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VALIDATION & EXPERTISE

NF VALIDATION - Validation of alternative analysis methods
Application to the food industry

Summary report
according to standard EN ISO 16140-2/A1 (2024)

Qualitative method

NEOGEN® Molecular Detection Assay 2 – *Cronobacter*
(certificate # 3M 01/20 – 03/18)
for the detection of powdered infant formula products and production environmental samples

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This report contains 85 pages including 51 pages of appendices.

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Preamble

- **Protocols of validation:**

- **EN ISO 16140-1 and EN ISO 16140-2/A1 (2024): Microbiology of the food chain — Method validation**
  Part 1: Vocabulary.
  Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method.

- **AFNOR requirements regarding comparison and interlaboratory studies for implementation of the standard EN ISO 16140-2 (Version 12).**

- **Reference method:**

- **ISO 22964 (2017): Microbiology** of the food chain - Horizontal method for the detection of *Cronobacter* spp.

- **Application scope:**

- Powdered infant formula and infant cereals without probiotics, including ingredients (10 g and 300 g test portions)
- Powdered infant formula and infant cereals with probiotics (10 g and 300 g test portions)
- Production environmental samples (10 g or sample device)

- **Certification body:**

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

Definitions

- **Method comparison study**

The method comparison study is the part of the validation process that is performed in the organizing laboratory. It consists of three parts namely the following:
- A comparative study of the results of the reference method to the results of the alternative method in (naturally and/or artificially) contaminated samples (so-called sensitivity study);
- A comparative study to determine the relative level of detection (RLOD) in artificially contaminated samples (so-called RLOD study).
- An inclusivity/exclusivity study of the alternative method.

- **Sensitivity study**

The sensitivity study aims to determine the difference in sensitivity between the reference and the alternative method.
The sensitivity is the ability of the reference method or alternative method to detect the analyte.

- **Relative level of detection study**

A comparative study is conducted to evaluate the level of detection (LOD) of the alternative method against the reference method. The evaluation is based on the calculation of the relative level of detection (RLOD).
The level of detection at 50% (LOD_{50}) is the measured analyte concentration, obtained by a given measurement procedure, for which the probability of detection is 50%.
The relative level of detection level of detection at P = 0,50 (LOD_{50}) of the alternative method divided by the level of detection at P = 0,50 (LOD_{50}) of the reference method.

- **Inclusivity and exclusivity study**

The inclusivity study is a study involving pure target strains to be detected or enumerated by the alternative method.
The exclusivity study is a study involving pure non-target strains, which can be potentially cross-reactive, but are not expected to be detected or enumerated by the alternative method.

- **Interlaboratory study**

The interlaboratory study is a study performed by multiple laboratories testing identical samples at the same time, the results of which are used to estimate alternative-method performance parameters.
The aim of the interlaboratory study is to determine the difference in sensitivity between the reference and the alternative method when tested by different collaborators using identical samples (reproducibility conditions).

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Appendices

1. Introduction

The NEOGEN® Molecular Detection Assay 2 – *Cronobacter* method was validated in March 2018 according to the EN ISO 16140-2:2016 and the AFNOR Certification technical rules (Revision 6) (Certificate number: 3M 01/20-03/18) for the following categories:

- Infant formula and infant cereals without probiotics including ingredients (10 g and 300 g test portions),
- Infant formula and infant cereals with probiotics (10 g and 300 g test portions),
- Production environmental samples (10 g or sample device).

The method comparison study was carried out by ADRIA Développement (France) and the inter-laboratory was subcontracted to Q-Laboratories Inc (USA).

The method was renewed for the first time in February 2022 according to the EN ISO 16140-2:2016 without modification.

The method was renewed for the second time in January 2026 according to the EN ISO 16140-2/A1 (2024) without modification.

2. Protocols of the methods

2.1. Alternative method

2.1.1. Principle of the alternative method

The NEOGEN Molecular Detection Assays use loop-mediated isothermal amplification to rapidly amplify nucleic acid sequences with high specificity and sensitivity, combined with bioluminescence to detect the amplification. Presumptive positive results are reported in real-time while negative results are displayed after the assay is completed, 60 minutes. Results should be confirmed according to the ISO 22964:2017 reference method.

The flow diagram of the alternative method is provided in Appendix A.

2.1.2. Protocols of the alternative method

The overall protocols are briefly described below:

- Enrichment protocols.

Protocol N°	Categories	Types	Enrichment
General Protocol	Infant formula and infant cereals with and without probiotics (including ingredients)	Powdered infant formula	Add 10 g sample/sponge to 90 mL BPW ISO (ambient temperature) 18 - 24 h at 37°C ± 1°C
		Infant cereals	
		Raw material (dry milk powder, soy powder, whey powder, lactose, rice flour, maltodextrin)	
	Production environmental samples	Sampling device, rinse/process water Dust, sweeping, vacuum collection	
Specific Protocol 1	Infant formula and infant cereals without probiotics including ingredients	Powdered infant formula	Add 300 g sample to 2700 ml BPW ISO (pre-warmed to 37°C ± 1°C) 18 - 24 h at 37°C ± 1°C
		Infant cereals	
		Raw material (dry milk powder, soy powder, whey powder, lactose, rice flour, maltodextrin)	
Specific Protocol 2	Infant formula and infant cereals with probiotics	Powdered infant formula	Add 300 g sample to 2700 mL BPW ISO+ vancomycin (10 mg/L) (pre-warmed to 37°C ± 1°C) 22 - 24 h at 37°C ± 1°C
		Infant cereals	

- Incubate the samples for 18 h - 24 h at 37°C ± 1°C for the general and for the specific protocol 1, and for 22 h - 24 h at 37°C ± 1°C for the protocol 2.
- Transfer 20 µL of each enrichment to Lysis solution tube along with 20 µL of Negative Control (NC) in an individual Lysis solution tube.
- Heat treatment for 15 ± 1 min at 100°C ± 1°C
- Cool at ambient temperature for 5 – 10 minutes.
- Transfer 20 µL of lysed sample to *Cronobacter* reagent tube.
- Transfer 20 µL of lysed NC sample to *Cronobacter* reagent tube.
- Transfer 20 µL of lysed NC sample to Reagent Control tube.

- Run automated amplification and detection on NEOGEN Molecular Detection System.

- Confirmation using the protocol of the reference method:
    - Subculture in CSB (24 h ± 2 h at 41.5°C ± 1°C).
    - Streaking (10 µl) onto CCI Agar (24 h ± 2 h at 41.5°C ± 1°C).
    - Confirmation of typical colonies by biochemical tests with a purification step.

The primary enrichment broth and lysate can be stored for 72 h at 5°C ± 3°C in the event that the NEOGEN Molecular Detection Assay 2 – *Cronobacter* method cannot be run immediately after enrichment except for infant formula and infant cereals with probiotics (300 g test portion).

2.2. Reference method

The reference method corresponds to the ISO 22964 standard (2017): Microbiology of the food chain - Horizontal method for the detection of *Cronobacter* spp. (See Appendix B).

2.3. Study design

The study is a paired study design for the General Protocol as the reference and the alternative methods have the same enrichment procedure.

It is an unpaired study design for the Specific Protocols 1 and 2 as the reference and the alternative methods have different enrichment procedures.

3. Method comparison study

3.1. Sensitivity study

3.1.1. Number and nature of samples

314 samples were analysed, 192 using the general protocol, 62 using the specific protocol 1 and 60 using the specific protocol 2. The distribution per tested category and type is given in Table 1.

Table 1: distribution per category and types

Category	Test portion		Type	Protocol	Study design	Positive samples	Negative samples	Total
Infant formula and infant cereals without probiotics including ingredients ❶	**10 g**	a	Infant formula	General	Paired	12	10	22
		b	Infant cereals			12	9	21
		c	Non probiotic ingredients			9	13	22
		Total				**33**	**32**	**65**
	300 g	a	Infant formula	Specific 1	Unpaired	9	11	20
		b	Infant cereals			13	9	22
		c	Non probiotic ingredients			8	12	20
		Total				**30**	**32**	**62**
Infant formula and infant cereals with probiotics including ingredients ❷	**10 g**	a	Infant formula with probiotics	General	Paired	14	16	30
		b	Infant cereals with probiotics			19	14	33
		Total				**33**	**30**	**63**
	300 g	a	Infant formula with probiotics	Specific 2	Unpaired	15	15	30
		b	Infant cereals with probiotics	Specific 2	Unpaired	15	15	30
		Total				**30**	**30**	**60**
Production environmental samples ❸	**10 g or sample device**	a	Swabs, sponges, wipes	General	Paired	14	9	23
		b	Powdered residues			11	10	21
		c	Water used in manufacturing			9	11	20
		Total				**34**	**30**	**64**
General protocol						100	92	192
Specific protocol 1						30	32	62
Specific protocol 2						30	30	60
All categories						**160**	**154**	**314**

3.1.2. Artificial contamination of samples

Artificial contaminations were done by seeding or spiking protocol. Artificial contaminations are presented in Appendix C.

234 samples were artificially contaminated, using 46 different strains. 153 gave a positive result.

The repartition of the positive samples per inoculation protocol and inoculation level is given in Table 2. 26.3% of the samples were inoculated between 3 and 10 CFU using the seeding protocol but note that 81 inoculated samples (35%) gave negative results by both methods.

Table 2: repartition of the positive samples per inoculation protocol and inoculation level

	Naturally contaminated	**Spiking protocol**			**Seeding protocol**			**Total**
		≤ 5 CFU	5<x≤ 10 CFU	10<x≤ 30 CFU	≤ 3 CFU	3<x≤ 10 CFU	10<x≤ 30 CFU	
Number of samples	7	37	0	0	73	42	1	160
%	4.4%	23.1%	0.0%	0.0%	45.6%	26.3%	0.6%	100.0%

4.4% of the samples were naturally contaminated.

3.1.3. Protocols applied during the validation study

- **Incubation times**

The minimum incubation times were applied for each protocol:

- General protocol: 18 h
- Specific Protocol 1: 18 h
- Specific Protocol 2: 22 h

- **Confirmations**

The positive MDA tests were confirmed using the protocol described in the ISO method:

- Subculture in CSB (24 h ± 2 h at 41.5°C ± 1°C)
- Streaking (10 µl) onto CCI Agar (24 h ± 2 h at 41.5°C ± 1°C)
- Confirmation of typical colonies by biochemical tests with a purification step.

- **Enrichment broth and lysate storage**

For the positive samples, the enrichment broths and the lysates were tested a second time by the alternative method after storage for 72 h at 5°C ± 3°C, the confirmations were also run again.

3.1.4. Results

Raw data per category are given in Appendix D. The results are given in Table 3.

Table 3: interpretation of sample results between the reference and alternative method (based on the confirmed alternative)

Category	Test portion		Type	Protocol	Study design	PA	PD	TND	TNA
Infant formula and infant cereals without probiotics including ingredients ❶	**10 g**	a	Infant formula	General	Paired	12	0	0	10
		b	Infant cereals			11	0	1	9
		c	Non probiotic ingredients			9	0	0	13
		Total				**32**	**0**	**1**	**32**
	300 g	a	Infant formula	Specific 1	Unpaired	6	2	1	11
		b	Infant cereals			7	4	2	9
		c	Non probiotic ingredients			3	4	1	12
		Total				**16**	**10**	**4**	**32**
Infant formula and infant cereals with probiotics including ingredients ❷	**10 g**	a	Infant formula with probiotics	General	Paired	14	0	0	16
		b	Infant cereals with probiotics			19	0	0	14
		Total				**33**	**0**	**0**	**30**
	300 g	a	Infant formula with probiotics	Specific 2	Unpaired	11	2	2	15
		b	Infant cereals with probiotics	Specific 2	Unpaired	10	1	4	15
		Total				**21**	**3**	**6**	**30**
Production environmental samples ❸	**10 g or sample device**	a	Swabs, sponges, wipes	General	Paired	13	0	1	9
		b	Powdered residues			9	0	2	10
		c	Water used in manufacturing			9	0	0	11
		Total				**31**	**0**	**3**	**30**
General protocol						**96**	**0**	4	92
Specific protocol 1						**16**	**10**	4	32
Specific protocol 2						**21**	**3**	6	30
All categories						**133**	**13**	**14**	**154**

PA: positive agreement, NA: negative agreement, PD: positive deviation, TND: total negative deviation, TNA: total negative agreement.

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

The calculations are presented in Table 4.

Table 4: values in % of sensitivity for the two methods, relative trueness and false positive ratio for the alternative method (SEalt: sensitivity for the alternative method, SEref: sensitivity for the reference method, RT: relative trueness, FPR: false positive ratio for the alternative method), FNR: false negative ratio)

Category	Test portion		Type	Protocol	Study design	PA	$PA_{FP(alt)}$	NA	$NA_{FN(alt)}$	PD	ND	$ND_{FN(alt)}$	$PD_{FP(alt)}$	TND	TNA	SE_{alt} %	SE_{ref} %	RT %	FPR %	FNR %
Infant formula and infant cereals without probiotics including ingredients ❶	**10 g**	a	Infant formula	General	Paired	12	0	9	0	0	0	0	1	0	10	100,0	100,0	100,0	10,0	0,0
		b	Infant cereals			11	0	9	0	0	0	1	0	1	9	91,7	100,0	95,2	0,0	8,3
		c	Non probiotic ingredients			9	0	13	0	0	0	0	0	0	13	100,0	100,0	100,0	0,0	0,0
		Total				**32**	**0**	**31**	**0**	**0**	**0**	**1**	**1**	**1**	**32**	**97,0**	**100,0**	**98,5**	**3,1**	**3,0**
	300 g	a	Infant formula	Specific 1	Unpaired	6	0	11	0	2	1	0	0	1	11	88,9	77,8	85,0	0,0	0,0
		b	Infant cereals			7	0	6	2	4	2	0	1	2	9	84,6	69,2	70,0	11,1	15,4
		c	Non probiotic ingredients			3	0	11	1	4	1	0	0	1	12	87,5	50,0	73,7	0,0	12,5
		Total				**16**	**0**	**28**	**3**	**10**	**4**	**0**	**1**	**4**	**32**	**86,7**	**66,7**	**76,3**	**3,1**	**10,0**
Infant formula and infant cereals with probiotics including ingredients ❷	**10 g**	a	Infant formula with probiotics	General	Paired	14	0	16	0	0	0	0	0	0	16	100,0	100,0	100,0	0,0	0,0
		b	Infant cereals with probiotics			19	0	14	0	0	0	0	0	0	14	100,0	100,0	100,0	0,0	0,0
		Total				**33**	**0**	**30**	**0**	**0**	**0**	**0**	**0**	**0**	**30**	**100,0**	**100,0**	**100,0**	**0,0**	**0,0**
	300 g	a	Infant formula with probiotics	Specific 2	Unpaired	11	1	15	0	2	1	0	0	2	15	92,9	85,7	89,7	6,7	0,0
		b	Infant cereals with probiotics	Specific 2	Unpaired	10	0	15	0	1	4	0	0	4	15	73,3	93,3	83,3	0,0	0,0
		Total				**21**	**1**	**30**	**0**	**3**	**5**	**0**	**0**	**6**	**30**	**82,8**	**89,7**	**86,4**	**3,3**	**0,0**
Production environmental samples ❸	**10 g or sample device**	a	Swabs, sponges, wipes	General	Paired	13	0	9	0	0	0	1	0	1	9	92,9	100,0	95,7	0,0	7,1
		b	Powdered residues			9	0	10	0	0	0	2	0	2	10	81,8	100,0	90,5	0,0	18,2
		c	Water used in manufacturing			9	0	11	0	0	0	0	0	0	11	100,0	100,0	100,0	0,0	0,0
		Total				**31**	**0**	**30**	**0**	**0**	**0**	**3**	**0**	**3**	**30**	**91,2**	**100,0**	**95,3**	**0,0**	**8,8**
General protocol						**96**	**0**	**91**	**0**	**0**	**0**	**4**	**1**	4	92	96,0	100,0	97,9	1,1	4,0
Specific protocol 1						**16**	**0**	**28**	**3**	**10**	**4**	**0**	**1**	4	32	86,7	66,7	76,3	3,1	10,0
Specific protocol 2						**21**	**1**	**30**	**0**	**3**	**5**	**0**	**0**	6	30	82,8	89,7	86,4	3,3	0,0
All categories						**133**	**1**	**149**	**3**	**13**	**9**	**4**	**2**	**14**	**154**	**91,8**	**91,8**	**91,6**	**1,9**	**4,4**

A summary of the results is given in Table 5.

Table 5: summary of results

Parameter	Formula EN ISO 16140-2: 2016	General Protocol	Specific Protocol 1	Specific Protocol 2	All protocols
Sensitivity of the alternative method (SE_{alt})	$SE_{alt} = \frac{PA + PD}{PA + TND + PD} \times 100\%$	96.0%	86.7%	82.8%	91.8 %
Sensitivity of the reference method (SE_{ref})	$SE_{ref} = \frac{PA + TND}{PA + TND + PD} \times 100\%$	100%	66.7%	89.7%	91.8 %
Relative trueness (RT)	$RT = \frac{PA + TNA}{N} \times 100\%$	97.9%	76.3%	86.4%	91.6 %
False positive ratio (FPR) for the alternative method	$FPR = \frac{(FP)}{TNA} \times 100\%$	1.1%	3.1%	3.3%	1.9 %
False negative ratio (FNR) for the alternative method	$FNR = \frac{NA_{FN(alt)} + ND_{FN(alt)}}{PA + TND + PD}$	4.0%	10.0%	0.0%	4.4%

3.1.6. Analysis of discordant results

The negative deviations are given in Table 6 and the positive deviations in Table 7.

- **Negative deviations (14)**

For the general protocol (10 g test portion), 1 negative deviation concerns infant cereals and 3 concern environmental samples. The MDA tests were run in triplicate and for sample 3658; 1 test was positive. The confirmatory tests for the 4 samples confirmed the presence of *Cronobacter* in the enrichment broth. The contamination level was probably, in these cases, lower than the detection level of the alternative method.

For the specific protocol 1 (which concerns non-probiotic infant formula and infant cereals 300 g test portion), 4 negative deviations were obtained. For one sample (2033) the presence of *Cronobacter* spp. was confirmed in the enrichment broth. The detection level of the alternative method was probably not reached for this sample. For the 3 other samples (1694-4921-5335), the result was probably due to the unpaired study design.

For the specific protocol 2 (infant formula and infant cereals with probiotics, 300 g sample size), 6 negative deviations were obtained. For 1 sample, (6767) positive MDA was obtained three times, but it was impossible to confirm the presence of *Cronobacter* spp. in the enrichment broth. For the 5 other samples, the confirmation tests were also negative. These negative deviations were probably linked to the unpaired study design.

- **Positive deviations (13)**

10 positive deviations concern the specific protocol 1, 8 samples were artificially contaminated and 2 naturally contaminated.
The 3 samples in positive deviation for the specific protocol 2 were artificially contaminated.
The analyses of discordant results according to the EN ISO 16140-2:2016 is the following (See Table 8).

Table 6: negative deviations

Protocol	Sample N°	Product (French name)	Product	Artificial contamination		Reference method: ISO 22964	Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method				Category	Type
							BPW ISO **18h at 37°C**					
				Strain	Inoculation rate/sample		MDA2		Final result	Agree-ment		
							Result	Confirmatory tests				
General 10 g	**4620**	**Céréales infantiles Avoine blé riz**	**Infant cereals**	*C. sakazakii* Ad2403	6-2-2-4-3 (3,4)	+	-/-/-	+	-	ND FN_{alt}	1	b
	3658	**Poussière aspirateur**	**Dusts**	*C. sakazakii* Ad2379	3-4-4-5-3 (3,8)	+	-/+/-	+	-	ND FN_{alt}	3	b
	3671	**Ecouvillon**	**Swab**	*C. sakazakii* Ad2409	3-4-3-2-4 (3,2)	+	-/-/-	+	-	ND FN_{alt}	3	a
	4626	**Poussière probiotique aspirateur**	**Dusts with probiotics**	*C. sakazakii* Ad2406	1-2-0-2-3 (1,6)	+	-/-/-	+	-	ND FN_{alt}	3	b
Specific 1 300 g	**1694**	**Céréales infantiles chocolat**	**Infant cereal**	C. muytjensii E769	6.0	+	-	-	-	ND	1	b
	2033	**Poudre de lait (matière première)**	**Dry milk powder**	*C. sakazakii* Ad2412	0.5	+	-/-/-	+	-	ND FN_{alt}	1	c
	4921	**PDL infantile 2ème age BIO**	**Infant formula**	*C. sakazakii* Ad2400	3.6	+	-	-	-	ND	1	a
	5335*	**Céréales infantiles BIO**	**Infant cereals**	*C. sakazakii* Ad2370	1.8	+	-	-	-	ND	1	b
Specific 2 300 g	**4929**	**PDL infantile probiotiques (*Lb reuteri*) 2ème âge (2,1.103 CFU/g)**	**Infant formula with probiotics**	*C. sakazakii* Ad2400	3.6	+	-	-	-	ND	2	a
	5316*	**Céréales infantiles biscuitée/vanillée avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereals with probiotics**	*C. sakazakii* Ad2381	1.0	+	-	-	-	ND	2	b
	5321*	**Céréales infantiles noisetttes biscuitée avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereals with probiotics**	C. *dublinensis* DSM18705	0.8	+	-	-	-	ND	2	b
	5327*	**Céréales infantiles 5 céréales avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereals with probiotics**	*C. sakazakii* Ad2370	1.8	+	-	-	-	ND	2	b
	6762*	**Céréales infantiles probiotique Vanille (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	*C. sakazakii* Ad2366	1.8	+	-	-	-	ND	2	b
	6767	**PDL infantile probiotiques 2ème âge (*Lactobacillus fermentum*) (1,6.106 CFU/g)**	**Infant formula with probiotics**	*C. sakazakii* Ad1708	0.7	+	+/+/+	-	-	PA FP_{alt}	2	a

** Addition of amylase in the enrichment broth*

Table 7: positive deviations

Protocol	Sample N°	Product (French name)	Product	Artificial contamination		Reference method: ISO 22964	Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method				Category	Type
							BPW ISO **18h at 37°C**					
				Strain	Inoculation rate/sample		MDA2		Final result	Agree-ment		
							Result	Confirmatory tests				
Specific 1 300 g	**1685**	**Céréales infantiles BIO cacao quinoa**	**Infant cereals**	*C. sakazakii* Ad1445	7.5	-	+	+	+	PD	1	b
	2026	**Farine de blé bio**	**Wheat flour**	*C. sakazakii* Ad2341	1.1	-	+	+	+	PD	1	c
	2029	**Lactose**	**Lactose**	*C. sakazakii* Ad2413	2.4	-	+	+	+	PD	1	c
	2034	**Poudre de lait (matière première)**	**Dry milk powder**	*C. sakazakii* Ad2412	0.5	-	+	+	+	PD	1	c
	4915	**PDL infantile riz 1er age**	**Infant formula**	*C. sakazakii* Ad2394	6.8	-	+	+	+	PD	1	a
	4920	**PDL infantile 1er age**	**Infant formula**	*C. sakazakii* Ad2395	6.0	-	+	+	+	PD	1	a
	5023	**Amidon de blé**	**Wheat starch**	*C. sakazakii* Ad2378	0.6	-	+	+	+	PD	1	c
	5334 *	**Céréales infantiles saveur briochée**	**Infant cereals**	*C. sakazakii* Ad2356	1.3	-	+	+	+	PD	1	b
Specific 2 300 g	5702	Céréales infantiles BIO	Infant cereals	/	/	-	+	+	+	PD	1	b
	6904	Céréals infantiles cacao quinoa	Infant cereals	/	/	-	+	+	+	PD	1	b
	5026	**PDL infantile probiotique (*Lb rahmnosus, Bifido infantis*) 1er âge ($9{,}5.10^6$ CFU/g)**	**Infant formula with probiotics**	*C. sakazakii* Ad2378	0.6	-	+	+	+	PD	2	a
	5328 *	**Céréales infantiles carottes potiron avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	*C. sakazakii* Ad2370	1.8	-	+	+	+	PD	2	b
	6773	**PDL infantile probiotiques 1er âge (Bifidobactéries + ferments) (<$2{,}0.10^2$ CFU/g)**	**Infant formula with probiotics**	*C. sakazakii* Ad1708	0.7	-	+	+	+	PD	2	a

** Addition of amylase in the enrichment broth*

Table 8: analyses of discordant results

							Unpaired		Paired				Combined	
Category	**Type**		**Protocol**	**Study design**	**TND**	**PD**	**TND-PD**	**AL**	**TND-PD**	**AL**	**TND+PD**	**AL**	**TND-PD**	**AL**
Infant formula and infant cereals without probiotics including ingredients ❶	a	Infant formula	General	Paired	0	0			0		0			
	b	Infant cereals			1	0			1		1			
	c	Non probiotic ingredients			0	0			0		0			
	Total				**1**	**0**			**1**	**3**	**1**	**6**		
	a	Infant formula	Specific 1	Unpaired	1	2	-1							
	b	Infant cereals			2	4	-2							
	c	Non probiotic ingredients			1	4	-3							
	Total				**4**	**10**	**-6**	**3**						
Infant formula and infant cereals with probiotics including ingredients ❷	a	Infant formula with probiotics	General	Paired	0	0			0		0			
	b	Infant cereals with probiotics			0	0			0		0			
	Total				**0**	**0**			**0**	**3**	**0**	**6**		
	a	Infant formula with probiotics	Specific 2	Unpaired	2	2	0							
	b	Infant cereals with probiotics	Specific 2	Unpaired	4	1	3							
	Total				**6**	**3**	**3**	**3**						
Production environmental samples ❸	a	Swabs, sponges, wipes	General	Paired	1	0			0		1			
	b	Powdered residues			2	0			2		2			
	c	Water used in manufacturing			0	0			0		0			
	Total				**3**	**0**			**3**	**3**	**3**	**6**		
General protocol					4	0			**4**	**5**	**4**	**10**		
Specific protocol 1					4	10	**-6**	**3**						
Specific protocol 2					6	3	**3**	**3**						
All specific protocols					4	10	**-6**	**4**						
All categories					**14**	**13**							**1**	**5**

For the unpaired study (specific protocols 1 and 2), the calculated values for (TND - PD) meet the acceptability limit for each individual category and for all categories combined.

For the paired study (general protocol), the calculated values for (TND - PD) and for (TND + PD) meet the acceptability limit for each individual category and for all categories combined.

For the combined unpaired and paired study, the calculated values for (TND - PD) meet the acceptability limit.

3.1.7. Enrichment broth and lysates storage at 5 ± 3 °C for 72 h

The following changes were observed (See Table 9).

Table 9: enrichment broth and lysates storage

Sample N°	Product	Result before storage		Result after storage			
				Lysate		BPW	
		MDA test	Agreement	MDA test	Agreement	MDA test	Agreement
2679	Infant formula with probiotics	+	PA	+	PA FP_{alt}	+	PA FP_{alt}
3658	Dusts	-/+/-	ND	+/+/-/-/-/+/-	PA	+	PA
3671	Swab	-/-/-	ND	+/-/-/-/-/-/-/-	PA	+	PA
4620	Infant cereals	-/-/-	ND	-	ND	+	PA
5333	Infant cereals	+	PA	-/+/-	ND	+/+/+	PA
4925	Infant formula with probiotics	+	PA	+	PA FP_{alt}	+	PA FP_{alt}

The analyses of discordant results become (See Table 10) for lysates storage and Table 11 for BPW storage.

Table 10: analysis of discordant results after broths storage

							Unpaired		Paired				Combined	
Category		Test portion	Protocol	Study design	TND	PD	TND-PD	AL	TND-PD	AL	TND+PD	AL	TND-PD	AL
❶	Infant formula and infant cereals without probiotics including ingredients	10 g	General	Paired	1	0			1	3	1	6		
		300 g	Specific 1	Unpaired	5	0	-5	3						
❷	Infant formula and infant cereals with	10 g	General	Paired	0	1			1	3	1	6		
❸	Production environmental samples	10 g or sample	General	Paired	1	0			1	3	1	6		
General protocol					3	0			3	5	3	10		
Specific protocol 1					5	10	-5	3						
All samples					8	10							-2	5
❷	Infant formula and infant cereals with probiotics including ingredients	300 g	Specific 2	Unpaired	7	3	4	3						

Table 11: analysis of discordant results after lysate storage

	Category	Test portion	Protocol	Study design	TND	PD	Unpaired		Paired				Combined	
							TND-PD	AL	TND-PD	AL	TND+PD	AL	TND-PD	AL
❶	Infant formula and infant cereals without probiotics including ingredients	10 g	General	Paired	0	0			0	3	0	6		
		300 g	Specific 1	Unpaired	4	10	-6	3						
❷	Infant formula and infant cereals with	10 g	General	Paired	1	0			1	3	1	6		
❸	Production environmental samples	10 g or sample	General	Paired	1	0			1	3	1	6		
	General protocol				2	0			2	5	2	10		
	Specific protocol 1				4	10	-6	3						
	All samples				6	10							-4	5
❷	Infant formula and infant cereals with probiotics including ingredients	300 g	Specific 2	Unpaired	7	3	4	3						

For 2 samples (2679 - 4925), the changes observed before and after storage are due to the impossibility to confirm the presence of *Cronobacter* spp. in the enrichment broth.

For the 300 g test portion, the calculated values for (TND - PD) meet the acceptability limit (AL) for infant formula and infant cereals without probiotics.
The calculated value is higher than the AL for infant formula and infant cereals with probiotics (300 g test portion) tested with specific protocol 2, it is thus not possible to store the BPW and the lysates for this category.

For the 10 g test portion, the calculated values for (TND - PD) and (TND + PD) meet the AL for the individual and combined categories.

3.1.8. Confirmation

The confirmation protocol of the reference method was applied for all the samples.
For 4 samples (2675-6892-5332-6767) the presence of *Cronobacter* spp was not confirmed in the enrichment broth even when additional tests were applied (inoculation of 5 CSB and streaking onto CCI Agar).

3.1.9. MDA inhibition

The matrix control was tested for each sample.
All the matrix controls gave positive results, no inhibition was observed during the study.

3.2. Relative level of detection study

3.2.1. Experimental design

5 (matrix/strain) pairs were analyzed by the reference method and by the alternative method (See Table 12) using the following protocol:

- 5 negative samples,
- 20 samples inoculated at a level providing fractional positive results,
- 5 samples inoculated at a higher level.

Table 12: defined (matrix/strain) pairs for the RLOD determination

Test portion	Matrix	Inoculated strain	Enrichment dilution	Alternative method Protocol	Inoculation protocol	Category	Type
10 g	Infant cereals without probiotics	*Cronobacter sakazakii* Ad1446	1:10	General Paired	Lyophilized strains 2 weeks at 22-25°C	1	b
300 g	Infant cereals without probiotics	*Cronobacter dublinensis* E798	1:10	Specific 1 Unpaired		1	b
10 g	Powdered infant formula with probiotics	*Cronobacter sakazakii* Ad893	1:10	General Paired		2	a
300 g	Powdered infant formula with probiotics	*Cronobacter sakazakii* Ad893	1:10	Specific 2 Unpaired		2	a
1 unit	Stainless steel (sampled with sponge)	*Cronobacter malonaticus* E752 co-inoculated with *Escherichia coli* Ad1422	1:10	General Paired	Surface inoculation and overnight drying at 22-25°C*	3	a

**This protocol corresponds to the protocol described in the Appendix J (AOAC).*

3.2.2. Results and calculation of the RLODs

The raw data are given in Appendix E.

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). The RLOD are given Table 13.

Table 13: presentation of RLOD before and after confirmation of the alternative method results

Matrix/Strain	Test portion	RLOD	Lower G_L	Upper G_U	z-Test statistic	AL
Powdered infant cereal without probiotics / *Cronobacter sakazakii* Ad1446	10g	1.000	0.474	2.111	0.000	**1.5**
Powdered infant cereal without probiotics / *Cronobacter dublinensis* E798	300g	0.252	0.065	0,977	2.035	**2.5**
Powdered infant formula with probiotics / *Cronobacter sakazakii* Ad893	10g	1.000	0.483	2,069	0.000	**1.5**
Powdered infant formula with probiotics / *Cronobacter sakazakii* Ad893	300g	2.312	0.899	5,943	1.775	**2.5**
Stainless steel / *Cronobacter malonaticus* E752	1 unit	1.131	0.548	2.333	0.339	**1.5**
Combined	**/**	**1,072**	**0.679**	**1.695**	**0.305**	**/**

The RLOD meet the AL fixed at 2.5 for an unpaired study design or at 1.5 for a paired study design for all the tested matrix/strain pairs.

The $LOD_{50\%}$ calculations according to Wilrich & Wilrich POD-LOD calculation program - version 12 are given in Table 14.

Table 14: $LOD_{50\%}$ for the alternative and reference method

Category	(Strain / matrix) pair	Test portion	Level of detection at 50% (CFU / test portion) according to Wilrich & Wilrich	
			Reference method	Alternative method
1	Powdered infant cereal without probiotics / *Cronobacter sakazakii* Ad1446	10 g	0,7 [0,4-1,1]	0,7 [0,4-1,1]
2	Powdered infant cereal without probiotics / *Cronobacter dublinensis* E798	300 g	0,6 [0.3-1.0]	1,3 [0,6-2,6]
3	Powdered infant formula with probiotics / *Cronobacter sakazakii* Ad893	10 g	0,8 [0,5-1,4]	0,8 [0,5-1,4]

Category	(Strain / matrix) pair	Test portion	Level of detection at 50% (CFU / test portion) according to Wilrich & Wilrich	
			Reference method	Alternative method
4	Powdered infant formula with probiotics / *Cronobacter sakazakii* Ad893	300 g	0,6 [0,3-1,1]	2,3 [0,7-7,5]
5	Stainless steel / *Cronobacter malonaticus* E752	/	Not applicable	Not applicable
Combined results			**0,8 [0,6-1,1]**	**0,8 [0,6-1,1]**

The LOD_{50} varies from 0.6 to 4.5 CFU for the reference method and from 0.6 to 5.1 CFU for the alternative method. Note that for stainless steel surfaces, the inoculation level corresponds to the enumeration before overnight storage and leads probably to an overestimation of the inoculation level. It is thus not possible to evaluate the LOD_{50} for this assay.

3.3. Inclusivity and exclusivity study

3.3.1. Test protocols

- **Inclusivity**

Target strains were prepared in Brain Heart Infusion (BHI) or other non-selective medium at 37 ± 1°C. Dilutions were done in order to inoculate 10 to 100 cells/225 mL of BPW ISO + vancomycin (10mg/L). The broth was incubated for 18 h at 37 ± 1°C. The alternative protocol was then performed (MDA test and confirmation).

- **Exclusivity**

Negative strain cultures were performed in BHI or other non-selective medium at 37 ± 1°C. Dilutions were realised in order to inoculate 10^5 cells/mL BPW ISO. The alternative protocol was then performed (MDA test and confirmation).

3.3.2. Results

Raw data are given in Appendix F.

- **Inclusivity**

The 50 strains tested gave positive MDA tests and typical colonies when isolated on CCI Agar.

- **Exclusivity**

No cross reaction was observed among the 30 negative strains tested.

3.3.3. Conclusion

The NEOGEN Molecular Detection Assay 2 – *Cronobacter* method is specific and selective.

3.4. Practicability

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

<table>
<tr><td>Storage conditions, shelf-life and modalities of utilization after first use</td><td colspan="3">The storage temperature is 2-8°C.
The shelf-life is given on the package. All the reagents must be stored at the temperature mentioned on the package.</td></tr>
<tr><td rowspan="15">Time to result</td><td>Steps</td><td>Reference method</td><td>Alternative method</td></tr>
<tr><td colspan="3">Negative samples</td></tr>
<tr><td>Sampling enrichment</td><td>Day 0</td><td>Day 0</td></tr>
<tr><td>MDA test</td><td>/</td><td>Day 1</td></tr>
<tr><td>Subculture in CSB</td><td>Day 1</td><td>/</td></tr>
<tr><td>Streaking onto CCI</td><td>Day 2</td><td>/</td></tr>
<tr><td>Reading plates</td><td>Day 3</td><td>/</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td colspan="3">Presumptive positive or positive results</td></tr>
<tr><td>Subculture in RVS</td><td>Day 1</td><td>Day 1</td></tr>
<tr><td>Streaking onto CCI Agar</td><td>Day 2</td><td>Day 2</td></tr>
<tr><td>Reading plates, streaking onto TSA</td><td>Day 3</td><td>Day 3</td></tr>
<tr><td>Biochemical test</td><td>Day 4</td><td>Day 4</td></tr>
<tr><td>Final result</td><td>Day 5</td><td>Day 5</td></tr>
<tr><td>Common step with the reference method</td><td colspan="3">Enrichment step and confirmation for the general protocol</td></tr>
</table>

The negative results are available in 1 day with the alternative method while 3 days are required with the reference method. The positive results are available in 5 days for both methods.

4. Interlaboratory study

4.1. Organization of the study

- **Collaborators number**

13 collaborators were involved in the study. The analyses were conducted by two collaborators (i.e. technicians) in three laboratories (1 & 2, 3 & 4, 5 & 6) and one collaborator in seven laboratories (7, 8, 9, 10, 11, 12, 13).

- **Matrix and strain used**

Powdered infant formula containing probiotics (*Lactobacillus reuteri* DSM 17938) was inoculated with *Cronobacter sakazakii* Q Laboratories (QL) strain 17031.4.

- **Samples**

Samples were prepared and inoculated on Monday 20th of November 2017 as described below:

- Thirty-six 10 g samples for evaluation by the NEOGEN MDA 2 *Cronobacter* spp. method and confirmation by the ISO 22964 method. (12 per level to allow for submission as part of the AOAC OMA process),
- 1 sample for the total aerobic enumeration,
- A temperature probe was included with the shipment to monitor the temperature during shipment and at receipt.

- **Inoculation**

The targeted inoculation levels were the following:

- Level 0: 0 CFU/g,
- Level 1: < 3 CFU/ test portion. Inoculation level providing, as much as possible, fractional positive results (25%-75%),
- Level 2: 3 < x < 10 CFU/ test portion.

Prior to inoculation, the test product was screened for total aerobic count and total lactic count. The samples were inoculated in a bulk.

- **Labelling and shipping**

Test portions of 10 g were packaged in leak-proof, insulated containers and shipped (according to the Dangerous Goods Regulations IATA for Infectious Substances) by overnight carrier. Samples were randomized and blind coded prior to shipment. All test portions were shipped at ambient temperature (20-25°C) with an expected delivery prior to analysis on Monday. Upon arrival, the test portions were stored at room temperature until they are analyzed.

- **Analyses**

Collaborative study laboratories, the coordinating laboratory (Q-Laboratories) and the expert laboratory (ADRIA Développement) carried out the analyses on Monday 4th of December 2017 after samples are received. Analysis of 10 g portions were tested with the alternative and reference methods.

The alternative method general protocol was used for the 10 g portion sample which is outlined in Appendix B.

4.2. Experimental parameters controls

4.2.1. Strain stability and background microflora stability

Q-Laboratories conducted a QC screen on two sets of 10 test portions the day of inoculation, after 7 days and 14 days storage at ambient temperature.
The results are provided in Table 15.

Table 15: strain stability

Inoculation Level	Sample Replicate	Day of Inoculation	7 Days Post Inoculation	14 Days Post Inoculation
Low	1	+	+	+
	2	-	-	-
	3	+	+	-
	4	+	+	+
	5	+	+	+
	6	-	-	-
	7	-	+	-
	8	-	+	-
	9	-	-	+
	10	+	-	-
	Total	**5/10**	**6/10**	**4/10**
High	1	+	+	+
	2	+	+	+
	3	+	+	+
	4	+	+	+
	5	+	+	+
	6	+	+	+
	7	+	+	+
	8	+	+	+
	9	+	+	+
	10	+	+	+
	Total	**10/10**	**10/10**	**10/10**

No evolution was observed during storage for 2 weeks at ambient temperature.

4.2.2. Contamination level

The MPN values of the artificially contaminated infant formula were determined on the day of inoculation as follows (See Table 16).

Table 16: MPN summary

Matrix	Inoculum level	Large test Portion size	Medium test Portion size	Low test Portion size
Infant formula with probiotics	Low	5 x 20 g*	10 g	5 x 5 g
	High	10 g	5 x 5 g	5 x 2.5 g

**Comprised of samples analyzed during the collaborative study.*

The contamination levels were the following (see Table 17).

Table 17: contamination levels

Level	Theoretical target level (b/10 g)	True level (b/10 g)	Confidence interval
0	0	/	/
1	< 3	0.7	[0.57; 0.87]
2	3 < x < 10	2.71	[1.86; 3.97]

4.2.3. Logistic conditions

The temperature during shipment, the receipt date as well as the analysis date are provided in Table 18.

Table 18: sample temperature at receipt

Collaborator	Temperature during shipment	Receipt Date	Analysis date
1	20°C	Dec 1st, 2017	Dec 4th, 2017
2	19°C	Dec 1st, 2017	Dec 4th, 2017
3	22°C	Dec 1st, 2017	Dec 4th, 2017
4	20°C	Dec 1st, 2017	Dec 4th, 2017
5	19°C	Dec 1st, 2017	Dec 4th, 2017
6	21°C	Dec 1st, 2017	Dec 4th, 2017
7	20°C	Dec 1st, 2017	Dec 4th, 2017
8	21°C	Dec 1st, 2017	Dec 4th, 2017
9	22°C	Dec 1st, 2017	Dec 4th, 2017
10	24°C	Dec 1st, 2017	Dec 4th, 2017
11	23°C	Dec 4th, 2017	Dec 4th, 2017
12	22°C	Nov 30th, 2017	Dec 4th, 2017
13	23°C	Nov 30th, 2017	Dec 4th, 2017
ADRIA	20°C	Nov 29th, 2017	Dec 4th, 2017

No problem was encountered during the transport or at receipt for the 13 collaborators.

4.3. Results

The raw data are given in Appendix G.

4.3.1. Results obtained by the Expert Laboratory

The results obtained by Q Laboratories (Q Lab) and ADRIA Développement are given in Table 19.

Table 19: results obtained by Q Lab and ADRIA Développement

Level	Reference method		Alternative method	
	Q Lab	ADRIA	Q Lab	ADRIA
L0	0/12	0/12	0/12	0/12
L1	5/12	7/12	5/12	7/12
L2	12/12	12/12	12/12	12/12

Fractional positive samples were observed for Level 1 for both laboratories.

4.3.2. Results obtained by the collaborators

- **Aerobic mesophilic flora enumeration**

The enumeration levels varied from < 10 CFU/g to 70 CFU/g.

- **Lactic flora enumeration**

The lactic flora enumeration was first carried out only by Q Laboratories; the enumeration was 1.0 10^7 CFU/g.

One sample was sent to US laboratories for lactic flora enumeration. The reference method followed was the Compendium of Methods for the Microbiological Examination of Foods (CMMEF), Chapter 19: *Acid-producing Microorganisms*. The results were comprised between 6.4 10^7 CFU/g and 2.9 10^8 CFU/g.

- ***Cronobacter* spp. detection**

13 collaborators participated to the study. The results obtained are provided in Table 20 (reference method) and Table 21 (alternative method).

Table 20: positive results by the reference method for all collaborators

Collaborators	Contamination level		
	L0	L1	L2
1	0	6	12
2	0	7	12
3	0	6	12
4	0	5	12
5	0	4	12
6	0	5	12
7	0	5	12
8	0	6	12
9	0	6	12
10	0	5	12
11	0	8	12
12	0	7	12
13	0	8	12
Total	**P_0 = 0**	**P_1 = 78**	**P_2 = 156**

Table 21: positive results (before and after confirmation) by the alternative method for all collaborators

Collaborators	Contamination level								
	L0			L1			L2		
	MDA result	Confirmation result	Final result	MDA result	Confirmation result	Final result	MDA result	Confirmation result	Final result
1	0	0	0	6	6	6	12	12	12
2	0	0	0	7	7	7	12	12	12
3	0	0	0	5	6	5	12	12	12
4	0	0	0	5	5	5	12	12	12
5	0	0	0	4	4	4	12	12	12
6	0	0	0	5	5	5	12	12	12
7	2	0	0	7	5	5	12	12	12
8	1	0	0	6	6	6	12	12	12
9	0	0	0	6	6	6	12	12	12
10	0	0	0	5	5	5	12	12	12
11	0	0	0	8	8	8	12	12	12
12	0	0	0	7	7	6	12	12	12
13	0	0	0	9	8	8	12	12	12
Total	P_0 = 3	C_0 = 0	CP_0 = 0	P_1 = 80	C_1 = 78	CP_1 = 76	P_3 = 156	C_2 = 156	CP_3 = 156

Some positive results were obtained on unspiked samples:

- Lab 7: 2 control samples were found positive by the alternative method. The presence of *Cronobacter* spp. was not confirmed in the enrichment broth for these samples.
- Lab 8: 1 control sample gave a MDA positive result while the confirmatory tests were negative.

According to the AFNOR technical rules, it is possible to include the results from a collaborator with maximum one cross contamination at Level 0. For this study, this rule was applied and the results from Lab 7 were not kept for interpretation.

Positive MDA tests were also obtained while the presence of *Cronobacter* spp. was not confirmed in the enriched BPW for spiked samples (PPNA results). It was the case for one sample for Lab 12 and Lab 13, and two samples for Lab 7.

4.3.3. Results of the collaborators retained for interpretation

The results obtained with the 12 labs kept for interpretation are presented in Table 22 (reference method) and Table 23 (alternative method).

Table 22: positive results by the reference method (without Lab 7)

Collaborators	Contamination level		
	L0	L1	L2
1	0	6	12
2	0	7	12
3	0	6	12
4	0	5	12
5	0	4	12
6	0	5	12
8	0	6	12
9	0	6	12
10	0	5	12
11	0	8	12
12	0	7	12
13	0	8	12
Total	**$P_0 = 0$**	**$P_1 = 73$**	**$P_2 = 144$**

Table 23: positive results (before and after confirmation) by the alternative method (without Lab 7)

Collaborators	Contamination level								
	L0			L1			L2		
	MDA result	Confirmation result	Final result	MDA result	Confirmation result	Final result	MDA result	Confirmation result	Final result
1	0	0	0	6	6	6	12	12	12
2	0	0	0	7	7	7	12	12	12
3	0	0	0	5	6	5	12	12	12
4	0	0	0	5	5	5	12	12	12
5	0	0	0	4	4	4	12	12	12
6	0	0	0	5	5	5	12	12	12
8	1	0	0	6	6	6	12	12	12
9	0	0	0	6	6	6	12	12	12
10	0	0	0	5	5	5	12	12	12
11	0	0	0	8	8	8	12	12	12
12	0	0	0	7	7	6	12	12	12
13	0	0	0	9	8	8	12	12	12
Total	**P_0 = 1**	**C_0 = 0**	**CP_0 = 0**	**P_1 = 73**	**C_1 = 73**	**CP_1 = 71**	**P_3 = 144**	**C_2 = 144**	**CP_3 = 144**

4.4. Interpretation of the results

4.4.1. Calculation of the specificity percentage (SP)

The percentage specificities (SP) of the reference method and of the alternative method, using the data after confirmation, based on the results of level L0 are the following (See Table 24).

Table 24: percentage specificity

Specificity for the reference method	$SE_{ref} = (1 - \left(\frac{P_0}{N}\right)) \times 100\%$	**100 %**
Specificity for the alternative method	$SE_{alt} = (1 - \left(\frac{P_0}{N}\right)) \times 100\%$	**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.

4.4.2. Calculation of the sensitivity (SEalt), the sensitivity for the reference method (SEref), the relative trueness (RT) and the false positive ratio for the alternative method (FPR)

Fractional positive results were obtained for the low inoculation level (L1). This inoculation level was 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 is provided in Table 25.

Table 25: summary of the obtained results with the reference method and the alternative method for level 1

Response	Reference method positive (R+)	Reference method negative (R-)
Alternative method positive (A+)	Positive agreement (A+/R+) **PA = 71**	Positive deviation (R-/A+) **PD = 0**
Alternative method negative (A-)	Negative deviation (A-/R+) **TND = 2**	Negative agreement (A-/R-) **TNA = 71**

Based on the data summarized in Table 25, 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 26).

Table 26: sensitivity, relative trueness and false positive ratio percentages

Sensitivity of the alternative method (SE_{alt})	$SE_{alt} = \frac{PA + PD}{PA + TND + PD} \times 100\%$	**97,3%**
Sensitivity of the reference method (SE_{ref})	$SE_{ref} = \frac{PA + TND}{PA + TND + PD} \times 100\%$	**100%**
Relative trueness (RT)	$RT = \frac{PA + TNA}{N} \times 100\%$	**98,6%**
False positive ratio (FPR) for the alternative method	$FPR = \frac{FP}{TNA} \times 100\%$	**1,0%**
False negative ratio (FNR) for the alternative method	$FNR = \frac{NA_{FN(alt)} + ND_{FN(alt)}}{PA + TND + PD}$	**2.7%**

4.4.3. Interpretation of data

Two negative deviations were obtained at Level 1 (See Table 27).

Table 27: negative deviations for level 1

Collaborator	Sample No	MDA result	Confirmation
3	150	-	+
12	561	-	+

For both samples, the confirmation concluded to the presence of *Cronobacter* spp. in the enrichment broth. The detection level of the NEOGEN Molecular Detection Assay 2 – *Cronobacter* method was probably not reached.

For a paired study design, the difference between (TND – PD) and the addition (TND + PD) are calculated for the level(s) where fractional recovery is obtained (so L1 and possibly L2). The observed value found for (TND – PD) and (TND + PD) shall not be higher than the AL.

As 12 samples were tested per inoculation level per collaborator (instead of 8 samples as described in the ISO 16140-2:2016), the acceptability limit for 18 labs were taken into account for the interpretation (144 samples/8 = 18 labs).

For 12 Labs, the limits are the following:

	Result	**AL (12 labs but 144 samples= 18 labs)**	**Conclusion**
TND-PD=	2	5	TND - PD < AL
TND+PD=	2	7	TND + PD < AL

The EN ISO 16140-2/A1 (2024) requirements are fulfilled as (TND - PD) and (TND + PD) meet the AL.
There is indeed no difference between the sensitivity of the compared methods, and the alternative method complies with the reproducibility conditions.

4.4.4. 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_ver2.
The results are used only for information (see Table 28).

Table 28: $LOD_{50\%}$, $LOD_{95\%}$ and RLOD

Method	**LOD 50%**	**LOD 95%**	**RLOD**
Reference	0,55 [0,47-0,66]	2,39 [2,01-2,83]	1,02 [0,84-1,25]
Alternative	0,56 [0,48-0,67]	2,44 [2,06-2,90]	

5. Conclusion

- **Methods comparison study**

The method comparison study scheme corresponds to a paired study design for the general protocol as the alternative and reference methods have the same enrichment procedure and to an unpaired study design for the specific protocols 1 and 2 as the alternative and reference methods have a different enrichment procedure.

In the sensitivity study, 3 categories were tested: 2 food categories and the environmental samples. The protocol of the alternative method shows:

For the general protocol: 0 positive deviations (PD) and 4 negative deviations (TND)
For the specific protocol 1: 10 positive deviations (PD) and 4 negative deviations (TND)
For the specific protocol 2: 3 positive deviations (PD) and 6 negative deviations (TND).

The (TND - PD) and (TND + PD) calculated values are lower than the acceptability limits (AL) whatever the categories, and as well for the 3 tested categories and two test portions (10 g and 300 g).

The Relative Levels of Detection (RLOD) meet the AL fixed at 1.5 for the paired data study whatever the matrix/strain pairs and meet the AL fixed at 2.5 for the unpaired study.

The inclusivity and exclusivity testing gave the expected results for the 50 target strains and the 30 non target strains.

It is possible to store the primary enrichment broth and the lysates for 72 h at 5 ± 3°C except for infant formula and infant cereals with probiotics (300 g sample size).

The alternative method allows a one-day screening of the negative samples.

The alternative method fulfils all the EN ISO 16140-2/A1 (2024) and AFNOR technical rules (revision 12).

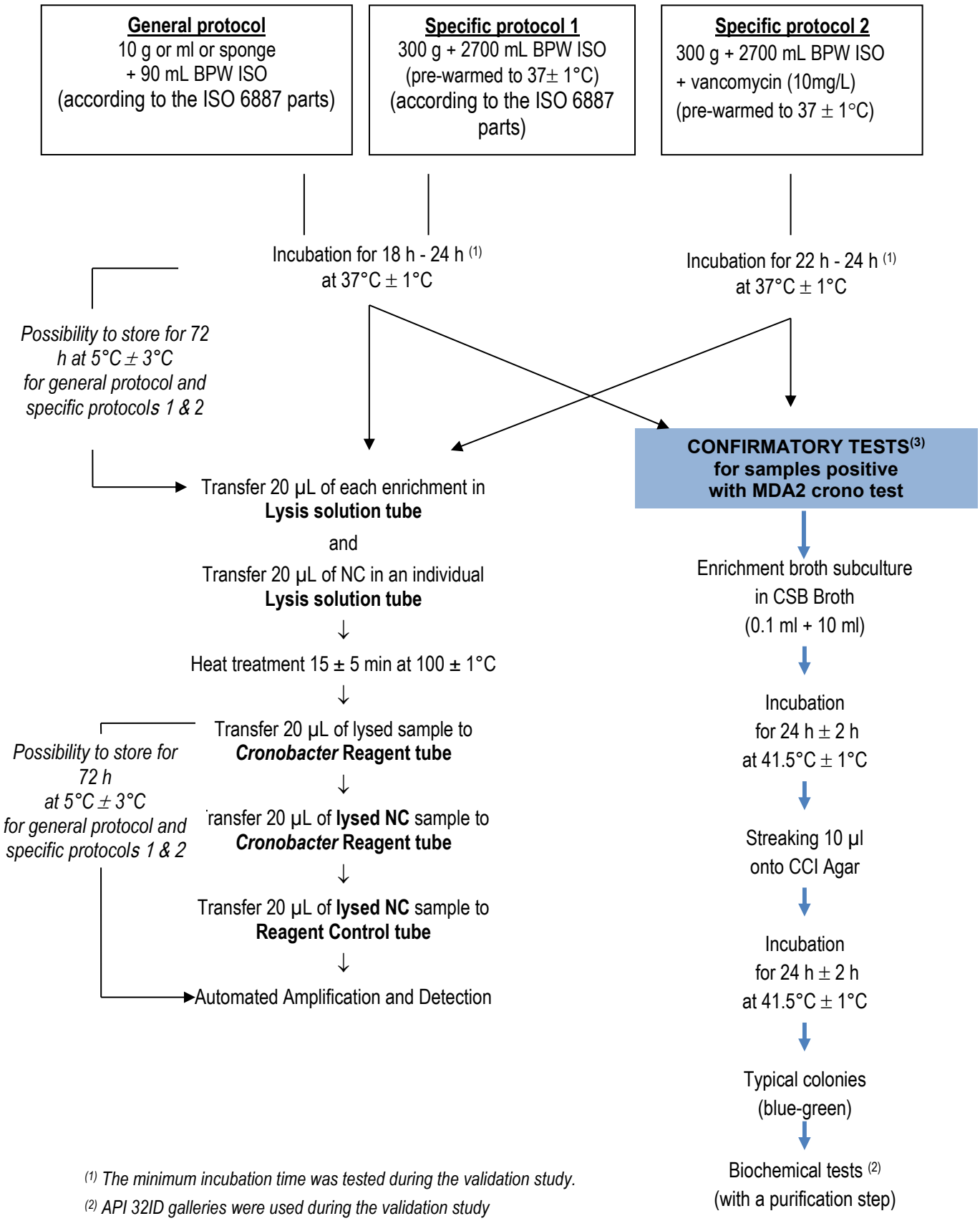
- **Interlaboratory study**

The data and interpretations comply with the EN ISO 16140-2/A1 (2024) requirements. The NEOGEN Molecular Detection Assay 2 – *Cronobacter* method is considered equivalent to the ISO standard.

Le Lion d'Angers, March 2nd , 2026
Guillaume MESNARD
Method Validation Supervisor

APPENDICES

Appendix A – Flow diagram of the alternative method: NEOGEN Molecular Detection Assay 2 – *Cronobacter* method



(1) The minimum incubation time was tested during the validation study.

(2) API 32ID galleries were used during the validation study

(3) All samples were confirmed during the validation study

Appendix B – Flow diagram of the reference method: ISO 22964 (2017): Microbiology of the food chain -- Horizontal method for the detection of *Cronobacter* spp.

10 g (or 10 mL) + 90 mL BPW (according to the ISO 6887 parts)
1 swab [3] + 10 ml BPW
1 sponge [1] + 90 ml BPW
↓
18 h ± 2 h at 37°C
↓
0.1 mL of culture + 10 mL CSB
24 h ± 2 h at 41.5 ºC± 1 ºC
↓
Streaking onto CCI agar
24 h ± 2 h at 41.5 ºC± 1 ºC
↓
Purification onto TSA
18 h to 24 h at 34ºC to 38 ºC
↓
Biochemical confirmation:
Oxidase
Hydrolysis of 4 Nitrophenyl (PNP) α-D-glucopyranoside substrate
L-Lysine decarboxylase
L-Ornithine decarboxylase
Fermentation of various carbohydrates
Methyl red (MR) (optional)
Voges-Proskauer (VP) (optional)
or Biochemical galleries (API 32ID)

[3] Supplemented with neutralizing agent when sampling is done after cleaning procedure. Composition of the neutralizing agent: Lecithin (3 g/l), Tween 80 (30 g/l), L-histidine (1 g/l), sodium thiosulfate ($Na_2S_2O_3$ - $5H_2O$) (7.8 g/l), disodium phosphate (Na_2PO_4 - $12H_2O$) (100.8 g/l)

Appendix C – Artificial contamination of samples

Sample N°	Product	Artificial contamination					Global result	Category	Type
		Strain	Origin	Injury protocol	Injury measure-ment	Inoculation CFU/sample			
1681	**Infant formula**	*C. sakazakii* Ad1445	Infant formula	Seeding lyophilized ambient 12 days	/	7.5	+	1	a
1682	**Infant cereal**	*C. sakazakii* Ad1445	Infant formula	Seeding lyophilized ambient 12 days	/	7.5	+	1	b
1683	**Infant cereal**	*C. sakazakii* Ad1445	Infant formula	Seeding lyophilized ambient 12 days	/	7.5	+	1	b
1684	**Infant cereal**	*C. sakazakii* Ad1445	Infant formula	Seeding lyophilized ambient 12 days	/	7.5	+	1	b
1685	**Infant cereal**	*C. sakazakii* Ad1445	Infant formula	Seeding lyophilized ambient 12 days	/	7.5	-	1	b
1686	**Infant cereal**	*C. sakazakii* Ad1445	Infant formula	Seeding lyophilized ambient 12 days	/	7.5	-	1	b
1693	**Infant cereal**	*C. muytjensii* E769	Milk powder	Seeding lyophilized ambient 12 days	/	6.0	+	1	b
1694	**Infant cereal**	*C. muytjensii* E769	Milk powder	Seeding lyophilized ambient 12 days	/	6.0	+	1	b
1700	**Infant formula with probiotics**	*C. muytjensii* E769	Milk powder	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1701	**Infant formula with probiotics**	*C. muytjensii* E769	Milk powder	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1702	**Infant formula with probiotics**	*C. muytjensii* E769	Milk powder	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1703	**Infant formula with probiotics**	C. muytjensii E769	Milk powder	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1704	**Infant formula with probiotics**	*C. sakazakii* Ad2405	Infant formula	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1705	**Infant formula with probiotics**	*C. sakazakii* Ad2405	Infant formula	Seeding lyophilized ambient 14 days	/	6.0	-	2	a
1706	**Infant formula with probiotics**	*C. sakazakii* Ad2405	Infant formula	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1707	**Infant formula with probiotics**	*C. sakazakii* Ad2405	Infant formula	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1708	**Infant formula with probiotics**	*C. sakazakii* Ad2405	Infant formula	Seeding lyophilized ambient 14 days	/	6.0	-	2	a
1709	**Infant formula with probiotics**	*C. sakazakii* Ad2405	Infant formula	Seeding lyophilized ambient 14 days	/	6.0	-	2	a
1710	**Infant formula with probiotics**	*C. sakazakii* Ad2349	Infant formula	Seeding lyophilized ambient 14 days	/	9.0	+	2	a
1711	**Infant formula with probiotics**	*C. sakazakii* Ad2349	Infant formula	Seeding lyophilized ambient 14 days	/	9.0	-	2	a
1712	**Infant formula with probiotics**	*C. sakazakii* Ad2349	Infant formula	Seeding lyophilized ambient 14 days	/	9.0	+	2	a
1713	**Infant cereal with probiotics**	*C. sakazakii* Ad2349	Infant formula	Seeding lyophilized ambient 14 days	/	9.0	+	2	b
1714	**Infant cereal with probiotics**	*C. sakazakii* Ad2349	Infant formula	Seeding lyophilized ambient 14 days	/	9.0	+	2	b
1715	**Infant cereal with probiotics**	*C. sakazakii* Ad2349	Infant formula	Seeding lyophilized ambient 14 days	/	9.0	+	2	b
2016	**Infant cereal with probiotics**	*C. sakazakii* Ad2341	Wheat starch	Seeding lyophilized ambient 22 days	/	0.8	+	2	b
2017	**Infant cereal with probiotics**	*C. sakazakii* Ad2413	Infant formula	Seeding lyophilized ambient 22 days	/	1.8	-	2	b

Sample N°	Product	Artificial contamination					Global result	Category	Type
		Strain	Origin	Injury protocol	Injury measure-ment	Inoculation CFU/sample			
2018	Infant cereal with probiotics	*C. sakazakii* Ad2412	Infant formula	Seeding lyophilized ambient 22 days	/	0.5	+	2	b
2019	Infant cereal with probiotics	*C. sakazakii* Ad2358	Infant formula	Seeding lyophilized ambient 22 days	/	1.1	+	2	b
2020	Infant cereal with probiotics	*C. sakazakii* Ad2378	Infant formula	Seeding lyophilized ambient 22 days	/	0.8	+	2	b
2021	Infant cereal with probiotics	*C. sakazakii* Ad2413	Infant formula	Seeding lyophilized ambient 22 days	/	1.8	+	2	b
2022	Infant cereal with probiotics	*C. sakazakii* Ad2412	Infant formula	Seeding lyophilized ambient 22 days	/	0.5	+	2	b
2023	Corn flour	*C. sakazakii* Ad2341	Wheat starch	Seeding lyophilized ambient 14 days	/	1.1	+	1	c
2024	Rye flour	*C. sakazakii* Ad2341	Wheat starch	Seeding lyophilized ambient 14 days	/	1.1	-	1	c
2025	Oat flour	*C. sakazakii* Ad2341	Wheat starch	Seeding lyophilized ambient 14 days	/	1.1	-	1	c
2026	Wheat flour	*C. sakazakii* Ad2341	Wheat starch	Seeding lyophilized ambient 14 days	/	1.1	-	1	c
2027	Barley flour	*C. sakazakii* Ad2341	Wheat starch	Seeding lyophilized ambient 14 days	/	1.1	-	1	c
2028	Dry milk powder	*C. sakazakii* Ad2413	Infant formula	Seeding lyophilized ambient 14 days	/	2.4	-	1	c
2029	Lactose	*C. sakazakii* Ad2413	Infant formula	Seeding lyophilized ambient 14 days	/	2.4	-	1	c
2030	Lactoserum	*C. sakazakii* Ad2413	Infant formula	Seeding lyophilized ambient 14 days	/	2.4	-	1	c
2031	Maltodextrin	*C. sakazakii* Ad2413	Infant formula	Seeding lyophilized ambient 14 days	/	2.4	+	1	c
2032	Soy powder	*C. sakazakii* Ad2412	Infant formula	Seeding lyophilized ambient 14 days	/	0.5	-	1	c
2033	Dry milk powder	*C. sakazakii* Ad2412	Infant formula	Seeding lyophilized ambient 14 days	/	0.5	+	1	c
2034	Dry milk powder	*C. sakazakii* Ad2412	Infant formula	Seeding lyophilized ambient 14 days	/	0.5	-	1	c
2656	Lactoserum powder	C. malonaticus E684	Food product	Seeding lyophilized ambient 18 days	/	<1,0	-	1	c
2657	Lactoserum powder	C. muytjensii E888	Milk powder	Seeding lyophilized ambient 18 days	/	1.2	-	1	c
2658	Dry milk powder	*C. sakazakii* Ad2348	Infant formula	Seeding lyophilized ambient 18 days	/	4.8	+	1	c
2659	Dry milk powder	*C. sakazakii* Ad2350	Infant formula	Seeding lyophilized ambient 18 days	/	2.1	+	1	c
2660	Dry milk powder	*C. sakazakii* Ad2351	Infant formula	Seeding lyophilized ambient 18 days	/	3.9	+	1	c
2661	Wheat starch	*C. sakazakii* Ad2352	Infant formula	Seeding lyophilized ambient 18 days	/	3.8	+	1	c
2662	Lactose	*C. sakazakii* Ad2356	Infant formula	Seeding lyophilized ambient 18 days	/	1.0	-	1	c
2663	Lactoserum	*C. sakazakii* Ad2361	Infant formula	Seeding lyophilized ambient 18 days	/	2.4	+	1	c
2664	Infant cereal	*C. sakazakii* Ad2370	Infant formula	Seeding lyophilized ambient 18 days	/	1.5	-	1	b
2665	Infant cereal	*C. malonaticus* E684	Food product	Seeding lyophilized ambient 18 days	/	<1,00	+	1	b
2666	Infant cereal	*C. muytjensii* E888	Milk powder	Seeding lyophilized ambient 18 days	/	1.2	-	1	b

Sample N°	Product	Artificial contamination					Global result	Category	Type
		Strain	Origin	Injury protocol	Injury measure-ment	Inoculation CFU/sample			
2667	**Infant cereal**	*C. sakazakii* Ad2348	Infant formula	Seeding lyophilized ambient 18 days	/	4.8	+	1	b
2668	**Infant cereal**	*C. sakazakii* Ad2350	Infant formula	Seeding lyophilized ambient 18 days	/	2.1	-	1	b
2669	**Infant formula**	*C. sakazakii* Ad2351	Infant formula	Seeding lyophilized ambient 18 days	/	3.9	-	1	a
2670	**Infant formula**	*C. sakazakii* Ad2352	Infant formula	Seeding lyophilized ambient 18 days	/	3.8	-	1	a
2672	**Infant formula**	*C. sakazakii* Ad2361	Infant formula	Seeding lyophilized ambient 18 days	/	2.4	-	1	a
2673	**Infant formula**	*C. sakazakii* Ad2370	Infant formula	Seeding lyophilized ambient 18 days	/	1.5	-	1	a
2674	**Infant formula**	*C. malonaticus* E684	Food product	Seeding lyophilized ambient 18 days	/	<1,0	-	1	a
2675	**Infant formula**	*C. muytjensii* E888	Milk powder	Seeding lyophilized ambient 18 days	/	1.2	-	1	a
2677	**Infant formula**	*C. sakazakii* Ad2350	Infant formula	Seeding lyophilized ambient 18 days	/	2.1	-	1	a
2671	**Infant formula**	*C. sakazakii* Ad2356	Infant formula	Seeding lyophilized ambient 18 days	/	1.0	+	1	a
2676	**Infant formula**	*C. sakazakii* Ad2348	Infant formula	Seeding lyophilized ambient 18 days	/	4.8	+	1	a
2678	**Infant formula**	*C. sakazakii* Ad2351	Infant formula	Seeding lyophilized ambient 18 days	/	3.9	+	1	a
2679	**Infant formula with probiotics**	*C. sakazakii* Ad2352	Infant formula	Seeding lyophilized ambient 18 days	/	3.8	+	2	a
2680	**Infant formula with probiotics**	*C. sakazakii* Ad2356	Infant formula	Seeding lyophilized ambient 18 days	/	1.0	-	2	a
2681	**Infant cereal with probiotics**	*C. sakazakii* Ad2361	Infant formula	Seeding lyophilized ambient 18 days	/	2.4	+	2	b
2682	**Infant cereal with probiotics**	*C. sakazakii* Ad2370	Infant formula	Seeding lyophilized ambient 18 days	/	1.5	+	2	b
3655	**Dust**	*C. sakazakii* Ad2409	Dairy environment	Spiking HT 56°C 8 min	0.6	3-4-3-2-4 (3,2)	+	3	b
3656	**Dust**	*C. sakazakii* Ad2399	Dairy environment	Spiking HT 56°C 8 min	0.7	3-2-1-2-2 (2,0)	+	3	b
3657	**Dust**	*C. sakazakii* Ad2390	Dairy environment	Spiking HT 56°C 8 min	1.7	0-0-1-1-0 (0,4)	+	3	b
3658	**Dust**	*C. sakazakii* Ad2379	Dairy environment	Spiking HT 56°C 8 min	0.8	3-4-4-5-3 (3,8)	+	3	b
3659	**Dust**	*C. sakazakii* Ad2409	Dairy environment	Spiking HT 56°C 8 min	0.6	3-4-3-2-4 (3,2)	+	3	b
3660	**Dust**	*C. sakazakii* Ad2399	Dairy environment	Spiking HT 56°C 8 min	0.7	3-2-1-2-2 (2,0)	+	3	b
3661	**Sponge**	*C. sakazakii* Ad2390	Dairy environment	Spiking HT 56°C 8 min	1.7	0-0-1-1-0 (0,4)	+	3	a
3662	**Sponge**	*C. sakazakii* Ad2379	Dairy environment	Spiking HT 56°C 8 min	0.8	3-4-4-5-3 (3,8)	+	3	a
3663	**Sponge**	*C. sakazakii* Ad2409	Dairy environment	Spiking HT 56°C 8 min	0.6	3-4-3-2-4 (3,2)	+	3	a
3664	**Sponge**	*C. sakazakii* Ad2399	Dairy environment	Spiking HT 56°C 8 min	0.7	3-2-1-2-2 (2,0)	+	3	a
3665	**Sponge**	*C. sakazakii* Ad2390	Dairy environment	Spiking HT 56°C 8 min	1.7	0-0-1-1-0 (0,4)	-	3	a
3666	**Sponge**	*C. sakazakii* Ad2379	Dairy environment	Spiking HT 56°C 8 min	0.8	3-4-4-5-3 (3,8)	+	3	a

Sample N°	Product	Artificial contamination					Global result	Category	Type
		Strain	Origin	Injury protocol	Injury measure-ment	Inoculation CFU/sample			
3667	Sponge	*C. sakazakii* Ad2409	Dairy environment	Spiking HT 56°C 8 min	0.6	3-4-3-2-4 (3,2)	+	3	a
3668	Sponge	*C. sakazakii* Ad2399	Dairy environment	Spiking HT 56°C 8 min	0.7	3-2-1-2-2 (2,0)	+	3	a
3669	Sponge	*C. sakazakii* Ad2390	Dairy environment	Spiking HT 56°C 8 min	1.7	0-0-1-1-0 (0,4)	-	3	a
3670	Sponge	*C. sakazakii* Ad2379	Dairy environment	Spiking HT 56°C 8 min	0.8	3-4-4-5-3 (3,8)	+	3	a
3671	Swab	*C. sakazakii* Ad2409	Dairy environment	Spiking HT 56°C 8 min	0.6	3-4-3-2-4 (3,2)	+	3	a
3672	Swab	*C. sakazakii* Ad2399	Dairy environment	Spiking HT 56°C 8 min	0.7	3-2-1-2-2 (2,0)	+	3	a
3673	Process water	*C. sakazakii* Ad2390	Dairy environment	Spiking HT 56°C 8 min	1.7	0-0-1-1-0 (0,4)	+	3	c
3674	Recycled wash water	*C. sakazakii* Ad2379	Dairy environment	Spiking HT 56°C 8 min	0.8	3-4-4-5-3 (3,8)	-	3	c
3675	Recycled wash water	*C. sakazakii* Ad2409	Dairy environment	Spiking HT 56°C 8 min	0.6	3-4-3-2-4 (3,2)	+	3	c
3676	Recycled wash water	*C. sakazakii* Ad2399	Dairy environment	Spiking HT 56°C 8 min	0.7	3-2-1-2-2 (2,0)	-	3	c
3677	Serum powder	*C. sakazakii* Ad2411	Infant formula	Spiking HT 56°C 8 min	0.9	1-2-3-2-2 (2,0)	+	1	c
4612	Infant formula	*C. sakazakii* Ad2403	Infant formula	Spiking HT 56°C 10 min	1.1	6-2-2-4-3 (3,4)	+	1	a
4613	Infant formula	*C. sakazakii* Ad2284	Infant formula	Spiking HT 56°C 10 min	1.9	1-0-2-0-0 (0,6)	-	1	a
4614	Infant formula	*C. sakazakii* Ad1432	Infant formula	Spiking HT 56°C 10 min	1.8	1-0-0-0-1 (0,4)	-	1	a
4615	Infant formula	*C. sakazakii* Ad2403	Infant formula	Spiking HT 56°C 10 min	1.6	5-0-3-3-0 (2,2)	+	1	a
4616	Infant formula	*C. sakazakii* Ad2403	Infant formula	Spiking HT 56°C 10 min	1.1	6-2-2-4-3 (3,4)	+	1	a
4617	Infant formula	*C. sakazakii* Ad2284	Infant formula	Spiking HT 56°C 10 min	1.9	1-0-2-0-0 (0,6)	+	1	a
4618	Infant cereal	*C. sakazakii* Ad1432	Infant formula	Spiking HT 56°C 10 min	1.8	1-0-0-0-1 (0,4)	-	1	b
4619	Infant cereal	*C. sakazakii* Ad2403	Infant formula	Spiking HT 56°C 10 min	1.6	5-0-3-3-0 (2,2)	+	1	b
4620	Infant cereal	*C. sakazakii* Ad2403	Infant formula	Spiking HT 56°C 10 min	1.1	6-2-2-4-3 (3,4)	+	1	b
4621	Maltodextrin	*C. sakazakii* Ad2284	Infant formula	Spiking HT 56°C 10 min	1.9	1-0-2-0-0 (0,6)	-	1	c
4622	Dust with probiotics	*C. sakazakii* Ad2408	Dairy environment	Spiking HT 56°C 10 min	2.9	2-1-1-1-0 (1,0)	+	3	b
4623	Dust with probiotics	*C. sakazakii* Ad2406	Dairy environment	Spiking HT 56°C 10 min	1.2	1-2-0-2-3 (1,6)	+	3	b
4624	Dust with probiotics	*C. sakazakii* Ad2404	Dairy environment	Spiking HT 56°C 10 min	1.4	7-6-5-4-0 (4,4)	+	3	b
4625	Dust with probiotics	*C. sakazakii* Ad2408	Dairy environment	Spiking HT 56°C 10 min	2.9	2-1-1-1-0 (1,0)	-	3	b
4626	Dust with probiotics	*C. sakazakii* Ad2406	Dairy environment	Spiking HT 56°C 10 min	1.2	1-2-0-2-3 (1,6)	+	3	b
4627	Process water	*C. sakazakii* Ad2404	Dairy environment	Spiking HT 56°C 10 min	1.4	7-6-5-4-0 (4,4)	+	3	c
4628	Recycled wash water	*C. sakazakii* Ad2408	Dairy environment	Spiking HT 56°C 10 min	2.9	2-1-1-1-0 (1,0)	-	3	c

Sample N°	Product	Artificial contamination					Global result	Category	Type
		Strain	Origin	Injury protocol	Injury measure-ment	Inoculation CFU/sample			
4629	**Recycled wash water**	*C. sakazakii* Ad2406	Dairy environment	Spiking HT 56°C 10 min	1.2	1-2-0-2-3 (1,6)	+	3	c
4630	**Recycled wash water**	*C. sakazakii* Ad2404	Dairy environment	Spiking HT 56°C 10 min	1.4	7-6-5-4-0 (4,4)	+	3	c
4631	**Process water**	*C. sakazakii* Ad2408	Dairy environment	Spiking HT 56°C 10 min	2.9	2-1-1-1-0 (1,0)	+	3	c
4632	**Process water**	*C. sakazakii* Ad2406	Dairy environment	Spiking HT 56°C 10 min	1.2	1-2-0-2-3 (1,6)	-	3	c
4633	**Process water**	*C. sakazakii* Ad2404	Dairy environment	Spiking HT 56°C 10 min	1.4	7-6-5-4-0 (4,4)	+	3	c
4634	**Process water**	*C. sakazakii* Ad2408	Dairy environment	Spiking HT 56°C 10 min	2.9	2-1-1-1-0 (1,0)	+	3	c
4635	**Swab**	*C. sakazakii* Ad2406	Dairy environment	Spiking HT 56°C 10 min	1.2	1-2-0-2-3 (1,6)	+	3	a
4914	**Infant formula**	*C. sakazakii* Ad1446	Infant formula	Seeding lyophilized ambient 34 days	/	3.0	+	1	a
4915	**Infant formula**	*C. sakazakii* Ad2394	Infant formula	Seeding lyophilized ambient 34 days	/	6.8	-	1	a
4917	**Infant formula**	*C. sakazakii* Ad2400	Infant formula	Seeding lyophilized ambient 34 days	/	3.6	+	1	a
4918	**Infant formula**	*C. sakazakii* Ad1446	Infant formula	Seeding lyophilized ambient 34 days	/	3.0	+	1	a
4922	**Infant formula**	*C. sakazakii* Ad1446	Infant formula	Seeding lyophilized ambient 34 days	/	3.0	+	1	a
4925	**Infant formula with probiotics**	*C. sakazakii* Ad2400	Infant formula	Seeding lyophilized ambient 34 days	/	3.6	+	2	a
4926	**Infant formula with probiotics**	*C. sakazakii* Ad1446	Infant formula	Seeding lyophilized ambient 34 days	/	3.0	+	2	a
4927	**Infant formula with probiotics**	*C. sakazakii* Ad2394	Infant formula	Seeding lyophilized ambient 34 days	/	6.8	-	2	a
4928	**Infant formula with probiotics**	*C. sakazakii* Ad2395	Infant formula	Seeding lyophilized ambient 34 days	/	6.0	-	2	a
4929	**Infant formula with probiotics**	*C. sakazakii* Ad2400	Infant formula	Seeding lyophilized ambient 34 days	/	3.6	+	2	a
4930	**Infant formula with probiotics**	*C. sakazakii* Ad2394	Infant formula	Seeding lyophilized ambient 34 days	/	6.8	-	2	a
4931	**Infant formula with probiotics**	*C. sakazakii* Ad2395	Infant formula	Seeding lyophilized ambient 34 days	/	6.0	-	2	a
5316 *	**Infant cereal with probiotics**	*C. sakazakii* Ad2381	Infant formula	Seeding lyophilized ambient 28 days	/	1.0	+	2	b
5317 *	**Infant cereal with probiotics**	*C. malonaticus* DSM18702	Milk powder	Seeding lyophilized ambient 28 days	/	1.8	-	2	b
5318 *	**Infant cereal with probiotics**	*C. malonaticus* DSM18702	Milk powder	Seeding lyophilized ambient 28 days	/	1.8	-	2	b
5321 *	**Infant cereal with probiotics**	*C. dublinensis* DSM18705	Milk powder	Seeding lyophilized ambient 28 days	/	0.8	+	2	b

*Addition of amylase in the enrichment broth

Sample N°	Product	Artificial contamination					Global result	Category	Type
		Strain	Origin	Injury protocol	Injury measu-rement	Inoculation CFU/sample			
5322 *	**Infant cereal with probiotics**	*C. dublinensis* DSM18705	Milk powder	Seeding lyophilized ambient 28 days	/	0.8	+	2	b
5323 *	**Infant cereal with probiotics**	*C. sakazakii* Ad2358	Infant formula	Seeding lyophilized ambient 28 days	/	0.5	+	2	b
5324 *	**Infant cereal with probiotics**	*C. sakazakii* Ad2358	Infant formula	Seeding lyophilized ambient 28 days	/	0.5	+	2	b
5325 *	**Infant cereal with probiotics**	*C. sakazakii* Ad2356	Infant formula	Seeding lyophilized ambient 28 days	/	1.3	+	2	b
5326 *	**Infant cereal with probiotics**	*C. sakazakii* Ad2356	Infant formula	Seeding lyophilized ambient 28 days	/	1.3	+	2	b
5327 *	**Infant cereal with probiotics**	*C. sakazakii* Ad2370	Infant formula	Seeding lyophilized ambient 28 days	/	1.8	+	2	b
5328 *	**Infant cereal with probiotics**	*C. sakazakii* Ad2370	Infant formula	Seeding lyophilized ambient 28 days	/	1.8	-	2	b
5329	**Infant formula with probiotics**	*C. sakazakii* Ad2381	Infant formula	Seeding lyophilized ambient 28 days	/	1.0	-	2	a
5330	**Infant formula with probiotics**	*C. malonaticus* DSM18702	Milk powder	Seeding lyophilized ambient 28 days	/	1.8	+	2	a
5331 *	**Infant cereal**	*C. sakazakii* Ad2412	Infant formula	Seeding lyophilized ambient 28 days	/	1.5	+	1	b
5332 *	***Infant cereal***	*C. dublinensis* DSM18705	Milk powder	Seeding lyophilized ambient 28 days	/	0.8	-	1	b
5333 *	**Infant cereal**	*C. sakazakii* Ad2358	Infant formula	Seeding lyophilized ambient 28 days	/	0.5	+	1	b
5334 *	**Infant cereal**	*C. sakazakii* Ad2356	Infant formula	Seeding lyophilized ambient 28 days	/	1.3	-	1	b
5335 *	**Infant cereal**	*C. sakazakii* Ad2370	Infant formula	Seeding lyophilized ambient 28 days	/	1.8	+	1	b
6764 *	**Infant cereal with probiotics**	*C. malonaticus* E752	RTRH food	Seeding lyophilized ambient 24 days	/	<1,0	-	2	b
6769	**Infant formula with probiotics**	*C. malonaticus* E752	RTRH food	Seeding lyophilized ambient 24 days	/	<1,0	-	2	a
6770	**Infant formula with probiotics**	*C. sakazakii* Ad2381	Dairy product	Seeding lyophilized ambient 24 days	/	4.0	-	2	a
6774	**Infant formula with probiotics**	*C. sakazakii* Ad2366	Environmental sample	Seeding lyophilized ambient 24 days	/	1.8	-	2	a
6892	**Recycled wash water (Dairy industry)**	*C. universalis* NCTC9529T	Water	Spiking HT 56°C 8 min	0.78	1-1-1-0-0 (0,6)	-	3	c
6893	**Recycled wash water (Dairy industry)**	C. sakazaki Ad2289	Environmental water	Spiking HT 56°C 8 min	2.21	1-1-0-0-0 (0,4)	-	3	c
6894	**Recycled wash water (Dairy industry)**	*C. universalis* NCTC9529T	Water	Spiking HT 56°C 8 min	0.78	1-1-1-0-0 (0,6)	-	3	c
6895	**Recycled wash water (Dairy industry)**	C. sakazaki Ad2289	Environmental water	Spiking HT 56°C 8 min	2.21	1-1-0-0-0 (0,4)	+	3	c
5023	**Wheat starch**	*C. sakazakii* Ad2378	Infant formula	Seeding lyophilized ambient 44 days	/	0.6	+	1	c

Sample N°	Product	Artificial contamination					Global result	Category	Type
		Strain	Origin	Injury protocol	Injury measu-rement	Inoculation CFU/sample			
5024	Corn starch	*C. muytjensii* E888	Milk powder	Seeding lyophilized ambient 44 days	/	1.7	-	1	c
5036	Maltodextrin	*C. sakazakii* Ad1420	Infant formula	Seeding lyophilized ambient 43 days	/	1.0	-	1	c
5037	Flour	*C. sakazakii* Ad2396	Infant formula	Seeding lyophilized ambient 43 days	/	1.1	+	1	c
5026	Infant formula with probiotics	*C. sakazakii* Ad2378	Infant formula	Seeding lyophilized ambient 44 days	/	0.6	+	2	a
5027	Infant formula with probiotics	*C. muytjensii* E888	Milk powder	Seeding lyophilized ambient 44 days	/	1.7	-	2	a
5028	Infant formula with probiotics	*C. sakazakii* Ad893	Dairy product	Seeding lyophilized ambient 44 days	/	0.4	+	2	a
5029	Infant cereal with probiotics	*C. sakazakii* Ad2378	Infant formula	Seeding lyophilized ambient 44 days	/	0.6	+	2	b
5033	Infant formula with probiotics	*C. sakazakii* Ad2396	Infant formula	Seeding lyophilized ambient 43 days	/	1.1	+	2	a
5034	Infant formula with probiotics	*C. sakazakii* Ad1420	Infant formula	Seeding lyophilized ambient 43 days	/	1.0	+	2	a
5035	Infant formula with probiotics	*C. sakazakii* Ad2396	Infant formula	Seeding lyophilized ambient 43 days	/	1.1	-	2	a
6761 *	Infant cereal with probiotics	*C. sakazakii* Ad1708	Environmental sample	Seeding lyophilized ambient 24 days	/	0.7	+	2	b
6762 *	Infant cereal with probiotics	*C. sakazakii* Ad2366	Environmental sample	Seeding lyophilized ambient 24 days	/	1.8	+	2	b
6765 *	Infant cereal with probiotics	*C. sakazakii* Ad2383	Environmental sample	Seeding lyophilized ambient 24 days	/	1.6	+	2	b
6767	Infant formula with probiotics	*C. sakazakii* Ad1708	Environmental sample	Seeding lyophilized ambient 24 days	/	0.7	+	2	a
6768	Infant formula with probiotics	*C. sakazakii* Ad2366	Environmental sample	Seeding lyophilized ambient 24 days	/	1.8	+	2	a
6771	Infant formula with probiotics	*C. sakazakii* Ad2383	Environmental sample	Seeding lyophilized ambient 24 days	/	1.6	+	2	a
6772	Infant formula with probiotics	*C. sakazakii* Ad2359	Environmental sample	Seeding lyophilized ambient 24 days	/	18.4	+	2	a
6773	Infant formula with probiotics	*C. sakazakii* Ad1708	Environmental sample	Seeding lyophilized ambient 24 days	/	0.7	+	2	a
6775	Infant formula with probiotics	*C. sakazakii* Ad2366	Environmental sample	Seeding lyophilized ambient 24 days	/	1.8	+	2	a
6776	Infant formula with probiotics	*C. sakazakii* Ad2366	Environmental sample	Seeding lyophilized ambient 24 days	/	1.8	+	2	a

Appendix D – Sensitivity study: raw data

Bold typing : artificially inoculated samples

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 colony
NC: Non characteristic colony on nutrient agar
e: error MDA
PA: positive agreement
NA: negative agreement
ND: negative deviation
PD: positive deviation
PD FP_{alt}: positive presumptive negative agreement
PA FP_{alt} : positive presumptive negative deviation
*: Pre-warmed BPW ISO + vancomycin (10 mg/L) with amylase

INFANT FORMULA AND INFANT CEREALS WITHOUT PROBIOTICS including ingredients (10 g test portion)																								
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method General Protocol																Category	Type
						BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation				MDA test-Lysate		MDA test-BPW		Confirmation							
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
1681	**PDL infantile 2eme âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
2669	**PDL infantile 2eme âge**	**Infant formula**	-	st	-	-	+	st	/	-	NA											1	a
2670	**PDL infantile 1er âge**	**Infant formula**	-	st	-	-	+	st	/	-	NA											1	a
2672	**PDL infantile 1er âge**	**Infant formula**	-	st	-	-	+	st	/	-	NA											1	a
2673	**PDL infantile 1er âge**	**Infant formula**	-	st	-	e/-/-/-	+/+/+/+	st	/	-	NA											1	a
2674	**Aliment diététique pour bébé à base de protéine de riz**	**Infant formula**	-	st	-	-	+	st	/	-	NA											1	a
2675	**PDL infantile 2eme âge**	**Infant formula**	-	st	-	+/-/-	+/+/+	st	/	-	PD FP_{alt}	-	+	-	+	st	/	-	NA	-	NA	1	a
2677	**Aliment diététique pour bébé 100% protéine de riz**	**Infant formula**	-	st	-	-	+	st	/	-	NA											1	a
2671	**PDL infantile 1er âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
2676	**PDL infantile 2eme âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
2678	**PDL infantile 1er âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
4612	**PDL infantile 1er âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
4613	**PDL infantile 1er âge**	**Infant formula**	-	st	-	-	+	st	/	-	NA											1	a
4614	**PDL infantile 1er âge**	**Infant formula**	-	st	-	-	+	st	/	-	NA											1	a
4615	**PDL infantile BIO 3ème âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
4616	**PDL infantile BIO 1er âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
4617	**PDL infantile 1er âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
4914	**PDL infantile 1er âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
4915	**PDL infantile riz 1er âge**	**Infant formula**	-	st	-	-	+	st	/	-	NA	-	+	-	+	st	/	-	NA			1	a
4917	**PDL infantile riz anti-régurgitation 1er âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
4918	**PDL infantile 1er âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
4922	**PDL infantile 2ème âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
1682	**Céréales infantiles BIO 3 fruits quinoa**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
1683	**Céréales infantiles BIO vanille quinoa**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
1684	**Céréales infantiles BIO 3 céréales**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
1685	**Céréales infantiles BIO cacao quinoa**	**Infant cereal**	-	st	-	-	+	st	/	-	NA	-	+	-	+	st	/	-	NA	-	NA	1	b
1686	**Céréales infantiles vanille**	**Infant cereal**	-	st	-	-	+	st	/	-	NA	-	+	-	+	st	/	-	NA	-	NA	1	b
1693	**Céréales infantiles vanille**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
1694	**Céréales infantiles chocolat**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
1721	Céréales infantiles multicéréales	Infant cereal	-	st	-	-	+	st	/	-	NA											1	b

INFANT FORMULA AND INFANT CEREALS WITHOUT PROBIOTICS including ingredients (10 g test portion)																									
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method General Protocol																		Category	Type
						BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C													
						MDA test		Confirmation				MDA test-Lysate		MDA test-BPW		Confirmation									
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
2664	**Céréales infantiles Avoine blé riz**	**Infant cereal**	-	st	-	-	+	st	/	-	NA											1	b
2665	**Céréales infantiles Riz blé carottes**	**Infant cereal**	+	+1/2	+	+	+	+1/2	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
2666	**Céréales infantiles saveur cacao**	**Infant cereal**	-	st	-	-	+	st	/	-	NA											1	b
2667	**Céréales infantiles saveur vanille**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
2668	**Muesli pour bébé**	**Infant cereal**	-	+d(E. vulneris)	-	-/-/-	+/+/+	+d	-(E. vulneris)	-	NA	-/-/-	+	-/-/-	+	+m d	-(E. vulneris)	-	NA	-	NA	1	b
4618	**Céréales infantiles Muesli**	**Infant cereal**	-	st	-	-	+	st	/	-	NA											1	b
4619	**Céréales infantiles saveur vanille**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
4620	**Céréales infantiles Avoine blé riz**	**Infant cereal**	+	+p	+	-/-/-	+/+/+	+p	+	-	ND FN_{alt}	-	+	+	+	+p	+	-	ND FN_{alt}	+	PA	1	b
5331 *	**Céréales infantiles muesli fraise**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
5332 *	**Céréales infantiles vanille**	**Infant cereal**	-	st	-	-	+	st	/	-	NA	-	+	-	+	st	/	-	NA	-	NA	1	b
5333 *	**Céréales infantiles biscuit**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
5334 *	**Céréales infantiles saveur briochée**	**Infant cereal**	-	st	-	-	+	st	/	-	NA	-	+	-	+	st	/	-	NA	-	NA	1	b
5335 *	**Céréales infantiles BIO**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
2023	**Farine de maïs bio**	**Corn flour**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	1	c
2024	**Farine de seigle bio**	**Rye flour**	-	-	-	-	+	-	/	-	NA											1	c
2025	**Farine d'avione bio**	**Oat flour**	-	st	-	-	+	st	/	-	NA											1	c
2026	**Farine de blé bio**	**Wheat flour**	-	-	-	-	+	-	/	-	NA	-	+	-	+	-	/	-	NA	-	NA	1	c
2027	**Farine d'orge mondé bio**	**Barley flour**	-	-	-	-	+	-	/	-	NA	-	+	-	+	-	/	-	NA	-	NA	1	c
2028	**Poudre de lait (matière première)**	**Dry milk powder**	-	-	-	-	+	-	/	-	NA	-	+	-	+	-	/	-	NA	-	NA	1	c
2029	**Lactose**	**Lactose**	-	st	-	-	+	st	/	-	NA	-	+	-	+	st	/	-	NA	-	NA	1	c
2030	**Protéine de lactoserum**	**Lactoserum**	-	st	-	-	+	st	/	-	NA	-	+	-	+	st	/	-	NA	-	NA	1	c
2031	**Maltodextrine**	**Maltodextrin**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	c
2032	**Isolat de protéine de soja**	**Soy powder**	-	st	-	-	+	st	/	-	NA											1	c
2033	**Poudre de lait (matière première)**	**Dry milk powder**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	c
2034	**Poudre de lait (matière première)**	**Dry milk powder**	-	-	-	-	+	-	/	-	NA	-	+	-	+	-	/	-	NA	-	NA	1	c
2656	**Poudre de lactoserum**	**Lactoserum powder**	-	st	-	-	+	st	/	-	NA											1	c
2657	**Poudre de lactoserum**	**Lactoserum powder**	-	st	-	-	+	st	/	-	NA											1	c
2658	**Poudre de lait (matière première)**	**Dry milk powder**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	c
2659	**Poudre de lait (matière première)**	**Dry milk powder**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	c
2660	**Poudre de lait (matière première)**	**Dry milk powder**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	c
2661	**Amidon de blé**	**Wheat starch**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	c
2662	**Lactose**	**Lactose**	-	st	-	-	+	st	/	-	NA											1	c
2663	**Lactoserum**	**Lactoserum**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	c
3677	**Poudre de serum**	**Serum powder**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+Md	+	+	PA	+	PA	1	c
4621	**Maltodextrine**	**Maltodextrin**	-	st	-	-	+	st	/	-	NA											1	c

INFANT FORMULA AND INFANT CEREALS WITH PROBIOTICS (10 g test portion)																							
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method General Protocol																Category	Type
						BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation				MDA test-Lysate		MDA test-BPW		Confirmation							
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
1700	**PDL infantile probiotique épaissie 0-6 mois (4,0.10^5 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
1701	**PDL infantile probiotique épaissie 6-12 mois (1,9.10^6 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
1702	**PDL infantile probiotique épaissie 0-6 mois (4,5.10^4 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
1703	**PDL infantile probiotique BIO 0-6 mois (9,7.10^6 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
1704	**PDL infantile probiotique 0-6 mois (8,1.10^5 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
1705	**PDL infantile probiotique épaissie 6-12 mois (*Lactobacillus fermentum*)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA	-	+	-	+	st	/	-	NA	-	NA	2	a
1706	**PDL infantile probiotique 6-12 mois (*Lactobacillus fermentum*)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
1707	**PDL infantile probiotique 0-6 mois (4,9.10^7 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
1708	**PDL infantile probiotique 0-6 mois (8,9.10^6 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA	-	+	-	+	st	/	-	NA	-	NA	2	a
1709	**PDL infantile probiotique 0-6 mois (*Lactobacillus fermentum*)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
1710	**PDL infantile probiotique épaissie 6-12 mois (4,3.10^3 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
1711	**PDL infantile probiotique 0-6 mois (*Bifidobacterium* - ferments lactiques)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
1712	**PDL infantile probiotique épaissie 6-12 mois (3,6.10^4 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
2679	**PDL infantile probiotique 2eme âge (6,7.10^6 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	10 x st	/	-	PA FP_{alt}		PA FPalt	2	a
2680	**PDL infantile probiotique 2eme âge 4,2.10^4 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
4925	**PDL infantile probiotique (*Lb reuteri* DSM17938) 1er âge (7,5.10^5 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a

INFANT FORMULA AND INFANT CEREALS WITH PROBIOTICS (10 g test portion)																								
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method General Protocol																Category	Type
						BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation				MDA test-Lysate		MDA test-BPW		Confirmation							
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
4926	**PDL infantile probiotique (*Lb reuteri* DSM17938) 2ème âge (5,9.10^5 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
4927	**PDL infantile probiotique (Bifidobactéries) (9,0.10^2 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
4928	**PDL infantile probiotique (Lb reuteri) 1er âge (1,8.10^4 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
4929	**PDL infantile probiotique (Lb *reuteri*) 2ème âge (2,1.10^3 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
4930	**PDL infantile probiotique (*Bifidobacterium lactis*) 1er âge (2,1.10^3 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
4931	**PDL infantile probiotique (*St. Thermophilus*, *B. lactis*) 1er âge (1,3.10^6 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
5329	**PDL infantile probiotique (*St. Thermophilus*, *B. longum*) 2ème âge (2,0.10^4 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
5330	**PDL infantile probiotique (1,3.10^5 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
6769	**PDL infantile probiotique 2ème âge (*Lactobacillus rhamnosus* + *Bifido infantis*) (8,1.10^4 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
6770	**PDL infantile probiotique 2ème âge (*Lactobacillus reuteri*) (1,5.10^5 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
6774	**PDL infantile probiotique 1er âge (*Lactobacillus reuteri*) (6,7.10^5 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
7208	PDL infantile probiotique (*Lb fermentum* 6,9.10^4 CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a
7209	PDL infantile probiotique (*Lb* reuteri 1,2.10^3 CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a
7210	PDL infantile probiotique (*St. Thermophilus* / *B. longum* 1,6.10^2 CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a

INFANT FORMULA AND INFANT CEREALS WITH PROBIOTICS (10 g test portion)																								
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method General Protocol																Category	Type
						BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation				MDA test-Lysate		MDA test-BPW		Confirmation							
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
1713	**Céréales infantiles probiotique cacao (4,1.10⁴ CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
1714	**Céréales infantiles probiotique biscuité (1,7.10⁵ CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
1715	**Céréales infantiles probiotique miel (3,5.10⁶ CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2016	**Céréales infantiles probiotique caramel (2,3.10⁵ CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2017	**Céréales infantiles probiotique vanille (1,5.10⁶ CFU/g)**	**Infant cereal with probiotics**	-	st	-	-	+	st	/	-	NA											2	b
2018	**Céréales infantiles probiotique chocolat au lait biscuité (4,0.10⁵ CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2019	**Céréales infantiles probiotique 5 céréales (5,4.10⁵ CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2020	**Céréales infantiles probiotique vanille chocolat lait (2,3.10⁵ CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2021	**Céréales infantiles probiotique vanille biscuité (3,4.10⁵ CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2022	**Céréales infantiles probiotique carotte potiron (3,8.10⁵ CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2681	**Céréales infantiles probiotique vanille (2,4.10⁵ CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2682	**Céréales infantiles probiotique (8,7.10⁴ CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5316 *	**Céréales infantiles biscuité/vanillé avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5317 *	**Céréales infantiles miel avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	-	st	-	-	+	st	/	-	NA											2	b

INFANT FORMULA AND INFANT CEREALS WITH PROBIOTICS (10 g test portion)																								
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method General Protocol																Category	Type
						BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation				MDA test-Lysate		MDA test-BPW		Confirmation							
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
5318 *	**Céréales infantiles vanille chocolat avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	-	st	-	-	+	st	/	-	NA											2	b
5321 *	**Céréales infantiles noisettes biscuité avec probiotiques (B. *lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5322 *	**Céréales infantiles caramel avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5323 *	**Céréales infantiles miel avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5324 *	**Céréales infantiles vanille avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5325 *	**Céréales infantiles biscuité avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5326 *	**Céréales infantiles 5 céréales avec probiotiques (B. lactis) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5327 *	**Céréales infantiles 5 céréales avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5328 *	**Céréales infantiles carottes potiron avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	-	st	-	-	+	st	/	-	NA	-	+	-	+	st	/	-		-		2	b
6764 *	**Céréales infantiles probiotique Cacao (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	-	st	-	-	+	st	/	-	NA											2	b
7213 *	Céréales infantiles probiotique noisette biscuité (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7214 *	Céréales infantiles probiotique chocolat (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7215 *	Céréales infantiles probiotique biscuité (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7216 *	Céréales infantiles probiotique 5 céréales (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b

INFANT FORMULA AND INFANT CEREALS WITH PROBIOTICS (10 g test portion)																								
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method General Protocol																Category	Type
						BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation				MDA test-Lysate		MDA test-BPW		Confirmation							
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
7217 *	Céréales infantiles probiotique vanille (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7218 *	Céréales infantiles probiotique miel (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7219 *	Céréales infantiles probiotique caramel (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7220 *	Céréales infantiles probiotique cacao (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7221 *	Céréales infantiles probiotique 5 céréales (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b

INFANT FORMULA AND INFANT CEREALS WITHOUT PROBIOTICS including ingredients (300 g test portion)																								
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method Specific Protocol 1																	Category	Type
						Pre-warmed BPW ISO 1**8h at 37°C**						Pre-warmed BPW ISO 1**8h at 37°C** + **72h at 5 ± 3°C**												
						MDA test		Confirmation				MDA test- Lysate		MDA test- BPW		Confirmation								
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
1681	**PDL infantile 2eme âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
1682	**Céréales infantiles BIO 3 fruits quinoa**	**Infant cereal**	+	+p	+	+	+	+m	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
1683	**Céréales infantiles BIO vanille quinoa**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
1684	**Céréales infantiles BIO 3 céréales**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
1685	**Céréales infantiles BIO cacao quinoa**	**Infant cereal**	+	st	-	+	+	+p	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	1	b
1693	**Céréales infantiles vanille**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	b
1694	**Céréales infantiles chocolat**	**Infant cereal**	+	+p	+	-	+	st	/	-	ND	-	+	-	+	st	/	-	ND	-	ND	1	b
1721	Céréales infantiles multicéréales	Infant cereal	-	st	-	-	+	st	/	-	NA											1	b
2023	**Farine de maïs bio**	**Corn flour**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	1	c
2024	**Farine de seigle bio**	**Rye flour**	-	-	-	-	+	-	/	-	NA											1	c
2025	**Farine d'avione bio**	**Oat flour**	-	st	-	-	+	-	/	-	NA											1	c
2026	**Farine de blé bio**	**Wheat flour**	+	-	-	+	+	+M	+	+	PD	+	+	+	+	+m	+	+	PD	+	PD	1	c
2028	**Poudre de lait (matière première)**	**Dry milk powder**	-	-	-	-/-/-	+/+/+	+p	+	-	NA FN_{alt}	-	+	-	+	-	/	-	NA	-	NA	1	c
2029	**Lactose**	**Lactose**	+	st	-	+	+	+p	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	1	c
2031	**Maltodextrine**	**Maltodextrin**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	c
2032	**Isolat de protéine de soja**	**Soy powder**	-	st	-	-	+	st	/	-	NA											1	c
2033	**Poudre de lait (matière première)**	**Dry milk powder**	+	+p	+	-/-/-	+/+/+	+p	+	-	ND FN_{alt}	-/-/-	+	-/-/-	+	+p	+	-	ND FN_{alt}	-	ND FN_{alt}	1	c
2034	**Poudre de lait (matière première)**	**Dry milk powder**	+	-	-	+	+	+M	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	1	c
4914	**PDL infantile 1er âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
4915	**PDL infantile riz 1er âge**	**Infant formula**	+	st	-	+	+	+p	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	1	a
4916	**PDL infantile 1er âge**	**Infant formula**	-	st	-	-	+	st	/	-	NA											1	a
4917	**PDL infantile riz anti-régurgitation 1er âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
4918	**PDL infantile 1er âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
4920	**PDL infantile 1er âge**	**Infant formula**	+	st	-	+	+	+p	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	1	a
4921	**PDL infantile 2ème âge BIO**	**Infant formula**	+	+p	+	-	+	st	/	-	ND	-	+	-	+	st		-	ND	-	ND	1	a
4922	**PDL infantile 2ème âge**	**Infant formula**	+	+p	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	1	a
4923	**PDL infantile 2ème âge**	**Infant formula**	-	st	-	-	+	st	/	-	NA											1	a
4924	**PDL infantile 1er âge**	**Infant formula**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	1	a
5023	**Amidon de blé**	**Wheat starch**	+	st	-	+	+	+p	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	1	c
5024	**Amidon de maïs**	**Corn starch**	-	st	-	-	+	st	/	-	NA											1	c
5036	**Maltodextrine**	**Maltodextrin**	-	st	-	-	+	st	/	-	NA											1	c
5037	**Farine blanche blé BIO**	**Flour**	+	+p	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	1	c
5331 *	**Céréales infantiles muesli fraise**	**Infant cereal**	+	+p	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	1	b

INFANT FORMULA AND INFANT CEREALS WITHOUT PROBIOTICS including ingredients (300 g test portion)																									
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method Specific Protocol 1																		Category	Type
						Pre-warmed BPW ISO 18h at 37°C						Pre-warmed BPW ISO 18h at 37°C + 72h at 5 ± 3°C													
						MDA test		Confirmation				MDA test- Lysate		MDA test- BPW		Confirmation									
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
5332 *	**Céréales infantiles vanille**	**Infant cereal**	-	st	-	+/+/-	+/+/+	st (x5)	/	-	PD FP_{alt}	+/+/-	+/+/+	+/-/i/+	+/+/+	st	-	-	NA	-	NA	1	b
5333 *	**Céréales infantiles biscuit**	**Infant cereal**	+	+p	+	+	+	+p	+	+	PA	-/+/-	+/+/+	+	+	+p	+	-	ND	+	PA	1	b
5334 *	**Céréales infantiles saveur briochée**	**Infant cereal**	+	st	-	+	+	+M	+	+	PD	+	+	+	+	+M	+	+	PD	+	PD	1	b
5335 *	**Céréales infantiles BIO**	**Infant cereal**	+	+p	+	-	+	-	/	-	ND	-	+	-	+	-	/	-	ND	-	ND	1	b
5702	Céréales infantiles BIO	Infant cereal	+	-	-	+	+	+M	+	+	PD	+	+	+	+	+M	+	+	PD	+	PD	1	b
6632	PDL infantile 1er âge	Infant formula	-	st	-	-	+	st	/	-	NA											1	a
6633	PDL infantile 1er âge	Infant formula	-	st	-	-	+	st	/	-	NA											1	a
6634	PDL infantile 1er âge	Infant formula	-	st	-	-	+	st	/	-	NA											1	a
6635	PDL infantile 1er âge	Infant formula	-	st	-	-	+	st	/	-	NA											1	a
6636	PDL infantile 1er âge	Infant formula	-	st	-	-	+	st	/	-	NA											1	a
6637	PDL infantile 1er âge	Infant formula	-	st	-	-	+	st	/	-	NA											1	a
6638	PDL infantile 1er âge	Infant formula	-	st	-	-	+	st	/	-	NA											1	a
6639	PDL infantile 1er âge	Infant formula	-	st	-	-	+	st	/	-	NA											1	a
6640	PDL infantile 2ème âge	Infant formula	-	st	-	-	+	st	/	-	NA											1	a
6896	Céréales infantiles carottes	Infant cereal	-	st	-	-	+	st	/	-	NA											1	b
6897	Céréales infantiles camomille vanille	Infant cereal	-	st	-	-	+	st	/	-	NA											1	b
6898	Muesli pour bébé	Infant cereal	-	st	-	-	+	-	/	-	NA											1	b
6899	Céréales infantiles nature	Infant cereal	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	1	b
6900	Céréales infantiles 3 fruits + quinoa	Infant cereal	-	-	-	-	+	-	/	-	NA											1	b
6901	Bouillie bio 3 céréales	Infant cereal	-	st	-	-/-/-	+/+/+	+p	+	-	NA FN_{alt}	-	+	-	+	+p	+	-	NA	-	NA	1	b
6902	Céréales infantiles vanille	Infant cereal	-	st	-	-/-/-	+/+/+	+p	+	-	NA FN_{alt}	-	+	-	+	+p	+	-	NA	-	NA	1	b
6903	Céréales infantiles potiron	Infant cereal	-	st	-	-	+	st	/	-	NA											1	b
6904	Céréales infantiles cacao quinoa	Infant cereal	+	st	-	+	+	+p	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	1	b
7060 *	Cérélales bases	Cereals (raw material)	-	st	-	-	+	st		-	NA											1	c
7061 *	Powdered whey 70% Lactoserum	Powdered whey 70% Lactoserum	-	-	-	-/-/-	+/+/+	+d	- Pantoea spp x5	-	NA	-/-/-	+/+/+	-/-/-	+/+/+	+d	- Pantoea spp	-	NA	-	NA	1	c
7062 *	Bio Powdered whey	Bio Powdered whey	-	st	-	-	+	-		-	NA											1	c
7063 *	Powdered whey 50%	Powdered whey 50%	-	-	-	-	+	-		-	NA											1	c
7064 *	Cérélaes bases	Cereals (raw material)	-	st	-	-	+	-		-	NA											1	c
7065 *	Cérélaes bases	Cereals (raw material)	-	-	-	-	+	st		-	NA											1	c

INFANT FORMULA AND INFANT CEREALS WITH PROBIOTICS (300 g test portion)																							
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method Specific Protocol 2																Category	Type
						Pre-warmed BPW ISO + vancomycin (10mg/L) **22h at 37°C**						Pre-warmed BPW ISO + vancomycin (10mg/L) **22h at 37°C + 72h at 5°C ± 3°C**											
						MDA test		Confirmation				MDA test- Lysate		MDA test- BPW		Confirmation							
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
4925	**PDL infantile probiotique (*Lb reuteri* DSM17938) 1er âge (7,5.10^5 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	st (x5)	/	-	PA FP_{alt}	-	PA FP_{alt}	2	a
4926	**PDL infantile probiotique (*Lb reuteri* DSM17938) 2ème âge (5,9.10^5 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
4927	**PDL infantile probiotique (Bifidobactéries) (9,0.10^2 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
4928	**PDL infantile probiotique (*Lb reuteri*) 1er âge (1,8.10^4 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
4929	**PDL infantile probiotique (*Lb reuteri*) 2ème âge (2,1.10^3 CFU/g)**	**Infant formula with probiotics**	+	+p	+	-	+	st	/	-	ND	-	+	e/-/-	+	st	/	-	ND	-	ND	2	a
4930	**PDL infantile probiotique (*Bifidobacterium lactis*) 1er âge (2,1.10^3 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
4931	**PDL infantile probiotique (St. *Thermophilus*, *B. lactis*) 1er âge (1,3.10^6 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
5026	**PDL infantile probiotique (*Lb rahmnosus*, *Bifido infantis*) 1er âge (9,5.10^6 CFU/g)**	**Infant formula with probiotics**	+	st	-	+	+	+p	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	2	a
5027	**PDL infantile probiotique épaissie (*Lb rahmnosus*, *Bifido infantis*) 2éme âge (8,1.10^3 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
5028	**PDL infantile probiotique (*Lb fermentum*) 1er âge (2,0.10^2 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
5033	**PDL infantile probiotique épaissie (Bifidobactéries) 1er âge**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
5034	**PDL infantile probiotique (*Lb fermentum*) 2éme âge (1,8.10^5 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
5035	**PDL infantile probiotique (*St. thermophilus*, *Bifido longum*) 2éme âge (2,0.10^2 CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a

INFANT FORMULA AND INFANT CEREALS WITH PROBIOTICS (300 g test portion)																							
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method Specific Protocol 2																Category	Type
						Pre-warmed BPW ISO + vancomycin (10mg/L) **22h at 37°C**						Pre-warmed BPW ISO + vancomycin (10mg/L) **22h at 37°C + 72h at 5°C ± 3°C**											
						MDA test		Confirmation				MDA test- Lysate		MDA test- BPW		Confirmation							
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
5329	**PDL infantile probiotique (*St. Thermophilus*, *B. longum*) 2ème âge (2,0.10⁴ CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	-	/	-	NA											2	a
5330	**PDL infantile probiotique (1,3.10⁵ CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
6767	**PDL infantile probiotique 2ème âge (*Lactobacillus fermentum*) (1,6.10⁶ CFU/g)**	**Infant formula with probiotics**	+	+p	+	+/+/+	+/+/+	- (x 6 CSB)	/	-	PA FP_{alt}	+/+/+	+/+/+	-/-/+	+/+/+	- (x 6 CSB)	/	-	PA FP_{alt}	-	PA FP_{alt}	2	a
6768	**PDL infantile probiotique 1er âge (*Lactobacillus rhamnosus* + *Bifido infantis*) (6,9.10⁶ CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	2	a
6769	**PDL infantile probiotique 2ème âge (*Lactobacillus rhamnosus* + *Bifido infantis*) (8,1.10⁴ CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
6770	**PDL infantile probiotique 2ème âge (*Lactobacillus reuteri*) (1,5.10⁵ CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
6771	**PDL infantile probiotique 1er âge (*Lactobacillus reuteri*) (2,5.10² CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
6772	**PDL infantile probiotique 2ème âge (Bifidobactéries + ferments) (<2,0.10² CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
6773	**PDL infantile probiotique 1er âge (Bifidobactéries + ferments) (<2,0.10² CFU/g)**	**Infant formula with probiotics**	+	st	-	+	+	+p	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	2	a
6774	**PDL infantile probiotique 1er âge (*Lactobacillus reuteri*) (6,7.10⁵ CFU/g)**	**Infant formula with probiotics**	-	st	-	-	+	st	/	-	NA											2	a
6775	**PDL infantile probiotique (*S. thermophilus* + *B. lactis*) (<2,0.10² CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
6776	**PDL infantile probiotique (*B. lactis*) (<10 CFU/g)**	**Infant formula with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
7208	PDL infantile probiotique (Lb fermentum 6,9.10⁴ CFU/g)	Infant formula with probiotics	-	st	-	-	+	-	/	-	NA											2	a
7209	PDL infantile probiotique (Lb reuteri 1,2.10³ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a

INFANT FORMULA AND INFANT CEREALS WITH PROBIOTICS (300 g test portion)																								
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method Specific Protocol 2																Category	Type
						Pre-warmed BPW ISO + vancomycin (10mg/L) **22h at 37°C**						Pre-warmed BPW ISO + vancomycin (10mg/L) **22h at 37°C + 72h at 5°C ± 3°C**											
						MDA test		Confirmation				MDA test- Lysate		MDA test- BPW		Confirmation							
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
7210	PDL infantile probiotique (*St. Thermophilus* / *B. longum* 1,6.10² CFU/g)	Infant formula with probiotics	-	st	-	-	+	-	/	-	NA											2	a
7211	PDL infantile probiotique épaissie (*Lb reuteri* 3,0.10³ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a
7212	PDL infantile probiotique épaissie (B. *lactis* 6,0.10³ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a
5029	**Céréales infantiles avec probiotiques (*B. lactis*) saveur caramel (4,6.10⁵ CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5316 *	**Céréales infantiles biscuité/vanillé avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	-	+	st	/	-	ND	-	+	-	+	st	/	-	ND	-	ND	2	b
5317 *	**Céréales infantiles miel avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	-	st	-	-	+	st	/	-	NA											2	b
5318 *	**Céréales infantiles vanille chocolat avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	-	st	-	-	+	st	/	-	NA											2	b
5319 *	**Céréales infantiles cacao avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5320 *	**Céréales infantiles chocolat lait biscuité avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5321 *	**Céréales infantiles noisettes biscuité avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	-	+	st	/	-	ND	-	+	-	+	st	/	-	ND	-	ND	2	b
5322 *	**Céréales infantiles caramel avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5323 *	**Céréales infantiles miel avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5324 *	**Céréales infantiles vanille avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b

INFANT FORMULA AND INFANT CEREALS WITH PROBIOTICS (300 g test portion)																							
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method Specific Protocol 2																Category	Type
						Pre-warmed BPW ISO + vancomycin (10mg/L) **22h at 37°C**						Pre-warmed BPW ISO + vancomycin (10mg/L) **22h at 37°C + 72h at 5°C ± 3°C**											
						MDA test		Confirmation				MDA test- Lysate		MDA test- BPW		Confirmation							
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
5325 *	**Céréales infantiles biscuité avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5326 *	**Céréales infantiles 5 céréales avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5327 *	**Céréales infantiles 5 céréales avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	-	+	st	/	-	ND	-	+	-	+	st	/	-	ND	-	ND	2	b
5328 *	**Céréales infantiles carottes potiron avec probiotiques (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	st	-	+	+	+p	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	2	b
6761 *	**Céréales infantiles probiotique Miel (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
6762 *	**Céréales infantiles probiotique Vanille (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	-	+	st	/	-	ND	-	+	-	+	st	/	-	ND	-	ND	2	b
6764 *	**Céréales infantiles probiotique Cacao (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	-	st	-	-	+	st	/	-	NA											2	b
6765 *	**Céréales infantiles probiotique Caramel (*B. lactis*) (<10 CFU/g)**	**Infant cereal with probiotics**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
7213 *	Céréales infantiles probiotique noisette biscuité (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7214 *	Céréales infantiles probiotique chocolat (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7215 *	Céréales infantiles probiotique biscuité (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7216 *	Céréales infantiles probiotique 5 céréales (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7217 *	Céréales infantiles probiotique vanille (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	-	/	-	NA											2	b

INFANT FORMULA AND INFANT CEREALS WITH PROBIOTICS (300 g test portion)																							
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method Specific Protocol 2																Category	Type
						Pre-warmed BPW ISO + vancomycin (10mg/L) **22h at 37°C**						Pre-warmed BPW ISO + vancomycin (10mg/L) **22h at 37°C + 72h at 5°C ± 3°C**											
						MDA test		Confirmation				MDA test- Lysate		MDA test- BPW		Confirmation							
				CCI	Final result	Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
7218 *	Céréales infantiles probiotique miel (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7219 *	Céréales infantiles probiotique caramel (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7220 *	Céréales infantiles probiotique cacao (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7221 *	Céréales infantiles probiotique 5 céréales (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7222 *	Céréales infantiles probiotique vanille (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7223 *	Céréales infantiles probiotique biscuité (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7224 *	Céréales infantiles probiotique miel (*B. lactis*) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b

PRODUCTION ENVIRONMENTAL SAMPLES																								
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method General Protocol																Category	Type
						BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation		Final result	Agree-ment	MDA test-Lysate		MDA test-BPW		Confirmation		Final result Lysate	Agree-ment + 72h Lysate	Final result BPW	Agree-ment + 72h BPW		
				CCI	Final result	Result	Matrix control	CCI	Confir-matory tests after purification			Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification						
3661	**Eponge**	**Sponge**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	3	a
3662	**Eponge**	**Sponge**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	a
3663	**Eponge**	**Sponge**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+1/2	+	+	PA	+	PA	3	a
3664	**Eponge**	**Sponge**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	3	a
3665	**Eponge**	**Sponge**	-	-	-	-	+	-	/	-	NA											3	a
3666	**Eponge**	**Sponge**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	a
3667	**Eponge**	**Sponge**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	a
3668	**Eponge**	**Sponge**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	a
3669	**Eponge**	**Sponge**	-	-	-	-	+	-	/	-	NA											3	a
3670	**Eponge**	**Sponge**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	a
3671	**Ecouvillon**	**Swab**	+	+md	+	-/-/-	+/+/+	+md	+	-	ND FN_{alt}	+/-/-/-/-/-/-	+	+	+	+md	+	+	PA	+	PA	3	a
3672	**Ecouvillon**	**Swab**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	a
4635	**Ecouvillon tour séchage**	**Swab**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	a
6777	Ecouvillon doseur intérieur cage (Industrie laitière)	Environmental swab (Dairy industry)	-	st	-	-	+	st	/	-	NA											3	a
6778	Ecouvillon carrelage tamis (Industrie laitière)	Environmental swab (Dairy industry)	+	+1/2	+	+	+	+1/2	+	+	PA	+	+	+	+	+1/2	+	+	PA	+	PA	3	a
6779	Ecouvillon infuseuse (Industrie laitière)	Environmental swab (Dairy industry)	-	-	-	-	+	-	/	-	NA											3	a
6780	Lingette prélèvement sol (Industrie laitière)	Environmental wipe (Dairy industry)	-	+M Buttiauxella agrestis x1 E. vulneris / B. agrestis x4	-	-/-/-	+/+/+	+M	- Buttiauxella agrestis x1 E. vulneris / B. agrestis x4	-	NA	-/-/-	+	-/-/-	+	+1/2	- Buttiauxella agrestis	-	NA	-	NA	3	a
6781	Lingette prélèvement sol (Industrie laitière)	Environmental wipe (Dairy industry)	-	+md Buttiauxella agrestis x1 Enterobacter cloacae x4	-	-/-/-	+/+/+	+md	- Buttiauxella agrestis x1 Enterobacter cloacae x4	-	NA	-/-/-	+	-/-/-	+	+m	- Buttiauxella agrestis	-	NA	-	NA	3	a
6782	Lingette aspirateur (Industrie laitière)	Environmental wipe (Dairy industry)	+	+1/2	+	+	+	+1/2	+	+	PA	+	+	+	+	+m		+	PA	+	PA	3	a
6783	Lingette prélèvement sol (Industrie laitière)	Environmental wipe (Dairy industry)	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p		+	PA	+	PA	3	a
6784	Lingette sol (Industrie laitière)	Environmental wipe (Dairy industry)	-	+1/2d Serratia ficaria x1 E. vulneris / B. agrestis x4	-	-/-/-	+/+/+	+1/2 d	- Serratia ficaria x1 E. vulneris / B. agrestis x4	-	NA	-/-/-	+	-/-/-	+	+1/2 d	- Serratia ficaria	-	NA	-	NA	3	a

PRODUCTION ENVIRONMENTAL SAMPLES																									
Sample N°	Product (French name)	Product	Global result	Reference method: ISO 22964		Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method General Protocol																		Category	Type
						BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C													
						MDA test		Confirmation				MDA test-Lysate		MDA test-BPW		Confirmation									
				CCI	Final result	Result	Matrix control	CCI	Confir-matory tests after purification	Final result	Agree-ment	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agree-ment + 72h Lysate	Final result BPW	Agree-ment + 72h BPW				
7420	Eponge table environnement production poudre de lait	Sponge (milk powder industry)	-	st	-	-	+	st	/	-	NA											3	a
7421	Eponge table environnement production poudre de lait	Sponge (milk powder industry)	-	st	-	-	+	st	/	-	NA											3	a
3655	**Poussière aspirateur**	**Dust**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	3	b
3656	**Poussière aspirateur**	**Dust**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	3	b
3657	**Poussière aspirateur**	**Dust**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	3	b
3658	**Poussière aspirateur**	**Dust**	+	+Md	+	-/+/-	+/+/+	+Md	+	-	ND FN_{alt}	+/+/- /-/-/+/-	+	+	+	+M	+	+	PA	+	PA	3	b
3659	**Poussière aspirateur**	**Dust**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	b
3660	**Poussière aspirateur**	**Dust**	+	+Md	+	+	+	+Md	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	b
4622	**Poussière probiotique aspirateur**	**Dust with probiotics**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	b
4623	**Poussière probiotique aspirateur**	**Dust with probiotics**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	b
4624	**Poussière probiotique aspirateur**	**Dust with probiotics**	+	+M	+	+	+	+M	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	b
4625	**Poussière probiotique aspirateur**	**Dust with probiotics**	-	-	-	-	+	-	/	-	NA											3	b
4626	**Poussière probiotique aspirateur**	**Dust with probiotics**	+	+M	+	-/-/-	+/+/+	+M	+	-	ND FN_{alt}	-	+	-	+	-	/	-	ND FN_{alt}	-	ND FN_{alt}	3	b
6789	Poussière lait aspirateur	Dust without probiotics (Dairy industry)	+	+1/2	+	+	+	+1/2	+	+	PA	+	+	+	+	+1/2	+	+	PA	+	PA	3	b
7298	Poussière probiotique produit fini	Dust (probiotics)	-	st	-	-	+	st	/	-	NA											3	b
7299	Poussière probiotique produit fini	Dust (probiotics)	-	st	-	-	+	st	/	-	NA											3	b
7300	Poussière probiotique produit fini	Dust (probiotics)	-	st	-	-	+	st	/	-	NA											3	b
7301	Poussière produit fini	Dust (final product)	-	st	-	-	+	st	/	-	NA											3	b
7302	Poussière produit fini	Dust (final product)	-	st	-	-	+	st	/	-	NA											3	b
7303	Poussière produit fini	Dust (final product)	-	st	-	-	+	st	/	-	NA											3	b
7304	Poussière lait	Dust (milk)	-	st	-	-	+	st	/	-	NA											3	b
7305	Poussière lait	Dust (milk)	-	-	-	-	+	-	/	-	NA											3	b
7306	Poussière lait	Dust (milk)	-	st	-	-	+	st	/	-	NA											3	b
3673	**Eau de process**	**Process water**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	c
3674	**Eau de lavage**	**Recycled wash water**	-	st	-	-	+	st	/	-	NA											3	c
3675	**Eau de lavage**	**Recycled wash water**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	c

PRODUCTION ENVIRONMENTAL SAMPLES																									
Sample N°	Product (French name)	Product	Global result	**Reference method: ISO 22964**		**Alternative method: NEOGEN Molecular Detection Assay 2 *Cronobacter* method General Protocol**																		Category	Type
						BPW ISO 1**8h at 37°C**						BPW ISO 1**8h at 37°C + 72h at 5 ± 3°C**													
						MDA test		Confirmation				MDA test-Lysate		MDA test-BPW		Confirmation									
				CCI	Final result	Result	Matrix control	CCI	Confir-matory tests after purification	Final result	Agree-ment	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification	Final result Lysate	Agree-ment + 72h Lysate	Final result BPW	Agree-ment + 72h BPW				
3676	**Eau de lavage**	**Recycled wash water**	-	st	-	-	+	st	/	-	NA											3	c
4627	**Eau de process réseau**	**Process water**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	c
4628	**Eau de lavage**	**Recycled wash water**	-	st	-	-	+	st	/	-	NA											3	c
4629	**Eau début rinçage circuit concentrateur**	**Recycled wash water**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	c
4630	**Eau fin rinçage circuit concentrateur**	**Recycled wash water**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	c
4631	**Eau de process**	**Process water**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	c
4632	**Eau de process**	**Process water**	-	st	-	-	+	st	/	-	NA											3	c
4633	**Eau de process**	**Process water**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	c
4634	**Eau de process**	**Process water**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	c
6785	Eau process réseau (Industrie laitière)	Process water (Dairy industry)	-	st	-	-	+	st	/	-	NA											3	c
6786	Eau lavage (Industrie laitière)	Recycled wash water (Dairy industry)	-	st	-	-	+	st	/	-	NA											3	c
6787	Eau début rinçage circuit concentrateur	Recycled wash water (Dairy industry)	-	st	-	-	+	st	/	-	NA											3	c
6788	Eau fin rinçage circuit concentrateur	Recycled wash water (Dairy industry)	-	st	-	-	+	st	/	-	NA											3	c
6892	**Eau rinçage process en cours**	**Recycled wash water (Dairy industry)**	-	st	-	+	+	st (x5)	/	-	NA	+	+	+	+	st (x5)	/	-	NA	-	NA	3	c
6893	**Eau lavage (Industrie laitière)**	**Recycled wash water (Dairy industry)**	-	st	-	-	+	st	/	-	NA											3	c
6894	**Eau début rinçage circuit concentrateur**	**Recycled wash water (Dairy industry)**	-	st	-	-	+	st	/	-	NA											3	c
6895	**Eau fin rinçage circuit concentrateur**	**Recycled wash water (Dairy industry)**	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	3	c

Appendix E – Relative level of detection study: raw data

Matrix : Powdered infant formula with probiotics – 10 g
strain : Cronobacter sakazakii Ad893
Petrifilm aerobic plate count: <40 CFU/g Lactic count: 6,1.10^4 CFU/g

N° sample	Level	Contamination level-(cfu/sample)-MPN determination	Reference method: ISO 22964		Number positive samples/Total	Alternative method: NEOGEN Molecular Detection Assay 2 Cronobacter method General Protocol			Number positive samples/Total
			CCI	Final result		MDA2 result	Confirmation result	Final result	
3994	0	/	st	-	0/5	-	st	-	0/5
3997			st	-		-	st	-	
4002			st	-		-	st	-	
4005			st	-		-	st	-	
4008			st	-		-	st	-	
3993	Low	1.2	st	-	14/20	-	st	-	14/20
3995			+p	+		+	+p	+	
3996			st	-		-	st	-	
3998			+p	+		+	+p	+	
3999			st	-		-	st	-	
4001			+p	+		+	+p	+	
4003			+p	+		+	+p	+	
4004			+p	+		+	+p	+	
4006			st	-		-	st	-	
4007			+p	+		+	+p	+	
4009			+p	+		+	+p	+	
4010			+p	+		+	+p	+	
4011			+p	+		+	+p	+	
4012			+p	+		+	+p	+	
4014			+p	+		+	+p	+	
4015			st	-		-	st	-	
4017			+p	+		+	+p	+	
4018			+p	+		+	+p	+	
4019			st	-		-	st	-	
4020			+p	+		+	+p	+	
3991	High	4.0	+p	+	5/5	+	+p	+	5/5
3992			+p	+		+	+p	+	
4000			+p	+		+	+p	+	
4013			+p	+		+	+p	+	
4016			+p	+		+	+p	+	

Matrix : Powdered infant formula with probiotics - 300 g
strain : Cronobacter sakazakii Ad893
Petrifilm aerobic plate count: <10 CFU/g Lactic count: 3,2.10^6 CFU/g

N° sample	Level	Contamination level-(cfu/sample)-MPN determination	Reference method: ISO 22964		Number positive samples/Total	Alternative method: NEOGEN Molecular Detection Assay 2 Cronobacter General Protocol			Number positive samples/Total
			CCI	Final result		MDA2 result	Confirmation result	Final result	
5491	0	/	st	-	0/5	-	-	-	0/5
5496			st	-		-	-	-	
5502			st	-		-	-	-	
5506			st	-		-	-	-	
5513			st	-		-	-	-	
5490	Low	0.5	+	+	9/20	-	st	-	5/20
5492			+	+		-	st	-	
5494			st	-		-	st	-	
5495			+	+		+	+	+	
5497			+	+		-	st	-	
5498			st	-		-	st	-	
5499			+	+		-	st	-	
5500			+	+		-	st	-	
5501			st	-		+	+	+	
5503			st	-		+	+	+	
5505			+	+		-	st	-	
5507			st	-		-	st	-	
5509			st	-		-	-	-	
5510			st	-		-	st	-	
5511			+	+		+	+	+	
5512			+	+		+	+	+	
5514			st	-		-	st	-	
5515			st	-		-	st	-	
5518			st	-		-	st	-	
5519			st	-		-	st	-	
5493	High	3.3	+	+	5/5	+	+	+	4/5
5504			+	+		+	+	+	
5508			+	+		-	st	-	
5516			+	+		+	+	+	
5517			+	+		+	+	+	

Matrix : Powdered infant cereal without probiotics – 10 g
strain : Cronobacter sakazakii Ad1446
Petrifilm aerobic plate count: 5,0.10^3 CFU/g

N° sample	Level	Contamination level-(cfu/sample)-MPN determination	Reference method: ISO 22964		Number positive samples/Total	Alternative method: NEOGEN Molecular Detection Assay 2 Cronobacter General Protocol			Number positive samples/Total
			CCI	Final result		MDA2 result	Confirmation result	Final result	
3910	0	/	st	-	0/5	-	st	-	0/5
3916			st	-		-	st	-	
3922			st	-		-	st	-	
3923			st	-		-	st	-	
3933			st	-		-	st	-	
3911	Low	1.1	+p	+	12/20	+	+p	+	12/20
3913			+p	+		+	+p	+	
3914			+p	+		+	+p	+	
3915			-	-		-	-	-	
3917			+p	+		+	+p	+	
3918			st	-		-	st	-	
3921			st	-		-	st	-	
3924			+p	+		+	+p	+	
3925			+p	+		+	+p	+	
3926			+p	+		+	+p	+	
3928			+p	+		+	+p	+	
3929			st	-		-	st	-	
3930			-	-		-	-	-	
3931			+M	+		+	+M	+	
3932			+p	+		+	+p	+	
3934			-	-		-	-	-	
3935			-	-		-	-	-	
3937			+p	+		+	+p	+	
3938			st	-		-	st	-	
3939			+p	+		+	+p	+	
3912	High	1.7	+p	+	4/5	+	+p	+	4/5
3919			st	-		-	st	-	
3920			+p	+		+	+p	+	
3927			+p	+		+	+p	+	
3936			+p	+		+	+p	+	

Matrix : Powdered infant cereal without probiotics – 300 g
Strain : Cronobacter dublinensis E798
Petrifilm aerobic plate count: 50 CFU/g

N° sample	Level	Contamination level-(cfu/sample)	Reference method: ISO 22964		Number positive samples/Total	Alternative method: NEOGEN Molecular Detection Assay 2 Cronobacter General Protocol			Number positive samples/Total
			CCI	Final result		MDA2 result	Confirmation result	Final result	
6933	0	/	st	-	0/5	-	-	-	0/5
6934			st	-		-	-	-	
6935			st	-		-	-	-	
6936			st	-		-	-	-	
6937			st	-		-	-	-	
6938	Low	0,3	st	-	3/20	-	st	-	5/20
6939			st	-		-	st	-	
6941			st	-		+	+p	+	
6942			st	-		+	+p	+	
6943			st	-		-	st	-	
6945			st	-		-	st	-	
6946			st	-		-	st	-	
6947			st	-		-	st	-	
6948			st	-		-/-/-	+p	-	
6949			st	-		+	+p	+	
6951			st	-		+	+p	+	
6952			+p	+		-	st	-	
6953			st	-		-	st	-	
6954			st	-		-	st	-	
6956			st	-		-/-/+	+p	-	
6957			st	-		-	st	-	
6958			st	-		-	st	-	
6959			+p	+		-	st	-	
6961			st	-		+	+p	+	
6962			+p	+		-	st	-	
6940	High	0,9	st	-	0/5	-	st	-	4/5
6944			st	-		+	+p	+	
6950			st	-		+	+p	+	
6955			st	-		+	+p	+	
6960			st	-		+	+p	+	

Matrix : Stainless steel (sampling with sponge)
Strain : *Cronobacter malonaticus* E752
Competitor contamination level (E. coli Ad1422): 190 CFU/sample

N° sample	Level	Contamination level- (cfu/unit)	Reference method: ISO 22964		Number positive samples/Total	Alternative method: NEOGEN Molecular Detection Assay 2 Cronobacter General Protocol			Number positive samples/Total
			CCI	Final result		MDA2 result	Confirmation result	Final result	
2502	0	/	-	-	0/5	-	-	-	0/5
2509			-	-		-	-	-	
2515			-	-		-	-	-	
2523			-	-		-	-	-	
2530			-	-		-	-	-	
2503	Low	9.5	-	-	15/20	-	-	-	14/20
2504			-	-		-	-	-	
2506			+	+		+	+	+	
2507			+	+		+	+	+	
2508			+	+		+	+	+	
2510			+	+		+	+	+	
2511			-	-		-	-	-	
2513			+	+		+	+	+	
2514			+	+		-/+/+/-/-/-/+/+/+/-	+	-	
2516			+	+		+	+	+	
2517			+	+		+	+	+	
2519			-	-		-	-	-	
2520			-	-		-	-	-	
2521			+	+		+	+	+	
2522			+	+		+	+	+	
2524			+	+		+	+	+	
2526			+	+		+	+	+	
2528			+	+		+	+	+	
2529			+	+		+	+	+	
2531			+	+		+	+	+	
2505	High	19.8	+	+	5/5	+	+	+	5/5
2512			+	+		+	+	+	
2518			+	+		+	+	+	
2525			+	+		+	+	+	
2527			+	+		+	+	+	

Appendix F – Inclusivity and exclusivity study: raw data

INCLUSIVITY								
n°	Genus	Species	Reference	Origin	Inoculation level cfu/90ml	Pre-warmed 3M BPW ISO + **vancomycin (10mg/L)** 22h at 37°C		
						MDA2 *Cronobacter* spp		Confirmation CSB/CCI
						Result	Matrix control	
1	*Cronobacter*	*dublinensis*	DSM18705	Dairy Product	13	+	+	+
2	*Cronobacter*	*malonaticus*	DSM18702	Dairy Product	11	+	+	+
3	*Cronobacter*	*malonaticus*	Ad1708	Dairy Product	25	+	+	+
4	*Cronobacter*	*muytjensii*	CIP103581	/	10	+	+	+
5	*Cronobacter*	*sakazakii*	Ad939	Infant formula	15	+	+	+
6	*Cronobacter*	*sakazakii*	Ad940	Infant formula	30	+	+	+
7	*Cronobacter*	*sakazakii*	Ad941	Infant formula	29	+	+	+
8	*Cronobacter*	*sakazakii*	Ad942	Infant formula	44	+	+	+
9	*Cronobacter*	*sakazakii*	Ad943	Infant formula	19	+	+	+
10	*Cronobacter*	*sakazakii*	Ad944	Infant formula	8	+	+	+
11	*Cronobacter*	*sakazakii*	Ad945	Infant formula	20	+	+	+
12	*Cronobacter*	*sakazakii*	Ad946	Infant formula	26	+	+	+
13	*Cronobacter*	*sakazakii*	Ad947	Infant formula	19	+	+	+
14	*Cronobacter*	*sakazakii*	Ad948	Infant formula	15	+	+	+
15	*Cronobacter*	*sakazakii*	Ad949	Infant formula	11	+	+	+
16	*Cronobacter*	*sakazakii*	Ad950	Infant formula	17	+	+	+
17	*Cronobacter*	*sakazakii*	Ad951	Infant formula	22	+	+	+
18	*Cronobacter*	*sakazakii*	Ad952	Infant formula	22	+	+	+
19	*Cronobacter*	*sakazakii*	Ad953	Infant formula	56	+	+	+
20	*Cronobacter*	*sakazakii*	Ad963	Infant formula	16	+	+	+
21	*Cronobacter*	*sakazakii*	Ad704	Infant formula	34	+	+	+
22	*Cronobacter*	*sakazakii*	Ad831	Infant formula	30	+	+	+
23	*Cronobacter*	*sakazakii*	Ad829	Infant formula	25	+	+	+
24	*Cronobacter*	*sakazakii*	Ad916	Infant formula	22	+	+	+
25	*Cronobacter*	*sakazakii*	Ad893	Infant formula	14	+	+	+
26	*Cronobacter*	*sakazakii*	Ad894	Infant formula	21	+	+	+
27	*Cronobacter*	*sakazakii*	Ad895	Infant formula	16	+	+	+
28	*Cronobacter*	*sakazakii*	Ad896	Infant formula	16	+	+	+
29	*Cronobacter*	*sakazakii*	Ad897	Infant formula	26	+	+	+
30	*Cronobacter*	*sakazakii*	Ad898	Infant formula	20	+	+	+
31	*Cronobacter*	*dublinensis lactaridi*	DSMZ18707 T	Dairy Product	16	+	+	+
32	*Cronobacter*	*dublinensis lausannensis*	DSMZ 18706 T	Dairy Product	41	+	+	+
33	*Cronobacter*	*sakazakii*	Ad1418	Infant formula	15	+	+	+
34	*Cronobacter*	*sakazakii*	Ad1419	Infant formula	19	+	+	+
35	*Cronobacter*	*sakazakii*	Ad1420	Infant formula	19	+	+	+
36	*Cronobacter*	*sakazakii*	Ad1421	Infant formula	26	+	+	+
37	*Cronobacter*	*sakazakii*	Ad1424	Infant formula	31	+	+	+

INCLUSIVITY								
n°	**Genus**	**Species**	**Reference**	**Origin**	**Inoculation level cfu/90ml**	Pre-warmed 3M BPW ISO **+ vancomycin (10mg/L)** 22h at 37°C		
						MDA2 *Cronobacter* spp		Confirmation CSB/CCI
						Result	Matrix control	
38	*Cronobacter*	*sakazakii*	Ad1425	Infant formula	12	+	+	+
39	*Cronobacter*	*sakazakii*	Ad1433	Infant formula	25	+	+	+
40	*Cronobacter*	*sakazakii*	Ad1434	Infant formula	19	+	+	+
41	*Cronobacter*	*sakazakii*	Ad1435	Infant formula	22	+	+	+
42	*Cronobacter*	*turicencis*	Ad 1445	Infant formula	13	+	+	+
43	*Cronobacter*	*turicencis*	DSMZ 18703	/	12	+	+	+
44	*Cronobacter*	*malonaticus*	E752	Baby food	19	+	+	+
45	*Cronobacter*	*turicensis*	E681	Food	12	+	+	+
46	*Cronobacter*	*muytjensii*	E769	Milk powder	9	+	+	+
47	*Cronobacter*	*dublinensis* subsp *dublinensis*	LMG 23823T	Environment	26	+	+	+
48	*Cronobacter*	*dublinensis* subsp *lausanensis*	E798	/	16	+	+	+
49	*Cronobacter*	*universalis*	NCTC 9529T	water	19	+	+	+
50	*Cronobacter*	*condimenti*	LMG 26250T	Spiced meat	19	+	+	+

EXCLUSIVITY						
N°	**Genus**	**Species**	**Reference**	**Origin**	Inoculation level cfu/ml	MDA2 *Cronobacter* spp
1	*Citrobacter*	*braakii*	Ad833	Beef	$3{,}8.10^5$	-
2	*Citrobacter*	*diversus*	100	Pork liver	$4{,}7.10^5$	-
3	*Citrobacter*	*farmeri*	Ad1116	Environmental sample	$3{,}8.10^5$	-
4	*Citrobacter*	*freundi*	39	Environmental sample	$2{,}1.10^5$	-
5	*Citrobacter*	*koseri*	CIP105177	/	$2{,}8.10^5$	-
6	*Enterobacter*	*aerogenes*	Ad889	Meat flour	$3{,}9.10^5$	-
7	*Enterobacter*	*agglomerans*	A00L065	Dairy product	$3{,}7.10^5$	-
8	*Enterobacter*	*agglomerans*	136	Dairy product	$4{,}0.10^3$	-
9	*Lelliotia*	*amnigenus*	52	Vegetables	$1{,}4.10^5$	-
10	*Lelliotia*	*amnigenus*	129	Raw milk	$2{,}5.10^5$	-
11	*Lelliotia*	*amnigenus*	A00C068	Poultry	$2{,}6.10^5$	-
12	*Enterobacter*	*cloacae*	51	Vegetables	$3{,}1.10^5$	-
13	*Enterobacter*	*cloacae*	128	Beef	$1{,}8.10^5$	-
14	*Escherichia*	*fergusonii*	2876	Environmental sample	$3{,}4.10^5$	-
15	*Pluralibacter*	*gergoviae*	CIP 76.1	/	$9{,}5.10^5$	-
16	*Enterobacter*	*helveticus*	DSM 18396 T	Fruit powder	$1{,}1.10^5$	-
17	*Enterobacter*	*hormaechei*	Ad990	Butter	$3{,}9.10^5$	-
18	*Kluyvera*	*intermedia*	60	Vegetables	$8{,}8.10^4$	-
19	*Enterobacter*	*kobei*	Ad706	Milk powder	$2{,}9.10^5$	-
20	*Escherichia*	*coli*	16	Dairy product	$3{,}4.10^5$	-
21	*Escherichia*	*hermanii*	Ad462	Dairy product	$3{,}9.10^5$	-
22	*Hafnia*	*alvei*	Ad2274	Dairy product	$4{,}0.10^5$	-
23	*Klebsiella*	*pneumoniae*	122	Dairy product	$2{,}8.10^5$	-
24	*Leclercia*	*adecarboxylata*	Ad707	Milk powder	$4{,}8.10^5$	-
25	*Salmonella*	*arizonae* (51:z4,z23)	CIP 5523	/	$3{,}3.10^5$	-
26	*Salmonella*	*diarizonae* SIIIb 65 :c :z	Ad1298	Dairy environmental sample	$5{,}6.10^5$	-
27	*Salmonella*	Typhimurium	Ad1333	Dairy product	$3{,}9.10^5$	-
28	*Serratia*	*fonticola*	Ad1696	Salmon	$4{,}0.10^4$	-
29	*Serratia*	*marcescens*	Ad455	Raw milk	$3{,}1.10^5$	-
30	*Yersinia*	*intermedia*	Ad133	Dairy product	$8{,}0.10^4$	-

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

Laboratory 1
Aerobic mesophilic flora : 10 CFU/g
Total Lactic Count : 6.4 10^7 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
227	-	/	/	-	-	-	-	**NA**
228	-	/	/	-	-	-	-	**NA**
249	-	/	/	-	-	-	-	**NA**
390	-	/	/	-	-	-	-	**NA**
397	-	/	/	-	-	-	-	**NA**
477	-	/	/	-	-	-	-	**NA**
491	-	/	/	-	-	-	-	**NA**
524	-	/	/	-	-	-	-	**NA**
715	-	/	/	-	-	-	-	**NA**
737	-	/	/	-	-	-	-	**NA**
780	-	/	/	-	-	-	-	**NA**
795	-	/	/	-	-	-	-	**NA**
184	-	/	/	-	-	-	-	**NA**
277	-	/	/	-	-	-	-	**NA**
319	+	-	*Cronobacter* spp	+	+	+	+	**PA**
462	-	/	/	-	-	-	-	**NA**
466	+	-	*Cronobacter* spp	+	+	+	+	**PA**
472	-	/	/	-	-	-	-	**NA**
539	+	-	*Cronobacter* spp	+	+	+	+	**PA**
540	-	/	/	-	-	-	-	**NA**
691	+	-	*Cronobacter* spp	+	+	+	+	**PA**
697	+	-	*Cronobacter* spp	+	+	+	+	**PA**
706	+	-	*Cronobacter* spp	+	+	+	+	**PA**
769	-	/	/	-	-	-	-	**NA**
159	+	-	*Cronobacter* spp	+	+	+	+	**PA**
353	+	-	*Cronobacter* spp	+	+	+	+	**PA**
364	+	-	*Cronobacter* spp	+	+	+	+	**PA**
411	+	-	*Cronobacter* spp	+	+	+	+	**PA**
414	+	-	*Cronobacter* spp	+	+	+	+	**PA**
619	+	-	*Cronobacter* spp	+	+	+	+	**PA**
620	+	-	*Cronobacter* spp	+	+	+	+	**PA**
636	+	-	*Cronobacter* spp	+	+	+	+	**PA**
640	+	-	*Cronobacter* spp	+	+	+	+	**PA**
653	+	-	*Cronobacter* spp	+	+	+	+	**PA**
688	+	-	*Cronobacter* spp	+	+	+	+	**PA**
689	+	-	*Cronobacter* spp	+	+	+	+	**PA**

Laboratory **2**
Aerobic mesophilic flora : 10 CFU/g
Total Lactic Count : 2.0 10^8 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
237	**-**	/	/	-	-	-	-	**NA**
240	**-**	/	/	-	-	-	-	**NA**
383	**-**	/	/	-	-	-	-	**NA**
550	**-**	/	/	-	-	-	-	**NA**
726	**-**	/	/	-	-	-	-	**NA**
743	**-**	/	/	-	-	-	-	**NA**
747	**-**	/	/	-	-	-	-	**NA**
748	**-**	/	/	-	-	-	-	**NA**
754	**-**	/	/	-	-	-	-	**NA**
771	**-**	/	/	-	-	-	-	**NA**
777	**-**	/	/	-	-	-	-	**NA**
790	**-**	/	/	-	-	-	-	**NA**
140	**-**	/	/	-	-	-	-	**NA**
142	**-**	/	/	-	-	-	-	**NA**
143	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
149	**-**	/	/	-	-	-	-	**NA**
190	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
191	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
275	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
286	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
304	**-**	/	/	-	-	-	-	**NA**
322	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
431	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
545	**-**	/	/	-	-	-	-	**NA**
163	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
169	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
207	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
222	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
336	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
341	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
344	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
346	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
416	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
417	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
588	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
597	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**

Laboratory **3**
Aerobic mesophilic flora : 50 CFU/g
Total Lactic Count : 2.5 10^8 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
233	-	/	/	-	-	-	-	**NA**
379	-	/	/	-	-	-	-	**NA**
389	-	/	/	-	-	-	-	**NA**
391	-	/	/	-	-	-	-	**NA**
393	-	/	/	-	-	-	-	**NA**
562	-	/	/	-	-	-	-	**NA**
564	-	/	/	-	-	-	-	**NA**
713	-	/	/	-	-	-	-	**NA**
721	-	/	/	-	-	-	-	**NA**
740	-	/	/	-	-	-	-	**NA**
746	-	/	/	-	-	-	-	**NA**
760	-	/	/	-	-	-	-	**NA**
127	-	/	/	-	-	-	-	**NA**
132	+	-	*Cronobacter* spp	+	+	+	+	**PA**
150	+	-	*Cronobacter* spp	+	-	+	-	**ND FN_{alt}**
176	-	/	/	-	-	-	-	**NA**
177	-	/	/	-	-	-	-	**NA**
194	-	/	/	-	-	-	-	**NA**
195	+	-	*Cronobacter* spp	+	+	+	+	**PA**
197	+	-	*Cronobacter* spp	+	+	+	+	**PA**
201	-	/	/	-	-	-	-	**NA**
312	-	/	/	-	-	-	-	**NA**
451	+	-	*Cronobacter* spp	+	+	+	+	**PA**
467	+	-	*Cronobacter* spp	+	+	+	+	**PA**
158	+	-	*Cronobacter* spp	+	+	+	+	**PA**
167	+	-	*Cronobacter* spp	+	+	+	+	**PA**
374	+	-	*Cronobacter* spp	+	+	+	+	**PA**
406	+	-	*Cronobacter* spp	+	+	+	+	**PA**
412	+	-	*Cronobacter* spp	+	+	+	+	**PA**
420	+	-	*Cronobacter* spp	+	+	+	+	**PA**
585	+	-	*Cronobacter* spp	+	+	+	+	**PA**
599	+	-	*Cronobacter* spp	+	+	+	+	**PA**
601	+	-	*Cronobacter* spp	+	+	+	+	**PA**
602	+	-	*Cronobacter* spp	+	+	+	+	**PA**
641	+	-	*Cronobacter* spp	+	+	+	+	**PA**
648	+	-	*Cronobacter* spp	+	+	+	+	**PA**

Laboratory **4**
Aerobic mesophilic flora : 70 CFU/g
Total Lactic Count : 8.8 10^7 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
25	-	/	/	-	-	-	-	**NA**
29	-	/	/	-	-	-	-	**NA**
37	-	/	/	-	-	-	-	**NA**
38	-	/	/	-	-	-	-	**NA**
44	-	/	/	-	-	-	-	**NA**
46	-	/	/	-	-	-	-	**NA**
48	-	/	/	-	-	-	-	**NA**
66	-	/	/	-	-	-	-	**NA**
69	-	/	/	-	-	-	-	**NA**
70	-	/	/	-	-	-	-	**NA**
72	-	/	/	-	-	-	-	**NA**
74	-	/	/	-	-	-	-	**NA**
15	-	/	/	-	-	-	-	**NA**
1	+	-	*Cronobacter* spp	+	+	+	+	**PA**
3	+	-	*Cronobacter* spp	+	+	+	+	**PA**
17	-	/	/	-	-	-	-	**NA**
19	-	/	/	-	-	-	-	**NA**
50	-	/	/	-	-	-	-	**NA**
52	-	/	/	-	-	-	-	**NA**
55	-	/	/	-	-	-	-	**NA**
57	+	-	*Cronobacter* spp	+	+	+	+	**PA**
60	+	-	*Cronobacter* spp	+	+	+	+	**PA**
62	-	/	/	-	-	-	-	**NA**
65	+	-	*Cronobacter* spp	+	+	+	+	**PA**
5	+	-	*Cronobacter* spp	+	+	+	+	**PA**
8	+	-	*Cronobacter* spp	+	+	+	+	**PA**
12	+	-	*Cronobacter* spp	+	+	+	+	**PA**
20	+	-	*Cronobacter* spp	+	+	+	+	**PA**
24	+	-	*Cronobacter* spp	+	+	+	+	**PA**
76	+	-	*Cronobacter* spp	+	+	+	+	**PA**
84	+	-	*Cronobacter* spp	+	+	+	+	**PA**
85	+	-	*Cronobacter* spp	+	+	+	+	**PA**
92	+	-	*Cronobacter* spp	+	+	+	+	**PA**
96	+	-	*Cronobacter* spp	+	+	+	+	**PA**
98	+	-	*Cronobacter* spp	+	+	+	+	**PA**
100	+	-	*Cronobacter* spp	+	+	+	+	**PA**

Laboratory 5
Aerobic mesophilic flora : 20 CFU/g
Total Lactic Count : 9.1 10^7 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
259	-	/	/	-	-	-	-	**NA**
265	-	/	/	-	-	-	-	**NA**
403	-	/	/	-	-	-	-	**NA**
515	-	/	/	-	-	-	-	**NA**
527	-	/	/	-	-	-	-	**NA**
717	-	/	/	-	-	-	-	**NA**
718	-	/	/	-	-	-	-	**NA**
727	-	/	/	-	-	-	-	**NA**
752	-	/	/	-	-	-	-	**NA**
756	-	/	/	-	-	-	-	**NA**
762	-	/	/	-	-	-	-	**NA**
775	-	/	/	-	-	-	-	**NA**
182	-	/	/	-	-	-	-	**NA**
188	-	/	/	-	-	-	-	**NA**
198	-	/	/	-	-	-	-	**NA**
288	+	-	*Cronobacter sakazakii* group	+	+	+	+	**PA**
293	-	/	/	-	-	-	-	**NA**
307	-	/	/	-	-	-	-	**NA**
313	-	/	/	-	-	-	-	**NA**
325	-	/	/	-	-	-	-	**NA**
440	-	/	/	-	-	-	-	**NA**
442	+	-	*Cronobacter sakazakii* group	+	+	+	+	**PA**
461	+	-	*Cronobacter sakazakii* group	+	+	+	+	**PA**
537	+	-	*Cronobacter sakazakii* group	+	+	+	+	**PA**
162	+	+	*Cronobacter* sakazakii group	+	+	+	+	**PA**
164	+	+	*Cronobacter sakazakii* group	+	+	+	+	**PA**
590	+	+	*Cronobacter sakazakii* group	+	+	+	+	**PA**
592	+	+	*Cronobacter sakazakii* group	+	+	+	+	**PA**
596	+	+	*Cronobacter sakazakii* group	+	+	+	+	**PA**
631	+	+	*Cronobacter sakazakii* group	+	+	+	+	**PA**
634	+	+	*Cronobacter sakazakii* group	+	+	+	+	**PA**
644	+	+	*Cronobacter sakazakii* group	+	+	+	+	**PA**
650	+	+	*Cronobacter sakazakii* group	+	+	+	+	**PA**
656	+	+	*Cronobacter sakazakii* group	+	+	+	+	**PA**
693	+	+	*Cronobacter sakazakii* group	+	+	+	+	**PA**
709	+	+	*Cronobacter sakazakii* group	+	+	+	+	**PA**

Laboratory 6
Aerobic mesophilic flora : 20 CFU/g
Total Lactic Count : 1.7 10^8 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
103	-	/	/	-	-	-	-	**NA**
272	-	/	/	-	-	-	-	**NA**
378	-	/	/	-	-	-	-	**NA**
558	-	/	/	-	-	-	-	**NA**
572	-	/	/	-	-	-	-	**NA**
716	-	/	/	-	-	-	-	**NA**
731	-	/	/	-	-	-	-	**NA**
744	-	/	/	-	-	-	-	**NA**
758	-	/	/	-	-	-	-	**NA**
759	-	/	/	-	-	-	-	**NA**
763	-	/	/	-	-	-	-	**NA**
787	-	/	/	-	-	-	-	**NA**
128	+	+	*C. sakazakii* group	+	+	+	+	**PA**
129	-	/	/	-	-	-	-	**NA**
145	-	/	/	-	-	-	-	**NA**
189	-	/	/	-	-	-	-	**NA**
305	+	+	*C. sakazakii* group	+	+	+	+	**PA**
309	-	/	/	-	-	-	-	**NA**
438	+	+	*C. sakazakii* group	+	+	+	+	**PA**
446	+	+	*C. sakazakii* group	+	+	+	+	**PA**
534	-	/	/	-	-	-	-	**NA**
685	+	+	*C. sakazakii* group	+	+	+	+	**PA**
791	-	/	/	-	-	-	-	**NA**
796	-	/	/	-	-	-	-	**NA**
154	+	+	*C. sakazakii* group	+	+	+	+	**PA**
166	+	+	*C. sakazakii* group	+	+	+	+	**PA**
171	+	+	*C. sakazakii* group	+	+	+	+	**PA**
337	+	+	*C. sakazakii* group	+	+	+	+	**PA**
580	+	+	*C. sakazakii* group	+	+	+	+	**PA**
589	+	+	*C. sakazakii* group	+	+	+	+	**PA**
610	+	+	*C. sakazakii* group	+	+	+	+	**PA**
617	+	+	*C. sakazakii* group	+	+	+	+	**PA**
625	+	+	*C. sakazakii* group	+	+	+	+	**PA**
642	+	+	*C. sakazakii* group	+	+	+	+	**PA**
649	+	+	*C. sakazakii* group	+	+	+	+	**PA**
666	+	+	*C. sakazakii* group	+	+	+	+	**PA**

Laboratory **7**
Aerobic mesophilic flora : 20 CFU/g
Total Lactic Count : 2.9 10^8 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
232	-	/	/	-	+	-	-	**PD FP_{alt}**
244	-	/	/	-	+	-	-	**PD FP_{alt}**
377	-	/	/	-	-	-	-	**NA**
490	-	/	/	-	-	-	-	**NA**
492	-	/	/	-	-	-	-	**NA**
498	-	/	/	-	-	-	-	**NA**
503	-	/	/	-	-	-	-	**NA**
566	-	/	/	-	-	-	-	**NA**
573	-	/	/	-	-	-	-	**NA**
730	-	/	/	-	-	-	-	**NA**
739	-	/	/	-	-	-	-	**NA**
776	-	/	/	-	-	-	-	**NA**
116	-	NA	NA	-	+	-	-	**PD FP_{alt}**
135	-	NA	NA	-	+	-	-	**PD FP_{alt}**
470	-	NA	NA	-	-	-	-	**NA**
526	+	-	*Cronobacter* spp	+	+	+	+	**PA**
543	-	NA	NA	-	-	-	-	**NA**
701	+	-	*Cronobacter* spp	+	+	+	+	**PA**
707	+	-	*Cronobacter* spp	+	+	+	+	**PA**
710	+	-	*Cronobacter* spp	+	+	+	+	**PA**
742	-	NA	NA	-	-	-	-	**NA**
751	-	NA	NA	-	-	-	-	**NA**
774	-	NA	NA	-	-	-	-	**NA**
783	+	-	*Cronobacter* spp	+	+	+	+	**PA**
161	+	-	*Cronobacter* spp	+	+	+	+	**PA**
165	+	-	*Cronobacter* spp	+	+	+	+	**PA**
361	+	-	*Cronobacter* spp	+	+	+	+	**PA**
582	+	-	*Cronobacter* spp	+	+	+	+	**PA**
593	+	-	*Cronobacter* spp	+	+	+	+	**PA**
604	+	-	*Cronobacter* spp	+	+	+	+	**PA**
607	+	-	*Cronobacter* spp	+	+	+	+	**PA**
608	+	-	*Cronobacter* spp	+	+	+	+	**PA**
618	+	-	*Cronobacter* spp	+	+	+	+	**PA**
637	+	-	*Cronobacter* spp	+	+	+	+	**PA**
686	+	-	*Cronobacter* spp	+	+	+	+	**PA**
699	+	-	*Cronobacter* spp	+	+	+	+	**PA**

Laboratory **8**

Aerobic mesophilic flora : 10 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
112	**-**	/	/	-	**-**	-	-	**NA**
229	**-**	/	/	-	**-**	-	-	**NA**
257	**-**	/	/	-	**-**	-	-	**NA**
263	**-**	/	/	-	**-**	-	-	**NA**
266	**-**	/	/	-	**-**	-	-	**NA**
501	**-**	/	/	-	**-**	-	-	**NA**
510	**-**	/	/	-	**-**	-	-	**NA**
567	**-**	/	/	-	**-**	-	-	**NA**
569	**-**	/	/	-	**-**	-	-	**NA**
575	**-**	/	/	-	**-**	-	-	**NA**
733	**-**	/	/	-	**-**	-	-	**NA**
735	**-**	/	/	-	**+**	-	-	**PD FP_{alt}**
133	**-**	/	/	-	-	-	-	**NA**
323	**-**	/	/	-	-	-	-	**NA**
673	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
676	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
681	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
698	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
700	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
702	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
749	**-**	/	/	-	-	-	-	**NA**
761	**-**	/	/	-	-	-	-	**NA**
766	**-**	/	/	-	-	-	-	**NA**
797	**-**	/	/	-	-	-	-	**NA**
215	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
218	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
362	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
581	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
591	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
598	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
606	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
629	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
630	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
643	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
659	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**
660	**+**	-	98.5% *Cronobacter* spp	+	+	+	+	**PA**

Laboratory **9**

Aerobic mesophilic flora : <10 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
243	-	/	/	-	-	-	-	**NA**
269	-	/	/	-	-	-	-	**NA**
384	-	/	/	-	-	-	-	**NA**
386	-	/	/	-	-	-	-	**NA**
402	-	/	/	-	-	-	-	**NA**
513	-	/	/	-	-	-	-	**NA**
516	-	/	/	-	-	-	-	**NA**
520	-	/	/	-	-	-	-	**NA**
522	-	/	/	-	-	-	-	**NA**
556	-	/	/	-	-	-	-	**NA**
725	-	/	/	-	-	-	-	**NA**
734	-	/	/	-	-	-	-	**NA**
282	-	/	/	-	-	-	-	**NA**
459	+	-	+	+	+	+	+	**PA**
536	-	/	/	-	-	-	-	**NA**
578	-	/	/	-	-	-	-	**NA**
585	-	/	/	-	-	-	-	**NA**
592	-	/	/	-	-	-	-	**NA**
664	+	-	+	+	+	+	+	**PA**
671	+	-	+	+	+	+	+	**PA**
675	+	-	+	+	+	+	+	**PA**
677	+	-	+	+	+	+	+	**PA**
703	+	-	+	+	+	+	+	**PA**
720	-	/	/	-	-	-	-	**NA**
136	+	-	+	+	+	+	+	**PA**
170	+	-	+	+	+	+	+	**PA**
211	+	-	+	+	+	+	+	**PA**
376	+	-	+	+	+	+	+	**PA**
419	+	-	+	+	+	+	+	**PA**
422	+	-	+	+	+	+	+	**PA**
583	+	-	+	+	+	+	+	**PA**
614	+	-	+	+	+	+	+	**PA**
624	+	-	+	+	+	+	+	**PA**
626	+	-	+	+	+	+	+	**PA**
692	+	-	+	+	+	+	+	**PA**
694	+	-	+	+	+	+	+	**PA**

Laboratory **10**

Aerobic mesophilic flora : 20 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
105	-	/	/	-	-	-	-	**NA**
238	-	/	/	-	-	-	-	**NA**
239	-	/	/	-	-	-	-	**NA**
250	-	/	/	-	-	-	-	**NA**
273	-	/	/	-	-	-	-	**NA**
387	-	/	/	-	-	-	-	**NA**
496	-	/	/	-	-	-	-	**NA**
512	-	/	/	-	-	-	-	**NA**
518	-	/	/	-	-	-	-	**NA**
568	-	/	/	-	-	-	-	**NA**
574	-	/	/	-	-	-	-	**NA**
755	-	/	/	-	-	-	-	**NA**
184	-	/	/	-	-	-	-	**NA**
277	-	/	/	-	-	-	-	**NA**
319	-	/	/	-	-	-	-	**NA**
462	-	/	/	-	-	-	-	**NA**
466	+	-	+	+	+	+	+	**PA**
472	-	/	/	-	-	-	-	**NA**
539	-	/	/	-	-	-	-	**NA**
540	+	-	+	+	+	+	+	**PA**
691	+	-	+	+	+	+	+	**PA**
697	+	-	+	+	+	+	+	**PA**
706	+	-	+	+	+	+	+	**PA**
769	-	/	/	-	-	-	-	**NA**
159	+	-	+	+	+	+	+	**PA**
353	+	-	+	+	+	+	+	**PA**
364	+	-	+	+	+	+	+	**PA**
411	+	-	+	+	+	+	+	**PA**
414	+	-	+	+	+	+	+	**PA**
619	+	-	+	+	+	+	+	**PA**
620	+	-	+	+	+	+	+	**PA**
636	+	-	+	+	+	+	+	**PA**
640	+	-	+	+	+	+	+	**PA**
653	+	-	+	+	+	+	+	**PA**
688	+	-	+	+	+	+	+	**PA**
689	+	-	+	+	+	+	+	**PA**

Laboratory 11

Aerobic mesophilic flora : 30 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
115	**-**	/	/	-	-	-	-	**NA**
120	**-**	/	/	-	-	-	-	**NA**
261	**-**	/	/	-	-	-	-	**NA**
262	**-**	/	/	-	-	-	-	**NA**
268	**-**	/	/	-	-	-	-	**NA**
480	**-**	/	/	-	-	-	-	**NA**
481	**-**	/	/	-	-	-	-	**NA**
495	**-**	/	/	-	-	-	-	**NA**
498	**-**	/	/	-	-	-	-	**NA**
499	**-**	/	/	-	-	-	-	**NA**
509	**-**	/	/	-	-	-	-	**NA**
555	**-**	/	/	-	-	-	-	**NA**
187	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
290	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
292	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
298	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
423	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
435	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
450	**-**	/	/	-	-	-	-	**NA**
452	**-**	/	/	-	-	-	-	**NA**
460	**-**	/	/	-	-	-	-	**NA**
465	**-**	/	/	-	-	-	-	**NA**
533	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
548	**+**	-	*Cronobacter* spp	+	+	+	+	**PA**
204	**+**	-	*Cronobacter* spp	+	**+**	+	+	**PA**
209	**+**	-	*Cronobacter* spp	+	**+**	+	+	**PA**
210	**+**	-	*Cronobacter* spp	+	**+**	+	+	**PA**
214	**+**	-	*Cronobacter* spp	+	**+**	+	+	**PA**
217	**+**	-	*Cronobacter* spp	+	**+**	+	+	**PA**
326	**+**	-	*Cronobacter* spp	+	**+**	+	+	**PA**
334	**+**	-	*Cronobacter* spp	+	**+**	+	+	**PA**
349	**+**	-	*Cronobacter* spp	+	**+**	+	+	**PA**
355	**+**	-	*Cronobacter* spp	+	**+**	+	+	**PA**
375	**+**	-	*Cronobacter* spp	+	**+**	+	+	**PA**
413	**+**	-	*Cronobacter* spp	+	**+**	+	+	**PA**
418	**+**	-	*Cronobacter* spp	+	**+**	+	+	**PA**

Laboratory **12**

Aerobic mesophilic flora : 30 CFU /g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
101	-	/	/	-	-	-	-	**NA**
102	-	/	/	-	-	-	-	**NA**
108	-	/	/	-	-	-	-	**NA**
117	-	/	/	-	-	-	-	**NA**
122	-	/	/	-	-	-	-	**NA**
123	-	/	/	-	-	-	-	**NA**
251	-	/	/	-	-	-	-	**NA**
252	-	/	/	-	-	-	-	**NA**
260	-	/	/	-	-	-	-	**NA**
504	-	/	/	-	-	-	-	**NA**
553	-	/	/	-	-	-	-	**NA**
557	-	/	/	-	-	-	-	**NA**
294	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
301	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
303	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
427	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
428	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
430	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
443	-	/	/	-	-	-	-	**NA**
445	-	/	/	-	+	-	-	**PD FP_{alt}**
453	-	/	/	-	-	-	-	**NA**
456	-	/	/	-	-	-	-	**NA**
457	-	/	/	-	-	-	-	**NA**
561	+	-	*Cronobacter* spp.	+	-	+	-	**ND FN_{alt}**
179	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
212	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
216	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
221	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
324	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
372	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
373	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
405	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
407	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
421	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
424	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
425	+	-	*Cronobacter* spp.	+	+	+	+	**PA**

Laboratory 13

Aerobic mesophilic flora : 20 CFU /g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
106	-	/	/	-	-	-	-	**NA**
107	-	/	/	-	-	-	-	**NA**
111	-	/	/	-	-	-	-	**NA**
255	-	/	/	-	-	-	-	**NA**
382	-	/	/	-	-	-	-	**NA**
385	-	/	/	-	-	-	-	**NA**
458	-	/	/	-	-	-	-	**NA**
464	-	/	/	-	-	-	-	**NA**
485	-	/	/	-	-	-	-	**NA**
493	-	/	/	-	-	-	-	**NA**
542	-	/	/	-	-	-	-	**NA**
544	-	/	/	-	-	-	-	**NA**
119	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
144	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
231	-	/	/	-	-	-	-	**NA**
256	-	/	/	-	+	-	-	**PD FP_{alt}**
258	-	/	/	-	-	-	-	**NA**
281	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
296	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
354	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
408	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
426	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
433	-	/	/	-	-	-	-	**NA**
434	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
178	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
213	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
224	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
356	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
357	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
363	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
366	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
367	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
368	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
369	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
547	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
554	+	-	*Cronobacter* spp.	+	+	+	+	**PA**

Laboratory ADRIA

Aerobic mesophilic flora : <10 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
104	**-**	/	/	-	-	-	-	**NA**
109	**-**	/	/	-	-	-	-	**NA**
113	**-**	/	/	-	-	-	-	**NA**
124	**-**	/	/	-	-	-	-	**NA**
125	**-**	/	/	-	-	-	-	**NA**
234	**-**	/	/	-	-	-	-	**NA**
253	**-**	/	/	-	-	-	-	**NA**
482	**-**	/	/	-	-	-	-	**NA**
486	**-**	/	/	-	-	-	-	**NA**
507	**-**	/	/	-	-	-	-	**NA**
523	**-**	/	/	-	-	-	-	**NA**
529	**-**	/	/	-	-	-	-	**NA**
137	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
226	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
279	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
284	-	/	/	-	-	-	-	**NA**
316	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
463	-	/	/	-	-	-	-	**NA**
473	-	/	/	-	-	-	-	**NA**
475	-	/	/	-	-	-	-	**NA**
535	-	/	/	-	-	-	-	**NA**
541	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
546	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
549	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
203	**+**	-	*Cronobacter* spp.	+	+	+	+	**PA**
205	**+**	-	*Cronobacter* spp.	+	+	+	+	**PA**
220	**+**	-	*Cronobacter* spp.	+	+	+	+	**PA**
223	**+**	-	*Cronobacter* spp.	+	+	+	+	**PA**
335	**+**	-	*Cronobacter* spp.	+	+	+	+	**PA**
348	**+**	-	*Cronobacter* spp.	+	+	+	+	**PA**
358	**+**	-	*Cronobacter* spp.	+	+	+	+	**PA**
359	**+**	-	*Cronobacter* spp.	+	+	+	+	**PA**
370	**+**	-	*Cronobacter* spp.	+	+	+	+	**PA**
371	**+**	-	*Cronobacter* spp.	+	+	+	+	**PA**
415	**+**	-	*Cronobacter* spp.	+	+	+	+	**PA**
551	**+**	-	*Cronobacter* spp.	+	+	+	+	**PA**

Laboratory Q Labs
Aerobic mesophilic flora : 40 CFU /g
Lactic flora:1,0.10^{7} CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: NEOGEN Molecular Detection Assay MDA 2 *Cronobacter*			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	+	+	*Cronobacter* spp.	+	+	+	+	**PA**
/	+	+	*Cronobacter* spp.	+	+	+	+	**PA**
/	-	/	/	-	-	-	-	**NA**
/	+	+	*Cronobacter* spp.	+	+	+	+	**PA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	+	+	*Cronobacter* spp.	+	+	+	+	**PA**
/	+	+	*Cronobacter* spp.	+	+	+	+	**PA**
/	-	/	/	-	-	-	-	**NA**
/	-	/	/	-	-	-	-	**NA**
/	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
/	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
/	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
/	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
/	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
/	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
/	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
/	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
/	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
/	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
/	+	-	*Cronobacter* spp.	+	+	+	+	**PA**
	+	-	*Cronobacter* spp.	+	+	+	+	**PA**