

NF VALIDATION
Validation of alternative analytical methods
Application in food microbiology

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

3M™ Molecular Detection Assay 2 - Cronobacter method
(Certificate number: 3M 01/20-03/18)
for qualitative detection of powdered infant formula products
and production environmental samples

Qualitative method

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This report consists of 87 pages, including 7 appendices.

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Quality Assurance documents related to this study can be consulted upon request from **3M Health Care**.

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

Validation protocols	<ul style="list-style-type: none"> ▪ ISO 16140-1 (2016): Microbiology of the food chain - Method validation — <i>Part 1: Vocabulary</i> ▪ ISO 16140-2(2016): Microbiology of the food chain - Method validation — <i>Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method</i> ▪ AFNOR technical rules (PR Revision 7)
Reference method	ISO 22964 (2017): Microbiology of the food chain - Horizontal method for the detection of <i>Cronobacter</i> spp.
Alternative method	3M™ Molecular Detection Assay 2 – <i>Cronobacter</i> method
Scope	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Powdered infant formula and infant cereals without probiotics, including ingredients <i>(10 g and 300 g test portions)</i> <input checked="" type="checkbox"/> Powdered infant formula and infant cereals with probiotics <i>(10 g and 300 g test portions)</i> <input checked="" type="checkbox"/> Production environmental samples <i>(10 g or sample device)</i>
Certification organism	AFNOR Certification (http://nf-validation.afnor.org/)

1 AIM OF THE STUDY

The 3M™ 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 in February 2022 according to the ISO16140-2:2016 without modification.

2 METHOD PROTOCOLS

2.1 Alternative method

The flow diagram of the alternative method is provided in **Appendix 1**.

2.1.1 Principle

The 3M 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.

2.1.2 Protocols

The overall protocols are briefly described below:

- Enrichment protocols.

Protocol No	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 ± 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 ± 1°C) 22 - 24 h at 37°C ± 1°C
		Infant cereals	

- Incubate the samples for 18 h - 24 h at 37 ± 1°C for the general and for the specific protocol 1, and for 22 h - 24 h at 37 ± 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 ± 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 3M Molecular Detection System
- Confirmation using the protocol of the reference method:
 - * Subculture in CSB (24 h \pm 2 h at 41.5°C \pm 1°C)
 - * Streaking (10 μ l) onto CCI Agar (24 h \pm 2 h at 41.5°C \pm 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 \pm 3°C in the event that the 3M 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).

2.1.3 Restrictions

There is no restriction.

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 2**).

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.

♦ Analysis performed according to the COFRAC accreditation

3 INITIAL VALIDATION STUDY (2017): RESULTS

3.1 Method Comparison Study

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

The study was carried out on a diversity of samples and strains representative of agri-food products. This does not constitute an exhaustive list of the different matrices included in the scope.

For any comment on the alternative method, please contact AFNOR Certification at <http://nf-validation.afnor.org/contact-2/>.

3.1.1 Sensitivity study

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

3.1.1.1 Number and nature of samples

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 tested category and type

Category		Test portion	Type		Protocol	Study design	Positive	Negative	Total		
1	Infant formula and infant cereals without probiotics including ingredients	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		
2	Infant formula and infant cereals with probiotics	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			15	15	30		
Total							30	30	60		
3	Production environmental samples	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 samples							160	154	314		

3.1.1.2 Artificial contamination of samples

Artificial contaminations were done by seeding or spiking protocol. The artificial contaminations are presented in **Appendix 3**.

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.

3.1.1.3 Protocols applied during the validation study

Incubation time

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.

3.1.1.4 Test results

Raw data per category are given in **Appendix 4**. The results are given in **Table 3**.

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

Category	Test portion	Type	Protocol	Study design	PA	NA*	PD	ND**	PPND	PPNA	
1	10 g	a	Infant formula	General	Paired	12	9	0	0	0	1
		b	Infant cereals			11	9	0	1	0	0
		c	Non probiotic ingredients			9	13	0	0	0	0
		Total					32	31	0	1	0
	300 g	a	Infant formula	Specific 1	Unpaired	6	11	2	1	0	0
		b	Infant cereals			7	8	4	2	0	1
		c	Non probiotic ingredients			3	12	4	1	0	0
Total					16	31	10	4	0	1	
2	10 g	a	Infant formula with probiotics	General	Paired	14	16	0	0	0	0
		b	Infant cereals with probiotics			19	14	0	0	0	0
		Total					33	30	0	0	0
	300 g	a	Infant formula with probiotics	Specific 2	Unpaired	11	15	2	1	1	0
		b	Infant cereals with probiotics	Specific 2	Unpaired	10	15	1	4	0	0
		Total					21	30	3	5	1
3	10 g or sample device	a	Swabs, sponges, wipes	General	Paired	13	9	0	1	0	0
		b	Powdered residues			9	10	0	2	0	0
		c	Water used in manufacturing			9	11	0	0	0	0
		Total					31	30	0	3	0
General Protocol					96	91	0	4	0	1	
Specific Protocol 1					16	31	10	4	0	1	
Specific Protocol 2					21	30	3	5	1	0	
All samples					133	152	13	13	1	2	

* PPNA not included

** PPND not included

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

The calculations are presented in **Table 4**.

Table 4 – Calculation of the relative trueness (RT), the sensitivity (SE) and the false positive ratio (FPR)

Category	Test portion	Type	Protocol	Study design	PA	NA*	PD	ND**	PPND	PPNA	SE _{alt} %	SE _{ref} %	RT %	FPR %	
1	10 g	a	Infant formula	General	Paired	12	9	0	0	0	1	100,0	100,0	100,0	11,1
		b	Infant cereals			11	9	0	1	0	0	91,7	100,0	95,2	0,0
		c	Non probiotic ingredients			9	13	0	0	0	0	100,0	100,0	100,0	0,0
		Total				32	31	0	1	0	1	97,0	100,0	98,5	3,1
	300 g	a	Infant formula	Specific 1	Unpaired	6	11	2	1	0	0	88,9	77,8	85,0	0,0
		b	Infant cereals			7	8	4	2	0	1	84,6	69,2	72,7	12,5
		c	Non probiotic ingredients			3	12	4	1	0	0	87,5	50,0	75,0	0,0
Total			16			31	10	4	0	1	86,7	66,7	77,4	3,1	
2	10 g	a	Infant formula with probiotics	General	Paired	14	16	0	0	0	0	100,0	100,0	100,0	0,0
		b	Infant cereals with probiotics			19	14	0	0	0	0	100,0	100,0	100,0	0,0
		Total				33	30	0	0	0	0	100,0	100,0	100,0	0,0
	300 g	a	Infant formula with probiotics	Specific 2	Unpaired	11	15	2	1	1	0	86,7	86,7	86,7	6,7
		b	Infant cereals with probiotics	Specific 2	Unpaired	10	15	1	4	0	0	73,3	93,3	83,3	0,0
		Total			21	30	3	5	1	0	80,0	90,0	85,0	3,3	
3	10 g or sample device	a	Swabs, sponges, wipes	General	Paired	13	9	0	1	0	0	92,9	100,0	95,7	0,0
		b	Powdered residues			9	10	0	2	0	0	81,8	100,0	90,5	0,0
		c	Water used in manufacturing			9	11	0	0	0	0	100,0	100,0	100,0	0,0
		Total				31	30	0	3	0	0	91,2	100,0	95,3	0,0
General Protocol					96	91	0	4	0	1	96,0	100,0	97,9	1,1	
Specific Protocol 1					16	31	10	4	0	1	86,7	66,7	77,4	3,1	
Specific Protocol 2					21	30	3	5	1	0	80,0	90,0	85,0	3,3	
All samples					133	152	13	13	1	2	91,3	91,9	91,4	1,9	

* PPNA not included

** PPND not included

A summary of the results is given in **Table 5**.

Table 5 - Summary of results

		General Protocol	Specific Protocol 1	Specific Protocol 2	All protocols
Sensitivity for the alternative method	$SE_{alt} = \frac{(PA + PD)}{(PA + ND + PD)} \times 100\%$	96.0%	86.7%	80.0%	91.3 %
Sensitivity for the reference method	$SE_{ref} = \frac{(PA + ND)}{(PA + ND + PD)} \times 100\%$	100.0%	66.7%	90.0%	91.9 %
Relative trueness	$RT = \frac{(PA + NA)}{N} \times 100\%$	97.9%	77.4%	85.0%	91.4 %
False positive ratio for the alternative method* FP = PPNA + PPND	$FPR = \frac{(FP)}{NA} \times 100\%$	1.1%	3.1%	3.3%	1.9 %

With $ND = ND + PPND$
 $NA = NA + PPNA$

3.1.1.6 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: 3M Molecular Detection Assay 2 <i>Cronobacter</i> method				Category	Type
				Strain	Inoculation rate/sample		BPW ISO 18h at 37°C					
							MDA2		Final result	Agree- ment		
							Result	Confirmatory tests				
General 10 g	4620	Céréales infantiles Avoine blé riz	Infant cereals	<i>C. sakazakii</i> Ad2403	6-2-2-4-3 (3,4)	+	-/-	+	-	ND	1	b
	3658	Poussière aspirateur	Dusts	<i>C. sakazakii</i> Ad2379	3-4-4-5-3 (3,8)	+	-/+	+	-	ND	3	b
	3671	Ecouvillon	Swab	<i>C. sakazakii</i> Ad2409	3-4-3-2-4 (3,2)	+	-/-	+	-	ND	3	a
	4626	Poussière probiotique aspirateur	Dusts with probiotics	<i>C. sakazakii</i> Ad2406	1-2-0-2-3 (1,6)	+	-/-	+	-	ND	3	b
Specific 1 300 g	1694	Céréales infantiles chocolat	Infant cereal	<i>C. muytjensii</i> E769	6.0	+	-	-	-	ND	1	b
	2033	Poudre de lait (matière première)	Dry milk powder	<i>C. sakazakii</i> Ad2412	0.5	+	-/-	+	-	ND	1	c
	4921	PDL infantile 2ème age BIO	Infant formula	<i>C. sakazakii</i> Ad2400	3.6	+	-	-	-	ND	1	a
	5335 *	Céréales infantiles BIO	Infant cereals	<i>C. sakazakii</i> Ad2370	1.8	+	-	-	-	ND	1	b
Specific 2 300 g	4929	PDL infantile probiotiques (<i>Lb reuteri</i>) 2ème âge (2,1.10 ³ CFU/g)	Infant formula with probiotics	<i>C. sakazakii</i> Ad2400	3.6	+	-	-	-	ND	2	a
	5316 *	Céréales infantiles biscuitée/vanillée avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereals with probiotics	<i>C. sakazakii</i> Ad2381	1.0	+	-	-	-	ND	2	b
	5321 *	Céréales infantiles noisettes biscuitée avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereals with probiotics	<i>C. dublinensis</i> DSM18705	0.8	+	-	-	-	ND	2	b
	5327 *	Céréales infantiles 5 céréales avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereals with probiotics	<i>C. sakazakii</i> Ad2370	1.8	+	-	-	-	ND	2	b
	6762 *	Céréales infantiles probiotique Vanille (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2366	1.8	+	-	-	-	ND	2	b
	6767	PDL infantile probiotiques 2ème âge (<i>Lactobacillus fermentum</i>) (1,6.10 ⁶ CFU/g)	Infant formula with probiotics	<i>C. sakazakii</i> Ad1708	0.7	+	+/+/+	-	-	PPND	2	a

* Addition of amylase in the enrichment broth

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Table 7 - Positive deviations

Protocol	Sample N°	Product (French name)	Product	Artificial contamination		Reference method: ISO 22964♦	Alternative method: 3M Molecular Detection Assay 2 <i>Cronobacter</i> method				Category	Type
				strain	Inoculation rate/sample	Final result	Pre-warmed BPW ISO 18h at 37°C					
							MDA		Final result	Agreement		
							Result	Confirmatory tests				
Specific 1 300 g	1685	Céréales infantiles BIO cacao quinoa	Infant cereals	<i>C. sakazakii</i> Ad1445	7.5	-	+	+	+	PD	1	b
	2026	Farine de blé bio	Wheat flour	<i>C. sakazakii</i> Ad2341	1.1	-	+	+	+	PD	1	c
	2029	Lactose	Lactose	<i>C. sakazakii</i> Ad2413	2.4	-	+	+	+	PD	1	c
	2034	Poudre de lait (matière première)	Dry milk powder	<i>C. sakazakii</i> Ad2412	0.5	-	+	+	+	PD	1	c
	4915	PDL infantile riz 1er age	Infant formula	<i>C. sakazakii</i> Ad2394	6.8	-	+	+	+	PD	1	a
	4920	PDL infantile 1er age	Infant formula	<i>C. sakazakii</i> Ad2395	6.0	-	+	+	+	PD	1	a
	5023	Amidon de blé	Wheat starch	<i>C. sakazakii</i> Ad2378	0.6	-	+	+	+	PD	1	c
	5334 *	Céréales infantiles saveur briochée	Infant cereals	<i>C. sakazakii</i> Ad2356	1.3	-	+	+	+	PD	1	b
	5702	Céréales infantiles BIO	Infant cereals	/	/	-	+	+	+	PD	1	b
	6904	Céréales infantiles cacao quinoa	Infant cereals	/	/	-	+	+	+	PD	1	b
Specific 2 300 g	5026	PDL infantile probiotique (<i>Lb rahmnosus</i> , <i>Bifido infantis</i>) 1er âge (9,5.10 ⁶ CFU/g)	Infant formula with probiotics	<i>C. sakazakii</i> Ad2378	0.6	-	+	+	+	PD	2	a
	5328 *	Céréales infantiles carottes potiron avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2370	1.8	-	+	+	+	PD	2	b
	6773	PDL infantile probiotiques 1er âge (Bifidobactéries + ferments) (<2,0.10 ² CFU/g)	Infant formula with probiotics	<i>C. sakazakii</i> Ad1708	0.7	-	+	+	+	PD	2	a

♦ Analyses performed according to the COFRAC accreditation

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Table 8 - Analyses of discordant results

Category	Test portion	Type	Protocol	Study design	PD	ND	PPND	Unpaired study design		Paired study design				Combined unpaired and paired		
								(ND+PPND)-PD	AL	(ND+PPND)-PD	AL	(ND+PPND)+PD	AL	(ND+PPND)-PD	AL	
1	10 g	a	Infant formula	General	Paired	0	0	0			0		0			
		b	Infant cereals			0	1	0			1		1			
		c	Non probiotic ingredients			0	0	0			0		0			
		Total				0	1	0			1		3			
	300 g	a	Infant formula	Specific 1	Unpaired	2	1	0	-1							
		b	Infant cereals			4	2	0	-2							
		c	Non probiotic ingredients			4	1	0	-3							
Total			10	4	0	-6	3									
2	10 g	a	Infant formula with probiotics	General	Paired	0	0	0			0		0			
		b	Infant cereals with probiotics			0	0	0			0		0			
		Total				0	0	0			0		3			
	300 g	a	Infant formula with probiotics	Specific 2	Unpaired	2	1	1	0							
		b	Infant cereals with probiotics			1	4	0	3							
		Total				3	5	1	3							
3	10 g or sample device	a	Swabs, sponges, wipes	General	Paired	0	1	0			1		1			
		b	Powdered residues			0	2	0			2		2			
		c	Water used in manufacturing			0	0	0			0		0			
		Total				0	3	0			3		3			
General Protocol					0	4	0			4	5	4	10			
Specific Protocol 1					10	4	0	-6	3							
Specific Protocol 2					3	5	1	3	3							
All Specific protocols					10	4	0	-3	4							
All samples					13	13	1							1	5	

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

For the paired study (general protocol), the calculated values for ((ND + PPND) - PD) and for ((ND + PPND) + 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 ((ND + PPND) - PD) meet the acceptability limit.

3.1.1.7 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			
		MDA test	Agreement	Lysate		BPW	
				MDA test	Agreement	MDA test	Agreement
2679	Infant formula with probiotics	+	PA	+	PPND	+	PPND
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	+	PPND	+	PPND

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

Table 10 - Analysis of discordant after storage for 72 h at 5°C ± 3°C – Lysates

Category	Test portion	Protocol	Study design	PD	ND	PPND	UNPAIRED		PAIRED				COMBINED		
							(ND+PPND) -PD	AL	(ND+PPND) -PD	AL	(ND+PPND) +PD	AL	(ND+PPND) -PD	AL	
1	Infant formula and infant cereals without probiotics	10 g	General	Paired	0	1	0			1	3	1	6		
	300 g	Specific 1	Unpaired	10	5	0	-5	3							
2	Infant formula and infant cereals with probiotics	10 g	General	Paired	0	0	1			1	3	1	6		
3	Production environmental samples	10 g or sample device	General	Paired	0	1	0			1	3	1	6		
General Protocol					0	2	1			3	5	3	10		
Specific Protocol 1					10	5	0	-5	3						
All samples					10	7	1							-2	5
2	Infant formula and infant cereals with probiotics	300 g	Specific 2	Unpaired	3	5	2	4	3						

Table 11 - Analysis of discordant after storage for 72 h at 5°C ± 3°C – BPW

Category	Test portion	Protocol	Study design	PD	ND	PPND	Unpaired study design		PAIRED				COMBINED		
							(ND+PPND) -PD	AL	(ND+PPND) -PD	AL	(ND+PPND) +PD	AL	(ND+PPND) -PD	AL	
1	Infant formula and infant cereals without probiotics	10 g	General	Paired	0	0	0			0	3	0	6		
		300 g	Specific 1	Unpaired	10	4	0	-6	3						
2	Infant formula and infant cereals with probiotics	10 g	General	Paired	0	0	1			1	3	1	6		
3	Production environmental samples	10 g or sample device	General	Paired	0	1	0			1	3	1	6		
General Protocol					0	1	1			2	5	2	10		
Specific Protocol 1					10	4	0	-6	3						
All samples					10	5	1							-4	5
2	Infant formula and infant cereals with probiotics	300 g	Specific 2	Unpaired	3	5	2	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 ((ND + PPND) - 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 ((ND + PPND) - PD) and (ND + PPND + PD) meet the AL for the individual and combined categories.

3.1.1.8 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).

3.1.1.9 MDA inhibition

The matrix control was tested for each sample.

All the matrix controls gave positive results, no inhibition was observed during the study.

3.1.2 Relative level of detection

The relative level of detection is the level of detection at $P = 0.50$ (LOD_{50}) of the alternative (proprietary) method divided by the level of detection at $P = 0.50$ (LOD_{50}) of the reference method.

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

$$RLOD = \frac{LOD_{Alt.}}{LOD_{Ref.}}$$

3.1.2.1 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	<i>Cronobacter sakazakii</i> Ad1446	1:10	General Paired	Lyophilized strains 2 weeks at 22-25°C	1	b
300 g	Infant cereals without probiotics	<i>Cronobacter dublinensis</i> E798	1:10	Specific 1 Unpaired		1	b
10 g	Powdered infant formula with probiotics	<i>Cronobacter sakazakii</i> Ad893	1:10	General Paired		2	a
300 g	Powdered infant formula with probiotics	<i>Cronobacter sakazakii</i> Ad893	1:10	Specific 2 Unpaired		2	a
1 unit	Stainless steel (sampled with sponge)	<i>Cronobacter malonaticus</i> E752 co-inoculated with <i>Escherichia coli</i> 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)

3.1.2.2 Calculation and interpretation of the RLOD

The raw data are given in **Appendix 5**.

The RLOD calculations were performed using the Excel spreadsheet available at <http://standards.iso.org/iso/16140> - RLOD (clause 5-1-4-2 Calculation and interpretation of RLOD) version 06.07.2015. The RLOD are given **Table 13**.

Table 13 – Presentation of RLOD before and after confirmation of the alternative method results

Matrix/Strain	Test portion	RLOD	RLODL	RLODU	b=ln(RLOD)	sd(b)	z-Test statistic	p-value	AL
Powdered infant cereal without probiotics / <i>Cronobacter sakazakii</i> Ad1446	10g	1.000	0.477	2.097	0.000	0.370	0.000	1.000	1.5
Powdered infant cereal without probiotics / <i>Cronobacter dublinensis</i> E798	300g	0.255	0.066	0.987	-1.367	0.677	2.020	1.957	2.5
Powdered infant formula with probiotics / <i>Cronobacter sakazakii</i> Ad893	10g	1.000	0.473	2.113	0.000	0.374	0.000	1.000	1.5
Powdered infant formula with probiotics / <i>Cronobacter sakazakii</i> Ad893	300g	2.317	0.857	6.261	0.840	0.497	1.690	0.091	2.5
Stainless steel / <i>Cronobacter malonaticus</i> E752	1 unit	1.151	0.519	2.553	0.141	0.398	0.354	0.723	1.5
Combined	/	0.969	0.683	1.375	-0.032	0.175	0.181	1.143	/

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 LOD₅₀ % calculations according to Wilrich & Wilrich POD-LOD calculation program - version 10, 2021-03-02 test are given in Table 14.

Table 14 - LOD₅₀ results

Category	(Strain / matrix) pair	Test portion	Level of detection at 50% (CFU / test portion) according to Wilrich & Wilrich ¹	
			Reference method	Alternative method
1	Powdered infant cereal without probiotics / <i>Cronobacter sakazakii</i> Ad1446	10 g	0,7 [0,4-1,1]	0,7 [0,4-1,1]
2	Powdered infant cereal without probiotics / <i>Cronobacter dublinensis</i> E798	300 g	0,6 [0.3-1.0]	1,3 [0,6-2,6]
3	Powdered infant formula with probiotics / <i>Cronobacter sakazakii</i> Ad893	10 g	0,8 [0,5-1,4]	0,8 [0,5-1,4]
4	Powdered infant formula with probiotics / <i>Cronobacter sakazakii</i> Ad893	300 g	2,3 [0,7-7,5]	0,6 [0,3-1,1]
5	Stainless steel / <i>Cronobacter malonaticus</i> E752	/	Not applicable	Not applicable
Combined results/			0,8 [0,6-1,1]	0,8 [0,6-1,1]

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

The LOD₅₀ 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 LOD₅₀ for this assay.

3.1.3 *Inclusivity / exclusivity*

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

3.1.3.1 *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 10⁵ cells/mL BPW ISO. The alternative protocol was then performed (MDA test and confirmation).

3.1.3.2 *Results*

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

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.

The 3M™ Molecular Detection Assay 2 – *Cronobacter* method is specific and selective.

3.1.4 Practicability

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

Storage conditions, shelf-life and modalities of utilization after first use	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.		
Time to result	Steps	Reference method	Alternative method
	Negative samples		
	Sampling enrichment	D0	D0
	MDA test	/	D1
	Subculture in CSB	D1	/
	Streaking onto CCI	D2	/
	Reading plates	D3	/
	Presumptive positive or positive results		
	Subculture in RVS	D1	D1
	Streaking onto CCI Agar	D2	D2
	Reading plates, streaking onto TSA	D3	D3
	Biochemical test	D4	D4
	Final result	D5	D5
	Common step with the reference method	Enrichment step and confirmation for the general protocol	

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.

3.2 Inter-laboratory Study

The inter-laboratory study is a study performed by multiple laboratories testing identical samples at the same time, the results of which are used to estimate alternative-method performance parameters.

3.2.1 Study organisation

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 3M 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 2.

3.2.2 *Experimental parameters controls*

3.2.2.1 *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.

3.2.2.2 Contamination levels

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 ²	10 g ¹	5 x 5 g
	High	10 g ¹	5 x 5 g	5 x 2.5 g

² 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]

3.2.2.3 Logistic conditions

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

Table 18 - Sample temperatures at receipt

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

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

3.2.3 Results analysis

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

3.2.3.1 Expert laboratory results

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.

3.2.3.2 Results observed by the collaborative laboratories

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 $1.0 \cdot 10^7$ 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 $6.4 \cdot 10^7$ CFU/g and $2.9 \cdot 10^8$ 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 (ALL the 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	P₀ = 0	P₁ = 78	P₂ = 156

Table 21 - Positive results (before and after confirmation)
by the alternative method (ALL the 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	P₀ = 3	C₀ = 0	CP₀ = 0	P₁ = 80	C₁ = 78	CP₁ = 76	P₂ = 156	C₂ = 156	CP₂ = 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.

3.2.3.3 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	P₀ = 0	P₁ = 73	P₂ = 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	P₀ = 1	C₀ = 0	CP₀ = 0	P₁ = 73	C₁ = 73	CP₁ = 71	P₃ = 144	C₂ = 144	CP₃ = 144

3.2.4 Calculation and interpretation

3.2.4.1 Calculation of the specificity percentage (SP)

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

Table 24 - Percentage specificity

Specificity for the reference method	$SP_{ref} = \left(1 - \left(\frac{P_0}{N_-}\right)\right) \times 100 \% =$	100 %
Specificity for the alternative method	$SP_{alt} = \left(1 - \left(\frac{CP_0}{N_-}\right)\right) \times 100 \% =$	100 %

N: number of all L0 tests

P₀ = total number of false-positive results obtained with the blank samples before confirmation

CP₀ = total number of false-positive results obtained with the blank samples

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

Fractional positive results were obtained for the low 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+) ND = 2	Negative agreement (A-/R-) NA = 71 (PPNA = 1)

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 for the alternative method:	$SE_{alt} = \frac{(PA+PD)}{(PA+PD+ND)} \times 100\% =$	97.3 %
Sensitivity for the reference method:	$SE_{ref} = \frac{(PA+ND)}{(PA+PD+ND)} \times 100\% =$	100.0 %
Relative trueness	$RT = \frac{(PA+NA)}{N} \times 100\% =$	98.6 %
False positive ratio for the alternative method	$FPR = \frac{FP}{NA} \times 100\% =$	1.0 %

3.2.4.3 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 3M™ Molecular Detection Assay 2 – *Cronobacter* method was probably not reached.

For a **paired study design**, the difference between (ND – PD) and the addition (ND + PD) are calculated for the level(s) where fractional recovery is obtained (so L_1 and possibly L_2). The observed value found for (ND – PD) and (ND + 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
ND-PD=	2	5	ND - PD < AL
ND+PD=	2	7	ND + PD < AL

The EN ISO 16140-2:2016 requirements are fulfilled as (ND - PD) and (ND + 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.

3.2.4.4 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_ver1_28-06-2017.xls. 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]	

3.3 Conclusion

The **method comparison study conclusions** are:

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 (ND)
- For the specific protocol 1: 10 positive deviations and 4 negative deviations
- For the specific protocol 2: 3 positive deviations and 6 negative deviations.

The (ND - PD) and (ND + 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 $5 \pm 3^{\circ}\text{C}$ 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 16140-2:2016 and AFNOR technical rules (revision 6).

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

The data and interpretations comply with the EN ISO 16140-2:2016 requirements. **The 3M™ Molecular Detection Assay 2 – Cronobacter method is considered equivalent to the ISO standard.**

Quimper, 09 March 2022

²²Maryse RANNOU

Project Manager

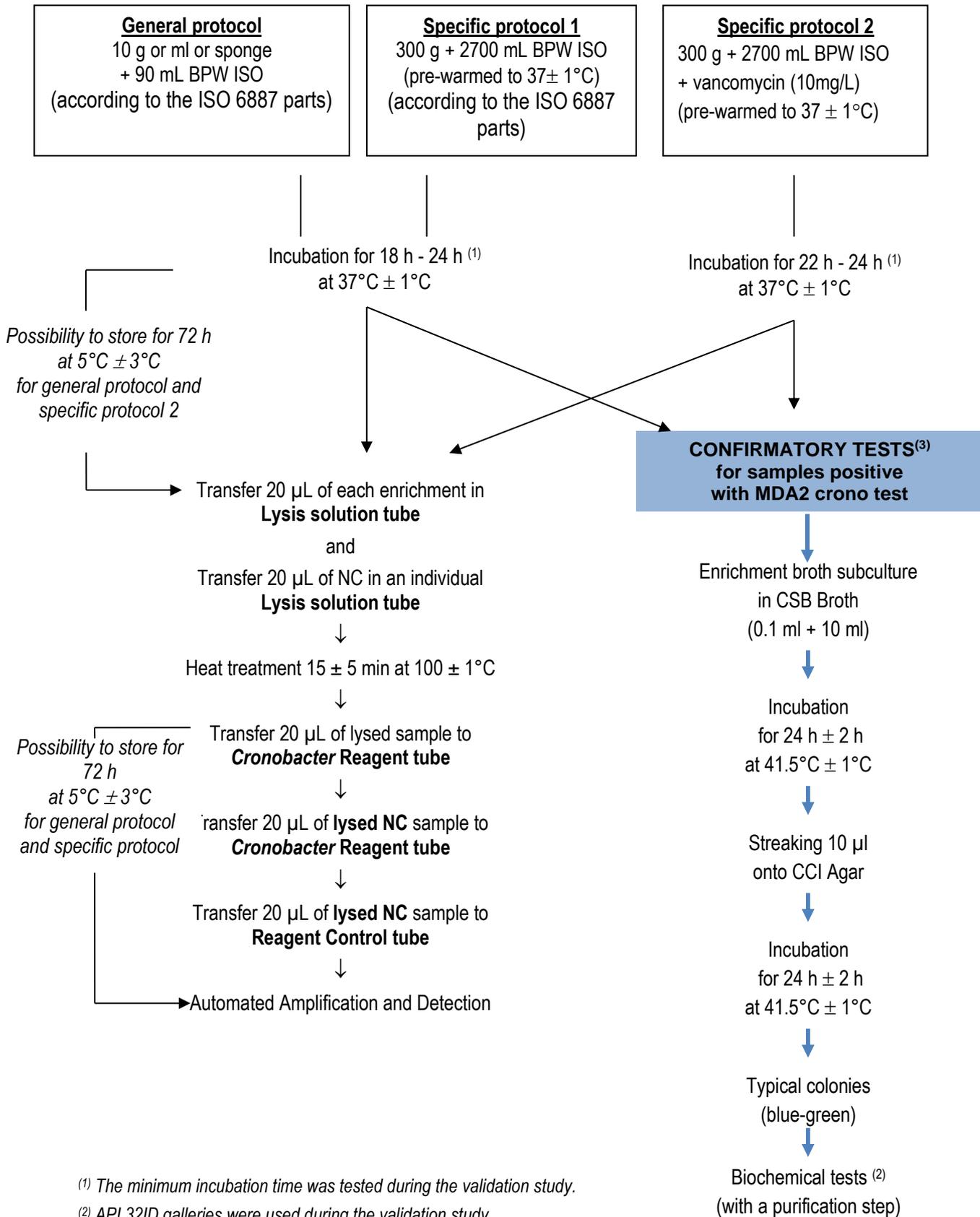
Validation of Alternative methods

Food Safety & Quality



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

Appendix 1 – Flow diagram of the alternative method: 3M™ Molecular Detection Assay 2 – *Cronobacter* method

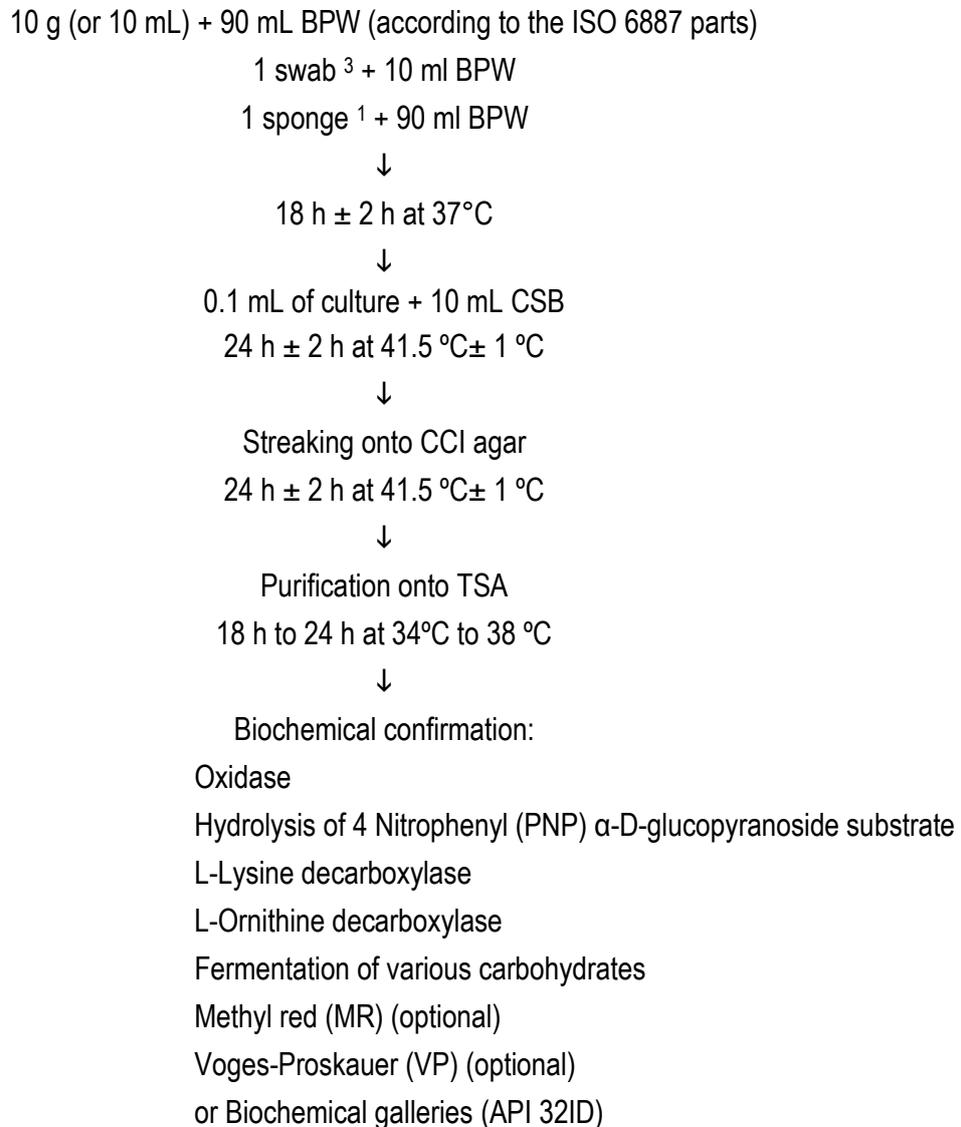


⁽¹⁾ The minimum incubation time was tested during the validation study.

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

⁽³⁾ All samples were confirmed during the validation study

**Appendix 2 – Flow diagram of the reference method:
ISO 22964 (2017): Microbiology of the food chain --
Horizontal method for the detection of *Cronobacter* spp.**



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 (Na₂S₂O₃ - 5H₂O) (7.8 g/l), disodium phosphate (Na₂PO₄ - 12H₂O) (100.8 g/l)

Appendix 3 – Artificial contamination of samples

Sample N°	Product	Artificial contamination					Global result	Category	Type
		Strain	Origin	Injury protocol	Injury measurement	Inoculation CFU/sample			
1681	Infant formula	<i>C. sakazakii</i> Ad1445	Infant formula	Seeding lyophilized ambient 12 days	/	7.5	+	1	a
1682	Infant cereal	<i>C. sakazakii</i> Ad1445	Infant formula	Seeding lyophilized ambient 12 days	/	7.5	+	1	b
1683	Infant cereal	<i>C. sakazakii</i> Ad1445	Infant formula	Seeding lyophilized ambient 12 days	/	7.5	+	1	b
1684	Infant cereal	<i>C. sakazakii</i> Ad1445	Infant formula	Seeding lyophilized ambient 12 days	/	7.5	+	1	b
1685	Infant cereal	<i>C. sakazakii</i> Ad1445	Infant formula	Seeding lyophilized ambient 12 days	/	7.5	-	1	b
1686	Infant cereal	<i>C. sakazakii</i> Ad1445	Infant formula	Seeding lyophilized ambient 12 days	/	7.5	-	1	b
1693	Infant cereal	<i>C. muytjensii</i> E769	Milk powder	Seeding lyophilized ambient 12 days	/	6.0	+	1	b
1694	Infant cereal	<i>C. muytjensii</i> E769	Milk powder	Seeding lyophilized ambient 12 days	/	6.0	+	1	b
1700	Infant formula with probiotics	<i>C. muytjensii</i> E769	Milk powder	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1701	Infant formula with probiotics	<i>C. muytjensii</i> E769	Milk powder	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1702	Infant formula with probiotics	<i>C. muytjensii</i> E769	Milk powder	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1703	Infant formula with probiotics	<i>C. muytjensii</i> E769	Milk powder	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1704	Infant formula with probiotics	<i>C. sakazakii</i> Ad2405	Infant formula	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1705	Infant formula with probiotics	<i>C. sakazakii</i> Ad2405	Infant formula	Seeding lyophilized ambient 14 days	/	6.0	-	2	a
1706	Infant formula with probiotics	<i>C. sakazakii</i> Ad2405	Infant formula	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1707	Infant formula with probiotics	<i>C. sakazakii</i> Ad2405	Infant formula	Seeding lyophilized ambient 14 days	/	6.0	+	2	a
1708	Infant formula with probiotics	<i>C. sakazakii</i> Ad2405	Infant formula	Seeding lyophilized ambient 14 days	/	6.0	-	2	a
1709	Infant formula with probiotics	<i>C. sakazakii</i> Ad2405	Infant formula	Seeding lyophilized ambient 14 days	/	6.0	-	2	a
1710	Infant formula with probiotics	<i>C. sakazakii</i> Ad2349	Infant formula	Seeding lyophilized ambient 14 days	/	9.0	+	2	a
1711	Infant formula with probiotics	<i>C. sakazakii</i> Ad2349	Infant formula	Seeding lyophilized ambient 14 days	/	9.0	-	2	a
1712	Infant formula with probiotics	<i>C. sakazakii</i> Ad2349	Infant formula	Seeding lyophilized ambient 14 days	/	9.0	+	2	a
1713	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2349	Infant formula	Seeding lyophilized ambient 14 days	/	9.0	+	2	b
1714	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2349	Infant formula	Seeding lyophilized ambient 14 days	/	9.0	+	2	b
1715	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2349	Infant formula	Seeding lyophilized ambient 14 days	/	9.0	+	2	b
2016	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2341	Wheat starch	Seeding lyophilized ambient 22 days	/	0.8	+	2	b
2017	Infant cereal with probiotics	<i>C. sakazakii</i> 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 measurement	Inoculation CFU/sample			
2018	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2412	Infant formula	Seeding lyophilized ambient 22 days	/	0.5	+	2	b
2019	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2358	Infant formula	Seeding lyophilized ambient 22 days	/	1.1	+	2	b
2020	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2378	Infant formula	Seeding lyophilized ambient 22 days	/	0.8	+	2	b
2021	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2413	Infant formula	Seeding lyophilized ambient 22 days	/	1.8	+	2	b
2022	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2412	Infant formula	Seeding lyophilized ambient 22 days	/	0.5	+	2	b
2023	Corn flour	<i>C. sakazakii</i> Ad2341	Wheat starch	Seeding lyophilized ambient 14 days	/	1.1	+	1	c
2024	Rye flour	<i>C. sakazakii</i> Ad2341	Wheat starch	Seeding lyophilized ambient 14 days	/	1.1	-	1	c
2025	Oat flour	<i>C. sakazakii</i> Ad2341	Wheat starch	Seeding lyophilized ambient 14 days	/	1.1	-	1	c
2026	Wheat flour	<i>C. sakazakii</i> Ad2341	Wheat starch	Seeding lyophilized ambient 14 days	/	1.1	-	1	c
2027	Barley flour	<i>C. sakazakii</i> Ad2341	Wheat starch	Seeding lyophilized ambient 14 days	/	1.1	-	1	c
2028	Dry milk powder	<i>C. sakazakii</i> Ad2413	Infant formula	Seeding lyophilized ambient 14 days	/	2.4	-	1	c
2029	Lactose	<i>C. sakazakii</i> Ad2413	Infant formula	Seeding lyophilized ambient 14 days	/	2.4	-	1	c
2030	Lactoserum	<i>C. sakazakii</i> Ad2413	Infant formula	Seeding lyophilized ambient 14 days	/	2.4	-	1	c
2031	Maltodextrin	<i>C. sakazakii</i> Ad2413	Infant formula	Seeding lyophilized ambient 14 days	/	2.4	+	1	c
2032	Soy powder	<i>C. sakazakii</i> Ad2412	Infant formula	Seeding lyophilized ambient 14 days	/	0.5	-	1	c
2033	Dry milk powder	<i>C. sakazakii</i> Ad2412	Infant formula	Seeding lyophilized ambient 14 days	/	0.5	+	1	c
2034	Dry milk powder	<i>C. sakazakii</i> Ad2412	Infant formula	Seeding lyophilized ambient 14 days	/	0.5	-	1	c
2656	Lactoserum powder	<i>C. malonaticus</i> E684	Food product	Seeding lyophilized ambient 18 days	/	<1,0	-	1	c
2657	Lactoserum powder	<i>C. muytjensii</i> E888	Milk powder	Seeding lyophilized ambient 18 days	/	1.2	-	1	c
2658	Dry milk powder	<i>C. sakazakii</i> Ad2348	Infant formula	Seeding lyophilized ambient 18 days	/	4.8	+	1	c
2659	Dry milk powder	<i>C. sakazakii</i> Ad2350	Infant formula	Seeding lyophilized ambient 18 days	/	2.1	+	1	c
2660	Dry milk powder	<i>C. sakazakii</i> Ad2351	Infant formula	Seeding lyophilized ambient 18 days	/	3.9	+	1	c
2661	Wheat starch	<i>C. sakazakii</i> Ad2352	Infant formula	Seeding lyophilized ambient 18 days	/	3.8	+	1	c
2662	Lactose	<i>C. sakazakii</i> Ad2356	Infant formula	Seeding lyophilized ambient 18 days	/	1.0	-	1	c
2663	Lactoserum	<i>C. sakazakii</i> Ad2361	Infant formula	Seeding lyophilized ambient 18 days	/	2.4	+	1	c
2664	Infant cereal	<i>C. sakazakii</i> Ad2370	Infant formula	Seeding lyophilized ambient 18 days	/	1.5	-	1	b
2665	Infant cereal	<i>C. malonaticus</i> E684	Food product	Seeding lyophilized ambient 18 days	/	<1,00	+	1	b
2666	Infant cereal	<i>C. muytjensii</i> 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 measurement	Inoculation CFU/sample			
2667	Infant cereal	<i>C. sakazakii</i> Ad2348	Infant formula	Seeding lyophilized ambient 18 days	/	4.8	+	1	b
2668	Infant cereal	<i>C. sakazakii</i> Ad2350	Infant formula	Seeding lyophilized ambient 18 days	/	2.1	-	1	b
2669	Infant formula	<i>C. sakazakii</i> Ad2351	Infant formula	Seeding lyophilized ambient 18 days	/	3.9	-	1	a
2670	Infant formula	<i>C. sakazakii</i> Ad2352	Infant formula	Seeding lyophilized ambient 18 days	/	3.8	-	1	a
2672	Infant formula	<i>C. sakazakii</i> Ad2361	Infant formula	Seeding lyophilized ambient 18 days	/	2.4	-	1	a
2673	Infant formula	<i>C. sakazakii</i> Ad2370	Infant formula	Seeding lyophilized ambient 18 days	/	1.5	-	1	a
2674	Infant formula	<i>C. malonaticus</i> E684	Food product	Seeding lyophilized ambient 18 days	/	<1,0	-	1	a
2675	Infant formula	<i>C. muytjensii</i> E888	Milk powder	Seeding lyophilized ambient 18 days	/	1.2	-	1	a
2677	Infant formula	<i>C. sakazakii</i> Ad2350	Infant formula	Seeding lyophilized ambient 18 days	/	2.1	-	1	a
2671	Infant formula	<i>C. sakazakii</i> Ad2356	Infant formula	Seeding lyophilized ambient 18 days	/	1.0	+	1	a
2676	Infant formula	<i>C. sakazakii</i> Ad2348	Infant formula	Seeding lyophilized ambient 18 days	/	4.8	+	1	a
2678	Infant formula	<i>C. sakazakii</i> Ad2351	Infant formula	Seeding lyophilized ambient 18 days	/	3.9	+	1	a
2679	Infant formula with probiotics	<i>C. sakazakii</i> Ad2352	Infant formula	Seeding lyophilized ambient 18 days	/	3.8	+	2	a
2680	Infant formula with probiotics	<i>C. sakazakii</i> Ad2356	Infant formula	Seeding lyophilized ambient 18 days	/	1.0	-	2	a
2681	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2361	Infant formula	Seeding lyophilized ambient 18 days	/	2.4	+	2	b
2682	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2370	Infant formula	Seeding lyophilized ambient 18 days	/	1.5	+	2	b
3655	Dust	<i>C. sakazakii</i> Ad2409	Dairy environment	Spiking HT 56°C 8 min	0.6	3-4-3-2-4 (3,2)	+	3	b
3656	Dust	<i>C. sakazakii</i> Ad2399	Dairy environment	Spiking HT 56°C 8 min	0.7	3-2-1-2-2 (2,0)	+	3	b
3657	Dust	<i>C. sakazakii</i> Ad2390	Dairy environment	Spiking HT 56°C 8 min	1.7	0-0-1-1-0 (0,4)	+	3	b
3658	Dust	<i>C. sakazakii</i> Ad2379	Dairy environment	Spiking HT 56°C 8 min	0.8	3-4-4-5-3 (3,8)	+	3	b
3659	Dust	<i>C. sakazakii</i> Ad2409	Dairy environment	Spiking HT 56°C 8 min	0.6	3-4-3-2-4 (3,2)	+	3	b
3660	Dust	<i>C. sakazakii</i> Ad2399	Dairy environment	Spiking HT 56°C 8 min	0.7	3-2-1-2-2 (2,0)	+	3	b
3661	Sponge	<i>C. sakazakii</i> Ad2390	Dairy environment	Spiking HT 56°C 8 min	1.7	0-0-1-1-0 (0,4)	+	3	a
3662	Sponge	<i>C. sakazakii</i> Ad2379	Dairy environment	Spiking HT 56°C 8 min	0.8	3-4-4-5-3 (3,8)	+	3	a
3663	Sponge	<i>C. sakazakii</i> Ad2409	Dairy environment	Spiking HT 56°C 8 min	0.6	3-4-3-2-4 (3,2)	+	3	a
3664	Sponge	<i>C. sakazakii</i> Ad2399	Dairy environment	Spiking HT 56°C 8 min	0.7	3-2-1-2-2 (2,0)	+	3	a
3665	Sponge	<i>C. sakazakii</i> Ad2390	Dairy environment	Spiking HT 56°C 8 min	1.7	0-0-1-1-0 (0,4)	-	3	a
3666	Sponge	<i>C. sakazakii</i> 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 measurement	Inoculation CFU/sample			
3667	Sponge	<i>C. sakazakii</i> Ad2409	Dairy environment	Spiking HT 56°C 8 min	0.6	3-4-3-2-4 (3,2)	+	3	a
3668	Sponge	<i>C. sakazakii</i> Ad2399	Dairy environment	Spiking HT 56°C 8 min	0.7	3-2-1-2-2 (2,0)	+	3	a
3669	Sponge	<i>C. sakazakii</i> Ad2390	Dairy environment	Spiking HT 56°C 8 min	1.7	0-0-1-1-0 (0,4)	-	3	a
3670	Sponge	<i>C. sakazakii</i> Ad2379	Dairy environment	Spiking HT 56°C 8 min	0.8	3-4-4-5-3 (3,8)	+	3	a
3671	Swab	<i>C. sakazakii</i> Ad2409	Dairy environment	Spiking HT 56°C 8 min	0.6	3-4-3-2-4 (3,2)	+	3	a
3672	Swab	<i>C. sakazakii</i> Ad2399	Dairy environment	Spiking HT 56°C 8 min	0.7	3-2-1-2-2 (2,0)	+	3	a
3673	Process water	<i>C. sakazakii</i> Ad2390	Dairy environment	Spiking HT 56°C 8 min	1.7	0-0-1-1-0 (0,4)	+	3	c
3674	Recycled wash water	<i>C. sakazakii</i> Ad2379	Dairy environment	Spiking HT 56°C 8 min	0.8	3-4-4-5-3 (3,8)	-	3	c
3675	Recycled wash water	<i>C. sakazakii</i> Ad2409	Dairy environment	Spiking HT 56°C 8 min	0.6	3-4-3-2-4 (3,2)	+	3	c
3676	Recycled wash water	<i>C. sakazakii</i> Ad2399	Dairy environment	Spiking HT 56°C 8 min	0.7	3-2-1-2-2 (2,0)	-	3	c
3677	Serum powder	<i>C. sakazakii</i> Ad2411	Infant formula	Spiking HT 56°C 8 min	0.9	1-2-3-2-2 (2,0)	+	1	c
4612	Infant formula	<i>C. sakazakii</i> Ad2403	Infant formula	Spiking HT 56°C 10 min	1.1	6-2-2-4-3 (3,4)	+	1	a
4613	Infant formula	<i>C. sakazakii</i> Ad2284	Infant formula	Spiking HT 56°C 10 min	1.9	1-0-2-0-0 (0,6)	-	1	a
4614	Infant formula	<i>C. sakazakii</i> Ad1432	Infant formula	Spiking HT 56°C 10 min	1.8	1-0-0-0-1 (0,4)	-	1	a
4615	Infant formula	<i>C. sakazakii</i> Ad2403	Infant formula	Spiking HT 56°C 10 min	1.6	5-0-3-3-0 (2,2)	+	1	a
4616	Infant formula	<i>C. sakazakii</i> Ad2403	Infant formula	Spiking HT 56°C 10 min	1.1	6-2-2-4-3 (3,4)	+	1	a
4617	Infant formula	<i>C. sakazakii</i> Ad2284	Infant formula	Spiking HT 56°C 10 min	1.9	1-0-2-0-0 (0,6)	+	1	a
4618	Infant cereal	<i>C. sakazakii</i> Ad1432	Infant formula	Spiking HT 56°C 10 min	1.8	1-0-0-0-1 (0,4)	-	1	b
4619	Infant cereal	<i>C. sakazakii</i> Ad2403	Infant formula	Spiking HT 56°C 10 min	1.6	5-0-3-3-0 (2,2)	+	1	b
4620	Infant cereal	<i>C. sakazakii</i> Ad2403	Infant formula	Spiking HT 56°C 10 min	1.1	6-2-2-4-3 (3,4)	+	1	b
4621	Maltodextrin	<i>C. sakazakii</i> Ad2284	Infant formula	Spiking HT 56°C 10 min	1.9	1-0-2-0-0 (0,6)	-	1	c
4622	Dust with probiotics	<i>C. sakazakii</i> Ad2408	Dairy environment	Spiking HT 56°C 10 min	2.9	2-1-1-1-0 (1,0)	+	3	b
4623	Dust with probiotics	<i>C. sakazakii</i> Ad2406	Dairy environment	Spiking HT 56°C 10 min	1.2	1-2-0-2-3 (1,6)	+	3	b
4624	Dust with probiotics	<i>C. sakazakii</i> Ad2404	Dairy environment	Spiking HT 56°C 10 min	1.4	7-6-5-4-0 (4,4)	+	3	b
4625	Dust with probiotics	<i>C. sakazakii</i> Ad2408	Dairy environment	Spiking HT 56°C 10 min	2.9	2-1-1-1-0 (1,0)	-	3	b
4626	Dust with probiotics	<i>C. sakazakii</i> Ad2406	Dairy environment	Spiking HT 56°C 10 min	1.2	1-2-0-2-3 (1,6)	+	3	b
4627	Process water	<i>C. sakazakii</i> Ad2404	Dairy environment	Spiking HT 56°C 10 min	1.4	7-6-5-4-0 (4,4)	+	3	c
4628	Recycled wash water	<i>C. sakazakii</i> 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 measurement	Inoculation CFU/sample			
4629	Recycled wash water	<i>C. sakazakii</i> Ad2406	Dairy environment	Spiking HT 56°C 10 min	1.2	1-2-0-2-3 (1,6)	+	3	c
4630	Recycled wash water	<i>C. sakazakii</i> Ad2404	Dairy environment	Spiking HT 56°C 10 min	1.4	7-6-5-4-0 (4,4)	+	3	c
4631	Process water	<i>C. sakazakii</i> Ad2408	Dairy environment	Spiking HT 56°C 10 min	2.9	2-1-1-1-0 (1,0)	+	3	c
4632	Process water	<i>C. sakazakii</i> Ad2406	Dairy environment	Spiking HT 56°C 10 min	1.2	1-2-0-2-3 (1,6)	-	3	c
4633	Process water	<i>C. sakazakii</i> Ad2404	Dairy environment	Spiking HT 56°C 10 min	1.4	7-6-5-4-0 (4,4)	+	3	c
4634	Process water	<i>C. sakazakii</i> Ad2408	Dairy environment	Spiking HT 56°C 10 min	2.9	2-1-1-1-0 (1,0)	+	3	c
4635	Swab	<i>C. sakazakii</i> Ad2406	Dairy environment	Spiking HT 56°C 10 min	1.2	1-2-0-2-3 (1,6)	+	3	a
4914	Infant formula	<i>C. sakazakii</i> Ad1446	Infant formula	Seeding lyophilized ambient 34 days	/	3.0	+	1	a
4915	Infant formula	<i>C. sakazakii</i> Ad2394	Infant formula	Seeding lyophilized ambient 34 days	/	6.8	-	1	a
4917	Infant formula	<i>C. sakazakii</i> Ad2400	Infant formula	Seeding lyophilized ambient 34 days	/	3.6	+	1	a
4918	Infant formula	<i>C. sakazakii</i> Ad1446	Infant formula	Seeding lyophilized ambient 34 days	/	3.0	+	1	a
4922	Infant formula	<i>C. sakazakii</i> Ad1446	Infant formula	Seeding lyophilized ambient 34 days	/	3.0	+	1	a
4925	Infant formula with probiotics	<i>C. sakazakii</i> Ad2400	Infant formula	Seeding lyophilized ambient 34 days	/	3.6	+	2	a
4926	Infant formula with probiotics	<i>C. sakazakii</i> Ad1446	Infant formula	Seeding lyophilized ambient 34 days	/	3.0	+	2	a
4927	Infant formula with probiotics	<i>C. sakazakii</i> Ad2394	Infant formula	Seeding lyophilized ambient 34 days	/	6.8	-	2	a
4928	Infant formula with probiotics	<i>C. sakazakii</i> Ad2395	Infant formula	Seeding lyophilized ambient 34 days	/	6.0	-	2	a
4929	Infant formula with probiotics	<i>C. sakazakii</i> Ad2400	Infant formula	Seeding lyophilized ambient 34 days	/	3.6	+	2	a
4930	Infant formula with probiotics	<i>C. sakazakii</i> Ad2394	Infant formula	Seeding lyophilized ambient 34 days	/	6.8	-	2	a
4931	Infant formula with probiotics	<i>C. sakazakii</i> Ad2395	Infant formula	Seeding lyophilized ambient 34 days	/	6.0	-	2	a
5316 *	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2381	Infant formula	Seeding lyophilized ambient 28 days	/	1.0	+	2	b
5317 *	Infant cereal with probiotics	<i>C. malonaticus</i> DSM18702	Milk powder	Seeding lyophilized ambient 28 days	/	1.8	-	2	b
5318 *	Infant cereal with probiotics	<i>C. malonaticus</i> DSM18702	Milk powder	Seeding lyophilized ambient 28 days	/	1.8	-	2	b
5321 *	Infant cereal with probiotics	<i>C. dublinensis</i> 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 measurement	Inoculation CFU/sample			
5322 *	Infant cereal with probiotics	<i>C. dublinensis</i> DSM18705	Milk powder	Seeding lyophilized ambient 28 days	/	0.8	+	2	b
5323 *	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2358	Infant formula	Seeding lyophilized ambient 28 days	/	0.5	+	2	b
5324 *	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2358	Infant formula	Seeding lyophilized ambient 28 days	/	0.5	+	2	b
5325 *	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2356	Infant formula	Seeding lyophilized ambient 28 days	/	1.3	+	2	b
5326 *	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2356	Infant formula	Seeding lyophilized ambient 28 days	/	1.3	+	2	b
5327 *	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2370	Infant formula	Seeding lyophilized ambient 28 days	/	1.8	+	2	b
5328 *	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2370	Infant formula	Seeding lyophilized ambient 28 days	/	1.8	-	2	b
5329	Infant formula with probiotics	<i>C. sakazakii</i> Ad2381	Infant formula	Seeding lyophilized ambient 28 days	/	1.0	-	2	a
5330	Infant formula with probiotics	<i>C. malonaticus</i> DSM18702	Milk powder	Seeding lyophilized ambient 28 days	/	1.8	+	2	a
5331 *	Infant cereal	<i>C. sakazakii</i> Ad2412	Infant formula	Seeding lyophilized ambient 28 days	/	1.5	+	1	b
5332 *	Infant cereal	<i>C. dublinensis</i> DSM18705	Milk powder	Seeding lyophilized ambient 28 days	/	0.8	-	1	b
5333 *	Infant cereal	<i>C. sakazakii</i> Ad2358	Infant formula	Seeding lyophilized ambient 28 days	/	0.5	+	1	b
5334 *	Infant cereal	<i>C. sakazakii</i> Ad2356	Infant formula	Seeding lyophilized ambient 28 days	/	1.3	-	1	b
5335 *	Infant cereal	<i>C. sakazakii</i> Ad2370	Infant formula	Seeding lyophilized ambient 28 days	/	1.8	+	1	b
6764 *	Infant cereal with probiotics	<i>C. malonaticus</i> E752	RTRH food	Seeding lyophilized ambient 24 days	/	<1,0	-	2	b
6769	Infant formula with probiotics	<i>C. malonaticus</i> E752	RTRH food	Seeding lyophilized ambient 24 days	/	<1,0	-	2	a
6770	Infant formula with probiotics	<i>C. sakazakii</i> Ad2381	Dairy product	Seeding lyophilized ambient 24 days	/	4.0	-	2	a
6774	Infant formula with probiotics	<i>C. sakazakii</i> Ad2366	Environmental sample	Seeding lyophilized ambient 24 days	/	1.8	-	2	a
6892	Recycled wash water (Dairy industry)	<i>C. universalis</i> 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)	<i>C. sakazaki</i> 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)	<i>C. universalis</i> 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)	<i>C. sakazaki</i> Ad2289	Environmental water	Spiking HT 56°C 8 min	2.21	1-1-0-0-0 (0,4)	+	3	c
5023	Wheat starch	<i>C. sakazakii</i> 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 measurement	Inoculation CFU/sample			
5024	Corn starch	<i>C. mytjensii</i> E888	Milk powder	Seeding lyophilized ambient 44 days	/	1.7	-	1	c
5036	Maltodextrin	<i>C. sakazakii</i> Ad1420	Infant formula	Seeding lyophilized ambient 43 days	/	1.0	-	1	c
5037	Flour	<i>C. sakazakii</i> Ad2396	Infant formula	Seeding lyophilized ambient 43 days	/	1.1	+	1	c
5026	Infant formula with probiotics	<i>C. sakazakii</i> Ad2378	Infant formula	Seeding lyophilized ambient 44 days	/	0.6	+	2	a
5027	Infant formula with probiotics	<i>C. mytjensii</i> E888	Milk powder	Seeding lyophilized ambient 44 days	/	1.7	-	2	a
5028	Infant formula with probiotics	<i>C. sakazakii</i> Ad893	Dairy product	Seeding lyophilized ambient 44 days	/	0.4	+	2	a
5029	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2378	Infant formula	Seeding lyophilized ambient 44 days	/	0.6	+	2	b
5033	Infant formula with probiotics	<i>C. sakazakii</i> Ad2396	Infant formula	Seeding lyophilized ambient 43 days	/	1.1	+	2	a
5034	Infant formula with probiotics	<i>C. sakazakii</i> Ad1420	Infant formula	Seeding lyophilized ambient 43 days	/	1.0	+	2	a
5035	Infant formula with probiotics	<i>C. sakazakii</i> Ad2396	Infant formula	Seeding lyophilized ambient 43 days	/	1.1	-	2	a
6761 *	Infant cereal with probiotics	<i>C. sakazakii</i> Ad1708	Environmental sample	Seeding lyophilized ambient 24 days	/	0.7	+	2	b
6762 *	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2366	Environmental sample	Seeding lyophilized ambient 24 days	/	1.8	+	2	b
6765 *	Infant cereal with probiotics	<i>C. sakazakii</i> Ad2383	Environmental sample	Seeding lyophilized ambient 24 days	/	1.6	+	2	b
6767	Infant formula with probiotics	<i>C. sakazakii</i> Ad1708	Environmental sample	Seeding lyophilized ambient 24 days	/	0.7	+	2	a
6768	Infant formula with probiotics	<i>C. sakazakii</i> Ad2366	Environmental sample	Seeding lyophilized ambient 24 days	/	1.8	+	2	a
6771	Infant formula with probiotics	<i>C. sakazakii</i> Ad2383	Environmental sample	Seeding lyophilized ambient 24 days	/	1.6	+	2	a
6772	Infant formula with probiotics	<i>C. sakazakii</i> Ad2359	Environmental sample	Seeding lyophilized ambient 24 days	/	18.4	+	2	a
6773	Infant formula with probiotics	<i>C. sakazakii</i> Ad1708	Environmental sample	Seeding lyophilized ambient 24 days	/	0.7	+	2	a
6775	Infant formula with probiotics	<i>C. sakazakii</i> Ad2366	Environmental sample	Seeding lyophilized ambient 24 days	/	1.8	+	2	a
6776	Infant formula with probiotics	<i>C. sakazakii</i> Ad2366	Environmental sample	Seeding lyophilized ambient 24 days	/	1.8	+	2	a

Appendix 4 – 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
- PPNA: positive presumptive negative agreement
- PPND : positive presumptive negative deviation
- *: Pre-warmed 3M 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: 3M Molecular Detection Assay 2 Cronobacter method General Protocol																		Category	Type
				CCI	Final result	BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C													
						MDA test		Confirmation		Final result	Agreement	MDA test-Lysate		MDA test-BPW		Confirmation		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW				
						Result	Matrix control	CCI	Confirmatory tests after purification			Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification								
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	/	-	PPNA	-	+	-	+	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: 3M Molecular Detection Assay 2 Cronobacter method General Protocol																Category	Type
				CCI	Final result	BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation		Final result	Agreement	MDA test-Lysate		MDA test-BPW		Confirmation		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
						Result	Matrix control	CCI	Confirmatory tests after purification			Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification						
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	-	+	+	+	+p	+	-	ND	+	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'avoine 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 lactosérum	Lactosérum	-	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 lactosérum	Lactosérum powder	-	st	-	-	+	st	/	-	NA										1	c	
2657	Poudre de lactosérum	Lactosérum 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	Lactosérum	Lactosérum	+	+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: 3M Molecular Detection Assay 2 <i>Cronobacter</i> method General Protocol																Category	Type
				CCI	Final result	BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation		Final result	Agreement	MDA test-Lysate		MDA test-BPW		Confirmation		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
						Result	Matrix control	CCI	Confirmatory tests after purification			Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification						
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 (<i>Lactobacillus fermentum</i>)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA	-	+	-	+	st	/	-	NA	-	NA	2	a
1706	PDL infantile probiotique 6-12 mois (<i>Lactobacillus fermentum</i>)	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 (<i>Lactobacillus fermentum</i>)	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 (<i>Bifidobacterium -ferments lactiques</i>)	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	/	-	PPND		PPND	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 (<i>Lb reuteri</i> 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: 3M Molecular Detection Assay 2 <i>Cronobacter</i> method General Protocol																Category	Type
				CCI	Final result	BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation		Final result	Agreement	MDA test-Lysate		MDA test-BPW		Confirmation		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
						Result	Matrix control	CCI	Confirmatory tests after purification			Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification						
4926	PDL infantile probiotique (<i>Lb reuteri</i> 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 (<i>Lb reuteri</i>) 1er âge (1,8.10 ⁴ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a
4929	PDL infantile probiotique (<i>Lb reuteri</i>) 2ème âge (2,1.10 ³ CFU/g)	Infant formula with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
4930	PDL infantile probiotique (<i>Bifidobacterium lactis</i>) 1er âge (2,1.10 ³ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a
4931	PDL infantile probiotique (<i>St. Thermophilus, B. lactis</i>) 1er âge (1,3.10 ⁶ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a
5329	PDL infantile probiotique (<i>St. Thermophilus, B. longum</i>) 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 (<i>Lactobacillus rhamnosus + Bifido infantis</i>) (8,1.10 ⁴ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a
6770	PDL infantile probiotique 2ème âge (<i>Lactobacillus reuteri</i>) (1,5.10 ⁵ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a
6774	PDL infantile probiotique 1er âge (<i>Lactobacillus reuteri</i>) (6,7.10 ⁵ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a
7208	PDL infantile probiotique (<i>Lb fermentum</i> 6,9.10 ⁴ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a
7209	PDL infantile probiotique (<i>Lb reuteri</i> 1,2.10 ³ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a
7210	PDL infantile probiotique (<i>St. Thermophilus / B. longum</i> 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: 3M Molecular Detection Assay 2 <i>Cronobacter</i> method General Protocol																Category	Type
				CCI	Final result	BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation		Final result	Agreement	MDA test-Lysate		MDA test-BPW		Confirmation		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
						Result	Matrix control	CCI	Confirmatory tests after purification			Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification						
1713	Céréales infantiles probiotique cacao (4,1.10 ⁴ CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
1714	Céréales infantiles probiotique biscuité (1,7.10 ⁵ CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
1715	Céréales infantiles probiotique miel (3,5.10 ⁶ CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2016	Céréales infantiles probiotique caramel (2,3.10 ⁵ CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2017	Céréales infantiles probiotique vanille (1,5.10 ⁶ CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
2018	Céréales infantiles probiotique chocolat au lait biscuité (4,0.10 ⁵ CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2019	Céréales infantiles probiotique 5 céréales (5,4.10 ⁵ CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2020	Céréales infantiles probiotique vanille chocolat lait (2,3.10 ⁵ CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2021	Céréales infantiles probiotique vanille biscuité (3,4.10 ⁵ CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2022	Céréales infantiles probiotique carotte potiron (3,8.10 ⁵ CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2681	Céréales infantiles probiotique vanille (2,4.10 ⁵ CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
2682	Céréales infantiles probiotique (8,7.10 ⁴ CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5316 *	Céréales infantiles biscuité/vanillé avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5317 *	Céréales infantiles miel avec probiotiques (<i>B. lactis</i>) (<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: 3M Molecular Detection Assay 2 <i>Cronobacter</i> method General Protocol																Category	Type
				CCI	Final result	BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation		Final result	Agreement	MDA test-Lysate		MDA test-BPW		Confirmation		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
						Result	Matrix control	CCI	Confirmatory tests after purification			Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification						
5318 *	Céréales infantiles vanille chocolat avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
5321 *	Céréales infantiles noisettes biscuité avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5322 *	Céréales infantiles caramel avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5323 *	Céréales infantiles miel avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5324 *	Céréales infantiles vanille avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5325 *	Céréales infantiles biscuité avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5326 *	Céréales infantiles 5 céréales avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5327 *	Céréales infantiles 5 céréales avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b
5328 *	Céréales infantiles carottes potiron avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA	-	+	-	+	st	/	-		-		2	b
6764 *	Céréales infantiles probiotique Cacao (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7213 *	Céréales infantiles probiotique noisette biscuité (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7214 *	Céréales infantiles probiotique chocolat (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7215 *	Céréales infantiles probiotique biscuité (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7216 *	Céréales infantiles probiotique 5 céréales (<i>B. lactis</i>) (<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: 3M Molecular Detection Assay 2 <i>Cronobacter</i> method General Protocol																Category	Type
				CCI	Final result	BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation		Final result	Agreement	MDA test-Lysate		MDA test-BPW		Confirmation		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW		
						Result	Matrix control	CCI	Confirmatory tests after purification			Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification						
7217 *	Céréales infantiles probiotique vanille (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7218 *	Céréales infantiles probiotique miel (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7219 *	Céréales infantiles probiotique caramel (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7220 *	Céréales infantiles probiotique cacao (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b
7221 *	Céréales infantiles probiotique 5 céréales (<i>B. lactis</i>) (<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: 3M Molecular Detection Assay 2 <i>Cronobacter</i> method Specific Protocol 1																Category	Type
				CCI	Final result	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		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW			
						Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI					Confirmatory tests after purification		
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	-	+	-	+	-	/	-	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	-/-/	+	-/-/	+	+p	+	-	ND	-	ND	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: 3M Molecular Detection Assay 2 <i>Cronobacter</i> method Specific Protocol 1																Category	Type	
				CCI	Final result	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			Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW			
						Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification							
5332 *	Céréales infantiles vanille	Infant cereal	-	st	-	+/-	+/+	st (x5)	/	-	PPNA	+/-	+/+	+/-/+/	+/+	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	-	+	-	+	+p	+	-	NA	-	NA	1	b	
6902	Céréales infantiles vanille	Infant cereal	-	st	-	-/-	+/+	+p	+	-	NA	-	+	-	+	+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 *	Céréales bases	Cereals (raw material)	-	st	-	-	+	st		-	NA											1	c	
7061 *	Powdered whey 70% Lactoserum	Powdered whey 70% Lactoserum	-	-	-	-/-	+/+	+d	-	Pantoea spp x5	NA	-/-	+/+	-/-	+/+	+d	-	NA	-	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 *	Céréales bases	Cereals (raw material)	-	st	-	-	+	-		-	NA											1	c	
7065 *	Céréales 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: 3M Molecular Detection Assay 2 Cronobacter method Specific Protocol 2																		Category	Type
				CCI	Final result	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		Final result	Agreement	MDA test- Lysate		MDA test- BPW		Confirmation		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW				
						Result	Matrix control	CCI	Confirmatory tests after purification			Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification								
4925	PDL infantile probiotique (<i>Lb reuteri</i> DSM17938) 1er âge (7,5.10 ⁵ CFU/g)	Infant formula with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	st (x5)	/	-	PPND	-	PPND	2	a		
4926	PDL infantile probiotique (<i>Lb reuteri</i> 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 (<i>Lb reuteri</i>) 1er âge (1,8.10 ⁴ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a		
4929	PDL infantile probiotique (<i>Lb reuteri</i>) 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 (<i>Bifidobacterium lactis</i>) 1er âge (2,1.10 ³ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a		
4931	PDL infantile probiotique (<i>St. Thermophilus</i> , <i>B. lactis</i>) 1er âge (1,3.10 ⁶ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a		
5026	PDL infantile probiotique (<i>Lb rahmnosus</i> , <i>Bifido infantis</i>) 1er âge (9,5.10 ⁶ CFU/g)	Infant formula with probiotics	+	st	-	+	+	+p	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	2	a		
5027	PDL infantile probiotique épaisse (<i>Lb rahmnosus</i> , <i>Bifido infantis</i>) 2ème âge (8,1.10 ³ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA											2	a		
5028	PDL infantile probiotique (<i>Lb fermentum</i>) 1er âge (2,0.10 ² CFU/g)	Infant formula with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a		
5033	PDL infantile probiotique épaisse (Bifidobactéries) 1er âge	Infant formula with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a		
5034	PDL infantile probiotique (<i>Lb fermentum</i>) 2ème âge (1,8.10 ⁵ CFU/g)	Infant formula with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a		
5035	PDL infantile probiotique (<i>St. thermophilus</i> , <i>Bifido longum</i>) 2ème 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: 3M Molecular Detection Assay 2 Cronobacter method Specific Protocol 2																Category	Type
				CCI	Final result	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		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW			
						Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI					Confirmatory tests after purification		
5329	PDL infantile probiotique (St. Thermophilus, B. longum) 2ème âge (2,0.10 ⁴ CFU/g)	Infant formula with probiotics	-	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
6767	PDL infantile probiotique 2ème âge (Lactobacillus fermentum) (1,6.10 ⁶ CFU/g)	Infant formula with probiotics	+	+p	+	+/+/+	+/+/+	- (x 6 CSB)	/	-	PPND	+/+/+	+/+/+	-/-/+	+/+/+	- (x 6 CSB)	/	-	PPND	-	PPND	2	a
6768	PDL infantile probiotique 1er âge (Lactobacillus rhamnosus + Bifido infantis) (6,9.10 ⁶ CFU/g)	Infant formula with probiotics	+	+p	+	+	+	+M	+	+	PA	+	+	+	+	+M	+	+	PA	+	PA	2	a
6769	PDL infantile probiotique 2ème âge (Lactobacillus rhamnosus + Bifido infantis) (8,1.10 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	
6771	PDL infantile probiotique 1er âge (Lactobacillus reuteri) (2,5.10 ² CFU/g)	Infant formula with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
6772	PDL infantile probiotique 2ème âge (Bifidobactéries + ferments) (<2,0.10 ² CFU/g)	Infant formula with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	a
6773	PDL infantile probiotique 1er âge (Bifidobactéries + ferments) (<2,0.10 ² CFU/g)	Infant formula with probiotics	+	st	-	+	+	+p	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	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	
6775	PDL infantile probiotique (S. thermophilus + B. lactis) (<2,0.10 ² 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 6,9.10 ⁴ CFU/g)	Infant formula with probiotics	-	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	

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: 3M Molecular Detection Assay 2 <i>Cronobacter</i> method Specific Protocol 2																Category	Type	
				CCI	Final result	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		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW				
						Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI					Confirmatory tests after purification			
7210	PDL infantile probiotique (<i>St. Thermophilus</i> / <i>B. longum</i> 1,6.10 ² CFU/g)	Infant formula with probiotics	-	st	-	-	+	-	/	-	NA												2	a
7211	PDL infantile probiotique épaissie (<i>Lb reuteri</i> 3,0.10 ³ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA												2	a
7212	PDL infantile probiotique épaissie (<i>B. lactis</i> 6,0.10 ³ CFU/g)	Infant formula with probiotics	-	st	-	-	+	st	/	-	NA												2	a
5029	Céréales infantiles avec probiotiques (<i>B. lactis</i>) saveur caramel (4,6.10 ⁵ CFU/g)	Infant cereal with probiotics	+	pp	+	+	+	pp	+	+	PA	+	+	+	+	pp	+	+	+	PA	+	PA	2	b
5316 *	Céréales infantiles biscuité/vanillé avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	pp	+	-	+	st	/	-	ND	-	+	-	+	st	/	-	ND	-	ND	2	b	
5317 *	Céréales infantiles miel avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA												2	b
5318 *	Céréales infantiles vanille chocolat avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA												2	b
5319 *	Céréales infantiles cacao avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	pp	+	+	+	pp	+	+	PA	+	+	+	+	pp	+	+	+	PA	+	PA	2	b
5320 *	Céréales infantiles chocolat lait biscuité avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	pp	+	+	+	pp	+	+	PA	+	+	+	+	pp	+	+	+	PA	+	PA	2	b
5321 *	Céréales infantiles noisettes biscuité avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	pp	+	-	+	st	/	-	ND	-	+	-	+	st	/	-	ND	-	ND	2	b	
5322 *	Céréales infantiles caramel avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	pp	+	+	+	pp	+	+	PA	+	+	+	+	pp	+	+	+	PA	+	PA	2	b
5323 *	Céréales infantiles miel avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	pp	+	+	+	pp	+	+	PA	+	+	+	+	pp	+	+	+	PA	+	PA	2	b
5324 *	Céréales infantiles vanille avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	pp	+	+	+	pp	+	+	PA	+	+	+	+	pp	+	+	+	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: 3M Molecular Detection Assay 2 <i>Cronobacter</i> method Specific Protocol 2																	Category	Type
				CCI	Final result	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		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW				
						Result	Matrix control	CCI	Confirmatory tests after purification	Final result	Agreement	Result	Matrix control	Result	Matrix control	CCI					Confirmatory tests after purification			
5325 *	Céréales infantiles biscuité avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b	
5326 *	Céréales infantiles 5 céréales avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b	
5327 *	Céréales infantiles 5 céréales avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	-	+	st	/	-	ND	-	+	-	+	st	/	-	ND	-	ND	2	b	
5328 *	Céréales infantiles carottes potiron avec probiotiques (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	st	-	+	+	+p	+	+	PD	+	+	+	+	+p	+	+	PD	+	PD	2	b	
6761 *	Céréales infantiles probiotique Miel (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b	
6762 *	Céréales infantiles probiotique Vanille (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	-	+	st	/	-	ND	-	+	-	+	st	/	-	ND	-	ND	2	b	
6764 *	Céréales infantiles probiotique Cacao (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b	
6765 *	Céréales infantiles probiotique Caramel (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	+	+p	+	+	+	+p	+	+	PA	+	+	+	+	+p	+	+	PA	+	PA	2	b	
7213 *	Céréales infantiles probiotique noisette biscuité (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b	
7214 *	Céréales infantiles probiotique chocolat (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b	
7215 *	Céréales infantiles probiotique biscuité (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b	
7216 *	Céréales infantiles probiotique 5 céréales (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA											2	b	
7217 *	Céréales infantiles probiotique vanille (<i>B. lactis</i>) (<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: 3M Molecular Detection Assay 2 <i>Cronobacter</i> method Specific Protocol 2																Category	Type	
				CCI	Final result	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		Final result	Agreement	MDA test- Lysate		MDA test- BPW		Confirmation		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement +72h BPW			
						Result	Matrix control	CCI	Confirmatory tests after purification			Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification							
7218 *	Céréales infantiles probiotique miel (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA												2	b
7219 *	Céréales infantiles probiotique caramel (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA												2	b
7220 *	Céréales infantiles probiotique cacao (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA												2	b
7221 *	Céréales infantiles probiotique 5 céréales (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA												2	b
7222 *	Céréales infantiles probiotique vanille (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA												2	b
7223 *	Céréales infantiles probiotique biscuité (<i>B. lactis</i>) (<10 CFU/g)	Infant cereal with probiotics	-	st	-	-	+	st	/	-	NA												2	b
7224 *	Céréales infantiles probiotique miel (<i>B. lactis</i>) (<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: 3M Molecular Detection Assay 2 Cronobacter method General Protocol																Category	Type
				CCI	Final result	BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C											
						MDA test		Confirmation		Final result	Agreement	MDA test-Lysate		MDA test-BPW		Confirmation		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement + 72h BPW		
						Result	Matrix control	CCI	Confirmatory 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	+/-/-/-	+	+	+	+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: 3M Molecular Detection Assay 2 Cronobacter method General Protocol															Category	Type		
				CCI	Final result	BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C												
						MDA test		Confirmation		Final result	Agreement	MDA test-Lysate		MDA test-BPW		Confirmation		Final result Lysate	Agreement + 72h Lysate	Final result BPW			Agreement + 72h BPW	
						Result	Matrix control	CCI	Confirmatory tests after purification			Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification							
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	+/+/- /-/+/-	+	+	+	+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	-	+	-	+	-	/	-	ND	-	ND	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: 3M Molecular Detection Assay 2 Cronobacter method General Protocol																Category	Type	
				CCI	Final result	BPW ISO 18h at 37°C						BPW ISO 18h at 37°C + 72h at 5 ± 3°C												
						MDA test		Confirmation		Final result	Agreement	MDA test-Lysate		MDA test-BPW		Confirmation		Final result Lysate	Agreement + 72h Lysate	Final result BPW	Agreement + 72h BPW			
						Result	Matrix control	CCI	Confirmatory tests after purification			Result	Matrix control	Result	Matrix control	CCI	Confirmatory tests after purification							
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 5 – 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: 3M 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	+	

♦ Analyses performed according to the COFRAC accreditation

ADRIA Développement

Summary report (Version 0)

3M MDA 2 - Cronobacter

Matrix : Powdered infant formula with probiotics - 300 g

strain : Cronobacter sakazakii Ad893

Petrifilm aerobic plate count: <10 CFU/g

Lactic count: 3,2.10⁶ CFU/g

N° sample	Level	Contamination level- (cfu/sample)-MPN determination	Reference method: ISO 22964♦		Number positive samples/Total	Alternative method: 3M Molecular Detection Assay 2 Cronobacter method 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			+	+		+	+	+	

♦ Analyses performed according to the COFRAC accreditation

ADRIA Développement

Summary report (Version 0)

3M MDA 2 - Cronobacter

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: 3M Molecular Detection Assay 2 Cronobacter method 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	+	

* Analyses performed according to the COFRAC accreditation

ADRIA Développement

Summary report (Version 0)

3M MDA 2 - Cronobacter

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: 3M Molecular Detection Assay 2 Cronobacter method 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	-		-	st	-	
6949			st	-		-	st	-	
6951			st	-		-	st	-	
6952			+p	+		-	st	-	
6953			st	-		-	st	-	
6954			st	-		-	st	-	
6956			st	-		-	st	-	
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	+	

* Analyses performed according to the COFRAC accreditation

ADRIA Développement

Summary report (Version 0)

3M MDA 2 - Cronobacter

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: 3M Molecular Detection Assay 2 Cronobacter method 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			+	+		+	+	+	

♦ Analyses performed according to the COFRAC accreditation

ADRIA Développement

Summary report (Version 0)

3M MDA 2 - Cronobacter

Appendix 6 – 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		
						3M MDA2 <i>Cronobacter</i> spp		Confirmation CSB/CCI
						Result	Matrix control	
1	<i>Cronobacter</i>	<i>dublinensis</i>	DSM18705	Dairy Product	13	+	+	+
2	<i>Cronobacter</i>	<i>malonaticus</i>	DSM18702	Dairy Product	11	+	+	+
3	<i>Cronobacter</i>	<i>malonaticus</i>	Ad1708	Dairy Product	25	+	+	+
4	<i>Cronobacter</i>	<i>muytjensii</i>	CIP103581	/	10	+	+	+
5	<i>Cronobacter</i>	<i>sakazakii</i>	Ad939	Infant formula	15	+	+	+
6	<i>Cronobacter</i>	<i>sakazakii</i>	Ad940	Infant formula	30	+	+	+
7	<i>Cronobacter</i>	<i>sakazakii</i>	Ad941	Infant formula	29	+	+	+
8	<i>Cronobacter</i>	<i>sakazakii</i>	Ad942	Infant formula	44	+	+	+
9	<i>Cronobacter</i>	<i>sakazakii</i>	Ad943	Infant formula	19	+	+	+
10	<i>Cronobacter</i>	<i>sakazakii</i>	Ad944	Infant formula	8	+	+	+
11	<i>Cronobacter</i>	<i>sakazakii</i>	Ad945	Infant formula	20	+	+	+
12	<i>Cronobacter</i>	<i>sakazakii</i>	Ad946	Infant formula	26	+	+	+
13	<i>Cronobacter</i>	<i>sakazakii</i>	Ad947	Infant formula	19	+	+	+
14	<i>Cronobacter</i>	<i>sakazakii</i>	Ad948	Infant formula	15	+	+	+
15	<i>Cronobacter</i>	<i>sakazakii</i>	Ad949	Infant formula	11	+	+	+
16	<i>Cronobacter</i>	<i>sakazakii</i>	Ad950	Infant formula	17	+	+	+
17	<i>Cronobacter</i>	<i>sakazakii</i>	Ad951	Infant formula	22	+	+	+
18	<i>Cronobacter</i>	<i>sakazakii</i>	Ad952	Infant formula	22	+	+	+
19	<i>Cronobacter</i>	<i>sakazakii</i>	Ad953	Infant formula	56	+	+	+
20	<i>Cronobacter</i>	<i>sakazakii</i>	Ad963	Infant formula	16	+	+	+
21	<i>Cronobacter</i>	<i>sakazakii</i>	Ad704	Infant formula	34	+	+	+
22	<i>Cronobacter</i>	<i>sakazakii</i>	Ad831	Infant formula	30	+	+	+
23	<i>Cronobacter</i>	<i>sakazakii</i>	Ad829	Infant formula	25	+	+	+
24	<i>Cronobacter</i>	<i>sakazakii</i>	Ad916	Infant formula	22	+	+	+
25	<i>Cronobacter</i>	<i>sakazakii</i>	Ad893	Infant formula	14	+	+	+
26	<i>Cronobacter</i>	<i>sakazakii</i>	Ad894	Infant formula	21	+	+	+
27	<i>Cronobacter</i>	<i>sakazakii</i>	Ad895	Infant formula	16	+	+	+
28	<i>Cronobacter</i>	<i>sakazakii</i>	Ad896	Infant formula	16	+	+	+
29	<i>Cronobacter</i>	<i>sakazakii</i>	Ad897	Infant formula	26	+	+	+
30	<i>Cronobacter</i>	<i>sakazakii</i>	Ad898	Infant formula	20	+	+	+
31	<i>Cronobacter</i>	<i>dublinensis lactaridi</i>	DSMZ18707 T	Dairy Product	16	+	+	+
32	<i>Cronobacter</i>	<i>dublinensis lausannensis</i>	DSMZ 18706 T	Dairy Product	41	+	+	+
33	<i>Cronobacter</i>	<i>sakazakii</i>	Ad1418	Infant formula	15	+	+	+
34	<i>Cronobacter</i>	<i>sakazakii</i>	Ad1419	Infant formula	19	+	+	+
35	<i>Cronobacter</i>	<i>sakazakii</i>	Ad1420	Infant formula	19	+	+	+
36	<i>Cronobacter</i>	<i>sakazakii</i>	Ad1421	Infant formula	26	+	+	+
37	<i>Cronobacter</i>	<i>sakazakii</i>	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		
						3M MDA2 <i>Cronobacter</i> spp		Confirmation CSB/CCI
						Result	Matrix control	
38	<i>Cronobacter</i>	<i>sakazakii</i>	Ad1425	Infant formula	12	+	+	+
39	<i>Cronobacter</i>	<i>sakazakii</i>	Ad1433	Infant formula	25	+	+	+
40	<i>Cronobacter</i>	<i>sakazakii</i>	Ad1434	Infant formula	19	+	+	+
41	<i>Cronobacter</i>	<i>sakazakii</i>	Ad1435	Infant formula	22	+	+	+
42	<i>Cronobacter</i>	<i>turicensis</i>	Ad 1445	Infant formula	13	+	+	+
43	<i>Cronobacter</i>	<i>turicensis</i>	DSMZ 18703	/	12	+	+	+
44	<i>Cronobacter</i>	<i>malonaticus</i>	E752	Baby food	19	+	+	+
45	<i>Cronobacter</i>	<i>turicensis</i>	E681	Food	12	+	+	+
46	<i>Cronobacter</i>	<i>muytjensii</i>	E769	Milk powder	9	+	+	+
47	<i>Cronobacter</i>	<i>dublinensis</i> subsp <i>dublinensis</i>	LMG 23823T	Environment	26	+	+	+
48	<i>Cronobacter</i>	<i>dublinensis</i> subsp <i>lausanensis</i>	E798	/	16	+	+	+
49	<i>Cronobacter</i>	<i>universalis</i>	NCTC 9529T	water	19	+	+	+
50	<i>Cronobacter</i>	<i>condimenti</i>	LMG 26250T	Spiced meat	19	+	+	+

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

Appendix 7 - Results obtained by the collaborative laboratories and the expert laboratory

Laboratory 1
Aerobic mesophilic flora : 10 CFU/g
Total Lactic Count : 6.4 10⁷ CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
462	-	/	/	-	-	-	-	NA
466	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
472	-	/	/	-	-	-	-	NA
539	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
540	-	/	/	-	-	-	-	NA
691	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
697	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
706	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
769	-	/	/	-	-	-	-	NA
159	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
353	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
364	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
411	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
414	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
619	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
620	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
636	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
640	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
653	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
688	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
689	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA

Laboratory **2**
 Aerobic mesophilic flora : 10 CFU/g
 Total Lactic Count : 2.0 10⁸ CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
149	-	/	/	-	-	-	-	NA
190	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
191	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
275	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
286	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
304	-	/	/	-	-	-	-	NA
322	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
431	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
545	-	/	/	-	-	-	-	NA
163	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
169	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
207	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
222	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
336	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
341	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
344	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
346	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
416	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
417	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
588	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
597	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA

Laboratory 3

Aerobic mesophilic flora : 50 CFU/g

Total Lactic Count : 2.5 10⁸ CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
150	+	-	<i>Cronobacter</i> spp	+	-	+	-	ND
176	-	/	/	-	-	-	-	NA
177	-	/	/	-	-	-	-	NA
194	-	/	/	-	-	-	-	NA
195	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
197	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
201	-	/	/	-	-	-	-	NA
312	-	/	/	-	-	-	-	NA
451	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
467	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
158	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
167	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
374	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
406	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
412	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
420	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
585	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
599	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
601	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
602	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
641	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
648	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA

Laboratory 4

Aerobic mesophilic flora : 70 CFU/g

Total Lactic Count : 8.8 10⁷ CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
3	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
17	-	/	/	-	-	-	-	NA
19	-	/	/	-	-	-	-	NA
50	-	/	/	-	-	-	-	NA
52	-	/	/	-	-	-	-	NA
55	-	/	/	-	-	-	-	NA
57	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
60	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
62	-	/	/	-	-	-	-	NA
65	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
5	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
8	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
12	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
20	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
24	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
76	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
84	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
85	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
92	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
96	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
98	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
100	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA

Laboratory 5

Aerobic mesophilic flora : 20 CFU/g

Total Lactic Count : 9.1 10⁷ CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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	+	-	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
293	-	/	/	-	-	-	-	NA
307	-	/	/	-	-	-	-	NA
313	-	/	/	-	-	-	-	NA
325	-	/	/	-	-	-	-	NA
440	-	/	/	-	-	-	-	NA
442	+	-	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
461	+	-	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
537	+	-	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
162	+	+	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
164	+	+	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
590	+	+	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
592	+	+	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
596	+	+	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
631	+	+	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
634	+	+	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
644	+	+	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
650	+	+	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
656	+	+	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
693	+	+	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA
709	+	+	<i>Cronobacter sakazakii</i> group	+	+	+	+	PA

Laboratory 6

Aerobic mesophilic flora : 20 CFU/g

Total Lactic Count : 1.7 10⁸ CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
129	-	/	/	-	-	-	-	NA
145	-	/	/	-	-	-	-	NA
189	-	/	/	-	-	-	-	NA
305	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
309	-	/	/	-	-	-	-	NA
438	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
446	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
534	-	/	/	-	-	-	-	NA
685	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
791	-	/	/	-	-	-	-	NA
796	-	/	/	-	-	-	-	NA
154	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
166	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
171	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
337	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
580	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
589	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
610	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
617	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
625	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
642	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
649	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA
666	+	+	<i>C. sakazakii</i> group	+	+	+	+	PA

Laboratory 7

Aerobic mesophilic flora : 20 CFU/g

Total Lactic Count : 2.9 10⁸ CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			Agreement
	CCI	Oxidase	Biochemical galleries	Final result	Test result	Confirmation	Final result	
232	-	/	/	-	+	-	-	PPNA
244	-	/	/	-	+	-	-	PPNA
377	-	/	/	-	-	-	-	NA
490	-	/	/	-	-	-	-	NA
492	-	/	/	-	-	-	-	NA
498	-	/	/	-	-	-	-	NA
503	-	/	/	-	-	-	-	NA
566	-	/	/	-	-	-	-	NA
573	-	/	/	-	-	-	-	NA
730	-	/	/	-	-	-	-	NA
739	-	/	/	-	-	-	-	NA
776	-	/	/	-	-	-	-	NA
116	-	NA	NA	-	+	-	-	PPNA
135	-	NA	NA	-	+	-	-	PPNA
470	-	NA	NA	-	-	-	-	NA
526	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
543	-	NA	NA	-	-	-	-	NA
701	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
707	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
710	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
742	-	NA	NA	-	-	-	-	NA
751	-	NA	NA	-	-	-	-	NA
774	-	NA	NA	-	-	-	-	NA
783	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
161	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
165	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
361	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
582	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
593	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
604	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
607	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
608	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
618	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
637	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
686	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
699	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA

Laboratory **8**
 Aerobic mesophilic flora : 10 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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	-	/	/	-	+	-	-	PPNA
133	-	/	/	-	-	-	-	NA
323	-	/	/	-	-	-	-	NA
673	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
676	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
681	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
698	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
700	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
702	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
749	-	/	/	-	-	-	-	NA
761	-	/	/	-	-	-	-	NA
766	-	/	/	-	-	-	-	NA
797	-	/	/	-	-	-	-	NA
215	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
218	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
362	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
581	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
591	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
598	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
606	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
629	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
630	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
643	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
659	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA
660	+	-	98.5% <i>Cronobacter</i> spp	+	+	+	+	PA

Laboratory 9
 Aerobic mesophilic flora : <10 CFU/g

N°Sample	Reference method: ISO 22964				Alternative method: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
290	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
292	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
298	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
423	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
435	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
450	-	/	/	-	-	-	-	NA
452	-	/	/	-	-	-	-	NA
460	-	/	/	-	-	-	-	NA
465	-	/	/	-	-	-	-	NA
533	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
548	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
204	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
209	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
210	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
214	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
217	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
326	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
334	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
349	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
355	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
375	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
413	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA
418	+	-	<i>Cronobacter</i> spp	+	+	+	+	PA

Laboratory **12**
Aerobic mesophilic flora : 30 CFU /g

N°Sample	Reference method: ISO 22964				Alternative method: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
301	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
303	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
427	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
428	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
430	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
443	-	/	/	-	-	-	-	NA
445	-	/	/	-	+	-	-	PPNA
453	-	/	/	-	-	-	-	NA
456	-	/	/	-	-	-	-	NA
457	-	/	/	-	-	-	-	NA
561	+	-	<i>Cronobacter</i> spp.	+	-	+	-	ND
179	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
212	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
216	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
221	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
324	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
372	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
373	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
405	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
407	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
421	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
424	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
425	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA

Laboratory 13
Aerobic mesophilic flora : 20 CFU /g

N°Sample	Reference method: ISO 22964				Alternative method: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
144	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
231	-	/	/	-	-	-	-	NA
256	-	/	/	-	+	-	-	PPNA
258	-	/	/	-	-	-	-	NA
281	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
296	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
354	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
408	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
426	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
433	-	/	/	-	-	-	-	NA
434	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
178	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
213	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
224	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
356	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
357	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
363	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
366	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
367	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
368	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
369	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
547	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
554	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA

Laboratory ADRIA

Aerobic mesophilic flora : <10 CFU/g

N°Sample	Reference method: ISO 22964♦				Alternative method: 3M Molecular Detection Assay MDA 2 <i>Cronobacter</i>			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	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
226	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
279	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
284	-	/	/	-	-	-	-	NA
316	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
463	-	/	/	-	-	-	-	NA
473	-	/	/	-	-	-	-	NA
475	-	/	/	-	-	-	-	NA
535	-	/	/	-	-	-	-	NA
541	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
546	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
549	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
203	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
205	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
220	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
223	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
335	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
348	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
358	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
359	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
370	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
371	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
415	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA
551	+	-	<i>Cronobacter</i> spp.	+	+	+	+	PA

♦ Analyses performed according to the COFRAC accreditation

