference method EN ISO 11290-1/A1 according to the standard ISO 16140-2: 2016.

TOURS, the 13th of December 2021
Stéphanie ROTILY-FORCIOLI
Aid of Microbiology service

Appendices

APPENDIX 1

ALTERNATIVE METHOD PROTOCOL : multi doses kit

Protocol for a broad range of foods and environmental samples

Enrichment

Food sample and environmental sample except surface samples: (general protocol) :
25 g sample + 225 LPT broth at room temperature in a blender bag.
Incubate for 22 – 28 h at 37±1°C.

Environmental surface samples (specific protocol) :
Sponge or swipe + 100 mL LPT broth at room temperature in a blender bag.
Swab + 10 mL LPT broth at room temperature in a blender bag.
Incubate for 18 – 24 h at 37±1°C.

Lysis

Mix manually the content of the blender bag.
Transfer 20 µL of the enriched broth into a lysis tube.
Place the tube in a bead beater and run it for 5 minutes at a speed above 2 000 rpm.

Final setup for PCR

Reconstitute the PCR reagent according to the manufacturer's recommendations.
A blue color shall be obtained.
Pipet 5 µL of the reagent in a PCR tube.
Using a 10 µL Gene-Up tip, transfer 5 µL of the lysed sample (red color) into the PCR tube.
When sample is added to the PCR reagent, the solution turns purple.
Place a strip cap on each strip tube and seal it.
Spin in a plate centrifuge for 10 seconds.
The plate is now ready to be processed in the Gene-UP instrument and must be started within 15 minutes.

Results

Start the run according to the instructions of the manufacturer.
Read the results with the Gene-UP Routine software.

Confirmation

Confirm all positive results obtained with GENE-UP *Listeria monocytogenes*
Isolate 10 µL of the LPT broth on an O&A agar plate.
Incubate for 24±3 h at 37°C.
The plates can be read between 24 and 48 hours.
The presence of typical colonies confirms a positive result.
An API LIS strip or RAPIDEC Lmono or a Fast Rhamnose essay can be performed directly from an isolated colony

ALTERNATIVE METHOD PROTOCOL : unit dose kit

Protocol for a broad range of foods and environmental samples

Enrichment

Food sample and environmental sample except surface samples: (general protocol) :
25 g sample + 225 LPT broth at room temperature in a blender bag.
Incubate for 22 – 28 h at 37±1°C.

Environmental surface samples (specific protocol) :
Sponge or swipe + 100 mL LPT broth at room temperature in a blender bag.
Swab + 10 mL LPT broth at room temperature in a blender bag.
Incubate for 18 – 24 h at 37±1°C.

Lysis

Mix manually the content of the blender bag.
Transfer 20 µL of the enriched broth into a lysis tube.
Place the tube in a bead beater and run it for 5 minutes at a speed above 2 000 rpm.

Final setup for PCR

Using a 10 µL Gene-Up tip, transfer 10 µL of the lysed sample (red color) into the PCR tube.
When sample is added to the PCR reagent, the solution turns purple.
Place a strip cap on each strip tube and seal it.
Spin in a plate centrifuge for 10 seconds.
The plate is now ready to be processed in the Gene-UP instrument and must be started within 120 minutes.

Results

Start the run according to the instructions of the manufacturer.
Read the results with the Gene-UP Routine software.

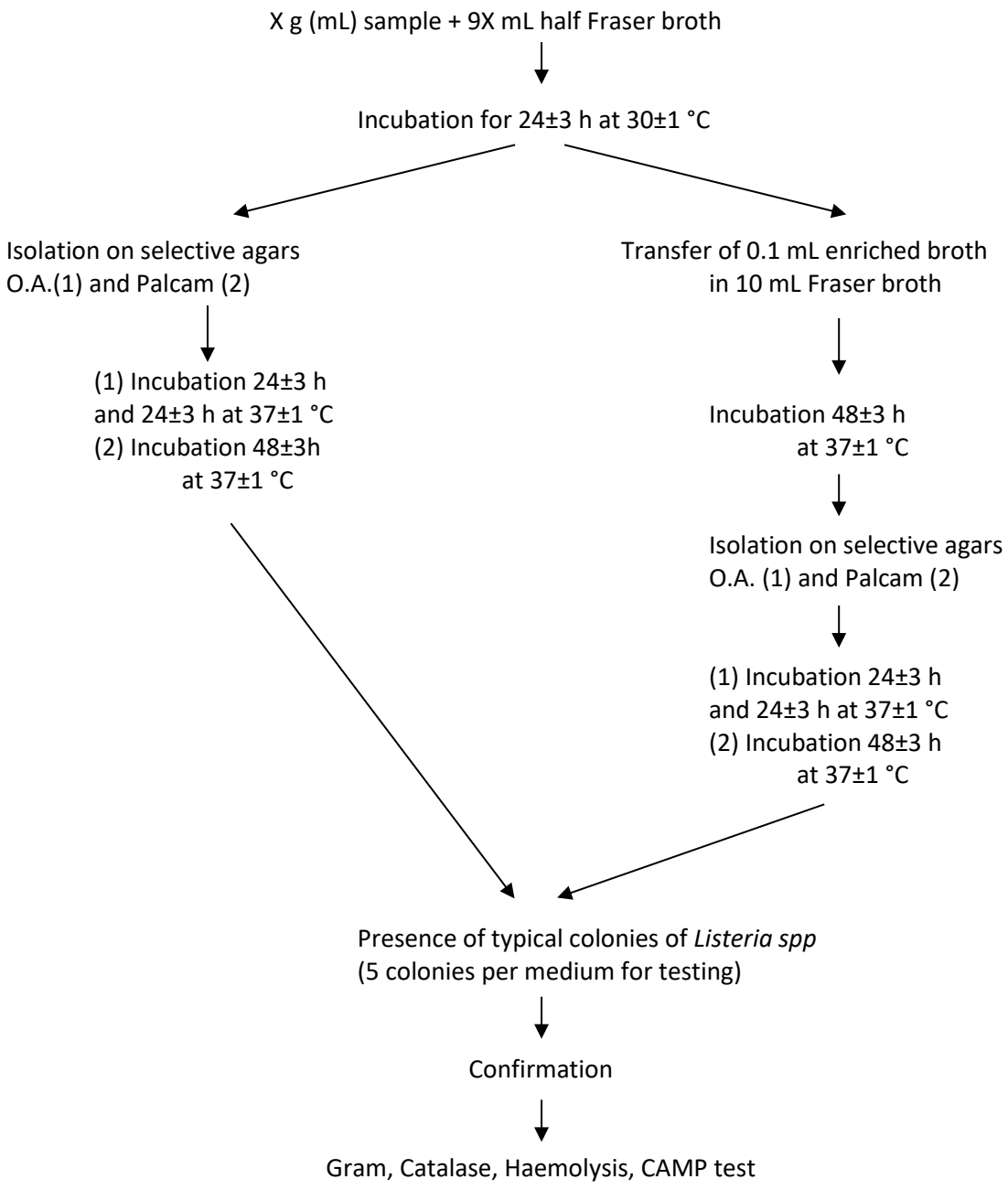
Confirmation

Confirm all positive results obtained with GENE-UP *Listeria monocytogenes*
Isolate 10 µL of the LPT broth on an O&A agar plate.
Incubate for 24±3 h at 37°C.
The plates can be read between 24 and 48 hours.
An API LIS strip or RAPIDEC Lmono or a Fast Rhamnose essay can be performed directly from an isolated colony

APPENDIX 2

REFERENCE METHOD PROTOCOL

ISO 11290-1/A1 (February 2005)



REFERENCE METHOD PROTOCOL

ISO 11290-1 (May 2017)

X g (mL) sample + 9X mL half Fraser broth

↓

Incubation for 25±1 h at 30±1 °C

Isolation on selective agars
O.A.(1) and Palcam (2)

↓

(1) Incubation 24±3 h
and 24±3 h at 37±1 °C
(2) Incubation 48±3h
at 37±1 °C

Transfer of 0.1 mL in 10 mL Fraser broth

↓

Incubation 24±2 h
at 37±1 °C

↓

Isolation on selective agars
O.A. (1) and Palcam (2)

↓

(1) Incubation 24±3 h
and 24±3 h at 37±1 °C
(2) Incubation 48±3 h
at 37±1 °C

Presence of typical colonies of *Listeria spp*
(5 colonies per medium for testing)

↓

Confirmation

Listeria spp :
- Gram
- Catalase

Listeria monocytogenes :
- Haemolysis
- Rhamnose
- Xylose

APPENDIX 3

ARTIFICIAL CONTAMINATIONS OF SAMPLES

Year	Category	Sample ID	Sample	Code strain	Strain	Origin	Protocol of seeding	Inoculation level (CFU/25g)	Global result
2016	Meat products	GL29	Smoked lardons	LIS.4.20	*Listeria monocytogenes 1/2a*	sandwich bacon vegetables	48 h at 5±3°C	1.7	+
2016		GL30	Smoked bacon	LIS.4.27	*Listeria monocytogenes 1/2a*	Minced meat	48 h at 5±3°C	1.3	+
2016		GL31	Smoked cured ham	LIS.4.28	*Listeria monocytogenes 1/2b*	Leg of duck	48 h at 5±3°C	1.0	-
2016		GL32	Raw Montbéliard sausage	LIS.4.30	*Listeria monocytogenes 1/2b*	Raw turkey	48 h at 5±3°C	0.5	-
2016		GL159	Raw tournedos (beef)	LIS.4.11	*Listeria monocytogenes 1/2a*	Chicken with curry	48 h at 5±3°C	1.6	+
2016		GL160	Raw turkey filet mignon	LIS.4.11	*Listeria monocytogenes 1/2a*	Chicken with curry	48 h at 5±3°C	1.6	+
2016		GL161	Speck	LIS.4.11	*Listeria monocytogenes 1/2a*	Chicken with curry	48 h at 5±3°C	1.6	+
2016		GL162	Smoked salami	LIS.4.26	*Listeria monocytogenes 1/2a*	Ham	48 h at 5±3°C	2.8	-
2016		GL163	ham without rind	LIS.4.26	*Listeria monocytogenes 1/2a*	Ham	48 h at 5±3°C	2.8	+
2016		GL164	Ham with rind	LIS.4.26	*Listeria monocytogenes 1/2a*	Ham	48 h at 5±3°C	2.8	+
2016	Dairy products	GL99	Cream cheese with garlic and herbs	LIS.4.24	*Listeria monocytogenes 1/2a*	Cheese meal	48 h at 5±3°C	1.6	+
2016		GL100	Cream cheese (pasteurized milk)	LIS.4.24	*Listeria monocytogenes 1/2a*	Cheese meal	48 h at 5±3°C	1.6	+
2016		GL101	Nature yoghurt (pasteurized milk)	LIS.4.24	*Listeria monocytogenes 1/2a*	Cheese meal	48 h at 5±3°C	1.6	+
2016		GL102	Montagnolo (cow milk pasteurized cheese)	LIS.4.58	*Listeria monocytogenes*	Not matured cow raw milk cheese	48 h at 5±3°C	1.4	+
2016		GL103	Organic Emmental (cow raw milk cheese)	LIS.4.58	*Listeria monocytogenes*	Not matured cow raw milk cheese	48 h at 5±3°C	1.4	+
2016		GL104	Tomme from Savoie (cow raw milk cheese)	LIS.4.58	*Listeria monocytogenes*	Not matured cow raw milk cheese	48 h at 5±3°C	1.4	+
2016		GL105	Comté (cow raw milk cheese)	LIS.4.60	*Listeria monocytogenes*	Cow raw milk cheese	48 h at 5±3°C	1.8	+
2016		GL106	Cœur de chèvre (goat raw milk cheese)	LIS.4.60	*Listeria monocytogenes*	Cow raw milk cheese	48 h at 5±3°C	1.8	+
2016		GL107	La croseta (goat raw milk cheese)	LIS.4.60	*Listeria monocytogenes*	Cow raw milk cheese	48 h at 5±3°C	1.8	+
2016		GL110	Ribot fermented milk	LIS.4.69	*Listeria monocytogenes*	Raw milk cheese	48 h at 5±3°C	1.0	+
2016		GL123	Cabri de Touraine cendré (goat raw milk cheese)	LIS.4.23	*Listeria monocytogenes 1/2a*	Cottage cheese	48 h at 5±3°C	3.3	+
2016		GL124	Butter (raw milk)	LIS.4.23	*Listeria monocytogenes 1/2a*	Cottage cheese	48 h at 5±3°C	3.3	+
2016		GL125	Sweet churned butter (raw milk)	LIS.4.23	*Listeria monocytogenes 1/2a*	Cottage cheese	48 h at 5±3°C	3.3	+
2016		GL126	Sweet salted churned butter (raw milk)	LIS.4.4	*Listeria monocytogenes 1/2a*	Zucchini goat cheese skewer	48 h at 5±3°C	2.3	+

Year	Category	Sample ID	Sample	Code strain	Strain	Origin	Protocol of seeding	Inoculation level (CFU/25g)	Global result
2016	Dairy products	GL127	Mascarpone	LIS.4.4	*Listeria monocytogenes 1/2a*	Zucchini goat cheese skewer	48 h at 5±3°C	2.3	+
2016		GL128	Fermented skimmed ribot milk	LIS.4.4	*Listeria monocytogenes 1/2a*	Zucchini goat cheese skewer	48 h at 5±3°C	2.3	+
2016		GL129	Pasteurized semi-skimmed milk	LIS.4.46	*Listeria monocytogenes 3a*	Goat cheese sandwich	48 h at 5±3°C	0.3	+
2016		GL130	Micro-filtered semi-skimmed milk	LIS.4.46	*Listeria monocytogenes 3a*	Goat cheese sandwich	48 h at 5±3°C	0.3	+
2016		GL131	Micro-filtered organic raw milk	LIS.4.46	*Listeria monocytogenes 3a*	Goat cheese sandwich	48 h at 5±3°C	0.3	+
2016		GL132	Cow raw milk	LIS.4.7	*Listeria monocytogenes 1/2a*	Ham-emmental sandwich	48 h at 5±3°C	3.0	+
2016		GL133	Fermented ribot milk	LIS.4.7	*Listeria monocytogenes 1/2a*	Ham-emmental sandwich	48 h at 5±3°C	3.0	+
2016		GL134	Fermented ribot milk	LIS.4.7	*Listeria monocytogenes 1/2a*	Ham-emmental sandwich	48 h at 5±3°C	3.0	+
2016		GL165	Pistachio ice-cream	LIS.4.56	*Listeria monocytogenes*	Cow raw milk cheese	48 h at 5±3°C	2.8	+
2016		GL166	Coffee ice-cream	LIS.4.56	*Listeria monocytogenes*	Cow raw milk cheese	48 h at 5±3°C	2.8	+
2021		1	Raw milk cheese	AFNL 88	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	4	+
2021		2	Raw milk cheese	AFNL 174	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	4,5	-
2021		5	Raw milk cheese	AFNL88	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	4	+
2021		6	Raw milk cheese	AFNL 174	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	4,5	+
2021		8	Raw milk cheese	AFNL 87	*Listeria monocytogenes*	Raw goat milk	72 h at 5±3°C	2,9	+
2021		11	Raw milk cheese	AFNL 83	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	+
2021		12	Raw milk cheese	AFNL 87	*Listeria monocytogenes*	Raw goat milk	72 h at 5±3°C	2,9	+
2021		13	Raw milk cheese	AFNL 83	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	+
2021		14	Raw milk cheese	AFNL 87	*Listeria monocytogenes*	Raw goat milk	72 h at 5±3°C	2,9	+
2021		17	Raw milk cheese	AFNL 83	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,2	+
2021		19	Raw goat milk	AFNL 178	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	2,8	-
2021		20	Raw goat milk	AFNL 178	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	2,8	-
2021		21	Raw cow's milk yogurt	AFNL 178	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	2,8	-
2021		22	Cottage cheese	AFNL 178	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	2,8	-
2021		23	Raw cow milk	AFNL 178	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	2,8	+
2021		24	Cottage cheese	AFNL 178	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	2,8	-
2021		26	Raw goat milk	AFNL 181	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	-
2021		27	Raw cow's milk yogurt	AFNL 181	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	+
2021		28	Cottage cheese	AFNL 181	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	+

Year	Category	Sample ID	Sample	Code strain	Strain	Origin	Protocol of seeding	Inoculation level (CFU/25g)	Global result
2021	Dairy products	29	Raw cow milk	AFNL 181	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	+
2021		30	Raw goat milk	AFNL 181	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	+
2021		39	Cream cheese	AFNL 182	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	+
2021		40	Cottage cheese	AFNL 182	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	-
2021		41	Grated cheese	AFNL 182	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	+
2021		42	Greek yogurt	AFNL 182	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	-
2021		43	Mozzarella	AFNL 182	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	-
2021		44	Ripe blueberry yogurt	AFNL 182	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	3,0	-
2021		45	Sour cream	AFNL 183	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	1,8	+
2021		46	Pasteurised milk cheese	AFNL 183	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	1,8	+
2021		47	Raw milk cheese	AFNL 183	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	1,8	+
2021		48	Pasteurised milk cheese	AFNL 183	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	1,8	+
2021		49	Pasteurised milk cheese	AFNL 183	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	1,8	+
2021		50	Cottage cheese	AFNL 183	*Listeria monocytogenes*	Raw milk cheese	72 h at 5±3°C	1,8	+
2021		62	Raw ewe milk	AFNL 180	*Listeria monocytogenes*	Food	72 h at 5±3°C	2,8	+
2021		63	Raw ewe milk	AFNL 180	*Listeria monocytogenes*	Food	72 h at 5±3°C	2,8	+
2021		64	Raw ewe milk	AFNL 180	*Listeria monocytogenes*	Food	72 h at 5±3°C	2,8	+

Year	Category	Sample ID	Sample	Strain code	Strain	Origin	Seeding protocol	Inoculation level (CFU/sample)	Global result
2017	Seafood products	GL 375	Marinated tuna carpaccio	LIS.4.8	*Listeria monocytogenes 1/2a*	sandwich tuna egg surimi	48 h at 5±3°C	1.2	+
2017		GL 376	Anchovy and capers with vinegar	LIS.4.8	*Listeria monocytogenes 1/2a*	sandwich tuna egg surimi	48 h at 5±3°C	1.2	-
2017		GL 377	Rollmops	LIS.4.8	*Listeria monocytogenes 1/2a*	sandwich tuna egg surimi	48 h at 5±3°C	1.2	-
2017		GL 378	Monkfish fillet	LIS.4.12	*Listeria monocytogenes 1/2a*	Smoked salmon	48 h at 5±3°C	1.6	+
2017		GL 379	Red mullet fillet	LIS.4.12	*Listeria monocytogenes 1/2a*	Smoked salmon	48 h at 5±3°C	1.6	-
2017		GL 380	Whiting fillet	LIS.4.12	*Listeria monocytogenes 1/2a*	Smoked salmon	48 h at 5±3°C	1.6	+
2017		GL 381	Swordfish	LIS.4.15	*Listeria monocytogenes 1/2a*	Salmon tartar	48 h at 5±3°C	0.8	+
2017		GL 382	Cod fillet	LIS.4.15	*Listeria monocytogenes 1/2a*	Salmon tartar	48 h at 5±3°C	0.8	+
2017		GL 383	Plaice fillet	LIS.4.15	*Listeria monocytogenes 1/2a*	Salmon tartar	48 h at 5±3°C	0.8	+
2017		GL 387	Smoked trout	LIS.4.25	*Listeria monocytogenes 1/2a*	Fish and vegetables à la provençale	48 h at 5±3°C	0.4	+
2017		GL 388	Smoked trout offcuts	LIS.4.25	*Listeria monocytogenes 1/2a*	Fish and vegetables à la provençale	48 h at 5±3°C	0.4	+
2017		GL 389	Smoked salmon offcuts	LIS.4.25	*Listeria monocytogenes 1/2a*	Fish and vegetables à la provençale	48 h at 5±3°C	0.4	+
2017		GL 393	Tuna à la catalane	LIS.4.42	*Listeria monocytogenes 3a*	Smoked salmon	48 h at 5±3°C	0.2	+
2017		GL 394	Salmon rillettes	LIS.4.42	*Listeria monocytogenes 3a*	Smoked salmon	48 h at 5±3°C	0.2	+
2017		GL 395	Parisian tuna salad	LIS.4.42	*Listeria monocytogenes 3a*	Smoked salmon	48 h at 5±3°C	0.2	+
2017	Vegetal products	GL 189	Entire frozen morels	LIS.4.4	*Listeria monocytogenes 1/2a*	Zucchini goat cheese skewer	48 h at 5±3°C	2.8	-
2017		GL 190	Pre-cooked lentils	LIS.4.4	*Listeria monocytogenes 1/2a*	Zucchini goat cheese skewer	48 h at 5±3°C	2.8	+
2017		GL 191	Zucchini purée	LIS.4.4	*Listeria monocytogenes 1/2a*	Zucchini goat cheese skewer	48 h at 5±3°C	2.8	+
2017		GL 192	Celery purée	LIS.4.5	*Listeria monocytogenes 1/2a*	Ham vegetables	48 h at 5±3°C	2.0	+
2017		GL 193	Split peas purée	LIS.4.5	*Listeria monocytogenes 1/2a*	Ham vegetables	48 h at 5±3°C	2.0	+
2017		GL 194	Pre-cooked potatoes	LIS.4.5	*Listeria monocytogenes 1/2a*	Ham vegetables	48 h at 5±3°C	2.0	+
2017		GL 195	Mung beans sprouts	LIS.4.10	*Listeria monocytogenes 1/2a*	Salad	48 h at 5±3°C	2.4	-
2017		GL 196	Vegetables mix for soup	LIS.4.10	*Listeria monocytogenes 1/2a*	Salad	48 h at 5±3°C	2.4	+
2017		GL 197	Packed red and white cabbage	LIS.4.10	*Listeria monocytogenes 1/2a*	Salad	48 h at 5±3°C	2.4	+
2017		GL 198	Entire frozen chanterelle mushrooms	LIS.4.20	*Listeria monocytogenes 1/2a*	Sandwich bacon vegetables	48 h at 5±3°C	1.2	-
2017		GL 199	Frozen entire porcini mushrooms	LIS.4.20	*Listeria monocytogenes 1/2a*	Sandwich bacon vegetables	48 h at 5±3°C	1.2	+
2017		GL 200	Strawberries	LIS.4.20	*Listeria monocytogenes 1/2a*	Sandwich bacon vegetables	48 h at 5±3°C	1.2	-
2017		GL 201	Pre-cooked cauliflower	LIS.4.17	*Listeria monocytogenes 1/2a*	Vegetables	48 h at 5±3°C	1.4	+

Year	Category	Sample ID	Sample	Strain code	Strain	Origin	Seeding protocol	Inoculation level (CFU/sample)	Global result
2017	Vegetal products	GL 202	Packed lamb's lettuce	LIS.4.17	*Listeria monocytogenes 1/2a*	Vegetables	48 h at 5±3°C	1.4	-
2017		GL 203	Flat parsley	LIS.4.17	*Listeria monocytogenes 1/2a*	Vegetables	48 h at 5±3°C	1.4	+
2017		GL 204	Basil	LIS.4.18	*Listeria monocytogenes 1/2a*	Vegetables salad	48 h at 5±3°C	0.8	+
2017		GL 205	Tarragon	LIS.4.18	*Listeria monocytogenes 1/2a*	Guiney fowl	48 h at 5±3°C	0.8	-
2017		GL 206	Chives	LIS.4.18	*Listeria monocytogenes 1/2a*	Vegetables salad	48 h at 5±3°C	0.8	-
2017		GL 358	Cherry tomatoes	LIS.4.76	*Listeria monocytogenes*	Salad	48 h at 5±3°C	0.6	+
2017		GL 590	Pineapple	LIS.4.79	*Listeria monocytogenes*	Deep-frozen peeled beans	48 h at 5±3°C	2.0	+
2017		GL 591	Apples	LIS.4.79	*Listeria monocytogenes*	Deep-frozen peeled beans	48 h at 5±3°C	2.0	+
2017		GL 592	Melon	LIS.4.79	*Listeria monocytogenes*	Deep-frozen peeled beans	48 h at 5±3°C	2.0	+
2017	Composite foods	GL 254	Pear pie	LIS.4.20	*Listeria monocytogenes 1/2a*	Sandwich bacon vegetables	48 h at 5±3°C	0.6	-
2017		GL 255	Apricot pie	LIS.4.20	*Listeria monocytogenes 1/2a*	Sandwich bacon vegetables	48 h at 5±3°C	0.6	+
2017		GL 256	Cherry cobbler	LIS.4.20	*Listeria monocytogenes 1/2a*	Sandwich bacon vegetables	48 h at 5±3°C	0.6	-
2017		GL 257	Apple pie	LIS.4.20	*Listeria monocytogenes 1/2a*	Sandwich bacon vegetables	48 h at 5±3°C	0.6	+
2017		GL 258	Flan	LIS.4.20	*Listeria monocytogenes 1/2a*	Sandwich bacon vegetables	48 h at 5±3°C	0.6	+
2017		GL 259	Mirabelle pie	LIS.4.20	*Listeria monocytogenes 1/2a*	Sandwich bacon vegetables	48 h at 5±3°C	0.6	+
2017		GL 260	Salad ham, vegetables, emmental	LIS.4.39	*Listeria monocytogenes 1/2c*	Salmon tartar	48 h at 5±3°C	2.4	+
2017		GL 261	Salad tuna, pasta, vegetables	LIS.4.39	*Listeria monocytogenes 1/2c*	Salmon tartar	48 h at 5±3°C	2.4	+
2017		GL 262	Salad chicken vegetables	LIS.4.39	*Listeria monocytogenes 1/2c*	Salmon tartar	48 h at 5±3°C	2.4	+
2017		GL 263	Chicken tabouleh	LIS.4.42	*Listeria monocytogenes 3a*	Smoked salmon	48 h at 5±3°C	7.0	+
2017		GL 264	Torti surimi	LIS.4.42	*Listeria monocytogenes 3a*	Smoked salmon	48 h at 5±3°C	7.0	+
2017		GL 265	Pièmontaise salad	LIS.4.42	*Listeria monocytogenes 3a*	Smoked salmon	48 h at 5±3°C	7.0	+
2017		GL 266	Pizza 4 cheese	LIS.4.46	*Listeria monocytogenes 3a*	Goat cheese sandwich	48 h at 5±3°C	2.2	+
2017		GL 267	Pizza ham emmental	LIS.4.46	*Listeria monocytogenes 3a*	Goat cheese sandwich	48 h at 5±3°C	2.2	-
2017		GL 268	Fusilli carbonara	LIS.4.46	*Listeria monocytogenes 3a*	Goat cheese sandwich	48 h at 5±3°C	2.2	+
2017		GL 269	Fusilli with cheese	LIS.4.77	*Listeria monocytogenes*	Tuna vegetables sandwich	48 h at 5±3°C	7.0	+
2017		GL 270	Noodles chicken vegetables	LIS.4.77	*Listeria monocytogenes*	Tuna vegetables sandwich	48 h at 5±3°C	7.0	+
2017		GL 271	Bolognese penne	LIS.4.77	*Listeria monocytogenes*	Tuna vegetables sandwich	48 h at 5±3°C	7.0	+
2017		GL 314	Coconut flan	LIS.4.6	*Listeria monocytogenes 1/2a*	Ham emmental sandwich	48 h at 5±3°C	0.6	+

Year	Category	Sample ID	Sample	Strain code	Strain	Origin	Seeding protocol	Inoculation level (CFU/sample)	Global result
2017	Composite foods	GL 315	Coffee flavored custard pastry	LIS.4.6	*Listeria monocytogenes 1/2a*	Ham emmental sandwich	48 h at 5±3°C	0.6	+
2017		GL 316	Cookie	LIS.4.6	*Listeria monocytogenes 1/2a*	Ham emmental sandwich	48 h at 5±3°C	0.6	-
2017		GL 317	Grape flan	LIS.4.7	*Listeria monocytogenes 1/2a*	Ham emmental sandwich	48 h at 5±3°C	0.6	+
2017		GL 318	Salad cabbage, ham, comté	LIS.4.7	*Listeria monocytogenes 1/2a*	Ham emmental sandwich	48 h at 5±3°C	0.6	-
2017		GL 319	Salad pineapple, carrot, surimi	LIS.4.7	*Listeria monocytogenes 1/2a*	Ham emmental sandwich	48 h at 5±3°C	0.6	+
2017		GL 320	Prawn salad with mandarins	LIS.4.8	*Listeria monocytogenes 1/2a*	Tuna egg surimi sandwich	48 h at 5±3°C	1.8	+
2017		GL 321	Salad potatoes sausages	LIS.4.8	*Listeria monocytogenes 1/2a*	Tuna egg surimi sandwich	48 h at 5±3°C	1.8	-
2017		GL 322	Chicken tabouleh	LIS.4.8	*Listeria monocytogenes 1/2a*	Tuna egg surimi sandwich	48 h at 5±3°C	1.8	+
2017	Environmental samples	GL 457	Swab 13	LIS.4.2	*Listeria monocytogenes*	Environment	48 h at 5±3°C	2.7	+
2017		GL 458	Sponge 1	LIS.4.2	*Listeria monocytogenes*	Environment	48 h at 5±3°C	2.7	+
2017		GL 459	Sponge 2	LIS.4.2	*Listeria monocytogenes*	Environment	48 h at 5±3°C	2.7	+
2017		GL 460	Sponge 3	LIS.4.16	*Listeria monocytogenes 1/2a*	Surface sample sewage	48 h at 5±3°C	1.7	+
2017		GL 461	Sponge 4	LIS.4.16	*Listeria monocytogenes 1/2a*	Surface sample sewage	48 h at 5±3°C	1.7	+
2017		GL 462	Sponge 5	LIS.4.16	*Listeria monocytogenes 1/2a*	Surface sample sewage	48 h at 5±3°C	1.7	+
2017		GL 463	Sponge 6	LIS.4.16	*Listeria monocytogenes 1/2a*	Surface sample sewage	48 h at 5±3°C	1.7	+
2017		GL 466	Process water 3	LIS.4.50	*Listeria monocytogenes 4b*	Surface sample salmon	48 h at 5±3°C	2.1	+
2017		GL 467	Process water 4	LIS.4.50	*Listeria monocytogenes 4b*	Surface sample salmon	48 h at 5±3°C	2.1	+
2017		GL 470	Process water 7	LIS.4.44	*Listeria monocytogenes 3a*	Surface sample	48 h at 5±3°C	2.0	+
2017		GL 471	Process water 8	LIS.4.44	*Listeria monocytogenes 3a*	Surface sample	48 h at 5±3°C	2.0	+
2017		GL 472	Process water 9	LIS.4.50	*Listeria monocytogenes 4b*	Surface sample salmon	48 h at 5±3°C	3.0	+
2017		GL 473	Process water 10	LIS.4.57	*Listeria monocytogenes*	Goat milk filter	48 h at 5±3°C	3.0	+
2017		GL 474	Process water 11	LIS.4.57	*Listeria monocytogenes*	Goat milk filter	48 h at 5±3°C	3.0	-
2017		GL 475	Swab 14	LIS.4.2	*Listeria monocytogenes*	Environment	48 h at 5±3°C	2.7	+
2017		GL 503	Dust 11	LIS.4.67	*Listeria monocytogenes 1/2 b*	Raw milk	48 h at 5±3°C	2.1	-
2017		GL 504	Dust 12	LIS.4.67	*Listeria monocytogenes 1/2 b*	Raw milk	48 h at 5±3°C	2.1	-
2017		GL 505	Dust 13	LIS.4.67	*Listeria monocytogenes 1/2 b*	Raw milk	48 h at 5±3°C	2.1	-
2017		GL 506	Dust 14	LIS.4.67	*Listeria monocytogenes 1/2 b*	Raw milk	48 h at 5±3°C	2.1	-
2017		GL 507	Dust 15	LIS.4.67	*Listeria monocytogenes 1/2 b*	Raw milk	48 h at 5±3°C	2.1	-

Year	Category	Sample ID	Sample	Strain code	Strain	Origin	Seeding protocol	Inoculation level (CFU/sample)	Global result
2017	Environmental samples	GL 566	Process water 35	LIS.4.68	*Listeria monocytogenes*	Surface sample	48 h at 5±3°C	2.8	+
2017		GL 567	Process water 36	LIS.4.68	*Listeria monocytogenes*	Surface sample	48 h at 5±3°C	2.8	+
2017		GL 568	Process water 37	LIS.4.68	*Listeria monocytogenes*	Surface sample	48 h at 5±3°C	2.8	+
2017		GL 569	Process water 38	LIS.4.68	*Listeria monocytogenes*	Surface sample	48 h at 5±3°C	2.8	+
2017		GL 570	Process water 39	LIS.4.68	*Listeria monocytogenes*	Surface sample	48 h at 5±3°C	2.8	+
2017		GL 571	Process water 40	LIS.4.2	*Listeria monocytogenes*	Environment	48 h at 5±3°C	2.0	+
2017		GL 572	Process water 41	LIS.4.2	*Listeria monocytogenes*	Environment	48 h at 5±3°C	2.0	+
2017		GL 575	Dust 24	LIS.4.57	*Listeria monocytogenes*	Goat milk filter	48 h at 5±3°C	6.4	+
2017		GL 576	Sponge 29	LIS.4.50	*Listeria monocytogenes 4b*	Surface sample salmon	48 h at 5±3°C	3.2	+
2017		GL 577	Sponge 30	LIS.4.50	*Listeria monocytogenes 4b*	Surface sample salmon	48 h at 5±3°C	3.2	+
2017		GL 578	Sponge 31	LIS.4.50	*Listeria monocytogenes 4b*	Surface sample salmon	48 h at 5±3°C	3.2	+
2017		GL 579	Sponge 32	LIS.4.16	*Listeria monocytogenes 1/2a*	Surface sample sewage	48 h at 5±3°C	2.2	+
2017		GL 580	Sponge 33	LIS.4.16	*Listeria monocytogenes 1/2a*	Surface sample sewage	48 h at 5±3°C	2.2	+
2017		GL 581	Sponge 34	LIS.4.57	*Listeria monocytogenes*	Goat milk filter	48 h at 5±3°C	6.4	+
2017		GL 588	Dust 25	LIS.4.57	*Listeria monocytogenes*	Goat milk filter	48 h at 5±3°C	6.4	+
2017		GL 589	Dust 26	LIS.4.57	*Listeria monocytogenes*	Goat milk filter	48 h at 5±3°C	6.4	+
2017		GL 593	Swab 42	LIS.4.44	*Listeria monocytogenes 3a*	Surface sample	48 h at 5±3°C	1.8	+
2017		GL 594	Swab 43	LIS.4.44	*Listeria monocytogenes 3a*	Surface sample	48 h at 5±3°C	1.8	+
2017		GL 595	Swab 44	LIS.4.44	*Listeria monocytogenes 3a*	Surface sample	48 h at 5±3°C	1.8	+
2017		GL 596	Swab 45	LIS.4.44	*Listeria monocytogenes 3a*	Surface sample	48 h at 5±3°C	1.8	+

APPENDIX 4

SENSITIVITY STUDY : RAW DATA

Caption:

◊ : level determined by 3 to 5 enumerations
sp : spiking
se : seeding
nc : naturally contaminated
cm: contamination by mixture
+ / Pos : positive result
- / Neg : negative result
/ : test not realized
Ø : absence of colonies
PA : positive agreement
NA : negative agreement
PD : positive deviation
ND : negative deviation
FN : false negative result
FP : false positive result
PP: presumed positive result before confirmation
A : absence
P : presence
0 / 1 / 2 / 3 / 4 : level of typical flora, from absence to high
Ø / L / M / H : level of annex flora, from absence to high
I : result after re-isolation
(XXX) : number of typical colonies
L.m : Listeria monocytogenes
L.w : Listeria welshimeri
L.in: Listeria inocua
L.iv: Listeria ivanovii
Confirmation : streaking on selective medium + ISO 11290-1 confirmation
Conf. 1 : streaking on selective medium + visual reading
Conf. 2 : streaking on selective medium + API Listeria
Conf. 3 : streaking on selective medium + RAPIDEC L-mono
Conf. 4 : streaking on selective medium + Fast Rhamnose
Conf. 5 : streaking on selective medium + ISO 11290-1 confirmation (case n°1)
chromID L. mono: w=white colonies / b=blue colonies

CP : Number of amplification cycles necessary to obtain a statistically significant fluorescent signal with regard to the background noise
MP : Temperature for which 50% of the double strand DNA is separeted

MEAT PRODUCTS

Type	Sample N°	Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP									AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage 3 days at 5°C					Confirmation ISO 16140-2 on MA negative samples		Concordance RM /AM	
				Half Fraser		Fraser		Conf.	Final result	CP	MP	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	CP	MP	GENE -UP	CP	MP	GENE UP result	Conf. 1	Final result	Conf. 5	Final result	Final result	After a 3-day storage at 5°C
				ALOA	PALCAM	ALOA	PALCAM						ALOA												ALOA					
a-	GL22	Cooked pig's feet	nc	0 L	0 L	0 Ø	0 M	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
a-	GL26	Raw veal cutlet	/	1h- Ø	1 Ø	4h- Ø	4 Ø	- (L. w)	**A**	0,00	0,00	-	4h- Ø	/	/	/	- (L. in)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
a-	GL27	Raw pork chop (loin)	/	2h- Ø	2 Ø	4h- Ø	4 Ø	- (L. in)	**A**	0,00	0,00	-	3h- Ø	/	/	/	- (L. in)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
a-	GL28	Raw boneless pork tenderloin	/	1h- Ø	1 L	3h- Ø	4 M	- (L. in)	**A**	0,00	0,00	-	3h- L	/	/	/	- (L. in)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
a-	GL39	Raw marinated turkey cutlet	/	2h- L	2 L	4h- Ø	3 Ø	- (L. w)	**A**	0,00	0,00	-	4h- Ø	- (L. w)	/	/	- (L. w)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
a-	GL47	Raw turkey cutlet	/	1h- L	1 L	3h- Ø	3 Ø	- (L. w)	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
a-	GL48	Raw chicken cutlet	/	0 L	0 L	3h- Ø	0 H	- (L. w)	**A**	29,93	65,16	+	3h- Ø	- (L. w)	-	-	- (L. w)	**A (FP)**	30,62	65,26	+	31,96	64,79	+	3h- Ø	**A (FP)**	-	A	NA (PP)	NA (PP)
a-	GL50	Raw leg of lamb	/	1h+ Ø	1 Ø	4h+ Ø	4 Ø	- (L. iv)	**A**	0,00	0,00	-	3h+ Ø	- (L. iv)	L. iv	-	- (L. iv)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
a-	GL53	Raw beef bavette	/	0 L	0 M	0 Ø	0 L	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL135	Raw matrinated beef (nut oil, balsamic vinegar)	/	0 L	0 L	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL136	Raw matrinated beef (lemon olive oil)	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL137	Raw marinated beef (parmiggiano, tomatoes)	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**		**A**	NA	/
a-	GL139	Raw turkey cutlet	/	2h- L	2 L	3h- Ø	3 Ø	- (L. w)	**A**	0,00	0,00	-	4h- L	- (L. w)	/	/	- (L. w)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL140	Raw chicken fillet	/	0 L	0 M	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL142	Raw beef tenderloin	/	0 Ø	0 H	0 Ø	0 M	-	**A**	0,00	0,00	-	3h- Ø	- (L. w)	/	/	- (L. w)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL143	Raw beef sirloin	/	1h- Ø	1 L	3h- Ø	3 Ø	- (L. w)	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL145	Raw beef tenderloin	/	0 Ø	0 L	0 Ø	0 L	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL146	Raw beef meat	/	0 Ø	0 L	0 Ø	0 L	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL147	Raw beef rumsteak	/	0 L	0 L	0 Ø	0 L	-	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL148	Raw horse striploin	/	0 Ø	0 M	0 Ø	0 L	-	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL151	Raw veal steaks	/	1h- Ø	1 L	3h- L	3 L	- (L. w)	**A**	0,00	0,00	-	4h- Ø	- (L. w)	/	/	- (L. w)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL152	Raw beef rib steak	/	0 Ø	0 L	0 Ø	0 M	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL153	Raw pork meat	/	1h- Ø	1 M	4h- Ø	4 Ø	- (L. w)	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL154	Raw pork loin chop	/	0 L	0 L	0 L	0 M	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL155	Raw lamb chops	/	0 Ø	0 L	0 Ø	0 L	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL156	Raw veal chop	/	0 Ø	0 L	0 Ø	0 L	-	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL157	Raw pork chop	/	1h- L	1 L	4h- Ø	4 Ø	- (L. w)	**A**	0,00	0,00	-	2h- Ø	- (L. w)	/	/	- (L. w)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL158	Raw pork ribs	/	1h- L	1 M	3h- L	3 L	- (L. w)	**A**	0,00	0,00	-	3h- L	- (L. w)	/	/	- (L. w)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
a+	GL5	Boneless skinless chicken leg	nc	3h+ Ø	2 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	18,57	64,76	+	4h+ Ø	+ (L. m)	L. iv	L. m	+ (L. m)	**P**	19,69	64,79	+	19,10	64,66	+	4h+ L	**P**	/	/	PA	PA
a+	GL8	Duck wings (raw)	nc	2h+ Ø	2 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	17,23	62,23	+	4h+ Ø	+ (L. m)	L. m	L. m	+ (L. m)	**P**	18,67	61,98	+	17,05	61,98	+	4h- Ø	**P**	/	/	PA	PA
a+	GL12	Pork's cartilage (raw)	nc	3h+ L	3 Ø	4h+ L	3 M	+ (L. m)	**P**	22,86	64,82	+	4h+ Ø	+ (L. m)	L. iv	L. m	+ (L. m)	**P**	23,75	65,02	+	22,78	64,86	+	4h+ M	**P**	/	/	PA	PA
a+	GL16	Raw chicken	nc	2h+ Ø	2 Ø	4h+ L	4 Ø	+ (L. m)	**P**	17,33	64,96	+	4h+ Ø	+ (L. m)	L. m	L. m	+ (L. m)	**P**	18,11	65,25	+	18,88	63,98	+	4h+ L	**P**	/	/	PA	PA
a+	GL25	Raw boneless leg of lamb	nc	1h+ Ø	1 Ø	4h+ Ø	4 M	+ (L. m)	**P**	0,00	0,00	-	4h- Ø	/	/	/	/	**A**	0,00	0,00	-	0,00	0,00	-	2h- Ø	**A**	-	A	ND	ND
a+	GL54	Raw horse rumsteak	nc	1h+ Ø	0 L	4h+ 1h- Ø	4 Ø	+ (L. w + L. m)	**P**	30,18	64,31	+	4h+ Ø	+ (L. m)	L. m	L. m	+ (L. m)	**P**	28,32	65,01	+	26,28	64,56	+	4h+ Ø	**P**	/	**/**	PA	PA
a+	GL138	Raw turkey filet mignon	nc	2h+/1h- L	3 L	3h+ 2h- Ø	2 Ø	+ (L. in + L. m)	**P**	24,16	64,72	+	4h+ 1h- L	+ (L. in + L. m)	L. m	L. m	+ (L. in + L. m)	**P**	23,56	64,75	+	23,76	65,04	+	4h+ 2h- Ø	**P**	/	**/**	PA	PA
a+	GL141	Raw chicken cutlet	nc	2h- L	1 L	2h- L	2 L	- (L. w)	**A**	25,00	65,18	+	4h+ Ø	+ (L. w + L. m)	L. m	L. m	+ (L. w + L. m)	**P**	23,64	64,76	+	22,32	65,01	+	4h+ L	**P**	/	**/**	PD	PD
a+	GL144	Raw lamb	nc	2h+ Ø	2 L	3h+ 2h- L	4 L	+ (L. in + L. m)	**P**	27,83	64,94	+	3h+ 1h- Ø	+ (L. in + L. m)	L. m	L. m	+ (L. in + L. m)	**P**	22,93	64,85	+	27,18	65,17	+	2h+ 1h- Ø	**P**	/	**/**	PA	PA

Type	Sample N°	Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP									AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage 3 days at 5°C					Confirmation ISO 16140-2 on MA negative samples		Concordance RM /AM	
				Half Fraser		Fraser		Conf.	Final result	CP	MP	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	CP	MP	GENE -UP	CP	MP	GENE UP result	Conf. 1	Final result	Conf. 5	Final result	Final result	After a 3-day storage at 5°C
				ALOA	PALCAM	ALOA	PALCAM						ALOA												ALOA					
a+	GL149	Sliced raw horse	nc	2h+ Ø	3 L	3h+ 1h-Ø	4 Ø	+ (L. in + L. m)	**P**	0,00	0,00	-	3h- Ø	- (L. in)	/	/	- (L. in)	**A**	0,00	0,00	+	0,00	0,00	-	2h- Ø	**A**	-	**A**	ND	ND
a+	GL150	Raw lamb shoulder	nc	1h+ L	1 L	3h+ 1h-M	3 M	+ (L. in + L. m)	**P**	29,56	63,24	+	3h+ 2h-M	+ (L. in + L. m)	L. m	L. m	+ (L. in + L. m)	**P**	29,54	64,98	-	29,51	65,39	+	2h+ 1h- L	**P**	/	**/**	PA	PA
a+	GL159	Raw beef tenderloin	se	0 Ø	0 L	0 Ø	0 L	-	**A**	23,96	64,94	+	4h+ Ø	+ (L. m)	L. m	L. m	+ (L. m)	**P**	24,01	64,81	+	19,49	65,01	+	4h+ Ø	**P**	/	**/**	PD	PD
a+	GL160	Raw turkey filet mignon	se	2h+/1h-Ø	3 Ø	1h+/2h-Ø	3 Ø	+ (L. m)	**P**	23,14	64,78	+	4h+ 1h-Ø	+ (L. in + L. m)	L. m	L. m	+ (L. in + L. m)	**P**	22,53	64,83	+	22,62	64,80	+	4h+ Ø	**P**	/	**/**	PA	PA
b-	GL3	Nem Chua (raw)	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
b-	GL18	Cooked minced meat	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	2h- Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
b-	GL24	Frozen minced meat with oignons	/	3h- M	3 M	3h- L	0 H	- (L. w)	**A**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
b-	GL32	Montbéliard sausages (smoked)	se	0 Ø	0 L	0 Ø	0 M	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
b-	GL44	Pork roast (cooked)	/	0 Ø	0 Ø	0 Ø	0 L	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
b-	GL45	Duck flavored paste with Porto	/	0 Ø	0 L	0 L	0 M	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
b-	GL46	Chicken rillettes	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
b-	GL49	Raw boneless lamb	/	1h+ Ø	0 L	4h+ Ø	0 H	- (L. iv)	**A**	0,00	0,00	-	3h+ L	- (L. iv)	L. iv	-	- (L. iv)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
b-	GL51	Beef minced meat	/	1h- Ø	1 M	3h- Ø	4 L	- (L. w)	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
b-	GL52	Raw pork tenderloin	/	0 L	0 M	0 L	0 L	-	**A**	0,00	0,00	-	3h- L	- (L. w)	/	/	- (L. w)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
b-	GL55	Raw turkey filet mignon	/	3h- L	3 L	2h- Ø	3 Ø	- (L. w)	**A**	0,00	0,00	-	3h- M	- (L. in)	/	/	- (L. in)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
b-	GL58	Pork meatloaf	/	0 Ø	0 L	0 L	0 L	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
b-	GL61	Small pork sausages	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
b-	GL62	Pork rillettes	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
b+	GL1	Sausage meat	nc	1h+ Ø	1 Ø	4h+ Ø	3 M	+ (L. m)	**P**	26,21	62,02	+	2h+ L	+ (L. m)	L. m	L. m	+ (L. m)	**P**	26,85	61,84	+	23,33	62,30	+	3h+ L	**P**	/	/	PA	PA
b+	GL2	Peking duck (cooked)	nc	2h+/2h-Ø	2 Ø	3h+/1h-Ø	3 Ø	+ (L. w + L.m)	**P**	20,79	61,83	+	3h+/1h-Ø	+ (L. m)	L. m	L. m	+ (L. m)	**P**	21,56	61,88	+	20,20	62,27	+	2h+/2h- Ø	**P**	/	/	PA	PA
b+	GL4	Chinese cooked duck	nc	2h+/1h-Ø	3 Ø	2h+/2h-Ø	4 L	+ (L. w + L.m)	**P**	24,72	62,01	+	4h- Ø	/	/	/	- (L. w)	**P**	25,63	61,99	+	24,43	62,11	+	4h- Ø	**P**	/	/	PA	PA
												Fraser⇨	1h+/2h-Ø	+ (L. m)	L. m	L. m	+ (L. w + L.m)							Fraser□	1h+/3h- Ø					
b+	GL6	Peking duck (raw)	nc	2h+ Ø	2 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	23,13	62,11	+	3h+/1h-Ø	+ (L. m)	L. m	L. m	+ (L. in + L. m)	**P**	24,50	62,20	+	24,09	62,02	+	4h- M	**P**	/	/	PA	PA
																								Fraser□	1h+/3h- L					
b+	GL9	Peking duck (cooked)	nc	3h+ Ø	3 Ø	2h+/1h-M	3 M	+ (L.m)	**P**	18,13	62,09	+	3h+/1h-Ø	+ (L. m)	L. m	L. m	+ (L. m)	**P**	18,66	61,53	+	19,52	60,74	+	4h+/1h- L	**P**	/	/	PA	PA
b+	GL10	Peking duck (raw)	nc	2h+/2h-Ø	2 Ø	4h+ L	4 Ø	+ (L. w + L.m)	**P**	29,55	64,38	+	3h- Ø	/	/	/	- (L. w)	**P**	26,74	64,76	+	18,63	65,31	+	3h- L	**P**	/	/	PA	PA
												Fraser⇨	1h+/2h-Ø	+ (L. m)	L. m	L. m	+ (L. w + L.m)							Fraser□	1h+/2h- Ø					
b+	GL11	Pork rillettes	nc	2h+ M	2 L	4h+ Ø	4 Ø	+ (L. m)	**P**	18,15	64,97	+	4h+ L	+ (L. m)	L. m	L. m	+ (L. m)	**P**	18,77	64,98	+	19,17	64,97	+	4h+ L	**P**	/	/	PA	PA
b+	GL13	Vacuum-packed sausages	nc	2h+ Ø	2 Ø	3h+ Ø	3 M	+ (L. m)	**P**	24,06	61,90	+	3h+ L	+ (L. m)	L. m	L. m	+ (L. m)	**P**	25,13	62,31	+	16,83	62,00	+	4h+ L	**P**	/	/	PA	PA
b+	GL20	Raw chicken preparation	nc	3h+/1h-L	3 L	2h+ Ø	2 M	+ (L. in + L. m)	**P**	21,79	64,62	+	3h+/1h-L	+ (L. m)	L. m	L. m	+ (L. m)	**P**	22,77	64,60	+	25,39	65,18	+	4h+ M	**P**	/	/	PA	PA
b+	GL21	Cooked minced veal	nc	2h+ Ø	2 Ø	4h+ Ø	3 M	+ (L. m)	**P**	18,23	64,53	+	4h+ L	+ (L. m)	L. iv	L. m	+ (L. m)	**P**	18,59	64,70	+	24,82	64,96	+	4h+ L	**P**	/	/	PA	PA
b+	GL23	Raw processed chicken	nc	1h+/3h-L	2 L	2h+/1h-L	0 H	+ (L. w + L.m)	**P**	22,67	64,49	+	1h+/2h-L	+ (L. m)	L. iv	L. m	+ (L. m)	**P**	22,96	64,64	+	22,34	64,78	+	4h+/1h- L	**P**	/	/	PA	PA
c-	GL15	Ham with rind	nc	0 L	0 L	0 L	0 M	-	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL17	Smoked processed veal	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	2h- Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL31	Smoked cured ham	se	0 L	0 M	0 M	0 M	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL40	Ham withoud rind	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL41	Ham with rind	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/

Type	Sample N°	Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP									AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage 3 days at 5°C					Confirmation ISO 16140-2 on MA negative samples		Concordance RM /AM	
				Half Fraser		Fraser		Conf.	Final result	CP	MP	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	CP	MP	GENE -UP	CP	MP	GENE UP result	Conf. 1	Final result	Conf. 5	Final result	Final result	After a 3-day storage at 5°C
				ALOA	PALCAM	ALOA	PALCAM						ALOA												ALOA					
c-	GL42	Chicken breast (cooked)	/	0 Ø	0 Ø	0 L	0 M	-	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL43	Turkey breast (cooked)	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL56	Smoked sausages	/	2h- L	0 H	3h- Ø	3 M	- (L. w)	**A**	0,00	0,00	-	3h- L	- (L. in)	/	/	- (L. in)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL57	Smoked lardons	/	0 L	0 L	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 M	- (L. w)	/	/	- (L. w)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL59	Smoked salami	/	0 Ø	0 L	0 Ø	0 Ø	-	**A**	9,68	0,00	-	0 L	- (L. in)	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL60	Smoked bacon	/	0 L	0 L	4h- Ø	4 Ø	- (L. w)	**A**	9,50	0,00	-	3h- M	- (L. w)	/	/	- (L. w)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL162	Smoked salami	se	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c+	GL7	Ham with rind	nc	1h+/1h- L	1 L	4h+/1h- Ø	4 L	+ (L. in + L. m)	**P**	18,94	64,62	+	2h+/1h- Ø	+ (L. m)	L. m	L. m	+ (L. m)	**P**	19,70	64,73	+	18,89	64,88	+	3h+/1 h- L	**P**	/	/	PA	PA
c+	GL14	Smoked sliced poultry	nc	3h+ Ø	3 Ø	4h+ L	4 Ø	+ (L. m)	**P**	17,13	64,7	+	3h+ Ø	+ (L. m)	L. m	L. m	+ (L. m)	**P**	18,62	65,10	+	15,83	64,90	+	4h+ Ø	**P**	/	/	PA	PA
c+	GL19	Garlic sausage	nc	0 L	0 L	0 L	0 M	-	**A**	32,03	64,73	+	2h+ L	+ (L. m)	L. m	L. m	+ (L. m)	**P**	31,29	65,02	+	28,27	63,06	+	1h+ L	**P**	/	/	PD	PD
c+	GL29	Smoked lardons	se	2h+/1h- M	1 M	4h+/1h- Ø	4 H	+ (L. m)	**P**	26,22	64,36	+	4h+/1h- Ø	+ (L. m)	L. m	L. m	+ (L. in + L. m)	**P**	27,76	64,73	+	25,84	64,02	+	3h+/1 h- Ø	**P**	/	/	PA	PA
c+	GL30	Smoked bacon	se	2h+ L	1 L	4h+/1h- Ø	3 M	+ (L. w + L.m)	**P**	23,57	64,20	+	3h+ L	+ (L. m)	L. m	L. m	+ (L. m)	**P**	24,67	64,69	+	20,46	64,09	+	4h+ Ø	**P**	/	/	PA	PA
c+	GL161	Speck	se	0 Ø	0 L	1h+/2h- Ø	3 Ø	+ (L. m)	**P**	0,00	0,00	-	2h- L	- (L. in)	/	/	- (L. in)	**A**	0,00	0,00	-	0,00	0,00	-	2h- M	**A**	-	**A**	ND	ND
c+	GL163	Ham without rind	se	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	24,86	64,91	+	3h+ Ø	+ (L. m)	L. m	L. m	+ (L. m)	**P**	25,13	64,90	+	22,32	64,80	+	3h+ Ø	**P**	/	**/**	PD	PD
c+	GL164	Ham with rind	se	1h+/1h- Ø	1 Ø	3h+ Ø	3 Ø	+ (L. m)	**P**	20,85	64,91	+	4h+ Ø	+ (L. m)	L. m	L. m	+ (L. m)	**P**	21,14	64,86	+	16,92	64,81	+	4h+ Ø	**P**	/	**/**	PA	PA

DAIRY PRODUCTS

Type	Sample N°	Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP									AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage of the broth 3 days at 5°C					Confirmation ISO 16140-2 : 2015 on MA negative samples		Concordance RM /AM	
				Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE-UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result				CP	MP	GENE-UP result	Conf. 1	Final result	Conf. 5	Final result	Final result	After a 3-day storage at 5°C
				ALOA	Palcam	ALOA	Palcam						ALOA						CP	MP	GENE-UP				ALOA					
a-	GL33	Raw milk cheese 1	/	0 M	0 L	2h- M	3 H	- (L. in)	A	0,00	0,00	-	0 H	/	/	/	/	A	0,00	0,00	-	/	/	/	/	/	-	A	NA	/
a-	GL34	Raw milk cheese 2	/	0 L	0 L	0 L	0 L	-	A	0,00	0,00	-	0 H	/	/	/	/	A	0,00	0,00	-	/	/	/	/	/	-	A	NA	/
a-	GL35	Raw milk cheese 3	/	0 M	0 L	0 M	0 M	-	A	0,00	0,00	-	0 H	/	/	/	/	A	0,00	0,00	-	/	/	/	/	/	-	A	NA	/
a-	GL36	Raw milk cheese 4	/	0 L	0 M	0 L	0 L	-	A	0,00	0,00	-	0 M	/	/	/	/	A	0,00	0,00	-	/	/	/	/	/	-	A	NA	/
a-	GL68	Savoie tomme cheese (raw milk)	/	0 Ø	0 Ø	0 L	0 Ø	-	A	0,00	0,00	-	0 L	/	/	/	/	A	0,00	0,00	-	/	/	/	/	/	-	A	NA	/
a-	GL69	Comté cheese (raw milk)	/	0 L	0 L	0 M	0 L	-	A	0,00	0,00	-	0 L	/	/	/	/	A	0,00	0,00	-	/	/	/	/	/	-	A	NA	/
a-	GL70	Goat cheese Cœur de chèvre (raw milk)	/	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0,00	-	0 H	/	/	/	/	A	0,00	0,00	-	/	/	/	/	/	-	A	NA	/
a-	GL71	Goat cheese La Croseta (raw milk)	/	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0,00	0,00	-	0 L	/	/	/	/	A	0,00	0,00	-	/	/	/	/	/	-	A	NA	/
a-	GL78	Organic emmental cheese 1 (raw milk)	/	0 Ø	0 Ø	0 L	0 Ø	-	A	0,00	0,00	-	0 L	/	/	/	/	A	0,00	0,00	-	/	/	/	/	/	-	A	NA	/
a-	GL79	Salers cheese (raw milk)	/	0 L	0 L	0 L	0 L	-	A	0,00	0,00	-	0 Ø	/	/	/	/	A	0,00	0,00	-	/	/	/	/	/	-	A	NA	/
a-	GL80	Brie de Meaux cheese (raw milk)	/	0 L	0 L	0 L	0 L	-	A	0,00	0,00	-	0 L	/	/	/	/	A	0,00	0,00	-	/	/	/	/	/	-	A	NA	/
a-	GL81	Neuchâtel cheese (raw milk)	/	0 L	0 L	0 Ø	0 L	-	A	0,00	0,00	-	0 H	/	/	/	/	A	0,00	0,00	-	/	/	/	/	/	-	A	NA	/
a-	GL82	Camembert cheese (raw milk)	/	0 Ø	0 Ø	0 M	0 H	-	**A**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
a-	GL85	Organic Cabécou cheese 1 (raw milk)	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
a-	GL112	Cantal cheese (cow raw milk)	/	1h- Ø	1 L	3h- Ø	3 Ø	- (L. in)	**A**	0,00	0,00	-	3h- Ø	- (L. in)	/	/	- (L. in)	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
a-	GL113	Abondance cheese (cow raw milk)	/	1h- L	1 Ø	2h- Ø	3 Ø	- (L. in)	**A**	0,00	0,00	-	4h- Ø	- (L. in)	/	/	- (L. in)	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
a-	GL118	Emmental cheese (cow raw milk)	/	0 Ø	0 Ø	0 Ø	0 L	-	**A**	0,00	0,00	-	2h+ L	- (L. iv)	- (L. iv)	+	- (L. iv)	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
a-	GL119	Le rondin cheese (goat raw milk)	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
a-	GL120	Rocamadour chhese (goat raw milk)	/	1h- Ø	1 Ø	3h- Ø	3 Ø	- (L. se)	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
a-	GL121	Moulis cheese (cow raw milk)	/	0 Ø	0 L	0 Ø	0 L	-	**A**	0,00	0,00	-	0 L	-	-	-	-	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
a-	GL122	Cabri cheese (goat raw milk)	/	0 Ø	0 L	0 Ø	0 L	-	**A**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
a-	GL168	Camembert cheese (cow raw milk)	/	0 L	0 L	0 L	0 H	-	**A**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
a-	GL176	Organic goat raw milk cheese	/	0 Ø	0 Ø	0 Ø	0 L	-	**A**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
a+	GL103	Organic emmental cheese 2 (raw milk)	se	4h+ Ø	3 Ø	2h+ Ø	2 L	+ (L. m)	**P**	18,60	65,04	+	2h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	15,50	65,61	+	18,66	65,33	+	2h+ M	**P**	/	/	PA	PA
a+	GL104	Savoie tomme cheese (raw milk)	se	4h+ Ø	4 Ø	3h+ Ø	3 L	+ (L. m)	**P**	26,95	64,66	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	26,87	65,10	+	29,63	60,17	+	4h+ Ø	**P**	/	/	PA	PA
a+	GL105	Comté cheese (raw milk)	se	4h+ Ø	3 L	3h+ Ø	4 L	+ (L. m)	**P**	16,69	65,17	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	18,09	65,44	+	18,60	65,68	+	4h+ Ø	**P**	/	/	PA	PA
a+	GL106	Goat cheese Cœur de chèvre (raw milk)	se	2h+ Ø	2 Ø	3h+ Ø	4 Ø	+ (L. m)	**P**	27,82	65,07	+	1h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	24,49	65,40	+	0,00	53,10	+ / Fraser⇨	0 L / 0 L	**A (FP)**	/	/	PA	ND (PP)
a+	GL107	Goat cheese La Croseta (raw milk)	se	2h+ Ø	2 Ø	3h+ Ø	3 L	+ (L. m)	**P**	31,74	65,21	+	1h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	32,58	65,55	+	0,00	48,63	+	1h+ L	**P**	/	/	PA	PA
a+	GL108	Neuchâtel cheese (raw milk)	nc	1h+ Ø	1 Ø	2h+ Ø	3 Ø	+ (L. m)	**P**	28,47	65,00	+	3h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	30,60	65,37	+	26,67	65,49	+	4 h+ L	**P**	/	/	PA	PA
a+	GL109	Camembert cheese (raw milk)	nc	4h+ Ø	3 M	3h+ Ø	3 L	+ (L. m)	**P**	21,95	65,09	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	22,14	65,25	+	22,51	65,24	+	4h+ Ø	**P**	/	/	PA	PA
a+	GL123	Cabri cendré cheese (goat raw milk)	se	1h+ Ø	1 L	2h+ Ø	2 Ø	+ (L. m)	**P**	33,19	65,05	+	1h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	33,30	65,03	+	33,26	65,42	+	1h+ L	**P**	/	/	PA	PA
a+	GL167	Emmental cheese (cow raw milk)	nc	0 Ø	0 Ø	0 L	0 L	-	**A**	26,63	64,36	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	26,98	64,54	+	23,58	64,66	+	4h+ Ø	**P**	/	/	PD	PD
a+	GL171	Goat raw milk cheese	nc	1h+ L	1 L	1h+ Ø	2 L	+ (L. m)	**P**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	0,00	0,00	-	0 L	**A**	-	**A**	ND	ND
a+	GL172	Cow raw milk cheese 1	nc	1h+ L	1 L	3h+ H	3 L	+ (L. m)	**P**	28,59	64,71	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	29,10	64,96	+	28,77	65,03	+	4h+ Ø	**P**	/	/	PA	PA
a+	GL174	Cow raw milk cheese 2	nc	1h+ Ø	1 Ø	3h+ Ø	3 L	+ (L. m)	**P**	22,85	64,82	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23,17	64,93	+	22,06	65,05	+	4h+ Ø	**P**	/	/	PA	PA
b-	GL86	Fermented ribot milk	/	0 Ø	0 L	0 L	0 H	-	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
b-	GL87	Fermented ribot skimmed-milk 1	/	0 Ø	0 Ø	0 M	0 H	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
b-	GL88	Fermented ribot skimmed-milk 2	/	0 Ø	0 L	0 M	0 H	-	**A**	10,53	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
b-	GL89	Micro-filtered milk 1	/	0 Ø	0 Ø	0 M	0 H	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/
b-	GL90	Micro-filtered milk 2	/	1h- Ø	1 L	4h- Ø	4 Ø	- (L. in)	**A**	0,00	0,00	-	3h- Ø	- (L. in)	- (L. in)	-	- (L. in)	**A**	0,00	0,00	-	/	/	/	/	/	-	**A**	NA	/

Type	Sample N°	Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP									AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage of the broth 3 days at 5°C					Confirmation ISO 16140-2 : 2015 on MA negative samples		Concordance RM /AM	
				Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE-UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result				CP	MP	GENE-UP result	Conf. 1	Final result	Conf. 5	Final result	Final result	After a 3-day storage at 5°C
				ALOA	Palcam	ALOA	Palcam						ALOA						CP	MP	GENE-UP				ALOA					
b-	GL91	Cow raw milk 1	/	0 Ø	0 Ø	0 Ø	0 M	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
b-	GL92	Raw milk butter	/	0 L	0 Ø	1h- L	0 L	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
b-	GL93	Soft churned raw milk butter	/	0 L	0 L	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
b-	GL94	Salted churned raw milk butter	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	10,25	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
b-	GL182	Fermented ribot milk	/	1h- Ø	1 L	3h- L	4 M	- (L. w)	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
b+	GL110	Fermented ribot milk	se	2h+ Ø	3 L	3h+ Ø	3 L	+ (L. m)	**P**	22,55	65,10	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23,26	65,46	+	19,30	65,34	+	4h+ Ø	**P**	/	**/**	PA	PA
b+	GL124	Raw milk butter	se	0 L	0 L	0 M	0 L	-	**A**	23,72	65,10	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23,82	64,90	+	19,48	65,16	+	4h+ Ø	**P**	/	**/**	PD	PD
b+	GL125	Soft churned raw milk butter	se	0 L	0 L	0 Ø	0 L	-	**A**	25,68	65,26	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	25,56	64,88	+	19,85	65,16	+	4h+ Ø	**P**	/	**/**	PD	PD
b+	GL126	Salted churned raw milk butter	se	1h+ Ø	1 Ø	3h+ Ø	3 Ø	+ (L. m)	**P**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	0,00	0,00	-	0 H	**A**	-	**A**	ND	ND
b+	GL128	Fermented ribot milk	se	0 Ø	0 L	1h- L	1 M	-	**A**	23,79	64,99	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	24,15	64,70	+	20,97	65,10	+	4h+ Ø	**P**	/	**/**	PD	PD
b+	GL130	Micro-filtered skimmed milk	se	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	25,92	65,05	+	2h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	26,44	64,68	+	24,24	65,01	+	2h+ Ø	**P**	/	**/**	PD	PD
b+	GL131	Micro-filtered milk	se	1h+ Ø	1 Ø	3h+ Ø	4 Ø	+ (L. m)	**P**	23,50	64,98	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23,84	64,81	+	21,74	64,99	+	3h+ Ø	**P**	/	**/**	PA	PA
b+	GL133	Fermented ribot milk	se	1h+ Ø	1 Ø	4h+ Ø	3 Ø	+ (L. m)	**P**	24,94	62,27	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	25,13	62,09	+	20,08	62,37	+	4h+ Ø	**P**	/	**/**	PA	PA
b+	GL134	Fermented ribot milk	se	1h+ Ø	1 L	3h+ Ø	4 Ø	+ (L. m)	**P**	23,67	62,70	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23,12	62,15	+	18,88	62,24	+	4h+ Ø	**P**	/	**/**	PA	PA
b+	GL178	Raw milk butter	nc	1h+ L	1 Ø	3h+ Ø	3 Ø	+ (L. m)	**P**	29,33	65,23	+	3h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	29,62	65,59	+	29,13	65,29	+	2h+ L	**P**	/	**/**	PA	PA
c-	GL37	Churned butter	/	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0,00	0,00	-	0 L	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL38	Pasteurized milk	/	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0,00	0,00	-	0 Ø	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL63	Vanilla ice-cream 1	/	0 Ø	0 L	0 M	0 H	-	A	0,00	0,00	-	0 M	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL64	Caramel ice-cream	/	0 L	0 L	0 L	0 M	-	A	0,00	0,00	-	0 M	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL65	Chocolate ice-cream 1	/	0 M	0 M	0 M	0 H	-	A	0,00	0,00	-	0 H	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL66	Cream cheese (pasteurized milk)	/	0 Ø	0 L	0 M	0 H	-	A	0,00	0,00	-	0 H	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL67	Montagnolo cheese (pasteurized milk)	/	0 L	0 L	0 M	0 L	-	A	0,00	0,00	-	0 H	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL72	Tzatziki	/	0 M	0 M	2h- M	2 H	- (L. s)	A	0,00	0,00	-	0 H	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL73	Cream cheese garlic and herbs	/	0 M	0 M	0 M	0 H	-	A	0,00	0,00	-	0 H	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL74	Trout and cream cheese	/	0 Ø	0 L	0 M	0 H	-	A	0,00	0,00	-	0 M	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL75	Strawberry milk drink	/	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0,00	0,00	-	0 Ø	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL76	Chocolate milk drink	/	0 Ø	0 Ø	0 M	0 H	-	A	0,00	0,00	-	0 M	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL77	Nature yoghurt	/	0 Ø	0 L	0 M	0 H	-	A	0,00	0,00	-	0 M	/	/	/	/	A	0,00	0,00	-	/	/	/	/	**/**	-	A	NA	/
c-	GL83	Sweet butter (pasteurized milk)	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL84	Caramel pudding	/	0 Ø	0 M	0 L	0 H	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL95	Nougat ice-cream	/	0 Ø	0 L	0 M	0 H	-	**A**	11,43	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL96	Vanilla ice-cream 2	/	0 Ø	0 L	0 M	0 M	-	**A**	10,38	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL97	Chocolate ice-cream 2	/	0 M	0 M	0 M	0 H	-	**A**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL98	Tzatziki	/	2h- M	0 M	4h- Ø	3 M	-	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL111	Ewe cheese (pasteurized milk)	/	1h- L	1 L	2h- Ø	3 L	- (L. in)	**A**	0,00	0,00	-	2h- H	- (L. in)	/	/	- (L. in)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL114	Corsica cheese (ewe pasteurized milk)	/	1h- L	1 L	3h- Ø	3 L	- (L. w)	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL115	Cottage cheese (pasteurized milk)	/	1h- L	1 Ø	3h- Ø	3 L	- (L. w)	**A**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL116	Munster cheese (cow pasteurized milk)	/	0 L	0 L	0 Ø	0 L	-	**A**	0,00	0,00	-	0 L	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL117	Lingot d'or cheese (cow pasteurized milk)	/	0 L	0 L	3h+ Ø	3 L	- (L. iv)	**A**	0,00	0,00	-	2h+ L	- (L. iv)	- (L. iv)	+	- (L. iv)	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL169	Lingot d'or cheese (cow pasteurized milk)	/	0 L	0 L	3h- Ø	3 L	- (L. in)	**A**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL170	Cottage cheese (pasteurized milk)	/	1h- L	1 L	3h- L	3 L	- (L. in)	**A**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL175	Cow pasteurized milk cheese	/	0 L	0 L	0 Ø	0 Ø	-	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/

Type	Sample N°	Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP									AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage of the broth 3 days at 5°C					Confirmation ISO 16140-2 : 2015 on MA negative samples		Concordance RM /AM	
				Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE-UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	CP	MP	GENE-UP	CP	MP	GENE-UP result	Conf. 1	Final result	Conf. 5	Final result	Final result	After a 3-day storage at 5°C
				ALOA	Palcam	ALOA	Palcam						ALOA												ALOA					
c-	GL179	Pudding	/	1h- Ø	1 L	4h- L	3 L	- (L. w)	**A**	0,00	0,00	-	0 M	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL180	Ewe pasteurized milk cheese	/	1h- L	1 L	3h- L	4 M	- (L. w)	**A**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL181	Pateurized skimmed milk	/	0 Ø	0 Ø	0 Ø	0 L	-	**A**	0,00	0,00	-	2h- L	- (L. w / L. s)	/	/	- (L. w)	A	0,00	0,00	-	/	/	/	/	**/**	-	**A**	NA	/
c+	GL99	Cream cheese garlic and herbs	se	4h+ Ø	4 L	3h+ Ø	3 M	+ (L. m)	**P**	17,92	65,11	+	4 h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	18,54	65,06	+	17,74	65,27	+	4 h+ L	**P**	/	**/**	PA	PA
c+	GL100	Cream cheese (pasteurized milk)	se	4h+ Ø	4 L	4h+ Ø	2 M	+ (L. m)	**P**	19,15	65,17	+	4 h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	20,12	65,09	+	19,81	65,18	+	4 h+ L	**P**	/	**/**	PA	PA
c+	GL101	Nature yoghurt	se	4h+ Ø	4 L	4h+ Ø	4 L	+ (L. m)	**P**	18,32	65,11	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	19,22	65,13	+	16,92	65,16	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL102	Montagnolo cheese (pasteurized milk)	se	4h+ Ø	4 Ø	3h+ Ø	4 L	+ (L. m)	**P**	18,18	65,27	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	18,48	65,28	+	17,72	65,09	+	4 h+ L	**P**	/	**/**	PA	PA
c+	GL127	Mascarpone	se	2h+ Ø	1 Ø	3h+ Ø	2 Ø	+ (L. m)	**P**	19,48	65,28	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	19,34	64,98	+	16,99	65,01	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL129	Pasteurized skimmed milk	se	1h+ Ø	1 Ø	3h+ Ø	3 Ø	+ (L. m)	**P**	0,00	0,00	-	0 Ø	/	/	/	/	**A**	0,00	0,00	-	0,00	0,00	-	0 Ø	**A**	-	**A**	ND	ND
c+	GL132	Raw milk	se	1h+ Ø	1 Ø	2h+ Ø	3 Ø	+ (L. m)	**P**	0,00	51,32	+	0 Ø	/	/	/	/	**A (FP)**	0,00	0,00	-	28,32	65,42	+	0 L	**A (FP)**	-	**A**	ND (PP)	ND (PP)
												Fraser⇨	0 Ø	/	/	/	/							Fraser⇨	0 Ø					
c+	GL165	Pistachio ice-cream	se	2h+ Ø	1 L	3h+ Ø	3 L	+ (L. m)	**P**	21,79	64,84	+	3h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	21,91	64,86	+	19,78	64,77	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL166	Coffee ice-cream	se	2h+ Ø	1 L	3h+ L	3 L	+ (L. m)	**P**	29,47	65,49	+	2h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	29,69	65,29	+	30,00	65,19	+	2h+ Ø	**P**	/	**/**	PA	PA
c+	GL173	Ewe pasteurized milk cheese	nc	1h+ L	1 L	3h+ Ø	3 Ø	+ (L. m)	**P**	0,00	0,00	-	0 H	/	/	/	/	**A**	0,00	0,00	-	0,00	0,00	-	0 H	**A**	-	**A**	ND	ND
c+	GL177	Mascarpone	nc	1h+ Ø	1 Ø	3h+ Ø	3 Ø	+ (L. m)	**P**	26,36	64,98	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	26,79	65,34	+	24,67	64,89	+	4h+ Ø	**P**	/	**/**	PA	PA

DAIRY PRODUCTS : EXTENSION 2021

Type	Sample N°	Product (french name)	Product	Contamination	RM: ISO 11290-1 #						AM: GENE-UP® LMO2																			Confirmation ISO 16140-2 on MA negative samples	
											AM: GENE UP - Protocol ③ for 22h at 37°C										AM: GENE UP after storage of the lysates 72h at 5°C			AM: GENE UP after storage of the broth 72h at 5°C					Agreement 72h	Agreement 72h lysate		
					Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE-UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	agreement 22h	CP	MP	Final Result 72h lysate	CP	MP	Result	Conf. 1	Final result 72h			ALOA	Final result
					ALOA	Palcam	ALOA	Palcam						ALOA													ALOA				
a	1	Tomme d'Espagne	Raw milk cheese	se	-	-	-	-	/	-	35,82	64,72	+	-	/	/	/	/	+	PD	40,00	65,04	+	36	65,33	+	-	+	PD	PD	+ (h+)	+
a	2	Fromage à Pâte dure	Raw milk cheese	se	-	-	-	-	/	-	/		-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
a	3	Camenbert	Raw milk cheese	/	-	-	-	-	/	-	/		-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
a	4	Bûche de chèvre	Raw milk cheese	/	+ (h-)	-	-	-	/	-	/		-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
a	5	Fromage italien	Raw milk cheese	se	-	-	+ (h+)	-	L.mono	+	33,6	64,36	+	+ (h+)	L.mono	+	+	+	+	PA	34,08	64,38	+	32,74	64,39	+	+	+	PA	PA	/	/
a	6	Camembert	Raw milk cheese	se	+ (h+)	+	+ (h+)	+	L.mono	+	32,7	64,11	+	+ (h+)	L.mono	+	+	+	+	PA	31,96	64,21	+	32,61	64,31	+	-	+	PA	PA	/	/
a	8	Fromage à Pâte dure	Raw milk cheese	se	+ (h+)	-	+ (h+)	+	L.mono	+	/	/	-	-	/	/	/	/	-	ND	/	/	-	/	/	-	-	-	ND	ND	-	-
a	9	Camenbert	Raw milk cheese	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	+ (h+)	- (L.iv)
a	10	Bûche de chèvre	Raw milk cheese	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
a	11	Fromage italien	Raw milk cheese	se	+ (h+)	+	+ (h+)	+	L.mono	+	34,3	61,81	+	+ (h+)	L.mono	+	+	+	+	PA	34,04	61,79	+	33,99	61,68	+	+	+	PA	PA	/	/
a	12	Camembert	Raw milk cheese	se	+ (h-)	+	+ (h-)	+	L. innocua	-	34,59	61,35	+	+ (h+)	L.mono	+	+	+	+	PD	33,00	61,53	+	35,76	61,39	+	+	+	PD	PD	/	/
a	13	Roquefort Auchan	Raw milk cheese	se	+ (h+)	+	+ (h+)	+	L.mono	+	33,35	61,48	+	+ (h+)	L.mono	+	+	+	+	PA	32,25	61,57	+	34,98	61,47	+	+	+	PA	PA	/	/
a	14	Brie de maux Auchan	Raw milk cheese	se	+ (h+)	+	+ (h+)	+	L.mono	+	36,99	61,63	+	+ (h+)	L.mono	+	+	+	+	PA	35,03	61,83	+	40	61,2	+	+	+	PA	PA	/	/
a	17	Roquefort société	Raw milk cheese	se	+ (h- & h+)	+	+ (h- & h+)	+	L.mono	+	25	61,25	+	+ (h+)	L.mono	+	+	+	+	PA	24,27	61,36	+	27,83	61,73	+	+	+	PA	PA	/	/
a	47	Roquefort	Raw milk cheese	se	+ (h+)	+	+ (h+)	+	L.mono	+	27,51	61,19	+	+ (h+)	L.mono	+	+	+	+	PA	26,84	61,08	+	23,16	61,24	+	+	+	PA	PA	/	/
a	57	Fromage lait cru de chèvre	Raw milk cheese	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
a	58	Fromage lait cru de chèvre	Raw milk cheese	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-		NA	NA	-	-
a	59	St maure de touraine	Raw milk cheese	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
a	60	Caillé de chèvre	Raw milk cheese	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
a	61	Chèvre frais	Raw milk cheese	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
a	79	Fromage de chèvre Pouligny	Raw milk cheese	CN	+ (h+)	+	+ (h+)	+	L.mono	+	25.84	52.98	+	+ (h+)	L.mono	+	+	+	+	PA	24.57	61.40	+	24.57	61.24	+	+	+	PA	PA	/	/
a	80	Vacherin	Raw milk cheese	CN	+ (h+)	+	+ (h+)	+	L.mono	+	19.99	52.51	+	+ (h+)	L.mono	+	+	+	+	PA	19.32	64.28	+	18.89	64.31	+	+	+	PA	PA	/	/
b	16	Lait de chèvre	Raw goat milk	/	+ (h-)	+	+ (h-)	+	L.seelegeri	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
b	19	Lait cru de chèvre	Raw goat milk	se	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
b	20	lait cru de chèvre	Raw goat milk	se	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
b	21	Yaourt lait cru de vache	Raw cow's milk yogurt	se	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
b	22	Faisselle de chèvre	Cottage cheese	se	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
b	23	Lait cru de vache	Raw cow milk	se	-	-	-	-	/	-	33,72	60,92	+	+ (h+)	L.mono	+	+	+	+	PD	33,68	60,94	+	33,49	61,4	+	+	+	PD	PD	/	/
b	24	Faisselle de chèvre	Cottage cheese	se	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
b	26	Lait cru de chèvre	Raw goat milk	se	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
b	27	Yaourt lait cru de vache	Raw cow's milk yogurt	se	+ (h+)	+	+ (h+)	+	L.mono	+	30,88	61,22	+	+ (h+)	L.mono	+	+	+	+	PA	30,85	60,92	+	26,92	61,09	+	+	+	PA	PA	/	/
b	28	Faisselle de chèvre	Cottage cheese	se	+ (h+)	+	+ (h+)	+	L.mono	+	26,45	61,13	+	+ (h+)	L.mono	+	+	+	+	PA	62,15	61,08	+	22,5	61,4	+	+	+	PA	PA	/	/
b	29	Lait cru de vache	Raw cow milk	se	+ (h+)	+	+ (h+)	+	L.mono	+	27,07	61,19	+	+ (h+)	L.mono	+	+	+	+	PA	37,35	61,07	+	23,36	61,19	+	+	+	PA	PA	/	/
b	30	Lait cru de chèvre	Raw goat milk	se	+ (h+)	+	+ (h+)	+	L.mono	+	24,96	61,12	+	+ (h+)	L.mono	+	+	+	+	PA	24,83	60,90	+	25,5	61,36	+	+	+	PA	PA	/	/
b	31	Lait cru de chèvre	Raw goat milk	CN	+ (h+)	+	+ (h+)	+	L.mono	+	18,26	61,02	+	+ (h+)	L.mono	+	+	+	+	PA	18,19	61,00	+	19,13	61,12	+	+	+	PA	PA	/	/
b	32	lait cru de chèvre	Raw goat milk	CN	+ (h+)	+	+ (h+)	+	L.mono	+	18,5	61,22	+	+ (h+)	L.mono	+	+	+	+	PA	18,21	61,09	+	19,76	61,24	+	+	+	PA	PA	/	/
b	62	lait cru de brebis	Raw ewe milk	se	+ (h+)	+	+ (h+)	+	L.mono	+	20,67	60,79	+	+ (h+)	L.mono	+	+	+	+	PA	21,44	60,82	+	19,76	61,12	+	+	+	PA	PA	/	/
b	63	lait cru de brebis	Raw ewe milk	se	+ (h+)	+	+ (h+)	+	L.mono	+	19,67	61,04	+	+ (h+)	L.mono	+	+	+	+	PA	19,55	61,27	+	19,72	61,58	+	+	+	PA	PA	/	/
b	64	lait cru de brebis	Raw ewe milk	se	-	-	-	-	/	-	26	61,09	+	+ (h+)	L.mono	+	+	+	+	PD	25,47	61,18	+	26,07	61,33	+	+	+	PD	PD	/	/
b	65	lait cru de brebis	Raw ewe milk	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
b	66	lait cru de brebis	Raw ewe milk	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
b	67	lait cru de brebis	Raw ewe milk	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-

Type	Sample N°	Product (french name)	Product	Contamination	RM: ISO 11290-1 #						AM: GENE-UP® LMO2																			Confirmation ISO 16140-2 on MA negative samples	
											AM: GENE UP - Protocol ③ for 22h at 37°C										AM: GENE UP after storage of the lysates 72h at 5°C			AM: GENE UP after storage of the broth 72h at 5°C					Agreement 72h	Agreement 72h lysate		
					Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE-UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	agreement 22h	CP	MP	Final Result 72h lysate	CP	MP	Result	Conf. 1	Final result 72h			ALOA	Final result
					ALOA	Palcam	ALOA	Palcam						ALOA													ALOA				
b	76	Lait cru de chèvre (37)	Raw goat milk	CN	+ (h+)	+	+ (h+)	+	L.mono	+	18,77	53,2	+	+ (h+)	L.mono	+	+	+	+	PA	16.54	61.72	+	17.11	62.02	+	+	+	PA	PA	/	/
b	78	Lait cru de chèvre (72)	Raw goat milk	CN	+ (h+)	+	+ (h+)	+	L.mono	+	18,77	53,2	+	+ (h+)	L.mono	+	+	+	+	PA	17.19	61.54	+	17.51	61.54	+	+	+	PA	PA	/	/
c	15	Coulommiers cœur de lion	Pasteurised milk cheese	/	+ (h+)	+	+ (h+)	+	L. iv	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
c	39	Fromage à tartiner	Cream cheese	se	+ (h+)	+	+ (h+)	+	L.mono	+	21,73	61,4	+	+ (h+)	L.mono	+	+	+	+	PA	21,75	61,00	+	17,65	61,62	+	+	+	PA	PA	/	/
c	40	Fromage blanc	Cottage cheese	se	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
c	41	Fromage râpé	Grated cheese	se	+ (h+)	+	+ (h+)	+	L.mono	+	/	/	-	-	/	/	/	/	-	ND	/	/	-	/	/	-	-	-	ND	ND	-	-
c	42	Yaourt à la grecque	Greek yogurt	se	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
c	43	Mozzarella	Mozzarella	se	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
c	44	Yaourt mûres myrtilles	Ripe blueberry yogurt	se	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
c	45	Crème fraiche	Sour cream	se	+ (h+)	+	+ (h+)	+	L.mono	+	20,21	61,33	+	+ (h+)	L.mono	+	+	+	+	PA	20,15	61,16	+	17,62	61,21	+	+	+	PA	PA	/	/
c	46	Caprices des dieux	Pasteurised milk cheese	se	+ (h+)	+	+ (h+)	+	L.mono	+	21,99	61,06	+	+ (h+)	L.mono	+	+	+	+	PA	23,22	60,61	+	19,49	61,08	+	+	+	PA	PA	/	/
c	48	emmental	Pasteurised milk cheese	se	-	-	-	-	/	-	20,21	61,28	+	+ (h+)	L.mono	+	+	+	+	PD	20,14	60,93	+	19,74	61,43	+	+	+	PD	PD	/	/
c	49	mimolette	Pasteurised milk cheese	se	+ (h+)	+	+ (h+)	+	L.mono	+	18,78	61,07	+	+ (h+)	L.mono	+	+	+	+	PA	18,70	60,88	+	18,23	61,1	+	+	+	PA	PA	/	/
c	50	Fromage blanc	Cottage cheese	se	+ (h+)	+	+ (h+)	+	L.mono	+	20,88	61,45	+	+ (h+)	L.mono	+	+	+	+	PA	20,88	60,88	+	19,34	61,18	+	+	+	PA	PA	/	/
c	68	Yaourt nature	yogurt	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
c	69	yaourt à la fraise	strawberry yogurt	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
c	70	fromage blanc	Cottage cheese	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
c	71	yaourt	yogurt	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
c	72	Lait entier pasteurisé	Pasteurized whole milk	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-		NA	NA	-	-
c	73	yaourt à boire à la fraise	strawberry drinkable yogurt	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-
c	74	Crème fraiche épaisse	Fresh cream	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-		NA	NA	-	-
c	75	fromage blanc	Cottage cheese	/	-	-	-	-	/	-	/	/	-	-	/	/	/	/	-	NA	/	/	-	/	/	-	-	-	NA	NA	-	-

SEA FOOD PRODUCTS

Type	Sample N°		Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP									AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage 3 days at 5°C					Confirmation ISO 16140-2 : 2015 on MA negative samples		Concordance RM /AM	
					Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	CP	MP	GENE UP	CP	MP	GENE UP result	Conf. 1	Final result	Conf. 5	Final result	Final result	After a 3-day storage at 5°C
					ALOA	Palcam	ALOA	Palcam						ALOA												ALOA					
a-	GL	364	Shrimps	nc	4h- Ø	4 L	4h- Ø	4 Ø	- (L. in)	A	0.00	0.00	-	4h- Ø	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	379	Red mullet fillet	se	0 H	0 H	0 M	0 M	-	A	0.00	0.00	-	0 H	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	401	Cod fillet	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 L	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	403	Saithe fillet	nc	0 Ø	0 L	0 Ø	0 Ø	-	A	0.00	0.00	-	0 H	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	404	Pickled plaice fillet	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 L	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	405	Cod fillet	nc	0 L	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 Ø	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	407	Whiting fillet	nc	0 Ø	0 M	0 Ø	0 Ø	-	A	0.00	0.00	-	0 Ø	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	419	Wolffish fillet	nc	0 Ø	0 L	0 Ø	0 Ø	-	A	0.00	0.00	-	0 L	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	420	Cod fillet	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 Ø	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	422	Salmon fillet	nc	0 Ø	0 L	0 Ø	0 L	-	A	0.00	0.00	-	0 Ø	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	429	Cod	nc	0 H	0 H	0 Ø	0 M	-	A	0.00	0.00	-	0 H	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	430	Trout fillet	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 M	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a+	GL	363	Norwegian salmon fillet	nc	1h+ Ø	0 M	4h+ Ø	4 Ø	+ (L. m)	P	27.17	64.96	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	26.27	64.78	+	23.86	65.05	+	4h+ Ø	P	/	/	PA	PA
a+	GL	365	Swordfish	nc	4h+ Ø	3 M	4h+ Ø	4 L	+ (L. m)	P	20.57	62.05	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	19.89	62.31	+	18.80	61.95	+	4h+ L	P	/	/	PA	PA
a+	GL	369	Raw salmon fillet	nc	4h+ Ø	0 H	4h+ Ø	2 H	+ (L. m)	P	24.33	65.13	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	22.10	65.00	+	19.79	64.76	+	4h+ Ø	P	/	/	PA	PA
a+	GL	370	Salmon tartar	nc	4h+ L	1 H	4h+ Ø	4 Ø	+ (L. m)	P	24.03	64.99	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	22.85	64.97	+	20.77	64.78	+	4h+ Ø	P	/	/	PA	PA
a+	GL	378	Monkfish fillet	se	3h- L	0 H	4h- L	0 H	-	A	29.44	64.85	+	4h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	29.71	64.78	+	29.31	65.17	+	2h+ M	P	/	/	PD	PD
a+	GL	380	Whiting fillet	se	3h+ L	3 L	4h+ Ø	4 Ø	+ (L. m)	P	26.45	64.80	+	2h+ H	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	25.96	64.73	+	21.30	64.92	+	2h+ H	P	/	/	PA	PA
a+	GL	381	Swordfish	se	0 M	0 H	2h+ Ø	2 L	+ (L. m)	P	22.52	64.69	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	22.66	64.66	+	20.43	64.94	+	3h+ M	P	/	/	PA	PA
a+	GL	382	Cod fillet	se	4h+ Ø	1 M	4h+ Ø	4 Ø	+ (L. m)	P	0.00	0.00	-	0 L	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	ND	/
a+	GL	383	Plaice fillet	se	0 Ø	0 M	0 Ø	0 Ø	-	A	25.49	64.92	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	23.62	64.54	+	19.34	64.83	+	4h+ L	P	/	/	PD	PD
a+	GL	384	Saithe fillet	nc	4h+ Ø	2 M	4h+ Ø	4 L	+ (L. m)	P	22.74	64.82	+	4h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	21.76	64.69	+	18.86	64.96	+	1h+ H	P	/	/	PA	PA
a+	GL	385	Cod fillet	nc	4h+ Ø	3 L	4h+ Ø	4 Ø	+ (L. m)	P	21.28	64.97	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	20.10	64.74	+	18.20	64.91	+	4h+ Ø	P	/	/	PA	PA
a+	GL	386	Trout fillet	nc	1h+ M	0 H	4h+ Ø	4 Ø	+ (L. m)	P	30.88	65.02	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	30.69	64.91	+	30.33	64.83	+	2h+ M	P	/	/	PA	PA
a+	GL	402	Trout fillet	nc	0 L	0 M	0 Ø	0 Ø	-	A	30.62	65.10	+	3h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	30.98	64.94	+	29.98	65.34	+	3h+ L	P	/	/	PD	PD
a+	GL	406	Swordfish	nc	0 M	0 M	0 Ø	0 Ø	-	A	24.87	65.12	+	4h-/1h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	24.19	64.84	+	21.42	64.80	+	2h-/2h+ Ø	P	/	/	PD	PD
a+	GL	408	Monkfish fillet	nc	1h- L	0 H	4h- Ø	4 L	-	A	24.56	64.73	+	4h-/1h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	24.61	64.63	+	24.19	64.90	+	1h-/4h+ Ø	P	/	/	PD	PD
b-	GL	376	Anchovies and capers with vinegar	se	0 L	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 H	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	377	Rollmops	se	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 L	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	399	Marinated tuna carpaccio	nc	0 L	0 M	0 Ø	0 Ø	-	A	0.00	0.00	-	0 H	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	400	Smoked trout offcuts	nc	0 Ø	0 M	0 Ø	0 Ø	-	A	0.00	0.00	-	0 M	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	409	Shrimp tails marinated with garlic and parsley	nc	0 H	0 H	0 Ø	0 H	-	A	0.00	0.00	-	0 H	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	410	Smoked salmon offcuts	nc	0 Ø	0 L	0 H	0 H	-	A	0.00	0.00	-	0 L	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	416	Marinated anchovies à l'orientale	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 Ø	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	417	Anchovies marinated with garlic	nc	0 L	0 L	0 M	0 L	-	A	0.00	0.00	-	0 L	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	418	Anchovies marinated with oil	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 L	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b+	GL	366	Smoked salmon	nc	3h+ Ø	3 Ø	4h+ Ø	4 Ø	+ (L. m)	P	0.00	0.00	-	0 M	/	/	/	/	A	0.00	0.00	+	/	/	/	/	/	-	A	ND	/
b+	GL	371	Smoked salmon	nc	1h+ Ø	1 L	4h+ Ø	4 Ø	+ (L. m)	P	0.00	0.00	-	0 Ø	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	ND	/
b+	GL	372	Smoked salmon	nc	1h+ Ø	1 L	4h+ Ø	4 Ø	+ (L. m)	P	0.00	65.57	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	28.98	65.18	+	28.22	64.92	+	4h+ Ø	P	/	/	PA	PA
b+	GL	373	Smoked salmon (Scotland)	nc	3h+ Ø	2 M	4h+ Ø	3 M	+ (L. m)	P	28.58	65.04	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	27.62	65.10	+	26.45	65.31	+	4h+ Ø	P	/	/	PA	PA

Type	Sample N°		Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP									AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage 3 days at 5°C					Confirmation ISO 16140-2 : 2015 on MA negative samples		Concordance RM /AM	
					Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	CP	MP	GENE UP	CP	MP	GENE UP result	Conf. 1	Final result	Conf. 5	Final result	Final result	After a 3-day storage at 5°C
					ALOA	Palcam	ALOA	Palcam						ALOA												ALOA					
b+	GL	374	Smoked salmon offcuts	nc	3h+ Ø	3 L	3h+ Ø	3 L	+ (L. m)	**P**	26.77	65.29	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	25.48	64.90	+	23.28	64.81	+	4h+ L	**P**	/	**/**	PA	PA
b+	GL	375	Marinated tuna carpaccio	se	3h+ L	1 M	4h+ Ø	3 M	+ (L. m)	**P**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	ND	/
b+	GL	387	Smoked trout	se	4h+ Ø	0 H	3h+ Ø	4 Ø	+ (L. m)	**P**	0.00	0.00	-	3h- L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	ND	/
b+	GL	388	Smoked trout offcuts	se	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	23.84	64.74	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	22.09	64.76	+	20.85	65.20	+	4h+ Ø	**P**	/	**/**	PD	PD
b+	GL	389	Smoked salmon offcuts	se	4h+ L	2 H	3h+ H	0 H	+ (L. m)	**P**	24.48	64.69	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	22.97	64.88	+	20.00	65.01	+	4h+ Ø	**P**	/	**/**	PA	PA
b+	GL	390	Shrimp tails marinated with garlic and parsley	nc	2h+ M	0 H	4h+ Ø	0 H	+ (L. m)	**P**	0.00	0.00	-	0 H	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	ND	/
b+	GL	391	Smoked herring fillets	nc	2h+ Ø	2 L	4h+ Ø	4 L	+ (L. m)	**P**	29.55	62.51	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	28.86	62.84	+	28.27	62.04	+	4h+ Ø	**P**	/	**/**	PA	PA
b+	GL	392	Sweet smoked herring fillets	nc	3h+ Ø	2 Ø	3h+ Ø	4 Ø	+ (L. m)	**P**	29.04	62.36	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	28.50	62.36	+	27.06	62.51	+	4h+ Ø	**P**	/	**/**	PA	PA
c-	GL	362	Smoked salmon with cream	nc	0 M	0 M	0 M	0 H	-	**A**	0.00	0.00	-	0 H	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	411	Alaskan pollock, lemon sauce, rice	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	412	Fish parmentier with chives	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	413	Tuna à la provençale with bulgur	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	414	Salmon rillettes	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	415	Tuna à la catalane	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	423	Sardines rillettes with tomatoes	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	424	Crab rillettes	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	425	Tuna flakes with tomatoes	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	66.61	+	0 Ø	/	/	/	/	**A (FP)**	0.00	0.00	-	0.00	0.00	-	/	**A**	-	**A**	NA (PP)	NA
c-	GL	426	Mackerel flakes with lemon and pepper	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	427	Cod liver with lemon	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	428	Salmon with lemon sauce	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c+	GL	367	Croquette of shrimps	nc	1h-/4h+ Ø	0 H	1h-/3h+ Ø	2 M	+ (L. in + L. m)	**P**	23.24	65.10	+	1h+ H	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	22.77	65.03	+	22.20	64.99	+	1h+ H	**P**	/	**/**	PA	PA
c+	GL	368	Fricassee	nc	0 M	0 H	0 L	0 H	-	**A**	0.00	65.47	+	1h- H ⇨ confirmation positive after storage	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	0.00	65.53	+	29.76	65.03	+	1h+ M	**P**	/	**/**	PD	PD
c+	GL	393	Tuna à la catalane	se	3h+ Ø	3 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	ND	/
c+	GL	394	Salmon rillettes	se	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	ND	/
c+	GL	395	Parisian tuna salad	se	4h+ Ø	3 Ø	4h+ Ø	4 L	+ (L. m)	**P**	24.48	64.83	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	24.75	64.96	+	20.35	64.92	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL	396	Alaskan pollock, lemon sauce, rice	nc	4h+ Ø	4 Ø	4h+ L	4 Ø	+ (L. m)	**P**	20.22	65.08	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	20.42	65.21	+	17.71	65.00	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL	397	Tuna à la provençale with bulgur	nc	3h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	17.66	64.88	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	17.97	64.83	+	15.92	64.85	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL	398	Fish parmentier with chives	nc	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	19.89	65.35	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	19.97	65.04	+	17.26	64.74	+	4h+ Ø	**P**	/	**/**	PA	PA

VEGETAL PRODUCTS

Type	Sample N°	Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP									AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage 3 days at 5°C					Confirmation ISO 16140-2 : 2015 on MA negative samples		Concordance RM /AM	
				Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	CP	MP	GENE UP	CP	MP	GENE UP result	Conf. 1	Final result	Conf. 5	Final result	Final result	After a 3-day storage at 5°C
				ALOA	Palcam	ALOA	Palcam						ALOA												ALOA					
a-	GL189	Entire frozen morels	se	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	A	NA	/
a-	GL198	Entire frozen chanterelle mushrooms	se	0 Ø	0 Ø	0 L	0 L	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	A	NA	/
a-	GL200	Strawberries	se	0 L	0 L	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	A	NA	/
a-	GL205	Tarragon	se	0 M	0 H	0 M	0 H	-	**A**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	A	NA	/
a-	GL206	Chives	se	0 M	0 H	0 M	0 H	-	**A**	29.02	65.16	+	0 H	/	/	/	/	**A (FP)**	28.94	64.73	+	27.00	64.93	+	0 H	**A (FP)**	/	/	NA (PP)	NA (PP)
a-	GL214	Strawberries	nc	0 Ø	0 L	0 M	0 H	-	**A**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
a-	GL225	Deep-frozen green asparagus	nc	0 Ø	0 L	0 M	0 H	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL229	Buckwheat flour	nc	0 H	0 H	0 M	0 H	-	**A**	0.00	0.00	-	0 H	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL 341	Chanterelle mushrooms	nc	0 Ø	0 L	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 H	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL 342	Porcini mushrooms	nc	0 L	0 L	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 H	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL 354	Thyme	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 H	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL 355	Curly parsley	nc	0 H	0 H	0 M	0 H	-	**A**	0.00	0.00	-	0 H	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL 356	Chives	nc	1h- L	0 H	0 M	0 H	- (L. se)	**A**	0.00	0.00	-	0 H	/	/	/	/	**A (FN)**	33.92	65.58	+	/	/	/	/	**/**	+ (L. m)	**P**	NA	/
a-	GL 359	Apricots	nc	0 L	0 L	1h- L	0 M	-	**A**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
a-	GL 360	Gooseberries	nc	0 M	0 L	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
a+	GL199	Frozen entire porcini mushrooms	se	2h+/1h- Ø	2 Ø	4h+ Ø	3 M	+ (L. in + L. m)	**P**	0.00	0.00	-	1h- L	/	/	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0 L	**A**	-	A	ND	ND
a+	GL203	Flat parsley	se	2h+ M	0 H	4h+ Ø	2 M	+ (L. m)	**P**	26.54	64.85	+	3h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	26.53	64.48	+	24.77	64.95	+	4h+ Ø	**P**	/	/	PA	PA
a+	GL204	Basil	se	2h+ L	1 M	4h+ Ø	2 M	+ (L. m)	**P**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0 M	**A**	-	A	ND	ND
a+	GL 347	Asparagus	nc	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	21.25	65.03	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	21.13	64.80	+	17.39	65.01	+	4h+ Ø	**P**	/	**/**	PA	PA
a+	GL 348	Green aspargus	nc	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	21.09	65.12	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	20.99	64.96	+	16.79	64.84	+	4h+ Ø	**P**	/	**/**	PA	PA
a+	GL 357	Bay-tree	nc	1h+ H	0 H	4h+ L	0 H	+ (L. m)	**P**	27.56	65.18	+	0 H	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	27.77	65.09	+	27.41	65.05	+	0 H	**P**	/	**/**	PA	PA
a+	GL 358	Cherry tomatoes	se	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	23.67	62.13	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23.85	62.09	+	21.62	62.29	+	4h+ L	**P**	/	**/**	PD	PD
a+	GL 590	Pineapple	se	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	23.66	64.65	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	27.13	62.07	+	22.73	64.72	+	4h+ Ø	**P**	+ (L. m)	**P**	PA	PA
a+	GL 591	Apples	se	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	22.93	64.60	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23.53	64.62	+	18.69	64.92	+	4h+ Ø	**P**	+ (L. m)	**P**	PA	PA
a+	GL 592	Melon	se	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	19.93	64.44	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	19.98	64.84	+	18.74	64.91	+	4h+ Ø	**P**	+ (L. m)	**P**	PA	PA
b-	GL183	Radish	nc	0 Ø	0 L	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0 M	**A**	-	A	NA	NA
b-	GL184	Non seasoned grated carrots	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	A	NA	/
b-	GL185	Sliced cucumber	nc	0 Ø	0 L	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0 L	**A**	-	A	NA	NA
b-	GL195	Mung beans sprouts	se	0 L	0 L	0 L	0 H	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	A	NA	/
b-	GL202	Packed lamb's lettuce	se	0 M	0 M	0 L	0 H	-	**A**	0.00	0.00	-	0 H	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	A	NA	/
b-	GL208	Pre-cooked cauliflower	nc	0 L	0 L	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
b-	GL209	Pre-cooked potatoes	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
b-	GL210	Pre-cooked lentils	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
b-	GL215	Seasoned grated carrots	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
b-	GL216	Seasoned cucumber	nc	0 L	0 Ø	0 Ø	0 L	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
b-	GL217	Vegetables mix for soup	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
b-	GL219	Packed cauliflower	nc	0 L	0 L	0 Ø	0 H	-	**A**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
b-	GL220	Packed broccoli	nc	0 M	0 H	0 L	0 H	-	**A**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
b-	GL221	Packed batavia salad	nc	0 L	0 L	0 Ø	0 H	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
b-	GL228	Salad cabbage and lentils	nc	0 M	0 M	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 H	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	+ (L. m)	**P**	NA	/

Type	Sample N°	Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP									AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage 3 days at 5°C					Confirmation ISO 16140-2 : 2015 on MA negative samples		Concordance RM /AM	
				Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	CP	MP	GENE UP	CP	MP	GENE UP result	Conf. 1	Final result	Conf. 5	Final result	Final result	After a 3-day storage at 5°C
				ALOA	Palcam	ALOA	Palcam						ALOA												ALOA					
b+	GL190	Pre-cooked lentils	se	3h+ Ø	3 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	20.14	65.32	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	20.05	64.86	+	16.36	65.09	+	4h+ Ø	**P**	/	/	PA	PA
b+	GL194	Pre-cooked potatoes	se	4h+ Ø	2 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	22.02	64.99	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23.91	65.11	+	17.43	64.94	+	4h+ Ø	**P**	/	/	PA	PA
b+	GL196	Vegetables mix for soup	se	2h+ Ø	2 Ø	4h+ Ø	3 L	+ (L. m)	**P**	29.08	62.38	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	30.68	61.69	+	25.82	62.50	+	3h+ Ø	**P**	/	/	PA	PA
b+	GL197	Packed red and white cabbage	se	2h+ Ø	1 M	4h+ Ø	4 L	+ (L. m)	**P**	22.06	62.15	+	4h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23.03	61.45	+	18.32	62.29	+	4h+ Ø	**P**	/	/	PA	PA
b+	GL201	Pre-cooked cauliflower	se	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	26.79	64.97	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	26.70	64.63	+	21.75	65.04	+	4h+ Ø	**P**	/	/	PD	PD
b+	GL223	Deep-frozen peeled beans 1	nc	2h+ M	2 M	4h+ Ø	3 M	+ (L. m)	**P**	25.92	65.17	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	26.12	64.84	+	23.77	65.07	+	4h+ Ø	**P**	/	**/**	PA	PA
b+	GL224	Deep-frozen peeled beans 2	nc	2h+ L	2 M	4h+ Ø	3 M	+ (L. m)	**P**	26.83	65.05	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	26.72	64.96	+	24.09	64.93	+	4h+ Ø	**P**	/	**/**	PA	PA
b+	GL227	Salad potatoes and grated carrots	nc	3h+ Ø	2 L	4h+ Ø	3 M	+ (L. m)	**P**	24.07	65.07	+	4h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23.00	64.70	+	20.76	64.97	+	4h+ Ø	**P**	/	**/**	PA	PA
b+	GL 345	Poêlée vendéenne	nc	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	20.90	62.39	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	20.96	62.17	+	17.25	62.21	+	4h+ Ø	**P**	/	**/**	PA	PA
c-	GL211	Celery purée	nc	0 Ø	0 Ø	0 L	0 H	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
c-	GL212	Split peas purée	nc	0 Ø	0 L	0 L	0 H	-	**A**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
c-	GL213	Zucchini purée	nc	0 Ø	0 Ø	0 L	0 H	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	**/**	**/**	/	/	**/**	-	**A**	NA	/
c-	GL233	Carrot coulis	nc	0 Ø	0 Ø	0 Ø	0 L	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL234	Vegetables soup	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL250	Ratatouille	nc	3h- Ø	3 Ø	3h- Ø	4 Ø	- (L. w)	**A**	0.00	0.00	-	4h- Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL251	Zucchini confit	nc	4h- Ø	4 Ø	3h- Ø	4 Ø	- (L. w)	**A**	0.00	0.00	-	4h- Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL252	Ratatouille confit	nc	4h- Ø	3 Ø	3h- Ø	4 Ø	- (L. w)	**A**	0.00	0.00	-	4h- Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL253	Vegetables tajine	nc	4h- Ø	4 Ø	3h- Ø	4 Ø	- (L. w)	**A**	0.00	0.00	-	4h- Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL 338	Croutons with herbs	nc	0 L	0 L	0 L	0 L	-	**A**	0.00	0.00	-	0 H	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL 339	Croutons with garlic and parsley	nc	0 L	0 L	0 M	0 H	-	**A**	0.00	0.00	-	0 H	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL 361	Zucchini à la provençale	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c+	GL191	Zucchini purée	se	2h+ Ø	3 L	4h+ L	4 L	+ (L. m)	**P**	19.63	65.23	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	19.73	64.71	+	15.92	64.95	+	4h+ Ø	**P**	/	/	PA	PA
c+	GL192	Celery purée	se	2h+ Ø	3 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	21.34	65.10	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	21.56	64.40	+	17.72	65.01	+	4h+ Ø	**P**	/	/	PA	PA
c+	GL193	Split peas purée	se	1h+ Ø	2 L	4h+ Ø	3 L	+ (L. m)	**P**	20.87	65.11	+	3h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	22.57	64.15	+	18.42	65.12	+	4h+ Ø	**P**	/	/	PA	PA
c+	GL235	Minced vegetables mix	nc	2h+ Ø	2 L	4h+ Ø	2 H	+ (L. m)	**P**	20.79	62.14	+	3h+ H	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	20.55	62.29	+	18.59	62.28	+	4h+ M	**P**	/	**/**	PA	PA
c+	GL 343	Basil sauce	nc	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	23.65	62.22	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23.83	62.13	+	19.22	62.05	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL 344	Provençale sauce	nc	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	25.92	62.12	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	25.96	61.98	+	21.26	61.99	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL 346	Pesto	nc	2h+ Ø	3 L	4h+ Ø	4 Ø	+ (L. m)	**P**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	ND	/
c+	GL 349	Ratatouille	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	23.27	65.01	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23.21	64.53	+	19.85	64.76	+	4h+ Ø	**P**	/	**/**	PD	PD
c+	GL 350	Ratatouille à la provençale	nc	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	23.48	64.99	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23.48	64.62	+	19.60	64.65	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL 351	Cooked vegetables sweet and sour sauce	nc	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	27.81	65.15	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	28.48	64.79	+	24.90	65.12	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL 352	Grilled vegetables tajine	nc	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	24.77	64.89	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	24.74	64.42	+	20.84	65.13	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL 353	Carrot purée	nc	4h+ Ø	4 Ø	3h+ Ø	4 Ø	+ (L. m)	**P**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	ND	/

COMPOSITE FOODS

Type	Sample N°		Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP									AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage 3 days at 5°C					Confirmation ISO 16140-2 : 2015 on MA negative samples		Concordance RM /AM	
					Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	CP	MP	GENE UP	CP	MP	GENE UP result	Conf. 1	Final result	Conf. 5	Final result	Final result	After a 3-day storage at 5°C
					ALOA	Palcam	ALOA	Palcam						ALOA												ALOA					
a-	GL	275	Torti surimi	/	0 L	0 L	0 M	0 M	-	A	0.00	49.95	+	0 L	/	/	/	/	A (FP)	0.00	0.00	-	0.00	52.20	+	0 L	A (FP)	-	A	NA (PP)	NA (PP)
a-	GL	276	Piémontaise salad with ham	/	0 Ø	0 L	0 L	0 H	-	A	0.00	49.34	+	0 M	/	/	/	/	A (FP)	0.00	0.00	-	0.00	0.00	-	0 L	A	-	A	NA (PP)	NA
a-	GL	277	Oriental tabouleh	/	2h- L	0 M	4h- Ø	3 M	- (L.w)	A	0.00	0.00	-	2h- M	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	278	Salad chicken vegetables	/	0 M	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 H	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	279	Salad tuna, pasta, vegetables	/	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 H	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	280	Salad ham, vegetables, emmental	/	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 M	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	287	Sandwich with rosette	/	0 Ø	0 H	0 Ø	0 L	-	A	0.00	0.00	-	0 M	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	288	Sandwich ham emmental	/	0 L	0 H	0 Ø	0 Ø	-	A	0.00	0.00	-	0 M	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	289	Sandwich chicken kebab vegetables	/	0 M	0 M	0 L	0 H	-	A	0.00	0.00	-	0 H	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	290	Sandwich tuna vegetables	/	0 L	0 L	0 L	0 H	-	A	0.00	0.00	-	0 M	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	291	Sandwich ham butter	/	0 Ø	0 Ø	0 Ø	0 L	-	A	0.00	0.00	-	0 Ø	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a-	GL	292	Sandwich chicken kebab vegetables	/	0 Ø	0 L	0 L	0 H	-	A	0.00	0.00	-	4h- Ø	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
a+	GL	260	Salad ham, vegetables, emmental	se	2h+ L	2 M	2h+ H	0 H	+ (L. m)	P	20.78	62.06	+	4h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	21.01	61.81	+	21.01	62.15	+	4h+ L	P	/	/	PA	PA
a+	GL	261	Salad tuna, pasta, vegetables	se	2h+ M	2 L	3h+ Ø	4 Ø	+ (L. m)	P	21.25	62.33	+	4h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	21.49	62.25	+	21.50	62.29	+	4h+ Ø	P	/	/	PA	PA
a+	GL	262	Salad chicken vegetables	se	3h+ L	2 H	4h+ Ø	4 Ø	+ (L. m)	P	0.00	0.00	-	0 H	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	ND	/
a+	GL	263	Chicken tabouleh	se	4h+ Ø	2 H	3h+ Ø	4 L	+ (L. m)	P	25.28	64.89	+	1h-3h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	25.77	64.53	+	25.06	64.97	+	1h-3h+ M	P	/	/	PA	PA
a+	GL	264	Torti surimi	se	3h+ Ø	2 H	3h+ Ø	3 M	+ (L. m)	P	21.15	65.19	+	4h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	21.30	64.58	+	17.67	64.96	+	4h+ L	P	/	/	PA	PA
a+	GL	265	Piémontaise salad	se	3h+ Ø	3 L	4h+ Ø	3 L	+ (L. m)	P	21.17	64.99	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	21.84	64.78	+	18.07	65.00	+	4h+ Ø	P	/	/	PA	PA
a+	GL	300	Salmon tartar with eggs and oignons	nc	4h+ L	0 H	3h+ L	0 H	+ (L. m)	P	18.20	64.73	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	17.74	64.95	+	18.01	64.87	+	4h+ Ø	P	/	/	PA	PA
a+	GL	303	Thalissini (cod eggs,cottage cheese, salmon, chives)	nc	0 L	0 L	1h-2h+ Ø	1 H	+ (L. m)	P	29.25	65.23	+	4h-1h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	29.50	64.89	+	27.95	65.02	+	4h+ Ø	P	/	/	PA	PA
a+	GL	318	Salad, cabbage, ham, comté	se	0 Ø	0 L	0 L	0 Ø	-	A	0.00	0.00	-	0 M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	A (FN)	0.00	0.00	-	/	/	/	/	/	+ (L. m)	P	NA	/
a+	GL	319	Salad pineapple, carrot, surimi	se	0 Ø	0 L	0 Ø	0 M	-	A	26.31	62.16	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	26.58	62.11	+	24.03	62.26	+	2h+ Ø	P	/	/	PD	PD
a+	GL	320	Prawn salad with mandarins	se	1h+ L	1 L	3h+ Ø	3 M	+ (L. m)	P	0.00	0.00	-	0 M	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	ND	/
a+	GL	322	Chicken tabouleh	se	0 Ø	0 Ø	0 M	0 H	-	A	24.70	64.95	+	2h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	24.79	64.84	+	23.61	64.79	+	2h+ L	P	/	/	PD	PD
b-	GL	267	Pizza ham emmental	se	0 M	0 M	0 L	0 L	-	A	0.00	49.45	+	0 H	/	/	/	/	A (FP)	29.77	64.20	+	0.00	0.00	-	0 H	A	-	A	NA (PP)	NA
b-	GL	272	Chicken pizza	/	1h- Ø	0 L	0 L	0 H	-	A	8.08	0.00	-	0 H	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	281	Fusilli carbonara	/	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 L	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	282	Fusilli with cheese	/	0 Ø	0 Ø	0 L	0 H	-	A	7.57	0.00	-	0 M	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	283	Bolognese penne	/	0 Ø	0 Ø	0 Ø	0 Ø	-	A	9.58	48.81	+	0 L	/	/	/	/	A (FP)	0.00	0.00	-	0.00	0.00	-	0 L	A	-	A	NA (PP)	NA
b-	GL	284	Noodles chicken vegetables	/	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	0 Ø	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	293	Cheese burger	/	0 L	0 M	0 L	0 H	-	A	0.00	0.00	-	0 H	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	301	Nem chua	nc	0 Ø	0 Ø	0 Ø	0 Ø	-	A	0.00	0.00	-	1h- L	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	321	Salad potatoes sausages	se	0 Ø	0 Ø	0 M	0 H	-	A	0.00	0.00	-	0 L	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b-	GL	323	Fajitas chicken cheddar	nc	1h- H	2 H	3h- M	3 M	-	A	0.00	0.00	-	4h- Ø	/	/	/	/	A	0.00	0.00	-	/	/	/	/	/	-	A	NA	/
b+	GL	266	Pizza 4 cheese	se	0 L	0 L	0 L	0 H	-	A	23.12	64.74	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	23.17	64.66	+	21.96	64.89	+	4h+ Ø	P	/	/	PD	PD
b+	GL	268	Fusilli carbonara	se	4h+ Ø	2 M	4h+ Ø	4 Ø	+ (L. m)	P	21.69	64.96	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	22.30	64.41	+	18.12	65.29	+	4h+ Ø	P	/	/	PA	PA
b+	GL	269	Fusilli with cheese	se	3h+ Ø	2 L	3h+ L	0 H	+ (L. m)	P	19.74	65.15	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	20.01	64.86	+	17.60	65.15	+	4h+ Ø	P	/	/	PA	PA
b+	GL	270	Noodles chicken vegetables	se	4h+ Ø	4 Ø	4h+ Ø	3 Ø	+ (L. m)	P	24.97	65.96	! / +	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	18.13	65.05	+	16.36	65.18	+	4h+ Ø	P	+ (L. m)	P	PA	PA
b+	GL	271	Bolognese penne	se	4h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	P	19.21	64.86	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	20.00	64.84	+	16.77	65.18	+	4h+ Ø	P	/	/	PA	PA
b+	GL	285	Scrambled eggs with herbs	nc	4h+ Ø	3 L	4h+ Ø	3 M	+ (L. m)	P	19.23	64.94	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	19.74	64.76	+	17.08	64.87	+	4h+ Ø	P	/	/	PA	PA

Type	Sample N°		Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP									AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage 3 days at 5°C					Confirmation ISO 16140-2 : 2015 on MA negative samples		Concordance RM /AM	
					Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	CP	MP	GENE UP	CP	MP	GENE UP result	Conf. 1	Final result	Conf. 5	Final result	Final result	After a 3-day storage at 5°C
					ALOA	Palcam	ALOA	Palcam						ALOA												ALOA					
b+	GL	286	Fish with lemon sauce and rice	nc	4h+ Ø	3 L	4h+ Ø	4 L	+ (L. m)	**P**	20.64	64.51	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	20.84	64.54	+	20.11	64.92	+	4h+ Ø	**P**	/	**/**	PA	PA
b+	GL	294	Chicken burger	nc	0 L	0 M	0 L	0 H	-	**A**	26.02	62.11	+	1h-3h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	25.91	62.43	+	23.16	62.31	+	4h+ L	**P**	/	**/**	PD	PD
b+	GL	295	Spinach goat cheese tart	nc	3h+ Ø	3 L	4h+ L	2 H	+ (L. m)	**P**	22.83	62.11	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	22.80	62.07	+	16.98	61.86	+	4h+ Ø	**P**	/	**/**	PA	PA
b+	GL	296	Quiche lorraine	nc	3h+ Ø	3 L	3h+ Ø	2 M	+ (L. m)	**P**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	ND	/
b+	GL	297	Tomatoes chorizo tart	nc	3h+ Ø	3 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	0.00	0.00	-	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**A (FN)**	0.00	0.00	-	/	/	/	/	**/**	+ (L. m)	**P**	ND	/
b+	GL	302	Minced meat sandwich	nc	0 Ø	0 H	0 L	0 L	-	**A**	23.84	62.14	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23.59	62.43	+	21.56	62.00	+	4h+ Ø	**P**	/	**/**	PD	PD
c-	GL	254	pear pie	se	0 Ø	0 L	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	256	Cherry cobler	se	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	273	Mirabelle pie	/	0 Ø	0 L	0 L	0 H	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	274	Apricot pie	/	0 Ø	0 L	0 Ø	0 H	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	305	Cherry pudding	/	0 Ø	0 Ø	0 Ø	0 L	-	**A**	0.00	0.00	-	1h- Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	306	Custard pastry	/	0 Ø	0 Ø	0 Ø	0 L	-	**A**	0.00	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	307	Vanilla flavored custard pastry	/	0 L	0 Ø	0 M	0 M	-	**A**	0.00	0.00	-	1h- Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	308	Strawberry pie	/	0 Ø	0 Ø	0 Ø	0 Ø	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	309	Vanilla flavored pancakes	/	0 Ø	0 L	0 L	0 M	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	311	Paris-Brest pastry	/	0 Ø	0 L	0 M	0 M	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	312	Chocolate flavored custard pastry	/	0 Ø	0 Ø	0 Ø	0 L	-	**A**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c-	GL	316	Cookie	se	0 L	0 L	0 L	0 M	-	**A**	0.00	0.00	-	0 M	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	NA	/
c+	GL	255	Apricot pie	se	1h+ Ø	1 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	ND	/
c+	GL	257	Apple pie	se	2h+ Ø	2 Ø	3h+ Ø	4 Ø	+ (L. m)	**P**	8.64	0.00	-	0 Ø	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	ND	/
c+	GL	258	Flan	se	3h+ Ø	3 Ø	3h+ Ø	4 Ø	+ (L. m)	**P**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	ND	/
c+	GL	259	Mirabelle pie	se	0 Ø	0 Ø	0 L	0 M	-	**A**	27.52	65.36	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	26.89	64.83	+	24.90	65.10	+	4h+ Ø	**P**	/	**/**	PD	PD
c+	GL	298	Chocolate cake	nc	2h+ Ø	0 M	4h+ Ø	1 H	+ (L. m)	**P**	0.00	0.00	-	0 L	/	/	/	/	**A**	0.00	0.00	-	/	/	/	/	**/**	-	**A**	ND	/
c+	GL	299	Lemon pie	nc	3h+ Ø	3 L	4h+ Ø	4 Ø	+ (L. m)	**P**	24.91	64.48	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	24.98	64.90	+	22.30	64.81	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL	304	Coconut chinese pastry	nc	4h+ Ø	0 H	1h-2h+ Ø	2 H	+ (L. m)	**P**	17.72	64.90	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	17.73	65.03	-	17.41	64.75	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL	314	Coconut flan	se	2h+ Ø	2 Ø	3h+ Ø	3 Ø	+ (L. m)	**P**	23.05	64.81	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	23.07	64.82	+	19.87	65.21	+	4h+ Ø	**P**	/	**/**	PA	PA
c+	GL	315	Coffee flavored custard pastry	se	2h+ Ø	2 Ø	3h+ Ø	3 Ø	+ (L. m)	**P**	25.15	64.04	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	25.18	65.09	+	21.06	64.91	+	3h+ Ø	**P**	/	**/**	PA	PA
c+	GL	317	Grape flan	se	1h+ Ø	1 Ø	3h+ Ø	2 H	+ (L. m)	**P**	25.00	62.09	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	25.08	62.26	+	20.59	62.28	+	3h+ Ø	**P**	/	**/**	PA	PA

ENVIRONMENTAL SAMPLES

Type	Sample N°		Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP							AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage 3 days at 5°C					Confirmation ISO 16140-2 : 2015 on MA negative samples		Concordance RM /AM	
					Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Final result	CP	MP	GENE UP	CP	MP	GENE UP result	Conf. 1	Final result	Conf . 3	Final result	Final result	After a 3-day storage at 5°C
					ALOA	Palcam	ALOA	Palcam						ALOA										ALOA					
a-	GL	474	Vegetables rinsing water - canteen	se	0Ø	0Ø	0Ø	0Ø	/	A	0.00	0.00	-	0L	/	/	A	0.00	0.00	-	0.00	0.00	-	0M	A	-	A	NA	NA
a-	GL	481	Rinsing water fish shop 1	/	0Ø	0Ø	0Ø	0Ø	/	A	0.00	50.83	+	0Ø	/	/	A (FP)	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA (PP)	NA
a-	GL	485	Rinsing water fish shop 2	/	0Ø	0Ø	0Ø	0Ø	/	A	0.00	0.00	-	0L	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA	NA
a-	GL	486	Rinsing water vegetable container 1	/	0Ø	0Ø	0Ø	0Ø	/	A	0.00	0.00	-	0Ø	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA	NA
a-	GL	487	Rinsing water vegetable container 2	/	0Ø	0Ø	0Ø	0Ø	/	A	0.00	0.00	-	0Ø	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA	NA
a-	GL	488	Rinsing water board of preparation	/	0Ø	0Ø	0Ø	0Ø	/	A	0.00	0.00	-	0Ø	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA	NA
a-	GL	489	Rinsing water board of preparation	/	0Ø	0Ø	0Ø	0Ø	/	A	3.20	0.00	-	0Ø	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA	NA
a-	GL	490	Rinsing water storage tray	/	0Ø	0Ø	0Ø	0Ø	/	A	0.00	0.00	-	0L	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA	NA
a-	GL	491	Rinsing water board of cold preparation	/	0Ø	0Ø	0Ø	0Ø	/	A	0.00	0.00	-	0Ø	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA	NA
a-	GL	492	Rinsing water board of cold preparation	/	0Ø	0Ø	0Ø	0Ø	/	A	0.00	0.00	-	0L	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA	NA
a+	GL	466	Vegetables rinsing water 1	se	2h+Ø	4Ø	4h+Ø	4Ø	+ (L.m)	P	17.81	65.01	+	4h+Ø	+ (L.m)	+ (L.m)	P	17.70	64.96	+	17.30	64.78	+	4h+Ø	P	/	/	PA	PA
a+	GL	467	Restaurant washing water	se	3h+Ø	2Ø	4h+Ø	4Ø	+ (L.m)	P	0.00	0.00	-	0Ø	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	ND	ND
a+	GL	470	Fruit rinsing water	se	2h+Ø	2Ø	4h+Ø	4Ø	+ (L.m)	P	26.24	65.28	+	1h+M	+ (L.m)	+ (L.m)	P	26.23	65.03	+	25.84	65.12	+	1L	P	/	/	PA	PA
a+	GL	471	Washing water 1	se	3h+Ø	3Ø	4h+Ø	4Ø	+ (L.m)	P	19.64	65.29	+	4h+Ø	+ (L.m)	+ (L.m)	P	19.89	65.11	+	17.66	65.22	+	4h+Ø	P	/	/	PA	PA
a+	GL	472	Vegetables rinsing water 2	se	2h+Ø	2Ø	4h+Ø	4Ø	+ (L.m)	P	18.10	62.47	+	4h+Ø	+ (L.m)	+ (L.m)	P	18.23	62.22	+	16.14	62.35	+	4h+Ø	P	/	/	PA	PA
a+	GL	473	Washing water 2	se	2h+Ø	2Ø	4h+Ø	4Ø	+ (L.m)	P	19.54	65.00	+	4h+Ø	+ (L.m)	+ (L.m)	P	19.72	64.77	+	17.42	64.87	+	4h+Ø	P	/	/	PA	PA
a+	GL	566	Vegetables rinsing water	se	3h+Ø	3Ø	3h+Ø	3Ø	+(L.m)	P	19.53	66.07	+	4h+Ø	+ (L.m)	+ (L.m)	P	19.09	65.13	+	17.44	65.13	+	3h+Ø	P	/	/	PA	PA
a+	GL	567	Washing water	se	0Ø	0Ø	0Ø	0Ø	/	A	17.52	64.84	+	4h+Ø	+ (L.m)	+ (L.m)	P	17.42	64.90	+	17.83	64.88	+	3h+Ø	P	+	P	PD	PD
a+	GL	568	Water nursing home	se	0Ø	0Ø	0Ø	0Ø	/	A	18.45	65.68	+	4h+Ø	+ (L.m)	+ (L.m)	P	18.33	64.86	+	17.45	64.88	+	3h+Ø	P	+	P	PD	PD
a+	GL	569	Rinsing water	se	2h+Ø	2L	3h+Ø	3M	+(L.m)	P	7.85	0.00	-	0L	/	/	A	0.00	0.00	-	0.00	0.00	-	0L	A	-	A	ND	ND
a+	GL	570	Rinsing water daycare	se	0Ø	0Ø	0Ø	0Ø	/	A	19.31	64.93	+	4h+Ø	+ (L.m)	+ (L.m)	P	19.24	65.11	+	17.06	64.96	+	3h+Ø	P	+	P	PD	PD
a+	GL	571	Rinsing water vegetables preparation	se	2h+Ø	2Ø	2h+Ø	2Ø	+(L.m)	P	19.57	62.23	+	4h+Ø	+ (L.m)	+ (L.m)	P	19.56	62.36	+	17.01	62.28	+	3h+Ø	P	/	/	PA	PA
a+	GL	572	Washing water dishwashing	se	2h+Ø	2L	2h+Ø	2M	+(L.m)	P	26.84	62.24	+	2h+Ø	+ (L.m)	+ (L.m)	P	27.04	61.97	+	17.09	62.19	+	3h+Ø	P	/	/	PA	PA
a+	GL	573	Washing chlorinated water kitchen	nc	0Ø	0Ø	0Ø	0Ø	/	A	27.29	62.54	+	2h+Ø	+ (L.m)	+ (L.m)	P	27.67	62.17	+	17.04	62.45	+	4h+Ø	P	+	P	PD	PD
a+	GL	574	Washing water	nc	1h+Ø	1Ø	2h+Ø	2Ø	+(L.m)	P	10.59	0.00	-	0Ø	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	ND	ND
b-	GL	493	Residu dessication dairy 1	/	0M	0M	0M	0M	/	A	0.00	0.00	-	0H	/	/	A	0.00	0.00	-	0.00	0.00	-	0M	A	-	A	NA	NA
b-	GL	494	Residu dessication dairy 2	nc	1h-M	1Ø	3h-Ø	3Ø	- (L.iv)	A	8.65	0.00	-	0H	/	/	A	0.00	0.00	-	0.00	0.00	-	0M	A	-	A	NA	NA
b-	GL	495	Residu dessication dairy 3	/	0M	0L	0Ø	0Ø	/	A	8.98	0.00	-	0H	/	/	A	7.96	0.00	-	0.00	0.00	-	0M	A	-	A	NA	NA
b-	GL	501	Residu peparation milk powder 3	/	0L	0L	0H	0H	/	A	0.00	0.00	-	0M	/	/	A	0.00	0.00	-	0.00	0.00	-	0L	A	-	A	NA	NA
b-	GL	502	Residu peparation milk powder 4	/	0Ø	0Ø	0Ø	0L	/	A	0.00	0.00	-	0L	/	/	A	0.00	0.00	-	0.00	0.00	-	0L	A	-	A	NA	NA
b-	GL	503	Redidu dusting dairy 1	se	0H	0L	0H	0H	/	A	8.23	0.00	-	0H	/	/	A	0.00	0.00	-	0.00	0.00	-	0L	A	-	A	NA	NA
b-	GL	504	Redidu dusting dairy 2	se	0H	0L	0H	0H	/	A	0.00	0.00	-	0H	/	/	A	0.00	0.00	-	0.00	0.00	-	0M	A	-	A	NA	NA
b-	GL	505	Residu peparation milk powder 5	se	0H	0H	0H	0H	/	A	0.00	0.00	-	0H	/	/	A	0.00	0.00	-	0.00	0.00	-	0H	A	-	A	NA	NA
b-	GL	506	Residu peparation milk powder 6	se	0H	0L	0M	0H	/	A	0.00	0.00	-	0H	/	/	A	0.00	0.00	-	0.00	0.00	-	0M	A	-	A	NA	NA
b-	GL	507	Dust from sieve dairy 1	se	0Ø	0Ø	0Ø	0Ø	/	A	0.00	0.00	-	0H	/	/	A	0.00	0.00	-	0.00	0.00	-	0M	A	-	A	NA	NA
b-	GL	538	Dusts dairy	/	0L	0M	0L	0L	/	A	0.00	0.00	-	0H	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA	NA
b-	GL	539	Dust from sieve dairy 3	/	0Ø	0Ø	0Ø	0Ø	/	A	0.00	0.00	-	0H	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA	NA
b-	GL	540	Dust from sieve dairy 4	/	0M	0L	0L	0L	/	A	0.00	0.00	-	0H	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA	NA
b-	GL	541	Dust from sieve dairy 5	/	0M	0M	0M	0L	/	A	0.00	0.00	-	0M	/	/	A	0.00	0.00	-	0.00	0.00	-	0Ø	A	-	A	NA	NA
b+	GL	498	Residu dessication dairy 4	nc	0L	0L	0Ø	0Ø	/	A	29.50	64.97	+	0M	+ (L.m)	+ (L.m)	P	29.03	65.15	+	27.65	64.61	+	4h+Ø	P	+	P	PD	PD
b+	GL	499	Residu peparation milk powder 1	nc	4h+Ø	4Ø	4h+Ø	4Ø	+(L.m)	P	0.00	0.00	-	0L	/	/	A	0.00	0.00	-	0.00	0.00	-	0L	A	-	A	ND	ND

Type	Sample N°		Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP							AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage 3 days at 5°C					Confirmation ISO 16140-2 : 2015 on MA negative samples		Concordance RM /AM	
					Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Final result	CP	MP	GENE UP	CP	MP	GENE UP result	Conf. 1	Final result	Conf . 3	Final result	Final result	After a 3-day storage at 5°C
					ALOA	Palcam	ALOA	Palcam						ALOA										ALOA					
b+	GL	500	Residu peparation milk powder 2	nc	0Ø	0L	0L	0M	/	**A**	22.64	64.43	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	22.63	64.5	+	19.08	64.39	+	4h+M	**P**	+	**P**	PD	PD
b+	GL	508	Dust biscuit factory	nc	4h+Ø	4Ø	3h+Ø	4Ø	+(L.m)	**P**	22.63	64.39	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	23.10	64.55	+	21.79	64.11	+	3h+L	**P**	/	**/**	PA	PA
b+	GL	575	Dusts kitchen	se	0Ø	0Ø	0Ø	0Ø	/	**A**	24.29	62.02	+	2h+Ø	+ (L.m)	+ (L.m)	**P**	24.61	61.65	+	17.12	62.28	+	4h+Ø	**P**	+	**P**	PD	PD
b+	GL	588	Wipe sieve	se	4Ø	4Ø	4h+Ø	4Ø	+(L.m)	**P**	16.89	61.67	+	4h+Ø	+ (L.m)	+ (L.m)	**P**	14.75	61.51	+	16.76	61.72	+	3h+Ø	**P**	+	**P**	PA	PA
b+	GL	589	Dusts kitchen	se	0L	0L	0L	0L	/	**A**	18.84	61.6	+	1h+L	+ (L.m)	+ (L.m)	**P**	24.10	64.42	+	27.20	62.24	+	2h+L	**P**	+	**P**	PD	PD
c-	GL	516	Swab cooling cell	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0L	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0L	**A**	-	**A**	NA	NA
c-	GL	517	Swab table	/	0Ø	0Ø	0Ø	0M	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	518	Swab work plan 1	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	519	Swab work plan 2	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	8.48	0.00	-	0M	**A**	-	**A**	NA	NA
c-	GL	520	Swab cutting table 2	/	0Ø	0M	0M	0H	/	**A**	0.00	0.00	-	0M	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	521	Swab wall 1	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	522	Swab wall 2	/	0Ø	0Ø	0L	0M	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	523	Swab table hot preparation	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0M	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0M	**A**	-	**A**	NA	NA
c-	GL	529	Sponge work plan preparation	/	0Ø	0L	0M	0H	/	**A**	0.00	0.00	-	0M	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0H	**A**	-	**A**	NA	NA
c-	GL	530	Sponge cutting table	/	0M	0M	0M	0H	/	**A**	0.00	0.00	-	0M	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0H	**A**	-	**A**	NA	NA
c-	GL	531	Sponge kitchen cold preparation	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	532	Sponge utensil cold preparation	/	0Ø	0L	0L	0M	/	**A**	0.00	0.00	-	0L	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0L	**A**	-	**A**	NA	NA
c-	GL	542	Swab kitchen wall	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	543	Swab refrigerator 1	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	544	Swab refrigerator 2	/	0Ø	0Ø	0Ø	0Ø	/	**A**	7.55	0.00	-	0L	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	545	Swab sink 1	/	0L	0L	0L	0L	/	**A**	0.00	49.00	+	0M	/	/	**A (FP)**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA (PP)	NA
c-	GL	546	Swab work plan	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	547	Swab sink 2	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0L	/	/	**A**	0.00	0.00	-	9.52	0.00	-	0M	**A**	-	**A**	NA	NA
c-	GL	548	Swab wall 3	/	0Ø	0L	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	549	Swab wall 4	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	550	Swab clean kitchen table	/	0L	0M	0L	0M	/	**A**	0.00	0.00	-	0L	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	551	Swab utensil kitchen	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	552	Sponge wall 4	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0M	/	/	**A**	0.00	0.00	-	8.88	0.00	-	0L	**A**	-	**A**	NA	NA
c-	GL	554	Sponge sink 1	/	0L	0L	0M	0M	/	**A**	0.00	0.00	-	0M	/	/	**A**	0.00	0.00	-	9.35	0.00	-	0M	**A**	-	**A**	NA	NA
c-	GL	555	Sponge refrigerator 1	/	0M	0M	0M	0M	/	**A**	0.00	0.00	-	0M	/	/	**A**	0.00	0.00	-	9.35	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	556	Sponge refrigerator 2	/	0L	0M	0L	0L	/	**A**	0.00	0.00	-	0H	/	/	**A**	0.00	0.00	-	9.42	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	557	Sponge sink kitchen 1	/	0L	0L	0Ø	0L	/	**A**	7.26	0.00	-	0M	/	/	**A**	0.00	0.00	-	8.42	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	558	Sponge clean table	/	0M	0M	0L	0M	/	**A**	7.80	0.00	-	0M	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	559	Sponge sink kitchen 2	/	0M	0M	0L	0M	/	**A**	8.20	0.00	-	0L	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	560	Sponge cutting table 1	/	0L	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0L	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	561	Sponge cutting table 2	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	562	Swab blender before cleaning	/	0L	0M	0L	0L	/	**A**	0.00	67.34	+	1h-M	/	/	**A (FP)**	0.00	0.00	-	0.00	65.69	+	0Ø	**A (FP)**	-	**A**	NA (PP)	NA (PP)
c-	GL	563	Swab blender after cleaning	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	564	Swab slicer before cleaning	/	0L	0M	0L	0L	/	**A**	8.11	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	565	Swab slicer after cleaning	/	0Ø	0Ø	0Ø	0Ø	/	**A**	7.69	0.00	-	0L	/	/	**A**	0.00	0.00	-	8.33	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	582	Sponge door handle kitchen	/	0Ø	0Ø	0Ø	0Ø	/	**A**	8.10	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	583	Sponge work plan	/	0M	0M	0M	0H	/	**A**	7.97	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	584	Sponge wall 6	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA

Type	Sample N°		Sample	Contamination	RM: NF EN ISO 11290-1						AM: GENE UP							AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP after storage 3 days at 5°C					Confirmation ISO 16140-2 : 2015 on MA negative samples		Concordance RM /AM	
					Half Fraser		Fraser		Confirmation	Final result	CP	MP	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Final result	CP	MP	GENE UP	CP	MP	GENE UP result	Conf. 1	Final result	Conf . 3	Final result	Final result	After a 3-day storage at 5°C
					ALOA	Palcam	ALOA	Palcam						ALOA										ALOA					
c-	GL	585	Wipe work plan 1	/	0Ø	0Ø	0Ø	0Ø	/	**A**	9.82	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	586	Wipe work plan 2	/	0Ø	0Ø	0Ø	0Ø	/	**A**	10.39	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c-	GL	587	Wipe trolley	/	0Ø	0Ø	0Ø	0Ø	/	**A**	0.00	0.00	-	0Ø	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0Ø	**A**	-	**A**	NA	NA
c+	GL	457	Swab board of preparation	se	2h+Ø	1L	3h+Ø	3M	+ (L.m)	**P**	24.23	62.54	+	3h+ Ø	+ (L.m)	+ (L.m)	**P**	24.10	62.33	+	20.18	62.41	+	4h+Ø	**P**	/	**/**	PA	PA
c+	GL	458	Sponge board of preparation	se	2h+L	2M	3h+Ø	4Ø	+ (L.m)	**P**	22.58	62.35	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	22.50	62.88	+	18.24	62.54	+	4h+Ø	**P**	/	**/**	PA	PA
c+	GL	459	Sponge wall of school's kitchen	se	2h+Ø	1L	3h+Ø	3m	+ (L.m)	**P**	25.51	62.36	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	25.30	62.26	+	20.95	62.32	+	3h+Ø	**P**	/	**/**	PA	PA
c+	GL	460	Sponge daycare's board of preparation	se	2h+Ø	3Ø	4h+Ø	4Ø	+ (L.m)	**P**	21.91	65.25	+	4h+Ø	+ (L.m)	+ (L.m)	**P**	21.85	65.28	+	17.86	65.43	+	4h+Ø	**P**	/	**/**	PA	PA
c+	GL	461	Sponge kitchen wall, hot preparation	se	3h+Ø	3M	3h+Ø	4Ø	+ (L.m)	**P**	20.85	65.33	+	4h+Ø	+ (L.m)	+ (L.m)	**P**	20.96	65.30	+	16.94	65.27	+	4h+Ø	**P**	/	**/**	PA	PA
c+	GL	462	Sponge kitchen wall, cold preparation	se	3h+Ø	3Ø	4h+Ø	4Ø	+ (L.m)	**P**	0.00	0.00	-	0H	/	/	**A**	0.00	0.00	-	7.32	0.00	-	0M	**A**	-	**A**	ND	ND
c+	GL	463	Sponge board of cold preparation	se	3h+Ø	3L	4h+Ø	4Ø	+ (L.m)	**P**	23.88	65.12	+	3M	+ (L.m)	+ (L.m)	**P**	24.01	65.15	+	22.47	65.16	+	3h+Ø	**P**	/	**/**	PA	PA
c+	GL	475	Swab daycare's board of preparation	se	2h+Ø	1L	4h+Ø	3L	+ (L.m)	**P**	27.22	62.56	+	3h+Ø	+ (L.m)	+ (L.m)	**p**	27.45	62.33	+	26.23	62.47	+	3h+Ø	**P**	/	**/**	PA	PA
c+	GL	509	Swab utensil kitchen	nc	4h+Ø	4Ø	3h+Ø	4Ø	+(L.m)	**P**	20.54	64.20	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	21.10	64.25	+	16.91	64.07	+	4h+Ø	**P**	/	**/**	PA	PA
c+	GL	510	Swab storage tray dishwashing	nc	4h+Ø	4Ø	4h+Ø	4Ø	+(L.m)	**P**	23.81	64.33	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	24.24	64.44	+	19.73	64.22	+	3h+Ø	**P**	/	**/**	PA	PA
c+	GL	511	Swab storage tray	nc	4h+Ø	4Ø	3h+Ø	4Ø	+(L.m)	**P**	23.45	64.33	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	23.65	64.45	+	18.89	64.17	+	4h+Ø	**P**	/	**/**	PA	PA
c+	GL	512	Swab ladder hot preparation	nc	3h+Ø	4Ø	3h+Ø	3h+Ø	+(L.m)	**P**	21.85	64.30	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	22.09	64.44	+	17.46	64.08	+	4h+L	**P**	/	**/**	PA	PA
c+	GL	513	swab utensil hot preparation	nc	0M	0H	0H	0H	/	**A**	21.95	64.48	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	22.54	64.55	+	19.89	64.20	+	3h+Ø	**P**	+	**P**	PD	PD
c+	GL	514	Swab bath tank	nc	3h+Ø	3M	4h+Ø	4M	+(L.m)	**P**	19.89	64.07	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	20.70	64.35	+	18.30	63.96	+	4h+Ø	**P**	/	**/**	PA	PA
c+	GL	515	Swab cutting table 1	nc	3h+Ø	4L	4h+Ø	4M	+(L.m)	**P**	19.04	64.51	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	19.65	64.78	+	17.27	64.32	+	4h+Ø	**P**	/	**/**	PA	PA
c+	GL	524	Sponge table hot preparation	nc	3h+L	3M	3h+Ø	4H	+(L.m)	**P**	21.64	64.85	+	4h+Ø	+ (L.m)	+ (L.m)	**P**	21.70	65.04	+	19.47	64.8	+	4h+H	**P**	/	**/**	PA	PA
c+	GL	525	Sponge wall 1	nc	2h+Ø	3Ø	3h+Ø	4Ø	+(L.m)	**P**	0.00	0.00	-	0L	/	/	**A**	0.00	0.00	-	0.00	0.00	-	0M	**A**	-	**A**	ND	ND
c+	GL	526	Sponge wall 2	nc	3h+L	3H	3h+L	4M	+(L.m)	**P**	26.50	64.76	+	2h+M	+ (L.m)	+ (L.m)	**P**	26.28	64.94	+	24.73	64.79	+	3h+H	**P**	/	**/**	PA	PA
c+	GL	527	Sponge wall 3	nc	3h+L	3Ø	3h+Ø	4Ø	+(L.m)	**P**	20.31	64.68	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	20.53	64.83	+	17.75	64.68	+	4h+Ø	**P**	/	**/**	PA	PA
c+	GL	528	Sponge work plan kitchen	nc	3h+Ø	4Ø	4h+Ø	4Ø	+(L.m)	**P**	20.32	64.71	+	4h+Ø	+ (L.m)	+ (L.m)	**P**	20.44	64.85	+	17.86	64.70	+	4h+Ø	**P**	/	**/**	PA	PA
c+	GL	576	Sponge sink 2	se	3h+Ø	3Ø	3h+Ø	3Ø	+(L.m)	**P**	26.62	64.78	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	24.10	64.42	+	22.68	64.85	+	3h+Ø	**P**	/	**/**	PA	PA
c+	GL	577	Sponge wall 5	se	3h+Ø	3Ø	3h+Ø	3Ø	+(L.m)	**P**	23.50	64.86	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	23.26	64.47	+	18.20	64.76	+	2h+Ø	**P**	/	**/**	PA	PA
c+	GL	578	Sponge refrigerator 3	se	4h+Ø	3L	3h+L	3M	+(L.m)	**P**	20.50	64.69	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	20.01	64.24	+	18.59	64.64	+	3h+Ø	**P**	/	**/**	PA	PA
c+	GL	579	Sponge trolley	se	4h+Ø	3L	4h+Ø	3M	+(L.m)	**P**	25.66	65.27	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	25.43	64.66	+	22.56	65.18	+	3h+Ø	**P**	/	**/**	PA	PA
c+	GL	580	Sponge sink 3	se	3h+Ø	3Ø	3h+Ø	3Ø	+(L.m)	**P**	20.13	65.11	+	3h+M	+ (L.m)	+ (L.m)	**P**	19.95	64.83	+	17.25	65.01	+	3h+Ø	**P**	/	**/**	PA	PA
c+	GL	581	Songe floor	se	2h+M	2M	3h+M	2M	+(L.m)	**P**	27.01	62.32	+	1h+H	+ (L.m)	+ (L.m)	**P**	26.87	62.00	+	25.65	62.10	+	2h+M	**P**	/	**/**	PA	PA
c+	GL	593	Wipe cutting board	se	3h+Ø	3Ø	3h+Ø	3Ø	+(L.m)	**P**	21.43	65.18	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	21.43	64.90	+	18.53	65.23	+	3h+Ø	**P**	/	**/**	PA	PA
c+	GL	594	Wipe work plan kitchen 1	se	3h+Ø	2Ø	3h+Ø	3Ø	+(L.m)	**P**	22.81	65.01	+	2h+Ø	+ (L.m)	+ (L.m)	**P**	22.86	64.70	+	16.92	65.06	+	4h+Ø	**P**	/	**/**	PA	PA
c+	GL	595	Wipe work plan kitchen 2	se	3h+Ø	3Ø	4h+Ø	4Ø	+(L.m)	**P**	19.78	65.11	+	4h+Ø	+ (L.m)	+ (L.m)	**P**	19.53	64.72	+	17.04	65.14	+	3h+Ø	**P**	/	**/**	PA	PA
c+	GL	596	Wipe work plan kitchen 3	se	3h+Ø	3Ø	3h+Ø	4Ø	+(L.m)	**P**	23.53	64.87	+	3h+Ø	+ (L.m)	+ (L.m)	**P**	23.72	64.53	+	17.14	65.03	+	3h+Ø	**P**	/	**/**	PA	PA

APPENDIX 5

RELATIVE LEVEL OF DETECTION : RAW DATA

Caption: / : test not realized
Ø : absence of colonies
FP : false positive result
A : absence
P : presence
0 / 1 / 2 / 3 / 4 : level of typical flora, from absence to high
Ø / L / M / H : level of annex flora, from absence to high
L.m : Listeria monocytogenes
Confirmation : streaking on selective medium + ISO 11290-1 confirmation
Conf. 1 : streaking on selective medium + visual reading
Conf. 2 : streaking on selective medium + API Listeria
Conf. 3 : streaking on selective medium + RAPIDEC L-mono
Conf. 4 : streaking on selective medium + Fast Rhamnose
Conf. 5 : streaking on selective medium + ISO 11290-1 confirmation (case n°1)
chromID L. mono: w=white colonies / b=blue colonies

MEAT PRODUCTS

before inoculation : $1.2x10^4$ CFU/g / TVC after cold storage: $9.9x10^3$ CFU/g

Matrix	Contamination level (CFU/25 g)	Sample ID	RM: NF EN ISO 11290-1						AM: GENE UP										Number of positive results per method
			Half Fraser		Fraser		Confirmation	**Final result**	GENE UP result			Conf. 1		Conf. 2	Conf. 3	Conf. 4	Conf. 5	**Final result**	
			ALOA	PALCAM	ALOA	PALCAM			Result	CP	MP	ALOA	Chrom ID						
Rillettes	/	GLMR01	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 Ø	0 Ø	/	/	/	/	**A**	RM = 0/5 AM = 0/5
		GLMR02	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 M	0 Ø	/	/	/	/	**A**	
		GLMR03	0 Ø	0 Ø	0 M	0 Ø	/	**A**	-	0,00	0,00	0 M	0 Ø	/	/	/	/	**A**	
		GLMR04	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 M	0 Ø	/	/	/	/	**A**	
		GLMR05	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 M	0 Ø	/	/	/	/	**A**	
	0.6	GLMRL1	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 L	0 Ø	/	/	/	/	**A**	RM = 7/20 AM = 8/20
		GLMRL2	0 Ø	0 Ø	0 M	0 M	/	**A**	-	0,00	0,00	0 L	0 Ø	/	/	/	/	**A**	
		GLMRL3	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 M	0 Ø	/	/	/	/	**A**	
		GLMRL4	3h+ Ø	2 Ø	4h+ Ø	3 L	+ (L. m)	**P**	+	22,24	64,39	4h+ Ø	4 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRL5	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 M	0 Ø	/	/	/	/	**A**	
		GLMRL6	3h+ Ø	3 Ø	3h+ Ø	3 Ø	+ (L. m)	**P**	+	19,10	64,76	4h+ Ø	4 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRL7	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 M	0 Ø	/	/	/	/	**A**	
		GLMRL8	0 Ø	0 Ø	0 M	0 M	/	**A**	+	20,06	64,81	4h+ Ø	4 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRL9	3h+ Ø	3 Ø	4h+ Ø	2 M	+ (L. m)	**P**	+	22,67	64,81	4h+ Ø	4 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRL10	0 Ø	0 Ø	0 L	0 M	/	**A**	+	27,76	64,59	4h+ Ø	3 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRL11	3h+ Ø	3 Ø	3h+ Ø	4 L	+ (L. m)	**P**	-	0,00	0,00	0 M	0 Ø	/	/	/	/	**A**	
		GLMRL12	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 M	0 Ø	/	/	/	/	**A**	
		GLMRL13	0 Ø	0 Ø	0 M	0 H	/	**A**	-	0,00	0,00	0 Ø	0 Ø	/	/	/	/	**A**	
		GLMRL14	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	+	19,78	64,70	4h+ Ø	4 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRL15	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	+	24,12	64,81	0 Ø	0 Ø	/	/	/	/	**A (FP)**	
		GLMRL16	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 Ø	0 Ø	/	/	/	/	**A**	
		GLMRL17	2h+ Ø	2 Ø	4h+ Ø	2 M	+ (L. m)	**P**	-	0,00	0,00	0 Ø	0 Ø	/	/	/	/	**A**	
		GLMRL18	0 Ø	0 L	0 M	0 M	/	**A**	+	25,19	64,11	4h+ Ø	4 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRL19	3h+ Ø	3 Ø	3h+ Ø	2 H	+ (L. m)	**P**	+	21,24	64,82	4h+ Ø	4 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRL20	2h+ Ø	3 Ø	3h+ Ø	2 M	+ (L. m)	**P**	-	0,00	0,00	0 M	0 Ø	/	/	/	/	**A**	
	1.8	GLMRH1	0 M	0 L	0 Ø	0 Ø	/	**A**	+	23,42	64,46	4h+ M	4 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	RM = 4/5 AM = 5/5
		GLMRH2	2h+ M	4 Ø	3h+ Ø	2 M	+ (L. m)	**P**	+	22,67	64,91	4h+ H	4 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRH3	3h+ M	4 Ø	4h+ Ø	1 H	+ (L. m)	**P**	+	19,88	64,98	4h+ H	4 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRH4	2h+ M	2 Ø	3h+ Ø	1 H	+ (L. m)	**P**	+	22,29	64,66	4h+ M	4 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRH5	3h+ M	3 Ø	3h+ Ø	4 Ø	+ (L. m)	**P**	+	22,50	64,55	4h+ H	4 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	

DAIRY PRODUCTS

TVC before inoculation : $2.5x10^4$ CFU/mL / TVC after cold storage: $5.0x10^5$ CFU/mL

Matrix	Contamination level (CFU/25 g)	Sample ID	RM: NF EN ISO 11290-1						AM: GENE UP										Number of positive results per method
			Half Fraser		Fraser		Confirmation	Final result	GENE UP result			Conf. 1		Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	
			ALOA	PALCAM	ALOA	PALCAM			Result	CP	MP	ALOA	Chrom ID						
Raw milk	/	GLMRM01	0 L	0 L	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 L	0 L	/	/	/	/	**A**	RM = 0/5 AM = 0/5
		GLMRM02	0 L	0 L	0 L	0 L	/	**A**	-	0,00	0,00	0 L	0 L	/	/	/	/	**A**	
		GLMRM03	0 Ø	0 L	0 Ø	0 L	/	**A**	-	0,00	0,00	0 L	0 L	/	/	/	/	**A**	
		GLMRM04	0 Ø	0 L	0 L	0 L	/	**A**	-	0,00	0,00	0 L	0 L	/	/	/	/	**A**	
		GLMRM05	0 Ø	0 L	0 L	0 H	/	**A**	-	0,00	0,00	0 L	0 L	/	/	/	/	**A**	
	0.7	GLMRML1	0 Ø	0 Ø	0 Ø	0 L	/	**A**	-	0,00	0,00	0 L	0 L	/	/	/	/	**A**	RM = 7/20 AM = 7/20
		GLMRML2	1h+ Ø	1 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	-	0,00	0,00	0 L	0 Ø	/	/	/	/	**A**	
		GLMRML3	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 L	0 Ø	/	/	/	/	**A**	
		GLMRML4	0 L	0 Ø	0 H	0 M	/	**A**	-	0,00	0,00	0 Ø	0 L	/	/	/	/	**A**	
		GLMRML5	2h+ Ø	1 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	-	0,00	0,00	0 L	0 L	/	/	/	/	**A**	
		GLMRML6	1h+ Ø	1 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	!/-	0,00	0,00	0 L	0 Ø	/	/	/	/	**A**	
		GLMRML7	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 L	0 Ø	/	/	/	/	**A**	
		GLMRML8	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	+	29,03	65,02	3h+ Ø	3 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRML9	0 Ø	0 L	0 Ø	0 Ø	/	**A**	+	29,71	65,18	2h+ Ø	2 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRML10	1h+ Ø	1 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	-	0,00	0,00	0 L	0 L	/	/	/	/	**A**	
		GLMRML11	0 Ø	0 L	0 Ø	0 Ø	/	**A**	+	29,97	65,28	2h+ Ø	2 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRML12	1h+ Ø	1 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	-	0,00	0,00	0 L	0 L	/	/	/	/	**A**	
		GLMRML13	0 Ø	0 Ø	0 Ø	0 H	/	**A**	-	0,00	0,00	0 L	0 Ø	/	/	/	/	**A**	
		GLMRML14	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 L	0 L	/	/	/	/	**A**	
		GLMRML15	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	+	28,74	65,06	3h+ Ø	3 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRML16	0 Ø	0 L	4h+ Ø	3 Ø	/	**A**	+	28,82	64,93	3h+ Ø	3 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRML17	1h+ Ø	1 Ø	3h+ Ø	4 Ø	+ (L. m)	**P**	-	0,00	0,00	0 L	0 L	/	/	/	/	**A**	
		GLMRML18	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 L	0 Ø	/	/	/	/	**A**	
		GLMRML19	0 Ø	0 L	4h+ Ø	4 Ø	+ (L. m)	**P**	+	0,00	65,75	2h+ Ø	2 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRML20	0 Ø	0 L	0 Ø	0 Ø	/	**A**	+	30,22	64,69	3h+ L	2 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
	2.1	GLMRMH1	0 Ø	1 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	-	0,00	0,00	0 L	0 Ø	/	/	/	/	**A**	RM = 5/5 AM = 4/5
		GLMRMH2	1h+ Ø	1 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	+	28,44	65,19	4h+ Ø	3 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRMH3	1h+ Ø	1 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	+	30,03	65,43	2h+ Ø	2 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRMH4	1h+ Ø	1 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	+	29,02	65,08	3h+ Ø	3 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
		GLMRMH5	2h+ Ø	1 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	+	29,10	65,32	3h+ Ø	2 b Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	

SEA FOOD PRODUCTS

Total viable count : 5.4×10^2 CFU / g

#	Matrix	Contamination level (CFU/25 g)	Sample ID	RM: NF EN ISO 11290-1						AM: GENE UP									Number of positive results per method
				Half Fraser		Fraser		Confir-mation	**Final result**	GENE UP result			Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	
				ALOA	PALCAM	ALOA	PALCAM			Result	CP	MP	ALOA						
1	Salmon offcuts	0	GLMSE1	0 Ø	0 Ø	0 L	0 H	/	A	-	0,00	0,00	0 M	/	/	/	/	A	RM = 0/5 AM = 0/5
2			GLMSE2	0 Ø	0 Ø	0 L	0 L	/	**A**	-	0,00	0,00	0 M	/	/	/	/	A	
3			GLMSE3	0 Ø	0 Ø	0 M	0 H	/	**A**	-	0,00	0,00	0 L	/	/	/	/	A	
4			GLMSE4	0 Ø	0 L	0 L	0 M	/	**A**	-	0,00	0,00	0 M	/	/	/	/	A	
5			GLMSE5	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 M	/	/	/	/	A	
1		0.9	GLMSE6	2h+ L	2L	3h+ L	2M	+ (L.m)	P	-	0,00	0,00	0L	/	/	/	/	A	RM = 16/20 AM = 13/20
2			GLMSE7	2h+ L	2L	3h+ L	2M	+ (L.m)	P	-	0,00	0,00	0M	/	/	/	/	A	
3			GLMSE8	3h+ L	2M	3h+ L	2H	+ (L.m)	P	+	22,98	53,18	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
4			GLMSE9	0 L	0L	0L	0L	/	**A**	+	26,16	52,54	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
5			GLMSE10	1h+ Ø	1L	3h+Ø	3L	+ (L.m)	P	-	0,00	0,00	0L	/	/	/	/	A	
6			GLMSE11	1h+ M	1L	3h+ L	3H	+ (L.m)	P	+	28,93	52,53	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
7			GLMSE12	1h+ L	1L	3h+ Ø	3L	+ (L.m)	P	+	26,98	52,42	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
8			GLMSE13	1h+ Ø	1M	3h+Ø	3L	+ (L.m)	P	-	0,00	0,00	0Ø	/	/	/	/	A	
9			GLMSE14	2h+ L	2L	3h+ Ø	3L	+ (L.m)	P	+	27,05	52,59	3h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
10			GLMSE15	2h+ Ø	2L	3h+ Ø	3L	+ (L.m)	P	+	26,57	52,55	3h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
11			GLMSE16	0L	0M	0H	0H	/	**A**	+	27,71	52,61	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
12			GLMSE17	0L	0M	0H	0H	/	**A**	+	22,87	53,50	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
13			GLMSE18	2h+ Ø	2L	3h Ø	3M	+ (L.m)	P	+	27,55	52,70	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
14			GLMSE19	0L	0H	0H	0H	/	**A**	-	0,00	0,00	0Ø	/	/	/	/	A	
15			GLMSE20	2h+ Ø	2L	3h+ Ø	3M	+ (L.m)	P	+	26,03	52,48	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
16			GLMSE21	1h+ L	1H	3h+ Ø	3L	+ (L.m)	P	+	24,50	52,68	3h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
17			GLMSE22	3h+ L	2M	3h+ L	3M	+ (L.m)	P	+	23,65	52,76	3h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
18			GLMSE23	3h+ Ø	3L	3h+ Ø	3M	+ (L.m)	P	+	25,24	52,72	3h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
19			GLMSE24	3h+ L	3H	3h+ L	2H	+ (L.m)	P	-	0,00	0,00	0Ø	/	/	/	/	A	
20			GLMSE25	3h+ L	3L	3h+ L	3H	+ (L.m)	P	-	0,00	0,00	0Ø	/	/	/	/	A	
1		2.8	GLMSE26	3h+ Ø	3L	3h+ Ø	3L	+ (L.m)	**P**	+	24,93	52,70	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	**P**	RM = 5/5 AM = 5/5
2			GLMSE27	2h+ L	2L	3h+ Ø	3L	+ (L.m)	**P**	+	24,01	52,78	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	**P**	
3			GLMSE28	4h+ Ø	3L	3h+ Ø	3L	+ (L.m)	**P**	+	24,85	52,62	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	**P**	
4			GLMSE29	3h+ Ø	3L	3h+ Ø	3L	+ (L.m)	**P**	+	22,72	52,67	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	**P**	
5			GLMSE30	3h+ Ø	3L	3h+ Ø	3L	+ (L.m)	**P**	+	23,61	52,79	4h+ Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	**P**	

VEGETAL PRODUCTS

Total viable count : <4.0x10[1] CFU/g

#	Sample	Contamination level (CFU/25 g)	Sample ID	RM: NF EN ISO 11290-1						AM: GENE UP							Number of positive results per method
				Half Fraser		Fraser		Confir-mation	**Final result**	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	
				ALOA	PALCAM	ALOA	PALCAM				ALOA						
1	Mix of precooked vegetables	0	GLMV01	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0 Ø	/	/	/	/	A	RM = 0/5 AM = 0/5
2			GLMV02	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0 Ø	/	/	/	/	A	
3			GLMV03	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0 Ø	/	/	/	/	A	
4			GLMV04	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0 Ø	/	/	/	/	A	
5			GLMV05	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0 Ø	/	/	/	/	A	
6		0.5	GLMV06	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0 Ø	/	/	/	/	A	RM = 6/20 AM = 11/20
7			GLMV07	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0 Ø	/	/	/	/	A	
8			GLMV08	3h+ Ø	3 Ø	4h+ Ø	4 Ø	+ (L. m)	P	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
9			GLMV09	3h+ Ø	3 Ø	4h+ Ø	4 Ø	+ (L. m)	P	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
10			GLMV10	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0 Ø	/	/	/	/	A	
11			GLMV11	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0 Ø	/	/	/	/	A	
12			GLMV12	0 Ø	0 Ø	0 Ø	0 Ø	/	A	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
13			GLMV13	0 Ø	0 Ø	0 Ø	0 Ø	/	A	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
14			GLMV14	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0 Ø	/	/	/	/	A	
15			GLMV15	0 Ø	0 Ø	0 Ø	0 Ø	/	A	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
16			GLMV16	0 L	0 L	0 Ø	0 Ø	/	A	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
17			GLMV17	3h+ Ø	3 Ø	4h+ Ø	4 Ø	+ (L. m)	P	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
18			GLMV18	3h+ Ø	3 Ø	4h+ Ø	4 Ø	+ (L. m)	P	-	0 Ø	/	/	/	/	A	
19			GLMV19	3h+ Ø	3 Ø	1h-4h+ Ø	4 Ø	+ (L. m)	P	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
20			GLMV20	0 Ø	0 Ø	0 Ø	0 Ø	/	A	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
21			GLMV21	3h+ Ø	3 Ø	4h+ Ø	4 Ø	+ (L. m)	P	-	0 Ø	/	/	/	/	A	
22			GLMV22	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0 Ø	/	/	/	/	A	
23			GLMV23	0 Ø	0 Ø	0 Ø	0 Ø	/	A	+	0 Ø	/	/	/	/	A (FP)	
24			GLMV24	0 Ø	0 Ø	0 Ø	0 Ø	/	A	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
25			GLMV25	0 Ø	0 L	0 L	0 M	/	A	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
26		2.3	GLMV26	3h+ Ø	4 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	RM = 4/5 AM = 4/5
27			GLMV27	3h+ Ø	3 Ø	1h-4h+ Ø	4 Ø	+ (L. m)	**P**	-	0 Ø	/	/	/	/	**A**	
28			GLMV28	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
29			GLMV29	3h+ Ø	3 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	+	3h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
30			GLMV30	3h+ Ø	3 Ø	4h+ Ø	4 Ø	+ (L. m)	**P**	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	

COMPOSITE FOODS

Total viable count : 7.4×10^2 CFU/g

#	Matrix	Contamination level (CFU/25 g)	Sample ID	RM: NF EN ISO 11290-1						AM: GENE UP							Number of positive results per method
				Half Fraser		Fraser		Confir-mation	**Final result**	GENE UP result	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	
				ALOA	PALCAM	ALOA	PALCAM				ALOA						
1	Mixed salad	0	GLMSE1	0 Ø	0 Ø	0 L	0 H	/	A	-	0 M	/	/	/	/	A	RM = 0/5 AM = 0/5
2			GLMSE2	0 Ø	0 Ø	0 L	0 L	/	A	-	0 M	/	/	/	/	A	
3			GLMSE3	0 Ø	0 Ø	0 M	0 H	/	A	-	0 L	/	/	/	/	A	
4			GLMSE4	0 Ø	0 L	0 L	0 M	/	A	-	0 M	/	/	/	/	A	
5			GLMSE5	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0 M	/	/	/	/	A	
6		0,9	GLMSE6	1h+ Ø	2 L	3h+ Ø	3 M	+ (L. m)	P	+	4h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	RM = 13/20 AM = 15/20
7			GLMSE7	0 Ø	0 L	0 H	0 H	/	A	-	0 Ø	/	/	/	/	A	
8			GLMSE8	2h+ Ø	2 Ø	3h+ Ø	4 Ø	+ (L. m)	P	+	3h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
9			GLMSE9	1h+ Ø	1 Ø	3h+ Ø	3 Ø	+ (L. m)	P	+	4h+ Ø	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
10			GLMSE10	0 Ø	0 Ø	0 M	0 H	/	A	-	0 L	/	/	/	/	A	
11			GLMSE11	1h+ Ø	1 Ø	3h+ L	4 L	+ (L. m)	P	-	0 L	/	/	/	/	A	
12			GLMSE12	1h+ Ø	1 Ø	3h+ Ø	3 M	+ (L. m)	P	+	4h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
13			GLMSE13	1h+ Ø	1 Ø	4h+ Ø	4 Ø	+ (L. m)	P	+	3h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
14			GLMSE14	0 Ø	0 L	0 Ø	0 Ø	/	A	+	2h+ H	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
15			GLMSE15	1h+ Ø	1 L	3h+ Ø	4 L	+ (L. m)	P	+	4h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
16			GLMSE16	2h+ Ø	2 L	3h+ Ø	2 M	+ (L. m)	P	+	3h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
17			GLMSE17	2h+ Ø	2 L	3h+ Ø	4 L	+ (L. m)	P	+	3h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
18			GLMSE18	0 Ø	0 L	0 L	0 H	/	A	+	3h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
19			GLMSE19	0 Ø	0 L	0 L	0 H	/	A	+	3h+ H	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
20			GLMSE20	1h+ Ø	1 L	3h+ Ø	4 L	+ (L. m)	P	+	3h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
21			GLMSE21	2h+ L	2 L	3h+ Ø	4 Ø	+ (L. m)	P	+	1h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
22			GLMSE22	0 Ø	0 L	0 L	0 H	/	A	+	0 M	/	/	/	/	A (FP)	
23			GLMSE23	1h+ Ø	1 L	4h+ Ø	4 L	+ (L. m)	P	+	3h+ H	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
24			GLMSE24	1h+ Ø	1 L	4h+ Ø	4 Ø	+ (L. m)	P	+	1h+ H	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	P	
25			GLMSE25	0 Ø	0 L	0 Ø	0 Ø	/	A	-	0 M	/	/	/	/	A	
26		2,7	GLMSE26	2h+ Ø	1 L	3h+ Ø	3 L	+ (L. m)	**P**	+	4h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	RM = 4/5 AM = 5/5
27			GLMSE27	2h+ Ø	2 L	4h+ Ø	4 Ø	+ (L. m)	**P**	+	3h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
28			GLMSE28	2h+ Ø	2 L	4h+ Ø	4 L	+ (L. m)	**P**	+	4h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
29			GLMSE29	0 Ø	0 L	0 L	0 L	/	**A**	+	4h+ L	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	
30			GLMSE30	2h+ L	3 L	3h+ Ø	4 L	+ (L. m)	**P**	+	1h+ M	+ (L. m)	+ (L. m)	+ (L. m)	+ (L. m)	**P**	

ENVIRONMENTAL SAMPLES (GENERAL PROTOCOLE)

Total viable count : 3.0×10^2 CFU /mL

#	Matrix	Contamination level (CFU/25 g)	Sample ID	RM: NF EN ISO 11290-1						AM: GENE UP									Number of positive results per method
				Half Fraser		Fraser		Confir-mation	**Final result**	GENE UP result			Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5	Final result	
				ALOA	PALCAM	ALOA	PALCAM			Result	CP	MP	ALOA						
1	Process water	0	GLMPW1	0 Ø	0 Ø	0 L	0 H	/	A	-	0,00	0,00	0 M	/	/	/	/	A	RM = 0/5 AM = 0/5
2			GLMPW2	0 Ø	0 Ø	0 L	0 L	/	**A**	-	0,00	0,00	0 L	/	/	/	/	A	
3			GLMPW3	0 Ø	0 Ø	0 M	0 H	/	**A**	-	0,00	0,00	0 L	/	/	/	/	A	
4			GLMPW4	0 Ø	0 L	0 L	0 M	/	**A**	-	0,00	0,00	0 M	/	/	/	/	A	
5			GLMPW5	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0 L	/	/	/	/	A	
1		1.6	GLMPW6	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0,00	0,00	0L	/	/	/	/	A	RM = 6/20 AM = 8/20
2			GLMPW7	0 Ø	0 Ø	0 Ø	0 Ø	/	A	+	17,67	65,17	4h+Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
3			GLMPW8	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0,00	0,00	0L	/	/	/	/	A	
4			GLMPW9	0 Ø	0 Ø	0 Ø	0 Ø	/	A	+	18,82	65,28	4h+Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
5			GLMPW10	3h+Ø	3Ø	4h+Ø	4Ø	+ (L.m)	**P**	-	0,00	0,00	0M	/	/	/	/	A	
6			GLMPW11	0Ø	0Ø	0Ø	0Ø	/	A	-	0,00	0,00	0M	/	/	/	/	A	
7			GLMPW12	4h+Ø	4Ø	4h+Ø	4Ø	+ (L.m)	**P**	-	0,00	0,00	0M	/	/	/	/	A	
8			GLMPW13	0Ø	0Ø	0Ø	0Ø	/	A	-	0,00	0,00	0L	/	/	/	/	A	
9			GLMPW14	3h+Ø	3Ø	3h+Ø	3Ø	+ (L.m)	**P**	+	16,88	65,42	4h+Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
10			GLMPW15	0Ø	0Ø	0Ø	0Ø	/	A	-	0,00	0,00	0L	/	/	/	/	A	
11			GLMPW16	3h+Ø	3Ø	3h+Ø	3Ø	+ (L.m)	**P**	+	20,21	65,19	4h+Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
12			GLMPW17	0 Ø	0 Ø	0 Ø	0 Ø	/	A	+	17,68	65,19	4h+Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
13			GLMPW18	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0,00	0,00	0M	/	/	/	/	A	
14			GLMPW19	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0,00	0,00	0M	/	/	/	/	A	
15			GLMPW20	3h+Ø	3Ø	3h+Ø	4Ø	+ (L.m)	**P**	+	24,03	65,07	3h+L	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
16			GLMPW21	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0,00	0,00	0L	/	/	/	/	A	
17			GLMPW22	3h+Ø	3Ø	0Ø	3Ø	+ (L.m)	**P**	-	0,00	0,00	0M	/	/	/	/	A	
18			GLMPW23	0 Ø	0 Ø	0 Ø	0 Ø	/	A	+	21,04	65,14	4h+Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
19			GLMPW24	0 Ø	0 Ø	0 Ø	0 Ø	/	A	+	16,53	65,34	4h+Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
20			GLMPW25	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0,00	0,00	0H	/	/	/	/	A	
1		4.4	GLMPW26	3h+ Ø	4Ø	3h+ Ø	4Ø	+ (L.m)	**P**	-	0,00	0,00	0L	/	/	/	/	**A**	RM = 2/5 AM = 2/5
2			GLMPW27	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0M	/	/	/	/	**A**	
3			GLMPW28	3h+Ø	4Ø	2h+Ø	0Ø	+ (L.m)	**P**	+	24,89	65,20	3h+Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
4			GLMPW29	0Ø	0Ø	0Ø	0Ø	/	**A**	+	20,94	62,08	4h+Ø	+ (L.m)	+ (L.m)	+ (L.m)	+ (L.m)	P	
5			GLMPW30	0Ø	0Ø	0Ø	0Ø	/	**A**	-	0,00	0,00	0M	/	/	/	/	**A**	

ENVIRONMENTAL SAMPLES (SPECIFIC PROTOCOLE)

Total viable count : <10 CFU / g

#	Matrix	Contamination level (CFU/25 g)	Sample ID	RM: NF EN ISO 11290-1						AM: GENE UP							Number of positive results per method
				Half Fraser		Fraser		Confir-mation	Final result	GENE UP result			Conf. 1	Conf. 2	Conf. 3	Final result	
				ALOA	PALCAM	ALOA	PALCAM			Result	CP	MP	ALOA				
1	Swab	0	GLMS1	0 Ø	0 Ø	0 Ø	0 Ø	/	A	-	0,00	0,00	0Ø	/	/	**A**	RM = 0/5 AM = 0/5
2			GLMS2	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0Ø	/	/	**A**	
3			GLMS3	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0Ø	/	/	**A**	
4			GLMS4	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0Ø	/	/	**A**	
5			GLMS5	0 Ø	0 Ø	0 Ø	0 Ø	/	**A**	-	0,00	0,00	0Ø	/	/	**A**	
1		1.1	GLMS6	3h+Ø	3Ø	3h+Ø	3Ø	+ (L.m)	**P**	+	25,93	65,34	3h+Ø	+ (L.m)	+ (L.m)	**P**	RM = 13/20 AM = 12/20
2			GLMS7	2h+Ø	3Ø	2h+Ø	3Ø	+ (L.m)	**P**	+	25,62	65,24	3h+Ø	+ (L.m)	+ (L.m)	**P**	
3			GLMS8	2h+Ø	2Ø	2h+Ø	4Ø	+ (L.m)	**P**	-	7,56	0,00	0Ø	/	/	**A**	
4			GLMS9	3h+Ø	2Ø	3h+Ø	3Ø	+ (L.m)	**P**	+	23,18	65,20	2h+Ø	+ (L.m)	+ (L.m)	**P**	
5			GLMS10	0Ø	0Ø	0Ø	0Ø	/	**A**	-	0,00	0,00	0Ø	/	/	**A**	
6			GLMS11	0Ø	0Ø	0Ø	0Ø	/	**A**	-	0,00	0,00	0Ø	/	/	**A**	
7			GLMS12	3h+Ø	3Ø	3h+Ø	4Ø	+ (L.m)	**P**	+	25,89	65,11	3h+Ø	+ (L.m)	+ (L.m)	**P**	
8			GLMS13	2h+Ø	2Ø	2h+Ø	3Ø	+ (L.m)	**P**	-	0,00	0,00	0Ø	/	/	**A**	
9			GLMS14	0Ø	0Ø	Ø	0Ø	/	**A**	-	0,00	0,00	0Ø	/	/	**A**	
10			GLMS15	3h+Ø	3Ø	2h+Ø	4Ø	+ (L.m)	**P**	-	0,00	0,00	0Ø	/	/	**A**	
11			GLMS16	2h+Ø	2Ø	2h+Ø	3Ø	+ (L.m)	**P**	+	25,94	65,35	2h+Ø	+ (L.m)	+ (L.m)	**P**	
12			GLMS17	0Ø	0Ø	0Ø	0Ø	/	**A**	-	0,00	0,00	0Ø	/	/	**A**	
13			GLMS18	3h+Ø	3Ø	3h+Ø	3Ø	+ (L.m)	**P**	+	27,72	65,64	2h+Ø	+ (L.m)	+ (L.m)	**P**	
14			GLMS19	3h+Ø	3Ø	4h	4Ø	+ (L.m)	**P**	+	26,06	65,34	2h+Ø	+ (L.m)	+ (L.m)	**P**	
15			GLMS20	0Ø	0Ø	0Ø	0Ø	/	**A**	+	24,19	65,11	2h+Ø	+ (L.m)	+ (L.m)	**P**	
16			GLMS21	3h+Ø	3Ø	3h+Ø	3Ø	+ (L.m)	**P**	+	25,04	65,47	3h+Ø	+ (L.m)	+ (L.m)	**P**	
17			GLMS22	0Ø	0Ø	0Ø	0Ø	/	**A**	+	25,08	65,28	3h+Ø	+ (L.m)	+ (L.m)	**P**	
18			GLMS23	3h+Ø	3Ø	3h+Ø	3Ø	+ (L.m)	**P**	-	0,00	0,00	0Ø	/	/	**A**	
19			GLMS24	2h+Ø	3Ø	3h+Ø	3Ø	+ (L.m)	**P**	+	24,54	65,34	3h+Ø	+ (L.m)	+ (L.m)	**P**	
20			GLMS25	0Ø	0Ø	0Ø	0Ø	/	**A**	+	25,66	65,24	3h+Ø	+ (L.m)	+ (L.m)	**P**	
1		3.1	GLMS26	3h+Ø	3Ø	3h+Ø	4Ø	+ (L.m)	**P**	+	23,02	65,20	3h+Ø	+ (L.m)	+ (L.m)	**P**	RM = 5/5 AM = 5/5
2			GLMS27	2h+Ø	2Ø	2h+Ø	3Ø	+ (L.m)	**P**	+	23,59	65,21	3h+Ø	+ (L.m)	+ (L.m)	**P**	
3			GLMS28	3h+Ø	3Ø	3h+Ø	3Ø	+ (L.m)	**P**	+	22,97	65,19	2h+Ø	+ (L.m)	+ (L.m)	**P**	
4			GLMS29	3h+Ø	3Ø	3h+Ø	3Ø	+ (L.m)	**P**	+	23,45	65,38	2h+Ø	+ (L.m)	+ (L.m)	**P**	
5			GLMS30	3h+Ø	3Ø	3h+Ø	3Ø	+ (L.m)	**P**	+	22,15	65,48	3h+Ø	+ (L.m)	+ (L.m)	**P**	

DAIRY PRODUCTS (PROTOCOLE ③)

Matrix : Raw cow milk
Strain : *Listeria monocytogenes* AFNL 102
Total viable count : 380 CFU/mL

Contamination level (CFU/25 mL)	Sample ID	RM: NF EN ISO 11290-1 (#)						AM: GENE-UP LMO2					Number of positive results per method
		Half Fraser		Fraser		Confirmation	**Final result**	GENE UP result			Conf. 1	Final result	
		ALOA	PALCAM	ALOA	PALCAM			CP	MP	Result	ALOA		
0	1	-	-	-	-	/	-	-	-	-	-	-	**RM = 0/5 AM = 0/5**
	2	-	-	-	-	/	-	-	-	-	-	-	
	3	-	-	-	-	/	-	-	-	-	-	-	
	4	-	-	-	-	/	-	-	-	-	-	-	
	5	-	-	-	-	/	-	-	-	-	-	-	
1,3	6	+	-	+	+	+	+	31,47	65,09	+	+	+	**11/20 RM 17/20 AM**
	7	-	-	-	-	/	-	31,53	64,54	+	+	+	
	8	+	+	+	+	+	+	31,96	64,50	+	+	+	
	9	-	-	-	-	/	-	/	/	-	-	-	
	10	-	-	+	+	+	+	28,7	64,48	+	+	+	
	11	-	-	-	-	/	-	33,62	64,49	+	+	+	
	12	-	-	-	-	/	-	/	/	-	-	-	
	13	-	-	-	-	/	-	33,2	64,85	+	+	+	
	14	+	+	+	+	+	+	31,05	64,40	+	+	+	
	15	-	-	-	-	/	-	34,85	64,28	+	+	+	
	16	+	+	+	+	+	+	/	/	-	-	-	
	17	+	+	+	+	+	+	31,65	64,18	+	+	+	
	18	-	-	-	-	/	-	32	64,66	+	+	+	
	19	-	-	+	+	+	+	32,43	64,58	+	+	+	
	20	-	-	-	-	/	-	31,43	64,56	+	+	+	
	21	+	+	+	+	+	+	34,86	64,76	+	+	+	
	22	+	+	+	+	+	+	31,55	64,57	+	+	+	
	23	-	-	-	-	/	-	32,8	64,70	+	+	+	
	24	-	-	+	+	+	+	30,77	64,62	+	+	+	
	25	+	+	+	+	+	+	31,52	64,54	+	+	+	
3,6	26	+	+	+	+	+	+	33,15	64,82	+	+	+	**4/5 RM 5/5 AM**
	27	+	+	+	+	+	+	32,14	64,59	+	+	+	
	28	-	-	-	-	/	-	31,04	64,48	+	+	+	
	29	+	+	+	+	+	+	30,02	64,45	+	+	+	
	30	-	-	+	+	+	+	33,1	64,70	+	+	+	

APPENDIX 6

INCLUSIVITE/EXCLUSIVITE : RAW DATA

INCLUSIVITY (Enrichment in LPT broth)

Number	Code	Microorganism	Origin	Gene-UP result			Confirmation
				CP	MP	Result	
1	LIS.4.1	*Listeria monocytogenes*	CIP 78.31	19.17	64.74	+	Positive
2	LIS.4.2	*Listeria monocytogenes*	Clinical environment	19.34	61.95	+	Positive
3	LIS.4.4	*Listeria monocytogenes 1/2a*	zucchini cheese brochette	21.64	64.97	+	Positive
4	LIS.4.5	*Listeria monocytogenes 1/2a*	ham and vegetables	18.01	64.73	+	Positive
5	LIS.4.6	*Listeria monocytogenes 1/2a*	ham cheese sandwich	20.76	65.03	+	Positive
6	LIS.4.7	*Listeria monocytogenes 1/2a*	ham cheese sandwich	21.14	62.19	+	Positive
7	LIS.4.8	*Listeria monocytogenes 1/2a*	tuna egg surimi sandwich	19.49	64.72	+	Positive
8	LIS.4.9	*Listeria monocytogenes 1/2a*	roasted beef bone meal	18.92	64.94	+	Positive
9	LIS.4.10	*Listeria monocytogenes 1/2a*	salad	19.00	62.02	+	Positive
10	LIS.4.11	*Listeria monocytogenes 1/2a*	curry chicken	20.13	61.96	+	Positive
11	LIS.4.12	*Listeria monocytogenes 1/2a*	smoked salmon	18.81	64.79	+	Positive
12	LIS.4.13	*Listeria monocytogenes 1/2a*	foie gras	19.15	64.88	+	Positive
13	LIS.4.14	*Listeria monocytogenes 1/2a*	ktipiti sauce	19.80	62.03	+	Positive
14	LIS.4.15	*Listeria monocytogenes 1/2a*	salmon tartare	19.22	64.84	+	Positive
15	LIS.4.16	*Listeria monocytogenes 1/2a*	swab	19.44	64.74	+	Positive
16	LIS.4.17	*Listeria monocytogenes 1/2a*	raw vegetables	19.29	64.91	+	Positive
17	LIS.4.18	*Listeria monocytogenes 1/2a*	vegetables salad	21.04	61.80	+	Positive
18	LIS.4.19	*Listeria monocytogenes 1/2a*	Guinea fowl	22.87	64.54	+	Positive
19	LIS.4.20	*Listeria monocytogenes 1/2a*	bacon vegetables sandwich	18.66	64.54	+	Positive
20	LIS.4.21	*Listeria monocytogenes 1/2a*	CIP 103574	19.48	64.94	+	Positive
21	LIS.4.22	*Listeria monocytogenes 1/2a*	CIP 104794	25.32	62.08	+	Positive
22	LIS.4.23	*Listeria monocytogenes 1/2a*	Cheese	16.70	64.96	+	Positive
23	LIS.4.24	*Listeria monocytogenes 1/2a*	ready to eat meal with cheese	22.74	64.71	+	Positive
24	LIS.4.25	*Listeria monocytogenes 1/2a*	Fish and vegetables provençale	18.01	65.13	+	Positive
25	LIS.4.26	*Listeria monocytogenes 1/2a*	Ham	19.17	64.93	+	Positive
26	LIS.4.27	*Listeria monocytogenes 1/2a*	Minced meat	17.13	65.09	+	Positive
27	LIS.4.28	*Listeria monocytogenes 1/2b*	Duck	18.65	64.78	+	Positive
28	LIS.4.29	*Listeria monocytogenes 1/2b*	Praliné	20.56	64.89	+	Positive
29	LIS.4.30	*Listeria monocytogenes 1/2b*	Raw turkey	18.50	64.84	+	Positive
30	LIS.4.31	*Listeria monocytogenes 1/2b*	Rollmops	17.51	65.09	+	Positive
31	LIS.4.32	*Listeria monocytogenes 1/2b*	Raw milk	20.48	64.75	+	Positive
32	LIS.4.33	*Listeria monocytogenes 1/2c*	Minced meat	17.33	64.70	+	Positive
33	LIS.4.34	*Listeria monocytogenes 1/2c*	Gouda	19.35	64.35	+	Positive
34	LIS.4.35	*Listeria monocytogenes 1/2c*	« chef » salad sandwich	19.93	62.38	+	Positive
35	LIS.4.36	*Listeria monocytogenes 1/2c*	CIP 103573	21.22	62.25	+	Positive
36	LIS.4.37	*Listeria monocytogenes 1/2c*	Duck foie gras	19.20	62.31	+	Positive
37	LIS.4.38	*Listeria monocytogenes 1/2c*	Duck foie gras	20.66	62.32	+	Positive
38	LIS.4.39	*Listeria monocytogenes 1/2c*	Salmon tartare	20.11	62.29	+	Positive
39	LIS.4.40	*Listeria monocytogenes 1/2c*	Ktipiti sauce	20.08	62.08	+	Positive
40	LIS.4.41	*Listeria monocytogenes 1/2c*	Foie gras	21.01	62.10	+	Positive
41	LIS.4.42	*Listeria monocytogenes 3a*	Smoked salmon	17.06	64.82	+	Positive
42	LIS.4.43	*Listeria monocytogenes 3a*	Sliced bacon	17.48	64.86	+	Positive
43	LIS.4.44	*Listeria monocytogenes 3a*	Swab	19.46	64.97	+	Positive
44	LIS.4.45	*Listeria monocytogenes 3a*	Roasted bacon	20.51	65.14	+	Positive

Number	Code	Microorganism	Origin	Gene-UP result			Confirmation
				CP	MP	Result	
45	LIS.4.46	*Listeria monocytogenes 3a*	Goat cheese sandwich	19.87	65.02	+	Positive
46	LIS.4.47	*Listeria monocytogenes 4b*	Salmon slices	19.62	64.98	+	Positive
47	LIS.4.48	*Listeria monocytogenes 4b*	CIP 103575	21.73	64.77	+	Positive
48	LIS.4.49	*Listeria monocytogenes 4b*	CIP 7838	20.83	64.86	+	Positive
49	LIS.4.50	*Listeria monocytogenes 4b*	Salmon swab	19.76	65.17	+	Positive
50	LIS.4.51	*Listeria monocytogenes 4c*	CIP 7839	17.21	64.46	+	Positive

EXCLUSIVITY

N°	Code	Microorganism	Origin	Gene-UP result		
				CP	MP	Result
1	LIS.1.1	*Listeria grayi*	CIP 105447T	0,00	0,00	-
2	LIS.2.1	*Listeria innocua*	Vegetables sandwich	0,00	0,00	-
3	LIS.2.2	*Listeria innocua*	Bacon vegetables sandwich	0,00	0,00	-
4	LIS.2.3	*Listeria innocua*	Door swab	0,00	0,00	-
5	LIS.2.4	*Listeria innocua*	CIP 80.12	0,00	0,00	-
6	LIS.2.5	*Listeria innocua*	CTSCCV	0,00	0,00	-
7	LIS.2.6	*Listeria innocua*	Pork	0,00	0,00	-
8	LIS.2.7	*Listeria innocua*	Chicken bacon sandwich	0,00	0,00	-
9	LIS.2.8	*Listeria innocua*	Beef tongue	0,00	0,00	-
10	LIS.2.9	*Listeria innocua*	Beef meat	0,00	0,00	-
11	LIS.2.10	*Listeria innocua*	CIP 80.11	0,00	0,00	-
12	LIS.3.1	*Listeria ivanovii*	Raw milk	0,00	0,00	-
13	LIS.3.2	*Listeria ivanovii*	CTSCCV	0,00	0,00	-
14	LIS.3.4	*Listeria ivanovii subsp. Londoniensis*	CIP 103505	0,00	0,00	-
15	LIS.5.1	*Listeria seeligeri*	CIP 79.46	0,00	0,00	-
16	LIS.5.2	*Listeria seeligeri*	CTSCCV	0,00	0,00	-
17	LIS.6.1	*Listeria welshimeri*	CIP 81.48	0,00	0,00	-
18	LIS.6.2	*Listeria welshimeri*	CIP 81.94 T	0,00	0,00	-
19	LIS.6.3	*Listeria welshimeri*	CTSCCV	0,00	0,00	-
20	BAC.1.1	*Bacillus cereus*	Dairy industry	0,00	0,00	-
21	BAC.2.1	*Bacillus circulans*	Dairy industry	0,00	0,00	-
22	BAC.4.1	*Bacillus subtilis*	Pudding	0,00	0,00	-
23	BRE.1.1	*Brevibacterium casei*	Dairy product	0,00	0,00	-
24	ENTC.1.2	*Enterococcus faecalis*	ATCC 33186	0,00	0,00	-
25	ENTC.2.1	*Enterococcus faecium*	Dairy industry	0,00	0,00	-
26	LACB.1.1	*Lactobacillus casei*	Dairy product	0,00	0,00	-
27	LACB.3.1	*Lactobacillus leishmanii*	CIP 53.61	0,00	0,00	-
28	MIC.1.1	*Micrococcus luteus*	Dairy industry	0,00	0,00	-
29	RHO.1.1	*Rhodococcus equi*	CIP 58.69	0,00	0,00	-
30	STA.2.1	*Staphylococcus epidermidis*	Dairy product	0,00	0,00	-

INCLUSIVITY 2021 (Enrichment in LX broth)

INCLUSIVITY										
N°	Reference		Strain	Serovar	Origin	Inoculation level (CFU/225mL)	GENE-UP result with protocol ③			
							CP	MP	Result	Confirmation
1	AFNL	83	*L. monocytogenes*	IIc	goat cheese	47	16,17	61,47	+	+ (H+)
2	AFNL	84	*L. monocytogenes*	Ivb	garlic sausage	61	18,63	64,43	+	+ (H+)
3	AFNL	85	*L. monocytogenes*	IIa	sausage	55	15,95	64,71	+	+ (H+)
4	AFNL	86	*L. monocytogenes*	IIa	chicken fillet	40	16,64	64,61	+	+ (H+)
5	AFNL	87	*L. monocytogenes*	IIa	goat milk	46	16,09	61,9	+	+ (H+)
6	AFNL	88	*L. monocytogenes*	IIa	Valençay (goat cheese)	84	16	64,43	+	+ (H+)
7	AFNL	89	*L. monocytogenes*	IIa	Pork filet mignon	51	16,12	64,42	+	+ (H+)
8	AFNL	90	*L. monocytogenes*	IIa	ground steak	61	16,34	61,31	+	+ (H+)
9	AFNL	91	*L. monocytogenes*	Ivb	Duck rilettes	44	18,87	63,95	+	+ (H+)
10	AFNL	92	*L. monocytogenes*	IIa	Pork terrine	36	16,08	64,45	+	+ (H+)
11	AFNL	93	*L. monocytogenes*	Ivb	pastry	52	18,97	64,47	+	+ (H+)
12	AFNL	94	*L. monocytogenes*	IIa	Sushi shrimp	26	16,23	64,52	+	+ (H+)
13	AFNL	95	*L. monocytogenes*	IIa	Potato / salmon	46	16	64,53	+	+ (H+)
14	AFNL	96	*L. monocytogenes*	IIa	Tuna endive salad	48	16,1	64,64	+	+ (H+)
15	AFNL	97	*L. monocytogenes*	Ivb	Beet	56	18,22	64,54	+	+ (H+)
16	AFNL	98	*L. monocytogenes*	IIa	pastry	53	15,8	64,36	+	+ (H+)
17	AFNL	99	*L. monocytogenes*	IIa	process water	39	15,71	61,53	+	+ (H+)
18	AFNL	100	*L. monocytogenes*	Ivb	Tailandaise salad	43	18,68	64,26	+	+ (H+)
19	AFNL	101	*L. monocytogenes*	IIa	Minestrone	34	15,86	61,44	+	+ (H+)
20	AFNL	102	*L. monocytogenes*	IIa	Milk	32	16,52	64,12	+	+ (H+)
21	AFNL	103	*L. monocytogenes*	Ivb	Beet	47	18,21	64,07	+	+ (H+)
22	AFNL	104	*L. monocytogenes*	IIa	Salmon tarama	41	16,02	64,04	+	+ (H+)
23	AFNL	105	*L. monocytogenes*	IIb	pastry	32	19,7	63,86	+	+ (H+)
24	AFNL	106	*L. monocytogenes*	Ivb	Cauliflower	49	19,58	63,9	+	+ (H+)
25	AFNL	107	*L. monocytogenes*	Ivb	Citrus tabbouleh	50	19,77	63,84	+	+ (H+)
26	AFNL	108	*L. monocytogenes*	IIa	raw halibut fillet	50	16,58	64,14	+	+ (H+)
27	AFNL	109	*L. monocytogenes*	IIa	Celery	34	17,49	64,17	+	+ (H+)
28	AFNL	110	*L. monocytogenes*	IIa	Salad	26	16,71	64,09	+	+ (H+)
29	AFNL	111	*L. monocytogenes*	IIb	pastry	14	21,07	63,64	+	+ (H+)
30	AFNL	112	*L. monocytogenes*	IIb	Brandade	33	17,94	64,46	+	+ (H+)
31	AFNL	113	*L. monocytogenes*	IIa	Salmon blinis	30	17,92	64,91	+	+ (H+)
32	AFNL	114	*L. monocytogenes*	IIa	tuna pizza	31	17,82	64,31	+	+ (H+)
33	AFNL	115	*L. monocytogenes*	IIa	Salmon	60	16,55	64,29	+	+ (H+)
34	AFNL	116	*L. monocytogenes*	II a	Rillons	45	16,09	64,34	+	+ (H+)
35	AFNL	117	*L. monocytogenes*	IV b	Cold room cloth	40	18,2	64,37	+	+ (H+)
36	AFNL	118	*L. monocytogenes*	II a	ground beef	47	16	61,69	+	+ (H+)
37	AFNL	119	*L. monocytogenes*	II a	turkey	38	16,32	64,4	+	+ (H+)
38	AFNL	120	*L. monocytogenes*	II a	Cucumber	47	16,61	64,34	+	+ (H+)

INCLUSIVITY										
N°	Reference		Strain	Serovar	Origin	Inoculation level (CFU/225mL)	GENE-UP result with protocol ③			
							CP	MP	Result	Confirmation
39	AFNL	121	*L. monocytogenes*	II a	Trencher cloth	42	16,05	64,29	+	+ (H+)
40	AFNL	122	*L. monocytogenes*	II a	pork	27	16,04	64,25	+	+ (H+)
41	AFNL	123	*L. monocytogenes*	IV b	Trencher cloth	43	17,94	63,95	+	+ (H+)
42	AFNL	124	*L. monocytogenes*	IV b	Pastry laboratory	49	18,26	64,08	+	+ (H+)
43	AFNL	125	*L. monocytogenes*	IV b	Kitchen worktop cloth	53	17,88	64,19	+	+ (H+)
44	AFNL	126	*L. monocytogenes*	II b	sausage	44	18,43	64,21	+	+ (H+)
45	AFNL	127	*L. monocytogenes*	II a	Chopper cloth	39	16,02	64,32	+	+ (H+)
46	AFNL	128	*L. monocytogenes*	II b	lab floor	40	18,52	63,87	+	+ (H+)
47	AFNL	129	*L. monocytogenes*	IV b	roast beef	46	18,07	64,18	+	+ (H+)
48	AFNL	130	*L. monocytogenes*	II a	sausage	50	16,09	64,36	+	+ (H+)
49	AFNL	131	*L. monocytogenes*	II c	Foie gras	61	17,62	61,46	+	+ (H+)
50	AFNL	132	*L. monocytogenes*	II c	veal	55	15,82	61,58	+	+ (H+)

APPENDIX 7

PERFORMANCE OF THE UNIT DOSE KIT

Caption :

CP:	Crossing point
MP:	Melting point
I:	Inhibition
-:	Negative result
+:	Positive result
-(1/3):	Negative result after dilution 1/3
+ (1/3):	Positive result after dilution 1/3
ST:	Sample Type
SN:	Sample number

MEAT PRODUCTS			Previous validation study			Extension study 2018						Comparison between 1) and 2)
ST	SN	Sample	AM: GENE UP after storage of the lysates 3 days at 5°C			1) AM: GENE UP Current kit/software 2.0			2) AM: GENE UP New kit/software 3.0			
			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
b+	GL1	Chair à saucisse	29,04	52,92	+	29.10	53,40	+	29.03	51.08	+	=
b+	GL2	Canard laqué (cuit)	23,53	52,46	+	23.19	52.88/60.88	+	23.35	51.18	+	=
b+	GL3	Nem Chua (préparation crue)	32,10	52,95	+	32.55	51.74	+	33.51	51.37	+	=
b+	GL4	Canard pipa (cuit)	21,03	60,73	+	20.5	60,70	+	21.56	60.70	I/+ (1/3)	=
a+	GL5	Cuisse de poulet sans os ni peau (cru/surgelé)	22,10	53,22	+	21.86	52.37	+	20.96	51.62	+	=
b+	GL6	Canard laqué (cru)	23,59	60,29	+	23.31	60.08	+	23.09	59.52	+	=
c+	GL7	Jambon avec couenne	21,36	52,10	+	19.94	51.79	+	19.76	58.88	+	=
a+	GL8	Ailes de canard (cru)	20,80	52,81	+	20.86	52.92	+	20.31	51.69	+	=
b+	GL9	Canard laqué (cuit)	20,44	52,38	+	19.9	52.25	+	20.23	51.08	+	=
b+	GL10	Canard laqué (cru)	25,18	60,62	+	25.18	60.7	+	25.20	59.50	+	=
b+	GL11	Rillettes de porc	20,55	52,65	+	19.82	52.62	+	20.03	51.58	+	=
a+	GL12	Cartilage de porc (cru)	25,79	52,92	+	24.9	53.11	+	25.46	51.92	+	=
b+	GL13	Saucisse fraîche sous vide	27,68	53,32	+	26.82	53.43	+	26.92	52.48	+	=
c+	GL14	Volaille fumée tranchée	20,56	53,25	+	20.54	53.5	+	20.44	52.03	+	=
c-	GL15	Jambon supérieur avec couenne	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL16	Poulet (cru)	19,92	53,19	+	20.26	53.56	+	19.76	52.33	+	=
c+	GL17	Bloc de veau fumé	33,99	53,37	+	0.00	0.00	-	0.00	0.00	-	=
b+	GL18	Steak hâché bœuf haricots verts	26,67	59,59	+	25.91	59.13	+	28.11	57.55	+	=
c+	GL19	Saucisson à l'ail sec	33,84	52,36	+	32.18	52.6	+	34.02	52.02	+	=
b+	GL20	Bouchée au poulet (cru)	24,50	52,89	+	23.79	53.19	+	23.79	57.88	+	=
b+	GL21	Veau vallée d'ange mixé (cuit)	20,57	52,56	+	20.15	52.77	+	19.81	52.21	+	=
a-	GL22	Pieds de porc (cuits)	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL23	Pâté au poulet (transformé cru)	24,32	52,72	+	23.80	53.10	+	24.33	51.75	+	=
b+	GL24	Steak hâché aux oignons (surgelé)	30,97	60,13	+	30.07	60.76	+	33.44	58.91	+	=
a+	GL25	Gigot d'agneau sans os (cru)	31,18	58,53	+	32.06	58.66	+	31.98	56.30	+	=
a+	GL26	Escalope de veau (cru)	27,49	59,49	+	29.56	60.08	+	29.49	58.09	+	=
a+	GL27	Côte d'échine de porc (cru)	25,58	59,64	+	26.45	59.68	+	26.42	58.27	+	=
a+	GL28	Filet de porc sans os (cru)	29,93	59,36	+	30.20	59.88	+	30.76	58.26	+	=
c+	GL29	Lardons fumés	25,71	59,43	+	26.25	59.62	+	26.83	58.28	+	=
c+	GL30	Bacon fumé	26,57	52,87	+	26.84	52.92	+	26.69	51.47	+	=
c-	GL31	Jambon sec fumé	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL32	Saucisses de Montbéliard (à cuire)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL39	Escalope marinée de dinde (cru)	27,26	60,85	+	27.57	60.89	+	26.77	60.22	+	=
c-	GL40	Jambon supérieur sans couenne	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL41	Jambon supérieur avec couenne	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL42	Blanc de poulet	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL43	Blanc de dinde	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL44	Rôti de porc (cuit)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL45	Mousse de canard au porto	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL46	Rillettes de poulet rôti	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL47	Escalope de dinde (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL48	Escalope de poulet (cru)	27,93	59,25	+	27.16	59.11	+	27.73	58.32	+	=

MEAT PRODUCTS			Previous validation study			Extension study 2018						Comparison between 1) and 2)
ST	SN	Sample	AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP Current kit/software 2.0			AM: GENE UP New kit/software 3.0			
			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
b+	GL49	Agneau sans os à griller (cru)	33,19	55,10	+	32.96	55.36	+	34.60	54.87	+	=
a+	GL50	Gigot d'agneau (cru)	34,03	35,03	+	32.96	55.30	+	34.74	54.75	+	=
b-	GL51	Steak hâché pur bœuf	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL52	Filet de porc sans os (cru)	32,88	60,27	+	32.51	60.47	+	33.28	60.06	+	=
a-	GL53	Bavette de bœuf (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL54	Rumsteak de cheval (cru)	30,14	52,33	+	29.55	52.4	+	29.98	52.3	+	=
b+	GL55	Médaillon de filet mignon dinde	29,86	59,91	+	29.92	60.26	+	29.84	59.83	+	=
c+	GL56	Saucisses fumées	28,19	59,45	+	28.18	59.40	+	27.73	59.20	+	=
c-	GL57	Lardons allumettes fumées	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL58	Terrine de campagne (porc)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL59	Salami fumé (porc)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL60	Filet de bacon fumé	32,27	60,26	+	31.77	60.48	+	40.00	58.41	+	=
b-	GL61	Mini knacks pur porc	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL62	Rillettes du Mans pur porc	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL135	Bœuf cru mariné (huile de noix)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL136	Bœuf cru mariné (huile d'olive)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL137	Bœuf cru mariné (parmesan)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL138	Filet mignon de dinde (cru)	21,21	59,50	+	22.05	60.00	+	21.76	59.74	+	=
a+	GL139	Escalope de dinde (cru)	25,98	60,54	+	27.72	61.02	+	27.47	60.75	+	=
a-	GL140	Filet de poulet (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL141	Escalope de poulet (cru)	23,47	52,44	+	24.18	59.82	+	23.90	59.11	+	=
a+	GL142	Filet de tournedos (cru)	28,47	60,62	+	29.47	61.11	+	29.82	60.53	+	=
a-	GL143	Bavette d'aloyau (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL144	Collier d'agneau (cru)	29,20	53,03	+	29.90	53.14	+	29.91	59.49	+	=
a-	GL145	Filet de bœuf (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL146	Viande de bœuf (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL147	Rumsteak de bœuf (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL148	Faux filet de cheval (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL149	Cheval tranché (cru)	28,46	59,65	+	28.2	59.73	+	28.11	59.08	+	=
a+	GL150	Epaule d'agneau (cru)	30,47	52,88	+	31.21	53.68	+	31.05	59.52	+	=
a+	GL151	Pavé de veau (cru)	27,46	60,49	+	28.68	61.36	+	28.50	60.75	+	=
a-	GL152	Entrecôte de bœuf (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL153	Viande de porc (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL154	Côte d'échine de porc (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL155	Côtes d'agneau (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL156	Côte de veau (cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL157	Côte de porc (cru)	32,04	60,11	+	33.03	60.69	+	33.83	60.02	+	=
a+	GL158	Travers de porc (cru)	29,65	60,32	+	30.59	60.96	+	30.52	60.56	+	=
a+	GL159	Tournedos de bœuf (cru)	26,45	53,15	+	28.14	53.59	+	27.77	52.34	+	=
a+	GL160	Filet mignon de dinde (cru)	21,80	59,55	+	22.51	59.87	+	21.98	59.04	+	=
c+	GL161	Speck	25,68	59,85	+	26.21	59.78	+	24.64	59.53	+	=
c-	GL162	Salami fumé (porc)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL163	Jambon supérieur sans couenne	27,65	53,33	+	27.76	53.66	+	27.99	52.62	+	=
c+	GL164	Jambon supérieur avec couenne	23,69	53,37	+	24.19	53.78	+	24.02	52.38	+	=

DAIRY PRODUCTS			Previous validation study			Extension study 2018						Comparison between 1) and 2)
ST	SN	Sample	AM: GENE UP after storage of the lysates 3 days at 5°C			1) AM: GENE UP Current kit/software 2.0			2) AM: GENE UP New kit/software 3.0			
			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
a+	GL33	Fromage au lait cru 1	0,00	0,00	-	0.00	53,40	-	0.00	0.00	-	=
a-	GL34	Fromage au lait cru 2	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL35	Fromage au lait cru 3	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL36	Fromage au lait cru 4	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL37	Beurre de baratte	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL38	Lait pasteurisé	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL63	Glace vanille 1	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL64	Glace caramel	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL65	Glace chocolat 1	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL66	Fromage à tartiner (lait pasteurisé)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL67	Montagnolo (fromage - pasteurisé - vache)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL68	Tomme de Savoie (fromage - cru - vache)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL69	Comté (fromage - cru- vache)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL70	Cœur de chèvre (fromage - cru chèvre)	0,00	0,00	-	I/0.00	I/0.00	I/- (1/3)	I/0.00	I/0.00	I/- (1/3)	=
a-	GL71	L a croseta (fromage - cru - chèvre)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL72	Tzatziki	29,85	59,58	+	30.11	59.28	+	29.73	59.05	+	=
c-	GL73	Fromage à tartiner ail et fines herbes	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL74	Truite et carré frais	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL75	Boisson au lait (fraise)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL76	Boisson au lait (chocolat)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL77	Yaourt nature	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL78	Emmental bio 1 (fromage - cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL79	Salers (lait cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL80	Brie de Meaux (lait cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL81	Neuchâtel fermier (fromage - cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL82	Petit camembert (fromage - cru - vache)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL83	Beurre doux (lait pasteurisé)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL84	Crème dessert aux œufs et caramel	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL85	Cabécou bio 1 (fromage - cru - chèvre)	0,00	0,00	-	I/0.00	I/0.00	I/- (1/3)	0.00	0.00	-	=
b-	GL86	Lait ribot fermenté	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL87	Lait fermenté ribot maigre 1	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL88	Lait fermenté ribot maigre 2	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL89	Lait microfiltré 1	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL90	Lait microfiltré 2	28,64	59,72	+	28.85	59.71	+	28.51	59.48	+	=
b-	GL91	Lait cru de vache jersiaise	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL92	Beurre cru de vache jersiaise	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL93	Beurre de baratte cru doux	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL94	Beurre de baratte cru demi-sel	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL95	Glace nougat	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL96	Glace vanille 2	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL97	Glace chocolat 2	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL98	Tzatziki	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL99	Fromage à tartiner ail et fines herbes	21,82	53,70	+	21.86	53.87	+	21.59	53.51	+	=

DAIRY PRODUCTS			Previous validation study			Extension study 2018						Comparison between 1) and 2)
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			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
c+	GL100	Fromage à tartiner (lait pasteurisé)	23,09	53,70	+	31.00	53.41	+	22.81	53.36	+	=
c+	GL101	Yaourt nature (lait pasteurisé)	22,31	53,58	+	24.99	53.63	+	21.32	53.76	+	=
c+	GL102	Montagnolo (fromage - pasteurisé - vache)	21,32	53,57	+	22.89	53.85	+	22.19	53.64	+	=
a+	GL103	Emmental bio 2 (fromage - cru)	22,26	53,68	+	23.56	54.07	+	21.85	53.37	+	=
a+	GL104	Tomme de Savoie (fromage - cru - vache)	28,31	53,28	+	27.89	53.76	+	28.43	52.75	+	=
a+	GL105	Comté (fromage - cru- vache)	20,91	53,64	+	20.96	54.09	+	20.53	53.27	+	=
a+	GL106	Cœur de chèvre (fromage - cru chèvre)	25,85	53,60	+	26.03	53.99	+	27.80	53.22	+	=
a+	GL107	La croseta (fromage - cru - chèvre)	31,80	53,48	+	33.45	53.81	+	34.24	53.04	+	=
a+	GL108	Neuchâtel fermier (fromage - cru)	31,08	53,24	+	0.00/35.62/ 34.88	0.00/53.56/ 53.89	-	30.59	53.42	+	≠/=/=
a+	GL109	Petit camembert (fromage - cru - vache)	34,49	53,44	+	25.86	52.15	+	24.87	53.44	+	=
b+	GL110	Lait fermenté ribot	25,68	53,54	+	25.95	53.05	+	25.05	53.19	+	=
c+	GL111	Saveur du maquis (fromage - pasteurisé- brebis)	29,91	59,37	+	31.45	59.81	+	31.14	59.46	+	=
a+	GL112	Cantal (fromage - cru - vache)	29,94	59,34	+	29.60	59.59	+	29.75	59.45	+	=
a+	GL113	Abondance fermier (fromage - cru vache)	25,24	59,71	+	25.33	59.85	+	24.73	59.44	+	=
c+	GL114	Corsica (fromage - pasteurisé - brebis)	33.46	60.46	+	0,00	0,00	-	0,00	0,00	-	=
c+	GL115	Fromage blanc nature (pasteurisé - vache)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL116	Munster (fromage - pasteurisé - vache)	34,29	53,19	-	0.00	0.00	-	0,00	0,00	+	=
c+	GL117	Lingot d'or (fromage - pasteurisé- vache)	32,78	54,84	+	32.08	55.59	+	33.68	54.91	+	=
a+	GL118	Emmental Savoie (fromage - cru- vache)	32,47	55,06	+	31.99	55.72	+	32.69	55.26	+	=
a-	GL119	Le rondin (fromage - cru - chèvre)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL120	Rocamadour (fromage - cru - chèvre)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL121	Moulis artisanal (fromage - cru- vache)	35,88	59,17	+	0.00/38.56/ 38.96	0.00/59.65/ 59.24	-	36.43	59.11	+	≠/=/=
a-	GL122	Cabri de touraine (fromage - cru - chèvre)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL123	Cabri de touraine cendré (fromage - cru - chèvre)	33,84	53,25	+	33.70	53.40	+	34.79	52.65	+	=
b+	GL124	Beurre cru jersiaise (lait cru)	26,64	53,37	+	28.11	53.43	+	27.03	52.52	+	=
b+	GL125	Beurre de baratte doux (lait cru)	28,82	53,30	+	29.30	53.50	+	28.58	52.80	+	=
b+	GL126	Beurre de baratte demi-sel (lait cru)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL127	Mascarpone	22,15	53,39	+	25.82	53.50	+	22.99	52.99	+	=
b+	GL128	Lait ribot maigre fermenté	26,58	52,92	+	28.54	53.03	+	26.29	50.36	+	=
c+	GL129	Lait demi-écrémé (pasteurisé)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL130	Lait demi-écrémé microfiltré	29,15	53,00	+	29.83	53.49	+	29.59	52.45	+	=
b+	GL131	Lait frais bio microfiltré	26,67	53,29	+	27.75	53.72	+	26.72	52.85	+	=
c+	GL132	Lait frais de vache jersiaise	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL133	Lait ribot fermenté	27,78	53,23	+	28.99	53.79	+	28.00	52.81	+	=
b+	GL134	Lait ribot fermenté	25,71	53,14	+	27.03	53.94	+	26.75	52.68	+	=
c+	GL165	Glace pistache	24,28	53,31	+	24.74	53.89	+	24.35	52.60	+	=
c+	GL166	Glace café	33,70	53,33	+	32.89	53.96	+	34.91	52.65	+	=
a+	GL167	Emmental (fromage - cru- vache)	29,36	53,17	+	29.98	54.10	+	30.01	52.60	+	=

DAIRY PRODUCTS			Previous validation study			Extension study 2018						Comparison between 1) and 2)
ST	SN	Sample	AM: GENE UP after storage of the lysates 3 days at 5°C			1) AM: GENE UP Current kit/software 2.0			2) AM: GENE UP New kit/software 3.0			
			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
a-	GL168	Camembert (fromage - cru-vache)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL169	Lingot d'or (fromage - pasteurisé- vache)	33,63	59,01	+	34.71	58.99	+	35.67	58.68	+	=
c+	GL170	Fromage blanc nature (pasteurisé - vache)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL171	Fromage au lait de chèvre cru	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL172	Fromage au lait de vache cru 1	30,65	53,30	+	29.89	53.53	+	30.70	52.55	+	=
c+	GL173	Fromage au lait de brebis pasteurisé	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL174	Fromage au lait de vache cru 2	25,58	53,33	+	25.88	53.89	+	25.75	52.47	+	=
c-	GL175	Fromage au lait pasteurisé de vache	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL176	Fromage au lait de chèvre cru bio	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL177	Mascarpone	29,62	53,41	+	29.78	53.14	+	29.88	52.70	+	=
b+	GL178	Beurre cru (lait cru)	33,46	53,32	+	32.63	53.35	+	34.55	52.57	+	=
c+	GL179	Flan aux œufs	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL180	Saveur du maquis (fromage - pasteurisé- brebis)	33,34	59,19	+	33.25	59.63	+	34.45	58.89	+	=
c+	GL181	Lait demi-écrémé (pasteurisé)	29,48	59,32	+	29.28	59.62	+	29.57	58.79	+	=
b-	GL182	Lait ribot fermenté	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=

SEA FOOD PRODUCTS			Previous validation study			Extension study 2018						Comparison between 1) and 2)
ST	SN	Sample	AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP Current kit/software 2.0			AM: GENE UP New kit/software 3.0			
			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
c-	GL362	Saumon fumé. crème	0,00	0,00	-	0.00	53,40	-	0.00	0.00	-	=
a+	GL363	Cœur de filet de Norvège	28,94	53,26	+	29.51	52.75	+	29.50	52.24	+	=
a+	GL364	Crevettes	22,45	59,74	+	23.18	59.29	+	22.78	58.91	+	=
a+	GL365	Longe d'espadon	22,66	53,48	+	23.46	52.88	+	22.58	52.96	+	=
b+	GL366	Saumon fumé	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL367	Croquette de crevette	23,93	53,07	+	25.36	53.33	+	24.43	59.14	+	=
c+	GL368	Appareil à fricassée	33,97	52,33	+	0.00	52.91	+	35.07	51.89	+	=
a+	GL369	Filet de saumon cru	24,79	53,22	+	25.01	53.22	+	25.10	51.51	+	=
a+	GL370	Tartare de saumon	25,49	53,22	+	26.23	53.93	+	26.47	52.76	+	=
b+	GL371	Saumon fumé	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL372	Saumon fumé	32,52	53,00	+	34.14	53.60	+	34.64	52.48	+	=
b+	GL373	Saumon fumé (Ecosse)	31,15	53,10	+	30.64	53.88	+	31.92	52.76	+	=
b+	GL374	Chutes de saumon fumé	28,61	53,23	+	28.46	54.03	+	28.52	52.32	+	=
b+	GL375	Carpaccio de thon mariné	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL376	Anchois et câpres au vinaigre d'alcool	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL377	Rollmops au vinaigre d'alcool	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL378	Filet de lotte	30,97	52,89	+	30.91	53.22	+	31.87	52.39	+	=
a-	GL379	Filet de rouget	32,20	57,39	+	35.32	57.81	+	35.73	57.25	+	=
a+	GL380	Filet de merlan	27,86	52,97	+	28.42	53.44	+	28.32	51.83	+	=
a+	GL381	Espadon	25,02	53,12	+	25.34	53.46	+	25.55	52.58	+	=
a+	GL382	Filet de cabillaud	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL383	Filet de plie	26,13	53,03	+	26.46	53.67	+	26.78	52.24	+	=
a+	GL384	Filet de lieu noir	24,60	53,27	+	24.59	53.61	+	24.53	52.58	+	=
a+	GL385	Dos de cabillaud	22,62	53,12	+	22.25	53.25	+	23.06	52.50	+	=
a+	GL386	Filet de truite	31,84	52,99	+	32.34	51.60	+	32.86	52.57	+	=
b+	GL387	Truite fumée d'Aquitaine	31,26	60,31	+	32.59	59.12	+	33.11	59.99	+	=
b+	GL388	Lardons de truite fumée au bois de hêtre	24,61	53,27	+	24.93	52.56	+	25.10	52.59	+	=
b+	GL389	Lardons de saumon fumé	26,02	53,26	+	26.55	52.98	+	25.32	52.51	+	=
b+	GL390	Queues de crevettes marinées ail et persil	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL391	Filets de harengs fumés au bois de hêtre	31,89	53,29	+	34.11	52.73	+	33.52	52.53	+	=
b+	GL392	Filets de harengs fumés doux	31,06	53,21	+	31.7	53.22	+	32.86	52.42	+	=
c+	GL393	Thon à la catalane	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL394	Rillettes de saumon	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL395	Salade de thon parisienne	26,96	52,87	+	27.03	53.62	+	27.55	52.34	+	=
c+	GL396	Colin d'Alaska sauce citron et riz safrané	23,04	53,28	+	22.61	53.84	+	22.82	52.72	+	=
c+	GL397	Thon à la provençale et blé	20,70	53,07	+	20.16	53.68	+	20.71	52.30	+	=
c+	GL398	Parmentier de poisson à la ciboulette	22,61	53,13	+	23.77	52.51	+	22.24	52.11	+	=
b-	GL399	Carpaccio de thon mariné	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL400	Lardons de truite fumée	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL401	Dos de cabillaud	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=

SEA FOOD PRODUCTS			Previous validation study			Extension study 2018						Comparison between 1) and 2)
ST	SN	Sample	AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP Current kit/software 2.0			AM: GENE UP New kit/software 3.0			
			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
a+	GL402	Filet de truite	32,00	52,91	+	33.11	52.98	+	33.52	52.42	+	=
a-	GL403	Filet de lieu noir	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL404	Filet de plie saumurée	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL405	Filet de cabillaud	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL406	Espadon	26,49	52,75	+	27.15	53.64	+	27.03	52.22	+	=
a-	GL407	Filet de merlan	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL408	Filet de lotte	20,45	59,60	+	21.18	58.90	+	20.62	58.94	+	=
b-	GL409	Queues de crevettes marinées ail et persil	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL410	Lardons de saumon fumé	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL411	Colin d'Alaska sauce citron et riz safrané	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL412	Parmentier de poisson à la ciboulette	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL413	Thon à la provençale et blé	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL414	Rillettes de saumon	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL415	Thon à la catalane	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL416	Anchois marinés à l'orientale	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL417	Anchois marinés à l'ail	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL418	Anchois marinés à l'huile	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL419	Filet de loup de mer	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL420	Dos de cabillaud	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL421	Filet de merlan	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL422	Baron saumon	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL423	Rillettes de sardines aux tomates séchées	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL424	Rillettes au crabe	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL425	Miettes de thon à la tomate	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL426	Emietté de maquereau citron et poivre	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL427	Foie de morue au citron	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL428	Saumon sauce citron	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL429	Cabillaud	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL430	Filet de truite	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL431	Filets de sardines sauce citron-basilic	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL432	Sardines pimentées	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL433	Filets de sardines tomates et petits légumes	23,53	59,64	+	23.92	59.72	+	25.82	57.96	+	=
c+	GL434	Filets de maquereaux tomates-basilic	25,80	57,89	+	25.91	57.67	+	26.12	57.19	+	=
c+	GL435	Sardines et tapenade d'olives	22,86	57,79	+	22.77	58.05	+	23.79	57.05	+	=
c+	GL436	Saumon sauce oseille et pâtes	31,52	57,40	+	30.69	57.70	+	32.58	56.84	+	=
a+	GL437	Filet de perche du nil (surgelé)	28,80	59,56	+	28.67	59.38	+	29.28	59.05	+	=
a+	GL438	Filet de sabre	26,05	59,72	+	25.78	59.45	+	25.95	59.10	+	=
a+	GL439	Tranche de thon (surgelé)	23,69	59,64	+	24.20	59.51	+	24.55	59.33	+	=
a+	GL440	Espadon	24,95	60,55	+	25.50	60,51	+	25.54	60.03	+	=
a+	GL441	Crevettes géantes (surgelé)	33,67	60,24	+	36,29	59,85	+	36,41	59,55	+	=
a+	GL442	Noix de saint-jacques (surgelé)	24,46	60,66	+	25.28	60.77	+	26.09	59.82	+	=

VEGETAL PRODUCTS			Previous validation study			Extension study 2018						Comparison between 1) and 2)
ST	SN	Sample	AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP Current kit/software 2.0			AM: GENE UP New kit/software 3.0			
			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
b-	GL183	Radis	0,00	0,00	-	0.00	53,40	-	0.00	0.00	-	=
b-	GL184	Carottes râpées non assaisonnées	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL185	Concombre tranché	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL186	Choux fleur emballé	23,93	57,79	+	25.44	58.17	+	24.87	57.54	+	=
b+	GL187	Brocolis emballé	21,94	57,90	+	23.73	58.26	+	23.13	57.55	+	=
b-	GL188	Salade batavia emballée	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL189	Marolles entières surgelées	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL190	Lentilles pré-cuites	22,57	53,17	+	25.14	53.88	+	24.52	52.61	+	=
c+	GL191	Purée de courgettes	22,83	53,10	+	22.44	53.81	+	23.22	52.32	+	=
c+	GL192	Purée de céleri	24,36	53,02	+	25.06	52.58	+	25.47	52.38	+	=
c+	GL193	Purée de pois cassés	23,26	53,03	+	24.26	52.74	+	23.81	52.31	+	=
b+	GL194	Pommes de terre pré-cuites	24,89	53,14	+	26.80	53.13	+	26.32	52.49	+	=
b-	GL195	Soja emballé	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL196	Mélange pour soupe	31,89	52,87	+	31.9	53.22	+	33.73	52.31	+	=
b+	GL197	Chou blanc - chou rouge emballés	24,86	52,85	+	26.61	53.55	+	26.72	52.51	+	=
a-	GL198	Girolles entières surgelées	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL199	Cèpes entiers surgelés	35,53	58,93	+	0.00	0.00	+	36.64	51.91	+	=
a-	GL200	Fraises	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL201	Choux-fleurs pré-cuits	29,56	53,06	+	30.46	53.75	+	31.10	52.39	+	=
b-	GL202	Mâche emballée	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL203	Persil plat	28,97	52,86	+	30.54	51.98	+	30.46	52.43	+	=
a+	GL204	Basilic	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL205	Estragon	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL206	Ciboulette	25,83	53,31	+	31.73	53.32	+	31.96	52.13	+	=
b-	GL207	Radis	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL208	Choux-fleurs pré-cuits	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL209	Pommes de terre pré-cuites	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL210	Lentilles pré-cuites	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL211	Purée de céleri	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL212	Purée de pois cassés	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL213	Purée de courgettes	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL214	Fraises	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL215	Carottes râpées assaisonnées	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL216	Concombre assaisonné	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL217	Mélange pour soupe	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL218	Soja emballé	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL219	Choux fleur emballé	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL220	Brocolis emballé	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL221	Salade batavia emballée	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL222	Mâche emballée	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL223	Fèves pelées surgelées 1	29,02	53,08	+	29.81	53.74	+	30.22	52.50	+	=
b+	GL224	Fèves pelées surgelées 2	29,68	53,13	+	29.91	53.62	+	30.76	52.67	+	=
a-	GL225	Asperges vertes surgelées 1	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL226	Asperges vertes surgelées 2	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=

VEGETAL PRODUCTS			Previous validation study			Extension study 2018						Comparison between 1) and 2)
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			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
b+	GL227	Salade de pommes de terre et carottes râpées	26,52	53,21	+	26.96	53.71	+	26.96	52.63	+	=
a+	GL228	Salade chou et lentilles	32,54	57,64	+	32.71	58.35	+	34.16	57.70	+	=
a-	GL229	Farine de blé noir 1	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL230	Farine de blé noir 2	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL231	Farine de blé noir 3	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL232	Asperges vertes surgelées 3	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL233	Coulis de carottes	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL234	Potage de légumes	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL235	Macédoine de légumes mixés	23,14	53,32	+	24.95	53.69	+	23.97	52.62	+	=
a+	GL236	Oseille	26,87	59,68	+	28.9	58.65	+	27.61	59.23	+	=
a+	GL237	Aneth	32,90	59,02	+	33.59	58.79	+	33.84	58.65	+	=
c+	GL238	Velouté de potiron	23,70	59,81	+	24.84	59.56	+	23.88	59.08	+	=
c+	GL239	Velouté de légumes	22,49	59,83	+	22.24	59.58	+	22.54	58.89	+	=
c+	GL240	Velouté de tomates	22,51	59,97	+	22.60	59.79	+	22.50	58.77	+	=
a+	GL241	Tomates cerises	21,57	60,08	+	21.87	60.03	+	20.95	59.35	+	=
a-	GL242	Morilles entières surgelées	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL243	Pleurotes entiers surgelés	34,06	58,93	+	35.22	59.08	+	36.11	58.78	+	=
a+	GL244	Girolles entières surgelées	31,71	59,03	+	31.44	59.84	+	32.71	58.71	+	=
a+	GL245	Asperges blanches	25,00	59,39	+	26.60	58.58	+	25.77	58.81	+	=
a-	GL246	Piments rouges	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL247	Piments antillais	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL248	Marrons à la forestière	23,66	60,62	+	25.27	60.63	+	22.65	59.00	+	=
c+	GL249	Macédoine de légumes	24,01	60,67	+	24.82	60.92	+	20.94	59.39	+	=
c+	GL250	Ratatouille	23,07	60,53	+	23.59	60.87	+	23.51	59.92	+	=
c+	GL251	Confit de courgettes	18,52	59,75	+	19.85	61.1	+	26.02	60.15	+	=
c+	GL252	Confit de ratatouille	19,67	60,93	+	20.64	61.34	+	20.54	60.2	+	=
c+	GL253	Tajine de légumes	19,45	60,85	+	19.32	61.05	+	19.69	60.27	+	=
c-	GL338	Croûtons aux fines herbes	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL339	Croûtons ail et persil	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL340	Morilles	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL341	Girolles	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL342	Bolets et cèpes	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL343	Sauce au basilic	25,95	53,21	+	26.10	53.70	+	26.49	52.44	+	=
c+	GL344	Sauce provençale	28,24	53,02	+	28.80	53.79	+	28.90	52.36	+	=
b+	GL345	Poêlée vendéenne	23,32	53,20	+	25.08	53.99	+	24.25	52.51	+	=
c+	GL346	Pesto au basilic frais	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL347	Asperges blanches	23,81	53,37	+	25.02	53.86	+	24.85	52.62	+	=
a+	GL348	Asperges vertes	23,70	53,40	+	24.59	53.98	+	24.25	52.83	+	=
c+	GL349	Ratatouille	25,72	53,35	+	27.34	52.33	+	26.30	52.73	+	=
c+	GL350	Ratatouille cuisinée à la provençale	25,78	53,38	+	26.15	53.52	+	26.22	52.75	+	=
c+	GL351	Légumes cuisinés sauce aigre douce	30,92	53,33	+	30.13	53.66	+	31.62	52.40	+	=
c+	GL352	Tajine de légumes grillés	27,49	53,33	+	27.54	53.79	+	27.53	52.36	+	=
c+	GL353	Purée de carottes	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL354	Thym	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=

VEGETAL PRODUCTS			Previous validation study			Extension study 2018						Comparison between 1) and 2)
ST	SN	Sample	AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP Current kit/software 2.0			AM: GENE UP New kit/software 3.0			
			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
a-	GL355	Persil frisé	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL356	Ciboulette	34,09	53,20	+	35.45	53.60	+	36.22	53.10	+	=
a+	GL357	Laurier	29,72	53,30	+	30.72	53.43	+	31.18	52.79	+	=
a+	GL358	Tomate cerise grappe	26,19	53,28	+	28.47	53.63	+	27.87	52.53	+	=
a-	GL359	Abricots	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL360	Groseilles	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL361	Courgettes cuisinées à la provençale	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=

COMPOSITE FOODS			Previous validation study			Extension study 2018						Comparison between 1) and 2)
ST	SN	Sample	AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP Current kit/software 2.0			AM: GENE UP New kit/software 3.0			
			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
c-	GL254	Tarte poires	0,00	0,00	-	0.00	53,40	-	0.00	0.00	-	=
c+	GL255	Tarte abricots	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL256	Tarte clafoutis aux cerises	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL257	Tarte pommes	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL258	Flan	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL259	Tarte mirabelles	29,23	53,10	+	30.2	53.41	+	30.36	52.29	+	=
a+	GL260	Salade jambon. crudités. emmental	23,93	53,11	+	24.78	53.65	+	24.67	52.44	+	=
a+	GL261	Salade thon. pâtes. crudités	24,31	53,30	+	26.05	53.83	+	25.84	52.87	+	=
a+	GL262	Salade poulet. crudités	0,00	0,00	-	0.00	0.00	-	0,00	0,00	-	=
a+	GL263	Taboulé poulet	28,48	52,97	+	28.59	53.61	+	28.62	52.22	+	=
a+	GL264	Torti surimi	23,94	53,28	+	24.61	53.85	+	24.45	52.61	+	=
a+	GL265	Piémontaise au jambon	24,89	53,30	+	26.06	52.45	+	24.99	52.68	+	=
b+	GL266	Pizza 4 fromages	26,57	53,33	+	27.46	52.84	+	26.53	52.77	+	=
b-	GL267	Pizza jambon emmental	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL268	Fusilli à la carbonara	24,87	53,21	+	25.47	53.48	+	25.05	52.18	+	=
b+	GL269	Fusilli aux fromages	23,15	53,53	+	23.03	53.61	+	22.94	52.68	+	=
b+	GL270	Nouilles poulet légumes	21,42	53,46	+	22.24	53.98	+	22.57	52.94	+	=
b+	GL271	Penne à la bolognaise	22,89	53,41	+	24.23	53.96	+	23.85	52.88	+	=
b-	GL272	Pizza poulet	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL273	Tarte mirabelles	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL274	Tarte abricots	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL275	Torti surimi	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL276	Piémontaise au jambon	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL277	Taboulé oriental	31,64	60,36	+	31.52	60.78	+	32.00	60.18	+	=
a-	GL278	Salade poulet. crudités	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL279	Salade thon. pâtes. crudités	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL280	Salade jambon. crudités. emmental	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL281	Fusilli à la carbonara	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL282	Fusilli aux fromages	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL283	Penne à la bolognaise	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL284	Nouilles poulet légumes	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL285	Œufs brouillés aux herbes (MY2761)	21,18	52,25	+	22.62	52.74	+	22.18	52.46	+	=
b+	GL286	Poisson sauce citron. riz créole (ML9690)	22,28	52,04	+	23.84	52.86	+	23.92	52.20	+	=
a-	GL287	Sandwich rosette	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL288	Sandwich jambon emmental	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL289	Sandwich poulet kebab crudités	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL290	Sandwich thon crudités	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL291	Sandwich jambon beurre	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL292	Sandwich poulet rôti crudités	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL293	Cheese burger	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=

COMPOSITE FOODS			Previous validation study			Extension study 2018						Comparison between 1) and 2)
ST	SN	Sample	AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP Current kit/software 2.0			AM: GENE UP New kit/software 3.0			
			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
b+	GL294	Chicken burger	28,26	53,26	+	29.23	53.2	+	29.23	52.58	+	=
b+	GL295	Tarte chèvre épinards	25,28	53,35	+	26.04	53.8	+	25.84	52.52	+	=
b+	GL296	Quiche lorraine	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL297	Tarte tomates chorizo	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL298	Fondant chocolat	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL299	Tarte citrons	25,93	52,49	+	26.15	52.79	+	25.75	51.39	+	=
a+ ou c+	GL300	Tartare de saumon. œufs. oignons (ST 555)	20,05	53,31	+	21.85	53.85	+	21.55	52.67	+	=
b-	GL301	Nem chua (M 97162)	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL302	Steak hâché sandwich (ST 1489)	26,22	53,32	+	28.74	52.68	+	27.65	52.75	+	=
a+	GL303	Thalissini (oeufs de cabillaud. fromage blanc. saumon. ciboulette) (ML 9833)	32,01	53,11	+	32.78	52.59	+	33.67	52.37	+	=
c+	GL304	Perle coco(Q 4256)	18,95	52,65	+	20.84	52.67	+	20.22	60.67	+	=
c-	GL305	Flan cerises	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL306	Salambo vanille	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL307	Eclair à la vanille	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL308	Tarte aux fraises	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL309	Pancakes vanillés	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL310	Tarte aux fruits	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL311	Paris-Brest	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL312	Eclair au chocolat	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL313	Tarte à la framboise	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL314	Flan coco	25,69	53,29	+	25.44	53.42	+	25.87	52.25	+	=
c+	GL315	Eclair au café	27,74	53,40	+	28.93	52.28	+	28.20	52.71	+	=
c-	GL316	Cookie	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL317	Flan raisins	27,60	53,33	+	27.83	52.94	+	28.02	52.62	+	=
a-	GL318	Trio chou. jambon et comté	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL319	Duo ananas. carotte et surimi	29,23	53,08	+	29.69	53.22	+	30.02	52.30	+	=
a+	GL320	Salade de gambas aux mandarines	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL321	Salade de pommes de terre et saucisses	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL322	Taboulé volaille	27,29	53,28	+	53.45	60.61	+	28.67	52.60	+	=
b+	GL323	Fajitas poulet cheddar	21,02	59,96	+	22.58	60.02	+	21.75	59.17	+	=
a+	GL324	Sandwich poulet mayonnaise	21,70	59,77	+	22.43	59.87	+	22.21	59.04	+	=
a+	GL325	Wrap poulet rôti. tomates. sauce caesar	22,15	59,91	+	22.75	59.96	+	22.24	59.25	+	=
a+	GL326	Wrap poulet caesar	19,97	59,94	+	21.63	59.02	+	20.17	59.55	+	=
a+	GL327	Wrap jmbon brebis	21,93	60,05	+	23.5	58.73	+	21.79	59.51	+	=
a+	GL328	Sandwich suèdois saumon	23,02	60,98	+	24.86	60.70	+	23.86	60.56	+	=
a+	GL329	Sandwich suèdois bacon	30,33	59,14	+	31.71	59.14	+	31.77	59.06	+	=
c+	GL330	Omelette à la pomme de terre	30,57	59,31	+	31.31	58.86	+	32.45	58.38	+	=
a+	GL331	Salade de gambas à la mandarine	30,55	59,35	+	32.08	59.21	+	33.21	58.98	+	=
a+	GL332	Salade surimi. carottes. ananas	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL333	Salade piémontaise	30,99	58,97	+	32.18	59.14	+	32.01	58.86	+	=

ENVIRONMENTAL SAMPLES			Previous validation study			Extension study 2018						Comparison between 1) and 2)
ST	SN	Sample	AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP Current kit/software 2.0			AM: GENE UP New kit/software 3.0			
			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
c-	GL445	Swab 1	0,00	0,00	-	0.00	53,40	-	0.00	0.00	-	=
c+	GL446	Swab 2	26,13	59,75	+	27.62	55.82	+	26.90	58.77	+	=
c+	GL447	Swab 3	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL448	Swab 4	23,78	59,91	+	24.58	59.98	+	24.06	59.34	+	=
c+	GL449	Swab 5	22,84	60,07	+	23.58	59.65	+	23.19	59.41	+	=
c+	GL450	Swab 6	28,49	59,55	+	29.12	59.31	+	29.06	59.18	+	=
c+	GL451	Swab 7	21,48	59,84	+	21.63	59.72	+	21.45	59.17	+	=
c+	GL452	Swab 8	24,03	60,03	+	26.47	60.05	+	25.18	59.40	+	=
c+	GL453	Swab 9	28,95	52,22	+	29.78	59.53	+	30.97	58.51	+	=
c+	GL454	Swab 10	22,98	59,79	+	23.64	59.66	+	23.53	58.89	+	=
c+	GL455	Swab 11	28,13	59,77	+	28.78	59.46	+	29.02	58.81	+	=
c+	GL456	Swab 12	30,82	59,23	+	31.70	59.40	+	33.06	58.62	+	=
c+	GL457	Swab 13	27,04	53,35	+	27.63	53.36	+	27.68	52.52	+	=
c+	GL458	Sponge 1	25,29	53,37	+	26.43	53.26	+	26.06	52.42	+	=
c+	GL459	Sponge 2	28,62	53,35	+	29.02	52.66	+	28.95	52.08	+	=
c+	GL460	Sponge 3	24,74	53,54	+	25.55	53.24	+	25.05	52.39	+	=
c+	GL461	Sponge 4	23,85	53,75	+	24.32	53.63	+	24.15	52.35	+	=
c+	GL462	Sponge 5	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL463	Sponge 6	26,90	53,63	+	26.98	53.38	+	27.01	52.08	+	=
a+	GL466	Process water 3	20,32	52,94	+	30.55	53.15	+	31.65	52.03	+	=
a+	GL467	Process water 4	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL470	Process water 7	29,30	53,50	+	30.19	52.91	+	30.56	52.48	+	=
a+	GL471	Process water 8	22,70	53,75	+	23.65	52.65	+	23.14	52.67	+	=
a+	GL472	Process water 9	20,93	53,70	+	21.85	52.30	+	21.35	52.65	+	=
a+	GL473	Process water 10	22,08	52,90	+	22.47	52.83	+	22.53	52.05	+	=
a-	GL474	Process water 11	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL475	Swab 14	29,98	53,44	+	31.65	53.45	+	32.17	52.04	+	=
a+	GL476	Process water 12	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a+	GL477	Process water 13	27,97	59,64	+	28.66	59.65	+	28.56	59.06	+	=
a+	GL478	Process water 14	29,53	59,36	+	30.19	59.59	+	30.73	59.32	+	=
a+	GL479	Process water 15	28,67	59,65	+	29.60	59.54	+	29.84	59.26	+	=
a-	GL480	Process water 16	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL481	Process water 17	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL485	Process water 21	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL486	Process water 22	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL487	Process water 23	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL488	Process water 24	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL489	Process water 25	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL490	Process water 26	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL491	Process water 27	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
a-	GL492	Process water 28	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL493	Dust 1	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL494	Dust 2	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL495	Dust 3	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL496	Dust 4	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=

ENVIRONMENTAL SAMPLES			Previous validation study			Extension study 2018						Comparison between 1) and 2)
ST	SN	Sample	AM: GENE UP after storage of the lysates 3 days at 5°C			AM: GENE UP Current kit/software 2.0			AM: GENE UP New kit/software 3.0			
			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
b-	GL497	Dust 5	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL498	Dust 6	32,18	52,42	+	33.76	52.76	+	34.75	51.82	+	=
b+	GL499	Dust 7	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL500	Dust 8	24,52	52,46	+	25.84	52.72	+	25.11	52.03	+	=
b-	GL501	Dust 9	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL502	Dust 10	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL503	Dust 11	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL504	Dust 12	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL505	Dust 13	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL506	Dust 14	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL507	Dust 15	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL508	Dust 16	0,00	51,40	+	27.27	51.52	+	26.94	51.51	+	=
c+	GL509	Swab 16	24,40	51,52	+	25.59	51.36	+	25.11	51.16	+	=
c+	GL510	Swab 17	27,73	51,65	+	28.27	51.43	+	28.52	51.32	+	=
c+	GL511	Swab 18	27,13	51,71	+	27.36	51.72	+	27.12	51.59	+	=
c+	GL512	Swab 19	25,74	51,80	+	26.22	51.79	+	25.45	51.59	+	=
c+	GL513	Swab 20	25,83	51,82	+	26.34	51.87	+	25.71	51.63	+	=
c+	GL514	Swab 21	24,24	51,62	+	24.80	51.87	+	23.97	51.53	+	=
c+	GL515	Swab 22	23,01	51,78	+	24.42	52.10	+	23.64	51.80	+	=
c-	GL516	Swab 23	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL517	Swab 24	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL518	Swab 25	0,00	52,71	+	0.00	0.00	+	0.00	0.00	+	=
c-	GL519	Swab 26	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL520	Swab 27	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL521	Swab 28	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL522	Swab 29	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL523	Swab 30	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL524	Sponge 7	23,90	52,70	+	24.25	52.80	+	24.18	52.42	+	=
c+	GL525	Sponge 8	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c+	GL526	Sponge 9	28,77	52,61	+	28.93	52.86	+	29.24	52.38	+	=
c+	GL527	Sponge 10	23,26	52,67	+	22.62	52.85	+	22.69	52.31	+	=
c+	GL528	Sponge 11	22,76	52,65	+	22.29	52.81	+	22.51	52.25	+	=
c-	GL529	Sponge 12	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL530	Sponge 13	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL531	Sponge 14	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL532	Sponge 15	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b+	GL533	Dust 17	33,08	55,31	+	34.48	54.55	+	34.95	54.77	+	=
b+	GL534	Dust 18	32,68	55,31	+	34.19	54.65	+	34.61	54.77	+	=
a+	GL535	Process water 32	29,19	55,38	+	29.95	55.34	+	29.91	55.12	+	=
a+	GL536	Process water 33	29,86	55,45	+	30.31	55.28	+	30.59	55.02	+	=
a+	GL537	Process water 34	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL538	Dust 20	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL539	Dust 21	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL540	Dust 22	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
b-	GL541	Dust 23	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=

ENVIRONMENTAL SAMPLES			Previous validation study			Extension study 2018						Comparison between 1) and 2)
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			CP	MP	GENE UP result	CP	MP	GENE UP result	CP	MP	GENE UP result	
c-	GL542	Swab 32	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL543	Swab 33	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL544	Swab 34	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL545	Swab 35	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL546	Swab 36	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL547	Swab 37	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL548	Swab 38	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL549	Swab 39	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL550	Swab 40	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL551	Swab 41	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL552	Sponge 17	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL554	Sponge 19	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL555	Sponge 20	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL556	Sponge 21	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL557	Sponge 22	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL558	Sponge 23	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL559	Sponge 24	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL560	Sponge 25	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL561	Sponge 26	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL562	Wipe 1	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL563	Wipe 2	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL564	Wipe 3	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=
c-	GL565	Wipe 4	0,00	0,00	-	0.00	0.00	-	0.00	0.00	-	=