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***AFNOR validation
following the EN ISO 16140 standard
of the TRANSIA PLATE Listeria method***

SUMMARY REPORT

Date of certification : 21/11/1995
1st Renewal date : 07/02/2000
2nd Renewal date : 11/12/2003
3rd Renewal date : 04/12/2007
Certificate number : TRA 02/6-11/95

Tplate Lspp - summary 2008 v01

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APPENDICES

1 Introduction

1.1 Validation references

The TRANSIA PLATE *Listeria* spp. method has been validated according to the EN ISO 16140:2003 standard, with respect to the reference method EN ISO 11290-1:2004.

1.2 Protocol and principle of the alternative method

1.2.1 Protocol

The diagram summarising the method is shown in appendix A.

The protocol is the following:

- enrichment on ½ Fraser broth for 20 to 26 hours at 30°C ± 1°C,
- then inoculation of 0.25mL of the ½ Fraser broth in 10 mL of Fraser broth, incubated 22 to 26 h at 30°C +/-1°C,
- followed by a TRANSIA® PLATE *Listeria* test after heating of 1 to 2 mL of the enrichment broth Fraser at 95-100°C (boiling water) for 20 minutes.

Positive results with TRANSIA® PLATE have to be confirmed by streaking the non-heated Fraser broth:

- on Palcam or chromogenic agar according to Ottaviani & Agosti, according to classical tests described in methods standardized by CEN, ISO or AFNOR, including a purification step,
- on chromogenic agar according to Ottaviani & Agosti, followed by biochemical gallery without prior strain purification from a characteristic colony of *Listeria* if it is well isolated,
- on ALOA® agar, and then ALOA® Confirmation agar if the suspicious colony is characteristic of *Listeria monocytogenes* (blue colony with halo) (confirmation of specie *monocytogenes*)
or
Gram coloration and catalase tests if the suspicious colony is characteristic of *Listeria* (blue colony without halo) (confirmation of *Listeria* genus).

On the other hand, assays were made on samples tested during the accuracy test to evaluate the possibility of keeping the Fraser broths for 72 hours at 2°C – 8°C after incubation to verify that this conservation does not modify the result.

1.2.2 Principle of the TRANSIA® PLATE *Listeria* test

TRANSIA™ PLATE *Listeria* is based on a two-step, sandwich-type ELISA (Enzyme Linked Immuno Sorbent Assay) using:

- a microtitre plate with divisible strips coated with antibodies specific for *Listeria* flagellar antigens,
- and ready-to-use reagents.

The assay reliably recovers and detects *Listeria* sp., after the steps of enrichment and a heating shock which allows the release of *Listeria* antigens possibly presents in the analysed sample.

The reading of the microtitre plate is done with a spectrophotometer at a wavelength of 450 nm.

A result is considered negative if:

$$\text{O.D.} < \frac{(\text{NC1} + \text{NC2})}{2} + 0.15$$

A result is considered positive if:

$$\text{O.D.} \geq \frac{(\text{NC1} + \text{NC2})}{2} + 0.15$$

1.3 Application scope

- All food products,
- environmental samples.

1.4 Reference method

The validation study was carried out by reference to the EN ISO 11290-1/A1:2004 standard method : 'Horizontal method for the detection and enumeration of *Listeria monocytogenes* — Part 1: Detection method – Amendment 1: Modification of the isolation media, of the haemolysis test and inclusion of precision data" (#).

The diagram summarising the method is shown in annex A.

1.5 Background of certification

The TRANSIA™ PLATE Listeria method has been validated with the certificate number TRA 02/6-11/95.

- November 1995 : initial certification for human food products
- February 2000 : first renewal for human food products
- December 2003 : second renewal and extension after protocol modification for human food products

The reference method was:

- for the initial certification, the French standard V 08-055 (1993) « Detection of *Listeria monocytogenes* – Routine method »
- for the first and second renewals, the EN ISO 11290-1 (1997) « Horizontal method for the detection and enumeration of *Listeria monocytogenes* – Part 1: Detection method ».

The main elements associated with the TRANSIA™ PLATE Listeria method since 1995 are listed in appendix B.

The renewal study was therefore reviewed to conform to:

- the EN ISO 16140 standard,
- the EN ISO 11290-1/A1:2004 standard.

Some results of the initial validation study were analysed in comparative study (relative accuracy and linearity).

Results of the studies from 2003 were collected in the part showing "relative accuracy", in the part "linearity" and in the part « inclusivity/exclusivity ».

In this renewal study, several **modifications** were studied in the alternative method:

1. Extension of the application scope to environmental samples
2. Possibility to store the non heated Fraser broth for 72 hours at 2°C – 8°C before performing the TRANSIA™ PLATE Listeria test: these tests were done on all positive samples of the relative accuracy, relative specificity and relative sensitivity study
3. Confirmation procedures :
the positive test results were confirmed by streaking the non heated Fraser broth:
 - on Palcam or chromogenic agar according to Ottaviani & Agosti, according to classical tests described in methods standardized by CEN, ISO or AFNOR, including a purification step,
 - on chromogenic agar according to Ottaviani & Agosti, followed by biochemical gallery without prior strain purification from a characteristic colony of *Listeria* if it is well isolated,
 - on ALOA® agar, and then ALOA® Confirmation agar if the suspicious colony is characteristic of *Listeria monocytogenes* (blue colony with halo) (confirmation of specie *monocytogenes*)
or
Gram coloration and catalase tests if the suspicious colony is characteristic of *Listeria* (blue colony without halo) (confirmation of *Listeria* genus).

The renewal study was therefore reviewed to conform to new standards and to test the proposed modifications. None of the results of previous studies have been resumed.

2 Comparative study of methods

2.1 Relative accuracy, relative specificity and relative sensitivity

The aim of this study, according to the reference document EN ISO 16140, is to compare the performances of the two methods:

- the reference method EN ISO 11290-1/A1 :2004,

- the TRANSIA™ PLATE *Listeria*,

on samples naturally contaminated and not contaminated with *Listeria monocytogenes* and other *Listeria*.

2.1.1 Number and nature of the samples

According to the ISO 16140 standard, a minimum of 60 products per category must be analysed, with around 50% of positive products (at least 30 results) and 50% of negative products.

Each category was divided into various types and the results are displayed as follows:

Category	Types	Positive*	Negative	Total
Meat products	raw meats	8	7	15
	seasoned, ready to cook	16	5	21
	cooked pork, ready-cooked meals, ...	12	18	30
	Total	36	30	66
Dairy products	cheeses from cow milk	11	11	22
	cheeses from goat or sheep milk	12	14	26
	desserts, milk powders, raw milks	11	6	17
	Total	34	31	65
Seafood products	fresh fish fillets and shellfish	14	12	26
	smoked fish	10	15	25
	fish-based ready-cooked meals	7	7	14
	Total	31	34	65
Vegetables	frozen	10	9	19
	raw vegetables	11	9	20
	seasoned	12	12	24
	Total	33	30	63
Environment	various waters	11	4	15
	surface samplings	8	21	29
	residues	12	10	22
	Total	31	35	66
TOTAL		165	160	325

* These are positive results by one or other of the methods

2.1.2 Artificial contaminations of the samples and percentage

Artificial contamination was achieved by mixture with a naturally contaminated product (7 samples) or by using stressed contaminating suspensions (use of 18 different strains), the stress treatment and efficiency of which have been determined according to EN ISO 16140 and AFNOR validation rules.

69 samples were positive after artificial contamination.

In total, of 160 positive results of *Listeria* spp., 43% were obtained as a result of artificial contamination.

2.1.3 Results of assays

The analyses have been conducted singly using the two methods.

The results of analysed samples were presented in appendix C.

The table of the 325 results of samples are below:

	Positive reference method (R+)	Negative reference method (R-)	Total
Positive alternative method (A+)	Positive agreement (A+/R+) PA = 158	Positive deviation (R-/A+) PD = 2	160
Negative alternative method (A-)	Negative deviation (A-/R+) ND = 5*	Negative agreement (A-/R-) NA = 160**	165
Total	163	162	325

Legend:

A+ = positives confirmed

A- = immediate negatives **and** negatives after confirmation when presumed positive

* not including any non-confirmed positive result

** including one positive TRANSIA PLATE *Listeria* result, not confirmed

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2.1.4 Calculation of relative accuracy (AC), relative specificity (SP) and relative sensitivity (SE)

All of these results help calculate the relative accuracy, relative sensitivity and relative specificity for each of the categories and for all of the categories, according to the formulae of the EN ISO 16140 standard.

Category	PA	NA	ND	PD	Sum N	Relative accuracy AC (%) [100x(PA+NA)]/N	N+ PA + ND	Relative sensitivity SE (%) [100xPA]/N+	N- NA + PD	Relative specificity SP (%) [100xNA]/N-
Meat products	33	30	2	1	66	95,5	35	94,3	31	96,8
Dairy products	33	31	1	0	65	98,5	34	97,1	31	100
Seafood	31	34	0	0	65	100	31	100	34	100
Vegetables	32	30	1	0	63	98,4	33	97,0	30	100
Environment	29	35	1	1	66	97,0	30	96,4	36	97,2
TOTAL	158	160	5	2	325	97,8	163	96,9	162	98,8

For the alternative method, the values as a percentage calculated for the following three criteria according to the EN ISO 16140 standard were:

<i>Relative accuracy : AC</i>	97.8 %
<i>Relative specificity : SP</i>	98.8 %
<i>Relative sensitivity : SE</i>	96.9 %

The AFNOR Technical Bureau requests the sensitivity of the two methods to be recalculated with consideration of all the confirmed positives (this includes the additional positives of the alternative method):

Alternative method :	Reference method :
$(PA + PD) / (PA + PD + ND) = 97.0 \%$	$(PA + ND) / (PA + PD + ND) = 98.8 \%$

2.1.5 Analysis of discordances

The number of discordances between the reference method and the alternative method was 7.

According to annex F of the NF EN ISO 16140 standard, the number of discordances for which a statistical test must be conducted in order to compare the two methods is 6.

The statistic test has been done.

The aim is the determination of the M value, depending on the total number of discordances and according to the EN ISO 16140 (appendix F) and the comparison between M and an m-value, as the smaller of the two values of PD and ND. Both methods would be considered as equivalent if $m > M$.

Number of discordances	M	m	Conclusion
7	0	2	Equivalence

The TRANSIA™ PLATE Listeria method and the reference method EN ISO 11290-1/A1 can be considered as equivalent.

2.1.6 Comments on the Fraser broths conservation at 2°C – 8°C for 72 hours

The Fraser broths have been tested by the test TRANSIA™ PLATE Listeria, just after incubation, then these Fraser broths were kept for three days at 2°C – 8°C and a new TRANSIA test has been realized, with, in parallel, streaking on selective plates and confirmation of the positive results.

The obtained results were the same as those obtained directly after incubation for the positive and additional positive samples. For the 5 negative deviation (false negative), one result (D37) became in positive agreement with the reference method.

All the identifications realized after Fraser conservation were the same as those obtained directly after incubation.

2.1.7 Comments on the confirmation protocol

All the confirmations performed after TRANSIA™ PLATE *Listeria* positive tests allowed to confirm the presence of *Listeria* on ALOA® medium.

The confirmation of *Listeria* genus with Gram coloration and catalase tests and of the specie *Listeria monocytogenes* with ALOA® Confirmation medium didn't cause any problem.

On the other hand,, the biochemical galleries realized from typical isolated colonies on chromogenic agar according to Ottaviani & Agosti without prior strain purification have always allowed to identify the species of *Listeria*.

2.2 Relative detection level

The objective was to determine the level of contamination for which less than 50% of the responses obtained are positive and that for which more than 50% of the responses obtained are positive.

Different 'food strain matrix' couples were studied in parallel with the reference method and the TRANSIA™ PLATE *Listeria* method, for five representative studied categories.

The artificial contaminations have been realised according to EN ISO 16140 and AFNOR validation rules.

The detection levels, calculated according to Spearman-Kärber (LOD₅₀) and obtained for each food-strain couple are as follows:

Matrix	Strain	Relative detection level for the reference method (UFC / 25 g or 25 mL)	Relative detection level for the alternative method (UFC / 25 g or 25 mL)
Rillettes	<i>L.welshimeri</i>	0.7 [0.4 – 1.2]	0.7 [0.4 – 1.2]
Raw milk	<i>L.ivanovii</i>	0.6 [0.4 – 0.8]	0.6 [0.4 – 0.8]
Smoked salmon	<i>L.monocytogenes</i> 1/2a	0.6 [0.3 – 1.0]	0.6 [0.3 – 1.0]
Mixed raw vegetables	<i>L.monocytogenes</i> 4b	0.8 [0.5 – 1.3]	0.8 [0.5 – 1.3]
Process water	<i>L.innocua</i>	0.4 [0.2 – 0.8]	0.4 [0.2 – 0.8]

* "Hitchins A. Proposed Use of a 50 % Limit of Detection Value in Defining Uncertainty Limits in the Validation of Presence-Absence Microbial Detection Methods, Draft 10th December, 2003".

Conclusion

The level of detection obtained for the TRANSIA™ PLATE *Listeria* method is between 0.2 and 1.3 cells per 25 grams and it is identical to the one obtained for the reference method.

2.3 Inclusivity / exclusivity

The inclusivity and the exclusivity of the method are defined by analysis, respectively, of 50 positive strains and 30 negative strains.

2.3.1 Inclusivity

Protocol

For each of the *Listeria* strains, a culture in nutrient broth was made over 24 hours at 30°C.

A ½ Fraser broth was inoculated with around 10 to 100 *Listeria* per 225 mL and incubated at 30°C for 20–26hr, then subcultured in Fraser broth before performing the TRANSIA™ PLATE *Listeria* test.

Results

The results are listed in appendix D.

The 50 strains of *Listeria* (25 strains of *Listeria monocytogenes* and 25 strains of other *Listeria*) gave all positive results.

2.3.2 Exclusivity

Protocol

The different negative strains were cultivated and diluted in nutrient broth to obtain levels of around 10^5 cells per mL. After incubation at 30°C for 20–26 hours, the TRANSIA™ PLATE Listeria test was performed.

Results

The results are listed in appendix D.

The study of the 30 non-*Listeria* strains by the TRANSIA™ PLATE Listeria test did not detect the presence of any cross-reaction.

3 Interlaboratory study

3.1 Study organization

- Number of participating laboratories

14 laboratories received samples. The list of the laboratories is presented in appendix E.

- Matrix used

The "pasteurized milk" matrix was used to perform the interlaboratory study.

- Strain used

The strain used for spiking is a strain of de *Listeria innocua* (origin « dairy product »).

- Number of samples per laboratory

24 samples were prepared per laboratory, and were distributed in 3 levels, with 8 samples per level and method.

3.2 Control of experimental parameters

3.2.1 Contamination rates obtained after artificial contamination

The following table shows the obtained contamination rates and estimated precisions:

Level	Samples	Targeted theoretical rate (b/25ml)	Real rate (b/25ml sample)	Estimated lower contamination limit per 25ml sample	Estimated upper contamination limit per 25ml sample
Level 0 (L0)	1-4-7-10-13-16-19-22	0	0		
Low level (L1)	2-5-8-11-14-17-20-23	3	1.4	0.1	7.9
High level (L2)	3-6-9-12-15-18-21-24	30	14	7.4	23.8

3.2.2 Problems of temperature recorded during transport, temperature on reception and reception times

3.2.2.1 Analysis of temperature monitoring curves during transport

The temperature curves obtained from thermobutton datas show that temperatures were stable during transport and were between 3°C and 8°C for most of the laboratories.

3.2.2.2 Temperatures on reception and reception times

The temperatures obtained are recorded in the following tables:

Laboratory	Reception Temperatures (°C)		Comments
	communicated by the laboratory	indicated by the thermobutton	
A	4.5	5.1	/
B	6.4	4.6	/
D	5.4	4.2	/
E	13.0	9.2	Delivery at 11:30 am
F	Not communicated	5.2	/
G	5.2	Not received	/
H	5.3	3.2	/
I	8.0	12.2	Damaged samples
J	Not communicated	5.6	/
K	9.0	9.3	Delivery at D+2
L	7.6	7.2	/
M	12.0	5.7	/
N	19.0	18.4	Delivery at D+2
O	6.8	3.6	/

Among the 14 laboratories, two laboratories received the samples two days after being sent, at a temperature above 8°C. Despite they performed the analyses, their results were not interpreted. However, they are presented in the results tables.

Two laboratories (E and M) have claimed delivery temperature above 8°C.

After analysis of temperature curves, the temperature on reception was conform for one of them. The laboratory E had a reception temperature above 8.4°C. ThisDespite this laboratoryhas performed the analyses, its results were not interpreted. However, they are presented in the results tables.

Finally, laboratory I informed us about damaged samples and could not perform the assays.

3.2.3 Conclusion

The results from 10 of the 14 participating laboratories can be analyzed after considering the conditions of shipment and delivery (Exclusion of Lab E, lab I, lab K and Lab M).

3.3 Results

3.3.1 Results obtained by cooperating laboratories

The detailed results are presented in appendix E and the following tables give a synthesis of the results obtained by all the laboratories.

Positive results obtained by the reference method

Laboratories	Levels of contamination					
	L0		L1		L2	
	Obtained	Nr samples	Obtained	Nr samples	Obtained	Nr samples
Lab A	0	8	8	8	8	8
Lab B	0	8	6	8	8	8
Lab D	0	8	7	8	8	8
Lab E	0	8	8	8	8	8
Lab F	0	8	8	8	8	8
Lab G	0	8	7	8	8	8
Lab H	0	8	5	8	8	8
Lab J	0	8	6	8	8	8
Lab K	0	8	4	8	8	8
Lab L	0	8	7	8	8	8
Lab M	0	8	6	8	8	8
Lab N	0	8	8	8	8	8
Lab O	0	8	7	8	8	8

Positive results obtained by the alternative method

Laboratories	Levels of contamination					
	L0		L1		L2	
	Obtained	Nr samples	Obtained	Nr samples	Obtained	Nr samples
Lab A	0	8	8	8	8	8
Lab B	0	8	6	8	8	8
Lab D	0	8	7	8	8	8
Lab E	0	8	7	8	8	8
Lab F	0	8	8	8	8	8
Lab G	0	8	7	8	8	8
Lab H	0	8	5	8	8	8
Lab J	0	8	5	8	8	8
Lab K	0	8	4	8	8	8
Lab L	0	8	7	8	8	8
Lab M	0	8	6	8	8	8
Lab N	0	8	8	8	8	8
Lab O	0	8	7	8	8	8

In grey are shown the results of the laboratories, which were excluded from the interpretation. But their results were concordant between the two methods and matched those of the other laboratories.

3.3.2 Comments (discrepancies with expected results, exclusions,...)

The results of the reference method and the alternative method **were in agreement** for 9 laboratories.

Among these 9 laboratories, the laboratory M found two non-spiked samples, positive by the TRANSIA™ PLATE Listeria test (OD = 0.666 and OD = 0.932 for a positive threshold at 0.301). These samples were not confirmed as positive. The lab informed us about washing problems which could explain their results (washing steps were performed manually).

Some laboratories found sample(s) contaminated at a low rate, negative by the alternative method and by the reference method. The contamination level was not so high (1.4 *Listeria innocua* in 25 mL), so their results are consistent. These are the laboratories:

- D, G, L and O: one negative result by both methods,
- B and M: two negative results by both methods,
- H: three negative results by both methods.

The tenth laboratory (lab J) found two samples negative by both methods and a sample contaminated at low rate (n°23), negative by the alternative method and positive by the reference method, but only with the isolation on COMPASS Listeria agar.

3.4 Calculations

The results of 10 laboratories were considered.

Note: the positive results of the alternative method were all confirmed.

3.4.1 Calculation of specificity percentage (%SP) and sensitivity percentage (%SE) for both methods

The percentages of specificity (SP) and sensitivity (SE) have been calculated with the EN ISO 16140 formulas.

For level L0, it is requested that the specificity percentage (%SP) should be calculated using each of the methods:

$$SP = \{1 - (FP/N_-)\} \times 100$$

where FP, number of false positives
N-, total number of tests L0

For levels L1 and L2, it is requested that the sensitivity percentage (%SE) should be calculated for each of the methods, compared with the number of expected positive results:

$$SE = (TP/N_+) \times 100$$

where TP, number of true positives
N+, total number of tests L1 or L2

The results are given in the following table:

Level	Reference method		Alternative method	
	SP/SE	LCL* %	SP/SE	LCL* %
L0	SP% = 100	98	SP% = 100	98
L1	SE% = 83.8	75	SE% = 82.5	73
L2	SE% = 100	98	SE% = 100	98
L1+L2	SE% = 91.9	84	SE% = 91.3	84

* LCL : low critical value, defined in standard EN ISO 16140

3.4.2 Calculation of the relative precision (AC)

The relative precision is calculated using the following formula:

$$AC = \{(PA + NA) / N\} \times 100$$

where PA, number of positive agreements
NA, number of negative agreements

	Positive reference method (R+)	Negative reference method (R-)	Total
Positive alternative method (A+)	Positive agreement (A+/R+) PA = 146	Positive deviation (R-/A+) PD = 0	(N+) = 146
Negative alternative method (A-)	Negative deviation (A-/R+) ND = 1*	Negative agreement (A-/R-) NA = 93**	(N-) = 94
Total	(N+) = 147	(N-) = 93	N = 240

* including no positive samples (not confirmed)

** including two positive results, not confirmed

For this study, the relative accuracy is 99.6%.

3.4.3 Analysis of discordances

As defined in appendix F in EN ISO 16140 standard, the number of disagreements beyond which a statistical test must be carried out to compare the two methods is 6. Therefore, this statistical test was not used because the number of disagreements observed between the two methods was one.

3.5 Interpretation

3.5.1 Comparison of relative precision (AC), specificity (SP) and sensitivity (SE) values

The values obtained in the two parts of the validation study are given in the following table:

	Interlaboratory study	Comparative study
Relative accuracy (AC)	99.6 %	97.8%
Sensitivity (SE)	91.3 %	96.9%
Specificity (SP)	100 %	98.8%

Note: relative specificity below 100% results from a number of confirmed supplementary positives and not from false positives.

The values obtained following the interlaboratory study are of the same order as the values obtained during the preliminary study for the relative precision and the specificity.

The sensitivity value obtained for the interlaboratory study and calculated in comparison with the expected results, is due to the fact that a number of samples contaminated at the lowest level, spread over all the laboratories were found to be not contaminated.

The AFNOR Technical Bureau requests the sensitivity of the two methods to be recalculated with consideration of all the confirmed positives (true positive results):

Alternative method	Reference method
$(PA + PD) / (PA + PD + ND) = 99.3 \%$	$(PA + ND) / (PA + PD + ND) = 100 \%$

3.5.2 Accordance (DA)

The accordance is the percentage chance of finding the same result from two identical test portions analyzed in the same laboratory under repeatability conditions, in other words a single operator using the same instrument and the same reagents within the shortest feasible time interval.

The first step to calculate the accordance is to calculate the probability that two identical samples give the same result for each of the participating laboratories, and then to determine the average of the probabilities of all laboratories.

The different tables used to deduce the accordance are given in appendix F and the accordance for each of the methods at each of the levels are given in the following table:

Level	Reference method	Alternative method
L0	DA % = 100 %	DA % = 100 %
L1	DA % = 75%	DA % = 74 %
L2	DA % = 100 %	DA % = 100 %

Values for the reference method and for the alternative method for level L1 are explained by a number of samples contaminated, but founded negative.

3.5.3 Concordance

The concordance is the percentage chance of finding the same result for two identical samples analyzed in two different laboratories.

The objective is to calculate the percentage of all pairs giving the same results on all possible pairs of results.

Result tables used to make these calculations are given in appendix G and the concordance for each of the methods and for each of the levels are given in the following table:

Level	Reference method	Alternative method
L0	Concordance % = 100 %	Concordance % = 100 %
L1	Concordance % = 72.5 %	Concordance % = 70.8%
L2	Concordance % = 100 %	Concordance % = 100 %

Values for the reference method and for the alternative method for level L1 are explained by a number of samples contaminated, but founded negative.

3.5.4 Odds Ratio (COR)

The concordance odds ratio is calculated using the following formula:

$$COR = \frac{\text{accordance} \times (100 - \text{accordance})}{\text{concordance} \times (100 - \text{concordance})}$$

The concordance odds ratio for each of the methods and for each of the levels is given in the following table:

Level	Alternative method	Reference method
L0	COR % = 1.00	COR % = 1.00
L1	COR % = 1.20	COR % = 1.16
L2	COR % = 1.00	COR % = 1.00

A value of 1.00 for the Odds ratio means that the degree of agreement and the agreement are equal. When the Odds ratio increases, the interlaboratory variation becomes more predominant.

4 Practicability

Practicability was studied according to 13 criteria defined by the technical bureau in comparing the reference method EN ISO 11290-1 to the TRANSIA™ PLATE Listeria method.

<p>1. <i>Packaging mode of the components of the method (cf package insert)</i></p> <p>2. <i>Reagent volumes (cf package insert and vial packaging)</i></p>	<p>The TRANSIA™ PLATE Listeria kit contains the quantity of reagent necessary for 96 analyses :</p> <ul style="list-style-type: none"> - one microtitre plate with divisible strips, individually packed with a desiccant - one vial of negative control : 4mL - one vial of positive control: 2mL - one vial of conjugate: 12 mL - one vial of substrate: 7 mL - one vial of chromogen: 7 mL - one vial of Stop solution : 7 mL - washing buffer : 60 mL <p>A package containing 10 microtitre plates is also available.</p>
<p>3. <i>Storage conditions of the elements method (cf package insert) – Expiry of products not opened (cf package insert)</i></p>	<p>The storage temperature is of 2-8°C for the TRANSIA™ PLATE Listeria kit The kit expiry date is shown on the box label and on the different vials.</p>
<p>4. <i>Modalities of use after first use (cf package insert)</i></p>	<p>The kit components should be stored at 2-8°C. The reconstituted washing buffer should be stored at 2-8°C for a maximum of three months.</p>
<p>5. <i>Equipment or necessary specific premises (cf package insert)</i></p>	<p>Among the required equipment,</p> <ul style="list-style-type: none"> - an air incubator at 30°C ± 1°C - an air incubator at 37°C ± 1°C - a water bath at 95-100°C - a microtitre plate reader or a TRANSIA Elisamatic II
<p>6. <i>Reagents ready for use or to be reconstituted (cf package insert)</i></p>	<p>Precisions in the package insert of the TRANSIA™ PLATE Listeria method, § Kit components and § Preparation of reagents which expose the list of required but not provided reagents and the conditions of the washing buffer preparation.</p>
<p>7. <i>Duration of training of the operator not familiar with the method</i></p>	<p>For an operator trained in standard techniques of microbiology, training in the technique requires less than 1 day.</p>

8. Real time handling - Flexibility of the technique relative to the number of samples to be analysed

Steps	Average time for a sample (min)		Average time for 40 samples (min)	
	Standard ISO 11290-1	TRANSIA PLATE Listeria method	Standard ISO 11290-1	TRANSIA PLATE Listeria method
Preparation, weighing, dilution and crushing	7	7	120	120
Transfer to Fraser broths	1	1	35	30
TRANSIA PLATE Listeria test (heating and automated assay procedure)	/	5	/	10
TRANSIA PLATE Listeria test (heating and manual assay procedure)	/	120	/	165
Streaking of ½ Fraser and Fraser broths, on two selective media	2	/	25	/
Plates reading	2	/	20	/
Average total time (per sample)	12 minutes	Manual :128 min Automate :13 min	5 minutes	Manual :7 min Automate :4 min

These times correspond to negative samples for which no confirmation is necessary.

In the case of positive samples, the necessary time for isolation of the Fraser broth on selective media must be added to the confirmations (around 1 minute).

And the average time for the confirmation of a typical colony by reference method tests can be evaluated at around 5 minutes.

The advantage of the alternative method particularly lies in the possibility to sort negative samples from the suspicious samples and thus reducing the number of confirmations.

9. Time-to-result

Steps	Time required	Time required
	TRANSIA PLATE Listeria method	ISO 11290-1 reference method
Realisation of first enrichment	D0	D0
Transfer to Fraser broth	D1	D1
TRANSIA PLATE Listeria procedure	D2	/
Test result	D2	/
Obtaining negative result (if test is negative)		
Streaking of selective broths on selective media	D2	D1 and D3
Reading the plates	D3 to D4	D2 to D5
Confirmation tests : identification strips, serology		
Obtaining negative result (after streaking and negative confirmation if done)	D3 to D9	D5 to D11
Obtaining positive result		
Genus:		
Confirmation by reference method tests (GRAM coloration, catalase test)	D3 to D4	D5 to D6
After streaking on ALOA [®]	D3	
Specie:		
Confirmation by reference method tests (CAMP tests, haemolysis, TSBYE broth)	D8 to D9	D9 to D11
Confirmation by biochemical gallery	D4 to D5	D4 to D7
Streaking on ALOA [®] and confirm by ALOA [®] Confirmation	D4	

10. Type of qualification of the operator:	level identical to that necessary for the reference method
11. Steps common to the reference method	First step of enrichment Confirmations
12. Traceability of the analysis results	The work sheet is identified as ENR COM 020B If the TRANSIA Elisamatic II is used, all the results are saved in a history file. A result sheet is printed with the reagents lot numbers, time, test result, and sample identification. The results can be exported to a LIMS.
13. Maintenance by the laboratory	No specific maintenance, other than classical procedure for the Microtitre plate reader Note: the BioControl Systems firm offers a customer technical support for the possible problems during the ELISA procedure.

5 Conclusion

The validation study of the methods was conducted according to the reference document EN ISO 16140.

The **comparative study** allows assessing:

- the relative accuracy, the relative sensitivity and the relative specificity,
- the relative detection level,
- the inclusivity and the exclusivity.

The performances of the TRANSIA™ PLATE Listeria method are equivalent to those of the reference method EN ISO 11290-1:2004. They were determined by analysis of 325 samples distributed over five categories of products.

The relative accuracy obtained was 97.8%, the relative sensitivity 96.9% and the relative specificity 98.8%, according to the calculations required by the EN ISO 16140 standard.

7 discordant results were obtained: 2 additional positive results and 5 false negative results.

Because the positive samples by the alternative method are positive confirmed samples, the sensitivities were recalculated relative to all positive results and are:

- 98.8% sensitivity for the reference method,
- 97.0% sensitivity for the alternative method.

The relative level of detection of the TRANSIA™ PLATE *Listeria* method and of the reference method was evaluated by artificial contaminations of five different products, representative of the five categories tested.

It is between 0.2 and 1.3 cells of *Listeria* per 25 g or mL of sample and is the same as the one of the reference method.

The specificity of the method is good since all the strains of *Listeria* were detected (inclusivity) and no cross-reactions were observed in the non *Listeria* strains tested (exclusivity).

The **interlaboratory study results** obtained for all of the 10 selected laboratories show that the alternative method and the reference method have comparable values of relative accuracy, specificity and sensitivity as those obtained during the preliminary study.

The variability of the alternative method (accordance, concordance, Odds ratio) is comparable with the variability of the reference method.

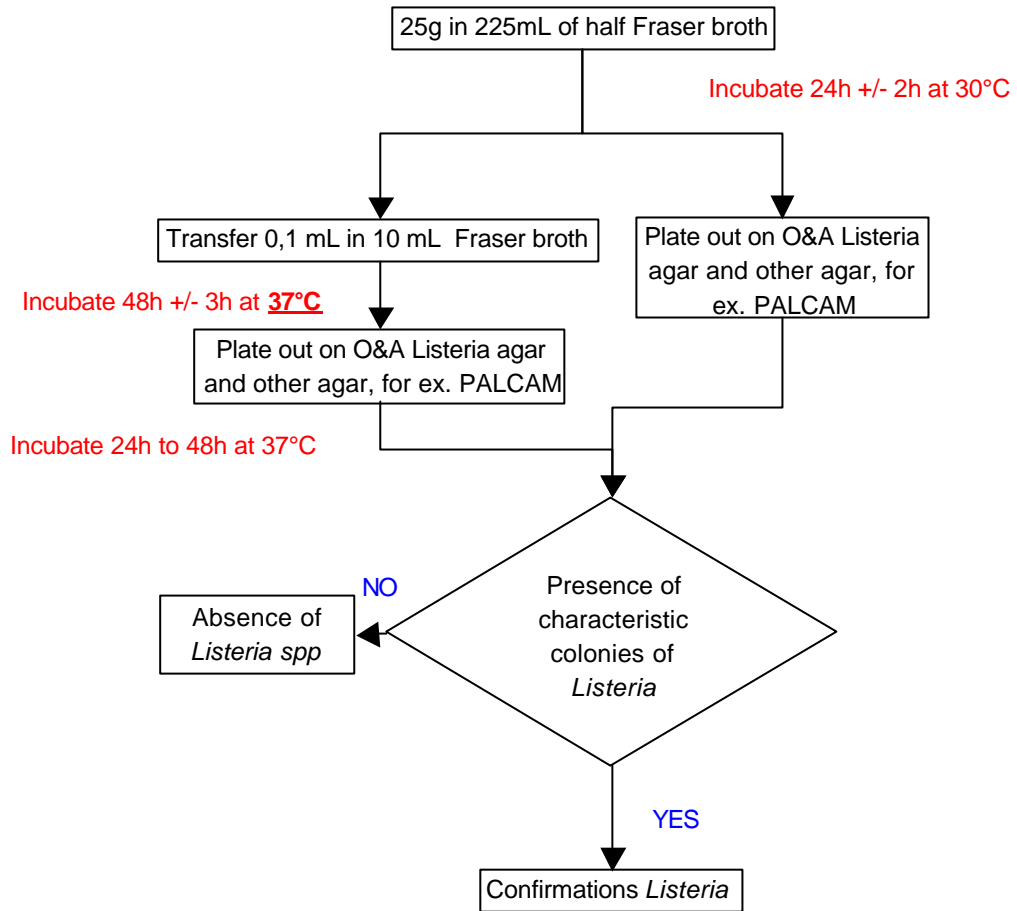
Based on these results, the validation of the TRANSIA™ PLATE *Listeria* method was renewed in December 2007, under the certificate number TRA 02/6-11/95.

APPENDICES

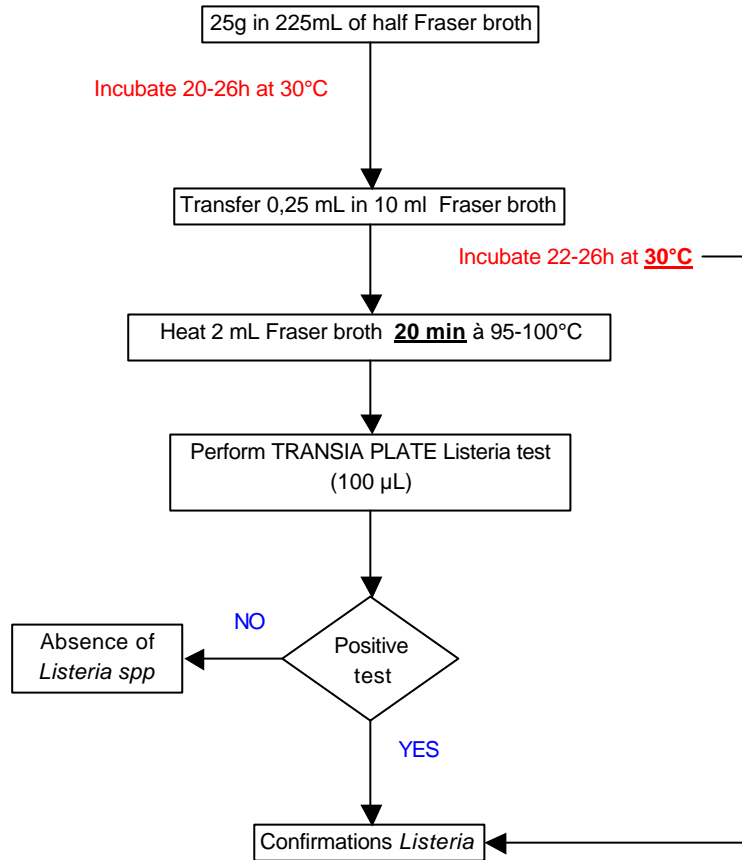
APPENDIX A :

ANALYTICAL PROTOCOLS

EN ISO STANDARD 11290-1/A1 : 2004 (#)



Méthode alternative TRANSIA PLATE Listeria



APPENDIX B :

MAIN RESULTS OF THE FIRST VALIDATION STUDY

1st Certification date

The TRANSIA™ PLATE *Listeria* method has been validated with the certificate number TRA 02/6-11/95.

- November 1995 : initial certification for human food products
- February 2000 : first renewal for human food products
- December 2003 : second renewal and extension after protocol modification for human food products

Reference method used for the validation

- for the initial certification, the French standard V 08-055 (1993) « Detection of *Listeria monocytogenes* – Routine method »
- for the first and second renewals, the EN ISO 11290-1 (1997) « Horizontal method for the detection and enumeration of *Listeria monocytogenes* – Part 1: Detection method ».

Main results obtained in the first validation study

Specificity

Initial certification study 1995

108 strains of *Listeria* and 50 strains other than *Listeria* were studied with the TRANSIA™ PLATE *Listeria* test:

⇒ no cross-reactions were observed in the non *Listeria* strains tested

⇒ all the strains of *Listeria* were detected except one non-motile strain of *Listeria monocytogenes* 1/2

Limit of detection

Three strains of *Listeria* (*L.monocytogenes* 4b, *L.monocytogenes* 1/2a, *L. innocua* 6a) were tested at different levels (from $7,0.10^3$ to $7,0.10^5$ cellules/mL Fraser broth).

The limit of detection of the immunoenzymatic test was 7×10^4 cells/mL.

Renewal study 1999

One strain of *L. monocytogenes* 4b was tested in Fraser broth.

The limit of detection of the immunoenzymatic test was 7×10^4 cells/mL.

The limit of detection of the immunoenzymatic test for this strain was 3.4×10^5 cells/mL.

Renewal study 2003

Four strains were studied (*L.monocytogenes* 4b, *L.monocytogenes* 1/2a, *L.innocua*, *L.welshimeri*).

The limit of detection of the immunoenzymatic test was between 1.3×10^4 cells/mL and 3.8×10^4 cells/mL.

Relative detection level

Four strains of *Listeria* (*L.monocytogenes* 4b, *L.monocytogenes* 1/2a, *L.innocua* 6a and *L.ivanovii* 5) were used for contaminating different food matrices (Ground beef meat, cheese, salad and smoked salmon). The contamination levels under 10 cells per 25 grams were detected.

Renewal study 1999

Four strains of *Listeria* were used for contaminating traditional rillettes: *L.monocytogenes* 1/2a, *L.monocytogenes* 4b, *L.innocua* 6a, et *L.innocua* 6b. No discordance was observed in comparison with the reference method. Even the weakest rates made (from 1 to 7 bacteria per 25 grams) were detected, irrespective of the strain used.

Renewal study 2003

Four strains (*L.monocytogenes* 4b, *L.monocytogenes* 1/2a, *L.innocua*, *L.welshimeri*) were used for contaminating four food matrices (traditional rillettes, raw milk, shredded cabbage and smoked salmon). No discordance was observed between the reference method and the alternative method. Even the weakest rates made (from 4 to 7 bacteria per 25 grams) were detected, irrespective of the strain used.

Accuracy

Initial certification study 1995

240 samples distributed over 4 categories (meat products, dairy products, seafood products, vegetable products) were analysed: 115 samples were contaminated by *Listeria*. The percentage of concordance between the two methods was 95.4 % with 7 false negative results and 4 additional positive results for the TRANSIA PLATE *Listeria* method.

Renewal study 2003

218 samples distributed over 4 categories (meat products, dairy products, seafood products, vegetable products) were analysed: 122 samples were contaminated by *Listeria*. The percentage of concordance between the two methods was 98.2% with 3 false negative results and 1 additional positive result for the TRANSIA PLATE *Listeria* method.

Fidelity

Renewal study 1999

11 laboratories conducted analyses on eight samples (two samples per contamination level) and the results of 9 laboratories were taken in account due to time-to-delivery and receipt temperature problems. The results were according to expected results.

Renewal study 2003

14 laboratories conducted analyses on eight samples (two samples per contamination level) and the results of 11 laboratories were taken in account due to time-to-delivery and receipt temperature problems. The results were according to expected results.

The percentages of concordant results relative to those expected, obtained for the different collaborative studies, were as follows:

Levels of contamination par 25 mL	Negative results	Positive results
<u>Study 1999</u>		
Level 0	100 % (18/18)	0 % (0/18)
Level 1 : 1 - 10 <i>Listeria</i> / 25 ml	0 % (0/18)	100 % (18/18)
Level 2 : 5 - 50 <i>Listeria</i> / 25 ml	0 % (0/18)	100 % (18/18)
Level 3 : 10 - 100 <i>Listeria</i> / 25 ml	0 % (0/18)	100 % (18/18)
<u>Study 2003</u>		
Level 0	100 % (22/22)	0 % (0/22)
Level 1 : 1 - 10 <i>Listeria</i> / 25 ml	0 % (0/22)	100 % (22/22)
Level 2 : 5 - 50 <i>Listeria</i> / 25 ml	0 % (0/22)	100 % (22/22)
Level 3 : 10 - 100 <i>Listeria</i> / 25 ml	0 % (0/22)	100 % (22/22)

Report of modifications made in the alternative method, having caused or not a validation extension

The modification of the TRANSIA PLATE *Listeria* method concerned the protocol of the method, but not its principle. The assays were made in an extension study during the 2nd renewal study.

Initially, the method was validated according to the following protocol:

- enrichment in Fraser ½ broth, incubated 24 to 26 hours at 30°C ± 1°C,
- then inoculation in 10 mL of Fraser broth incubated 24 to 26 hours at 26°C +/-1°C,
- followed by a TRANSIA[®] PLATE *Listeria* test after heating of an aliquot of the enrichment broth Fraser at 95-100°C (boiling water) for 20 minutes.

In 2003, the steps of the protocol were modified as follows :

- decrease of the incubation period of the Fraser ½ broth, from 24-26 hours to 20-26 hours,
- decrease of the incubation period of the Fraser broth, from 24-26 hours to 22-26 hours,
- increase of the incubation temperature of the Fraser broth, from 26°C to 30°C ± 1°C.

Bibliography

The report on external validations made by organisms other than AFNOR CERTIFICATION (date, organism, nature of validation protocol, indication of the reference method) is the following :

- NordVal validation obtained in 1995, renewed on 12/12/2002 and on 22/12/2004

The protocol concerned by the validation is the following:

- enrichment in Fraser ½ broth, incubated 24 hours at 30°C,
- then inoculation in 10 mL of Fraser broth incubated 24 h at 30°C +/-1°C,
- followed by a TRANSIA® PLATE Listeria test after heating of 1 to 2 mL of the enrichment broth Fraser at 95-100°C (boiling water) for 20 minutes.

The positive results are confirmed after streaking on Oxford agar and identification of 5 colonies.

The reference methods were:

- FIL 143 standard: 1990 for the dairy products
- NMKL 136 standard:1990 for the other products.

Technical requirements for AFNOR validation

The validation referential was that in effect in dates of different studies.

Currently, it is replaced by the EN ISO 16140:2003 standard.

APPENDIX C :

RELATIVE ACCURACY, RELATIVE SPECIFICITY,
RELATIVE SENSITIVITY

-

DETAILED RESULTS TABLES
FOR EACH SAMPLE CATEGORY

Legend

Bacterial presence

∅ : no growth
L = light growth
M = medium growth
H = high growth

Distribution of the flora

A = pure culture of suspicious colonies
B = mixed culture with a majority of suspicious colonies
C = mixed culture with a minority of suspicious colonies
D = mixed culture with very few suspicious colonies
E = no suspicious colonies
(x) : x characteristic colonies of *Listeria* if $x \leq 5$

Meat products

CODE	MATRICES	Cat.	S p i k e d	Reference Method ISO 11290-1/A1 #					Alternative method (all products) / Listeria genus							Alternative method (all products) after storage of Fraser broth for 72 hours at 2 - 8°C / Listeria genus									
				FRASER 1/2		FRASER		CONFIRMATION		TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison	TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison
				O&A1	P1	O&A2	P2	IDENTIF.	Result L.spp	OD	Cut-off	Res.	ALOA	PALCAM	Identification			OD	Cut-off	Res.	ALOA	PALCAM	Identification		
A11	Pope's eye	MP1	No	+LA	+LA	+MA	+HA	<i>L. monocytogenes</i>	+	3,031	0,217	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	2,961	0,220	+	+MA	+MA	<i>L. monocytogenes</i>	+	=
A12	Minced beef	MP1	No	+LA	+LB	+LB	+HB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	2,844	0,217	+	+LA	+LB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	=	2,940	0,220	+	+MB	+MB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	=
A13	Beef meat	MP1	No	+LA	+LA	+MA	+MA	<i>L. monocytogenes</i>	+	2,977	0,217	+	+MA	+MB	<i>L. monocytogenes</i>	+	=	2,865	0,220	+	+MA	+MA	<i>L. monocytogenes</i>	+	=
A14	Minced beef	MP1	No	Ø	Ø	Ø	Ø	/	-	1,505	0,217	+	-LA	+MA	<i>L. grayi</i>	+	SP	2,952	0,220	+	-LA	+MA	<i>L. grayi</i>	+	SP
A15	Minced horse meat	MP1	No	+LA(4)	+LA(1)	+MA	+MA	<i>L. monocytogenes</i>	+	0,913	0,217	+	+LA	+LB	<i>L. monocytogenes</i>	+	=	3,010	0,220	+	+MA	+LA	<i>L. monocytogenes</i>	+	=
A16	Minced beef	MP1	No	-LE	Ø	-LE	-LE	/	-	0,034	0,217	-	Ø	Ø	Ø	-	=	0,044	0,220	-	Ø	Ø	Ø	-	=
A17	Poultry leg	MP1	No	+LA	+LA	+MB	+MB	<i>L. monocytogenes</i>	+	1,666	0,217	+	+LA	+MB	<i>L. monocytogenes</i>	+	=	2,929	0,220	+	+LA	+LA	<i>L. monocytogenes</i>	+	=
B1	Duck breast	MP1	No	Ø	Ø	Ø	Ø	/	-	0,039	0,215	-	/	/	/	-	=								
B2	Chicken breast	MP1	No	Ø	Ø	Ø	Ø	/	-	0,038	0,215	-	/	/	/	-	=								
B3	Pork fillet	MP1	No	Ø	Ø	Ø	Ø	/	-	0,037	0,215	-	/	/	/	-	=								
J7	Minced beef	MP1	No	Ø	Ø	Ø	-LE	/	-	0,161	0,284	-	/	/	/	-	=								
J9	Minced beef	MP1	No	-ME	Ø	-LE	Ø	/	-	0,109	0,284	-	/	/	/	-	=								
K30	Pork chop	MP1	No	-LA	+LA(2)	-MB	+MB	<i>L. welshimeri</i>	+	2,983	0,263	+	-LB	+MB	<i>L. welshimeri</i>	+	=	3,007	0,245	+	-LB	+MB	<i>L. welshimeri</i>	+	=
N20	Minced beef	MP1	No	-LE	Ø	+MA	+MA	<i>L. monocytogenes</i>	+	1,272	0,229	+	+LB	+MB	<i>L. monocytogenes</i> <i>L. innocua</i>	+	=	2,938	0,220	+	+LB	+LB	<i>L. monocytogenes</i> <i>L. innocua</i>	+	=
N24	Pork liver	MP1	No	Ø	Ø	Ø	-LE	/	-	0,052	0,229	-	/	/	/	-	=								
A1	Chipolata sausages	MP2	No	+LB	+LB	+LB	+HB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	2,998	0,217	+	+MB	+HB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	=	2,968	0,220	+	+MB	+HB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	=
A2	Sausagemeat	MP2	No	-LA	+LB	-MA	+HA	<i>L. innocua</i>	+	2,975	0,217	+	-MA	+HA	<i>L. innocua</i>	+	=	2,960	0,220	+	-LA	+MA	<i>L. innocua</i>	+	=
A3	Sausage	MP2	No	+LB	+LB	+MB	+MB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	2,964	0,217	+	+MB	+HB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	=	2,945	0,220	+	+LB	+LB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	=
A4	Sausagemeat	MP2	No	-LA	+LA	-MB	+HB	<i>L. welshimeri</i>	+	3,000	0,217	+	-MA	+MA	<i>L. welshimeri</i>	+	=	2,989	0,220	+	-LA	+MA	<i>L. welshimeri</i>	+	=
B4	Beef carpaccio	MP2	No	Ø	Ø	Ø	Ø	/	-	0,036	0,215	-	/	/	/	-	=								
J3	Sausages	MP2	No	-LE	Ø	Ø	Ø	/	-	0,109	0,284	-	/	/	/	-	=								
J4	Chipolata sausages	MP2	No	-LB	+LB(3)	-LB	+MB	<i>L. innocua</i>	+	0,325	0,284	+	-LB	+LA	<i>L. innocua</i>	+	=	0,351	0,252	+	-LB	+LA	<i>L. innocua</i>	+	=
J5	Steak tartare	MP2	No	-LA(3)	+LA(2)	-LA	+HA	<i>L. innocua</i>	+	0,454	0,284	+	-LA	+LA	<i>L. innocua</i>	+	=	0,563	0,252	+	-LA	+LA	<i>L. innocua</i>	+	=
J6	Sausages	MP2	No	Ø	Ø	Ø	Ø	/	-	0,126	0,284	-	/	/	/	-	=								
J8	Merguez	MP2	No	+LB	+LB	+MB	+MB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	3,135	0,284	+	+MB	+MB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	=	3,014	0,252	+	+MB	+MB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	=
K24	Chipolata sausages	MP2	No	+LB	+LB	+MB	+MB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	3,014	0,263	+	+LB	+LB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	=	2,844	0,245	+	+MB	+MB	<i>L. monocytogenes</i> <i>L. welshimeri</i>	+	=
K25	Merguez	MP2	No	Ø	Ø	Ø	Ø	/	-	0,153	0,263	-	/	/	/	-	=								
K26	Chipolata sausages	MP2	No	-LA(2)	+LA	-MA	+HA	<i>L. welshimeri</i>	+	2,767	0,263	+	-MA	+MB	<i>L. welshimeri</i>	+	=	2,980	0,245	+	-MA	+MB	<i>L. welshimeri</i>	+	=
K27	Sausage	MP2	No	+LA	+LA	+MA	+HA	<i>L. monocytogenes</i>	+	2,986	0,263	+	+MA	+MB	<i>L. monocytogenes</i>	+	=	2,967	0,245	+	+MA	+MB	<i>L. monocytogenes</i>	+	=
K28	Organic pork sausage	MP2	No	-LA(2)	Ø	-MA	+HA	<i>L. welshimeri</i>	+	2,993	0,263	+	-LB	+MB	<i>L. welshimeri</i>	+	=	3,011	0,245	+	-LB	+MB	<i>L. welshimeri</i>	+	=
K29	Porc sausage	MP2	No	+MB	+LB	+MB	+HB	<i>L. monocytogenes</i> <i>L. innocua</i>	+	2,987	0,263	+	+MB	+HA	<i>L. monocytogenes</i> <i>L. innocua</i>	+	=	3,005	0,245	+	+MB	+HA	<i>L. monocytogenes</i> <i>L. innocua</i>	+	=
K31	Beef meatballs	MP2	No	+MB	+MB	+MB	+MB	<i>L. monocytogenes</i>	+	3,011	0,263	+	+MB	+HA	<i>L. monocytogenes</i>	+	=	3,029	0,245	+	+MB	+HA	<i>L. monocytogenes</i>	+	=
N19	Sausages	MP2	No	Ø	Ø	Ø	Ø	/	-	0,050	0,229	-	Ø	Ø	Ø	-	=	0,047	0,220	-	Ø	Ø	Ø	-	=
N21	Merguez	MP2	No	+LA	+MB	+MB	+MB	<i>L. monocytogenes</i> <i>L. innocua</i>	+	2,931	0,229	+	+MB	+MB	<i>L. monocytogenes</i> <i>L. innocua</i>	+	=	2,902	0,220	+	+HA	+HA	<i>L. monocytogenes</i> <i>L. innocua</i>	+	=
N23	American fillet	MP2	No	+LB	+LB	+MB	+MB	<i>L. monocytogenes</i>	+	3,040	0,229	+	+MA	+HB	<i>L. monocytogenes</i>	+	=	2,746	0,220	+	+MB	+HB	<i>L. monocytogenes</i>	+	=
N25	Sausagemeat	MP2	No	+MB	+MB	+MB	+MB	<i>L. monocytogenes</i> <i>L. innocua</i>	+	2,118	0,229	+	+MB	+HB	<i>L. monocytogenes</i> <i>L. innocua</i>	+	=	3,041	0,220	+	+HB	+HB	<i>L. monocytogenes</i> <i>L. innocua</i>	+	=

Meat products

CODE	MATRICES	Cat.	S p i k e d	Reference Method ISO 11290-1/A1 #						Alternative method (all products) / Listeria genus								Alternative method (all products) after storage of Fraser broth for 72 hours at 2 - 8°C / Listeria genus							
				FRASER 1/2		FRASER		CONFIRMATION		TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison	TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison
				O&A1	P1	O&A2	P2	IDENTIF.	Result L.spp	OD	Cut-off	Res.	ALOA	PALCAM	Identification			OD	Cut-off	Res.	ALOA	PALCAM	Identification		
A5	Smoked bacon	MP3	No	-LE	+LD	-MA	+HB	L.innocua	+	0,051	0,217	-	Ø	Ø	Ø	-	FN	0,047	0,220	-	Ø	Ø	Ø	-	FN
A6	Pork caul	MP3	No	+LA	+LA	+MB	+MB	L.monocytogenes	+	3,026	0,217	+	+MA	+MB	L.monocytogenes	+	=	3,011	0,220	+	+MA	+MB	L.monocytogenes	+	=
A7	Peppered salami-type sausage	MP3	No	Ø	Ø	-LA	+HA	L.innocua	+	0,037	0,217	-	Ø	Ø	Ø	-	FN	0,040	0,220	-	Ø	Ø	Ø	-	FN
A8	Salami-type sausage	MP3	No	+LB	+LB	+MB	+HB	L.monocytogenes	+	3,021	0,217	+	+MB	+HB	L.monocytogenes	+	=	2,972	0,220	+	+MB	+MB	L.monocytogenes	+	=
A9	Bacon	MP3	No	Ø	Ø	Ø	Ø	/	-	0,037	0,217	-	/	/	/	-	=								
A10	Sausage	MP3	No	-LE	Ø	-LA	+HA	L.innocua	+	0,254	0,217	+	-LA	+LA	L.innocua	+	=	1,397	0,220	+	-LA	+LA	L.innocua	+	=
A18	Smoked bacon	MP3	No	+LB	+LB	+LB	+HB	L.monocytogenes L.welshimeri	+	3,053	0,217	+	+MB	+HB	L.monocytogenes L.welshimeri	+	=	2,983	0,220	+	+LB	+LB	L.monocytogenes L.welshimeri	+	=
A19	Pâté de campagne	MP3	No	Ø	Ø	Ø	Ø	/	-	0,041	0,217	-	/	/	/	-	=								
A20	Cooked chitterlings sausage	MP3	No	-ME	-ME	-ME	-ME	/	-	0,054	0,217	-	/	/	/	-	=								
A21	Cooked chitterlings sausage	MP3	No	-ME	-ME	-LE	-LE	/	-	0,044	0,217	-	/	/	/	-	=								
B5	Streaky bacon	MP3	No	Ø	Ø	Ø	Ø	/	-	0,052	0,215	-	/	/	/	-	=								
B6	Rolled and stuffed ham	MP3	No	-LE	-LE	-ME	-ME	/	-	0,048	0,215	-	/	/	/	-	=								
B7	Pâté de campagne	MP3	No	-LE	-LE	-ME	-ME	/	-	0,040	0,215	-	/	/	/	-	=								
B8	Pork head pâté	MP3	No	Ø	Ø	Ø	Ø	/	-	0,046	0,215	-	/	/	/	-	=								
B9	Horse salami-like sausage	MP3	No	-LE	-LE	Ø	Ø	/	-	0,045	0,215	-	/	/	/	-	=								
B10	Grilled chicken	MP3	No	Ø	Ø	Ø	Ø	/	-	0,041	0,215	-	/	/	/	-	=								
B11	Saveloy	MP3	No	Ø	Ø	Ø	Ø	/	-	0,045	0,215	-	/	/	/	-	=								
J1	Foie gras	MP3	No	+MA	+HA	+MA	+MB	L.monocytogenes	+	3,028	0,284	+	+LA	+MA	L.monocytogenes	+	=	3,012	0,252	+	+MA	+HA	L.monocytogenes	+	=
J2	Sliced smoked bacon	MP3	No	-LA	+LA	-MB	+HA	L.welshimeri	+	3,154	0,284	+	-LA	+HA	L.welshimeri	+	=	3,015	0,252	+	-MA	+HA	L.welshimeri	+	=
J10	Peppered salami-type sausage	MP3	No	Ø	-LE	Ø	-LE	/	-	0,113	0,284	-	/	/	/	-	=								
J11	Bacon	MP3	No	+LA	+LA	+MA	+MA	L.monocytogenes	+	3,191	0,284	+	+LA	+LA	L.monocytogenes	+	=	2,993	0,252	+	+LA	+LA	L.monocytogenes	+	=
J12	Thin sliced pork + mustard	MP3	No	-LE	Ø	Ø	Ø	/	-	0,113	0,284	-	/	/	/	-	=								
J13	Smoked bacon	MP3	No	Ø	Ø	Ø	Ø	/	-	0,197	0,284	-	/	/	/	-	=								
L32	Salami-type sausage	MP3	No	-ME	Ø	-ME	Ø	/	-	0,113	0,273	-	/	/	/	-	=								
M15	Cooked sausage	MP3	No	+LA	+LA	+LA	+MA	L.monocytogenes	+	3,046	0,266	+	+MA	+LB	L.monocytogenes	+	=	2,979	0,228	+	+MA	+HA	L.monocytogenes	+	=
M16	Duck pâté	MP3	No	+LA	+LA	+MA	+MA	L.monocytogenes	+	2,985	0,266	+	+MA	+MB	L.monocytogenes	+	=	3,004	0,228	+	+MA	+MA	L.monocytogenes	+	=
N17	Pâté de campagne	MP3	No	Ø	Ø	Ø	Ø	/	-	0,050	0,229	-	/	/	/	-	=								
N18	Foie gras	MP3	No	Ø	Ø	Ø	Ø	/	-	0,051	0,229	-	Ø	Ø	Ø	-	=	0,043	0,220	-	Ø	Ø	Ø	-	=
N22	Sliced smoked bacon	MP3	No	+LA(5)	+LB(2)	+MA	+HA	L.monocytogenes	+	1,008	0,229	+	+MA	+HA	L.monocytogenes	+	=	3,006	0,220	+	+HA	+HA	L.monocytogenes	+	=
T1	Rillettes	MP3	No	Ø	Ø	Ø	Ø	/	-	0,050	0,229	-	/	/	/	-	=								

Dairy products

CODE	MATRICES	Cat.	S p i k e d	Reference Method ISO 11290-1/A1 #						Alternative method (all products) / Listeria genus							Alternative method (all products) after storage of Fraser broth for 72 hours at 2 - 8°C / Listeria genus								
				FRASER 1/2		FRASER		CONFIRMATION		TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison	TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison
				O&A1	P1	O&A2	P2	IDENTIF.	Result L.spp	OD	Cut-off	Res.	ALOA	PALCAM	Identification			OD	Cut-off	Res.	ALOA	PALCAM	Identification		
A23	Feta cheese	DP1	No	+LA	+LA	+MA	+MB	L. monocytogenes	+	1,860	0,217	+	+LA	+LA	L. monocytogenes	+	=	2,199	0,220	+	+LA	+LA	L. monocytogenes	+	=
A25	"Maroilles fermier" raw milk cheese	DP1	No	+MA	+MA	+MA	+HA	L. monocytogenes	+	3,078	0,217	+	+MA	+HA	L. monocytogenes	+	=	2,987	0,220	+	+MA	+HA	L. monocytogenes	+	=
A26	"Tome de Cambrai" raw milk cheese	DP1	No	+LB	+LB	+MB	+MB	L. monocytogenes	+	0,101	0,217	-	+LA	+LA	L. monocytogenes	-	FN	0,126	0,220	-	+LA	+LA	L. monocytogenes	-	FN
A28	"Maroilles fermier" raw milk cheese	DP1	No	+MA	+MB	+MB	+HB	L. monocytogenes	+	2,870	0,217	+	+MA	+HB	L. monocytogenes	+	=	2,898	0,220	+	+MA	+HB	L. monocytogenes	+	=
B17	"Reblochon" raw milk cheese	DP1	No	Ø	Ø	Ø	Ø	/	-	0,043	0,215	-	/	/	/	-	=								
B18	"Reblochon" raw milk cheese	DP1	No	Ø	Ø	Ø	Ø	/	-	0,043	0,215	-	/	/	/	-	=								
B19	"Maroilles" raw milk cheese	DP1	No	Ø	Ø	Ø	Ø	/	-	0,030	0,215	-	/	/	/	-	=								
B20	"Epoisses" raw milk cheese	DP1	No	Ø	Ø	Ø	Ø	/	-	0,031	0,215	-	/	/	/	-	=								
K17	Raw milk cheese	DP1	No	Ø	Ø	Ø	Ø	/	-	0,155	0,263	-	/	/	/	-	=								
K18	Raw milk cheese	DP1	No	Ø	Ø	-LE	-ME	/	-	0,078	0,263	-	/	/	/	-	=								
K19	"Epoisses" cheese	DP1	No	+LB	+LB	+MB	+HB	L. monocytogenes L.innocua	+	3,018	0,263	+	+MB	+MB	L. monocytogenes L.innocua	+	=	3,026	0,245	+	+MA	+MA	L. monocytogenes L.innocua	+	=
K20	"Pont l'Évêque" cheese	DP1	No	+LB	+LB	+MB	+MB	L. monocytogenes	+	2,870	0,263	+	+MA	+MA	L. monocytogenes	+	=	3,019	0,245	+	+LA	+LA	L. monocytogenes	+	=
L26	"Camembert" raw milk cheese	DP1	Yes	Ø	Ø	Ø	Ø	/	-	0,102	0,273	-	/	/	/	-	=								
L27	"Reblochon" cheese	DP1	Yes	-LE	-LE	Ø	Ø	/	-	0,092	0,273	-	/	/	/	-	=								
M26	"Petit Billy affiné" cheese	DP1	Yes	+LA(3)	+LA(4)	+MA	+MA	L. monocytogenes	+	3,071	0,266	+	+MA	+MA	L. monocytogenes	+	=	3,034	0,228	+	+MA	+LA	L. monocytogenes	+	=
M27	"Camembert" raw milk cheese	DP1	Yes	+LA	+LA	+MA	+MB	L. monocytogenes	+	3,134	0,266	+	+MA	+MA	L. monocytogenes	+	=	2,930	0,228	+	+MA	+MA	L. monocytogenes	+	=
M28	"Coulommiers" raw milk cheese	DP1	Yes	+MA	+MA	+MA	+HA	L. monocytogenes	+	3,029	0,266	+	+MA	+HA	L. monocytogenes	+	=	3,006	0,228	+	+HA	+HA	L. monocytogenes	+	=
M31	"Camembert" raw milk cheese	DP1	No	Ø	Ø	Ø	-LE	/	-	0,034	0,266	-	/	/	/	-	=								
M32	"Camembert" raw milk cheese	DP1	No	-LE	Ø	Ø	Ø	/	-	0,027	0,266	-	/	/	/	-	=								
M33	"Neufchâtel" cheese	DP1	No	-LE	Ø	Ø	Ø	/	-	0,031	0,266	-	/	/	/	-	=								
N13	"Maroilles" raw milk cheese	DP1	Yes	+LA	+LA	+MA	+HA	L. monocytogenes	+	2,928	0,229	+	+MA	+MA	L. monocytogenes	+	=	2,985	0,220	+	+MA	+MA	L. monocytogenes	+	=
N15	"Munster fermier" cheese	DP1	Yes	+LB	+LB	+MB	+HB	L. monocytogenes	+	3,041	0,229	+	+LA	+LA	L. monocytogenes	+	=	0,339	0,220	+	+LA	+LA	L. monocytogenes	+	=
A24	"Roquefort" cheese	DP2	No	Ø	Ø	Ø	Ø	/	-	0,044	0,217	-	/	/	/	-	=								
A27	"Petit vinageois" raw milk cheese	DP2	No	+LA	+MA	+MA	+HA	L. monocytogenes	+	3,059	0,217	+	+MA	+HA	L. monocytogenes	+	=	2,863	0,220	+	+LA	+MA	L. monocytogenes	+	=
A29	Raw goat milk cheese	DP2	No	+MA	+MA	+MA	+MA	L. monocytogenes	+	2,984	0,217	+	+MA	+HA	L. monocytogenes	+	=	2,869	0,220	+	+MA	+HA	L. monocytogenes	+	=
A30	"Munster fermier" cheese	DP2	No	+LA	+MA	+MA	+MA	L. monocytogenes	+	2,926	0,217	+	+MA	+HA	L. monocytogenes	+	=	2,997	0,220	+	+MA	+MA	L. monocytogenes	+	=
A31	"Munster fermier" cheese	DP2	No	+MA	+LA	+MA	+MA	L. monocytogenes	+	3,012	0,217	+	+MA	+HA	L. monocytogenes	+	=	3,040	0,220	+	+MA	+MA	L. monocytogenes	+	=
B12	Goat cheese	DP2	No	Ø	Ø	Ø	Ø	/	-	0,033	0,215	-	/	/	/	-	=								
B13	Goat cheese	DP2	No	-LE	Ø	Ø	Ø	/	-	0,034	0,215	-	/	/	/	-	=								
B14	"Selles sur Cher" raw goat milk cheese	DP2	No	Ø	Ø	Ø	Ø	/	-	0,039	0,215	-	/	/	/	-	=								
B15	"Valençay" raw goat milk cheese	DP2	No	Ø	Ø	Ø	Ø	/	-	0,047	0,215	-	/	/	/	-	=								
B16	"Selles sur Cher" raw goat milk cheese	DP2	No	Ø	Ø	Ø	Ø	/	-	0,036	0,215	-	/	/	/	-	=								
L23	Pasteurized goat cheese	DP2	Yes	-LE	-LE	Ø	-LE	/	-	0,086	0,273	-	/	/	/	-	=								
L24	Pasteurized goat cheese	DP2	Yes	+LB	+LB(3)	+LB	+MB	L. monocytogenes L.innocua	+	3,122	0,273	+	+LA	+MA	L. monocytogenes	+	=	2,988	0,266	+	+MA	+HA	L. monocytogenes	+	=
L28	Pasteurized goat cheese	DP2	Yes	Ø	-LE	Ø	Ø	/	-	0,098	0,273	-	/	/	/	-	=								
M18	Goat cheese	DP2	Yes	+LA	+LA	+MA	+HB	L. monocytogenes	+	3,033	0,266	+	+MA	+HA	L. monocytogenes	+	=	3,004	0,228	+	+HA	+HA	L. monocytogenes	+	=
M19	Goat cheese	DP2	Yes	+LA(1)	+LA	+MA	+MA	L. monocytogenes	+	3,110	0,266	+	+MA	+HB	L. monocytogenes	+	=	2,750	0,228	+	+MA	+MA	L. monocytogenes	+	=
M20	"Sainte Maure" ashy goat cheese	DP2	Yes	+LA	+LA	+MA	+HA	L. monocytogenes	+	3,029	0,266	+	+MA	+HA	L. monocytogenes	+	=	2,946	0,228	+	+MA	+MA	L. monocytogenes	+	=
M21	"Sainte Maure" ashy goat cheese	DP2	Yes	Ø	Ø	Ø	Ø	/	-	0,032	0,266	-	/	/	/	-	=								
M22	Goat cheese	DP2	Yes	+MA	+MA	+MA	+MA	L. monocytogenes	+	3,049	0,266	+	+MA	+HB	L. monocytogenes	+	=	2,909	0,228	+	+MA	+MA	L. monocytogenes	+	=
M23	Goat cheese	DP2	Yes	Ø	Ø	Ø	Ø	/	-	0,029	0,266	-	/	/	/	-	=								
M24	Goat cheese	DP2	Yes	+MA	+LA	+HA	+HA	L. monocytogenes	+	3,036	0,266	+	+HA	+HA	L. monocytogenes	+	=	3,030	0,228	+	+MA	+HA	L. monocytogenes	+	=
M25	Goat cheese	DP2	Yes	+LA	+LA	+MA	+MA	L. monocytogenes	+	3,125	0,266	+	+MA	+HA	L. monocytogenes	+	=	2,963	0,228	+	+MA	+MA	L. monocytogenes	+	=
M30	"Petit Pouligny" goat cheese	DP2	No	Ø	Ø	Ø	Ø	/	-	0,028	0,266	-	/	/	/	-	=								
M35	Goat cheese	DP2	No	Ø	Ø	Ø	Ø	/	-	0,028	0,266	-	/	/	/	-	=								
M36	Goat cheese	DP2	No	Ø	Ø	Ø	Ø	/	-	0,038	0,266	-	/	/	/	-	=								
N11	Goat cheese	DP2	Yes	-LE	-LE	-LE	-ME	/	-	0,050	0,229	-	/	/	/	-	=	0,049	0,220	-	/	/	/	-	=
N14	Goat cheese	DP2	Yes	+LA	+LA	+MA	+MA	L. monocytogenes	+	1,129	0,229	+	+MA	+LA	L. monocytogenes	+	=	1,146	0,220	+	+LA	+LA	L. monocytogenes	+	=

Dairy products

CODE	MATRICES	Cat.	S p i k e d	Reference Method ISO 11290-1/A1 #						Alternative method (all products) / Listeria genus								Alternative method (all products) after storage of Fraser broth for 72 hours at 2 - 8°C / Listeria genus							
				FRASER 1/2		FRASER		CONFIRMATION		TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison	TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison
				O&A1	P1	O&A2	P2	IDENTIF.	Result L.spp	OD	Cut-off	Res.	ALOA	PALCAM	Identification			OD	Cut-off	Res.	ALOA	PALCAM	Identification		
A22	Opéra chocolate cake	DP3	No	+LB	+MD	+MB	+MB	<i>L. monocytogenes</i>	+	2,775	0,217	+	+LB	+HB	<i>L. monocytogenes</i>	+	=	2,939	0,220	+	+LB	+MB	<i>L. monocytogenes</i>	+	=
K8	Vanilla ice-cream	DP3	Yes	+LA	+LA	+MA	+HB	<i>L. monocytogenes</i>	+	3,014	0,263	+	+LA	+LA	<i>L. monocytogenes</i>	+	=	3,019	0,245	+	+LA	+MA	<i>L. monocytogenes</i>	+	=
K9	"Mystère" ice-cream	DP3	Yes	-MB	+MB	-MA	+HA	<i>L.innocua</i>	+	2,920	0,263	+	-MB	+HA	<i>L.innocua</i>	+	=	2,914	0,245	+	-MA	+HA	<i>L.innocua</i>	+	=
K10	Choux pastry + Chantilly cream	DP3	Yes	+LA	+LA	+MA	+HA	<i>L. monocytogenes</i>	+	2,990	0,263	+	+LA	+MA	<i>L. monocytogenes</i>	+	=	2,976	0,245	+	+MA	+MA	<i>L. monocytogenes</i>	+	=
K11	Strawberries + ice-cream and Chantilly cream	DP3	Yes	-MA	+MA	-MA	+MA	<i>L.innocua</i>	+	2,997	0,263	+	-MA	+MA	<i>L.innocua</i>	+	=	2,993	0,245	+	-MA	+MA	<i>L.innocua</i>	+	=
K13	Milk powder	DP3	Yes	-LA	+LA	-MA	+HA	<i>L.innocua</i>	+	2,990	0,263	+	-MA	+MA	<i>L.innocua</i>	+	=	3,011	0,245	+	-MA	+MA	<i>L.innocua</i>	+	=
K15	Profiteroles	DP3	No	Ø	Ø	Ø	Ø	/	-	0,073	0,263	-	/	/	/	-	=								
K16	Choux pastry + Chantilly cream	DP3	No	Ø	Ø	Ø	Ø	/	-	0,069	0,263	-	/	/	/	-	=								
L21	Mix for cookies	DP3	No	-HD	+MD	-HB	+MD	<i>L.innocua</i>	+	3,054	0,273	+	-MA	+HA	<i>L.innocua</i>	+	=	2,935	0,266	+	-MA	+MA	<i>L.innocua</i>	+	=
L25	Raw milk	DP3	Yes	+MB	+MA	+HB	+HB	<i>L. monocytogenes</i>	+	3,097	0,273	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	3,055	0,266	+	+MA	+HA	<i>L. monocytogenes</i>	+	=
L29	Raw milk	DP3	Yes	-LE	-LE	-LE	Ø	/	-	0,097	0,273	-	/	/	/	-	=								
L30	Raw milk	DP3	No	Ø	Ø	Ø	Ø	/	-	0,103	0,273	-	/	/	/	-	=								
L31	Raw milk	DP3	Yes	-LE	Ø	-LE	Ø	/	-	0,097	0,273	-	/	/	/	-	=								
M17	Choux pastry + Chantilly cream	DP3	Yes	+LA	+LA	+MA	+MA	<i>L. monocytogenes</i>	+	3,116	0,266	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	2,852	0,228	+	+MA	+MA	<i>L. monocytogenes</i>	+	=
M29	Raw milk	DP3	Yes	+LA	+LA	+MA	+MA	<i>L. monocytogenes</i>	+	3,014	0,266	+	+LA	+HA	<i>L. monocytogenes</i>	+	=	3,029	0,228	+	+MA	+HA	<i>L. monocytogenes</i>	+	=
M34	Raspberry tart	DP3	No	Ø	Ø	Ø	Ø	/	-	0,032	0,266	-	/	/	/	-	=								
N12	Raw milk	DP3	Yes	+MA	+HA	+MA	+HA	<i>L. monocytogenes</i>	+	2,889	0,229	+	+MA	+HA	<i>L. monocytogenes</i>	+	=	2,862	0,220	+	+MA	+HA	<i>L. monocytogenes</i>	+	=

Seafood Products

CODE	MATRICES	Cat.	S p i k e d	Reference Method ISO 11290-1/A1 #						Alternative method (all products) / Listeria genus								Alternative method (all products) after storage of Fraser broth for 72 hours at 2 - 8°C / Listeria genus							
				FRASER 1/2		FRASER		CONFIRMATION		TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison	TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison
				O&A1	P1	O&A2	P2	IDENTIF.	Result L.spp	OD	Cut-off	Res.	ALOA	PALCAM	Identification			OD	Cut-off	Res.	ALOA	PALCAM	Identification		
C10	Shrimps	SP1	No	+MB	+LB	+MB	+MB	<i>L. monocytogenes</i>	+	3,244	0,265	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	3,159	0,243	+	+MA	+MA	<i>L. monocytogenes</i>	+	=
C11	Shrimps	SP1	No	+MB	+LA	+MB	+MA	<i>L. monocytogenes</i>	+	3,218	0,265	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	3,206	0,243	+	+MA	+MA	<i>L. monocytogenes</i>	+	=
C12	Shrimps	SP1	No	-LE	-LE	-ME	-ME	/	-	0,145	0,265	-	-LE	-LE	/	-	=								
C13	Shrimps	SP1	No	+MA	+MB	+MA	+MB	<i>L. monocytogenes</i>	+	3,254	0,265	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	3,156	0,243	+	+MA	+HA	<i>L. monocytogenes</i>	+	=
D12	Mixed seafood	SP1	No	+LB(1)	+LB(5)	+MA	+MA	<i>L. monocytogenes</i>	+	3,221	0,243	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	3,063	0,239	+	+MA	+HA	<i>L. monocytogenes</i>	+	=
D14	Mixed seafood	SP1	No	+LB	+LD	+MB	+HA	<i>L. monocytogenes</i>	+	0,418	0,243	+	+LB	+MB	<i>L. monocytogenes</i>	+	=	3,107	0,239	+	+MA	+HB	<i>L. monocytogenes</i>	+	=
D16	Sweet herring fillet	SP1	No	+LA	Ø	+MB	+HB	<i>L. monocytogenes</i>	+	3,029	0,243	+	+LA	+MA	<i>L. monocytogenes</i>	+	=	2,986	0,239	+	+MA	+MA	<i>L. monocytogenes</i>	+	=
D17	Frozen salmon fillet	SP1	No	+LA	+LA	+MA	+MA	<i>L. monocytogenes</i>	+	3,139	0,243	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	3,237	0,239	+	+MA	+HA	<i>L. monocytogenes</i>	+	=
E15	Shrimps	SP1	No	-LE	Ø	-LA	+LD	<i>L.grayi</i>	+	3,209	0,219	+	-LB	+LD	<i>L.grayi</i>	+	=	2,949	0,239	+	-LB	+LD	<i>L.grayi</i>	+	=
G1	Raw fish	SP1	No	Ø	-LE	Ø	Ø	/	-	0,100	0,270	-	/	/	/	-	=								
G3	Fresh halibut	SP1	No	Ø	Ø	Ø	Ø	/	-	0,165	0,270	-	/	/	/	-	=								
G4	Fresh salmon	SP1	No	+MA	+MA	+MA	+MA	<i>L. monocytogenes</i>	+	3,034	0,270	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	3,024	0,305		+MA	+MA	<i>L. monocytogenes</i>	+	=
G5	Fresh herring	SP1	No	Ø	Ø	-LE	-LE	/	-	0,084	0,270	-	/	/	/	-	=								
H11	Haddock fillet	SP1	No	-LA(3)	+LB	-MA	+HA	<i>L.innocua</i>	+	2,997	0,239	+	-LA	+LA	<i>L.innocua</i>	+	=								
H12	Sweet herring fillet	SP1	No	-MA	+MA	-MA	+MB	<i>L.innocua</i>	+	3,040	0,239	+	-LB	+LB	<i>L.innocua</i>	+	=								
I9	Sweet herring fillet	SP1	No	Ø	Ø	Ø	-LE	/	-	0,141	0,321	-	/	/	/	-	=	0,081	0,261	-	/	/	/	-	=
I10	Haddock	SP1	No	+MB	+MB	+LB	+LB	<i>L. monocytogenes</i> <i>L.innocua</i>	+	3,028	0,321	+	+MB	+MB	<i>L. monocytogenes</i> <i>L.innocua</i>	+	=	3,154	0,261	+	+LB	+MB	<i>L. monocytogenes</i> <i>L.innocua</i>	+	=
I11	Skate	SP1	No	-LE	Ø	-LE	-LE	/	-	0,186	0,321	-	Ø	Ø	Ø	-	=	0,089	0,261	-					
J15	Fish fillet	SP1	No	-LA	+LA	-MA	+MA	<i>L.innocua</i>	+	3,118	0,284	+	-MA	+HA	<i>L.innocua</i>	+	=	2,991	0,252	+	-MA	+HA	<i>L.innocua</i>	+	=
J21	Medium sole	SP1	No	Ø	Ø	-LE	-LE	/	-	0,110	0,284	-	/	/	/	-	=								
J22	Sea perch from Iceland	SP1	No	Ø	Ø	Ø	Ø	/	-	0,115	0,284	-	/	/	/	-	=								
J23	Panga fillet	SP1	No	+HB	+HB	+MB	+MB	<i>L. monocytogenes</i> <i>L.innocua</i>	+	3,118	0,284	+	+MB	+MB	<i>L. monocytogenes</i> <i>L.innocua</i>	+	=	3,009	0,252	+	+MB	+MB	<i>L. monocytogenes</i> <i>L.innocua</i>	+	=
J24	Cod fillet	SP1	No	Ø	Ø	-LE	Ø	/	-	0,108	0,284	-	/	/	/	-	=								
J25	Scallop	SP1	No	-ME	-LE	-ME	-ME	/	-	0,108	0,284	-	/	/	/	-	=								
K22	Shrimps	SP1	No	Ø	Ø	Ø	Ø	/	-	0,070	0,263	-	/	/	/	-	=								
K23	Frozen salmon	SP1	No	Ø	Ø	Ø	Ø	/	-	0,086	0,263	-	/	/	/	-	=								
C1	Smoked salmon tartare	SP2	No	Ø	Ø	Ø	Ø	/	-	0,090	0,265	-	/	/	/	-	=								
C2	Smoked salmon	SP2	No	Ø	Ø	Ø	Ø	/	-	0,089	0,265	-	/	/	/	-	=								
C4	Smoked salmon bits	SP2	No	+LA	+LA	+MA	+MA	<i>L. monocytogenes</i>	+	3,239	0,265	+	+MA	+HA	<i>L. monocytogenes</i>	+	=	3,221	0,243	+	+MA	+HA	<i>L. monocytogenes</i>	+	=
C5	Smoked salmon from Atlantic	SP2	No	Ø	Ø	Ø	Ø	/	-	0,100	0,265	-	/	/	/	-	=								
C6	Smoked salmon carpaccio	SP2	No	Ø	Ø	Ø	Ø	/	-	0,098	0,265	-	/	/	/	-	=								
C7	Smoked salmon from Ireland	SP2	No	Ø	Ø	Ø	Ø	/	-	0,088	0,265	-	/	/	/	-	=								
C9	Smoked kippers	SP2	No	-LA	+LA	-MA	+HA	<i>L.innocua</i>	+	3,232	0,265	+	-MA	+MA	<i>L.innocua</i>	+	=	3,175	0,243	+	-LA	+MA	<i>L.innocua</i>	+	=
D1	Smoked salmon bits	SP2	No	Ø	Ø	Ø	Ø	/	-	0,051	0,243	-	/	/	/	-	=								
D2	Smoked salmon from Atlantic	SP2	No	Ø	Ø	Ø	Ø	/	-	0,049	0,243	-	/	/	/	-	=								
D5	Smoked salmon carpaccio	SP2	No	+MB	+MB	+MB	+HB	<i>L. monocytogenes</i> <i>L. monocytogenes</i> <i>L.innocua</i>	+	3,176	0,243	+	+MB	+MB	<i>L. monocytogenes</i> <i>L. monocytogenes</i> <i>L.innocua</i>	+	=	3,212	0,239	+	+MB	+MB	<i>L. monocytogenes</i> <i>L. monocytogenes</i> <i>L.innocua</i>	+	=
D6	Smoked kippers	SP2	No	-LA	+LA	+MB	+HB	<i>L. monocytogenes</i> <i>L.innocua</i>	+	3,212	0,243	+	+MB	+MB	<i>L. monocytogenes</i> <i>L.innocua</i>	+	=	3,128	0,239	+	+MB	+MB	<i>L. monocytogenes</i> <i>L.innocua</i>	+	=
D7	Smoked salmon from Norway	SP2	No	Ø	Ø	+MA	+HA	<i>L. monocytogenes</i>	+	3,118	0,243	+	+LA	+LA	<i>L. monocytogenes</i>	+	=	3,163	0,239	+	+MA	+MA	<i>L. monocytogenes</i>	+	=
D8	Smoked haddock	SP2	No	Ø	Ø	+MB	+MB	<i>L. monocytogenes</i>	+	3,162	0,243	+	+LA	+MB	<i>L. monocytogenes</i>	+	=	3,184	0,239	+	+MA	+HA	<i>L. monocytogenes</i>	+	=
D9	Small smoked trout	SP2	No	-LE	-ME	-LE	-ME	/	-	0,048	0,243	-	/	/	/	-	=								
D10	Small slice of smoked trout	SP2	No	+LA	+LA	+MA	+MB	<i>L. monocytogenes</i>	+	3,217	0,243	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	2,989	0,239	+	+MA	+MA	<i>L. monocytogenes</i>	+	=
E1	Smoked salmon from Norway	SP2	No	+LA(5)	+LA(3)	+MA	+HA	<i>L. monocytogenes</i>	+	1,096	0,219	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	2,956	0,239	+	+MA	+MA	<i>L. monocytogenes</i>	+	=
E2	Salmon tartare	SP2	No	Ø	Ø	Ø	Ø	/	-	0,039	0,219	-	/	/	/	-	=								
E3	Smoked trout	SP2	No	Ø	Ø	Ø	Ø	/	-	0,048	0,219	-	/	/	/	-	=								
E4	Thin sliced salmon	SP2	No	Ø	Ø	Ø	Ø	/	-	0,046	0,219	-	/	/	/	-	=								
E5	Smoked salmon from Atlantic	SP2	No	Ø	Ø	Ø	Ø	/	-	0,045	0,219	-	/	/	/	-	=								
E6	Smoked haddock	SP2	No	+LA	+MB	+MA	+MB	<i>L. monocytogenes</i>	+	3,191	0,219	+	+MB	+MB	<i>L. monocytogenes</i>	+	=	3,039	0,239	+	+MB	+MB	<i>L. monocytogenes</i>	+	=
E7	Smoked salmon bits	SP2	No	Ø	Ø	Ø	Ø	/	-	0,039	0,219	-	Ø	Ø	Ø	-	=								
E10	Smoked salmon from Scotland	SP2	Yes	+MA	+MA	+MA	+MA	<i>L. monocytogenes</i>	+	3,249	0,219	+	+MB	+HB	<i>L. monocytogenes</i>	+	=	2,756	0,239	+	+MB	+HB	<i>L. monocytogenes</i>	+	=
G2	Kippers	SP2	No	Ø	Ø	Ø	Ø	/	-	0,092	0,270	-	/	/	/	-	=								
H5	Kippers	SP2	No	Ø	Ø	Ø	Ø	/	-	0,098	0,239	-	/	/	/	-	=								

Seafood Products

CODE	MATRICES	Cat.	S p i c e d	Reference Method ISO 11290-1/A1 #						Alternative method (all products) / Listeria genus								Alternative method (all products) after storage of Fraser broth for 72 hours at 2 - 8°C / Listeria genus							
				FRASER 1/2		FRASER		CONFIRMATION		TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison	TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison
				O&A1	P1	O&A2	P2	IDENTIF.	Result L.spp	OD	Cut-off	Res.	ALOA	PALCAM	Identification			OD	Cut-off	Res.	ALOA	PALCAM	Identification		
C8	Shrimps in spicy sauce	SP3	No	Ø	-LE	Ø	Ø	/	-	0,096	0,265	-	/	/	/	-	=								
D11	Cooked mussels from Chile	SP3	No	-LE	-LE	-LE	Ø	/	-	0,045	0,243	-	/	/	/	-	=								
D13	Salad of scampi	SP3	No	-ME	-LE	-ME	-LE	/	-	0,049	0,243	-	Ø	-LE	/	-	=								
D15	Shrimps in sauce	SP3	No	+LA	+MA	+MA	+MA	L. monocytogenes	+	3,223	0,243	+	+MA	+MA	L. monocytogenes	+	=	3,122	0,239	+	+MA	+MA	L. monocytogenes	+	=
E8	Accras de morue	SP3	Yes	+MA	+MA	+MA	+MB	L. monocytogenes	+	3,251	0,219	+	+MA	+MA	L. monocytogenes	+	=	2,860	0,239	+	+MA	+MA	L. monocytogenes	+	=
E9	Fish fritter with curry sauce	SP3	Yes	+MA	+MA	+MA	+MA	L. monocytogenes	+	3,238	0,219	+	+MA	+MB	L. monocytogenes	+	=	2,971	0,239	+	+MA	+MB	L. monocytogenes	+	=
E11	Rolled and stuffed salmon	SP3	Yes	+MA	+MA	+MA	+MA	L. monocytogenes	+	3,190	0,219	+	+MA	+MA	L. monocytogenes	+	=	2,884	0,239	+	+MA	+MA	L. monocytogenes	+	=
E12	Flaked crab	SP3	Yes	+MA	+MA	+MA	+MA	L. monocytogenes	+	3,179	0,219	+	+MA	+MA	L. monocytogenes	+	=	2,878	0,239	+	+MA	+MA	L. monocytogenes	+	=
E13	Shrimp spring rolls	SP3	Yes	+MA	+HA	+MA	+HA	L. monocytogenes	+	3,244	0,219	+	+MA	+HA	L. monocytogenes	+	=	3,004	0,239	+	+MA	+HA	L. monocytogenes	+	=
E14	Accras de morue	SP3	No	Ø	Ø	Ø	Ø	/	-	0,044	0,219	-	/	/	/	-	=								
E16	Salad of tuna	SP3	No	Ø	Ø	Ø	Ø	/	-	0,043	0,219	-	/	/	/	-	=								
E17	Crab stick	SP3	No	Ø	Ø	Ø	Ø	/	-	0,039	0,219	-	/	/	/	-	=								
I6	Salmon tartare	SP3	No	+LA	+LA	+HB*	+MB	L. monocytogenes	+	3,020	0,321	+	+MA	+HB	L. monocytogenes	+	=	3,125	0,261	+	+MA	+HB	L. monocytogenes	+	=
J26	Salmon cake	SP3	No	Ø	Ø	Ø	Ø	/	-	0,109	0,284	-	/	/	/	-	=								

Vegetables

CODE	MATRICES	Cat.	S p i k e d	Reference Method ISO 11290-1/A1 #						Alternative method (all products) / Listeria genus							Alternative method (all products) after storage of Fraser broth for 72 hours at 2 - 8°C / Listeria genus								
				FRASER 1/2		FRASER		CONFIRMATION		TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison	TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison
				O&A1	P1	O&A2	P2	IDENTIF.	Result <i>L.spp</i>	OD	Cut-off	Res.	ALOA	PALCAM	Identification			OD	Cut-off	Res.	ALOA	PALCAM	Identification		
N5	Cooked carrots	VP3	Yes	+MA	+MA	+MA	+MB	<i>L. monocytogenes</i>	+	2,969	0,229	+	+MA	+HA	<i>L. monocytogenes</i>	+	=	2,998	0,220	+	+MA	+HA	<i>L. monocytogenes</i>	+	=
N6	Cooked mixed vegetables	VP3	Yes	+MA	+MA	+MA	+MB	<i>L. monocytogenes</i>	+	2,630	0,229	+	+MA	+HA	<i>L. monocytogenes</i>	+	=	2,603	0,220	+	+MB	+MB	<i>L. monocytogenes</i>	+	=
N7	Rice and pepper	VP3	Yes	+MA	+MA	+MB	+MB	<i>L. monocytogenes</i>	+	2,939	0,229	+	+LA	+MA	<i>L. monocytogenes</i>	+	=	2,995	0,220	+	+MA	+HA	<i>L. monocytogenes</i>	+	=
N8	Potatoes with chives	VP3	Yes	+MA	+MA	+MB	+HA	<i>L. monocytogenes</i>	+	2,864	0,229	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	2,884	0,220	+	+MA	+MA	<i>L. monocytogenes</i>	+	=

Environment

CODE	MATRICES	Cat.	S p i k e d	Reference Method ISO 11290-1/A1 #						Alternative method (all products) / Listeria genus							Alternative method (all products) after storage of Fraser broth for 72 hours at 2 - 8°C / Listeria genus								
				FRASER 1/2		FRASER		CONFIRMATION		TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison	TP Listeria			CONFIRMATION			FINAL RESULT TP Listeria	Comparison
				O&A1	P1	O&A2	P2	IDENTIF.	Result L.spp	OD	Cut-off	Res.	ALOA	PALCAM	Identification			OD	Cut-off	Res.	ALOA	PALCAM	Identification		
D27	Process water	EN1	Yes	+LA(2)	+LA	+MA	+HA	<i>L. monocytogenes</i>	+	3,147	0,243	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	3,156	0,239	+	+MA	+HA	<i>L. monocytogenes</i>	+	=
D28	Process water	EN1	Yes	+LA	+LA	+MA	+HA	<i>L. monocytogenes</i>	+	3,189	0,243	+	+MA	+MB	<i>L. monocytogenes</i>	+	=	2,983	0,239	+	+MA	+HB	<i>L. monocytogenes</i>	+	=
D29	Process water	EN1	Yes	+LA	+LA	+MA	+HA	<i>L. monocytogenes</i>	+	3,118	0,243	+	+MB	+HB	<i>L. monocytogenes</i>	+	=	3,063	0,239	+	+MB	+HB	<i>L. monocytogenes</i>	+	=
D30	Process water	EN1	Yes	+LA	+LA	+MA	+MA	<i>L. monocytogenes</i>	+	3,144	0,243	+	+MA	+MA	<i>L. monocytogenes</i>	+	=	3,119	0,239	+	+MA	+MA	<i>L. monocytogenes</i>	+	=
H8	Wahbasin in dishwashing room	EN1	No	Ø	-LE	-LE	-LE	/	-	0,087	0,239	-	/	/	/	-	=								
H18	Pickler	EN1	No	-LE	-LE	Ø	Ø	/	-	0,072	0,239	-	/	/	/	-	=								
J16	Water from collecting trap during work	EN1	No	Ø	Ø	Ø	Ø	/	-	0,109	0,284	-	/	/	/	-	=								
L17	Process water	EN1	Yes	Ø	Ø	Ø	Ø	/	-	0,087	0,273	-	/	/	/	-	=								
L18	Process water	EN1	Yes	+LA	+LA	+MA	+MA	<i>L. monocytogenes</i>	+	3,080	0,273	+	+LA	+MA	<i>L. monocytogenes</i>	+	=	3,085	0,266	+	+MA	+HB	<i>L. monocytogenes</i>	+	=
L19	Process water	EN1	Yes	+LA(2)	+LA	+MA	+HA	<i>L. monocytogenes</i>	+	3,015	0,273	+	+LA	+MB	<i>L. monocytogenes</i>	+	=	3,009	0,266	+	+MA	+HB	<i>L. monocytogenes</i>	+	=
L20	Process water	EN1	Yes	+LA	+LA	+MA	+MA	<i>L. monocytogenes</i>	+	3,034	0,273	+	+MA	+MB	<i>L. monocytogenes</i>	+	=	2,996	0,266	+	+MA	+HB	<i>L. monocytogenes</i>	+	=
M8	Process water	EN1	Yes	-LA	+MA	-MA	+HB	<i>L.innocua</i>	+	2,986	0,266	+	-LA	+MA	<i>L.innocua</i>	+	=	2,859	0,228	+	-LA	+MA	<i>L.innocua</i>	+	=
M9	Process water	EN1	Yes	-LA	+MA	-MA	+HA	<i>L.innocua</i>	+	3,084	0,266	+	-MA	+MA	<i>L.innocua</i>	+	=	2,954	0,228	+	-LA	+MA	<i>L.innocua</i>	+	=
M13	Stagnant water in dirty container	EN1	No	+LA	+MA	+MB	+MB	<i>L. monocytogenes</i>	+	2,993	0,266	+	+MA	+HA	<i>L. monocytogenes</i>	+	=	2,999	0,228	+	+MA	+MA	<i>L. monocytogenes</i>	+	=
N9	Process water	EN1	Yes	-LA	+MA	-MA	+MA	<i>L.innocua</i>	+	3,002	0,229	+	-MA	+MA	<i>L.innocua</i>	+	=	3,007	0,220	+	-MA	+MA	<i>L.innocua</i>	+	=
D31	Surface of filleting table	EN2	No	-LA	Ø	+MB	+HB	<i>L. monocytogenes</i> <i>L.innocua</i>	+	1,920	0,243	+	+LB	+LB	<i>L. monocytogenes</i> <i>L.innocua</i>	+	=	3,183	0,239	+	+MB	+MB	<i>L. monocytogenes</i> <i>L.innocua</i>	+	=
D32	Stainless steel table in workroom	EN2	No	Ø	Ø	Ø	Ø	/	-	0,367	0,243	+	Ø	Ø	Ø	-	=(FP)	0,071	0,239	-	Ø	Ø	Ø	-	=
D33	Vacuum machine	EN2	Yes	Ø	Ø	Ø	-LE	/	-	3,073	0,243	+	+MA	+MA	<i>L.monocytogenes</i>	+	SP	3,244	0,239	+	+MA	+MA	<i>L.monocytogenes</i>	+	SP
D39	Surface grille haddock	EN2	Yes	+LA(3)	+LA(1)	+MA	+MA	<i>L. monocytogenes</i>	+	0,281	0,243	+	+MA	+LA	<i>L.monocytogenes</i>	+	=	0,846	0,239	+	+MA	+MA	<i>L.monocytogenes</i>	+	=
G6	Fish container	EN2	No	+MA	+MB	+MA	+MB	<i>L. monocytogenes</i>	+	3,015	0,270	+	+MA	+MA	<i>L.monocytogenes</i>	+	=	3,021	0,305	+	+MA	+MA	<i>L.monocytogenes</i>	+	=
G7	Fish bone extractor	EN2	No	+LA	+MB	+MB	+MB	<i>L. monocytogenes</i>	+	3,011	0,270	+	+MA	+MA	<i>L.monocytogenes</i>	+	=	2,980	0,305	+	+HA	+MA	<i>L.monocytogenes</i>	+	=
G8	Plastic pallet	EN2	No	+MA	+MA	+MB	+MB	<i>L. monocytogenes</i>	+	3,027	0,270	+	+MA	+MA	<i>L.monocytogenes</i>	+	=	3,016	0,305	+	+MA	+MB	<i>L.monocytogenes</i>	+	=
G9	Thawing chamber	EN2	No	-LE	-LE	Ø	-LE	/	-	0,224	0,270	-	/	/	/	-	=								
G10	Salmon container	EN2	No	+MA	+MA	+MA	+MB	<i>L. monocytogenes</i>	+	3,034	0,270	+	+MA	+MA	<i>L.monocytogenes</i>	+	=	3,001	0,305	+	+MA	+HA	<i>L.monocytogenes</i>	+	=
G11	Plastic bin	EN2	No	+LA	+MA	+MA	+MA	<i>L. monocytogenes</i>	+	3,034	0,270	+	+LA	+MA	<i>L.monocytogenes</i>	+	=	3,008	0,305	+	+MA	+MA	<i>L.monocytogenes</i>	+	=
G12	Grille	EN2	No	Ø	Ø	Ø	Ø	/	-	0,096	0,270	-	/	/	/	-	=								
G13	Dry salt table	EN2	No	-LE	-LE	-LE	-LE	/	-	0,091	0,270	-	/	/	/	-	=								
G14	Peeling table	EN2	No	Ø	Ø	-LE	-LE	/	-	0,108	0,270	-	/	/	/	-	=								
G15	Stainless steel table	EN2	No	Ø	Ø	Ø	Ø	/	-	0,101	0,270	-	/	/	/	-	=								
H1	"Bolness" tank	EN2	No	Ø	Ø	Ø	Ø	/	-	0,069	0,239	-	/	/	/	-	=								
H2	Vacuum scales	EN2	No	Ø	Ø	Ø	Ø	/	-	0,077	0,239	-	/	/	/	-	=								
H3	Filleting table	EN2	No	Ø	Ø	Ø	Ø	/	-	0,084	0,239	-	/	/	/	-	=								
H7	Vacuum machine	EN2	No	Ø	Ø	Ø	Ø	/	-	0,074	0,239	-	/	/	/	-	=								
H9	Filleting table	EN2	No	Ø	-LE	Ø	Ø	/	-	0,068	0,239	-	/	/	/	-	=								
H10	MAIE equipment	EN2	No	Ø	Ø	Ø	Ø	/	-	0,070	0,239	-	/	/	/	-	=								
H13	Racks	EN2	No	Ø	-LE	Ø	Ø	/	-	0,074	0,239	-	/	/	/	-	=								
H14	Table for roasts and skewers	EN2	No	-LE	-LE	-LE	-ME	/	-	0,078	0,239	-	/	/	/	-	=								
H15	Scale for salted meat	EN2	No	-LE	-LE	Ø	-LE	/	-	0,082	0,239	-	/	/	/	-	=								
H16	Salted meat rack	EN2	No	-LE	-LE	-ME	-ME	/	-	0,078	0,239	-	/	/	/	-	=								
H17	Grille	EN2	No	-LE	-LE	-ME	-ME	/	-	0,071	0,239	-	/	/	/	-	=								
H19	Door to scrap room	EN2	No	-LE	-LE	-LE	-ME	/	-	0,068	0,239	-	/	/	/	-	=								
H21	Scale for salmons	EN2	No	Ø	Ø	-LE	-ME	/	-	0,074	0,239	-	/	/	/	-	=								
H22	Table for manual filleting	EN2	No	Ø	-LE	Ø	-LE	/	-	0,078	0,239	-	/	/	/	-	=								
J17	Table for salmons	EN2	No	-LE	Ø	Ø	Ø	/	-	0,109	0,284	-	/	/	/	-	=								

APPENDIX D :

INCLUSIVITY / EXCLUSIVITY

Reference	Strain	Origin	Inoculum into 225mL 1/2 Fraser broth (cfu)	TRANSIA PLATE <i>Listeria</i>		
				OD	Cut-off	Res.
L64	<i>Listeria innocua</i>	"Epoisses" cheese	9,0	2,929	0,208	+
L1	<i>Listeria innocua</i> 6a	ATCC 33090	4,0	2,863	0,239	+
L2	<i>Listeria innocua</i>	Minced beef	6,8	2,978	0,208	+
L3	<i>Listeria innocua</i>	Cow liver	10,0	2,946	0,208	+
L66	<i>Listeria innocua</i>	Spinach	9,4	2,891	0,208	+
L72	<i>Listeria innocua</i>	"Boulettes d'Avesnes" cheese	34,0	3,202	0,257	+
L77	<i>Listeria innocua</i> 6a	Sausage	19,4	3,231	0,257	+
L76	<i>Listeria innocua</i> 6b	Minced beef	14,0	3,163	0,219	+
L108	<i>Listeria innocua</i>	"Gorgonzola" cheese	15,0	3,241	0,257	+
L142	<i>Listeria seeligeri</i>	Raw milk cheese	16,4	3,236	0,219	+
L84	<i>Listeria seeligeri</i>	Minced beef	12,0	3,187	0,219	+
L83	<i>Listeria seeligeri</i> 1/2b	Pork tongue	9,0	2,959	0,208	+
L115	<i>Listeria seeligeri</i>	Surface water (lake)	8,8	2,953	0,208	+
L146	<i>Listeria grayi</i>	Collection	10,0	2,897	0,239	+
L143	<i>Listeria grayi</i>	Frozen fries	6,4	3,001	0,239	+
L91	<i>Listeria welshimeri</i>	Sausage	24,0	3,172	0,257	+
L87	<i>Listeria welshimeri</i>	Minced beef	6,8	3,013	0,208	+
L99	<i>Listeria welshimeri</i>	Sausage	22	2,382	0,239	+
L100	<i>Listeria welshimeri</i>	Cocoa spread	17,2	3,201	0,219	+
L101	<i>Listeria welshimeri</i>	Cooked ham	19,0	3,248	0,219	+
L155	<i>Listeria welshimeri</i>	Salmon	8,7	3,092	0,208	+
L80	<i>Listeria ivanovii</i>	Collection	20,0	3,224	0,219	+
L179	<i>Listeria ivanovii</i>	Environmental sample	20,0	0,663	0,219	+
L151	<i>Listeria ivanovii</i>	Minced beef	18,6	1,151	0,219	+
L133	<i>Listeria ivanovii</i>	"Roquefort" cheese	7,0	3,075	0,208	+
L10	<i>Listeria monocytogenes</i> 1/2a	"Rillettes"	16,8	3,150	0,257	+
L12	<i>Listeria monocytogenes</i> 1/2a	Smoked salmon	18,4	3,180	0,257	+
L13	<i>Listeria monocytogenes</i> 1/2b	Pork hear	13	3,065	0,219	+
L14	<i>Listeria monocytogenes</i> 1/2c	Minced beef	22,8	3,223	0,257	+
L15	<i>Listeria monocytogenes</i> 1/2c	Beef	20,6	2,879	0,257	+
L17	<i>Listeria monocytogenes</i> 1/2c	Pork belly	22	3,095	0,257	+
L18	<i>Listeria monocytogenes</i> 1/2c	"Munster" cheese	17,6	3,163	0,257	+
L20	<i>Listeria monocytogenes</i>	Salmon scraps	20,8	3,166	0,257	+
L32	<i>Listeria monocytogenes</i> 4b	"Munster" cheese	26	3,145	0,219	+
L38	<i>Listeria monocytogenes</i>	Raw milk "Coulommier" cheese	14,2	3,186	0,219	+
L4	<i>Listeria monocytogenes</i> 1/2a	ATTCC 35152	24,4	3,237	0,257	+
L40	<i>Listeria monocytogenes</i> 1/2a	"Munster" cheese	22,6	3,147	0,332	+
L42	<i>Listeria monocytogenes</i> 1/2a	Chicken breast	28,6	3,231	0,257	+
L43	<i>Listeria monocytogenes</i> 1/2a	Minced beef	19,6	3,092	0,257	+
L44	<i>Listeria monocytogenes</i> 1/2a	Sausage	25	3,176	0,257	+
L45	<i>Listeria monocytogenes</i> 1/2a	Rabbit pâté	15,4	3,235	0,257	+
L47	<i>Listeria monocytogenes</i> 1/2a	Sauté potatoes	19,5	3,189	0,257	+
L48	<i>Listeria monocytogenes</i> 1/2b	Pork tongue	15,6	3,209	0,257	+
L49	<i>Listeria monocytogenes</i> 1/2b	Poultry liver pâté	16,4	3,183	0,332	+
L5	<i>Listeria monocytogenes</i> 1/2a	Sliced smoked salmon	21,8	3,240	0,257	+
L50	<i>Listeria monocytogenes</i> 1/2b	Black pudding	21	3,196	0,332	+
L52	<i>Listeria monocytogenes</i> 1/2b	SLCC 2755	21	3,192	0,257	+
L57	<i>Listeria monocytogenes</i> 4a	ATCC 19114	17,4	3,223	0,219	+
L60	<i>Listeria monocytogenes</i> 4d	ATCC	20	3,109	0,219	+
L7	<i>Listeria monocytogenes</i> 1/2a	"Munster" cheese	17,6	3,032	0,332	+

Exclusivity

Reference	Strain	Origin	Inoculum into 225mL nutrient broth (cfu)	TRANSIA PLATE Listeria		
				OD	Cut-off	Res.
BA5	<i>Bacillus sphaericus</i>	Meat product	8,5E+05	0,156	0,332	-
BA2	<i>Bacillus cereus</i>	Beetroot	8,8E+05	0,159	0,332	-
BA4	<i>Bacillus stearothermophilus</i>	Dairy product	4,3E+05	0,160	0,332	-
BA 9	<i>Bacillus cereus</i>	Dehydrated mashed potatoes	2,5E+05	0,075	0,219	-
BA 14	<i>Bacillus cereus</i>	Egg	1,3E+05	0,051	0,208	-
BA 15	<i>Bacillus cereus</i>	Vanilla custard	1,8E+05	0,049	0,208	-
BA 19	<i>Bacillus cereus</i>	Environmental sample	2,1E+05	0,057	0,208	-
BA 21	<i>Bacillus cereus</i>	Tabbouleh (with poultry)	1,7E+05	0,059	0,208	-
15	<i>Brochotrix thermosphacta</i>	Minced beef	9,0E+04	0,159	0,332	-
Le1	<i>Rhodotorula rubra</i>	Pastry	1,4E+05	0,257	0,332	-
E1	<i>Enterococcus faecalis</i>	Egg product	1,6E+05	0,164	0,332	-
E2	<i>Enterococcus faecium</i>	Collection ATCC 3286	3,4E+05	0,231	0,332	-
L139	<i>Jonesia denitrificans</i>	Collection	7,7E+05	0,223	0,332	-
Lb1	<i>Lactobacillus acidophilus</i>	Dairy product	6,5E+04	0,079	0,219	-
Lb2	<i>Lactobacillus casei</i>	Dairy product	1,5E+04	0,058	0,208	-
41	<i>Lactobacillus fermentum</i>	ATCC 9338	5,2E+05	0,179	0,332	-
M1	<i>Micrococcus spp.</i>	Environmental sample	7,6E+05	0,162	0,332	-
32	<i>Rhodococcus equi</i>	Meat product	1,7E+05	0,160	0,332	-
E3	<i>Streptococcus bovis</i>	Collection	2,8E+05	0,165	0,332	-
E10	<i>Streptococcus bovis</i>	Collection	2,3E+05	0,050	0,208	-
ST3	<i>Staphylococcus epidermidis</i>	Yogurt	3,6E+05	0,165	0,332	-
ST26	<i>Staphylococcus intermedius</i>	Collection	1,2E+05	0,050	0,208	-
ST17	<i>Staphylococcus aureus</i>	Yogurt ice-cream	2,6E+05	0,159	0,208	-
E8	<i>Enterococcus durans</i>	Meat product	3,0E+05	0,048	0,208	-
E9	<i>Enterococcus faecium</i>	Taramasalata	3,0E+05	0,051	0,208	-
E14	<i>Streptococcus anginosus</i>	Collection	1,3E+05	0,070	0,208	-
E17	<i>Streptococcus equinus</i>	Collection	1,0E+05	0,059	0,208	-
38	<i>Corynebacterium variabilis</i>	ATCC 15753	1,8E+05	0,050	0,208	-
34	<i>Lactobacillus plantarum</i>	Dairy product	3,2E+05	0,171	0,332	-
35	<i>Lactobacillus paracasei</i>	Dairy product	5,0E+05	0,230	0,332	-

APPENDIX E :

INTERLABORATORY STUDY
-
LIST AND DETAILED RESULTS OF
PARTICIPANT LABORATORIES

Laboratory	Town	Country
AGROQUAL	COLOMBELLES	France
ASEPT SAS	LAVAL	France
AVEYRON LABO	RODEZ	France
H.J. HEINZ COMPANY Ltd	WIGAN	United Kingdom
LABCO	SURGERES	France
LABO. DE ANALISIS Dr ECHEVARNE	BARCELONA	Spain
L.A.S.A.	CHAMPDENIERS	France
LDC	SABLE SUR SARTHE	France
LIAL	AURILLAC	France
NESTLE Research Center	LAUSANNE 26	Switzerland
PRIMEX S.A.	LANGUIDIC	France
RAISIO NUTRITION	RAISIO	Finland
SERVICE COMMUN DES LABORATOIRES	RENNES	France
SOCIETE FROMAGERE DE SAVOIE	FILLINGES	France

Laboratory A

Code sample	Reference method EN ISO 11290-1					Comparison / expected results	TRANSIA PLATE Listeria method					Comparison / expected results
	Fraser 1/2		Fraser		Result		Test		Test result	Confirmation COMPASS	Result	
	O&A	PALCAM	O&A	PALCAM			OD	Cut-off				
1	-	-	-	-	-	=	0,280	0,409	-	-	-	=
2	+	+	+	+	+	=	1,982	0,409	+	+	+	=
3	+	+	+	+	+	=	1,845	0,409	+	+	+	=
4	-	-	-	-	-	=	0,133	0,409	-	-	-	=
5	+	+	+	+	+	=	1,907	0,409	+	+	+	=
6	+	+	+	+	+	=	2,174	0,409	+	+	+	=
7	-	-	-	-	-	=	0,206	0,409	-	-	-	=
8	+	+	+	+	+	=	2,064	0,409	+	+	+	=
9	+	+	+	+	+	=	2,167	0,409	+	+	+	=
10	-	-	-	-	-	=	0,229	0,409	-	-	-	=
11	+	+	+	+	+	=	1,954	0,409	+	+	+	=
12	+	+	+	+	+	=	2,208	0,409	+	+	+	=
13	-	-	-	-	-	=	0,170	0,409	-	-	-	=
14	+	+	+	+	+	=	2,310	0,409	+	+	+	=
15	+	+	+	+	+	=	2,569	0,409	+	+	+	=
16	-	-	-	-	-	=	0,342	0,409	-	-	-	=
17	+	+	+	+	+	=	2,708	0,409	+	+	+	=
18	+	+	+	+	+	=	2,849	0,409	+	+	+	=
19	-	-	-	-	-	=	0,104	0,409	-	-	-	=
20	+	+	+	+	+	=	2,397	0,409	+	+	+	=
21	+	+	+	+	+	=	2,372	0,409	+	+	+	=
22	-	-	-	-	-	=	0,109	0,409	-	-	-	=
23	+	+	+	+	+	=	3,108	0,409	+	+	+	=
24	+	+	+	+	+	=	2,350	0,409	+	+	+	=

Total flora of milk (UFC/ml): > 30 000

Laboratory B

Code sample	Reference method EN ISO 11290-1					Comparison / expected results	TRANSIA PLATE Listeria method					Comparison / expected results
	Fraser 1/2		Fraser		Result		Test		Test result	Confirmation COMPASS	Result	
	O&A	PALCAM	O&A	PALCAM			OD	Cut-off				
1	-	-	-	-	-	=	0,237	0,368	-	-	-	=
2	+	+	+	+	+	=	Over	0,368	+	+	+	=
3	+	+	+	+	+	=	Over	0,368	+	+	+	=
4	-	-	-	-	-	=	0,127	0,368	-	-	-	=
5	-	-	-	-	-	#	0,086	0,368	-	-	-	#
6	+	+	+	+	+	=	Over	0,368	+	+	+	=
7	-	-	-	-	-	=	0,232	0,368	-	-	-	=
8	+	+	+	+	+	=	Over	0,368	+	+	+	=
9	+	+	+	+	+	=	Over	0,368	+	+	+	=
10	-	-	-	-	-	=	0,223	0,368	-	-	-	=
11	-	-	-	-	-	#	0,244	0,368	-	-	-	#
12	+	+	+	+	+	=	Over	0,368	+	+	+	=
13	-	-	-	-	-	=	0,364	0,368	-	-	-	=
14	+	+	+	+	+	=	Over	0,368	+	+	+	=
15	+	+	+	+	+	=	Over	0,368	+	+	+	=
16	-	-	-	-	-	=	0,300	0,368	-	-	-	=
17	+	+	+	+	+	=	Over	0,368	+	+	+	=
18	+	+	+	+	+	=	Over	0,368	+	+	+	=
19	-	-	-	-	-	=	0,262	0,368	-	-	-	=
20	+	+	+	+	+	=	Over	0,368	+	+	+	=
21	+	+	+	+	+	=	Over	0,368	+	+	+	=
22	-	-	-	-	-	=	0,165	0,368	-	-	-	=
23	+	+	+	+	+	=	Over	0,368	+	+	+	=
24	+	+	+	+	+	=	Over	0,368	+	+	+	=

Total flora of milk (UFC/ml): 8 800 000

Laboratory D

Code sample	Reference method EN ISO 11290-1					Comparison / expected results	TRANSIA PLATE Listeria method					Comparison / expected results
	Fraser 1/2		Fraser		Result		Test		Test result	Confirmation COMPASS	Result	
	O&A	PALCAM	O&A	PALCAM			OD	Cut-off				
1	-	-	-	-	-	=	0,080	0,252	-	-	-	=
2	+	+	+	+	+	=	3,144	0,252	+	+	+	=
3	+	+	+	+	+	=	3,152	0,252	+	+	+	=
4	-	-	-	-	-	=	0,080	0,252	-	-	-	=
5	+	+	+	+	+	=	3,143	0,252	+	+	+	=
6	+	+	+	+	+	=	3,140	0,252	+	+	+	=
7	-	-	-	-	-	=	0,077	0,252	-	-	-	=
8	+	+	+	+	+	=	3,125	0,252	+	+	+	=
9	+	+	+	+	+	=	3,135	0,252	+	+	+	=
10	-	-	-	-	-	=	0,087	0,252	-	-	-	=
11	+	+	+	+	+	=	3,106	0,252	+	+	+	=
12	+	+	+	+	+	=	3,171	0,252	+	+	+	=
13	-	-	-	-	-	=	0,096	0,252	-	-	-	=
14	+	+	+	+	+	=	2,877	0,252	+	+	+	=
15	+	+	+	+	+	=	3,120	0,252	+	+	+	=
16	-	-	-	-	-	=	0,091	0,252	-	-	-	=
17	-	-	-	-	-	#	0,092	0,252	-	-	-	#
18	+	+	+	+	+	=	3,144	0,252	+	+	+	=
19	-	-	-	-	-	=	0,091	0,252	-	-	-	=
20	+	+	+	+	+	=	3,154	0,252	+	+	+	=
21	+	+	+	+	+	=	3,028	0,252	+	+	+	=
22	-	-	-	-	-	=	0,116	0,252	-	-	-	=
23	+	+	+	+	+	=	2,969	0,252	+	+	+	=
24	+	+	+	+	+	=	3,125	0,252	+	+	+	=

Total flora of milk (UFC/ml): > 300 000

Laboratory E

Problem of receipt temperature

Code sample	Reference method EN ISO 11290-1					Comparison / expected results	TRANSIA PLATE Listeria method					Comparison / expected results
	Fraser 1/2		Fraser		Result		Test			Confirmation COMPASS	Result	
	O&A	Oxford	O&A	Oxford			OD	Cut-off	Test result			
1	-	-	-	-	-	=	0,099	0,218	-	-	-	=
2	+	+	+	+	+	=	3,166	0,218	+	+	+	=
3	+	+	+	+	+	=	3,157	0,218	+	+	+	=
4	-	-	-	-	-	=	0,105	0,218	-	-	-	=
5	+	+	+	+	+	=	3,181	0,218	+	+	+	=
6	+	+	+	+	+	=	3,195	0,218	+	+	+	=
7	-	-	-	-	-	=	0,109	0,218	-	-	-	=
8	+	+	+	+	+	=	3,141	0,218	+	+	+	=
9	+	+	+	+	+	=	3,173	0,218	+	+	+	=
10	-	-	-	-	-	=	0,105	0,218	-	-	-	=
11	+	+	+	+	+	=	3,157	0,218	+	+	+	=
12	+	+	+	+	+	=	3,168	0,218	+	+	+	=
13	-	-	-	-	-	=	0,112	0,218	-	-	-	=
14	+	ND	+	+	+	=	3,129	0,218	+	+	+	=
15	+	+	+	+	+	=	3,175	0,218	+	+	+	=
16	-	-	-	-	-	=	0,109	0,218	-	-	-	=
17	+	+	+	+	+	=	3,173	0,218	+	+	+	=
18	+	+	+	+	+	=	3,166	0,218	+	+	+	=
19	-	-	-	-	-	=	0,111	0,218	-	-	-	=
20	+	+	+	+	+	=	3,168	0,218	+	+	+	=
21	+	+	+	+	+	=	3,150	0,218	+	+	+	=
22	-	-	-	-	-	=	0,098	0,218	-	-	-	=
23	+	+	+	+	+	=	3,175	0,218	+	+	+	=
24	+	+	+	+	+	=	3,154	0,218	+	+	+	=
Total flora of milk (UFC/ml):		> 30 000										

Laboratory F

Code sample	Reference method EN ISO 11290-1					Comparison / expected results	TRANSIA PLATE Listeria method					Comparison / expected results
	Fraser 1/2		Fraser		Result		Test			Confirmation COMPASS	Result	
	O&A	PALCAM	O&A	PALCAM			OD	Cut-off	Test result			
1	-	-	-	-	-	=	0,086	0,263	-	-	-	=
2	+	+	+	+	+	=	3,235	0,263	+	+	+	=
3	+	+	+	+	+	=	3,239	0,263	+	+	+	=
4	-	-	-	-	-	=	0,096	0,263	-	-	-	=
5	+	+	+	+	+	=	3,244	0,263	+	+	+	=
6	+	+	+	+	+	=	3,230	0,263	+	+	+	=
7	-	-	-	-	-	=	0,097	0,263	-	-	-	=
8	+	+	+	+	+	=	3,234	0,263	+	+	+	=
9	+	+	+	+	+	=	3,238	0,263	+	+	+	=
10	-	-	-	-	-	=	0,089	0,263	-	-	-	=
11	+	+	+	+	+	=	3,279	0,263	+	+	+	=
12	+	+	+	+	+	=	3,232	0,263	+	+	+	=
13	-	-	-	-	-	=	0,106	0,263	-	-	-	=
14	+	+	+	+	+	=	2,995	0,263	+	+	+	=
15	+	+	+	+	+	=	3,232	0,263	+	+	+	=
16	-	-	-	-	-	=	0,089	0,263	-	-	-	=
17	+	+	+	+	+	=	3,238	0,263	+	+	+	=
18	+	+	+	+	+	=	3,235	0,263	+	+	+	=
19	-	-	-	-	-	=	0,099	0,263	-	-	-	=
20	+	+	+	+	+	=	3,232	0,263	+	+	+	=
21	+	+	+	+	+	=	3,106	0,263	+	+	+	=
22	-	-	-	-	-	=	0,118	0,263	-	-	-	=
23	+	+	+	+	+	=	3,232	0,263	+	+	+	=
24	+	+	+	+	+	=	3,239	0,263	+	+	+	=
Total flora of milk (UFC/ml):		> 30 000										

Laboratory G

Code sample	Reference method EN ISO 11290-1					Comparison / expected results	TRANSIA PLATE Listeria method					Comparison / expected results
	Fraser 1/2		Fraser		Result		Test			Confirmation COMPASS	Result	
	O&A	PALCAM	O&A	PALCAM			OD	Cut-off	Test result			
1	-	-	-	-	-	=	0,086	0,260	-	-	-	=
2	+	+	+	+	+	=	3,174	0,260	+	+	+	=
3	+	+	+	+	+	=	2,964	0,260	+	+	+	=
4	-	-	-	-	-	=	0,099	0,260	-	-	-	=
5	+	+	+	+	+	=	3,173	0,260	+	+	+	=
6	+	+	+	+	+	=	3,191	0,260	+	+	+	=
7	-	-	-	-	-	=	0,086	0,260	-	-	-	=
8	+	+	+	+	+	=	3,025	0,260	+	+	+	=
9	+	+	+	+	+	=	2,918	0,260	+	+	+	=
10	-	-	-	-	-	=	0,090	0,260	-	-	-	=
11	+	+	+	+	+	=	3,131	0,260	+	+	+	=
12	+	+	+	+	+	=	3,171	0,260	+	+	+	=
13	-	-	-	-	-	=	0,098	0,260	-	-	-	=
14	-	-	-	-	-	#	0,087	0,260	-	-	-	#
15	+	+	+	+	+	=	2,987	0,260	+	+	+	=
16	-	-	-	-	-	=	0,119	0,260	-	-	-	=
17	+	+	+	+	+	=	3,111	0,260	+	+	+	=
18	+	+	+	+	+	=	2,879	0,260	+	+	+	=
19	-	-	-	-	-	=	0,085	0,260	-	-	-	=
20	+	+	+	+	+	=	3,127	0,260	+	+	+	=
21	+	+	+	+	+	=	2,880	0,260	+	+	+	=
22	-	-	-	-	-	=	0,091	0,260	-	-	-	=
23	+	+	+	+	+	=	2,949	0,260	+	+	+	=
24	+	+	+	+	+	=	2,481	0,260	+	+	+	=
Total flora of milk (UFC/ml):		8 200										

Laboratory H

Code sample	Reference method EN ISO 11290-1					Comparison / expected results	TRANSIA PLATE Listeria method					Comparison / expected results
	Fraser 1/2		Fraser		Result		Test		Test result	Confirmation COMPASS	Result	
	O&A	PALCAM	O&A	PALCAM			OD	Cut-off				
1	-	-	-	-	-	=	0,069	0,226	-	-	-	=
2	-	-	-	-	-	#	0,060	0,226	-	-	-	#
3	+	+	+	+	+	=	3,509	0,226	+	+	+	=
4	-	-	-	-	-	=	0,063	0,226	-	-	-	=
5	+	+	+	+	+	=	3,420	0,226	+	+	+	=
6	+	+	+	+	+	=	3,509	0,226	+	+	+	=
7	-	-	-	-	-	=	0,077	0,226	-	-	-	=
8	+	+	+	+	+	=	3,509	0,226	+	+	+	=
9	+	+	+	+	+	=	3,509	0,226	+	+	+	=
10	-	-	-	-	-	=	0,063	0,226	-	-	-	=
11	-	-	-	-	-	#	0,061	0,226	-	-	-	#
12	+	+	+	+	+	=	3,509	0,226	+	+	+	=
13	-	-	-	-	-	=	0,088	0,226	-	-	-	=
14	-	-	-	-	-	#	0,095	0,226	-	-	-	#
15	+	+	+	+	+	=	3,509	0,226	+	+	+	=
16	-	-	-	-	-	=	0,060	0,226	-	-	-	=
17	+	+	+	+	+	=	3,509	0,226	+	+	+	=
18	+	+	+	+	+	=	3,509	0,226	+	+	+	=
19	-	-	-	-	-	=	0,060	0,226	-	-	-	=
20	+	+	+	+	+	=	3,481	0,226	+	+	+	=
21	+	+	+	+	+	=	3,432	0,226	+	+	+	=
22	-	-	-	-	-	=	0,071	0,226	-	-	-	=
23	+	+	+	+	+	=	3,509	0,226	+	+	+	=
24	+	+	+	+	+	=	3,509	0,226	+	+	+	=

Total flora of milk (UFC/ml): > 30 000

Laboratory J

Code sample	Reference method EN ISO 11290-1					Comparison / expected results	TRANSIA PLATE Listeria method					Comparison / expected results
	Fraser 1/2		Fraser		Result		Test		Test result	Confirmation COMPASS	Result	
	O&A	PALCAM	O&A	PALCAM			OD	Cut-off				
1	-	-	-	-	-	=	0,118	0,296	-	-	-	=
2	+	+	+	+	+	=	2,509	0,296	+	+	+	=
3	+	+	+	+	+	=	2,700	0,296	+	+	+	=
4	-	-	-	-	-	=	0,135	0,296	-	-	-	=
5	-	-	-	-	-	#	0,114	0,296	-	-	-	#
6	+	+	+	+	+	=	3,074	0,296	+	+	+	=
7	-	-	-	-	-	=	0,114	0,296	-	-	-	=
8	+	+	+	+	+	=	2,763	0,296	+	+	+	=
9	+	+	+	+	+	=	2,870	0,296	+	+	+	=
10	-	-	-	-	-	=	0,147	0,296	-	-	-	=
11	+	+	+	+	+	=	2,746	0,296	+	+	+	=
12	+	+	+	+	+	=	3,049	0,296	+	+	+	=
13	-	-	-	-	-	=	0,112	0,296	-	-	-	=
14	-	-	-	-	-	#	0,140	0,296	-	-	-	#
15	+	+	+	+	+	=	3,068	0,296	+	+	+	=
16	-	-	-	-	-	=	0,154	0,296	-	-	-	=
17	+	+	+	+	+	=	2,829	0,296	+	+	+	=
18	+	+	+	+	+	=	2,693	0,296	+	+	+	=
19	-	-	-	-	-	=	0,147	0,296	-	-	-	=
20	+	+	+	+	+	=	3,020	0,296	+	+	+	=
21	+	+	+	+	+	=	2,842	0,296	+	+	+	=
22	-	-	-	-	-	=	0,133	0,296	-	-	-	=
23	-	-	-	-	-	#	0,134	0,296	-	-	-	#
24	+	+	+	+	+	=	2,932	0,296	+	+	+	=

Total flora of milk (UFC/ml): > 30 000

Laboratory K

Delivery at D+2

Code sample	Reference method EN ISO 11290-1					Comparison / expected results	TRANSIA PLATE Listeria method					Comparison / expected results
	Fraser 1/2		Fraser		Result		Test		Test result	Confirmation COMPASS	Result	
	O&A	PALCAM	O&A	PALCAM			OD	Cut-off				
1	-	-	-	-	-	=	0,069	0,243	-	-	-	=
2	-	-	-	-	-	#	0,075	0,243	-	-	-	#
3	+	+	+	+	+	=	3,187	0,243	+	+	+	=
4	-	-	-	-	-	=	0,070	0,243	-	-	-	=
5	+	+	+	+	+	=	3,194	0,243	+	+	+	=
6	+	+	+	+	+	=	3,212	0,243	+	+	+	=
7	-	-	-	-	-	=	0,076	0,243	-	-	-	=
8	+	+	+	+	+	=	3,190	0,243	+	+	+	=
9	+	+	+	+	+	=	3,170	0,243	+	+	+	=
10	-	-	-	-	-	=	0,371	0,243	+	+	+	= (FP)
11	-	-	-	-	-	#	0,078	0,243	-	-	-	#
12	+	+	+	+	+	=	3,195	0,243	+	+	+	=
13	-	-	-	-	-	=	0,074	0,243	-	-	-	=
14	+	+	+	+	+	=	2,868	0,243	+	+	+	=
15	+	+	+	+	+	=	3,207	0,243	+	+	+	=
16	-	-	-	-	-	=	0,100	0,243	-	-	-	=
17	-	-	-	-	-	#	0,074	0,243	-	-	-	#
18	+	+	+	+	+	=	3,192	0,243	+	+	+	=
19	-	-	-	-	-	=	0,073	0,243	-	-	-	=
20	+	+	+	+	+	=	3,195	0,243	+	+	+	=
21	+	+	+	+	+	=	3,142	0,243	+	+	+	=
22	-	-	-	-	-	=	0,073	0,243	-	-	-	=
23	-	-	-	-	-	#	0,075	0,243	-	-	-	#
24	+	+	+	+	+	=	3,190	0,243	+	+	+	=

Total flora of milk (UFC/ml): > 3 000 000

Laboratory L

Code sample	Reference method EN ISO 11290-1				Result	Comparison / expected results	TRANSIA PLATE Listeria method					Comparison / expected results
	Fraser 1/2		Fraser				Test		Test result	Confirmation COMPASS	Result	
	O&A	PALCAM	O&A	PALCAM			OD	Cut-off				
1	-	-	-	-	-	=	0,111	0,350	-	-	-	=
2	+	+	+	+	+	=	4,142	0,350	+	+	+	=
3	+	+	+	+	+	=	4,031	0,350	+	+	+	=
4	-	-	-	-	-	=	0,116	0,350	-	-	-	=
5	+	+	+	+	+	=	3,782	0,350	+	+	+	=
6	+	+	+	+	+	=	4,145	0,350	+	+	+	=
7	-	-	-	-	-	=	0,220	0,350	-	-	-	=
8	+	+	+	+	+	=	4,146	0,350	+	+	+	=
9	+	+	+	+	+	=	4,151	0,350	+	+	+	=
10	-	-	-	-	-	=	0,105	0,350	-	-	-	=
11	+	+	+	+	+	=	3,876	0,350	+	+	+	=
12	+	+	+	+	+	=	3,873	0,350	+	+	+	=
13	-	-	-	-	-	=	0,299	0,350	-	-	-	=
14	+	+	+	+	+	=	3,663	0,350	+	+	+	=
15	+	+	+	+	+	=	4,142	0,350	+	+	+	=
16	-	-	-	-	-	=	0,194	0,350	-	-	-	=
17	-	-	-	-	-	#	0,246	0,350	-	-	-	#
18	+	+	+	+	+	=	3,829	0,350	+	+	+	=
19	-	-	-	-	-	=	0,096	0,350	-	-	-	=
20	+	+	+	+	+	=	4,010	0,350	+	+	+	=
21	+	+	+	+	+	=	4,146	0,350	+	+	+	=
22	-	-	-	-	-	=	0,156	0,350	-	-	-	=
23	+	+	+	+	+	=	4,139	0,350	+	+	+	=
24	+	+	+	+	+	=	4,143	0,350	+	+	+	=

Total flora of milk (UFC/ml): > 30 000

Laboratory M

Washing problems

Code sample	Reference method EN ISO 11290-1				Result	Comparison / expected results	TRANSIA PLATE Listeria method					Comparison / expected results
	Fraser 1/2		Fraser				Test		Test result	Confirmation COMPASS	Result	
	O&A	PALCAM	O&A	PALCAM			OD	Cut-off				
1	-	-	-	-	-	=	0,666	0,301	+	-	-	= (FP)
2	+	+	+	+	+	=	Over	0,301	+	+	+	=
3	+	+	+	+	+	=	Over	0,301	+	+	+	=
4	-	-	-	-	-	=	0,213	0,301	-	-	-	=
5	+	+	+	+	+	=	Over	0,301	+	+	+	=
6	+	+	+	+	+	=	Over	0,301	+	+	+	=
7	-	-	-	-	-	=	0,932	0,301	+	-	-	= (FP)
8	+	+	+	+	+	=	Over	0,301	+	+	+	=
9	+	+	+	+	+	=	Over	0,301	+	+	+	=
10	-	-	-	-	-	=	0,269	0,301	-	-	-	=
11	+	+	+	+	+	=	Over	0,301	+	+	+	=
12	+	+	+	+	+	=	Over	0,301	+	+	+	=
13	-	-	-	-	-	=	0,220	0,301	-	-	-	=
14	+	+	+	+	+	=	Over	0,301	+	+	+	=
15	+	+	+	+	+	=	Over	0,301	+	+	+	=
16	-	-	-	-	-	=	0,161	0,301	-	-	-	=
17	-	-	-	-	-	#	0,177	0,301	-	-	-	#
18	+	+	+	+	+	=	Over	0,301	+	+	+	=
19	-	-	-	-	-	=	0,141	0,301	-	-	-	=
20	-	-	-	-	-	#	0,117	0,301	-	-	-	#
21	+	+	+	+	+	=	Over	0,301	+	+	+	=
22	-	-	-	-	-	=	0,250	0,301	-	-	-	=
23	+	+	+	+	+	=	Over	0,301	+	+	+	=
24	+	+	+	+	+	=	Over	0,301	+	+	+	=

Total flora of milk (UFC/ml): 5 800

Laboratory N

Delivery at D+2

Code sample	Reference method EN ISO 11290-1					Comparison / expected results	TRANSIA PLATE Listeria method						Comparison / expected results
	Fraser 1/2		Fraser		Result		Test			Confirmation COMPASS	Result		
	O&A	PALCAM	O&A	PALCAM			OD	Cut-off	Test result				
1	-	-	-	-	-	=	0,069	0,248	-	-	-	=	
2	+	+	+	+	+	=	3,002	0,248	+	+	+	=	
3	+	+	+	+	+	=	3,000	0,248	+	+	+	=	
4	-	-	-	-	-	=	0,074	0,248	-	-	-	=	
5	+	+	+	+	+	=	3,015	0,248	+	+	+	=	
6	+	+	+	+	+	=	3,005	0,248	+	+	+	=	
7	-	-	-	-	-	=	0,077	0,248	-	-	-	=	
8	+	+	+	+	+	=	2,901	0,248	+	+	+	=	
9	+	+	+	+	+	=	2,918	0,248	+	+	+	=	
10	-	-	-	-	-	=	0,071	0,248	-	-	-	=	
11	+	+	+	+	+	=	2,920	0,248	+	+	+	=	
12	+	+	+	+	+	=	2,973	0,248	+	+	+	=	
13	-	-	-	-	-	=	0,068	0,248	-	-	-	=	
14	+	+	+	+	+	=	2,983	0,248	+	+	+	=	
15	+	+	+	+	+	=	2,990	0,248	+	+	+	=	
16	-	-	-	-	-	=	0,087	0,248	-	-	-	=	
17	+	+	+	+	+	=	2,993	0,248	+	+	+	=	
18	+	+	+	+	+	=	2,986	0,248	+	+	+	=	
19	-	-	-	-	-	=	0,078	0,248	-	-	-	=	
20	+	+	+	+	+	=	2,917	0,248	+	+	+	=	
21	+	+	+	+	+	=	2,867	0,248	+	+	+	=	
22	-	-	-	-	-	=	0,419	0,248	+	-	-	= (FP)	
23	+	+	+	+	+	=	3,096	0,248	+	+	+	=	
24	+	+	+	+	+	=	2,903	0,248	+	+	+	=	

Total flora of milk (UFC/ml): > 30 000

Laboratory O

Code sample	Reference method EN ISO 11290-1					Comparison / expected results	TRANSIA PLATE Listeria method						Comparison / expected results
	Fraser 1/2		Fraser		Result		Test			Confirmation COMPASS	Result		
	O&A	PALCAM	O&A	PALCAM			OD	Cut-off	Test result				
1	-	-	-	-	-	=	0,067	0,255	-	-	-	=	
2	+	+	+	+	+	=	3,282	0,255	+	+	+	=	
3	+	+	+	+	+	=	3,522	0,255	+	+	+	=	
4	-	-	-	-	-	=	0,079	0,255	-	-	-	=	
5	+	+	+	+	+	=	4,139	0,255	+	+	+	=	
6	+	+	+	+	+	=	3,606	0,255	+	+	+	=	
7	-	-	-	-	-	=	0,061	0,255	-	-	-	=	
8	-	-	-	-	-	#	0,068	0,255	-	-	-	#	
9	+	+	+	+	+	=	3,264	0,255	+	+	+	=	
10	-	-	-	-	-	=	0,071	0,255	-	-	-	=	
11	+	+	+	+	+	=	3,476	0,255	+	+	+	=	
12	+	+	+	+	+	=	3,349	0,255	+	+	+	=	
13	-	-	-	-	-	=	0,068	0,255	-	-	-	=	
14	+	+	+	+	+	=	3,613	0,255	+	+	+	=	
15	+	+	+	+	+	=	3,515	0,255	+	+	+	=	
16	-	-	-	-	-	=	0,067	0,255	-	-	-	=	
17	+	+	+	+	+	=	3,264	0,255	+	+	+	=	
18	+	+	+	+	+	=	3,282	0,255	+	+	+	=	
19	-	-	-	-	-	=	0,063	0,255	-	-	-	=	
20	+	+	+	+	+	=	3,525	0,255	+	+	+	=	
21	+	+	+	+	+	=	4,139	0,255	+	+	+	=	
22	-	-	-	-	-	=	0,074	0,255	-	-	-	=	
23	+	+	+	+	+	=	3,816	0,255	+	+	+	=	
24	+	+	+	+	+	=	3,872	0,255	+	+	+	=	

Total flora of milk (UFC/ml): 18 600 000

APPENDIX F :

INTERLABORATORY STUDY
-
ACCORDANCE

ALTERNATIVE METHOD**Level L0**

Laboratory	Nr of negative results expected	Nr of negative results obtained	Probability of negative result	Probability of negative pairs	Probability of positives	Probability of positive pairs	Probability of identical result pairs
Laboratory A	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory B	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory D	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory F	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory G	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory I	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory J	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory L	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory M	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory O	8	8	1,00	1,00	0,00	0,00	1,00
Mean:							1,00
Accordance:							100%

Level L1

Laboratory	Nr of positive results expected	Nr of positive results obtained	Probability of positive results	Probability of positive pairs	Probability of negative result	Probability of negative pairs	Probability of identical result pairs
Laboratory A	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory B	8	6	0,75	0,56	0,25	0,06	0,63
Laboratory D	8	7	0,88	0,77	0,13	0,02	0,78
Laboratory F	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory G	8	7	0,88	0,77	0,13	0,02	0,78
Laboratory I	8	5	0,63	0,39	0,38	0,14	0,53
Laboratory J	8	5	0,63	0,39	0,38	0,14	0,53
Laboratory L	8	7	0,88	0,77	0,13	0,02	0,78
Laboratory M	8	6	0,75	0,56	0,25	0,06	0,63
Laboratory O	8	7	0,88	0,77	0,13	0,02	0,78
Mean:							0,74
Accordance:							74%

Level L2

Laboratory	Nr of positive results expected	Nr of positive results obtained	Probability of positive results	Probability of positive pairs	Probability of negative result	Probability of negative pairs	Probability of identical result pairs
Laboratory A	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory B	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory D	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory F	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory G	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory I	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory J	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory L	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory M	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory O	8	8	1,00	1,00	0,00	0,00	1,00
Mean:							1,00
Accordance:							100%

REFERENCE METHOD

Level L0

Laboratory	Nr of negative results expected	Nr of negative results obtained	Probability of negative result	Probability of negative pairs	Probability of positives	Probability of positive pairs	Probability of identical result pairs
Laboratory A	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory B	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory D	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory F	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory G	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory I	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory J	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory L	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory M	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory O	8	8	1,00	1,00	0,00	0,00	1,00
Mean:							1,00
Accordance:							100%

Level L1

Laboratory	Nr of positive results expected	Nr of positive results obtained	Probability of positive results	Probability of positive pairs	Probability of negative result	Probability of negative pairs	Probability of identical result pairs
Laboratory A	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory B	8	6	0,75	0,56	0,25	0,06	0,63
Laboratory D	8	7	0,88	0,77	0,13	0,02	0,78
Laboratory F	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory G	8	7	0,88	0,77	0,13	0,02	0,78
Laboratory I	8	5	0,63	0,39	0,38	0,14	0,53
Laboratory J	8	6	0,75	0,56	0,25	0,06	0,63
Laboratory L	8	7	0,88	0,77	0,13	0,02	0,78
Laboratory M	8	6	0,75	0,56	0,25	0,06	0,63
Laboratory O	8	7	0,88	0,77	0,13	0,02	0,78
Mean:							0,75
Accordance:							75%

Level L2

Laboratory	Nr of positive results expected	Nr of positive results obtained	Probability of positive results	Probability of positive pairs	Probability of negative result	Probability of negative pairs	Probability of identical result pairs
Laboratory A	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory B	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory D	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory F	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory G	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory I	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory J	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory L	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory M	8	8	1,00	1,00	0,00	0,00	1,00
Laboratory O	8	8	1,00	1,00	0,00	0,00	1,00
Mean:							1,00
Accordance:							100%

APPENDIX G :

INTERLABORATORY STUDY
-
CONCORDANCE

ALTERNATIVE METHOD

Number of laboratories 10
 Number of positives per laboratory 8

Level L0

Laboratory	Nr of negative results expected	Nr of negative results obtained	Inter-laboratory pairs with the same result	Total number of inter-laboratory pairs
Laboratory A	8	8	576	576
Laboratory B	8	8	576	576
Laboratory D	8	8	576	576
Laboratory F	8	8	576	576
Laboratory G	8	8	576	576
Laboratory I	8	8	576	576
Laboratory J	8	8	576	576
Laboratory L	8	8	576	576
Laboratory M	8	8	576	576
Laboratory O	8	8	576	576
Total			5760	5760
Concordance	100,00%			

Number of laboratories 10
 Number of positives per laboratory 8

Level L1

Laboratory	Nr of positive results expected	Nr of positive results obtained	Inter-laboratory pairs with the same result	Total number of inter-laboratory pairs
Laboratory A	8	8	464	576
Laboratory B	8	6	384	576
Laboratory D	8	7	426	576
Laboratory F	8	8	464	576
Laboratory G	8	7	426	576
Laboratory I	8	5	338	576
Laboratory J	8	5	338	576
Laboratory L	8	7	426	576
Laboratory M	8	6	384	576
Laboratory O	8	7	426	576
Total			4076	5760
Concordance	70,76%			

Number of laboratories 10
 Number of positives per laboratory 8

Level L2

Laboratory	Nr of positive results expected	Nr of positive results obtained	Inter-laboratory pairs with the same result	Total number of inter-laboratory pairs
Laboratory A	8	8	576	576
Laboratory B	8	8	576	576
Laboratory D	8	8	576	576
Laboratory F	8	8	576	576
Laboratory G	8	8	576	576
Laboratory I	8	8	576	576
Laboratory J	8	8	576	576
Laboratory L	8	8	576	576
Laboratory M	8	8	576	576
Laboratory O	8	8	576	576
Total			5760	5760
Concordance	100,00%			

REFERENCE METHOD

Number of laboratories 10

Number of positives per laboratory 8

Level L0

Laboratory	Nb de négatifs attendus	Nb de négatifs obtenus	Paires interLaboratoyrs avec le même résultat	Nombre total de paires interLaboratoyrs
Laboratory A	8	8	576	576
Laboratory B	8	8	576	576
Laboratory D	8	8	576	576
Laboratory F	8	8	576	576
Laboratory G	8	8	576	576
Laboratory I	8	8	576	576
Laboratory J	8	8	576	576
Laboratory L	8	8	576	576
Laboratory M	8	8	576	576
Laboratory O	8	8	576	576
Total			5760	5760
Concordance	100,00%			

Number of laboratories 10

Number of positives per laboratory 8

Level L1

Laboratory	Nr of positive results expected	Nr of positive results obtained	Inter-laboratory pairs with the same result	Total number of inter-laboratory pairs
Laboratory A	8	8	472	576
Laboratory B	8	6	388	576
Laboratory D	8	7	432	576
Laboratory F	8	8	472	576
Laboratory G	8	7	432	576
Laboratory I	8	5	340	576
Laboratory J	8	6	388	576
Laboratory L	8	7	432	576
Laboratory M	8	6	388	576
Laboratory O	8	7	432	576
Total			4176	5760
Concordance	72,50%			

Number of laboratories 10

Number of positives per laboratory 8

Level L2

Laboratory	Nr of positive results expected	Nr of positive results obtained	Inter-laboratory pairs with the same result	Total number of inter-laboratory pairs
Laboratory A	8	8	576	576
Laboratory B	8	8	576	576
Laboratory D	8	8	576	576
Laboratory F	8	8	576	576
Laboratory G	8	8	576	576
Laboratory I	8	8	576	576
Laboratory J	8	8	576	576
Laboratory L	8	8	576	576
Laboratory M	8	8	576	576
Laboratory O	8	8	576	576
Total			5760	5760
Concordance	100,00%			