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NF VALIDATION
Validation of alternative analytical methods
Application in food microbiology

Summary report
Validation study according to EN ISO 16140-2:2016

Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates (Certificate number: ABI 29/06 - 11/13) in raw beef meats (fresh and frozen, seasoned or not), heat-treated milk and dairy products, and cocoa and cocoa products

Qualitative method

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This report consists of 82 pages, including 7 appendices.
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Quality Assurance documents related to this study can be consulted upon request from THERMO FISHER SCIENTIFIC.

The technical protocol and the result interpretation were carried out according to the EN ISO 16140-2:2016 and the AFNOR technical rules (PR revision 7).

Validation protocols	☒ ISO 16140-1 (2016): Microbiology of the food chain - Method validation — *Part 1: Vocabulary* ☒ ISO 16140-2(2016): Microbiology of the food chain - Method validation — *Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method* ☒ AFNOR technical rules (PR Revision 7)
Reference methods♦	- EN ISO 6579-1 (February 2017) - Microbiology of food and animal feeding stuffs - Horizontal method for the detection, enumeration and serotyping of *Salmonella* spp. - Part 1: detection of *Salmonella* spp. - ISO 6579-1/A1 (March 2020): Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of *Salmonella* spp. - Part 1: detection of *Salmonella* spp. Amendment 1: Broader range of incubation temperatures, amendment to the status of Annex D, and correction of the composition of MSRV and SC
Alternative method	**Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates**
Scope	☒ **Raw beef meats (fresh or frozen, seasoned or not)** ☒ **Heat-treated milk and dairy products** ☒ **Cocoa and cocoa products**
Certification organism	AFNOR Certification (http://nf-validation.afnor.org/)

♦ Analyses performed according to the COFRAC accreditation

1 INTRODUCTION

The ISO 16140 (2003) validation of the **Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates** was obtained in 2013, with the certificate number ABI 29/06 – 11/13 for:

Table 1 - Summary of the initial and extension/renewal studies

Date	Study	Validation standard	ISO method
2013	Initial validation: ▪ Raw beef meats, ready-to-reheat and ready-to-eat meat products (including poultry) ▪ Heat treated milks and dairy products, milk powders including infant formula with and without probiotics	ISO 16140 (2003)	ISO 6579 (2002)
2016	Extension study ▪ Cocoa and chocolate products ▪ Modification of the scope: ○ Raw beef meats (fresh and frozen, seasoned or not) ○ Heat-treated milk and dairy products	ISO 16140 (2003)	ISO 6579 (2002)
2017 (November)	Renewal study	ISO 16140-2 (2016)	ISO 6579-1 (2017)
2021 (October)	Renewal study	ISO 16140-2 (2016)	ISO 6579-1 (2017) ISO 6579-1/A1 (2020)

2 METHOD PROTOCOLS

2.1 Reference methods ♦

The reference method used for the initial and extension studies was the ISO 6579: Horizontal method for the detection of *Salmonella* spp.

♦ Analysis performed according to the COFRAC accreditation

The reference method used for the renewal study in 2017 was the EN ISO 6579-1 (February 2017) - Microbiology of food and animal feeding stuffs - Horizontal method for the detection, enumeration and serotyping of *Salmonella* spp. - Part 1: detection of *Salmonella* spp.

For this renewal study, the reference methods were the ISO 6579-1 and the ISO 6579-1/A1 (March 2020): Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of *Salmonella* spp. - Part 1: detection of *Salmonella* spp. Amendment 1: Broader range of incubation temperatures, amendment to the status of Annex D, and correction of the composition of MSRV and SC. The flow diagram is given in **Appendix 1**.

The modifications which occur in the version published in 2017 and 2020 are considered as minor and have no impact on the previous data.

2.2 Alternative method

❒ *Principle*

The Pathatrix™ Auto *Salmonella spp*. method allows sample pooling (up to 10 samples). Thus, the developed validation protocol is based on the analyses on pooled samples.

The ***Pathatrix™ Auto Salmonella spp. 10-pooling protocol*** is an automated, large volume, Re-circulating Immuno-Magnetic Separation (RIMS) sample processing device for rapid detection of specific pathogens from pre-enriched pooled food samples.
The pooling can be done between samples from the same category.

After a RIMS step, *Salmonella* detection is done by plating the beads on XLD and Thermo Scientific™ *Brilliance*™ Salmonella Agar. The confirmations are done with the Oxoid Salmonella latex test (Thermo Fisher Scientific).

❒ *Protocol*

Pathatrix™ protocols could be performed on individual samples, and on pooled samples (up to 10 samples per pool). **A specific protocol design is proposed in this ISO 16140-2 validation study.**

The enrichment broths can be stored for 32 h at 2-8°C before running the analyses of the individual samples when a positive data is found with the pooling protocol.

Based on the background microflora level of the tested samples, different enrichment protocols are available:

Category		Protocols	
1	**Raw beef meats (fresh and frozen, seasoned or not)**	P1	* 1/10 dilution in preheated (37°C ± 1°C) BPW, * Incubation for 20 h ± 2 h at 37°C ±1°C * Immuno-separation * Streaking onto XLD and *Brilliance™* Salmonella
2	**Heat-treated milk and dairy products**	P2	* 1/10 dilution in preheated BPW + Brilliant Green (0.002 %) * Incubation for 20 h ± 2 h at 37°C ±1°C * Immuno-separation * Streaking onto XLD and *Brilliance™* Salmonella
3	**Cocoa and cocoa products**	P3	* 1/10 dilution in preheated UHT skimmed milk + Brilliant Green (0.002 %) * Incubation for 20 h ± 2 h at 37°C ±1°C * Immuno-separation * Streaking onto XLD and *Brilliance™* Salmonella

For potentially acidic and alkaline samples, this additional step has to be applied:

- dilute the sample according to the enrichment protocol,
- leave to stand for 60 ± 5 min at room temperature,
- mix by stomaching for 1 min at normal speed and determine the pH. If necessary, adjust the pH to 6.8 ± 0.2

Typical colonies are confirmed by the Oxoid Salmonella latex test without applying a purification step or by the tests described in the ISO method (serological tests and biochemical galleries).

❒ ***Restriction***

There is no restriction for use.

2.3 Study design

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

3 INITIAL VALIDATION (2013), EXTENSION (2016) RESUTS AND RENEWAL (2017) STUDIES: RESULTS

3.1 Method comparison study

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

The study was carried out on a diversity of samples and strains representative of agri-food products. This does not constitute an exhaustive list of the different matrices included in the scope.
For any comment on the alternative method, please contact AFNOR Certification at http://nf-validation.afnor.org/contact-2/.

3.1.1 Sensitivity

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

3.1.1.1 Number and nature of samples

253 samples were analysed in the initial and extension studies, 157 samples during the initial validation study (2013) and 96 samples of cocoa and cocoa products for the extension study (2016).

In agreement with the AFNOR Technical Committee, 2 samples in negative agreement were removed for the renewal study interpretation due to an inoculation level above 10 CFU per sample.

Combining the different studies (initial and extension), 93 positive samples and 159 negative samples were obtained with the pooled protocol and 94 positive samples and 158 negative samples for the individual protocol. In total 252 samples were tested.

The repartition of samples per category and type are summarised in **Table 2.**

Table 2 – Repartition per category and type

***Salmonella* - pooled samples**						
Category		**Type**		**Positive samples**	**Negative samples**	**Total**
1	Raw beef meats (fresh and frozen, seasoned or not)	a	Ground meat	11	17	28
		b	Beef trim	12	18	30
		c	Seasoned meat	8	12	20
			Total	31	47	78
2	Heat-treated milk and dairy products	a	Milk powders including infant formula without probiotics	9	25	34
		b	Fermented milks and yoghurts, infant formula with probiotics	9	13	22
		c	Pasteurized milks, dairy desserts, and cream cheeses	12	10	22
			Total	30	48	78
3	Cocoa and cocoa products	a	Cocoa powder	13	25	38
		b	Cocoa based products	9	23	32
		c	Raw material	10	16	26
			Total	32	64	96
All categories				**93**	**159**	**252**

***Salmonella* – individual samples**						
Category		**Type**		**Positive samples**	**Negative samples**	**Total**
1	Raw beef meats (fresh and frozen, seasoned or not)	a	Ground meat	11	17	28
		b	Beef trim	12	18	30
		c	Seasoned meat	8	12	20
			Total	31	47	78
2	Heat-treated milk and dairy products	a	Milk powders including infant formula without probiotics	8	26	34
		b	Fermented milks and yoghurts, infant formula with probiotics	10	12	22
		c	Pasteurized milks, dairy desserts, and cream cheeses	12	10	22
			Total	30	48	78
3	Cocoa and cocoa products	a	Cocoa powder	14	24	38
		b	Cocoa based products	9	23	32
		c	Raw material	10	16	26
			Total	33	63	96
All categories				**94**	**158**	**252**

3.1.1.2 Artificial contamination of samples

Artificial contaminations (See **Appendix 3**) were carried out by:

- Cross-contamination with naturally contaminated products from the same type
- Using spiking or seeding protocols, i.e. contaminations by strains isolated from the same product type.

For the spiking protocols, the pure cultures were first submitted to stress treatments, and stress intensity was evaluated by enumerating the pure culture on non-selective and selective media, i.e. TSYEA and XLD media. Heat (56°C), frozen (-20°C) chemical (i) in Tryptone-Salt at acid or alkaline pH, (ii) in Tryptone-Salt supplemented with 10% NaCl and cold (4°C), lyophilisation treatments were used.

For the seeding protocols, the strains were inoculated directly to the raw beef meat samples, prior two days storage at 4°C or minimum one-week storage at -20°C. The strains were lyophilized and mix to the cocoa and chocolate products prior a minimum of two weeks storage at room temperature.

The artificial contaminations are presented in **Appendix 3**.

136 samples were artificially contaminated, using 43 different strains. 93 gave a positive result. For the seeding protocol, 23 samples were inoculated at level ≤ 3 CFU and 17 samples were inoculated between 3.8 and 6 CFU. For the spiking protocol, 33 (for the pooled protocol) or 34 (for the individual protocol) samples were inoculated at level ≤ 5 CFU and 17 (for the pooled protocol and for the individual protocol) samples were inoculated between 5.2 and 9.4 CFU. 2 samples were inoculated at 15.8 CFU/25 g. Only one sample was naturally contaminated (sample 324: ground beef).

The number of inoculated samples per protocol giving positive results is given in **Table 3**.

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

		Naturally contaminated	Artificially contaminated						Total
			Spiking			Seeding			
			x ≤ 5	5.2 < x ≤ 9.4	10 < x < 15.8	x ≤ 3	3 < x ≤ 6.0	10 < x < 30	
Pooled protocol	Number of samples	1	33	17	2	23	17	0	93
	%	1.1	35.5	18.3	2.2	24.7	18.3	0.0	100
Individual protocol	Number of samples	1	34	17	2	23	17	0	94
	%	1.1	36.2	18.1	2.1	24.5	18.1	0.0	100

1% of the samples were naturally contaminated.

The percentage of samples inoculated between 3 and 10 CFU (combining spiking and seeding protocols) is higher than 20%. But as indicated in Table 4, the percentage of inoculated samples giving negative results when inoculated below 5 CFU (spiking protocol) or below 3 CFU (seeding protocol) is relatively high: 20% for the spiking protocol and 39% for the seeding protocol.
Note that for the category 3 (chocolate), 50% of the samples inoculated with the seeding protocol at a level ≤3 CFU gave negative results.

Table 4 - Repartition of the positive and negative samples for the lowest inoculation level

			Number of samples	Percentage (%)
Artificially contamination	Spiking	Contaminated samples by spiking protocol	65	100
		Inoculation ≤ 5CFU/sample	46	70.8
		Negative sample	13	20.0
		Positive sample	33	50.8
	Seeding	Contaminated samples by seeding protocol	71	100
		Inoculation ≤ 3CFU/sample	51	71.8
		Negative sample	28	39.4
		Positive sample	23	32.4

3.1.1.3 Protocols applied during the validation study

Pooling protocol

In order to validate samples pooling, the protocol design was the following:

- analysis of one positive sample pooled with nine negative samples of the same type,
- analysis of individual negative samples (T0),
- analysis of individual positive samples (T0),
- analysis of individual positive samples (T32 h)

For each sample, the following experimental design was followed:

Positive sample	Negative sample	Pooling
P1	N1	P1 + N1 to N9
P2	N2	P2 + N1 to N9
P3	N3	P3 + N1 to N9
P4	N4	P4 + N1 to N9
P5	N5	P5 + N1 to N9
P6	N6	P6 + N2 to N10
P7	N7	P7 + N2 to N10
P8	N8	P8 + N2 to N10
P9	N9	P9 + N2 to N10
P10	N10	P10+ N2 to N10

In order to test the selectivity and to get the required negative results, 10 replicates of a negative sample from the same enrichment broth were pooled prior to analysis (10 x 5 ml of each negative sample).
Individual testing was done immediately after incubation and after storage for 32 h at 5°C ± 3°C**.**

- ***Incubation time***

The minimum incubation time was applied for the enrichment step, *i.e.* 18 h at 37°C ± 1°C.

- ***Confirmation***

The typical colonies were confirmed using the Oxoid *Salmonella* Test Kit (Ref. DR1108A) and by the tests described in the reference method after a purification step (serological tests and biochemical galleries).

- ***Storage***

During the validation study, the enrichment broths were stored for 32 h at 5°C ± 3°C before running the analyses on individual samples when a positive data was found with the pooling protocol.

3.1.1.4 Test results

Raw data per category are given in **Appendix 4**. The results are given in **Table 5**.

Table 5 – Interpretation of sample results between the reference and alternative method (based on the confirmed alternative)

Salmonella pooled samples										
Category		**Type**		**PA**	**NA***	**PD**	**ND****	**PPND**	**PPNA**	**Total**
1	Raw beef meats (fresh and frozen, seasoned or not)	a	Ground meat	9	17	2	0	0	0	28
		b	Beef trim	12	18	0	0	0	0	30
		c	Seasoned meat	7	12	0	1	0	0	20
			Total	28	47	2	1	0	0	78
2	Heat-treated milk and dairy products	a	Milk powders including infant formula without probiotics	5	25	2	2	0	0	34
		b	Fermented milks and yoghurts, infant formula with probiotics	7	13	0	2	0	0	22
		c	Pasteurized milks, dairy desserts and cream cheeses	12	10	0	0	0	0	22
			Total	24	48	2	4	0	0	78
3	Cocoa and cocoa products	a	Cocoa powder	4	25	6	3	0	0	38
		b	Cocoa based products	4	23	3	2	0	0	32
		c	Raw material	7	16	0	3	0	0	26
			Total	15	64	9	8	0	0	96
All categories				**67**	**159**	**13**	**13**	**0**	**0**	**252**

Salmonella individual samples										
Category		**Type**		**PA**	**NA***	**PD**	**ND****	**PPND**	**PPNA**	**Total**
1	Raw beef meats (fresh and frozen, seasoned or not)	a	Ground meat	9	17	2	0	0	0	28
		b	Beef trim	12	18	0	0	0	0	30
		c	Seasoned meta	7	12	0	1	0	0	20
			Total	28	47	2	1	0	0	78
2	Heat-treated milk and dairy products	a	Milk powders including infant formula without probiotics	5	26	1	2	0	0	34
		b	Fermented milks and yoghurts, infant formula with probiotics	8	12	1	1	0	0	22
		c	Pasteurized milks, dairy desserts and cream cheeses	12	10	0	0	0	0	22
			Total	25	48	2	3	0	0	78
3	Cocoa and cocoa products	a	Cocoa powder	4	24	7	3	0	0	38
		b	Cocoa based products	4	23	3	2	0	0	32
		c	Raw material	7	16	0	3	0	0	26
			Total	15	63	10	8	0	0	96
All categories				**68**	**158**	**14**	**12**	**0**	**0**	**252**

* PPNA not included ** PPND not included

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

The calculations are presented in **Table 6**.

Table 6 – Calculation of the relative trueness (RT), the sensitivity (SE) and the false positive ratio (FPR)

Salmonella pooled samples													
Category		**Type**		**PA**	**NA***	**PD**	**ND****	**PPND**	**PPNA**	**SE $_{alt}$ %**	**SE $_{ref}$ %**	**RT %**	**FPR %**
1	Raw beef meats (fresh and frozen, seasoned or not)	a	Ground meat	9	17	2	0	0	0	100,0	81,8	92,9	0,0
		b	Beef trim	12	18	0	0	0	0	100,0	100,0	100,0	0,0
		c	Seasoned meat	7	12	0	1	0	0	87,5	100,0	95,0	0,0
			Total	28	47	2	1	0	0	96,8	93,5	96,2	0,0
2	Heat-treated milk and dairy products	a	Milk powders including infant formula without probiotics	5	25	2	2	0	0	77,8	77,8	88,2	0,0
		b	Fermented milks and yoghurts, infant formula with probiotics	7	13	0	2	0	0	77,8	100,0	90,9	0,0
		c	Pasteurized milks, dairy desserts and cream cheeses	12	10	0	0	0	0	100,0	100,0	100,0	0,0
			Total	24	48	2	4	0	0	86,7	93,3	92,3	0,0
3	Cocoa and cocoa products	a	Cocoa powder	4	25	6	3	0	0	76,9	53,8	76,3	0,0
		b	Cocoa based products	4	23	3	2	0	0	77,8	66,7	84,4	0,0
		c	Raw material	7	16	0	3	0	0	70,0	100,0	88,5	0,0
			Total	15	64	9	8	0	0	75,0	71,9	82,3	0,0
All categories				**67**	**159**	**13**	**13**	**0**	**0**	**86,0**	**86,0**	**89,7**	**0,0**

Salmonella individual samples													
Category		**Type**		**PA**	**NA****	**PD**	**ND****	**PPND**	**PPNA**	**SE $_{alt}$ %**	**SE $_{ref}$ %**	**RT %**	**FPR %**
1	Raw beef meats (fresh and frozen, seasoned or not)	a	Ground meat	9	17	2	0	0	0	100,0	81,8	92,9	0,0
		b	Beef trim	12	18	0	0	0	0	100,0	100,0	100,0	0,0
		c	Seasoned meat	7	12	0	1	0	0	87,5	100,0	95,0	0,0
			Total	28	47	2	1	0	0	96,8	93,5	96,2	0,0
2	Heat-treated milk and dairy products	a	Milk powders including infant formula without probiotics	5	26	1	2	0	0	75,0	87,5	91,2	0,0
		b	Fermented milks and yoghurts, infant formula with probiotics	8	12	1	1	0	0	90,0	90,0	90,9	0,0
		c	Pasteurized milks, dairy desserts and cream cheeses	12	10	0	0	0	0	100,0	100,0	100,0	0,0
			Total	25	48	2	3	0	0	90,0	93,6	93,6	0,0
3	Cocoa and cocoa products	a	Cocoa powder	4	24	7	3	0	0	78,6	50,0	73,7	0,0
		b	Cocoa based products	4	23	3	2	0	0	77,8	66,7	84,4	0,0
		c	Raw material	7	16	0	3	0	0	70,0	100,0	88,5	0,0
			Total	15	63	10	8	0	0	75,8	69,7	81,3	0,0
All categories				**68**	**158**	**14**	**12**	**0**	**0**	**87,2**	**85,1**	**89,7**	**0,0**

* PPNA not included ** PPND not included

A summary of the results is given in **Table 7**.

Table 7 - Summary of results

		Salmonella pooled samples	*Salmonella* individual samples
Sensitivity for the alternative method	$SE_{alt} = \frac{(PA+PD)}{(PA+ND+PD)} \times 100\%$	86.0 %	87.2 %
Sensitivity for the reference method	$SE_{ref} = \frac{(PA+ND)}{(PA+ND+PD)} \; x \; 100\ \%$	86.0 %	85.1 %
Relative trueness	$RT = \frac{(PA+NA)}{N} \times 100\%$	89.7 %	89.7 %
False positive ratio for the alternative method* **FP = PPNA + PPND**	$FPR = \frac{(FP)}{NA} \times 100\%$	0.0 %	0.0 %

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

3.1.1.6 Analysis of discordant results

❒ *Negative deviations*

13 negative deviations were observed for the pooled protocol and 12 for the individual protocol (See **Table 8**). All the samples were artificially contaminated.

❒ *Positive deviations*

13 positive deviations (See **Table 9**) were observed for the pooled protocol; one concerned a naturally contaminated sample (3224). Two additional positive deviations were observed when the individual protocol was run (samples 3612 and 3344).

One sample (3278) gave a positive deviation using the pooled protocol and gave a negative result when analysed with the individual protocol (negative agreement).

Table 8 - Negative deviations

Sample N°	Product	Inoculated strain	Inoculation level CFU/sample	Pooled samples				Individual samples				Category	Type
				XLD	*Brilliance* Salmonella	Latex	Agreement	XLD	*Brilliance* Salmonella	Latex	Agreement		
205	**Carpaccio**	S. Infantis 128	2,6	-	-	/	**ND**	-	-	/	**ND**	1	c
3281	**Milk powder**	S. Ohio Ad1482	0,6	-	-	/	**ND**	-	-	/	**ND**	2	a
3496	**Milk infant formula without probiotics**	S. Montevideo 510	0,6	st	st	/	**ND**	st	st	/	**ND**	2	a
3611	**Fermented yoghurts**	S. Tennessee Ad 1171	7,4	-	-	/	**ND**	st	st	/	**ND**	2	b
3613	**Milk infant formula with probiotics**	S. Mbandaka Ad 1722	1,0	-	-	/	**ND**	-	+(3)	+	**PA**	2	b
3338	**Cocoa powder 100%**	S. Stanley Ad1688	3,0	st	st	/	**ND**	st	st	/	**ND**	3	a
3343	**Cocoa powder 100%**	S. Typhimurium Ad1333	2,5	st	st	/	**ND**	st	st	/	**ND**	3	a
3345	**Cocoa powder 100%**	S. Typhimurium Ad2034	2,5	st	st	/	**ND**	st	st	/	**ND**	3	a
6536	**Cocoa mass**	S. Bovismorbificans 728	0,2	-	-	/	**ND**	st	st	/	**ND**	3	c
219	**Chocolates balls**	S. Typhimurium Ad1682	1,4	-	-	/	**ND**	-	-	/	**ND**	3	b
220	**Chocolate bar**	S. Braenderup Ad1661	1,8	-	-	/	**ND**	-	-	/	**ND**	3	b
232	**Cocoa beans**	S. Virchow Ad1721	2,0	-	-	/	**ND**	-	-	/	**ND**	3	c
233	**Cocoa shells**	S. Bareilly Ad1687	2,0	-	-	/	**ND**	-	-	/	**ND**	3	c

Table 9 - Positive deviations

Sample N°	Product	Inoculated strain	Inoculation level CFU/sample	Pooled samples				Individual samples				Category	Type
				XLD	*Brilliance* Salmonella	Latex	Agreement	XLD	*Brilliance* Salmonella	Latex	Agreement		
3224	Ground beef			+m (1) ni	+1/2	+	**PD**	+m ni	+m	+	**PD**	1	a
6509	**Ground beef**	*S.* Newport 586	1,6	+m	+m	+	**PD**	+m	+m	+	**PD**	1	a
3277	**Milk infant formula without probiotics**	*S.* Anatum Ad298	9,2	+p	+p	+	**PD**	+p	+p	+	**PD**	2	a
3278	**Milk infant formula without probiotics**	*S.* Anatum Ad298	9,2	+p	+p	+	**PD**	-	-	/	**NA**	2	a
3612	**Milk infant formula with probiotics**	*S.* Mbandaka Ad 1722	1,0	-	-		**NA**	-	+p	+	**PD**	2	b
3336	**Cocoa powder 100%**	*S.* Bareilly Ad1687	2,5	+p	+p	+	**PD**	+p	+p	+	**PD**	3	a
3341	**Cocoa powder 100%**	*S.* Agona Ad1483	4,0	+p	+p	+	**PD**	+p	+p	+	**PD**	3	a
3342	**Cocoa powder 100%**	*S.* Agona Ad1483	4,0	+p	+p	+	**PD**	+p	+p	+	**PD**	3	a
3344	**Cocoa powder 100%**	*S.* Typhimurium Ad1333	2,5	st	st		**NA**	+ p (5)	+ p (4)	+	**PD**	3	a
6514	**Chocolate chips**	*S.* Stanley Ad1688	0,2	+m	+m	+	**PD**	+p	+p	+	**PD**	3	b
6530	**Cocoa powder 100%**	*S.* Infantis Ad1684	0	+p	+p	+	**PD**	+p	+p	+	**PD**	3	a
6531	**Cocoa powder 100%**	*S.* Oranienburg Ad1724	0,5	+p	+p	+	**PD**	+p	+p	+	**PD**	3	a
6534	**Cocoa powder 32%**	*S.* Stanley Ad1688	0,2	+1/2	+m	+	**PD**	+p	+p	+	**PD**	3	a
218	**Cocoa based dessert**	*S.* Typhimurium Ad1682	1,4	+m	+m	+	**PD**	+p	+p	+	**PD**	3	b
225	**Cocoa mousse**	*S.* Bareilly Ad1687	1,6	+m	+1/2	+	**PD**	+p	+p	+	**PD**	3	b

The analyses of discordant results according to the EN ISO 16140-2:2016 is the following (See **Table 10**):

Table 10 - Analyses of discordant results

Salmonella pooled samples (Unpaired study design)							
Category		**Type**	**PD**	**ND**	**PPND**	**(ND+ PPND)-PD**	**AL**
1	Raw beef meats (fresh and frozen, seasoned or not)	a	2	0	0	- 2	
		b	0	0	0	0	
		c	0	1	0	1	
		Total	2	1	0	- 1	3
2	Heat-treated milk and dairy products	a	2	2	0	1	
		b	0	2	0	2	
		c	0	0	0	0	
		Total	2	4	0	2	3
3	Cocoa and cocoa products	a	6	3	0	-3	
		b	3	2	0	-1	
		c	0	3	0	3	
		Total	9	8	0	-1	3
All categories			**13**	**13**	**0**	**0**	**5**

Salmonella individual samples (Unpaired study design)							
Category		**Type**	**PD**	**ND**	**PPND**	**(ND+ PPND)-PD**	**AL**
1	Raw beef meats (fresh and frozen, seasoned or not)	a	2	0	0	- 2	
		b	0	0	0	0	
		c	0	1	0	1	
		Total	2	1	0	- 1	3
2	Heat-treated milk and dairy products	a	1	2	0	1	
		b	1	1	0	0	
		c	0	0	0	0	
		Total	2	3	0	1	3
3	Cocoa and cocoa products	a	7	3	0	-4	
		b	3	2	0	-1	
		c	0	3	0	3	
		Total	10	8	0	-2	3
All categories			**14**	**12**	**0**	**-2**	**5**

The observed values for ((ND+PPND) – PD) meet the acceptability limit for each category and for all combined categories for both protocols (pooling and individual).

3.1.1.7 Confirmations

A summary of the differences observed between streaking onto XLD, and *Brilliance*™ Salmonella plates is given in **Table 11.**

Table 11 - Differences observed between streaking onto XLD and *Brilliance*™ Salmonella Agar plates

N° Sample	Strain inoculated	XLD	*Brilliance* Salmonella
3211	S. Bredeney 975	-	+ 1/2
3212	S. Bredeney 975	-	+ (1)
3214	S. Panama 8	-	+ m
3217	S. Bredeney 396	-	+ M
3218	S. Bredeney 396	-	+ m
3222	S. Bredeney 396	-	+ 1/2
3605	S. Dublin Ad1336	+ M	-
3607	S. Dublin Ad1336	+ 1/2	-
3608	S. Dublin Ad1336	+ M	-
3612	S. Mbandaka Ad1722	-	+ P
3613	S. Mbandaka Ad1722	-	+ (3)

Positive samples were streaked onto two selective agar plates. Typical colonies were confirmed by the latex test and the tests described in the reference method.

In 6 cases, typical colonies were observed only on *Brilliance* Salmonella plates. 5 samples were inoculated with S. Bredeney and 1 sample with S. Panama. In 3 cases, typical colonies were isolated only on XLD plates, the samples were inoculated with S. Dublin.

3.1.1.8 Enrichment broth storage at 5 ± 3°C for 32 h

The enrichment broths of 109 samples were stored for 32 h at 5°C ± 3°C and tested again with the individual protocol. The following changes were observed (See **Table 12**):

Table 12 - Enrichment broth storage at 5 ± 3°C for 32 h

N° Sample	Individual 18h	Individual 18h + 32h
3277	PD	NA
3613	PA	ND

The analyses of discordant results become (See **Table 13**).

Table 13 - Analysis of discordant after storage 32 h at 5 ± 3°C

Salmonella individual samples (Unpaired study design)							
Category		**Type**	**PD**	**ND**	**PPND**	**(ND+ PPND)-PD**	**AL**
1	Raw beef meats (fresh and frozen, seasoned or not)	a	2	0	0	-2	
		b	0	0	0	0	
		c	0	1	0	1	
		Total	2	1	0	-1	3
2	Heat-treated milk and dairy products	a	0	2	0	2	
		b	1	2	0	1	
		c	0	0	0	0	
		Total	1	4	0	3	3
3	Cocoa and cocoa products	a	7	3	0	-4	
		b	3	2	0	-1	
		c	0	3	0	3	
		Total	10	8	0	-2	3
All categories			**13**	**13**	**0**	**0**	**5**

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

3.1.2 Relative detection level

The relative detection level is the smallest number of culturable micro-organisms that can be detected in the sample in 50% of occasions by the alternative and reference methods.

3.1.2.1 Experimental design

Three (matrix/strain) pairs were analysed by the reference method and by the alternative method (See **Table 14**):

Table 14 - Defined (matrix/strain) pairs for the RLOD determination

	Matrix	**Inoculated strain**	**Storage conditions before analysis**
Initial validation study (2013)	Ground beef	*Salmonella* Typhimurium A00C060 (Protocol 1)	/
	Probiotic infant formula or fermented milk	*Salmonella* Anatum Ad298 (Protocol 2)	/
Extension study (2016)	Cocoa powder	*Salmonella* Braenderup Ad1661 (Protocol 3)	2 weeks at ambient temperature

The protocol described in the ISO 16140 (2003) was applied for the initial validation study and the protocol described in the ISO 16140-2:2016 was used for the extension study run in 2016.

The samples were analysed with the ISO 6579 standard in order to verify the absence of *Salmonella*. A total viable count microflora was also realised.

3.1.2.2 Calculation and interpretation of the RLOD

The raw data are given in **Appendix 5**. The RLOD calculations were performed using the Excel spreadsheet available at http://standards.iso.org/iso/16140 - RLOD (clause 5-1-4-2 Calculation and interpretation of RLOD) version 06.07.2015. The RLOD are given in **Table 15**.

Table 15 – Presentation of RLOD before and after confirmation of the alternative method results

Protocol	Name	RLOD	RLODL	RLODU	b=ln (RLOD)	sd(b)	z-Test statistic	p-value
Pooled	Ground beef /*Salmonella* Typhimurium A00C060	1,000	0,422	2,371	0,000	0,432	0,000	1,000
Individual	Ground beef /*Salmonella* Typhimurium A00C060	1,000	0,422	2,371	0,000	0,432	0,000	1,000
Pooled	Milk powder / *Salmonella* Anatum Ad298	0,929	0,433	1,994	-0,073	0,382	0,192	1,152
Individual	Milk powder / *Salmonella* Anatum Ad298	0,929	0,433	1,994	-0,073	0,382	0,192	1,152
Pooled	Cocoa / *Salmonella* Braenderup Ad1661	2,127	0,808	5,602	0,755	0,484	1,559	0,119
Individual	Cocoa / *Salmonella* Braenderup Ad1661	1,794	0,706	4,555	0,584	0,466	1,254	0,210
	Combined pooled protocol	1,202	0,740	1,952	0,184	0,242	0,760	0,447
	Combined individual protocol	1,154	0,714	1,866	0,144	0,240	0,598	0,550

The RLOD are lower than the AL fixed at 2.5 for an unpaired study for all the tested matrix/strain pairs and for both protocols (pooled and individual).

The $LOD_{50\ \%}$ calculations according to Wilrich & Wilrich POD-LOD calculation program - version 10, 2021-03-02 test are given in **Table 16**.

Table 16 - LOD_{50} results

Protocol	(Strain / matrix) pair	Level of detection at 50% (CFU / sample size) according to Wilrich & Wilrich[1]	
		Reference method	Alternative method
Pooled	Ground beef /*Salmonella* Typhimurium A00C060	0,614 [0,341;1.105]	0,628 [0,379;1,131]
Individual	Ground beef /*Salmonella* Typhimurium A00C060		0,628 [0,349;1,131]
Pooled	Milk powder / *Salmonella* Anatum Ad298	0,896 [0,512;1,567]	0,790 [0,454;1,374]
Individual	Milk powder / *Salmonella* Anatum Ad298		0,790 [0,454;1,374]
Pooled	Cocoa / *Salmonella* Braenderup Ad1661	1,573 [0,914;2,704]	2,.818 [1,557;5,101]
Individual	Cocoa / *Salmonella* Braenderup Ad1661		2,500 [1,402;4,458]
	Combined results - Pooled	**1,025 [0,737;1,426]**	**1,257 [0,897;1,761]**
	Combined results - Individual		**1,199 [0,857;1,676]**

The LOD_{50} varies from 0.6 to 1.6 CFU/sample size for the reference method and from 0.6 to 2.9 CFU/ sample size for the alternative method (pooled samples), from 0.6 to 2.5 CFU/ sample size for the alternative method (individual samples)

3.1.3 Inclusivity/exclusivity

Inclusivity is the ability of the alternative method to detect the target analyte from a wide range of strains.
Exclusivity is the lack of interference from a relevant range of non-target strains of the alternative method.

3.1.3.1 Test protocols

❒ **Inclusivity**

Salmonella isolates were inoculated into BHI medium and incubated at 37°C. Dilutions were done in order to inoculate between 10 to 100 cells/225 ml in preheated BPW + Brilliant Green (0.002%) (Protocol 2). The broths were incubated for 18 h at 37°C before performing the alternative method protocol. **The target strains were tested as followed: dilution of 5 ml enrichment with 45 ml BPW + 0.002% Brilliant Green.**

[1] Wilrich, C., and P.-Th. Wilrich: Estimation of the POD function and the LOD of a qualitative microbiological measurement method. AOAC International **92** (2009) 1763 - 1772.

❒ **Exclusivity**

Negative isolates were inoculated into BHI Broth and incubated at 37°C. Dilutions were generated in order to inoculate 10^5 cells/ml BPW. The broths were incubated for 22 h at 37°C. The alternative method was then performed.

3.1.3.2 Results

Raw data are given in **Appendix 6**.

❒ **Inclusivity**

For the initial validation study 51 strains were first tested using preheated BPW + Brilliant Green. They all gave a negative result.

The study was repeated by adding 25 ml of UHT skimmed milk to the enrichment broth and all the strains gave then a positive result.

For the renewal study, 49 strains were tested by adding directly UHT milk to the enrichment broth and positive results were obtained for all of them.

Taking into account both studies the following results were observed:

- 92 strains gave positive results when tested with a low inoculation level.
- For 8 strains (*Salmonella* Paratyphi *A* ATCC 9150, *Salmonella* Rissen 39, *Salmonella* Abortusequi Ad2321, *Salmonella* Abortusovis Ad2320, *Salmonella* Adelaïde Ad2319, *Salmonella* Cubana Ad2323, *Salmonella* Minnesota Ad2328 *and Salmonella* Norwich Ad1172*)* it was necessary to inoculate the broth at a higher level (> 100 CFU/125 ml) in order to obtain positive results.
- For 2 strains (*Salmonella* Abortusequi Ad2321 and *Salmonella* Abortusovis Ad2320) it was necessary to incubate the plates for 48 h to observe typical colonies.

❒ **Exclusivity**

30 strains were tested; no typical colonies were observed.

3.1.3.3 Conclusion

The Pathatrix™ Auto *Salmonella spp.* method is specific and selective.

3.1.4 Practicability

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

Storage conditions and shelf-life	The storage temperature for beads is 2 – 8°C. The storage temperature for the other parts is room temperature. All the reagents must be stored at the temperature mentioned on the package. The shelf-life is given on the package.		
Time to result	Steps	**Reference method**	**Alternative method**
	Negative samples		
	Pre-enrichment	Day 0	Day 0
	Enrichment	Day 1	/
	IMS pooled	/	Day 1
	Streaking onto selective agar plates	Day 2	Day 1
	Reading	Day 3	Day 2
	Steps	**Reference method**	**Alternative method**
	Presumptive positive or positive results		
	Pre-enrichment	Day 0	Day 0
	Enrichment	Day 1	/
	IMS pooled	/	Day 1
	Streaking onto selective agar plates		Day 1
	Reading	/	Day 2
	Latex test	/	Day 2
	IMS individual	/	Day 2
	Streaking onto selective agar plates	Day 2	Day 2
	Reading	Day 3	Day 3
	Latex test	/	Day 3
	Confirmatory tests	Day 4 to Day 6	/
Common step with the reference method	No common step		

The Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates allows the screening of negative samples within 2 days, while 3 days are required to analyse positive samples (including confirmation steps).

3.1.5 Method comparison study conclusion

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

In the sensitivity study, three food categories were tested. The protocol of the alternative method shows:

- 12 positive deviations (PD) for the pooled protocol and 14 positive deviations for the individual protocol;
- 13 negative deviations (ND) for the pooled protocol and 12 negative deviations for the individual protocol.

The ND - PD are below the acceptability limits (AL) whatever the categories, and as well for the three tested categories.

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

The inclusivity and exclusivity testing gave the expected results for the 100 target strains and the 30 non target strains.

It is possible to store the primary enrichment broth for 32 h at 5 ± 3°C.

The alternative method allows a two-days screening of the negative samples.

The alternative method fulfils all the EN ISO 16140-2:2016 and AFNOR technical rules (PR revision 7).

3.2 Inter-laboratory study (initial validation, 2013)

3.2.1 Study organisation

Samples were sent to 15 laboratories. The study was done with ground beef samples contaminated with *Salmonella* Typhimurium A00C060.

The inoculation levels were as follows:

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

The samples were inoculated individually. 8 replicates were provided per level to each laboratory. The total viable count microflora was analysed with a supplementary sample.

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

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

Samples were shipped in 24 h to 72 h to the involved laboratories. The temperature conditions had to stay lower or equal to 8.4°C during transport, and between 0°C – 8.4°C in the labs.

Collaborators and ADRIA Développement carried out the analyses with the alternative and reference methods on Tuesday 15th October or Wednesday 16th October 2013. Samples for the reference and the alternative method were analysed **at the same time.**

The collaborative study instructions were sent on 27th September 2013.

3.2.2 Experimental parameters control

3.2.2.1 Contamination level before inoculation, levels obtained after the artificial contaminations of the samples

- *Before inoculation*

In order to detect *Salmonella spp.*, the ISO 6579 method was performed on five test portions (25 g) before the inoculation. All the results were negative.

- *Sample stability*

Sample stability was checked by inoculating the matrix at 100 CFU/g and 5 CFU/g. Enumerations were performed for the high contamination level and detection analysis was performed for the low contamination level. Samples were analysed in triplicate and the results were the following:

Table 17 - Sample stability

Day	Reference method (research)			CFU/g (XLD)			Aerobic mesophilic flora (CFU/g)
	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3	
Day 0	+	+	+	250	210	210	230
Day 1	+	+	+	320	270	240	2 900
Day 2	+	+	+	170	210	190	1 800

No evolution was observed during storage at 4°C.

- *Contamination levels*

The contamination levels and the confidence intervals were the following:

Table 18 - Contamination levels

Level	Samples	Theoretical target level (CFU/test portion)	True level (CFU/test portion)	Low limit (CFU/test portion)	High limit (CFU/test portion)
Level 0	2 - 7 - 10 - 12 - 13 - 17 - 20 - 24	0	/	/	/
Low level	4 - 6 - 9 - 11 - 14 - 18 - 21 - 23	5	4.6	4.1	5.3
High level	1 - 3 - 5 - 8 - 15 - 16 - 19 - 22	25	20.2	17.5	23.3

3.2.2.2 Logistical conditions

Temperature conditions are given below:

Table 19 - Sample temperatures at receipt

Laboratories	Temperature measured by the temperature probe (°C)	Temperature measured at receipt (°C)	Receipt date and time	Analyse date
A	2.5	2.4	15/10/2013 11h00	15/10/2013 11h20
B	0.0	4.8	15/10/2013 10h15	15/10/2013 12h00
C	7.0	**10.0**	16/10/2013 17h00	**17/10/2013** /
D	1.0	4.5	16/10/2013 08h43	16/10/2013 13h00
E	1.5	5.0	15/10/2013 10h30	15/10/2013 14h30
F	5.5	5.8	15/10/2013 14h00	16/10/2013 09h00
G	1.5	4.0	15/10/2013 11h00	16/10/2013 /
H	3.0	4.9	15/10/2013 09h50	15/10/2013 11h00
I	1.0	7.5	15/10/2013 11h00	15/10/2013 14h00
J	1.0	3.9	15/10/2013 11h30	15/10/2013 15h00
K	2.5	5.5	15/10/2013 10h24	15/10/2013 14h00
L	*This lab. was unable to participate in the ring trial*			
M	2.5	4.7	15/10/2013 08h39	15/10/2013 14h00
N	/	4.6	15/10/2013 12h00	16/10/2013 16h00
O	0.0	6.2	15/10/2013 13h15	16/10/2013 14h30

All the temperatures during transport and at receipt were correct.
Lab C measured a temperature at receipt above 8.4°C (10.0°C), but the probe indicated that the temperature was 7.0°C.

3.2.3 Results analysis

The raw data are given in **Appendix 7**.

3.2.3.1 Expert lab results

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

Table 20 – Results obtained by the expert Lab.

Level	Reference method	Alternative method	
		Pooled samples	Individual samples
L0	0/8	0/8	0/8
L1	8/8	8/8	8/8
L2	8/8	8/8	8/8

3.2.3.2 Results observed by the collaborative laboratories

Aerobic mesophilic flora enumeration

Depending on the lab results, the enumeration levels varied from 1.0 x 10^2 to 3.4 x 10^4 CFU/g.

Salmonella detection

Samples were delivered to 15 Labs:

- Lab L was unable to proceed to the analysis,
- Lab C started the analysis at day 3 (17/10/2013),
- Lab K discarded a part of the enrichment broths before proceeding to individual sample analysis,
- Lab O didn't use the protocol correctly, the PBS solution was not used diluted (1/10 dilution) as mentioned in the protocol.

The results obtained are provided in **Table 21** (reference method) and **Table 22** (alternative method).

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

Laboratories	Contamination level		
	L0	*L1*	*L2*
A	0	8	8
B	0	7	8
C	0	8	8
D	0	8	8
E	0	8	8
F	0	8	8
G	0	8	8
H	0	8	8
I	0	8	8
J	0	8	8
K	0	8	8
M	0	8	8
N	0	7	8
O	1	8	8
Total	P_0 = 1	P_1 = 110	P_2 = 112

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

Salmonella pooled samples						
Laboratories	Contamination level - Pooled samples					
	L0		*L1*		*L2*	
	Before confirmation	*After confirmation*	*Before confirmation*	*After confirmation*	*Before confirmation*	*After confirmation*
A	0	0	8	8	8	8
B	0	0	8	8	8	8
C	0	0	8	8	8	8
D	0	0	8	8	8	8
E	0	0	8	8	8	8
F	0	0	8	8	8	8
G	0	0	8	8	8	8
H	0	0	8	8	7	7
I	0	0	8	8	8	8
J	0	0	8	8	8	8
K	0	0	8	8	8	8
M	0	0	8	8	8	8
N	0	0	7	7	8	8
O	0	0	8	8	8	8
Total	$P_0 = 0$	$CP_0 = 0$	$P_1 = 111$	$CP_1 = 111$	$P_2 = 111$	$CP_2 = 111$

Salmonella individual samples						
Laboratories	Contamination level					
	L0		*L1*		*L2*	
	Before confirmation	*After confirmation*	*Before confirmation*	*After confirmation*	*Before confirmation*	*After confirmation*
A	0	0	8	8	8	8
B	0	0	8	8	8	8
C	0	0	8	8	8	8
D	0	0	8	8	8	8
E	0	0	8	8	8	8
F	0	0	8	8	8	8
G	0	0	8	8	8	8
H	0	0	8	8	8	8
I	0	0	8	8	8	8
J	0	0	8	8	8	8
K (1)	0	0	4	4	4	4
M	0	0	8	8	8	8
N	0	0	7	7	8	8
O (2)	0	0	6	6	8	8
Total	$P_0 = 0$	$CP_0 = 0$	$P_1 = 105$	$CP_1 = 105$	$P_2 = 108$	$CP_2 = 108$

(1) Some enrichment broths were discarded before proceeding to the individual samples analysis.

(2) Protocol not correctly applied

3.2.3.3 Results of the collaborators retained for interpretation

The results obtained with the 11 labs kept for interpretation are presented in **Table 23** (reference method) and **Table 24** (alternative method).

Table 23 - Positive results by the reference method
(Without Labs C, K, L and O)

Laboratories	Reference method		
	L0	*L1*	*L2*
A	0	8	8
B	0	7	8
D	0	8	8
E	0	8	8
F	0	8	8
G	0	8	8
H	0	8	8
I	0	8	8
J	0	8	8
M	0	8	8
N	0	7	8
Total	$P_0 = 0$	$P_1 = 86$	$P_2 = 88$

Table 24 - Positive results (before and after confirmation) by the alternative methods (Without Labs C, K, L and O)

***Salmonella* pooled samples**						
Laboratories	**Contamination level**					
	L0		***L1***		***L2***	
	Before confirmation	*After confirmation*	*Before confirmation*	*After confirmation*	*Before confirmation*	*After confirmation*
A	0	0	8	8	8	8
B	0	0	8	8	8	8
D	0	0	8	8	8	8
E	0	0	8	8	8	8
F	0	0	8	8	8	8
G	0	0	8	8	8	8
H	0	0	8	8	7	7
I	0	0	8	8	8	8
J	0	0	8	8	8	8
M	0	0	8	8	8	8
N	0	0	6	6	8	8
Total	$P_0 = 0$	$CP_0 = 0$	$P_1 = 86$	$CP_1 = 86$	$P_2 = 87$	$CP_2 = 87$

Salmonella individual samples						
Laboratories	Contamination level					
	L0		*L1*		*L2*	
	Before confirmation	*After confirmation*	*Before confirmation*	*After confirmation*	*Before confirmation*	*After confirmation*
A	0	0	8	8	8	8
B	0	0	8	8	8	8
D	0	0	8	8	8	8
E	0	0	8	8	8	8
F	0	0	8	8	8	8
G	0	0	8	8	8	8
H	0	0	8	8	8	8
I	0	0	8	8	8	8
J	0	0	8	8	8	8
M	0	0	8	8	8	8
N	0	0	6	6	8	8
Total	**P_0 = 0**	**CP_0 = 0**	**P_1 = 86**	**CP_1 = 86**	**P_2 = 88**	**CP_2 = 88**

3.2.4 Calculation and interpretation

3.2.4.1 Calculation of the specificity percentage (SP)

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

Table 25 - Percentage specificity

Specificity for the reference method	$SP_{ref} = \left(1 - \left(\frac{P_0}{N\_}\right)\right) x\ 100\ \% =$	100 %
Specificity for the alternative method (pooled and individual protocols)	$SP_{alt} = \left(1 - \left(\frac{CP_0}{N\_}\right)\right) x\ 100\ \% =$	100 %

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

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

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

A summary of the results of the collaborators retained for interpretation, and obtained with the reference and the alternative methods for Level 1 and Level 2 is provided in **Table 26**.

Table 26 - Summary of the obtained results with the reference method and the alternative method for Level 1 and Level 2

		Salmonella pooled samples		*Salmonella* individual samples	
Level	**Response**	**Reference method positive (R+)**	**Reference method negative (R-)**	**Reference method positive (R+)**	**Reference method negative (R-)**
1	**Alternative method positive (A+)**	Positive agreement (A+/R+) **PA = 85**	Positive deviation (R-/A+) **PD = 1**	Positive agreement (A+/R+) **PA = 85**	Positive deviation (R-/A+) **PD = 1**
	Alternative method negative (A-)	Negative deviation (A-/R+) **ND = 1 (PPND = 0)**	Negative agreement (A-/R-) **NA = 1 (PPNA = 0)**	Negative deviation (A-/R+) **ND = 1 (PPND = 0)**	Negative agreement (A-/R-) **NA = 1 (PPNA = 0)**
2	**Alternative method positive (A+)**	Positive agreement (A+/R+) **PA = 87**	Positive deviation (R-/A+) **PD = 0**	Positive agreement (A+/R+) **PA = 88**	Positive deviation (R-/A+) **PD = 0**
	Alternative method negative (A-)	Negative deviation (A-/R+) **ND = 1 (PPND = 0)**	Negative agreement (A-/R-) **NA = 0 (PPNA = 0)**	Negative deviation (A-/R+) **ND = 0 (PPND = 0)**	Negative agreement (A-/R-) **NA = 0 (PPNA = 0)**

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

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

		Level 1		Level 2	
		Pooled	**Individual**	**Pooled**	**Individual**
Sensitivity for the alternative method:	$SE_{alt} = \frac{(PA+PD)}{(PA+PD+ND)} \; x \; 100\% =$	98.9 %	98.9 %	98.9 %	100.0 %
Sensitivity for the reference method:	$SE_{ref} = \frac{(PA+ND)}{(PA+PD+ND)} \; x \; 100\% =$	98.9 %	98.9 %	100.0 %	100.0 %
Relative trueness	$RT = \frac{(PA+NA)}{N} \; x \; 100\% =$	97.7 %	97.7 %	98.9 %	100.0 %
False positive ratio for the alternative method	$FPR = \frac{FP}{NA} \; x \; 100\% =$	0 %	0 %	/	/

3.2.4.3 *Interpretation of data*

The discordant results observed are:

Pooled sample protocol

Inoculation level	Negative deviations	Positive deviations
Level 1	N18	B6
Level 2	H5	/

Note that for sample H5, it was asked to the Lab to proceed to a second analysis (IMS and PCR) and the result was then positive (Ct = 24.0)

Individual sample protocol

Inoculation level	Negative deviations	Positive deviations
Level 1	N18	B6
Level 2	/	/

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

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

where

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

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

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

where

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

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

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

where

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

The AL is not met when the observed value is higher than the AL. When the AL is not met, investigations should be made (e.g. root cause analysis) in order to provide an explanation of the observed results. Based on the AL and the additional information, it is decided whether the alternative method is regarded as not fit for purpose. The reasons for acceptance of the alternative method when the AL is not met shall be stated in the study report.

In this study, fractional recovery was observed at Level 1 and Level 2. The calculations are the following, according to the EN ISO 16140-2:2016 (See **Table 28**).

Table 28 - Calculations

	Level 1		Level 2	
	Pooled	Individual	Pooled	Individual
N_X	88	88	88	88
$(p+)_{ref}$	1.0	1.0	1.0	1.0
$(p+)_{alt}$	1.0	1.0	1.0	1.0
AL = (ND - PD) max	3.42	3.42	1.73	0.00
ND - PD	0	0	0	0
Conclusion	ND - PD < AL	ND - PD < AL	ND - PD < AL	ND - PD < AL

The ISO 16140-2 (2016) requirements are fulfilled as (ND - PD) is lower than or equal to the AL for both inoculation levels and both protocols.

3.2.5 *Evaluation of the LOD $_{50\%}$, LOD $_{95\ \%}$ and RLOD between laboratories*

The RLOD was calculated using the EN ISO 16140-2:2016 Excel spreadsheet available at https://standards.iso.org/iso/16140/-5/ed-1/en/RLOD_inter-lab-study_16140-2_AnnexF_ver1_28-06-2017.xls. The results are used only for information (see Table 29).

Table 29 - LOD $_{50\%}$, LOD $_{95\ \%}$ and RLOD

Method	LOD $_{50\%}$	LOD $_{95\%}$	RLOD
Reference	0,84 [0,58;1,22]	3,64 [2,52;5,27]	1,42 [0,96;2,09]
Alternative Pooled	1,19 [0,89;1,60]	5,16 [3,85;6,91]	
Alternative Individual	0,84 [0,58;1,22]	3,64 [2,52;5,27]	1,00 [0,65;1,54]

3.2.6 *Inter-laboratory conclusion*

The data and interpretations comply with the EN ISO 16140-2:2016 requirements. **The alternative method is considered equivalent to the ISO standard.**

3.3 General conclusion

The **method comparison study conclusions** are:

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

In the sensitivity study, three food categories were tested. The protocol of the alternative method shows:

- 13 positive deviations (PD) for the pooled protocol and 14 positive deviations for the individual protocol;
- 13 negative deviations (ND) for the pooled protocol and 12 negative deviations for the individual protocol.

The ND - PD are below the acceptability limits (AL) whatever the categories, and as well for the three tested categories.

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

The inclusivity and exclusivity testing did give the expected results for the 100 target strains and the 30 non target strains.

It is possible to store the primary enrichment broth for 32 h at 5 ± 3°C.

The alternative method allows a two-days screening of the negative samples.

The alternative method fulfils all the EN ISO 16140-2:2016 and AFNOR technical rules (PR revision 7).

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

The data and interpretations comply with the EN ISO 16140-2:2016 requirements. **The alternative method is considered equivalent to the ISO standard.**

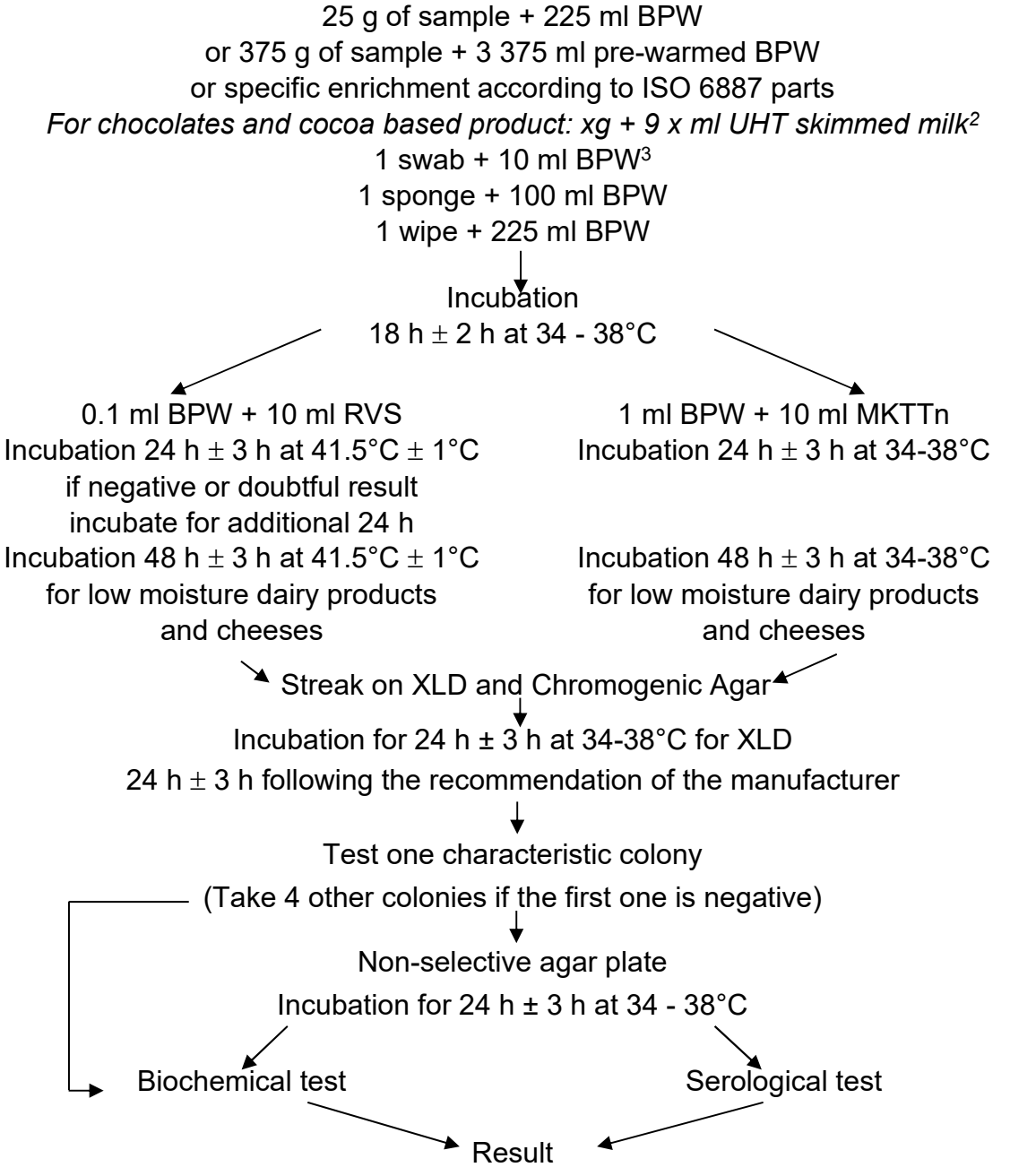
Quimper, 29 October 2021

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

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

Appendix 1 - Flow diagram of the reference method

ISO 6579-1 (February 2017): Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of *Salmonella* spp. - Part 1: detection of *Salmonella* spp.
ISO 6579-1/A1 (March 2020): Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of *Salmonella* spp. - Part 1: detection of *Salmonella* spp. Amendment 1: Broader range of incubation temperatures, amendment to the status of Annex D, and correction of the composition of MSRV and SC



[2] For chocolates products containing > 20 % fat, unless the products already contain sufficient emulsifier, add Tween 80
For products with high background microflora add Brilliant green (0.018g/L)

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

Appendix 2 – Flow diagram of the alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp*. 10-pooling protocol linked to selective agar plates

Enrichment

Protocol 1: Sample 1/10 dilution in (37°C ± 1°C) preheated BPW
Protocol 2: Sample 1/10 dilution in preheated BPW + Brilliant Green (0.002%)
Protocol 3: Sample 1/10 dilution in preheated UHT skimmed milk + Brilliant Green (0.002 %)

(25 g)
↓
Stomaching
↓
For potentially acidic and alkaline samples,
leave to stand for 60 ± 5 min at room temperature
Determine the pH and if necessary, adjust to 6.8 ± 0.2

Store enrichment broth
at 5°C ± 3°C up to 32 h
Pre-warm at 37°C

↓
37°C ± 1°C, 20h ± 2 h
↓

Transfer → 10 x 5 ml enrichment broth (pooled samples)
10 ml enrichment broth (individual sample)
into a Sample Vessel
↓
(Use a foam filter for highly particulate samples)
↓
Add 35 ml 1xPBS in the Elution Vessel
↓
Add 50 µl bead suspension into the spout on the lid of the Sample Vessel using the appropriate beads for each sample type:
APS 50: individual samples
APS 500: pooled samples
↓
Immuno-magnetic separation in the Pathatrix Auto Instrument
↓
Place the Elution Tube(s) in the Pathatrix magnetic Vessel Holder for 1 min
↓
Remove the 1xPBS (leaving the Elution Tube in the Pathatrix magnetic Vessel Holder)
↓
Add 120 µl of fresh 1xPBS and fully resuspend the bead pellet
↓
Place the Elution Tube in the Pathatrix magnetic Vessel Holder for 1 min
↓
Remove the 1xPBS
↓
Add 120 µl Nuclease-free water and fully resuspend the bead pellet

↓
Streak 10 µl of the beads onto XLD
and *Brilliance* Salmonella
↓
18 – 24 h at 37°C
↓
Confirmatory tests on typical colonies
by latex test (OXOID)

Appendix 3 – Artificial contamination of the samples (Initial validation 2013, Extension study 2016 and Renewal Study 2017)

Initial validation study (2013)
Extension study (2016)
Renewal study (2017)

N° Sample	Product	Product	Artificial contaminations (spiking protocol)					Enrichment broth	Global result pooled	Global result individual
			Strain	Origin	Injury protocol	Injury measurement	Inoculation level CFU/sample			
3219	Steak haché pur boeuf	Ground beef	S. Bredeney 975	Ground beef	Spiking TS pH4 4days	0.54	2-7-2-1-2 (2.8)	Protocol 1	+	+
3220	Steak haché	Ground beef	S. Panama 4255	Ground beef	Spiking TS pH4 4days	0.58	5-4-5-6-3 (4.6)	Protocol 1	+	+
3221	Steak haché	Ground beef	S. Panama 8	Ground beef	Spiking TS pH4 3 months	0.90	6-8-11-14-8 (9.4)	Protocol 1	+	+
3222	Steak haché	Ground beef	S. Bredeney 396	Ground beef	Spiking TS pH4 3 months	1.12	6-4-11-8-9 (7.6)	Protocol 1	+	+
6500	Steak haché 20% MG	Ground beef	S. Newport 586	Beef carcass	Seeding -20°C - 2 month	/	2-1-2-2-1 (1.6)	Protocol 1	-	-
6501	Egréné de bœuf 15% MG	Beef trim	S. Newport 586	Beef carcass	Seeding -20°C - 2 month	/	2-1-2-2-1 (1.6)	Protocol 1	-	-
6502	Egréné de bœuf 15% MG	Beef trim	S. Typhimurium A00C060	Ground beef	Seeding -20°C - 2 month	/	1-5-1-8-4 (3.8)	Protocol 1	+	+
6507	Steak haché bœuf hallal	Ground beef	S. Typhimurium A00C060	Ground beef	Seeding -20°C - 2 month	/	1-5-1-8-4 (3.8)	Protocol 1	+	+
6509	Steak haché bœuf hallal	Ground beef	S. Newport 586	Beef carcass	Seeding -20°C - 2 month	/	2-1-2-2-1 (1.6)	Protocol 1	+	+
189	Haché de bœuf surgelé	Frozen ground beef	S. Ohio Ad2224	Ground beef	Seeding 4°C 48h	/	0-2-1-3-2 (1.6)	Protocol 1	+	+
190	Haché pur bœuf 20% MG surgelé	Frozen ground beef (20% fat)	S. Ohio Ad2224	Ground beef	Seeding 4°C 48h	/	0-2-1-3-2 (1.6)	Protocol 1	+	+
191	Steak pur bœuf surgelé	Frozen beef meat	S. Infantis 128	Ground beef	Seeding 4°C 48h	/	2-2-2-2-1 (1.8)	Protocol 1	+	+
192	Steak haché surgelé	Frozen ground beef	S. Infantis 128	Ground beef	Seeding 4°C 48h	/	2-2-2-2-1 (1.8)	Protocol 1	-	-
3211	Rumsteak	Beef trim	S. Bredeney 975	Ground beef	Spiking TS pH4 4days	0.54	2-7-2-1-2 (2.8)	Protocol 1	+	+
3212	Onglet	Beef trim	S. Bredeney 975	Ground beef	Spiking TS pH4 4days	0.54	2-7-2-1-2 (2.8)	Protocol 1	+	+
3213	Gite de noix	Beef trim	S. Panama 4255	Ground beef	Spiking TS pH4 4days	0.58	5-4-5-6-3 (4.6)	Protocol 1	+	+
3214	Bavette	Beef trim	S. Panama 8	Ground beef	Spiking TS pH4 3 months	0.90	6-8-11-14-8 (9.4)	Protocol 1	+	+
3216	Tranche en tournedos	Beef trim	S. Bredeney 396	Ground beef	Spiking TS pH4 3 months	1.12	6-4-11-8-9 (7.6)	Protocol 1	+	+
3217	Gite de noix	Beef trim	S. Bredeney 396	Ground beef	Spiking TS pH4 3 months	1.12	6-4-11-8-9 (7.6)	Protocol 1	+	+
3218	Basse côtes	Beef trim	S. Bredeney 396	Ground beef	Spiking TS pH4 3 months	1.12	6-4-11-8-9 (7.6)	Protocol 1	+	+
6504	Pavé de bœuf mariné	Seasoned beef trim	S. Newport 586	Beef carcass	Seeding -20°C - 2 month	/	2-1-2-2-1 (1.6)	Protocol 1	+	+
193	Viande bovine à bourguignon	Beef trim	S. Enteritidis Ad2294	Beef meat	Seeding 4°C 48h	/	3-7-6-6-8 (6.0)	Protocol 1	+	+
194	Bavette de flanchet	Beef trim	S. Enteritidis Ad2294	Beef meat	Seeding 4°C 48h	/	3-7-6-6-8 (6.0)	Protocol 1	+	+
195	Hampe à griller	Beef trim	S. Panama 195	Beef meat	Seeding 4°C 48h	/	5-6-5-10-3 (5.8)	Protocol 1	+	+
196	Bavette de flanchet surgelée	Frozen beef trim	S. Panama 195	Beef meat	Seeding 4°C 48h	/	5-6-5-10-3 (5.8)	Protocol 1	+	+
207	Entrecôte surgelée	Frozen beef trim	S. Infantis 128	Beef meat	Seeding 4°C 48h	/	5-2-2-2-2 (2.6)	Protocol 1	-	-
6505	Carpaccio huile et éclats noisette	Seasoned raw beef trim	S. Typhimurium A00C060	Ground beef	Seeding -20°C - 2 month		1-5-1-8-4 (3.8)	Protocol 1	+	+
197	Pavé de bœuf mariné à l'échalote surgelé	Marinated beef meat	S. Newport 586	Beef meat	Seeding 4°C 48h	/	3-6-1-5-7 (4.4)	Protocol 1	-	-
198	Pavé de bœuf mariné aux 3 poivres surgelés	Marinated beef meat	S. Newport 586	Beef meat	Seeding 4°C 48h	/	3-6-1-5-7 (4.4)	Protocol 1	-	-
199	Carpaccio parmesan huile	Carpaccio	S. Panama 8	Beef meat	Seeding 4°C 48h	/	2-1-3-4-2 (2.4)	Protocol 1	-	-
200	Carpaccio huile et vinaigre balsamique	Carpaccio	S. Panama 8	Beef meat	Seeding 4°C 48h	/	2-1-3-4-2 (2.4)	Protocol 1	+	+
201	Carpaccio pistou	Carpaccio	S. Panama 8	Beef meat	Seeding 4°C 48h	/	2-1-3-4-2 (2.4)	Protocol 1	+	+
202	Carpaccio aux éclats de truffe et huile d'olive	Carpaccio	S.Give 436	Beef meat	Seeding 4°C 48h	/	6-1-3-8-4 (4.4)	Protocol 1	+	+
203	Pavé de rumsteak aux 3 poivres	Seasoned beef trim	S. Give 436	Beef meat	Seeding 4°C 48h	/	6-1-3-8-4 (4.4)	Protocol 1	+	+
204	Pavé de rumsteak à l'échalote	Seasoned beef trim	S. Give 436	Beef meat	Seeding 4°C 48h	/	6-1-3-8-4 (4.4)	Protocol 1	+	+
205	Carpaccio basilic et marinade	Carpaccio	S. Infantis 128	Beef meat	Seeding 4°C 48h	/	5-2-2-2-2 (2.6)	Protocol 1	+	+
206	Pavé de bœuf mariné à l'échalote	Marinated beef meat	S. Infantis 128	Beef meat	Seeding 4°C 48h	/	5-2-2-2-2 (2.6)	Protocol 1	-	-
624	Rumsteak marinés aux trois poivres	Marinated beef trim	S. Enteritidis Ad2294	Beef	Seeding 4°C 48h	/	2-0-0-1-2	Protocol 1	-	-
625	Carpaccio Basilic	Carpaccio	S. Enteritidis Ad2294	Beef	Seeding 4°C 48h	/	2-0-0-1-2	Protocol 1	+	+
3277	Lait de suite AR 6 mois	Milk infant formula without probiotics	S. Anatum Ad298	Milk powder	Spiking - HT 56° 8min	1.71	3-5-3-6-2 (3.8)	Protocol 2	+	+
3272	Lait de suite 6-12 mois	Milk infant formula without probiotics	S. Typhimurium 4	Milk powder	Spiking - HT 56° 8min	0.97	16-14-17-16-16 (15.8)	Protocol 2	+	+
3273	Lait de suite HA 0-6 mois	Milk infant formula without probiotics	S. Typhimurium 4	Milk powder	Spiking - HT 56° 8min	0.97	16-14-17-16-16 (15.8)	Protocol 2	+	+
3276	Lait de suite saveur vanille 1-3 ans	Milk infant formula without probiotics	S. Anatum Ad298	Milk powder	Spiking - HT 56° 8min	1.71	3-5-3-6-2 (3.8)	Protocol 2	+	+
3278	Lait de suite 6 BIO	Milk infant formula without probiotics	S. Anatum Ad298	Milk powder	Spiking - HT 56° 8min	1.71	3-5-3-6-2 (3.8)	Protocol 2	+	-

N° Sample	Product	Product	Artificial contaminations (spiking protocol)					Enrichment broth	Global result pooled	Global result individual
			Strain	Origin	Injury protocol	Injury measurement	Inoculation level CFU/sample			
3279	Lait de suite 6 mois	Milk infant formula without probiotics	S. Anatum Ad298	Milk powder	Spiking - HT 56° 8min	1.71	3-5-3-6-2 (3.8)	Protocol 2	-	-
3280	Lait écrémé BIO en poudre	Milk powder	S. Ohio Ad1482	Milk powder	Spiking - HT 56° 8min	0.72	0-1-0-2-0 (0.6)	Protocol 2	-	-
3281	Lait entier en poudre	Milk powder	S. Ohio Ad1482	Milk powder	Spiking - HT 56° 8min	0.72	0-1-0-2-0 (0.6)	Protocol 2	+	+
3282	Lait écrémé en poudre	Milk powder	S. Ohio Ad1482	Milk powder	Spiking - HT 56° 8min	0.72	0-1-0-2-0 (0.6)	Protocol 2	-	-
3283	Lait écrémé en poudre	Milk powder	S. Ohio Ad1482	Milk powder	Spiking - HT 56° 8min	0.72	0-1-0-2-0 (0.6)	Protocol 2	-	-
3494	Lait de suite AE 6-12 mois	Milk infant formula without probiotics	S. Infantis 401B	Raw milk	Spiking - HT 56° 8min	0.93	2-2-3-2-3 (2.4)	Protocol 2	+	+
3495	Lait de suite FE 0-6 mois	Milk infant formula without probiotics	S. Infantis 401B	Raw milk	Spiking - HT 56° 8min	0.93	2-2-3-2-3 (2.4)	Protocol 2	+	+
3496	Lait de suite O 0-6 mois	Milk infant formula without probiotics	S. Montevideo 510	Raw milk	Spiking - HT 56° 8min	0.70	0-1-1-0-1 (0.6)	Protocol 2	+	+
3497	Lait de suite +6 mois	Milk infant formula without probiotics	S. Montevideo 510	Raw milk	Spiking - HT 56° 8min	0.70	0-1-1-0-1 (0.6)	Protocol 2	-	-
3498	Lait écrémé en poudre	Milk powder	S. Mbandaka Ad 1722	Raw milk	Spiking - HT 56° 8min	1.39	2-3-1-4-4 (2.8)	Protocol 2	-	-
3612	Lait naissance avec probiotiques 0,1% (*Lactobacillus reuteri* et *S.* Thermophilus)	Milk infant formula with probiotics 0,1% (*Lactobacillus reuteri* and *S.* Thermophilus)	S. Mbandaka Ad 1722	Raw milk	Spiking - HT 56° 8min	0.86	0-1-0-2-2 (1.0)	Protocol 2	-	+
3604	Lait ribot	Fermented milk	S.Tennessee Ad 1171	Dairy product	Spiking - TS pH4 4 months	1.52	4-10-7-11-5 (7.4)	Protocol 2	+	+
3605	Lait ribot	Fermented milk	S. Dublin Ad 1336	Dairy product	Spiking - TS pH4 4 months	0.52	2-4-4-4-6 (4.0)	Protocol 2	+	+
3606	Lait ribot	Fermented milk	S. Montevideo 604	Raw milk	Spiking - TS pH4 2,5 months	0.85	7-6-3-7-10 (6.6)	Protocol 2	+	+
3607	Lait ribot	Fermented milk	S. Dublin Ad 1336	Dairy product	Spiking - TS pH4 4 months	0.52	2-4-4-4-6 (4.0)	Protocol 2	+	+
3608	Faisselle	Fermented milk	S. Dublin Ad 1336	Dairy product	Spiking - TS pH4 4 months	0.52	2-4-4-4-6 (4.0)	Protocol 2	+	+
3609	Fromage blanc	Fermented yoghurts	S. Montevideo 604	Raw milk	Spiking - TS pH4 2,5 months	0.85	7-6-3-7-10 (6.6)	Protocol 2	+	+
3610	Petit suisse	Fermented yoghurts	S. Montevideo 604	Raw milk	Spiking - TS pH4 2,5 months	0.85	7-6-3-7-10 (6.6)	Protocol 2	+	+
3611	Yaourt à la grecque	Fermented yoghurts	S. Tennessee Ad 1171	Dairy product	Spiking - TS pH4 4 months	1.52	4-10-7-11-5 (7.4)	Protocol 2	+	+
3613	Lait de suite transit avec probiotiques 0,1% (*Lactobacillus reuteri* et S. Thermophilus)	Milk infant formula with probiotics 0,1% (*Lactobacillus reuteri* and S. Thermophilus)	S. Mbandaka Ad 1722	Raw milk	Spiking - HT 56° 8min	0.86	0-1-0-2-2 (1.0)	Protocol 2	+	+
3614	Lait de suite AR avec probiotiques (Bifidobacterium et ferments lactiques)	Milk infant formula with probiotics (Bifidobacterium and Lactic ferments)	S. Montevideo Ad 912	Raw milk	Spiking - HT 56° 8min	0.80	2-1-0-0-0 (0.6)	Protocol 2	-	-
3615	Lait de suite avec probiotique (*Bifidobacterium* et ferments lactiques)	Milk infant formula with probiotics (*Bifidobacterium* and Lactic ferments)	S. Montevideo Ad 912	Raw milk	HT 56° 8min	0.80	2-1-0-0-0 (0.6)	Protocol 2	-	-
3701	Lait frais demi-écrémé	Pasteurized milk	S. Montevideo 604	Raw milk - Spiking	4°C 4 months	>0.90	7-7-8-6-6 (6.8)	Protocol 2	+	+
3702	Lait demi-écrémé	Pasteurized milk	S. Indiana Ad 174	Raw milk - Spiking	4°C 4 months	>1.48	6-9-6-2-3 (5.2)	Protocol 2	+	+
3703	Lait entier	Pasteurized milk	S. Meleagridis 505	Raw milk - Spiking	HT 56° 8min	1.30	2-1-1-5-2 (2.2)	Protocol 2	+	+
3704	Lait demi-écrémé	Pasteurized milk	S. Infantis 401B	Raw milk - Spiking	HT 56° 8min	1.18	1-1-0-2-0 (0.8)	Protocol 2	+	+
3705	Dessert lacté saveur crème brûlée	Dairy dessert	S. Indiana Ad 174	Raw milk - Spiking	4°C 4 months	>1.48	6-9-6-2-3 (5.2)	Protocol 2	+	+
3706	Danette vanille	Dairy dessert	S. Meleagridis 505	Raw milk - Spiking	4°C 2,5 months	1.87	5-6-7-6-9 (6.6)	Protocol 2	+	+
3707	Crème dessert au chocolat	Dairy dessert	S. Meleagridis 505	Raw milk - Spiking	HT 56° 8min	1.30	2-1-1-5-2 (2.2)	Protocol 2	+	+
3708	Crème dessert au chocolat	Dairy dessert	S. Infantis 401B	Raw milk - Spiking	HT 56° 8min	1.18	1-1-0-2-0 (0.8)	Protocol 2	+	+
3709	Fromage fondu	Cream cheese	S. Meleagridis 505	Raw milk - Spiking	4°C 2,5 months	1.87	5-6-7-6-9 (6.6)	Protocol 2	+	+
3710	Fromage fondu	Cream cheese	S. Montevideo 604	Raw milk - Spiking	4°C 4 months	>0.90	7-7-8-6-6 (6.8)	Protocol 2	+	+
3711	Fromage fondu pour hamburger	Cream cheese	S. Meleagridis 505	Raw milk - Spiking	HT 56° 8min	1.30	2-1-1-5-2 (2.2)	Protocol 2	+	+
3712	Fromage carré frais	Cream cheese	S. Infantis 401B	Raw milk - Spiking	HT 56° 8min	1.18	1-1-0-2-0 (0.8)	Protocol 2	+	+
3337	Poudre de cacao 100%	Cocoa powder 100%	S. Stanley Ad1688	Environment (Chocolate industry)	Spiking - Lyophilised strain / contact 5 days	0.31	3.0	Protocol 3	-	-
3338	Poudre de cacao 100%	Cocoa powder 100%	S. Stanley Ad1688	Environment (Chocolate industry)	Spiking - Lyophilised strain / contact 5 days	0.31	3.0	Protocol 3	+	+
3339	Poudre de cacao 100%	Cocoa powder 100%	S. Braenderup Ad1661	Environment (Chocolate industry)	Spiking - Lyophilised strain / contact 5 days	1.04	3.3	Protocol 3	-	-
3340	Poudre de cacao 100%	Cocoa powder 100%	S. Braenderup Ad1661	Environment (Chocolate industry)	Spiking - Lyophilised strain / contact 5 days	1.04	3.3	Protocol 3	+	+
3343	Poudre de cacao 100%	Cocoa powder 100%	S. Typhimurium Ad1333	Tiramisu	Spiking - Lyophilised strain / contact 5 days	0.55	2.5	Protocol 3	+	+
3345	Poudre de cacao 100%	Cocoa powder 100%	S. Typhimurium Ad2034	Cocoa beans	Spiking - Lyophilised strain / contact 5 days	0.40	2.5	Protocol 3	+	+
3336	Poudre de cacao 100%	Cocoa powder 100%	S. Bareilly Ad1687	Environment (Chocolate industry)	Spiking - Lyophilised strain / contact 5 days	0.32	2.5	Protocol 3	+	+

N° Sample	Product	Product	Artificial contaminations (spiking protocol)					Enrichment broth	Global result pooled	Global result individual
			Strain	Origin	Injury protocol	Injury measurement	Inoculation level CFU/sample			
3341	Poudre de cacao 100%	Cocoa powder 100%	S. Agona Ad1483	Tiramisu	Spiking - Lyophilised strain / contact 5 days	0.31	4.0	Protocol 3	+	+
6510	Poudre de cacao 100% 1	Cocoa powder 100%	S. Infantis Ad1684	Cocoa	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
6511	Poudre de cacao 100% 2	Cocoa powder 100%	S. Oranienburg Ad1724	Infant cereals	Seeding - Lyophilised strain / contact 60 days	/	0.5	Protocol 3	-	-
6512	Poudre de cacao 100% 3	Cocoa powder 100%	S. Virchow Ad 1721	Infant cereals	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
3342	Poudre de cacao 100%	Cocoa powder 100%	S. Agona Ad1483	Tiramisu	Seeding - Lyophilised strain / contact 5 days	0.31	4.0	Protocol 3	+	+
6520	Poudre de cacao 100% 4	Cocoa powder 100%	S. Montevideo Ad 1686	Gelatine	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
6521	Poudre de cacao 100% 5	Cocoa powder 100%	S. Bovismorbificans 728	Gelatine	Seeding - Lyophilised strain / contact 60 days	/	0.2	Protocol 3	-	-
6522	Poudre de cacao 100% 6	Cocoa powder 100%	S. Stanley Ad1688	Environment (Chocolate industry)	Seeding - Lyophilised strain / contact 60 days	/	0.2	Protocol 3	+	+
6524	Poudre de chocolat instantané	Cocoa powder	S. Virchow Ad 1721	Infant cereals	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
3344	Poudre de cacao 100%	Cocoa powder 100%	S. Typhimurium Ad1333	Tiramisu	Spiking - Lyophilised strain / contact 5 days	0.55	2.5	Protocol 3	+	+
6532	Poudre de cacao 100% 9	Cocoa powder 100%	S. Virchow Ad 1721	Infant cereals	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
6530	Poudre de cacao 100% 7	Cocoa powder 100%	S. Infantis Ad1684	Cocoa	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	+	+
6535	Poudre cacaotée pour chocolat instantané	Cocoa powder	S. Infantis Ad1684	Cocoa	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
6563	Poudre de cacao 100%	Cocoa powder 100%	S. Montevideo Ad 1686	Gelatine	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
216	Poudre de cacao 100%	Cocoa powder (100%)	S.Typhimurium Ad1682	Chocolate	Seeding lyophilysate 20°C 15 days	/	0-2-0-1-0-1-0-0-0-1 (5)	Protocol 3	+	+
217	Poudre de cacao	Cocoa powder	S. Virchow Ad1721	Cereals	Seeding lyophilysate 20°C 15 days	/	0-1-0-0-0-0-1-0-0-0 (2)	Protocol 3	+	+
6531	Poudre de cacao 100% 8	Cocoa powder 100%	S. Oranienburg Ad1724	Infant cereals	Lyophilised strain / contact 60 days	/	0.5	Protocol 3	+	+
6534	Poudre de cacao 32%	Cocoa powder 32%	S. Stanley Ad1688	Environment (Chocolate industry)	Seeding - Lyophilised strain / contact 60 days	/	0.2	Protocol 3	+	+
6513	Tablette chocolat noir 70%	70% Black chocolate bar	S. Bovismorbificans 728	Gelatine	Seeding - Lyophilised strain / contact 60 days	/	0.2	Protocol 3	-	-
6515	Chocolat pistoles	Coins of black chocolate	S. Infantis Ad1684	Cocoa	Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
6523	Chocolat pépites	Chocolate chips	S. Oranienburg Ad1724	Infant cereals	Lyophilised strain / contact 60 days	/	0.5	Protocol 3	-	-
6525	Vermicelles saveur chocolat	Chocolate Vermicelli	S. Montevideo Ad 1686	Gelatine	Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
6514	Pépites chocolat	Chocolate chips	S. Stanley Ad1688	Environment (Chocolate industry)	Lyophilised strain / contact 60 days	/	0.2	Protocol 3	+	+
6533	Pépites de chocolat noir 70% cacao	Black chocolate chips with 70% cocoa	S. Bovismorbificans 728	Gelatine	Lyophilised strain / contact 60 days	/	0.2	Protocol 3	-	-
219	Billes de chocolat	Chocolates balls	S. Typhimurium Ad1682	Chocolate	Spiking 58°c 8min	2.1	1-2-1-2-1 (1.4)	Protocol 3	+	+
220	Tablette de chocolat noir	Chocolate bar	S. Braenderup Ad1661	Chocolate industry	Spiking 58°c 8min	3.0	2-1-2-2-2 (1.8)	Protocol 3	+	+
221	Vermicelles chocolat	Chocolate Vermicelli	S. Typhimurium Ad1682	Chocolate	Seeding lyophilysate 20°C 15 days	/	0-2-0-1-0-1-0-0-0-1 (5)	Protocol 3	+	+
222	Pépites de chocolat	Chocolate ships	S. Braenderup Ad1661	Chocolate industry	Seeding lyophilysate 20°C 15 days	/	0-1-0-0-2-0-0-1-1-1 (6)	Protocol 3	+	+
223	Pépites de chocolat noir	Chocolate ships	S. Virchow Ad1721	Cereals	Seeding lyophilysate 20°C 15 days	/	0-1-0-0-0-0-1-0-0-0 (2)	Protocol 3	+	+
224	Tablette de chocolat au lait	Milk chocolate bar	S. Typhimurium Ad1682	Chocolate	Seeding lyophilysate 20°C 15 days	/	0-2-0-1-0-1-0-0-0-1 (5)	Protocol 3	+	+
226	Tablette de chocolat noir	Chocolate bar	S. Bareilly Ad1687	Chocolate industry	Spiking 58°c 8min	2.1	2-2-1-0-1 (1.6)	Protocol 3	-	-
218	Crème au chocolat	Cocoa based dessert	S. Typhimurium Ad1682	Chocolate	Spiking 58°c 8min	2.1	1-2-1-2-1 (1.4)	Protocol 3	+	+
225	Mousse au chocolat	Cocoa mousse	S. Bareilly Ad1687	Chocolate industry	Spiking 58°c 8min	2.1	2-2-1-0-1 (1.6)	Protocol 3	+	+
6516	Coques cacao	Chocolate shells	S. Infantis Ad1684	Cocoa	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
6517	Fèves cacao	Cocoa beans	S. Oranienburg Ad1724	Infant cereals	Seeding - Lyophilised strain / contact 60 days	/	0.5	Protocol 3	-	-

N° Sample	Product	Product	Artificial contaminations (spiking protocol)					Enrichment broth	Global result pooled	Global result individual
			Strain	Origin	Injury protocol	Injury measurement	Inoculation level CFU/sample			
6518	Beurre de cacao 1	Cocoa butter	S. Oranienburg Ad1724	Infant cereals	Seeding - Lyophilised strain / contact 60 days	/	0.5	Protocol 3	+	+
6519	Beurre de cacao 2	Cocoa butter	S. Virchow Ad 1721	Infant cereals	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
6526	Beurre de cacao 2	Cocoa butter	S. Virchow Ad 1721	Infant cereals	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
6527	Masse de cacao 1	Cocoa mass	S. Montevideo Ad 1686	Gelatine	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
6528	Masse de cacao 2	Cocoa mass	S. Montevideo Ad 1686	Gelatine	Seeding - Lyophilised strain / contact 60 days	/	0	Protocol 3	-	-
6529	Féves de cacao non stérilisé	Cocoa beans	S. Bovismorbificans 728	Gelatine	Seeding - Lyophilised strain / contact 60 days	/	0.2	Protocol 3	-	-
6536	Marre de chocolat	Cocoa mass	S. Bovismorbificans 728	Gelatine	Seeding - Lyophilised strain / contact 60 days	/	0.2	Protocol 3	+	+
6537	Marre de chocolat	Cocoa mass	S. Stanley Ad1688	Environment (Chocolate industry)	Seeding - Lyophilised strain / contact 60 days	/	0.2	Protocol 3	+	+
6538	Marre de chocolat	Cocoa mass	S. Stanley Ad1688	Environment (Chocolate industry)	Seeding - Lyophilised strain / contact 60 days	/	0.2	Protocol 3	+	+
227	Masse de cacao	Cocoa mass	S. Bovis morbificans 728	Gelatine	Seeding lyophilysed strain 20°C 15 days	/	0-0-1-0-0-0-0-2-0-0 (3)	Protocol 3	+	+
228	Masse de cacao	Cocoa mass	S. Braenderup Ad1661	Chocolate industry	Seeding lyophilysed strain 20°C 15 days	/	0-1-0-0-2-0-0-1-1-1 (6)	Protocol 3	+	+
229	Liqueur cacao	Cocoa liquor	S. Bovis morbificans 728	Gelatine	Seeding l lyophilysed strain 20°C 15 days	/	0-0-1-0-0-0-0-2-0-0 (3)	Protocol 3	+	+
230	Liqueur cacao	Cocoa liquor	S. Bareilly Ad1687	Chocolate industry	Seeding lyophilysed strain 20°C 15 days	/	0-0-0-0-1-1-0-2-0-0 (4)	Protocol 3	+	+
231	Fèves de cacao	Cocoa beans	S. Orianenburg Ad1724	Cereals	Seeding lyophilysed strain 20°C 15 days	/	1-1-1-1-0-0-0-0-1-1 (6)	Protocol 3	-	-
232	Fèves de cacao	Cocoa beans	S. Virchow Ad1721	Cereals	Seeding lyophilysed strain 20°C 15 days	/	0-1-0-0-0-0-1-0-0-0 (2)	Protocol 3	+	+
233	Coques cacao	Cocoa shells	S. Bareilly Ad1687	Chocolate industry	Seeding lyophilysed strain 20°C 15 days	/	0-0-0-0-1-1-0-2-0-0 (4)	Protocol 3	+	+

Appendix 4 – Relative accuracy: raw data (Initial validation 2013 and Extension study 2016 and Renewal study 2017)

Bold typing : artificially inoculated samples

***Salmonella* detection results:**

m:	minority level of target analyte
M :	majority level of target analyte
P:	pure culture level of target analyte
1/2 :	50% level of target analyte
-:	no typical colonies but presence of background microflora
st:	plate without any colony
d:	doubtful result
i:	PCR inhibition
PA:	positive agreement
NA:	negative agreement
ND:	negative deviation
PD:	positive deviation
PPNA:	positive presumptive negative agreement
PPND :	positive presumptive negative deviation
*:	PCR result after dilution 1/6
**:	PCR result after dilution 1/10
ni:	non isolated colonies

Initial validation study (2013)
Extension study (2016)
Renewal study (2017)

RAW BEEF MEATS (fresh and frozen, seasoned or not)																											
N° Sample	Product (French name)	Product	Enrichment broth	Global result pooled	Global result individual	Reference method: ISO 6579 or ISO 6579-1 ♦					Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates After enrichment incubation 18h at 37°C														Category	Type
						RVS broth		MKTTn broth		Result	Immunoseparation - Pooled samples								Immunoseparation - Individual samples							
						XLD	ASAP	XLD	ASAP		N° positive sample	N° negative samples	XLD	*Brilliance* Salmonella	Latex test	Reference method confirmatory tests (XLD)	Final result	Agree-ment	XLD	*Brilliance* Salmonella	Latex and reference method confirmatory tests	Final result	Agree-ment		
3224	Steak haché	Ground beef	Protocol 1	+	+	-	-	-	-	-	3224	3226 to 3234	+m (1) ni	+1/2	+	+	+	PD	+m ni	+m	+	+	PD	1	a
3219	**Steak haché pur boeuf**	**Ground beef**	Protocol 1	+	+	+1/2	+M	+M	+M	+	3219	3226 to 3234	+m ni	+M	+	+	+	PA	+m	+M	+	+	PA	1	a
3220	**Steak haché**	**Ground beef**	Protocol 1	+	+	+m	+p	+M	+M	+	3220	3226 to 3234	+m	+M	+	+	+	PA	+1/2	+M	+	+	PA	1	a
3221	**Steak haché**	**Ground beef**	Protocol 1	+	+	+m	+M	+M	+p	+	3221	3226 to 3234	+m ni	+m	+	+	+	PA	-	+M	+	+	PA	1	a
3222	**Steak haché**	**Ground beef**	Protocol 1	+	+	+M	+M	+1/2	+M	+	3222	3226 to 3234	-	+1/2	+	+	+	PA	-	+1/2	+	+	PA	1	a
3223	Steak haché	Ground beef	Protocol 1	-	-	-	-	-	-	-	3223	3226 to 3234	-	-			-	NA	-	-		-	NA	1	a
3225	Steak haché	Ground beef	Protocol 1	-	-	-	-	-	-	-	3225	3226 to 3234	-	-			-	NA	-	-		-	NA	1	a
3226	Steak haché	Ground beef	Protocol 1	-	-	-	-	-	-	-	/	3226	-	-			-	NA	-	-		-	NA	1	a
3227	Steak haché	Ground beef	Protocol 1	-	-	-	-	-	-	-	/	3227	-	-			-	NA	-	-		-	NA	1	a
3228	Steak haché	Ground beef	Protocol 1	-	-	-	-	-	-	-	/	3228	-	-			-	NA	-	-		-	NA	1	a
3229	Steak haché	Ground beef	Protocol 1	-	-	-	-	-	-	-	/	3229	-	-			-	NA	-	-		-	NA	1	a
6500	**Steak haché 20% MG**	**Ground beef**	Protocol 1	-	-	-	-	-	-	-	6500	01 to 09	-	-			-	NA	-	-		-	NA	1	a
6501	**Egréné de bœuf 15% MG**	**Beef trim**	Protocol 1	-	-	-	-	-	-	-	6501	01 to 09	-	-			-	NA	-	-		-	NA	1	a
6502	**Egréné de bœuf 15% MG**	**Beef trim**	Protocol 1	+	+	+m	+m	+m	+1/2	+	6502	01 to 09	+m	+1/2	+	+	+	PA	+p	+p	+	+	PA	1	a
6507	**Steak haché bœuf hallal**	**Ground beef**	Protocol 1	+	+	+M	+M	+M	+p	+	6507	01 to 09	+m	+m	+	+	+	PA	+m	+M	+	+	PA	1	a
6509	**Steak haché bœuf hallal**	**Ground beef**	Protocol 1		+	-	-	-	-	-	6509	01 to 09	+m	+m	+	+	+	PD	+m	+m	+	+	PD	1	a
01	Haché pur bœuf 20%MG	Ground beef 20% fat	Protocol 1	-	-	-	-	-	-	-	/	01	-	-			-	NA	-	-		-	NA	1	a
02	Steak haché pur bœuf 20%MG	Ground beef 20%fat	Protocol 1	-	-	-	-	-	-	-	/	02	-	-			-	NA	-	-		-	NA	1	a
03	Steak haché pur bœuf halal	Ground beef	Protocol 1	-	-	st	st	st	st	-	/	03	-	-			-	NA	-	-		-	NA	1	a
189	**Haché de bœuf surgelé**	**Frozen ground beef**	Protocol 1	+	+	+M	+p	+1/2	+1/2	+	189	207 to 215	+m	+m	+	+	+	PA	+p	+p	+	+	PA	1	a
190	**Haché pur bœuf 20% MG surgelé**	**Frozen ground beef (20% fat)**	Protocol 1	+	+	+M	+M	+m	+1/2	+	190	207 to 215	+m	+m	+	+	+	PA	+m	+m	+	+	PA	1	a
191	**Steak pur bœuf surgelé**	**Frozen beef meat**	Protocol 1	+	+	+M	+M	+1/2	+1/2	+	191	207 to 215	+md	+md	+	+	+	PA	+md	+md	+	+	PA	1	a
192	**Steak haché surgelé**	**Frozen ground beef**	Protocol 1	-	-	-	-	-	-	-	192	207 to 215	-	-			-	NA	-	-	-	-	NA	1	a
212	Haché pur bœuf surgelé	Frozen ground beef	Protocol 1	-	-	-	-	-	-	-	/	212	-	-			-	NA	-	-	-	-	NA	1	a
213	Steak haché surgelé	Frozen ground beef	Protocol 1	-	-	-	-	-	-	-	/	213	-	-			-	NA	-	-	-	-	NA	1	a
214	Steak haché 15% MG surgelé	Frozen ground beef (15% fat)	Protocol 1	-	-	-	-	-	-	-	/	214	-	-			-	NA	-	-	-	-	NA	1	a

♦ Analyses performed according to the COFRAC accreditation

RAW BEEF MEATS (fresh and frozen, seasoned or not)																												
N° Sample	Product (French name)	Product	Enrichment broth	Global result pooled	Global result individual	Reference method: ISO 6579 or ISO 6579-1 ♦					Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates															Category	Type
											After enrichment incubation 18h at 37°C																
						RVS broth		MKTTn broth			Immunoseparation - Pooled samples								Immunoseparation - Individual samples								
						XLD	ASAP	XLD	ASAP	Result	N° positive sample	N° negative samples	XLD	*Brilliance* Salmonella	Latex test	Reference method confirmatory tests (XLD)	Final result	Agree-ment	XLD	*Brilliance* Salmonella	Latex and reference method confirmatory tests	Final result	Agree-ment		
215	Haché pur bœuf 20% MG surgelé	Frozen ground beef (20% fat)	Protocol 1	-	-	st	st	-	st	-	/	215	-	-			-	NA	-	-	-	-	NA	1	a
629	Steak haché	Ground beef	Protocol 1	-	-	st	st	-	-	-	/	629	-	-			-	NA	-	-		-	NA	1	a
3211	**Rumsteak**	**Beef trim**	Protocol 1	+	+	+m	+p	+M	+p	+	3211	3226 to 3234	-	+1/2	+	+	+	PA	1/2 ni	+M	+	+	PA	1	b
3212	**Onglet**	**Beef trim**	Protocol 1	+	+	+m	+1/2	+M	+M	+	3212	3226 to 3234	-	+m (1) ni	+	+	+	PA	+m ni	+m	+	+	PA	1	b
3213	**Gite de noix**	**Beef trim**	Protocol 1	+	+	+M	+M	+M	+p	+	3213	3226 to 3234	+m ni	+M	+	+	+	PA	+m	+M	+	+	PA	1	b
3214	**Bavette**	**Beef trim**	Protocol 1	+	+	+m	+M	+M	+M	+	3214	3226 to 3234	-	+m ni	+	+	+	PA	+m ni	+m	+	+	PA	1	b
3216	**Tranche en tournedos**	**Beef trim**	Protocol 1	+	+	+m	+p	+M	+M	+	3216	3226 to 3234	+m	+M	+	+	+	PA	-	+M	+	+	PA	1	b
3217	**Gite de noix**	**Beef trim**	Protocol 1	+	+	+m	+M	+1/2	+p	+	3217	3226 to 3234	-	+M	+	+	+	PA	+m ni	+M	+	+	PA	1	b
3218	**Basse côtes**	**Beef trim**	Protocol 1	+	+	+m	+M	+M	+p	+	3218	3226 to 3234	-	+m ni	+	+	+	PA	+m ni	+m	+	+	PA	1	b
3230	Rumsteak	Beef trim	Protocol 1	-	-	-	-	-	-	-	/	3230	-	-			-	NA	-	-		-	NA	1	b
3231	Onglet	Beef trim	Protocol 1	-	-	-	-	-	-	-	/	3231	-	-			-	NA	-	-		-	NA	1	b
3232	Gite de noix	Beef trim	Protocol 1	-	-	-	-	-	-	-	/	3232	-	-			-	NA	-	-		-	NA	1	b
3233	Faux filet	Beef trim	Protocol 1	-	-	-	-	-	-	-	/	3233	-	-			-	NA	-	-		-	NA	1	b
3234	Tranche en tournedos	Beef trim	Protocol 1	-	-	-	-	-	-	-	/	3234	-	-			-	NA	-	-		-	NA	1	b
6504	**Pavé de bœuf mariné**	**Seasoned beef trim**	Protocol 1	+	+	+M	+M	+M	+p	+	6504	01 to 09	+m	+m	+	+	+	PA	+m	+M	+	+	PA	1	b
04	Viande bovine filet	Beef trim	Protocol 1	-	-	-	-	-	-	-	/	04	-	-			-	NA	-	-		-	NA	1	b
05	Viande bovine steak à griller	Beef steak	Protocol 1	-	-	-	-	-	-	-	/	05	-	-			-	NA	-	-		-	NA	1	b
06	Viande bovine Bavette	Beef trim	Protocol 1	-	-	-	-	-	-	-	/	06	-	-			-	NA	-	-		-	NA	1	b
07	Viande bovine Rumsteack tournedos	Beef trim	Protocol 1	-	-	-	-	-	-	-	/	07	-	-			-	NA	-	-		-	NA	1	b
193	**Viande bovine à bourguignon**	**Beef trim**	Protocol 1	+	+	+M	+M	+1/2	+1/2	+	193	207 to 215	+m	+m	+	+	+	PA	+m	+p	+	+	PA	1	b
194	**Bavette de flanchet**	**Beef trim**	Protocol 1	+	+	+M	+M	+p	+p	+	194	207 to 215	+m	+m	+	+	+	PA	+m	+M	+	+	PA	1	b
195	**Hampe à griller**	**Beef trim**	Protocol 1	+	+	+p	+p	+M	+M	+	195	207 to 215	+m	+m	+	+	+	PA	+m	+1/2	+	+	PA	1	b
196	**Bavette de flanchet surgelée**	**Frozen beef trim**	Protocol 1	+	+	+p	+p	+p	+p	+	196	207 to 215	+m	+m	+	+	+	PA	+M	+p	+	+	PA	1	b
207	**Entrecôte surgelée**	**Frozen beef trim**	Protocol 1	-	-	st	st	st	st	-	/	207	-	-			-	NA	st	-	-	-	NA	1	b
208	Effeuillé de charolais surgelé	Frozen beef trim	Protocol 1	-	-	-	-	-	-	-	/	208	-	-			-	NA	-	-	-	-	NA	1	b
209	Tournedos de filet surgelé	Frozen beef trim	Protocol 1	-	-	-	st	-	-	-	/	209	-	-			-	NA	-	-	-	-	NA	1	b
210	Pavé de bœuf mariné aux 3 poivres surgelés	Frozen marinated beef meat	Protocol 1	-	-	-	-	-	-	-	/	210	-	-			-	NA	-	-	-	-	NA	1	b
211	Pavé de rumsteak à l'échalote surgelé	Frozen seasoned beef trim	Protocol 1	-	-	-	-	-	-	-	/	211	-	-			-	NA	-	-	-	-	NA	1	b
626	Bavette d'aloyau	Beef trim	Protocol 1	-	-	-	-	-	-	-	/	626	-	-			-	NA	-	-		-	NA	1	b
627	Steak à griller	Beef trim	Protocol 1	-	-	-	-	-	-	-	/	627	-	-			-	NA	-	-		-	NA	1	b
628	Steak tartare	Ground beef	Protocol 1	-	-	st	st	-	-	-	/	628	-	-			-	NA	-	-		-	NA	1	b
630	Steak sous vide	Beef trim	Protocol 1	-	-	-	st	-	-	-	/	630	-	-			-	NA	-	-		-	NA	1	b

RAW BEEF MEATS (fresh and frozen, seasoned or not)																												
N° Sample	Product (French name)	Product	Enrichment broth	Global result pooled	Global result individual	Reference method: ISO 6579 or ISO 6579-1 ♦					Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates															Category	Type
											After enrichment incubation 18h at 37°C																
						RVS broth		MKTTn broth			Immunoseparation - Pooled samples								Immunoseparation - Individual samples								
						XLD	ASAP	XLD	ASAP	Result	N° positive sample	N° negative samples	XLD	*Brilliance* Salmonella	Latex test	Reference method confirmatory tests (XLD)	Final result	Agree-ment	XLD	*Brilliance* Salmonella	Latex and reference method confirmatory tests	Final result	Agree-ment		
6505	**Carpaccio huile et éclats noisette**	Seasoned raw beef trim	Protocol 1	**+**	**+**	+m	+1/2	+M	+p	+	6505	01 to 09	+m	+m	+	+	+	**PA**	+m	+M	+	+	**PA**	1	c
08	Carpaccio Parmesan	Beef carpaccio	Protocol 1	**-**	**-**	-	-	-	-	-	/	08	-	-			-	**NA**	-	-		-	**NA**	1	c
09	Carpaccio huile et éclats noisette	Seasoned beef carpaccio	Protocol 1	**-**	**-**	-	-	-	-	-	/	09	-	-			-	**NA**	-	-		-	**NA**	1	c
197	**Pavé de bœuf mariné à l'échalote surgelé**	**Marinated beef meat**	Protocol 1	**-**	**-**	-	-	-	-	-	197	207 to 215	-	-			-	**NA**	-	-	-	-	**NA**	1	c
198	**Pavé de bœuf mariné aux 3 poivres surgelés**	**Marinated beef meat**	Protocol 1	**-**	**-**	-	-	-	-	-	198	207 to 215	-	-			-	**NA**	-	-	-	-	**NA**	1	c
199	**Carpaccio parmesan huile**	**Carpaccio**	Protocol 1	**-**	**-**	st	st	st	st	-	199	207 to 215	-	-			-	**NA**	-	-	-	-	**NA**	1	c
200	**Carpaccio huile et vinaigre balsamique**	**Carpaccio**	Protocol 1	**+**	**+**	+p	+p	+p	+p	+	200	207 to 215	+m	+m	+	+	+	**PA**	+m	+p	+	+	**PA**	1	c
201	**Carpaccio pistou**	**Carpaccio**	Protocol 1	**+**	**+**	+p	+p	+p	+p	+	201	207 to 215	+M	+m	+	+	+	**PA**	+M	+M	+	+	**PA**	1	c
202	**Carpaccio aux éclats de truffe et huile d'olive**	**Carpaccio**	Protocol 1	**+**	**+**	+p	+p	+p	+p	+	202	207 to 215	+m	+m	+	+	+	**PA**	+M	+p	+	+	**PA**	1	c
203	**Pavé de rumsteak aux 3 poivres**	**Seasoned beef trim**	Protocol 1	**+**	**+**	+p	+p	+M	+M	+	203	207 to 215	+M	+m	+	+	+	**PA**	+M	+M	+	+	**PA**	1	c
204	**Pavé de rumsteak à l'échalote**	**Seasoned beef trim**	Protocol 1	**+**	**+**	+p	+p	+M	+p	+	204	207 to 215	+m	+m	+	+	+	**PA**	+M	+M	+	+	**PA**	1	c
205	**Carpaccio basilic et marinade**	**Carpaccio**	Protocol 1	**+**	**+**	+p	+p	+1/2	+M	+	205	207 to 215	-	-			-	**ND**	-	-	-	-	**ND**	1	c
206	**Pavé de bœuf mariné à l'échalote**	**Marinated beef meat**	Protocol 1	**-**	**-**	-	st	st	st	-	206	207 to 215	-	-			-	**NA**	-	-	-	-	**NA**	1	c
624	**Rumsteak marinés aux trois poivres**	**Marinated beef trim**	Protocol 1	**-**	**-**	-	-	-	-	-	624	626 to 630	-	-			-	**NA**	-	-		-	**NA**	1	c
625	**Carpaccio Basilic**	**Carpaccio**	Protocol 1	**+**	**+**	+M	+p	+m	+M	+	625	626 to 630	+m	+1/2	+	+	+	**PA**	+m	+M	+	+	**PA**	1	c
822	Pavé de rumsteak à l'échalote	Seasoned beef trim	Protocol 1	**-**	**-**	-	-	-	-	-	/	822	-	-			-	**NA**	-	-		-	**NA**	1	c
823	Haché à la bolognaise	Seasoned ground beef	Protocol 1	**-**	**-**	-	-	-	-	-	/	823	-	-			-	**NA**	-	-		-	**NA**	1	c
824	Carpaccio pur bœuf à l'huile d'olive	Carpaccio	Protocol 1	**-**	**-**	-	-	-	-	-	/	824	-	-			-	**NA**	-	-		-	**NA**	1	c
825	Carpaccio bœuf à l'huile de noisettes	Carpaccio	Protocol 1	**-**	**-**	-	-	-	-	-	/	825	-	-			-	**NA**	-	-		-	**NA**	1	c
826	Carpaccio de bœuf au pistou	Carpaccio	Protocol 1	**-**	**-**	-	-	-	-	-	/	826	-	-			-	**NA**	-	-		-	**NA**	1	c

HEAT-TREATED MILK AND DAIRY PRODUCTS																											
N° Sample	Product (French name)	Product	Enrichment broth	Global result pooled	Global result individual	Reference method: ISO 6579 or ISO 6579-1 ♦					Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates After enrichment incubation 18h at 37°C														Category	Type
						RVS broth		MKTTn broth			Immunoseparation - Pooled samples								Immunoseparation - Individual samples							
						XLD	ASAP	XLD	ASAP	Result	N° positive sample	N° negative samples	XLD	*Brilliance* Salmonella	Latex test	Reference method confirmatory tests (XLD)	Final result	Agree-ment	XLD	*Brilliance* Salmonella	Latex and reference method confirmatory tests	Final result	Agree-ment		
3277	**Lait de suite AR 6 mois**	**Milk infant formula without probiotics**	Protocol 2	**+**	**+**	st	st	st	st	-	3277	3284 to 3292	+p	+p	+	+	+	**PD**	+p	+p	+	+	**PD**	2	a
3272	**Lait de suite 6-12 mois**	**Milk infant formula without probiotics**	Protocol 2	**+**	**+**	+p	+p	+p	+p	+	3272	3284 to 3292	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	a
3273	**Lait de suite HA 0-6 mois**	**Milk infant formula without probiotics**	Protocol 2	**+**	**+**	+p	+p	+p	+p	+	3273	3284 to 3292	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	a
3276	**Lait de suite saveur vanille 1-3 ans**	**Milk infant formula without probiotics**	Protocol 2	**+**	**+**	+p	+p	+p	+p	+	3276	3284 to 3292	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	a
3278	**Lait de suite BIO 6 mois**	**Milk infant formula without probiotics**	Protocol 2	**+**	**+**	st	st	st	st	-	3278	3285 to 3293	+p	+p	+	+	+	**PD**	-	-	/	-	**NA**	2	a
3279	**Lait de suite 6 mois**	**Milk infant formula without probiotics**	Protocol 2	**-**	**-**	st	st	st	st	-	3279	3285 to 3293	-	-			-	**NA**	-	-		-	**NA**	2	a
3280	**Lait écrémé BIO en poudre**	**Milk powder**	Protocol 2	**-**	**-**	st	st	st	st	-	3280	3285 to 3293	-	-			-	**NA**	-	-		-	**NA**	2	a
3281	**Lait entier en poudre**	**Milk powder**	Protocol 2	**+**	**+**	+p	+p	+p	+p	+	3281	3285 to 3293	-	-			-	**ND**	-	-		-	**ND**	2	a
3282	**Lait écrémé en poudre**	**Milk powder**	Protocol 2	**-**	**-**	st	st	st	st	-	3282	3285 to 3293	-	-			-	**NA**	-	-		-	**NA**	2	a
3283	**Lait écrémé en poudre**	**Milk powder**	Protocol 2	**-**	**-**	st	st	st	st	-	3283	3285 to 3293	-	-			-	**NA**	-	-		-	**NA**	2	a
3284	Lait 1/2 écrémé en poudre	Milk powder	Protocol 2	**-**	**-**	st	st	st	st	-	/	3284	-	-			-	**NA**	-	-		-	**NA**	2	a
3285	Lait écrémé BIO en poudre	Milk powder	Protocol 2	**-**	**-**	st	st	st	st	-	/	3285	-	-			-	**NA**	-	-		-	**NA**	2	a
3286	Lait entier en poudre	Milk powder	Protocol 2	**-**	**-**	st	st	st	st	-	/	3286	-	-			-	**NA**	-	-		-	**NA**	2	a
3287	Lait 1/2 écrémé en poudre	Milk powder	Protocol 2	**-**	**-**	st	st	st	st	-	/	3287	-	-			-	**NA**	-	-		-	**NA**	2	a
3288	Lait de suite FE 0-6 mois	Milk infant formula without probiotics	Protocol 2	**-**	**-**	st	st	st	st	-	/	3288	-	-			-	**NA**	-	-		-	**NA**	2	a
3289	Lait de suite 6 mois	Milk infant formula without probiotics	Protocol 2	**-**	**-**	st	st	st	st	-	/	3289	-	-			-	**NA**	-	-		-	**NA**	2	a
3290	Lait de suite HA 6-12 mois	Milk infant formula without probiotics	Protocol 2	**-**	**-**	st	st	st	st	-	/	3290	-	-			-	**NA**	-	-		-	**NA**	2	a
3291	Lait de suite HA 0-6 mois	Milk infant formula without probiotics	Protocol 2	**-**	**-**	st	st	st	st	-	/	3291	-	-			-	**NA**	-	-		-	**NA**	2	a
3292	Lait de suite +6 mois	Milk infant formula without probiotics	Protocol 2	**-**	**-**	st	st	st	st	-	/	3292	-	-			-	**NA**	-	-		-	**NA**	2	a
3293	Lait de suite AE 6-12 mois	Milk infant formula without probiotics	Protocol 2	**-**	**-**	st	st	st	st	-	/	3293	-	-			-	**NA**	-	-		-	**NA**	2	a
3494	**Lait de suite AE 6-12 mois**	**Milk infant formula without probiotics**	Protocol 2	**+**	**+**	+p	+p	+p	+p	+	3494	3499 to 3507	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	a
3495	**Lait de suite FE 0-6 mois**	**Milk infant formula without probiotics**	Protocol 2	**+**	**+**	+p	+p	+p	+p	+	3495	3499 to 3507	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	a
3496	**Lait de suite O 0-6 mois**	**Milk infant formula without probiotics**	Protocol 2	**+**	**+**	+p	+p	+p	+p	+	3496	3499 to 3507	st	st			-	**ND**	st	st		-	**ND**	2	a
3497	**Lait de suite +6 mois**	**Milk infant formula without probiotics**	Protocol 2	**-**	**-**	st	st	st	st	-	3497	3499 to 3507	st	st			-	**NA**	st	st		-	**NA**	2	a
3498	**Lait écrémé en poudre**	**Milk powder**	Protocol 2	**-**	**-**	st	st	st	st	-	3498	3499 to 3507	st	st			-	**NA**	st	st		-	**NA**	2	a
3499	Lait relais 6-12 mois	Milk infant formula without probiotics	Protocol 2	**-**	**-**	st	st	st	st	-	/	3499	st	st			-	**NA**	st	st		-	**NA**	2	a

♦ Analyses performed according to the COFRAC accreditation

HEAT-TREATED MILK AND DAIRY PRODUCTS

N° Sample	Product (French name)	Product	Enrichment broth	Global result pooled	Global result individual	Reference method: ISO 6579 or ISO 6579-1 ♦					Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates After enrichment incubation 18h at 37°C													Category	Type
						RVS broth		MKTTn broth			Immunoseparation - Pooled samples								Immunoseparation - Individual samples						
						XLD	ASAP	XLD	ASAP	Result	N° positive sample	N° negative samples	XLD	*Brilliance* Salmonella	Latex test	Reference method confirmatory tests (XLD)	Final result	Agree-ment	XLD	*Brilliance* Salmonella	Latex and reference method confirmatory tests	Final result	Agree-ment		
3500	Lait de suite 6-12 mois	Milk infant formula without probiotics	Protocol 2	-	-	st	st	st	st	-	/	3500	st	st			-	NA	st	st		-	NA	2	a
3501	Lait de suite HA 0-6 mois	Milk infant formula without probiotics	Protocol 2	-	-	st	st	st	st	-	/	3501	st	st			-	NA	st	st		-	NA	2	a
3502	Lait de suite AE 0-6 mois	Milk infant formula without probiotics	Protocol 2	-	-	st	st	st	st	-	/	3502	st	st			-	NA	st	st		-	NA	2	a
3503	Lait de suite 6-12 mois	Milk infant formula without probiotics	Protocol 2	-	-	st	st	st	st	-	/	3503	st	st			-	NA	st	st		-	NA	2	a
3504	Lait de suite 0-6 mois	Milk infant formula without probiotics	Protocol 2	-	-	st	st	st	st	-	/	3504	st	st			-	NA	st	st		-	NA	2	a
3505	Lait de suite FE 6-12 mois	Milk infant formula without probiotics	Protocol 2	-	-	st	st	st	st	-	/	3505	st	st			-	NA	st	st		-	NA	2	a
3506	Lait de suite saveur vanille 1-3 ans	Milk infant formula without probiotics	Protocol 2	-	-	st	st	st	st	-	/	3506	st	st			-	NA	st	st		-	NA	2	a
3507	Lait écrémé en poudre	Milk powder	Protocol 2	-	-	st	st	st	st	-	/	3507	st	st			-	NA	st	st		-	NA	2	a
3612	**Lait naissance avec probiotiques 0,1% (Lactobacillus reuteri et S. Thermophilus)**	**Milk infant formula with probiotics 0,1% (Lactobacillus reuteri and S. Thermophilus)**	Protocol 2	-	+	st	st	st	st	-	3612	3617 to 3625	-	-			-	NA	-	+p	+	+	PD	2	b
3604	**Lait ribot**	**Fermented milk**	Protocol 2	+	+	+p	+p	+p	+p	+	3604	3616 to 3624	+M	+p	+	+	+	PA	+p	+p	+	+	PA	2	b
3605	**Lait ribot**	**Fermented milk**	Protocol 2	+	+	+p	-	+p	-	+	3605	3616 to 3624	+M	-	+	+	+	PA	+p	-	+	+	PA	2	b
3606	**Lait ribot**	**Fermented milk**	Protocol 2	+	+	+p	+p	+p	+p	+	3606	3616 to 3624	+M	+M	+	+	+	PA	+p	+p	+	+	PA	2	b
3607	**Lait ribot**	**Fermented milk**	Protocol 2	+	+	+p	-	+p	-	+	3607	3616 to 3624	+1/2	-	+	+	+	PA	+p	-	+	+	PA	2	b
3608	**Faisselle**	**Fermented milk**	Protocol 2	+	+	+p	-	+p	-	+	3608	3616 to 3624	+M	-	+	+	+	PA	+p	-	+	+	PA	2	b
3609	**Fromage blanc**	**Fermented yoghurts**	Protocol 2	+	+	+p	+p	+p	+p	+	3609	3616 to 3624	+M	+M	+	+	+	PA	+p	+p	+	+	PA	2	b
3610	**Petit suisse**	**Fermented yoghurts**	Protocol 2	+	+	+p	+p	+p	+p	+	3610	3617 to 3625	+M	+M	+	+	+	PA	+p	+p	+	+	PA	2	b
3611	**Yaourt à la grecque**	**Fermented yoghurts**	Protocol 2	+	+	+p	+p	+p	+p	+	3611	3617 to 3625	-	-			-	ND	st	st		-	ND	2	b
3613	**Lait de suite transit avec probiotiques 0,1% (Lactobacillus reuteri et S. Thermophilus)**	**Milk infant formula with probiotics 0,1% (Lactobacillus reuteri and S. Thermophilus)**	Protocol 2	+	+	st	st	-	+p	+	3613	3617 to 3625	-	-			-	ND	-	+(3)	+	+	PA	2	b
3614	**Lait de suite AR avec probiotiques (Bifidobacterium et ferments lactiques)**	**Milk infant formula with probiotics (Bifidobacterium and Lactic ferments)**	Protocol 2	-	-	st	st	st	st	-	3614	3617 to 3625	-	-			-	NA	st	st		-	NA	2	b
3615	**Lait de suite avec probiotique Bifidobacterium et ferments lactiques)**	**Milk infant formula with probiotics (Bifidobacterium and Lactic ferments)**	Protocol 2	-	-	st	st	st	st	-	3615	3617 to 3625	-	-			-	NA	st	st		-	NA	2	b
3616	Lait ribot	Fermented milk	Protocol 2	-	-	st	st	st	st	-	/	3616	st	st			-	NA	st	st		-	NA	2	b
3617	Lait ribot	Fermented milk	Protocol 2	-	-	st	st	st	st	-	/	3617	st	st			-	NA	st	st		-	NA	2	b
3618	Lait ribot	Fermented milk	Protocol 2	-	-	st	st	st	st	-	/	3618	st	st			-	NA	st	st		-	NA	2	b
3619	Faisselle	Fermented milk	Protocol 2	-	-	st	st	st	st	-	/	3619	st	st			-	NA	st	st		-	NA	2	b
3620	Petit suisse	Fermented yoghurts	Protocol 2	-	-	st	st	st	st	-	/	3620	st	st			-	NA	st	st		-	NA	2	b
3621	Yaourt à la grecque	Fermented yoghurts	Protocol 2	-	-	st	st	st	st	-	/	3621	st	st			-	NA	st	st		-	NA	2	b

HEAT-TREATED MILK AND DAIRY PRODUCTS

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						RVS broth		MKTTn broth			Immunoseparation - Pooled samples								Immunoseparation - Individual samples						
						XLD	ASAP	XLD	ASAP	Result	N° positive sample	N° negative samples	XLD	*Brilliance* Salmonella	Latex test	Reference method confirmatory tests (XLD)	Final result	Agree-ment	XLD	*Brilliance* Salmonella	Latex and reference method confirmatory tests	Final result	Agree-ment		
3622	Lait naissance avec probiotiques 0,1% (Lactobacillus reuteri et S. Thermophilus)	Milk infant formula with probiotics 0,1% (Lactobacillus reuteri and S. Thermophilus)	Protocol 2	-	-	st	st	st	st	-	/	3622	st	st			-	**NA**	st	st		-	**NA**	2	b
3623	Lait de suite transit avec probiotiques (Lactobacillus reuteri et S. Thermophilus)	Milk infant formula with probiotic (Lactobacillus reuteri and S. Thermophilus)	Protocol 2	-	-	st	st	st	st	-	/	3623	-	-			-	**NA**	st	st		-	**NA**	2	b
3624	Lait de suite AR avec probiotiques (Bifidobacterium et ferments lactiques)	Milk infant formula with probiotics (Bifidobacterium and Lactic ferments)	Protocol 2	-	-	st	st	st	st	-	/	3624	st	st			-	**NA**	st	st		-	**NA**	2	b
3625	Lait de suite Lactofidus (Bifidobacterium et ferments lactiques)	Milk infant formula with probiotics (Bifidobacterium and Lactic ferments)	Protocol 2	-	-	st	st	st	st	-	/	3625	st	st			-	**NA**	st	st		-	**NA**	2	b
3701	**Lait frais demi-écrémé**	**Pasteurized milk**	Protocol 2	+	+	+p	+p	+p	+p	+	3701	3713 to 3721	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	c
3702	**Lait demi-écrémé**	**Pasteurized milk**	Protocol 2	+	+	+p	+p	+p	+p	+	3702	3713 to 3721	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	c
3703	**Lait entier**	**Pasteurized milk**	Protocol 2	+	+	+p	+p	+p	+p	+	3703	3713 to 3721	+M	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	c
3704	**Lait demi-écrémé**	**Pasteurized milk**	Protocol 2	+	+	+p	+p	+p	+p	+	3704	3713 to 3721	+M	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	c
3705	**Dessert lacté saveur crème brûlée**	**Dairy dessert**	Protocol 2	+	+	+p	+p	+p	+p	+	3705	3713 to 3721	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	c
3706	**Danette vanille**	**Dairy dessert**	Protocol 2	+	+	+p	+p	+p	+p	+	3706	3713 to 3721	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	c
3707	**Crème dessert au chocolat**	**Dairy dessert**	Protocol 2	+	+	+p	+p	+p	+p	+	3707	3714 to 3722	+M	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	c
3708	**Crème dessert au chocolat**	**Dairy dessert**	Protocol 2	+	+	+p	+p	+p	+p	+	3708	3714 to 3722	+M	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	c
3709	**Fromage fondu**	**Cream cheese**	Protocol 2	+	+	+p	+p	+p	+p	+	3709	3714 to 3722	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	c
3710	**Fromage fondu**	**Cream cheese**	Protocol 2	+	+	+p	+p	+p	+p	+	3710	3714 to 3722	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	c
3711	**Fromage fondu pour hamburger**	**Cream cheese**	Protocol 2	+	+	+p	+p	+p	+p	+	3711	3714 to 3722	+M	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	c
3712	**Fromage carré frais**	**Cream cheese**	Protocol 2	+	+	+p	+p	+p	+p	+	3712	3714 to 3722	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	2	c
3713	Lait frais demi-écrémé	Pasteurized milk	Protocol 2	-	-	st	st	st	st	-	/	3713	st	st			-	**NA**	st	st		-	**NA**	2	c
3714	Lait demi-écrémé	Pasteurized milk	Protocol 2	-	-	st	st	st	st	-	/	3714	st	st			-	**NA**	st	st		-	**NA**	2	c
3715	Lait entier	Pasteurized milk	Protocol 2	-	-	st	st	st	st	-	/	3715	st	st			-	**NA**	st	st		-	**NA**	2	c
3716	Lait demi-écrémé	Pasteurized milk	Protocol 2	-	-	st	st	st	st	-	/	3716	st	st			-	**NA**	st	st		-	**NA**	2	c
3717	Danette crème brûlée	Dairy dessert	Protocol 2	-	-	st	st	st	st	-	/	3717	st	st			-	**NA**	st	st		-	**NA**	2	c
3718	Danette vanille	Dairy dessert	Protocol 2	-	-	st	st	st	st	-	/	3718	st	st			-	**NA**	st	st		-	**NA**	2	c
3719	Crème dessert au chocolat	Dairy dessert	Protocol 2	-	-	st	st	st	st	-	/	3719	st	st			-	**NA**	st	st		-	**NA**	2	c
3720	Fromage fondu	Cream cheese	Protocol 2	-	-	st	st	st	st	-	/	3720	st	st			-	**NA**	st	st		-	**NA**	2	c
3721	Fromage fondu	Cream cheese	Protocol 2	-	-	st	st	st	st	-	/	3721	-	-			-	**NA**	-	-		-	**NA**	2	c
3722	Fromage fondu pour hamburger	Cream cheese	Protocol 2	-	-	st	st	st	st	-	/	3722	st	st			-	**NA**	st	st		-	**NA**	2	c

COCOA AND COCOA PRODUCTS																											
N° Sample	Product (French name)	Product	Enrichment broth	Global result pooled	Global result individual	Reference method: ISO 6579 or ISO 6579-1 ♦					Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates After enrichment incubation 18h at 37°C														Category	Type
						RVS broth		MKTTn broth			Immunoseparation - Pooled samples								Immunoseparation - Individual samples							
						XLD	ASAP	XLD	ASAP	Result	N° positive sample	N° negative samples	XLD	*Brilliance* Salmonella	Latex test	Reference method confirmatory tests (XLD)	Final result	Agree-ment	XLD	*Brilliance* Salmonella	Latex and reference method confirmatory tests	Final result	Agree-ment		
3337	**Poudre de cacao 100%**	**Cocoa powder 100%**	Protocol 3	**-**	**-**	st	st	st	st	-	3337	3346 to 3354	st	st			-	**NA**	st	st		-	**NA**	3	a
3338	**Poudre de cacao 100%**	**Cocoa powder 100%**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	3338	3346 to 3354	st	st			-	**ND**	st	st		-	**ND**	3	a
3339	**Poudre de cacao 100%**	**Cocoa powder 100%**	Protocol 3	**-**	**-**	st	st	st	st	-	3339	3346 to 3354	st	st			-	**NA**	st	st		-	**NA**	3	a
3340	**Poudre de cacao 100%**	**Cocoa powder 100%**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	3340	3346 to 3354	+p	+p	+	+	+	**PA**	+p	+p	+	+	**PA**	3	a
3343	**Poudre de cacao 100%**	**Cocoa powder 100%**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	3343	3346 to 3354	st	st			-	**ND**	st	st		-	**ND**	3	a
3345	**Poudre de cacao 100%**	**Cocoa powder 100%**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	3345	3346 to 3354	st	st			-	**ND**	st	st		-	**ND**	3	a
3346	Poudre de cacao 100%	Cocoa powder 100%	Protocol 3	**-**	**-**	st	st	st	st	-	/	3346	st	st			-	**NA**	st	st		-	**NA**	3	a
3347	Poudre de cacao 100%	Cocoa powder 100%	Protocol 3	**-**	**-**	st	st	st	st	-	/	3347	st	st			-	**NA**	st	st		-	**NA**	3	a
3348	Poudre de cacao 100%	Cocoa powder 100%	Protocol 3	**-**	**-**	st	st	st	st	-	/	3348	st	st			-	**NA**	st	st		-	**NA**	3	a
3336	**Poudre de cacao 100%**	Cocoa powder 100%	Protocol 3	**+**	**+**	st	st	st	st	-	3336	3346 to 3354	+p	+p	+	+	+	**PD**	+p	+p	+	+	**PD**	3	a
3341	**Poudre de cacao 100%**	Cocoa powder 100%	Protocol 3	**+**	**+**	st	st	st	st	-	3341	3346 to 3354	+p	+p	+	+	+	**PD**	+p	+p	+	+	**PD**	3	a
6510	**Poudre de cacao 100% 1**	Cocoa powder 100%	Protocol 3	**-**	**-**	st	st	st	st	-	6510	8016 to 8024	-	-			-	**NA**	st	st		-	**NA**	3	a
6511	**Poudre de cacao 100% 2**	Cocoa powder 100%	Protocol 3	**-**	**-**	st	st	st	st	-	6511	8016 to 8024	-	-			-	**NA**	st	st		-	**NA**	3	a
6512	**Poudre de cacao 100% 3**	Cocoa powder 100%	Protocol 3	**-**	**-**	st	st	st	st	-	6512	8016 to 8024	-	-			-	**NA**	st	st		-	**NA**	3	a
3342	**Poudre de cacao 100%**	Cocoa powder 100%	Protocol 3	**+**	**+**	st	st	st	st	-	3342	3346 to 3354	+p	+p	+	+	+	**PD**	+p	+p	+	+	**PD**	3	a
6520	**Poudre de cacao 100% 4**	Cocoa powder 100%	Protocol 3	**-**	**-**	st	st	st	st	-	6520	8017 to 8025	-	-			-	**NA**	st	st		-	**NA**	3	a
6521	**Poudre de cacao 100% 5**	Cocoa powder 100%	Protocol 3	**-**	**-**	st	st	st	st	-	6521	8017 to 8025	-	-			-	**NA**	st	st		-	**NA**	3	a
6522	**Poudre de cacao 100% 6**	Cocoa powder 100%	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	6522	8017 to 8025	+m	+m	+	+	+	**PA**	+p	+p	+	+	**PA**	3	a
6524	**Poudre de chocolat instantané**	Cocoa powder	Protocol 3	**-**	**-**	st	st	st	st	-	6524	8017 to 8025	-	-			-	**NA**	st	st		-	**NA**	3	a
3344	**Poudre de cacao 100%**	Cocoa powder 100%	Protocol 3	**+**	**+**	st	st	st	st	-	3344	3346 to 3354	st	st			-	**NA**	+ p (5)	+ p (4)	+	+	**PD**	3	a
6532	**Poudre de cacao 100% 9**	Cocoa powder 100%	Protocol 3	**-**	**-**	st	st	st	st	-	6532	8092 to 8100	-	-			-	**NA**	st	st		-	**NA**	3	a
6530	**Poudre de cacao 100% 7**	Cocoa powder 100%	Protocol 3	**+**	**+**	st	st	st	st	-	6530	8092 to 8100	+p	+p	+	+	+	**PD**	+p	+p	+	+	**PD**	3	a
6535	**Poudre cacaotée pour chocolat instantané**	Cocoa powder	Protocol 3	**-**	**-**	st	st	-	-	-	6535	8093 to 8101	-	-			-	**NA**	st	st		-	**NA**	3	a
6563	**Poudre de cacao 100%**	Cocoa powder 100%	Protocol 3	**-**	**-**	st	st	st	st	-	6563	8093 to 8101	st	-			-	**NA**	st	st		-	**NA**	3	a
8019	Poudre 100% cacao intense	Cocoa powder	Protocol 3	**-**	**-**	st	st	st	st	-	/	8019	-	st			-	**NA**	st	st		-	**NA**	3	a

♦ Analyses performed according to the COFRAC accreditation

COCOA AND COCOA PRODUCTS																														
N° Sample	Product (French name)	Product	Enrichment broth	Global result pooled	Global result individual	Reference method: ISO 6579 or ISO 6579-1 ♦					Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates After enrichment incubation 18h at 37°C															Category	Type
						RVS broth		MKTTn broth			Immunoseparation - Pooled samples									Immunoseparation - Individual samples										
						XLD	ASAP	XLD	ASAP	Result	N° positive sample	N° negative samples	XLD	*Brilliance* Salmonella	Latex test	Reference method confirmatory tests (XLD)	Final result	Agree-ment	XLD	*Brilliance* Salmonella	Latex and reference method confirmatory tests	Final result	Agree-ment		
8023	Poudre chocolat caramel	Caramel and chocolate powder	Protocol 3	-	-	st	st	st	st	-	/	8023	st	st			-	NA	-	-		-	NA	3	a
8093	Poudre chocolat au lait	Milk chocolate powder	Protocol 3	-	-	st	st	st	st	-	/	8093	st	st			-	NA	st	st		-	NA	3	a
8096	Poudre chocolat fin et savoureux	Cocoa powder	Protocol 3	-	-	st	st	st	st	-	/	8096	st	st			-	NA	st	st		-	NA	3	a
8098	Poudre petit déjeuner	Cocoa powder	Protocol 3	-	-	st	st	st	st	-	/	8098	st	st			-	NA	st	st		-	NA	3	a
8100	Poudre cacaotée	Cocoa powder	Protocol 3	-	-	st	st	st	st	-	/	8100	st	st			-	NA	st	st		-	NA	3	a
216	**Poudre de cacao 100%**	**Cocoa powder (100%)**	Protocol 3	+	+	+p	+p	+p	+p	+	216	234 to 242	+M	+1/2	+	+	+	PA	+p	+p	+	+	PA	3	a
217	**Poudre de cacao**	**Cocoa powder**	Protocol 3	+	+	+p	+p	+p	+p	+	217	234 to 242	+M	+M	+	+	+	PA	+p	+p	+	+	PA	3	a
6531	**Poudre de cacao 100% 8**	**Cocoa powder 100%**	Protocol 3	+	+	st	st	st	st	-	6531	8092 to 8100	+p	+p	+	+	+	PD	+p	+p	+	+	PD	3	a
6534	**Poudre de cacao 32%**	**Cocoa powder 32%**	Protocol 3	+	+	st	st	st	st	-	6534	8093 to 8101	+1/2	+m	+	+	+	PD	+p	+p	+	+	PD	3	a
237	Poudre pour boisson chocolatée	Chocolate based product	Protocol 3	-	-	st	st	st	st	-	/	237	-	-			-	NA	-	-		-	NA	3	a
239	Arôme cacao 100%	Cocoa 100%	Protocol 3	-	-	st	st	st	st	-	/	239	-	-			-	NA	-	-		-	NA	3	a
240	Poudre cacao 100%	Cocoa powder (100%)	Protocol 3	-	-	st	st	st	st	-	/	240	-	-			-	NA	-	-		-	NA	3	a
241	Poudre chocolatée pour petit déjeuner 32% cacao	Chocolate based product (32%)	Protocol 3	-	-	st	st	st	st	-	/	241	-	-			-	NA	-	-		-	NA	3	a
6513	**Tablette chocolat noir 70%**	**70% Black chocolate bar**	Protocol 3	-	-	st	st	st	st	-	6513	8016 to 8024	-	-			-	NA	st	st		-	NA	3	b
6515	**Chocolat pistoles**	**Coins of black chocolate**	Protocol 3	-	-	st	st	st	st	-	6515	8016 to 8024	-	-			-	NA	st	st		-	NA	3	b
6523	**Chocolat pépites**	**Chocolate chips**	Protocol 3	-	-	st	st	st	st	-	6523	8017 to 8025	-	-			-	NA	-	-		-	NA	3	b
6525	**Vermicelles saveur chocolat**	**Chocolate Vermicelli**	Protocol 3	-	-	st	st	st	st	-	6525	8092 to 8100	-	st			-	NA	-	-		-	NA	3	b
6514	**Pépites chocolat**	**Chocolate chips**	Protocol 3	+	+	st	st	st	st	-	6514	8016 to 8024	+m	+m	+	+	+	PD	+p	+p	+	+	PD	3	b
6533	**Pépites de chocolat noir 70% cacao**	**Black chocolate chips with 70% cocoa**	Protocol 3	-	-	st	st	st	st	-	6533	8093 to 8101	-	-			-	NA	st	st		-	NA	3	b
8016	Pépites chocolat	Chocolate chips	Protocol 3	-	-	st	st	st	st	-	/	8016	st	st			-	NA	st	st		-	NA	3	b
8017	Crème cupcake chocolat	Chocolate cream	Protocol 3	-	-	st	st	st	st	-	/	8017	st	st			-	NA	st	st		-	NA	3	b
8018	Tablette mousse chocolat noir	Chocolate bar	Protocol 3	-	-	-	-	-	-	-	/	8018	-	-			-	NA	-	-		-	NA	3	b
8020	Tablette chocolat 70% cacao intense	Black chocolate bar with 70% of cocoa	Protocol 3	-	-	st	st	st	st	-	/	8020	-	st			-	NA	-	st		-	NA	3	b
8021	croc' trois chocolats	Black and milk chocolate chips	Protocol 3	-	-	st	st	st	st	-	/	8021	-	st			-	NA	st	-		-	NA	3	b
8022	Pépites chocolat noir 50% cacao	Black chocolate chips with 50% cocoa	Protocol 3	-	-	st	st	st	st	-	/	8022	st	st			-	NA	st	st		-	NA	3	b
8024	Tablette chocolat lait	Milk chocolate bar	Protocol 3	-	-	st	st	st	st	-	/	8024	st	st			-	NA	st	st		-	NA	3	b
8025	Vermicelles saveur chocolat	Chocolate Vermicelli	Protocol 3	-	-	st	st	st	st	-	/	8025	st	st			-	NA	st	st		-	NA	3	b
8092	Tablette éclat noir aux fèves cacao	Cocoa bean and chocolate bar	Protocol 3	-	-	st	st	st	st	-	/	8092	st	st			-	NA	st	st		-	NA	3	b
8094	Tablette noir dégustation 80% cacao corse	Black chocolate bar with 70% of cocoa	Protocol 3	-	-	st	st	st	st	-	/	8094	st	st			-	NA	st	st		-	NA	3	b
8095	Tablette extra fondant lait	Milk chocolate bar	Protocol 3	-	-	st	st	st	st	-	/	8095	st	st			-	NA	st	st		-	NA	3	b

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						RVS broth		MKTTn broth		Result	Immunoseparation - Pooled samples								Immunoseparation - Individual samples									
						XLD	ASAP	XLD	ASAP		N° positive sample	N° negative samples	XLD	*Brilliance* Salmonella	Latex test	Reference method confirmatory tests (XLD)	Final result	Agree-ment	XLD	*Brilliance* Salmonella	Latex and reference method confirmatory tests	Final result	Agree-ment		
8097	Pépites chocolat au lait	Milk chocolate chips	Protocol 3	-	-	st	st	st	st	-	/	8097	st	st			-	NA	st	st		-	NA	3	b
8099	Maxi pépites chocolat	Chocolate chips	Protocol 3	-	-	st	st	st	st	-	/	8099	st	st			-	NA	st	st		-	NA	3	b
219	**Billes de chocolat**	**Chocolate balls**	Protocol 3	+	+	+p	+p	+p	+p	+	219	234 to 242	-	-			-	ND	-	-		-	ND	3	b
220	**Tablette de chocolat noir**	**Chocolate bar**	Protocol 3	+	+	+p	+p	+p	+p	+	220	234 to 242	-	-			-	ND	-	-		-	ND	3	b
221	**Vermicelles chocolat**	**Chocolate Vermicelli**	Protocol 3	+	+	+p	+p	+p	+p	+	221	234 to 242	+M	+M	+	+	+	PA	+p	+p	+	+	PA	3	b
222	**Pépites de chocolat**	**Chocolate ships**	Protocol 3	+	+	+p	+p	+p	+p	+	222	234 to 242	+m	+1/2	+	+	+	PA	+p	+p	+	+	PA	3	b
223	**Pépites de chocolat noir**	**Chocolate ships**	Protocol 3	+	+	+p	+p	+p	+p	+	223	234 to 242	+M	+M	+	+	+	PA	+p	+p	+	+	PA	3	b
224	**Tablette de chocolat au lait**	**Milk chocolate bar**	Protocol 3	+	+	+p	+p	+p	+p	+	224	234 to 242	+1/2	+1/2	+	+	+	PA	+p	+p	+	+	PA	3	b
226	**Tablette de chocolat noir**	**Chocolate bar**	Protocol 3	-	-	st	st	st	st	-	226	234 to 242	-	-			-	NA	-	-		-	NA	3	b
234	Tablette lait 55% cacao	Milk chocolate bar (55% cocoa)	Protocol 3	-	-	st	st	st	st	-	/	234	-	-			-	NA	-	st		-	NA	3	b
235	Tablette noir 64% cacao	Chocolate bar (64% cocoa)	Protocol 3	-	-	st	st	st	st	-	/	235	-	-			-	NA	-	-		-	NA	3	b
236	Tablette lait dessert 39% cacao	Milk chocolate bar (39% cocoa)	Protocol 3	-	-	st	st	st	st	-	/	236	-	-			-	NA	st	st		-	NA	3	b
238	Mousse au chocolat 42% cacao	Chocolate mousse (42%)	Protocol 3	-	-	st	-	-	-	-	/	238	-	-			-	NA	-	-		-	NA	3	b
218	**Crème au chocolat**	**Cocoa based dessert**	Protocol 3	+	+	st	st	st	st	-	218	234 to 242	+m	+m	+	+	+	PD	+p	+p	+	+	PD	3	b
225	**Mousse au chocolat**	**Cocoa mousse**	Protocol 3	+	+	st	st	st	st	-	225	234 to 242	+m	+1/2	+	+	+	PD	+p	+p	+	+	PD	3	b
3349	Liqueur cacao	Cocoa liquor	Protocol 3	-	-	st	st	st	st	-	/	3349	st	st			-	NA	st	st		-	NA	3	c
3350	Liqueur cacao	Cocoa liquor	Protocol 3	-	-	st	st	st	st	-	/	3350	st	st			-	NA	st	st		-	NA	3	c
3351	Liqueur cacao	Cocoa liquor	Protocol 3	-	-	st	st	st	st	-	/	3351	st	st			-	NA	st	st		-	NA	3	c
3352	Liqueur cacao	Cocoa liquor	Protocol 3	-	-	st	st	st	st	-	/	3352	st	st			-	NA	st	st		-	NA	3	c
3353	Liqueur cacao	Cocoa liquor	Protocol 3	-	-	st	st	st	st	-	/	3353	st	st			-	NA	st	st		-	NA	3	c
3354	Masse de cacao	Cocoa butter	Protocol 3	-	-	st	st	st	st	-	/	3354	st	st			-	NA	st	st		-	NA	3	c
6516	**Coques cacao**	**Chocolate shells**	Protocol 3	-	-	-	-	-	-	-	6516	8016 to 8024	-	-			-	NA	-	-		-	NA	3	c
6517	**Fèves cacao**	**Cocoa beans**	Protocol 3	-	-	-	-	-	-	-	6517	8016 to 8024	-	-			-	NA	-	-		-	NA	3	c
6518	**Beurre de cacao 1**	**Cocoa butter**	Protocol 3	+	+	+p	+p	+p	+p	+	6518	8017 to 8025	+m	+1/2	+	+	+	PA	+p	+p	+	+	PA	3	c
6519	**Beurre de cacao 2**	**Cocoa butter**	Protocol 3	-	-	st	st	st	st	-	6519	8017 to 8025	-	-			-	NA	st	st		-	NA	3	c
6526	**Beurre de cacao 2**	**Cocoa butter**	Protocol 3	-	-	st	st	st	st	-	6526	8092 to 8100	st	st			-	NA	st	st		-	NA	3	c

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						RVS broth		MKTTn broth		Result	Immunoseparation - Pooled samples								Immunoseparation - Individual samples								
						XLD	ASAP	XLD	ASAP		N° positive sample	N° negative samples	XLD	*Brilliance* Salmonella	Latex test	Reference method confirmatory tests (XLD)	Final result	Agree-ment	XLD	*Brilliance* Salmonella	Latex and reference method confirmatory tests	Final result	Agree-ment		
6527	**Masse de cacao 1**	**Cocoa mass**	Protocol 3	**-**	**-**	st	st	st	st	-	6527	8092 to 8100	st	st			-	**NA**	st	st		-	**NA**	3	c
6528	**Masse de cacao 2**	**Cocoa mass**	Protocol 3	**-**	**-**	st	st	st	st	-	6528	8092 to 8100	st	st			-	**NA**	st	st		-	**NA**	3	c
6529	**Fèves de cacao non stérilisé**	**Cocoa beans**	Protocol 3	**-**	**-**	-	-	-	-	-	6529	8092 to 8100	-	-			-	**NA**	-	-		-	**NA**	3	c
6536	**Masse de chocolat**	**Cocoa mass**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	6536	8093 to 8101	-	-			-	**ND**	st	st		-	**ND**	3	c
6537	**Masse de chocolat**	**Cocoa mass**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	6537	8093 to 8101	+1/2	+1/2	+	+	+	**PA**	+p	+p	+	+	**PA**	3	c
6538	**Masse de chocolat**	**Cocoa mass**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	6538	8093 to 8101	+1/2	+m	+	+	+	**PA**	+p	+p	+	+	**PA**	3	c
8101	Fèves cacao	Cocoa beans	Protocol 3	**-**	**-**	-	-	-	-	-	/	8101	-	-			-	**NA**	-	-		-	**NA**	3	c
227	**Masse de cacao**	**Cocoa mass**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	227	234 to 242	+1/2	+1/2	+	+	+	**PA**	+p	+p	+	+	**PA**	3	c
228	**Masse de cacao**	**Cocoa mass**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	228	234 to 242	+m	+1/2	+	+	+	**PA**	+p	+p	+	+	**PA**	3	c
229	**Liqueur cacao**	**Cocoa liquor**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	229	234 to 242	+M	+M	+	+	+	**PA**	+p	+p	+	+	**PA**	3	c
230	**Liqueur cacao**	**Cocoa liquor**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	230	234 to 242	+1/2	+M	+	+	+	**PA**	+p	+p	+	+	**PA**	3	c
231	**Fèves de cacao**	**Cocoa beans**	Protocol 3	**-**	**-**	-	-	-	-	-	231	234 to 242	-	-			-	**NA**	-	-		-	**NA**	3	c
232	**Fèves de cacao**	**Cocoa beans**	Protocol 3	**+**	**+**	-	-	+m	+m	+	232	234 to 242	-	-			-	**ND**	-	-		-	**ND**	3	c
233	**Coques cacao**	**Cocoa shells**	Protocol 3	**+**	**+**	+1/2	+1/2	+m	+1/2	+	233	234 to 242	-	-			-	**ND**	-	-		-	**ND**	3	c
242	Masse cacao	Cocoa mass	Protocol 3	**-**	**-**	st	st	st	st	-	/	242	-	-			-	**NA**	-	-		-	**NA**	3	c

RAW BEEF MEATS (fresh and frozen, seasoned or not)																		
N° Sample	Product	Product	Enrichment broth	Global result pooled	Global result individual	Reference method: ISO 6579 or ISO 6579-1 ♦					Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates Enrichment broth storage for 32h at 5°C ± 3°C Immunoseparation - Individual samples					Category	Type
						RVS broth		MKTTn broth		Result							
						XLD	ASAP	XLD	ASAP		XLD	*Brilliance* Salmonella	Latex confirmatory tests	Final result	Agreement		
3224	Steak haché	Ground beef	Protocol 1	+	+	-	-	-	-	-	+m (1) ni	+1/2	+	+	PD	1	a
3219	**Steak haché pur boeuf**	**Ground beef**	Protocol 1	+	+	+1/2	+M	+M	+M	+	+ m	+M	+	+	PA	1	a
3220	**Steak haché**	**Ground beef**	Protocol 1	+	+	+m	+p	+M	+M	+	+m	+M	+	+	PA	1	a
3221	**Steak haché**	**Ground beef**	Protocol 1	+	+	+m	+M	+M	+p	+	+m ni	+1/2	+	+	PA	1	a
3222	**Steak haché**	**Ground beef**	Protocol 1	+	+	+M	+M	+1/2	+M	+	+m (1) ni	+m	+	+	PA	1	a
3223	Steak haché	Ground beef	Protocol 1	-	-	-	-	-	-	-	-	-		-	NA	1	a
3225	Steak haché	Ground beef	Protocol 1	-	-	-	-	-	-	-	-	-		-	NA	1	a
6502	**Egréné de bœuf 15% MG**	**Beef trim**	Protocol 1	+	+	+m	+m	+m	+1/2	+	+P	+P	+	+	PA	1	a
6507	**Steak haché bœuf hallal**	**Ground beef**	Protocol 1	+	+	+M	+M	+M	+p	+	+m	+M	+	+	PA	1	a
6509	**Steak haché bœuf hallal**	**Ground beef**	Protocol 1		+	-	-	-	-	-	+m	+m	+	+	PD	1	a
189	**Haché de bœuf surgelé**	**Frozen ground beef**	Protocol 1	+	+	+M	+p	+1/2	+1/2	+	+1/2	+M	+	+	PA	1	a
190	**Haché pur bœuf 20% MG surgelé**	**Frozen ground beef (20% fat)**	Protocol 1	+	+	+M	+M	+m	+1/2	+	+M	+m	+	+	PA	1	a
191	**Steak pur bœuf surgelé**	**Frozen beef meat**	Protocol 1	+	+	+M	+M	+1/2	+1/2	+	+M	+M	+	+	PA	1	a
3211	**Rumsteak**	**Beef trim**	Protocol 1	+	+	+m	+p	+M	+p	+	+m ni	+M	+	+	PA	1	b
3212	**Onglet**	**Beef trim**	Protocol 1	+	+	+m	+1/2	+M	+M	+	+m ni	+m ni	+	+	PA	1	b
3213	**Gite de noix**	**Beef trim**	Protocol 1	+	+	+M	+M	+M	+p	+	+m	+M	+	+	PA	1	b
3214	**Bavette**	**Beef trim**	Protocol 1	+	+	+m	+M	+M	+M	+	+m	+m ni	+	+	PA	1	b
3216	**Tranche en tournedos**	**Beef trim**	Protocol 1	+	+	+m	+p	+M	+M	+	-	+M	+	+	PA	1	b
3217	**Gite de noix**	**Beef trim**	Protocol 1	+	+	+m	+M	+1/2	+p	+	+m ni	+m	+	+	PA	1	b
3218	**Basse côtes**	**Beef trim**	Protocol 1	+	+	+m	+M	+M	+p	+	+m d	+m ni	+	+	PA	1	b
6504	**Pavé de bœuf mariné**	**Seasoned beef trim**	Protocol 1	+	+	+M	+M	+M	+p	+	+m	+M	+	+	PA	1	b
193	**Viande bovine à bourguignon**	**Beef trim**	Protocol 1	+	+	+M	+M	+1/2	+1/2	+	+m	+1/2	+	+	PA	1	b
194	**Bavette de flanchet**	**Beef trim**	Protocol 1	+	+	+M	+M	+p	+p	+	+P	+1/2	+	+	PA	1	b
195	**Hampe à griller**	**Beef trim**	Protocol 1	+	+	+p	+p	+M	+M	+	+M	+m	+	+	PA	1	b
196	**Bavette de flanchet surgelée**	**Frozen beef trim**	Protocol 1	+	+	+p	+p	+p	+p	+	+M	+P	+	+	PA	1	b
6505	**Carpaccio huile et éclats noisette**	**Seasoned raw beef trim**	Protocol 1	+	+	+m	+1/2	+M	+p	+	+m	+M	+	+	PA	1	c
200	**Carpaccio huile et vinaigre balsamique**	**Carpaccio**	Protocol 1	+	+	+p	+p	+p	+p	+	+m	+M	+	+	PA	1	c
201	**Carpaccio pistou**	**Carpaccio**	Protocol 1	+	+	+p	+p	+p	+p	+	+M	+M	+	+	PA	1	c
202	**Carpaccio aux éclats de truffe et huile d'olive**	**Carpaccio**	Protocol 1	+	+	+p	+p	+p	+p	+	+M	+P	+	+	PA	1	c
203	**Pavé de rumsteak aux 3 poivres**	**Seasoned beef trim**	Protocol 1	+	+	+p	+p	+M	+M	+	+1/2	+1/2	+	+	PA	1	c
204	**Pavé de rumsteak à l'échalote**	**Seasoned beef trim**	Protocol 1	+	+	+p	+p	+M	+p	+	+1/2	+M	+	+	PA	1	c
205	**Carpaccio basilic et marinade**	**Carpaccio**	Protocol 1	+	+	+p	+p	+1/2	+M	+	-	-		-	ND	1	c
625	**Carpaccio Basilic**	**Carpaccio**	Protocol 1	+	+	+M	+p	+m	+M	+	+M	+1/2	+	+	PA	1	c

♦ Analyses performed according to the COFRAC accreditation

HEAT-TREATED MILK AND DAIRY PRODUCTS																	
N° Sample	Product	Product	Enrichment broth	Global result pooled	Global result individual	Reference method: ISO 6579 or ISO 6579-1 ♦					Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates					Category	Type
											Enrichment broth storage for 32h at 5°C ± 3°C						
						RVS broth		MKTTn broth		Result	Immunoseparation - Individual samples						
						XLD	ASAP	XLD	ASAP		XLD	*Brilliance* Salmonella	Latex confirmatory tests	Final result	Agreement		
3277	Lait de suite AR 6 mois	Milk infant formula without probiotics	Protocol 2	+	+	st	st	st	st	-	st	st		-	NA	2	a
3272	Lait de suite 6-12 mois	Milk infant formula without probiotics	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	a
3273	Lait de suite HA 0-6 mois	Milk infant formula without probiotics	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	a
3276	Lait de suite saveur vanille 1-3 ans	Milk infant formula without probiotics	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	a
3278	Lait de suite BIO 6 mois	Milk infant formula without probiotics	Protocol 2	+	-	st	st	st	st	-	-	-	/	-	NA	2	a
3279	Lait de suite 6 mois	Milk infant formula without probiotics	Protocol 2	-	-	st	st	st	st	-	st	st		-	NA	2	a
3280	Lait écrémé BIO en poudre	Milk powder	Protocol 2	-	-	st	st	st	st	-	st	st		-	NA	2	a
3281	Lait entier en poudre	Milk powder	Protocol 2	+	+	+p	+p	+p	+p	+	st	st		-	ND	2	a
3282	Lait écrémé en poudre	Milk powder	Protocol 2	-	-	st	st	st	st	-	St	St		-	NA	2	a
3283	Lait écrémé en poudre	Milk powder	Protocol 2	-	-	st	st	st	st	-	st	st		-	NA	2	a
3494	Lait de suite AE 6-12 mois	Milk infant formula without probiotics	Protocol 2	+	+	+p	+p	+p	+p	+	+P	+P	+	+	PA	2	a
3495	Lait de suite FE 0-6 mois	Milk infant formula without probiotics	Protocol 2	+	+	+p	+p	+p	+p	+	+P	+P	+	+	PA	2	a
3496	Lait de suite O 0-6 mois	Milk infant formula without probiotics	Protocol 2	+	+	+p	+p	+p	+p	+	st	st		-	ND	2	a
3497	Lait de suite +6 mois	Milk infant formula without probiotics	Protocol 2	-	-	st	st	st	st	-	st	st		-	NA	2	a
3498	Lait écrémé en poudre	Milk powder	Protocol 2	-	-	st	st	st	st	-	st	st		-	NA	2	a
3612	Lait naissance avec probiotiques 0,1% (Lactobacillus reuteri et S. Thermophilus)	Milk infant formula with probiotics 0,1% (Lactobacillus reuteri and S. Thermophilus)	Protocol 2	-	+	st	st	st	st	-	-	+	+	+	PD	2	b
3604	Lait ribot	Fermented milk	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	b
3605	Lait ribot	Fermented milk	Protocol 2	+	+	+p	-	+p	-	+	+p	-	+	+	PA	2	b
3606	Lait ribot	Fermented milk	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	b
3607	Lait ribot	Fermented milk	Protocol 2	+	+	+p	-	+p	-	+	+p	-	+	+	PA	2	b
3608	Faisselle	Fermented milk	Protocol 2	+	+	+p	-	+p	-	+	+p	-	+	+	PA	2	b
3609	Fromage blanc	Fermented yoghurts	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	b
3610	Petit suisse	Fermented yoghurts	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	b
3611	Yaourt à la grecque	Fermented yoghurts	Protocol 2	+	+	+p	+p	+p	+p	+	st	st		-	ND	2	b
3613	Lait de suite transit avec probiotiques 0,1% (Lactobacillus reuteri et S. Thermophilus)	Milk infant formula with probiotics 0,1% (Lactobacillus reuteri and S. Thermophilus)	Protocol 2	+	+	st	st	-	+p	+	st	st		-	ND	2	b
3614	Lait de suite AR avec probiotiques (Bifidobacterium et ferments lactiques)	Milk infant formula with probiotics (Bifidobacterium and Lactic ferments)	Protocol 2	-	-	st	st	st	st	-	st	st		-	NA	2	b
3615	Lait de suite avec probiotique (Bifidobacterium et ferments lactiques)	Milk infant formula with probiotics (Bifidobacterium and Lactic ferments)	Protocol 2	-	-	st	st	st	st	-	st	st		-	NA	2	b
3701	Lait frais demi-écrémé	Pasteurized milk	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	c
3702	Lait demi-écrémé	Pasteurized milk	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	c
3703	Lait entier	Pasteurized milk	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	c
3704	Lait demi-écrémé	Pasteurized milk	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	c
3705	Dessert lacté saveur crème brûlée	Dairy dessert	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	c
3706	Danette vanille	Dairy dessert	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	c
3707	Crème dessert au chocolat	Dairy dessert	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	c
3708	Crème dessert au chocolat	Dairy dessert	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	c
3709	Fromage fondu	Cream cheese	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	c
3710	Fromage fondu	Cream cheese	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	c
3711	Fromage fondu pour hamburger	Cream cheese	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	c
3712	Fromage carré frais	Cream cheese	Protocol 2	+	+	+p	+p	+p	+p	+	+p	+p	+	+	PA	2	c

♦ Analyses performed according to the COFRAC accreditation

COCOA AND COCOA PRODUCTS																	
N° Sample	Product	Product	Enrichment broth	Global result pooled	Global result individual	Reference method: ISO 6579 or ISO 6579-1 ♦					Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates Enrichment broth storage for 32h at 5°C ± 3°C5°C ± 3°C					Category	Type
						RVS broth		MKTTn broth		Result	Immunoseparation - Individual samples						
						XLD	ASAP	XLD	ASAP		XLD	*Brilliance* Salmonella	Latex confirmatory tests	Final result	Agreement		
3337	**Poudre de cacao 100%**	**Cocoa powder 100%**	Protocol 3	**-**	**-**	st	st	st	st	-	St	St		-	**NA**	3	a
3338	**Poudre de cacao 100%**	**Cocoa powder 100%**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	St	St		-	**ND**	3	a
3339	**Poudre de cacao 100%**	**Cocoa powder 100%**	Protocol 3	**-**	**-**	st	st	st	st	-	St	St		-	**NA**	3	a
3340	**Poudre de cacao 100%**	**Cocoa powder 100%**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+p	+p	+	+	**PA**	3	a
3343	**Poudre de cacao 100%**	**Cocoa powder 100%**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	St	St		-	**ND**	3	a
3345	**Poudre de cacao 100%**	**Cocoa powder 100%**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	St	St		-	**ND**	3	a
3336	**Poudre de cacao 100%**	Cocoa powder 100%	Protocol 3	**+**	**+**	st	st	st	st	-	+p	+p	+	+	**PD**	3	a
3341	**Poudre de cacao 100%**	Cocoa powder 100%	Protocol 3	**+**	**+**	st	st	st	st	-	+p	+p	+	+	**PD**	3	a
3342	**Poudre de cacao 100%**	Cocoa powder 100%	Protocol 3	**+**	**+**	st	st	st	st	-	+p	+p	+	+	**PD**	3	a
6522	**Poudre de cacao 100% 6**	Cocoa powder 100%	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	a
3344	**Poudre de cacao 100%**	Cocoa powder 100%	Protocol 3	**+**	**+**	st	st	st	st	-	+ p (1)	+ p (3)	+	+	**PD**	3	a
6530	**Poudre de cacao 100% 7**	Cocoa powder 100%	Protocol 3	**+**	**+**	st	st	st	st	-	+P	+P	+	+	**PD**	3	a
216	**Poudre de cacao 100%**	**Cocoa powder (100%)**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	a
217	**Poudre de cacao**	**Cocoa powder**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	a
6531	**Poudre de cacao 100% 8**	**Cocoa powder 100%**	Protocol 3	**+**	**+**	st	st	st	st	-	+P	+P	+	+	**PD**	3	a
6534	**Poudre de cacao 32%**	**Cocoa powder 32%**	Protocol 3	**+**	**+**	st	st	st	st	-	+P	+P	+	+	**PD**	3	a
6514	**Pépites chocolat**	**Chocolate chips**	Protocol 3	**+**	**+**	st	st	st	st	-	+P	+1	+	+	**PD**	3	b
219	**Billes de chocolat**	**Chocolates balls**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	-	-		-	**ND**	3	b
220	**Tablette de chocolat noir**	**Chocolate bar**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	st	st		-	**ND**	3	b
221	**Vermicelles chocolat**	**Chocolate Vermicelli**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	b
222	**Pépites de chocolat**	**Chocolate chips**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	b
223	**Pépites de chocolat noir**	**Chocolate chips**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	b
224	**Tablette de chocolat au lait**	**Milk chocolate bar**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	b
234	Tablette lait 55% cacao	Milk chocolate bar (55% cocoa)	Protocol 3	**-**	**-**	st	st	st	st	-	-	-		-	**NA**	3	b
218	**Crème au chocolat**	**Cocoa based dessert**	Protocol 3	**+**	**+**	st	st	st	st	-	+P	+P	+	+	**PD**	3	b
225	**Mousse au chocolat**	**Cocoa mousse**	Protocol 3	**+**	**+**	st	st	st	st	-	+P	+P	+	+	**PD**	3	b
6518	**Beurre de cacao 1**	**Cocoa butter**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	c
6536	**Masse de chocolat**	**Cocoa mass**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	st	st		-	**ND**	3	c
6537	**Masse de chocolat**	**Cocoa mass**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	c
6538	**Masse de chocolat**	**Cocoa mass**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	c
227	**Masse de cacao**	**Cocoa mass**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	c
228	**Masse de cacao**	**Cocoa mass**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	c
229	**Liqueur cacao**	**Cocoa liquor**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+P	+P	+	+	**PA**	3	c
230	**Liqueur cacao**	**Cocoa liquor**	Protocol 3	**+**	**+**	+p	+p	+p	+p	+	+1	+m	+	+	**PA**	3	c
232	**Fèves de cacao**	**Cocoa beans**	Protocol 3	**+**	**+**	-	-	+m	+m	+	-	-		-	**ND**	3	c
233	**Coques cacao**	**Cocoa shells**	Protocol 3	**+**	**+**	+1/2	+1/2	+m	+1/2	+	st	st		-	**ND**	3	c

♦ Analyses performed according to the COFRAC accreditation

Appendix 5 – Relative detection levels: raw data (Initial validation, 2013 and Extension study, 2016)

Ground beef *Initial validation study (2013)*
Salmonella Typhimurium A00C060
Aerobic mesophilic flora: 1.6 10^3 CFU/g

N° Sample	Level	Inoculation (CFU/25g)	Reference method: ISO 6579 or ISO 6579-1 ♦						Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates									
									Individual samples					Pooled samples				
			RVS		MKTTn		Result	Positive/total	XLD	*Brilliance* Salmonella	Latex test global result	Final result IMS	Positive/total	N° positive sample	XLD	*Brilliance* Salmonella	Latex test global result	Final result IMS	Positive/total
			XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella												
3294	0	0	-	-	-	-	-	0/6	-	-	/	-	0/6	/	-	-	/	-	0/6
3295			-	-	-	-	-		-	-	/	-		/	-	-	/	-	
3296			-	-	-	-	-		-	-	/	-		/	-	-	/	-	
3297			-	-	-	-	-		-	-	/	-		/	-	-	/	-	
3298			-	-	-	-	-		-	-	/	-		/	-	-	/	-	
3299			-	-	-	-	-		-	-	/	-		/	-	-	/	-	
3300	1	0.3	-	-	-	-	-	1/6	-	-	/	-	2/6	/	-	-	/	-	2/6
3301			-	-	-	-	-		-	-	/	-		/	-	-	/	-	
3302			-	-	-	-	-		+m	+M	+	+		3302	+m	+M	+	+	
3303			-	-	-	-	-		-	-	/	-		/	-	-	/	-	
3304			+M	+P	+M	+M	+		-	-	/	-		/	-	-	/	-	
3305			-	-	-	-	-		+1/2	+M	+	+		3305	+m	+M	+	+	
3306	2	0.7	+M	+P	+M	+M	+	4/6	+M	+M	+	+	3/6	3306	+m	+M	+	+	3/6
3307			+M	+M	+M	+P	+		+M	+M	+	+		3307	+m	+M	+	+	
3308			+m	+P	+M	+P	+		-	-	/	-		/	-	-	/	-	
3309			-	-	-	-	-		-	-	/	-		/	-	-	/	-	
3310			-	-	-	-	-		-	-	/	-		/	-	-	/	-	
3311			+M	+P	+M	+P	+		+m	+M	+	+		3311	+m	+M	+	+	
3312	3	1.3	-	-	-	-	-	4/6	-	-	/	-	4/6	3312	-	-	/	-	4/6
3313			+M	+P	+M	+P	+		+m	+M	+	+		3313	+m	+M	+	+	
3314			-	-	-	-	-		+M	+M	+	+		3314	+m	+M	+	+	
3315			+M	+P	+M	+P	+		-	-	/	-		/	-	-	/	-	
3316			+M	+P	+M	+P	+		+m	+M	+	+		3316	+m	+M	+	+	
3317			+M	+P	+M	+P	+		+m	+M	+	+		3317	+m	+M	+	+	
3318	4	2.6	+M	+P	+M	+P	+	6/6	+m	+M	+	+	6/6	3318	+m	+M	+	+	6/6
3319			+M	+P	+M	+P	+		+M	+M	+	+		3319	+1/2	+M	+	+	
3320			+M	+P	+M	+P	+		+m	+M	+	+		3320	+m (2)	+M	+	+	
3321			+m	+P	+M	+P	+		+M	+M	+	+		3321	+m	+M	+	+	
3322			+m	+P	+M	+P	+		+M	+M	+	+		3322	+m	+M	+	+	
3323			+P	+P	+P	+P	+		+P	+P	+	+		3323	+1/2	+M	+	+	

♦ Analysis performed according to the COFRAC accreditation

Milk powder (probiotic infant formula) *Initial validation study (2013)*
Salmonella Anatum Ad298
Aerobic mesophilic flora: 3.6 10^5 CFU/g (PCA) – 8.5 10^7 CFU/g (MRS)

N° Sample	Level	Inoculation (CFU/25g)	Reference method: ISO 6579 or ISO 6579-1 ♦						Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates										
									Individual samples					Pooled samples					
			RVS		MKTTn		Result	Positive/total	XLD	*Brilliance* Salmonella	Latex test global result	Final result IMS	Positive/total	N° positive sample	XLD	*Brilliance* Salmonella	Latex test global result	Reference method confirmatory tests (XLD)	Final result IMS	Positive/total
			XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella													
4244	0	0.0	St	St	St	St	-	0/6	St	St	/	-	0/6	/	St	St	/	/	-	0/6
4245			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4246			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4247			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4248			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4249			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4262	1	0.1	St	St	St	St	-	0/6	St	St	/	-	1/6	/	St	St	/	/	-	1/6
4263			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4264			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4265			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4266			St	St	St	St	-		+p	+p	+	+		/	St	St	/	/	-	
4267			St	St	St	St	-		St	St	/	-		4267	+p	+p	+	+	+	
4268	2	0.2	St	St	St	St	-	0/6	St	St	/	-	0/6	/	St	St	/	/	-	0/6
4269			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4270			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4271			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4272			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4273			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4375	3	0.4	+p	+p	+p	+p	+	2/6	St	St	/	-	1/6	/	St	St	/	/	-	1/6
4376			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4377			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4378			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4379			St	St	St	St	-		St	St	/	-		/	St	St	/	/	-	
4380			+p	+p	+p	+p	+		+p	+p	+	+		4380	+p	+p	+	+	+	
4381	4	0.9	+p	+p	+p	+p	+	2/6	St	St	/	-	4/6	/	St	St	/	/		4/6
4382			St	St	St	St	-		+p	+p	+	+		4382	+p	+p	+	+	+	
4383			St	St	St	St	-		+p	+p	+	+		4383	+p	+p	+	+	+	
4384			St	St	St	St	-		+p	+p	+	+		4384	+p	+p	+	+	+	
4385			St	St	St	St	-		+p	+p	+	+		4385	+p	+p	+	+	+	
4386			+p	+p	+p	+p	+		St	St	/	-		/	St	St	/	/	-	
4387	5	1.7	+p	+p	+p	+p	+	5/6	+p	+p	+	+	6/6	4387	+p	+p	+	+	+	6/6
4388			+p	+p	+p	+p	+		+p	+p	+	+		4388	+p	+p	+	+	+	
4389			+p	+p	+p	+p	+		+p	+p	+	+		4389	+p	+p	+	+	+	
4390			+p	+p	+p	+p	+		+p	+p	+	+		4390	+p	+p	+	+	+	
4391			+p	+p	+p	+p	+		+p	+p	+	+		4391	+p	+p	+	+	+	
4392			St	St	St	St	-		+p	+p	+	+		4392	+p	+p	+	+	+	
4393	6	3.4	+p	+p	+p	+p	+	6/6	+p	+p	+	+	5/6	4393	+p	+p	+	+	+	5/6
4394			+p	+p	+p	+p	+		+p	+p	+	+		4394	+p	+p	+	+	+	
4395			+p	+p	+p	+p	+		+p	+p	+	+		4395	+p	+p	+	+	+	
4396			+p	+p	+p	+p	+		St	St	/	-		/	St	St	/	/	-	
4397			+p	+p	+p	+p	+		+p	+p	+	+		4397	+p	+p	+	+	+	
4398			+p	+p	+p	+p	+		+p	+p	+	+		4398	+p	+p	+	+	+	

♦ Analysis performed according to the COFRAC accreditation

Matrix : Cocoa powder **(Extension study, 2016)**
Strain : *Salmonella* Braenderup Ad1661
Aerobic mesophilic flora: 40 CFU/g

N° sample	Level	Inoculation level (CFU/sample)	Reference method: ISO 6579 or ISO 6579-1 ♦						Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates									
			RVS broth		MKTTn broth		Final Result	Positive/Total	Pooled samples					Individual samples				
			XLD	ASAP	XLD	ASAP			XLD	*Brilliance Salmonella*	Latex	Final result	Positive /Total	XLD	*Brilliance Salmonella*	Latex and Confirmation	Final result	Positive /Total
685	0	0	st	st	st	st	-	0/5	st	st	/	-	0/5	st	st	/	-	0/5
686			st	st	st	st	-		st	st	/	-		st	st	/	-	
687			st	st	st	st	-		st	st	/	-		st	st	/	-	
688			st	st	st	st	-		st	st	/	-		st	st	/	-	
689			st	st	st	st	-		st	st	/	-		st	st	/	-	
665	3	2.2	st	st	st	st	-	12/20	st	st	/	-	7/20	st	st	/	-	8/20
666			+P	+P	+P	+P	+		+P	+P	+	+		+P	+P	+	+	
667			+P	+P	+P	+P	+		st	st	/	-		st	st	/	-	
668			+P	+P	+P	+P	+		st	st	/	-		st	st	/	-	
669			+P	+P	+P	+P	+		st	st	/	-		st	st	/	-	
670			st	st	st	st	-		st	st	/	-		st	st	/	-	
671			+P	+P	+P	+P	+		+P	+P	+	+		+P	+P	+	+	
672			st	st	st	st	-		st	st	/	-		st	st	/	-	
673			st	st	st	st	-		+P	+P	+	+		+P	+P	+	+	
674			+P	+P	+P	+P	+		st	st	/	-		st	st	/	-	
675			st	st	st	st	-		st	st	/	-		st	st	/	-	
676			+P	+P	+P	+P	+		st	st	/	-		st	+1	+	+	
677			+P	+P	+P	+P	+		+P	+P	+	+		+P	+P	+	+	
678			+P	+P	+P	+P	+		+P	+P	+	+		+P	+P	+	+	
679			st	st	st	st	-		st	st	/	-		st	st	/	-	
680			+P	+P	+P	+P	+		st	st	/	-		st	st	/	-	
681			st	st	st	st	-		st	st	/	-		st	st	/	-	
682			st	st	st	st	-		st	st	/	-		st	st	/	-	
683			+P	+P	+P	+P	+		+P	+P	+	+		+P	+P	+	+	
684			+P	+P	+P	+P	+		+P	+P	+	+		+P	+P	+	+	
660	10	7.4	+P	+P	+P	+P	+	5/5	+P	+P	+	+	5/5	+P	+P	+	+	5/5
661			+P	+P	+P	+P	+		+P	+P	+	+		+P	+P	+	+	
662			+P	+P	+P	+P	+		+P	+P	+	+		+P	+P	+	+	
663			+P	+P	+P	+P	+		+P	+P	+	+		+P	+P	+	+	
664			+P	+P	+P	+P	+		+P	+P	+	+		+P	+P	+	+	

♦ Analysis performed according to the COFRAC accreditation

Appendix 6 – Inclusivity and exclusivity: raw data (Initial validation, 2013 and Renewal study 2017)

INCLUSIVITY STUDY (Initial validation, 2013)													
Strain			Reference	Origin	Preheated BPW + Brilliant Green (0,002%) at 37°C for 18h				Preheated BPW + Brilliant Green (0,002%) + 25ml UHT milk at 37°C for 18h			
					Inoculation level (CFU/225ml)	Pooled samples			Inoculation level (CFU/225ml)	Pooled samples		
						XLD	*Brilliance* Salmonella	Latex OXOID		XLD	*Brilliance* Salmonella	Latex OXOID
1	*Salmonella*	Agona	A00V38	Feedstuff	20	-	-	/	9	+	+	+
2	*Salmonella*	Anatum	6140	Bœuf Bourguignon	11	-	-	/	5	+	+	+
3	*Salmonella*	*arizonae* 51:z4,z23:-	CIP 5523	Turkey	25	-	-	/	36	+	+	+
4	*Salmonella*	*arizonae* 50:z4,z23	CIP 5526	Egg powder	5	-	-	/	11	-	+d	+
5	*Salmonella*	*diarizonae* 38:IV:z53	Ad451	Raw milk cheese	50	-	-	/	18	+	+	+
6	*Salmonella*	*diarizonae* 61:-:1,5,7	Ad1280	Raw milk cheese	14	-	-	/	3	+ (H_2S-)	+d	+
7	*Salmonella*	Blockley	Ad 923	Chicken	46	-	-	/	6	+	+	+
8	*Salmonella*	Bovismorbificans	728	Agar	46	-	-	/	13	+	+	+
9	*Salmonella*	Braenderup	178	Food product	45	-	-	/	7	+	+	+
10	*Salmonella*	Brandenburg	Ad 351	Seafood	48	-	-	/	4	+	+	+
11	*Salmonella*	Bredeney	396	Ground beef	48	-	-	/	2	+	+	+
12	*Salmonella*	Cerro	Ad 689	Dehydrated proteins	47	-	-	/	1	+ (H_2S-)	+	+
13	*Salmonella*	Cremieu	230	Hare	31	-	-	/	12	+	+	+
14	*Salmonella*	Derby	Ad 1093	Frozen fish fillet	21	-	-	/	10	+	+	+
15	*Salmonella*	Dublin	Ad 529	Pancake	45	-	-	/	9	+	-(white colony)	+
16	*Salmonella*	Enteritidis	Ad 926	Raw veal meat	3	-	-	/	3	+	+	+
17	*Salmonella*	Gallinarum	Ad 300	Poultry slaughterhouse	12	-	-	/	7	+ (H2S-)	-	+ (very weak reaction)
18	*Salmonella*	Give	436	Ground beef	47	-	-	/	3	+	+	+
19	*Salmonella*	Hadar	35	Poultry	2	-	-	/	2	+	+	+
20	*Salmonella*	Havana	Ad 930	Poultry	46	-	-	/	7	+	+	+

INCLUSIVITY STUDY (Initial validation, 2013)												
Strain			Reference	Origin	Preheated BPW + Brilliant Green (0,002%) at 37°C for 18h				Preheated BPW + Brilliant Green (0,002%) + 25ml UHT milk at 37°C for 18h			
					Inoculation level (CFU/225ml)	*Pooled samples*			Inoculation level (CFU/225ml)	*Pooled samples*		
						XLD	*Brilliance* Salmonella	Latex OXOID		XLD	*Brilliance* Salmonella	Latex OXOID
21	*Salmonella*	Heidelberg	A00E005	Dairy industry environmental sample	8	-	-	/	6	+	+	+
22	*Salmonella*	*houtenae 43:z4z32*	Ad 597	Fish	42	+	-	+	10	+	+/-(orange colony)	+
23	*Salmonella*	Indiana	2	Fish flour	31	-	-	/	8	+	+	+
24	*Salmonella*	*indica* 1,26,14,25:a:enx	Ad 600	Environmental sample	7	-	-	/	6	+/-(yellow colony)	-(white colony)	+
25	*Salmonella*	Infantis	12	Ready-to-eat	48	-	-	/	9	+	+	+
26	*Salmonella*	Kedougou	Ad 929	Environmental sample (slaughterhouse)	20	-	-	/	10	+	+	+
27	*Salmonella*	Kottbus	1	Environmental sample (slaughterhouse)	4	-	-	/	4	+	+	+
28	*Salmonella*	Livingstone	E1	Egg white powder	37	-	-	/	7	+	+	+
29	*Salmonella*	London	326	Ham	45	-	-	/	4	+	+	+
30	*Salmonella*	Manhattan	900	Dairy environmental sample	48	-	-	/	7	+	+	+
31	*Salmonella*	Mbandaka	Ad 914	Mayonnaise	13	-	-	/	13	+	+	+
32	*Salmonella*	Montevideo	Ad 912	Raw milk	9	-	-	/	9	+	+	+
33	*Salmonella*	Napoli	Ad 928	Bovine	48	-	-	/	9	+	+	+
34	*Salmonella*	Newport	540	Toulouse sausage	7	-	-	/	7	+	+	+
35	*Salmonella*	Panama	195	Ground beef	5	-	-	/	5	+	+	+
36	*Salmonella*	Paratyphi A	ATCC 9150	/	5	-	-	/	38	-	-	/
									172	+ (H2S-)	+d (clear magenta)	+
37	*Salmonella*	Paratyphi B	Ad 301	Clinical	12	-	-	/	12	+	+	+
38	*Salmonella*	Paratyphi C	ATCC 13428	/	4	-	-	/	4	+	+	+
39	*Salmonella*	Regent	328	Duck	46	-	-	/	2	+	+	+

INCLUSIVITY STUDY (Initial validation, 2013)													
Strain			Reference	Origin	Preheated BPW + Brilliant Green (0,002%) at 37°C for 18h				Preheated BPW + Brilliant Green (0,002%) + 25ml UHT milk at 37°C for 18h				
					Inoculation level (CFU/225ml)	Pooled samples			Inoculation level (CFU/225ml)	Pooled samples			
						XLD	*Brilliance* Salmonella	Latex OXOID		XLD	*Brilliance* Salmonella	Latex OXOID
40	*Salmonella*	Rissen	39	Poultry	44	-	-	/	26	-	-	/
									120	+	+	+
41	*Salmonella*	Saintpaul	F31	Pilchard fillet	36	-	-	/	10	+	+	+
42	*Salmonella*	*salamae* 42:b:enxz	Ad 593	Cereals	1	-	-	/	33	+	+	+
43	*Salmonella*	Senftenberg	Ad355	Seafood	45	-	-	/	4	+	+	+
44	*Salmonella*	Typhi	Ad 302	Clinical	17	-	-	/	17	+	+	+
45	*Salmonella*	Typhimurium	305	Paella	7	-	-	/	14	+	+	+
46	*Salmonella*	Typhimurium 1,4 [5], 12 :- :-	Ad 1333	Tiramisu	28	-	-	/	9	+	+	+
47	*Salmonella*	Typhimurium 1,4 [5], 12 : i : -	Ad 1334	Ready-to-eat meal (meat)	7	-	-	/	8	+	+	+
48	*Salmonella*	Typhimurium 1,4,[5],12:- :1,2	Ad 1335	Primary production environmental sample	44	-	-	/	10	+	+	+
49	*Salmonella*	Urbana	Ad 501	Food product	13	-	-	/	8	+	+	+
50	*Salmonella*	Virchow	F276	Spice(curry)	39	-	-	/	19	+	+	+
51	*Salmonella*	*Bongori*	Ad599	Turkey breeding	1	-	-	/	44	- (yellow opaque colony)	+d (clear magenta)	+

INCLUSIVITY STUDY (Renewal study, 2017)								
Strain			Reference	Origin	Preheated BPW + Brilliant Green (0,002%) + 25ml UHT milk at 37°C for 18h			
					Inoculation level (CFU/225ml)	Pooled samples		
						XLD	*Brilliance* Salmonella	Latex OXOID
52	Salmonella	Abaetetuba	Ad2318	Clinical	23	+	+	+
53	*Salmonella*	Aberdeen	CIP 105618	/	27	+	+	+
54	*Salmonella*	Abortusequi	Ad2321	/	8 (48h)	- (48h)	- (48h)	/
					17	- (48h)	- (48h)	/
					71	- (48h)	- (48h)	/
					596	+ (48h)	+ (48h)	+
55	*Salmonella*	Abortusovis	Ad2320	Ovine foetus	12 (24h) 18 (48h)	- (48h)	- (48h)	/
					14	- (48h)	- (48h)	/
					70	- (48h)	- (48h)	/
					688	+ (48h)	+ (48h)	+
56	Salmonella	Adelaïde	Ad2319	Turkey breeding environment	54	-	-	/
					34	-	-	/
					210	+	+	+
57	*Salmonella*	Bardo	Adria 569	Meat for sausage	26	+	+	+
58	*Salmonella*	Bareilly	Ad 1687	Chocolate industry	38	+	+	+
59	*Salmonella*	Caracas	Ad2322	Spice	48	+	+	+ (weak)
60	*Salmonella*	Chester	CIP 103543		36	+	+	+
61	*Salmonella*	Cubana	Ad2323	Dust feed environment	28	-	-	/
					38	-	-	/
					154	+	+	+
62	Salmonella	Gaminara	Ad2324	Boar meat	22	+	+	+
63	*Salmonella*	Guinea	29	Food product	28	+ (yellow colonies)	+	+ (weak)
64	Salmonella	Hvittingfoss	Ad2325	Raw stuff	36	+	+	+
65	Salmonella	*indica*11:b:e,n,x	Ad2337	Chicken breeding environment	25	+	+	+
66	Salmonella	Javiana	Ad2326	Turkey meat	33	+	+	+
67	*Salmonella*	Kentucky	Ad1756	Poultry environmental sample	39	+	+	+
68	*Salmonella*	Landau	Ad 499	/	19	+	+	+

INCLUSIVITY STUDY (Renewal study, 2017)								
Strain			Reference	Origin	Preheated BPW + Brilliant Green (0,002%) + 25ml UHT milk at 37°C for 18h			
					Inoculation level (CFU/225ml)	Pooled samples		
						XLD	*Brilliance* Salmonella	Latex OXOID
69	*Salmonella*	Lille	Adria 37	Food product	32	+	+	+
70	*Salmonella*	Luciana	CIP 105626	/	4 (24h) 16 (48h)	+	+ (dark colonies)	+
71	*Salmonella*	Maracaibo	CIP 54143	/	23	+	+	+
72	*Salmonella*	Marseille	CIP105627	/	25	+	+	+
73	*Salmonella*	Meleagridis	505	Raw milk	19	+	+	+ (weak)
74	*Salmonella*	Michigan	Ad2327	Low moisture sausage	32	+	+	+ (weak)
75	*Salmonella*	Mikawasima	Ad1811	Raw ewe milk	31	+	+	+
76	*Salmonella*	Minnesota	Ad2328	Feed	32	-	-	/
					38	-	-	/
					230	-	-	/
					800	+	+	+
					BHI culture	+	+	+
77	Salmonella	Missisipi	Ad2329	Parakeet	36	+	+	+
78	*Salmonella*	Muenchen	CIP 106178	/	13	+	+	+
79	*Salmonella*	Norwich	Ad1172	Dairy product	14	-	-	/
					34	-	-	/
					218	+	+	+
80	*Salmonella*	Ohio	Ad1482	Raw cow milk	11	+	+	+
81	*Salmonella*	Orion	27	/	10	-	-	/
					29	+	+	+
					185	+	+	+
82	*Salmonella*	Oranienburg	Ad1724	Cereals	18	+	+	+
83	*Salmonella*	Ouakam	Ad1647	Compost	22	-	-	/
					38	+	+	+
					150	+	+	+
84	*Salmonella*	Pomona	CIP105630	Meat product	26	+	+	+
85	*Salmonella*	Poona	Ad2330	Poultry feed	89	+	+	+
86	Salmonella	Putten	Ad2331	Feed for chicken	30	+	+	+
87	Salmonella	Rubislaw	Ad2332	Shark cartilage	24	+	+	+

INCLUSIVITY STUDY (Renewal study, 2017)								
Strain			Reference	Origin	Preheated BPW + Brilliant Green (0,002%) + 25ml UHT milk at 37°C for 18h			
					Inoculation level (CFU/225ml)	Pooled samples		
						XLD	*Brilliance* Salmonella	Latex OXOID
88	Salmonella	Schwarzengrund	Ad2333	Egg products environment	30	+	+	+
89	*Salmonella*	Stanley	Ad 1688	Chocolate industry	21	+	+	+
90	*Salmonella*	Stourbridge	Ad2297	Raw milk cheese	17	-	-	/
					25	+	+	+
					87	+	+	+
91	*Salmonella*	Strasbourg	CIP105632	Clinical	4	+	+	+
92	*Salmonella*	Tananarive	CIP54142	Meat product	28	+	+	+
93	*Salmonella*	Tennessee	A00E006	Dusts from dairy industry	26	+	+	+
94	*Salmonella*	Thompson	AER301	Poultry	23	+	+	+
95	*Salmonella*	Veneziana	Adria 233	Food product	11	+	+	+
96	Salmonella	Wandsworth	Ad2335	Fillet of mullet	26	+	+	+
97	*Salmonella*	Waycross	CIP105634	/	24	+	+	+
98	*Salmonella*	Wayne	Ad502	/	23	+	+	+
99	Salmonella	Weltevreden	Ad2336	Treated water	24	+	+	+
100	*Salmonella*	Worthington	Adria 3506	Pâté	13	+	+	+

EXCLUSIVITY STUDY (Initial validation, 2013)							
No	**Strain**		**Origin**	**Inoculation level CFU/ml**	**Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates *Individual samples* BPW at 37°C for 22 h**		
					XLD	*Brilliance* Salmonella	Latex OXOID
1.	*Citrobacter braakii*	Ad833	Raw beef meat	$4.5\ 10^5$	-	-	/
2.	*Citrobacter Diversus*	Adria 140	Raw milk	$4.2\ 10^5$	-	-	/
3.	*Citrobacter freundii*	Adria 23	Raw pork sausage	$3.6\ 10^5$	-	-	/
4.	*Citrobacter freundii*	Adria 175	Raw duck meat	$3.1\ 10^5$	-	-	/
5.	*Citrobacter koseri*	Adria 71	Frozen vegetables	$4.9\ 10^5$	-	-	/
6.	*Enterobacter agglomerans*	Adria 11	Cheese	$3.2\ 10^5$	-	-	/
7.	*Enterobacter amnigenus*	A00C068	Raw poultry meat	$3.3\ 10^5$	-	-	/
8.	*Enterobacter cloacae*	Adria 10	Raw milk	$1.6\ 10^5$	-	-	/
9.	*Enterobacter intermedius*	Adria 60	Bean	$1.7\ 10^5$	-	-	/
10.	*Enterobacter kobei*	Ad 342	Ham	$5.8\ 10^4$	-	-	/
11.	*Enterobacter sakazakii*	Adria 95	Fermented milk	$2.1\ 10^5$	-	-	/
12.	*Erwinia carotovora*	CIP 8283	Potatoes	$6.0\ 10^4$	-	-	/
13.	*Escherichia coli*	Adria 19	Grated carrots	$2.9\ 10^5$	-	-	/
14.	*Escherichia hermanii*	Ad 461	Dessert	$1.5\ 10^5$	-	-	/
15.	*Escherichia vulneris*	Adria 127	Raw milk	$4.7\ 10^5$	-	-	/
16.	*Hafnia alvei*	Adria 167	Raw pork sausage	$3.4\ 10^5$	-	-	/
17.	*Klebsiella oxytoca*	57	Food product	$2.4\ 10^5$	-	-	/
18.	*Klebsiella pneumoniae*	47	Raw turkey meat	$2.1\ 10^5$	-	-	/
19.	*Kluyvera spp*	Adria 41	Raw milk	$1.5\ 10^5$	-	-	/
20.	*Morganella morganii*	CIP A236	/	$4.4\ 10^5$	-	-	/
21.	*Pantoea agglomerans*	Adria 86	Frozen vegetables	$4.2\ 10^5$	-	-	/

EXCLUSIVITY STUDY (Initial validation, 2013)							
No	**Strain**		**Origin**	**Inoculation level CFU/ml**	**Alternative method: Applied Biosystems™ Pathatrix™ Auto *Salmonella spp.* 10-pooling protocol linked to selective agar plates *Individual samples* BPW at 37°C for 22 h**		
					XLD	*Brilliance* Salmonella	Latex OXOID
22.	*Proteus mirabilis*	Ad639	Mayonnaise	$2.4\ 10^5$	-	-	/
23.	*Proteus vulgaris*	Adria 43	Sliced ham	$4.4\ 10^5$	-	-	/
24.	*Providencia rettgeri*	Adria 112	Liquid eggwhite	$8.8\ 10^4$	-	-	/
25.	*Rhanella aquatilis*	Adria 69	Molluscs	$3.2\ 10^5$	-	-	/
26.	*Serratia liquefaciens*	26	Egg product	$1.6\ 10^5$	-	-	/
27.	*Serratia proteomaculans*	A00C056	Ham	$9.4\ 10^4$	-	-	/
28.	*Shigella flexneri*	CIP 8248	/	$1.3\ 10^5$	-	-	/
29.	*Shigella sonnei*	CIP 8249T (ATCC 29930)	/	$3.8\ 10^5$	-	-	/
30.	*Yersinia enterocolotica*	Adria 32	Bacon	$1.4\ 10^5$	-	-	/

Appendix 7 – Results obtained by the collaborators and the Expert Laboratory (Initial validation, 2013)

Laboratory A

Aerobic mesophilic flora: 5.1 10^2 cfu/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
	RVS		MKTTn		Latex test	Final result	*Pooled Samples*			Final result - Pooled samples	*Individual Samples*			Final result - Individual samples		
							Direct streaking onto		Confirmation		Direct streaking onto		Confirmation			
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
A2	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
A7	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
A10	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
A12	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
A13	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
A17	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
A20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
A24	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
A4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A15	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
A22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory B

Aerobic mesophilic flora :2.8 10^2 cfu/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
	RVS		MKTTn		Latex test	Final result	*Pooled Samples*			Final result - Pooled samples	*Individual Samples*			Final result - Individual samples		
							Direct streaking onto		Confirmation		Direct streaking onto		Confirmation			
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
B2	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
B7	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
B10	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
B12	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
B13	-	-	-	-	-	-	+	-	-	-	-	-	/	-	**NA**	**NA**
B17	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
B20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
B24	-	-	-	-	-	-	-	-	/	-	+	-	/	-	**NA**	**NA**
B4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B6	-	-	-	-	/	-	+	+	+	+	+	+	+	+	**PD**	**PD**
B9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B15	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
B22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory C

Aerobic mesophilic flora: 4.5 10^5 cfu/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
							Pooled Samples				***Individual Samples***					
	RVS		MKTTn		Latex test	Final result	Direct streaking onto		Confirmation	Final result - Pooled samples	Direct streaking onto		Confirmation	Final result - Individual samples		
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
C2	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
C7	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
C10	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
C12	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
C13	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
C17	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
C20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
C24	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
C4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C15	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
C22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory D

Aerobic mesophilic flora: 4.5 10^3 cfu/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
							Pooled Samples				***Individual Samples***					
	RVS		MKTTn		Latex test	Final result	Direct streaking onto		Confirmation	Final result - Pooled samples	Direct streaking onto		Confirmation	Final result - Individual samples		
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
D2	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
D7	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
D10	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
D12	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
D13	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
D17	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
D20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
D24	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
D4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D15	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
D22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory E

Aerobic mesophilic flora:5,5.10^3 ufc/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
							Pooled Samples				***Individual Samples***					
	RVS		MKTTn		Latex test	Final result	Direct streaking onto		Confirmation	Final result - Pooled samples	Direct streaking onto		Confirmation	Final result - Individual samples		
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
E2	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
E7	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
E10	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
E12	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
E13	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
E17	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
E20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
E24	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
E4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E15	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
E22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory F

Aerobic mesophilic flora: 3.4 10^4 cfu/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
							Pooled Samples				***Individual Samples***					
	RVS		MKTTn		Latex test	Final result	Direct streaking onto		Confirmation	Final result - Pooled samples	Direct streaking onto		Confirmation	Final result - Individual samples		
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
F2	-	d	-	d	-	-	-	-	/	-	-	d	-	-	**NA**	**NA**
F7	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
F10	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
F12	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
F13	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
F17	-	d	-	d	-	-	-	-	/	-	-	d	-	-	**NA**	**NA**
F20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
F24	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
F4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F15	+	+	+	+	+	+	+	-	+	+	+	+	+	+	**PA**	**PA**
F16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
F22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory G

Aerobic mesophilic flora: $7.5.10^3$ cfu/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
							Pooled Samples				*Individual Samples*					
	RVS		MKTTn		Latex test	Final result	Direct streaking onto		Confirmation	Final result - Pooled samples	Direct streaking onto		Confirmation	Final result - Individual samples		
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
G2	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
G7	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
G10	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
G12	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
G13	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
G17	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
G20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
G24	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
G4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G15	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
G22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory H

Aerobic mesophilic flora: $2.5.10^3$ cfu/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
							Pooled Samples				***Individual Samples***					
	RVS		MKTTn		Latex test	Final result	Direct streaking onto		Confirmation	Final result - Pooled samples	Direct streaking onto		Confirmation	Final result - Individual samples		
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
H2	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
H7	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
H10	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
H12	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
H13	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
H17	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
H20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
H24	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
H4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H5	+	+	+	+	+	+	-/+	-/+	/+	-/+	+	+	+	+	**ND**	**PA**
H8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H15	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
H22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory I

Aerobic mesophilic flora: 1.0 10^2 cfu/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
							Pooled Samples				*Individual Samples*					
	RVS		MKTTn		Latex test	Final result	Direct streaking onto		Confirmation	Final result - Pooled samples	Direct streaking onto		Confirmation	Final result - Individual samples		
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
I2	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
I7	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
I10	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
I12	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
I13	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
I17	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
I20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
I24	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
I4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I15	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
I22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory J

Aerobic mesophilic flora: 4.7 10^3 cfu/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
	RVS		MKTTn		Latex test	Final result	*Pooled Samples*			Final result - Pooled samples	*Individual Samples*			Final result - Individual samples		
							Direct streaking onto		Confirmation		Direct streaking onto		Confirmation			
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
J2	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
J7	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
J10	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
J12	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
J13	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
J17	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
J20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
J24	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
J4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J15	+	+	+	+	+	+	+	-	+	+	+	-	+	+	**PA**	**PA**
J16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
J22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory K

Aerobic mesophilic flora:1.5 10^3 cfu/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
							Pooled Samples				***Individual Samples***					
	RVS		MKTTn		Latex test	Final result	Direct streaking onto		Confirmation	Final result - Pooled samples	Direct streaking onto		Confirmation	Final result - Individual samples		
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
K2	-	-	-	-	/	-	-	/	/	-	-	-	/	-	**NA**	**NA**
K7	-	-	-	-	/	-	-	/	/	-	-	-	/	-	**NA**	**NA**
K10	-	-	-	-	/	-	-	/	/	-	-	-	/	-	**NA**	**NA**
K12	-	-	-	-	/	-	-	/	/	-	-	-	/	-	**NA**	**NA**
K13	-	-	-	-	/	-	-	/	/	-	Samples thrown away					
K17	-	-	-	-	/	-	-	/	/	-						
K20	-	-	-	-	/	-	-	/	/	-						
K24	-	-	-	-	/	-	-	/	/	-						
K4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
K6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
K9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
K11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
K14	+	+	+	+	+	+	+	+	+	+	Samples thrown away					
K18	+	+	+	+	+	+	+	+	+	+						
K21	+	+	+	+	+	+	+	+	+	+						
K23	+	+	+	+	+	+	+	+	+	+						
K1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
K3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
K5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
K8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
K15	+	+	+	+	+	+	+	-	+	+	Samples thrown away					
K16	+	+	+	+	+	+	+	+	+	+						
K19	+	+	+	+	+	+	+	+	+	+						
K22	+	+	+	+	+	+	+	+	+	+						

Laboratory M

Aerobic mesophilic flora: 2.2 10^2 cfu/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
							Pooled Samples				*Individual Samples*					
	RVS		MKTTn		Latex test	Final result	Direct streaking onto		Confirmation	Final result - Pooled samples	Direct streaking onto		Confirmation	Final result - Individual samples		
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
M2	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
M7	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
M10	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
M12	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
M13	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
M17	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
M20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
M24	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
M4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M15	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
M22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory N

Aerobic mesophilic flora: 7.2 10^3 cfu/g

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
	RVS		MKTTn		Latex test	Final result	*Pooled Samples*			Final result - Pooled samples	*Individual Samples*			Final result - Individual samples		
							Direct streaking onto		Confirmation		Direct streaking onto		Confirmation			
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
N2	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
N7	-	-	-	-	/	-	-	-	/	-	+	-	-	-	**NA**	**NA**
N10	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
N12	-	-	+	-	-	-	-	-	/	-	-	-	/	-	**NA**	**NA**
N13	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
N17	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
N20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
N24	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
N4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N6	-	+	-	-	-	-	+	-	-	-	+	-	-	-	**NA**	**NA**
N9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N18	+	+	+	+	+	+	-	-	/	-	+	-	-	-	**ND**	**ND**
N21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N15	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
N22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory O

Aerobic mesophilic flora: 2.5 10^2 cfu/g

Protocol not respected (PBS not diluted)

N°Sample	Reference method: ISO 6579						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
							Pooled Samples				***Individual Samples***					
	RVS		MKTTn		Latex test	Final result	Direct streaking onto		Confirmation	Final result - Pooled samples	Direct streaking onto		Confirmation	Final result - Individual samples		
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
O2	-	-	-	-	/	-	-	/	/	-	-	-	/	-	**NA**	**NA**
O7	-	-	-	-	/	-	-	/	/	-	-	-	/	-	**NA**	**NA**
O10	-	-	-	-	/	-	-	/	/	-	-	-	/	-	**NA**	**NA**
O12	-	-	-	-	/	-	-	/	/	-	-	-	/	-	**NA**	**NA**
O13	+	+	+	+	+	+	-	/	/	-	-	-	/	-	**ND**	**ND**
O17	-	-	-	-	/	-	-	/	/	-	-	-	/	-	**NA**	**NA**
O20	+	+	+	+	-	-	-	/	/	-	-	-	/	-	**NA**	**NA**
O24	+	+	+	+	-	-	-	/	/	-	-	-	/	-	**NA**	**NA**
O4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O14	+	+	+	+	+	+	+	+	+	+	-	-	/	-	**PA**	**ND**
O18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O23	+	+	+	+	+	+	+	+	+	+	-	-	/	-	**PA**	**ND**
O1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O15	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
O22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

Laboratory P (=ADRIA)
Aerobic mesophilic flora: 2.9 10^3 CFU/g

N°Sample	Reference method: ISO 6579♦						Alternative method: Pathatrix™ Auto Salmonella spp. 10-pooling protocol linked to selective agar plates								Agreement Pooled samples	Agreement Individual samples
	RVS		MKTTn		Latex test	Final result	Pooled Samples			Final result - Pooled samples	Individual Samples			Final result - Individual samples		
							Direct streaking onto		Confirmation		Direct streaking onto		Confirmation			
	XLD	*Brilliance* Salmonella	XLD	*Brilliance* Salmonella			XLD	*Brilliance* Salmonella	Latex test		XLD	*Brilliance* Salmonella	Latex test			
P2	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
P7	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
P10	-	-	-	[2]	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
P12	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
P13	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
P17	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
P20	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
P24	-	-	-	-	/	-	-	-	/	-	-	-	/	-	**NA**	**NA**
P4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P9	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P11	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P14	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P18	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P21	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P23	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P8	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P15	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P16	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P19	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**
P22	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**PA**	**PA**

♦ Analyses performed according to the COFRAC accreditation