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

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

Qualitative method

RAPID'*Sakazakii*
(certificate # BRD 07/22-05/12)
for the detection of *Cronobacter* spp. in infant formula and infant cereals with or without probiotics including ingredients (30 g and 375 g test portions) and production environmental samples.

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This report contains 83 pages including 52 pages of appendices.

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Preamble

- **Protocols of validation:**

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

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

- **Reference method:**

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

- **Application scope:**

- Infant formula and infant cereals with or without probiotics including ingredients (30 g and 375 g test portions)
- Production of environmental samples of infant milk powder and cereal industry.

- **Certification body:**

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

Definitions

- **Method comparison study**

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

  - **Sensitivity study**

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

  - **Relative level of detection study**

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

  - **Inclusivity and exclusivity study**

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

- **Interlaboratory study**

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

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Appendices

1. Introduction

The RAPID'*Sakazakii* was validated with the certificate number BRD 07/22 - 05/12 according to the ISO 16140 standard (2003) for infant formula (30 g sample size).

Study	Date	Standards	Expert Laboratory	Observation
Initial validation	March 2012	EN ISO 16140-2: 2003	Adria Développement	Infant formula (30 g sample size)
1st renewal	March 2016	EN ISO 16140-2: 2003	Adria Développement	/
2nd renewal	April 2020	EN ISO 16140-2: 2016	Q-Laboratories	Tests performed with new version of EN ISO 22964 (2017) for sensitivity and RLOD parts
Extension	April 2020	EN ISO 16140-2: 2016	Adria Développement	Extension study (375 g sample size) with new version of EN ISO 22964 (2017) for inclusivity, sensitivity and RLOD parts
3rd renewal	April 2024	EN ISO 16140-2: 2016	Adria Développement	/
Extension	December 2025	EN ISO 16140-2/A1 (2024)	Laboratoire Microsept	Extension study for production environmental samples for infant milk powder and cereal industry

The present document is a summary report of validation study of the NF Validation certification of the ISO 16140-2 validation of the RAPID'*Sakazakii* for *Cronobacter* spp.

2. Principle and protocols of the methods

2.1. Alternative method

2.1.1. Principle of the method

The RAPID'*Sakazakii* method is based on an enzymatic activity characteristic of *Cronobacter* spp. Typical colonies appear blue to blue green. Sodium desoxycholate and cristal violet inhibits the background microflora.
The presumptive positive results are confirmed using the ISO 22964 confirmatory tests or by the iQ-Check *Cronobacter* PCR test.

2.1.2. Protocols of the method

All the protocols are described in table 1.

Table 1: protocols

	Protocol ❶	**Protocol ❷**	**Protocol ❸ (extension)**
	Infant formula and infant cereals with and without probiotics including ingredients (30 g sample size)	**Infant formula and infant cereals with and without probiotics including ingredients (375 g sample size)**	**Environmental samples**
	30 g + 270 mL BPW*	**375 g** + 1125 mL pre-warmed (37°C) BPW with PIF supplement*	Swab + 10 mL BPW Sponge + 100 mL BPW Dust or process water (25g) + 225 mL BPW + PIF supplement
Enrichment	18 h ± 2 h at 37°C ± 1°C	18 to 24 h at 37°C ± 1°C	18 to 24 h at 37±1°C
Streaking	10 µL onto RAPID'*Sakazakii*		
	Incubation 24 h ± 2 h at 44°C ± 1°C		
Confirmation	1 to 5 colonies by the tests described in the ISO method (biochemical tests) with or without purification step on TSA or by PCR (iQ-Check *Cronobacter)* on isolated colony		
Enrichment broth storage	48 h at 5°C ± 3°C	72 h at 5°C ± 3°C	72 h at 5°C ± 3°C
Plate storage	72 h at 5°C ± 3°C		

* Addition of alpha-amylase for infant cereals (0.1 g/L)

The workflow of the method is set out in Appendix A.

2.1.3. Restrictions

There are no restrictions on use.

2.2. Reference method

The reference method used as part of this extension study will be that described in standard EN ISO 22964:2017 "Horizontal method for the detection of *Cronobacter* spp.".

The workflow of the reference method is presented in Appendix B.

2.3. Study design

For protocols ❶, ❷ and ❸, there is no shared enrichment step for both the alternative and the reference methods, different test portions coming from the same batch or lot of products have to be used for the two methods. The study thus provides unpaired data and the word “unpaired study” is used to describe the study design.

3. Method comparison study

The study was conducted on a variety of samples and strains representative of food products. This is not an exhaustive list of the various matrices included in the application scope. For any remark on the alternative method, you can contact AFNOR Certification by connecting to the Internet page *http://nf-validation.afnor.org/contact-2/*.

3.1. Sensitivity study

3.1.1. Number and nature of the samples

Table 2 summarizes the repartition of the negative and positive samples analyzed.

Table 2: Distribution of the negative and positive samples per category and type

Category		Type	Positive samples	Negative samples	Total
❶ Infant formula and infant cereals with and without probiotics including ingredients (30 g sample size)	a	Infant formula and infant cereals without probiotics	11	9	20
	b	Infant formula and infant cereals with probiotics	12	8	20
	c	Ingredients (Maltodextrin, NFDM, whey…)	14	6	20
	Total		**37**	**23**	**60**
❷ Infant formula and infant cereals with and without probiotics and ingredients (375 g sample size)	a	Infant formula and infant cereals without probiotics	13	9	22
	b	Infant formula and infant cereals with probiotics	11	11	22
	c	Ingredients (Maltodextrin, NFDM, whey…)	10	12	22
	Total		**34**	**32**	**66**
❸ Environmental samples	a	Dusts and residues	10	10	20
	b	Cleaning and process water	10	10	20
	c	Surface samples (swab, sponge)	10	10	20
	Total		**30**	**30**	**60**
All categories			**101**	**85**	**186**

3.1.2. Artificial contamination

Artificial contamination was carried out with strains after an injury treatment, in accordance with the requirements of the validation standard and the AFNOR Validation Technical Board (see Appendix C).
For all studies, 85 samples were artificially contaminated and 16 naturally contaminated.
Table 3 gives the distribution of the positive samples per type and level of contamination and per category.

Table 3: distribution of the positive samples per type and contamination level for BPW protocol

Category	Naturally contaminated	Artificially contaminated							Total
		Cross contamination	Spiking protocol			Seeding protocol			
			≤ 5 CFU	5 < x ≤10 CFU	10<x<30 CFU	≤ 3 CFU	3 < x ≤10 CFU	10<x<30 CFU	
❶	15	0	3	0	0	5	14	0	37
❷	1	0	0	0	0	33	0	0	34
❸	0	0	19	0	0	9	2	0	30
All	**16**	**0**	**22**	**0**	**0**	**47**	**16**	**0**	**101**
%	**15,8%**	**0,0%**	**21,8%**	**0,0%**	**0,0%**	**46,5%**	**15,8%**	**0,0%**	**100,0%**

For all categories tested, the percentage of naturally contaminated samples is equal to 15.8%.

3.1.3. Results and calculation of sensitivity (SE), relative trueness (RT), false positive ratio (FPR) and false negative ratio (FNR)

Table 4 shows the summary of results obtained with the reference and alternative methods (after confirmation) of all samples for each category. Raw data are shown in Appendix D.

Table 4: summary of results obtained with reference and alternative methods (after confirmation) of all samples for each category

Category		Type	PA	PD	TND	TNA
❶ Infant formula and infant cereals with and without probiotics including ingredients (30 g sample size)	a	Infant formula and infant cereals without probiotics	11	0	0	9
	b	Infant formula and infant cereals with probiotics	12	0	0	8
	c	Ingredients (Maltodextrin, NFDM, whey…)	12	0	2	6
	Total		**35**	**0**	**2**	**23**
❷ Infant formula and infant cereals with and without probiotics and ingredients (375 g sample size)	a	Infant formula and infant cereals without probiotics	11	2	0	9
	b	Infant formula and infant cereals with probiotics	9	2	0	11
	c	Ingredients (Maltodextrin, NFDM, whey…)	5	5	0	12
	Total		**25**	**9**	**0**	**32**
❸ Environmental samples	a	Dusts and residues	7	1	2	10
	b	Cleaning and process water	9	1	0	10
	c	Surface samples (swab, sponge)	7	0	3	10
	Total		**23**	**2**	**5**	**30**
All categories			**83**	**11**	**7**	**85**

The set of results obtained were used to calculate the relative trueness, the sensitivity and the false positive ratio for each of the categories and for all the categories, according to the formulas set out in the EN ISO 16140-2/A1:2024 standard.

In sensitivity study, some abbreviations are used. Their signification and explanation are listed below, as described in ISO 16140-1 and ISO 16140-2/A1:

- N: total number of samples per category or for all categories
- N+: Total number of positive samples per category
- PA: positive agreement: qualitative alternative method and reference method both present a confirmed positive test result (confirmed positive results)
- NA: negative agreement: agreement when the qualitative alternative method and reference method both present a negative test result
- PD: positive deviation: (confirmed) positive result of the alternative method when the corresponding reference method result is negative
- ND: negative deviation: negative result of the alternative method when the corresponding reference method result is positive
- $ND_{FN(alt)}$: ND due to false negative alternative-method result
- $NA_{FN(alt)}$: NA due to false negative alternative-method result
- $PD_{FP(alt)}$: PD due to false positive alternative-method result
- - $PA_{FP(alt)}$: PA due to false positive alternative-method result
- - TNA and TND: total negative agreement and total negative deviation
    - Paired study:
        - $TNA = NA + PD_{FP(alt)}$
        - $TND = ND_{FN(alt)}$
    - Unpaired study:
        - $TNA = NA + NA_{FN(alt)} + PD_{FP(alt)}$
        - $TND = ND + ND_{FN(alt)} + PA_{FP(alt)}$

The formulas for the calculation of sensitivity, relative trueness and false positive and negative ratios are the following:

Sensitivity of the alternative method (SE_{alt})	$SE_{alt} = \frac{PA + PD}{PA + TND + PD} \times 100\%$
Sensitivity of the reference method (SE_{ref})	$SE_{ref} = \frac{PA + TND}{PA + TND + PD} \times 100\%$
Relative trueness (RT)	$RT = \frac{PA + TNA}{N} \times 100\%$
False positive ratio (FPR)	$FPR = \frac{PD_{FP(alt)}}{TNA} \times 100\%$ (paired) $FPR = \frac{PA_{FP(alt)} + PD_{FP(alt)}}{TNA} \times 100\%$ (unpaired)
False negative ratio (FNR)	$FNR = \frac{NA_{FN(alt)} + ND_{FN(alt)}}{PA + TND + PD}$ x 100 %

Table 5 shows the results of the sensitivity study.

Table 5: calculation of relative trueness (RT), sensitivity (SE), false positive ratio (FPR) and false negative ratio (FNR) for the alternative method

Category		Type	PA	$PA_{FP(alt)}$	NA	$NA_{FN(alt)}$	PD	ND	$ND_{FN(alt)}$	$PD_{FP(alt)}$	TND	TNA	SE_{alt} %	SE_{ref} %	RT %	FPR %	FNR %
❶ Infant formula and infant cereals with and without probiotics including ingredients (30 g sample size)	a	Infant formula and infant cereals without probiotics	11	0	9	0	0	0	0	0	0	9	100,0	100,0	100,0	0,0	0,0
	b	Infant formula and infant cereals with probiotics	12	0	8	0	0	0	0	0	0	8	100,0	100,0	100,0	0,0	0,0
	c	Ingredients (Maltodextrin, NFDM, whey…)	12	0	6	0	0	2	0	0	2	6	85,7	100,0	90,0	0,0	0,0
		Total	**35**	**0**	**23**	**0**	**0**	**2**	**0**	**0**	**2**	**23**	**94,6**	**100,0**	**96,7**	**0,0**	**0,0**
❷ Infant formula and infant cereals with and without probiotics and ingredients (375 g sample size)	a	Infant formula and infant cereals without probiotics	11	0	9	0	2	0	0	0	0	9	100,0	84,6	90,9	0,0	0,0
	b	Infant formula and infant cereals with probiotics	9	0	11	0	2	0	0	0	0	11	100,0	81,8	90,9	0,0	0,0
	c	Ingredients (Maltodextrin, NFDM, whey…)	5	0	12	0	5	0	0	0	0	12	100,0	50,0	77,3	0,0	0,0
		Total	**25**	**0**	**32**	**0**	**9**	**0**	**0**	**0**	**0**	**32**	**100,0**	**73,5**	**86,4**	**0,0**	**0,0**
❸ Environmental samples	a	Dusts and residues	7	0	10	0	1	2	0	0	2	10	80,0	90,0	85,0	0,0	0,0
	b	Cleaning and process water	9	0	10	0	1	0	0	0	0	10	100,0	90,0	95,0	0,0	0,0
	c	Surface samples (swab, sponge)	7	0	10	0	0	3	0	0	3	10	70,0	100,0	85,0	0,0	0,0
		Total	**23**	**0**	**30**	**0**	**2**	**5**	**0**	**0**	**5**	**30**	**83,3**	**93,3**	**88,3**	**0,0**	**0,0**
All categories			**83**	**0**	**85**	**0**	**11**	**7**	**0**	**0**	**7**	**85**	**93,1**	**89,1**	**90,3**	**0,0**	**0,0**

A summary of the results is given in Table 6.

Table 6: summary of the results for all categories

Parameter	Formula EN ISO 16140-2/A1 :2024	Results
Sensitivity of the alternative method (SE_{alt})	$SE_{alt} = \frac{(PA + PD)}{(PA + TND + PD)} x\ 100\ \%$	**93.1 %**
Sensitivity of the reference method (SE_{ref})	$SE_{ref} = \frac{(PA + TND)}{(PA + TND + PD)} x\ 100\ \%$	**89.1 %**
Relative trueness (RT)	$RT = \frac{(PA + TNA)}{N} x100\ \%$	**90.3 %**
False positive ratio (FPR)	$FPR = \frac{PA_{FP(alt)} + PD_{FP\ (alt)}}{TNA} x\ 100\ \%$	**0.0 %**
False negative ratio (FNR)	$FNR = \frac{NA_{FN(alt)} + ND_{FN(alt)}}{PA + TND + PD}$ x 100 %	**0.0 %**

3.1.4. Analysis of discordant results

- **Negative deviations:**

During the initial validation study, two negative deviations were observed, all with naturally contaminated samples. For these two samples, doubtful colonies were observed on the RAPID'Sakazakii plates, but they were not confirmed, they were identified as *Enterobacter cloacae*.

During extension study, five negative deviations from artificially contaminated samples were observed. For all these samples, the confirmations using the ISO reference method (CSB broth and CCI agar plate) did not reveal the presence of *Cronobacter*.

- **Positive deviations:**

During the initial validation study, nine positive deviations were observed, one for naturally contaminated sample (8019: infant cereals without probiotics) and eight for artificially contaminated samples. This result could be explained by the sampling difference (375 g for the alternative method and 10 g for the reference method).

During extension study, two positive deviations from artificially contaminated samples were observed. For all these positive samples, all the confirmation tests gave a positive result.

The negative deviations are given in Table 7 and the positive deviations in Table 8.

Table 7: negative deviations

Initial validation study

Type	#	Sample	Reference method: ISO 22964	Alternative method : RAPID'Sakazakii			
				RAPID'Sakazakii (direct streaking 10 µl)		Final result	Agreement
				Typical colonies	Confirmation: All confirmatory tests		
c	3c	Milk powder residues without probiotics	+	d (- on several plates)	/	/	ND
c	15c	Infant cereals residues with 5 cereals and banana and apple	+	d (- on several plates)	/	/	ND

Extension study

Type	#	Sample	Reference method ISO 22964" - 20h at 37°C				BPW +PIF supplement - 18h at 37°C						ISO conf.		
			CCI After CSB	Confirmatory tests: Ox.	Confirmatory tests: Gallery	Final result	Rapid *Sakazakii*	Conf. ISO with purification	Conf. ISO without purification	Conf. PCR on colony	Final result	Agreement	CCI after CSB	Ox.	Gallery
a+	3110723	Milk powder residues without probiotics	+ (BH)	-	*Cronobacter sp.*	P	- (EH)	/	/	/	A	ND	- (EH)	/	/
a+	3178253	Infant cereals residues with 5 cereals and banana and apple	+ (BM)	-	*Cronobacter sp.*	P	- (EM)	/	/	/	A	ND	- (EM)	/	/
c+	3110719	Sponge: dairy wall	+ (BM)	-	*Cronobacter sp.*	P	- (EM)	/	/	/	A	ND	- (EM)	/	/
c+	3071938	Sponge:Inside milk cooling tank	+ (CM)	-	*Cronobacter sp.*	P	- (EM)	/	/	/	A	ND	- (EM)	/	/
c+	3112805	Swab:Storage bin for infant cereals	+ (BM)	-	*Cronobacter sp.*	P	- (EM)	/	/	/	A	ND	- (EM)	/	/

Table 8: positive deviations

Initial validation study

Type	#	Sample	Artificial contamination		Reference method : ISO 22964*	Alternative method: RAPID'*Sakazakii*				
			Strain	Inoculation level/sample		RAPID'*Sakazakii* (direct streaking 10 µl)		Final result	Agreement	Type
				Mean		Typical colonies	Confirmation			
aA6:M14	7720	Infant cereals without probiotic multi cereals	*Cronobacter sakazakii*	1,5	-	+p	+	+	PD	2
a	8019	nfant cereals without probiotic multi cereal	Ad2848	/	-	+p	+	+	PD	2
b	7733	Infant formula with probiotics stage 2	*Cronobacter turincensis*	1,4	-	+p	+	+	PD	2
b	7735	(L. reuteri 9.8 x105 CFU/g)	Ad1445	2,9	-	+p	+	+	PD	2
c	7744	Maltodextrin	*Cronobacter sakazakii*	1	-	+p	+	+	PD	2
c	7745	Maltodextrin	Ad2349	0,4	-	+p	+	+	PD	2
c	7752	Lactoserum	*Cronobacter dublinensis*	1	-	+p	+	+	PD	2
c	7754	Non-fat dry milk powder	DSM18705	1	-	+p	+	+	PD	2
c	7755	Non-fat dry milk powder	DSM18705	1	-	+p	+	+	PD	2

Extension study

			Reference method ISO 22964[§] - 20h at 37°C				BPW +PIF supplement - 18h at 37°C								
Type	#	Sample	CCI After CSB	Confirmatory tests		Final result	Rapid *Sakazakii*	Conf. ISO with purification	Conf. ISO without purification	Conf. PCR on colony	Final result	Agreement	ISO conf.		
				Ox.	Gallery								CCI after CSB	Ox.	Gallery
a+	3110715	Cereal residues	- (EH)	/	/	A	+ (BM) réiso:+(AH)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,58	P	PD	+ (BH)	-	*Cronobacter sp.*
b+	3055096	Process water cheese shop	- (EH)	/	/	A	+ (AH)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,54	P	PD	+ (BH)	-	*Cronobacter sp.*

In conclusion, seven negative deviations and the eleven positive deviations most probably come from the nature of the study design. In an unpaired study, because of the difference of sampling between both methods, and the use of artificially contaminated samples with low levels of contamination, no cell of *Cronobacter* may have been present in the sampling of one of the two methods.

3.1.5. Calculation and interpretation of data

Table 9 shows the difference between negative deviations and positive deviations and the acceptability limits.

Table 9: analysis of discordant results

Category		Type	TND	PD	TND-PD	AL
❶ Infant formula and infant cereals with and without probiotics including ingredients (30 g sample	a	Infant formula and infant cereals without probiotics	0	0		
	b	Infant formula and infant cereals with probiotics	0	0		
	c	Ingredients (Maltodextrin, NFDM, whey…)	2	0		
		Total	**2**	**0**	2	3
❷ Infant formula and infant cereals with and without probiotics and ingredients (375 g sample	a	Infant formula and infant cereals without probiotics	0	2		
	b	Infant formula and infant cereals with probiotics	0	2		
	c	Ingredients (Maltodextrin, NFDM, whey…)	0	5		
		Total	**0**	**9**	-9	3
❸ Environmental samples	a	Dusts and residues	2	1		
	b	Cleaning and process water	0	1		
	c	Surface samples (swab, sponge)	3	0		
		Total	**5**	**2**	3	3
All categories			**7**	**11**	**-4**	**5**

The observed values for (TND - PD) and (TND + PD) meet the acceptability limit for each individual category, protocol and for all the combined categories (calculated values ≤ AL).

3.1.6. Confirmation

- **Initial validation**

During the validation, the typical colonies were confirmed by PCR and biochemical gallery without purification step, by biochemical tests (oxidase test and biochemical gallery) after subculture on non-selective agar plate.
When typical colonies were observed, they were identified as *Cronobacter* spp by biochemical galleries.
Doubtful colonies were observed onto RAPID'Sakazakii for 2 samples (3c and 15c), they were not confirmed by PCR, and they were identified as Enterobacter cloacae. The typical colonies observed on the RAPID'Sakazakii plates from 7 samples tested after enrichment broth storage for 72 h at 5°C ± 3°C and from 6 samples tested after plates storage for 72 h at 5°C± 3°C required the use of two galleries to obtain an identification (colonies tested without purification step).

- **Extension study**

During extension study (2025), all presumed positive samples were confirmed positive by the different protocols of confirmation used. No difference was observed between the confirmation on colonies with or without purification. All the PCR tests performed with iQ-Check Cronobacter kit on the characteristic colonies gave a positive result. For 4 samples n°3110715, n°23112789, n°3110720 and n°3112781, a streaking onto new agar plate of characteristic colonies observed on the Rapid'*Sakazakii* agar plate was necessary in order to obtain well-isolated colonies to carry out the confirmation tests.

3.1.7. Enrichment broth storage at 2 – 8°C for 72 hours

A stability study of the enriched broths stored at 5±3°C for 72 hours was performed on all positive and discordant samples. After storage, the broths were reanalyzed and confirmed.

For additional category tested in 2025, no evolution of the results was observed between the results obtained after the initial analysis and the results obtained after the cold storage of the broth.

The alternative method produces results comparable to the reference method after storage of the broths for 3 days at 5±3°C.
Table 10 shows the difference between negative deviations and positive deviations and the acceptability limits.

Table 10: analysis of discordant results after broth storage

Category		Type	TND	PD	TND-PD	AL
❶ Infant formula and infant cereals with and without probiotics including ingredients (30 g sample	a	Infant formula and infant cereals without probiotics	0	0		
	b	Infant formula and infant cereals with probiotics	0	0		
	c	Ingredients (Maltodextrin, NFDM, whey…)	2	0		
		Total	**2**	**0**	2	3
❷ Infant formula and infant cereals with and without probiotics and ingredients (375 g sample	a	Infant formula and infant cereals without probiotics	0	2		
	b	Infant formula and infant cereals with probiotics	0	2		
	c	Ingredients (Maltodextrin, NFDM, whey…)	0	5		
		Total	**0**	**9**	-9	3
❸ Environmental samples	a	Dusts and residues	2	1		
	b	Cleaning and process water	0	1		
	c	Surface samples (swab, sponge)	3	0		
		Total	**5**	**2**	3	3
All categories			**7**	**11**	**-4**	**5**

3.1.8. Plate storage at 2 – 8°C for 72 hours

All the plates from positive and negative samples were stored for 72 h at 5°C ± 3°C and read again. A confirmation by API ID32E was applied after storage. No change was observed after the plate storage at 5°C ± 3°C for 72 h.

3.1.9. Conclusion of the sensitivity study

Statistical tests of EN ISO 16140-2/A1 (2024) conclude that the alternative method for the additional category produce results comparable to the reference method

3.2. Relative level of detection study

3.2.1. Matrix-strain pairs

The matrix-strain pair tested during extension is presented in Table 11.

Table 11: matrix-strain pair tested for the RLOD study

	Category	Matrix	Strain	Origin	Storage condition after inoculation, before analysis	Protocol	Study design
Renewal	Infant formula and infant cereals with and without probiotics including ingredients (30 g)	Infant cereals with probiotics	*Cronobacter sakazakii* QL 11007.9	Rice flour	Seeding protocol with lyophilized strain storage for 2 weeks at ambient temperature	30 g + 270 mL BPW + 18 h 37°C	Unpaired study
Extension (2020)	Infant formula and infant cereals with and without probiotics including ingredients (375 g)	Infant formula with probiotics	*Cronobacter sakazakii* Ad1418	Milk powder	Seeding protocol with lyophilized strain storage for 2 weeks at ambient temperature	375 g + 1125 mL pre-warmed (37°C) BPW + PIF supplement 18 h 37°C	
Extension (2025)	Production environmental samples	Water process	*Cronobacter turicensis* HZN090	Environmental dairy products	Seeding protocol with storage 72h at 5±3° C	25 g + 225 mL BPW + PIF supplement 18 h 37°C	

The total flora of the matrix was determined and is set out in the results tables in Appendix E.

3.2.2. Contamination protocol

Three levels of contamination were prepared consisting of a negative control level, a low level, and a higher level.
The negative control level shall not produce positive results. Five replicates were tested for this level.
The low level shall be the theoretical detection level, it was contaminated at 0.7 - 1 CFU per test portion to obtain fractional recovery results. Twenty replicates were tested for this level.
The higher level shall be just above the theoretical detection level, it was contaminated at 2 - 3 CFU per test portion. Five replicates were tested for this level.
The spiking protocol was used.
Samples were then analyzed by reference and alternative method.

3.2.3. Results

The RLOD is defined as the ratio of the LODs of the alternative method and the reference method: RLOD= LOD_{alt} / LOD_{ref}.

The RLODs calculations were performed according to the standard ISO 16140-2/A1 (2024) using the Excel spreadsheet untitled "RLOD-ver4" available for download at https://standards.iso.org/iso/16140/-2/ed-1/en/amd/1/.

Values of the RLOD are set out in Table 12.

Table 12: RLOD values (RLOD: the estimated relative level of detection value, RLODU: the upper limit of the 95% confidence interval for RLOD, RLODL: the lower limit of the 95% confidence interval for RLOD.

Name	RLOD	RLODL	RLODU	AL
Infant cereals with probiotics / *Cronobacter Sakazakii* QL 11007.9	0,843	0,297	2,397	**2.5**
Infant formula with probiotics / *Cronobacter Sakazakii* AD1418	0,868	0,392	1,926	
Process water / *Cronobacter turicensis* HZN090	1,107	0,502	2,439	
Combined	**0,946**	**0,578**	**1,550**	

The LOD_{50} calculations according to Wilrich & Wilrich POD-LOD calculation program - version 12, are given in Table 13.

Table 13: $LOD_{50\%}$ for the alternative and reference method

Matrix/Strain	$LOD_{50\%}$ (CFU/sample size) Reference method	$LOD_{50\%}$ (CFU/sample size) Alternative method
Infant cereals with probiotics / *Cronobacter Sakazakii* QL 11007.9	1,5 [0,8; 2,9]	1,3 [0,7; 2,5]
Infant formula with probiotics / *Cronobacter Sakazakii* Ad1418	1,0 [0,6; 1,8]	0,9 [0,5; 1,6]
Process water / *Cronobacter turicensis* HZN090	0,9 [0,6; 1,7]	1,1 [0,6; 2,0]

3.2.4. Interpretation and conclusion

The RLOD value is below the acceptability limit set at 2.5 for "unpaired" categories as stated in ISO 16140-2/A1 (2024).

In conclusion, alternative method and the reference method show similar LODs values for the detection of *Cronobacter* in the categories tested.

3.3. Inclusivity and exclusivity study

The inclusivity study was carried out during the initial validation on 52 target strains. The enrichment broth used was BPW incubated for 16 hours at 37°C. During the first extension, the same strains were retested with the protocol using BPW + PIF supplement. This protocol corresponds to that proposed during this extension study, the Microsept laboratory proposed to keep the data and not to carry out additional tests.

3.3.1. Test protocol

- **Inclusivity**

For the initial validation study (2012), 52 target strains were tested. Cultures were performed in BHI medium, incubated at 37°C. Dilutions were done in order to inoculate between 10 to 100 cells/225 mL BPW. The broths were incubated for 16 h at 37°C. The alternative method protocol was then performed.

For the first extension study, the inclusivity testing was performed again as the protocol dedicated to big samples sizes is more selective than the protocol tested for the initial validation study. Dilutions were done in order to inoculate between 10 to 100 cells/225 mL BPW + PIF supplement; the broths were incubated for 18 h at 37°C and the protocol of the alternative method was then applied.
The same strains were tested for both initial and extension studies.

- **Exclusivity**

For the initial validation study, 31 non-target strains were tested. Cultures were performed in BHI medium, incubated at 37°C. Dilutions were done in order to inoculate 10^5 cells/ml BPW. 20 h incubation time was used. The alternative method protocol was then performed.

3.3.2. Results

Raw data are given in Appendix F.

- **Inclusivity**

For both studies (initial and extension), the 52 target strains showed positive results.

- **Exclusivity**

The 31 non-target strains showed negative results.

4. Inter-Laboratory Study

4.1. Study organization

Samples were sent to 13 laboratories. Probiotic infant formula containing *Lb. reuteri* was contaminated with the wild *Cronobacter Sakazakii* Ad 940 strain. In order to facilitate the study, the infant formula was first homogenized in sterile water.

Samples were inoculated and sent on Monday 19 March 2012, as described below:

- 24 labelled samples (30 ml) for *Cronobacter* spp. detection by RAPID'*Sakazakii* method and by the ISO/TS 22964 (2006) reference method for the detection of *Enterobacter Sakazakii*,
- 1 unlabeled milk sample for aerobic mesophilic flora enumeration by ISO 4833 method,
- 1 water flask labelled "Temperature Control" with a temperature probe for temperature control during transport and storage in the laboratory until the beginning of the analyses.

The analyses were started on Wednesday 21 March 2012. The targeted inoculation levels were:

- 0 CFU/30 g,
- 1 – 10 CFU/30 g,
- 5 – 50 CFU/30 g.

At least, each laboratory received 24 samples of 30 g, i.e. 8 samples per inoculation level and method.

Blind samples (code is only known by the expert laboratory) were placed in isothermal boxes, which contained cooling blocks, and express-shipped to the different laboratories.

A temperature control flask containing temperature probe was added to the package in order to register the temperature profile during the transport, package delivery.
Samples were shipped in 24 h to 48 h to the different laboratories. Sample temperature had to stay lower or equal to 8.4°C during transport, and between 0°C – 8.5°C at arrival.

Collaborative study laboratories and the expert laboratory carried out the analyses with the alternative and reference methods at Day 2, except Lab J at Day 3.

4.2. Experimental parameters controls

4.2.1. Strain stability and background microflora stability

Strain stability was checked by inoculating the matrix at 10 CFU/30ml and 1 CFU/30 ml and 100 CFU/30ml. Enumerations were performed for the high contamination level and detection analyses were performed for the low contamination level after 24 h and 48 h storage at 5 ± 3°C. Triplicates were analysed. The aerobic mesophilic flora was also enumerated; the results are given in Table 14.

Table 14: sample stability

	Detection/30 ml (ISO/TS 22964 reference method)						Enumeration (CFU/ml)		
	Low level inoculation			High level inoculation					
	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
Day 0	-	+	-	+	+	+	190	170	250
Day 1	+	+	-	+	+	+	66	91	74
Day 2	-	+	+	+	+	+	66	72	63

No evolution was observed during storage at 5°C ± 3°C.

4.2.2. Contamination levels

The contamination levels and the sample codification were the following (see Table 15).

Table 15: contamination levels

Level	Samples	Theoretical target level (CFU/30 ml)	True level (CFU/30 ml sample)	Low limit CFU / 30 ml sample	High limit CFU / 30 ml sample
Level 0	2 – 6 – 10 – 11 – 17 – 19 – 22 – 24	0	/	/	/
Low level	1 – 4 – 9 – 12 – 14 – 18 – 20 – 21	1	0.8	0.7	1.0
High level	3 – 5 – 7 – 8 – 13 – 15 – 16 – 23	20	20.6	17.9	23.7

4.2.3. Logistic conditions

Temperature conditions are given in Table 16.

Table 16: sample temperatures at receipt

Collaborators	Temperature measured at receipt by the sensor (°C)	Temperature measured at receipt (°C)	Day of receipt		Day of analysis
A	2,0	4,1	20/03/2012	09h30	21/03/2012
B	1,0	3,4	20/03/2012	14h00	21/03/2012
C	1,5	4,0	20/03/2012	15h30	21/03/2012
D	2,0	5,5	20/03/2012	15h50	21/03/2012
E	2,0	4,7	20/03/2012	10h00	21/03/2012
F	2,0	10,1*	20/03/2012	14h00	21/03/2012
G	1,5	4,2	20/03/2012	11h40	21/03/2012
H	3,0	3,1	20/03/2012	11h15	21/03/2012
I	0,0	1,1	20/03/2012	10h30	21/03/2012
J	1,5	4,8	20/03/2012	12h00	22/03/2012
K	1,5	4,9	20/03/2012	13h00	21/03/2012
L	2,5	5,0	20/03/2012	11h10	21/03/2012
M	1,0	2,5	20/03/2012	13h30	21/03/2012

** Temperature measured after the sample storage at 4°C.*

No problem was encountered during the transport or at receipt for the 13 collaborators. All the samples were delivered on time and in appropriate conditions. Temperatures during shipment and at receipt were all correct.

4.3. Results analysis

Raw data are provided in Appendix G.

4.3.1. Expert laboratory results

The results obtained by the expert laboratory are given in Table 17.

Table 17: results obtained by the expert Lab.

Level	Reference method	Alternative method
L0	0/8	0/8
L1	4/8	4/8
L2	8/8	8/8

All the control samples gave a negative result and all the samples inoculated at high level gave positive results by the reference and the alternative methods. For the low inoculation level,

fractional positive results were observed: 4 samples gave positive results by the reference and the alternative methods.

All the results were in agreement between the reference and the alternative methods.

4.3.2. Results observed by the collaborative laboratories

- **Aerobic mesophilic flora enumeration**

Depending on the Lab results, the enumeration levels varied from 8 CFU/ml to 66 CFU/ml, except for Lab K which numerated 2,0.105 CFU/ml.

- ***Cronobacter* spp. detection**

The Lab J started the analyses on Day 3, at 7 h am, while all the others run the analyses in the afternoon of Day 2 as expected.

The reviewers of this study have been contacted. Taking into account that fractional recovery results are still observed at level L1, it was concluded to integrate the Lab J results in the study interpretation. Cross contaminations were observed in the blank samples for many Labs: they are mainly due to the fact that the Labs used micropipettes to transfer the primary enrichment broth to the second step of the protocols.

The results obtained by the 13 collaborators are provided in Table 18 (reference method) and Table 19 (alternative method).

Table 18: positive results by the reference method (ALL the collaborators)

Collaborators	Contamination level		
	L0	L1	L2
A	0	1	8
B	0	2	8
C	2	5	8
D	0	4	8
E	0	6	8
F	1	6	8
G	2	4	8
H	4	6	8
I	0	5	8
J	0	6	8
K	0	3	8
L	0	3	8
M	0	3	8
TOTAL	**P_0 =9**	**P_1 =54**	**P_2 = 104**

Table 19: positive results (before and after confirmation) by the alternative method (ALL the collaborators)

Collaborators	Contamination level								
	L0			L1			L2		
	PCR result	Conf. result	Final result	PCR result	Conf. result	Final result	PCR result	Conf. result	Final result
A	0	0	0	1	1	1	8	8	8
B	0	0	0	2	2	2	8	8	8
C	1	1	1	5	5	5	8	8	8
D	0	0	0	4	4	4	8	8	8
E	0	0	0	6	6	6	8	8	8
F	0	0	0	5	5	5	8	8	8
G	2	2	2	3	3	3	8	8	8
H	3	3	3	7	7	7	8	8	8
I	0	0	0	5	5	5	8	8	8
J	0	0	0	6	6	6	8	8	8
K	0	0	0	3	3	3	8	8	8
L	0	0	0	3	3	3	8	8	8
M	1	1	1	3	3	3	8	8	8
Total	**P_0=7**	**C_0=7**	**CP_0=7**	**P_1 = 53**	**C_1=53**	**CP_1=53**	**P_2 = 104**	**C_2=104**	**CP_2=104**

According to the AFNOR technical rules, it is possible to include the results from a collaborator with maximum one presumptive positive or confirmed positive sample at Level 0. For this study, the rule was applied, and Labs C, G and H were excluded.

Finally, the results from 10 Labs were used for interpretation: A, B, D, E, F, I, J, K, L and M.

4.3.3. Results of the collaborators retained for interpretation

The results obtained with the 10 labs kept for interpretation are presented in Table 20 (reference method) and Table 21 (alternative method).

Table 20: positive results by the reference method (Without Labs C, G and H)

Collaborators	Contamination level		
	L0	L1	L2
A	0	1	8
B	0	2	8
D	0	4	8
E	0	6	8
F	1	6	8
I	0	5	8
J	0	6	8
K	0	3	8
L	0	3	8
M	0	3	8
TOTAL	**P_0 = 1**	**P_1 = 39**	**P_2 = 80**

Table 21: positive results (before and after confirmation) by the alternative method (Without Labs C, G and H)

Collaborators	Contamination level								
	L0			L1			L2		
	PCR result	Conf. result	Final result	PCR result	Conf. result	Final result	PCR result	Conf. result	Final result
A	0	0	0	1	1	1	8	8	8
B	0	0	0	2	2	2	8	8	8
D	0	0	0	4	4	4	8	8	8
E	0	0	0	6	6	6	8	8	8
F	0	0	0	5	5	5	8	8	8
I	0	0	0	5	5	5	8	8	8
J	0	0	0	6	6	6	8	8	8
K	0	0	0	3	3	3	8	8	8
L	0	0	0	3	3	3	8	8	8
M	1	1	1	3	3	3	8	8	8
Total	**P_0 = 1**	**C_0=1**	**CP_0=1**	**P_1 = 38**	**C_1=38**	**CP_1=38**	**P_2 = 80**	**C_2=80**	**CP_2=80**

4.4. Calculation and interpretation

4.4.1. Calculation of the specificity percentage (SP)

The percentage specificities (SP) of the reference method and of the alternative method, using the data after confirmation, based on the results of level L0 are the following (See Table 22).

Table 22: percentage specificity

Sensitivity of the alternative method (SE_{alt})	$SE_{alt} = (1 - (\frac{CP_0}{N}) \times 100\%$	**98.8%**
Sensitivity of the reference method (SE_{ref})	$SE_{ref} = (1 - (\frac{P_0}{N}) \times 100\%$	**98.8%**

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.

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

Fractional positive results were obtained for the low inoculation level (L1). This inoculation level was retained for calculation.

A summary of the results of the collaborators retained for interpretation and obtained with the reference and the alternative methods for Level 1 is provided in Table 23.

Table 23: summary of the obtained results with the reference method and the alternative method for Level 1

Level	Response	Reference method positive (R+)	Reference method negative (R-)
1	**Alternative method positive (A+)**	Positive agreement (A+/R+) **PA = 38**	Positive deviation (R-/A+) **PD = 0**
	Alternative method negative (A-)	Negative deviation (A-/R+) **TND = 1**	Negative agreement (A-/R-) **TNA = 41**

Based on the data summarized in Table 23, 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 24).

Table 24: sensitivity, relative trueness and false positive ratio percentages

		Level 1
Sensitivity for the alternative method	$SE_{alt} = \frac{PA + PD}{PA + TND + PD} \times 100\%$	97.4%
Sensitivity for the reference method	$SE_{ref} = \frac{PA + TND}{PA + TND + PD} \times 100\%$	100%
Relative trueness	$RT = \frac{PA + TNA}{N} \times 100\%$	98.8%
False positive ratio for the alternative method	$FPR = \frac{FP}{TNA} \times 100\%$	0%
False negative ratio for the alternative method	$FNR = \frac{NA_{FN(alt)} + ND_{FN(alt)}}{PA + TND + PD}$ x 100 %	0%

4.4.3. Interpretation of data

The negative deviations are listed in Table 25 for Level 1. No positive deviation was observed for Level 1.

Table 25: negative deviations for level 1

Lab	Level	Sample n°	RAPID'Sakazakii	
			Typical colonies	Confirmation
F	1	F18	-	-

For an unpaired study design, the difference between (TND – PD) is calculated for the level(s) where fractional recovery is obtained (so L1 and possibly L2). The observed value found for (TND – PD) shall not be higher than the AL. The AL is defined as [(TND – PD)max] and calculated per level where fractional recovery is obtained asdescribed below using the following three parameters:

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

where
P_x = number of samples with a positive result obtained with the reference method at level x (L1 or L2) for all the collaborators.

N_x = number of samples tested at level x (L1 or L2) with the reference method by all the collaborators.

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

where
CP_x = number of samples with a confirmed positive result obtained with the alternative method at level x (L1 or L2) for all the collaborators.

N_x = number of samples tested at level x (L1 or L2) with the alternative method by all the collaborators.

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

where
N_x = number of samples tested for level x (L1 or L2) with the reference method by all the collaborators.

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

In this study, fractional recovery was observed at Level 1. The calculations are the following, according to the EN ISO 16140-2:2016 (See Table 26).

Table 26: calculations

	Level 1
NX	80
$(p+)_{ref}$	0.5
$(p+)_{alt}$	0.5
AL = (TND - PD) max	10.95
TND - PD	1
Conclusion	TND-PD<AL

The ISO 16140-2/A1:2024 requirements are fulfilled as TND - PD meet the AL.

There is indeed no difference between the sensitivity of the compared methods, and the alternative method complies with the reproducibility conditions.

4.4.4. Evaluation of the LOD 50%, LOD 95 % and RLOD between laboratories

The LOD 50%, the LOD 95 % and 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 27).

Table 27 - LOD 50%, LOD 95 % and RLOD

Method	LOD 50%	LOD 95%	RLOD
Reference	1.1 [0.8;1.6]	4.7 [3.3;6.9]	1 [0.7;1.5]
Alternative	1.1 [0.8;1.6]	4.7 [3.3;6.9]	

5. Conclusion

- **The method comparison study conclusions are:**

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

- In the sensitivity study, three categories were tested. The protocol of the alternative method shows 11 positive deviations (PD) and 7 negative deviations (TND) for the three categories tested. The TND - PD meet the acceptability limits (AL) for each category, and as well for the tested categories.

- The Relative Levels of Detection (RLOD) are all below the AL fixed at 2.5 for the unpaired data study whatever the matrix/strain pairs.
- The inclusivity and exclusivity testing gave the expected results for the 52 target strains and the 31 non-target strains.

- It is possible to store the primary enrichment broth for 48 h at 5 ± 3°C for category 1 (Infant formula and infant cereals with and without probiotics including ingredients-30 g sample size), and for 72h at 5 ± 3°C for category 2 and 3 (Infant formula and infant cereals with and without probiotics including ingredients-375 g sample size and production environmental samples).

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

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

The data and the interpretation of the methods extension comparison study fulfill the requirements of the standard EN ISO 16140-2/A1 (2024). The Rapid'*Sakazakii* method is considered as equivalent to the standard EN ISO 22964 (April 2017).

April 20, 2026.

Guillaume MESNARD
Method Validation Supervisor

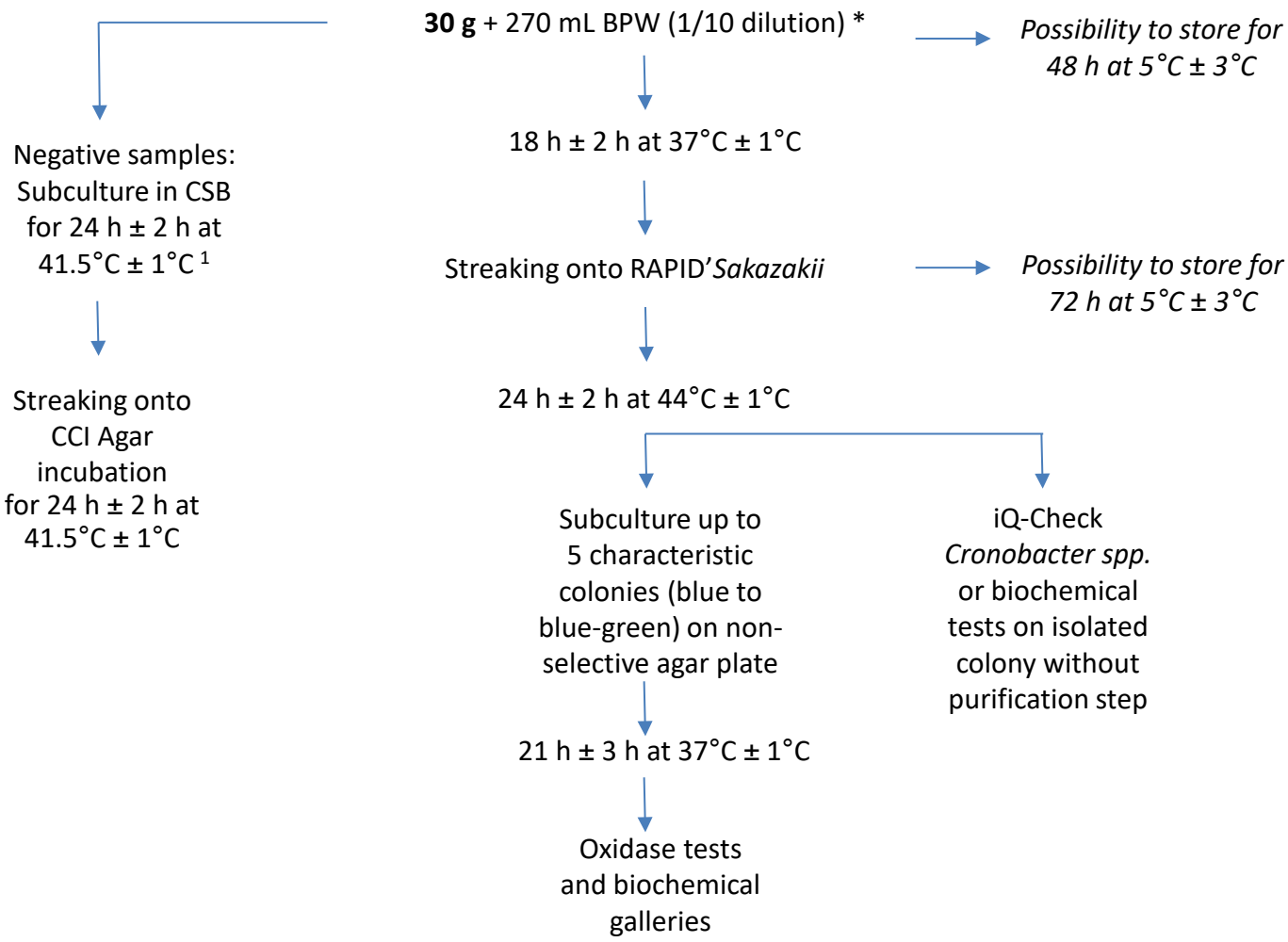
APPENDICES

Appendix A

Protocols of the alternative method: RAPID'*Sakazakii*

Infant formula and infant cereals with and without probiotics including ingredients (30 g sample size)

Protocol 1



* Addition of alpha-amylase for infant cereals (0.1 g/L)

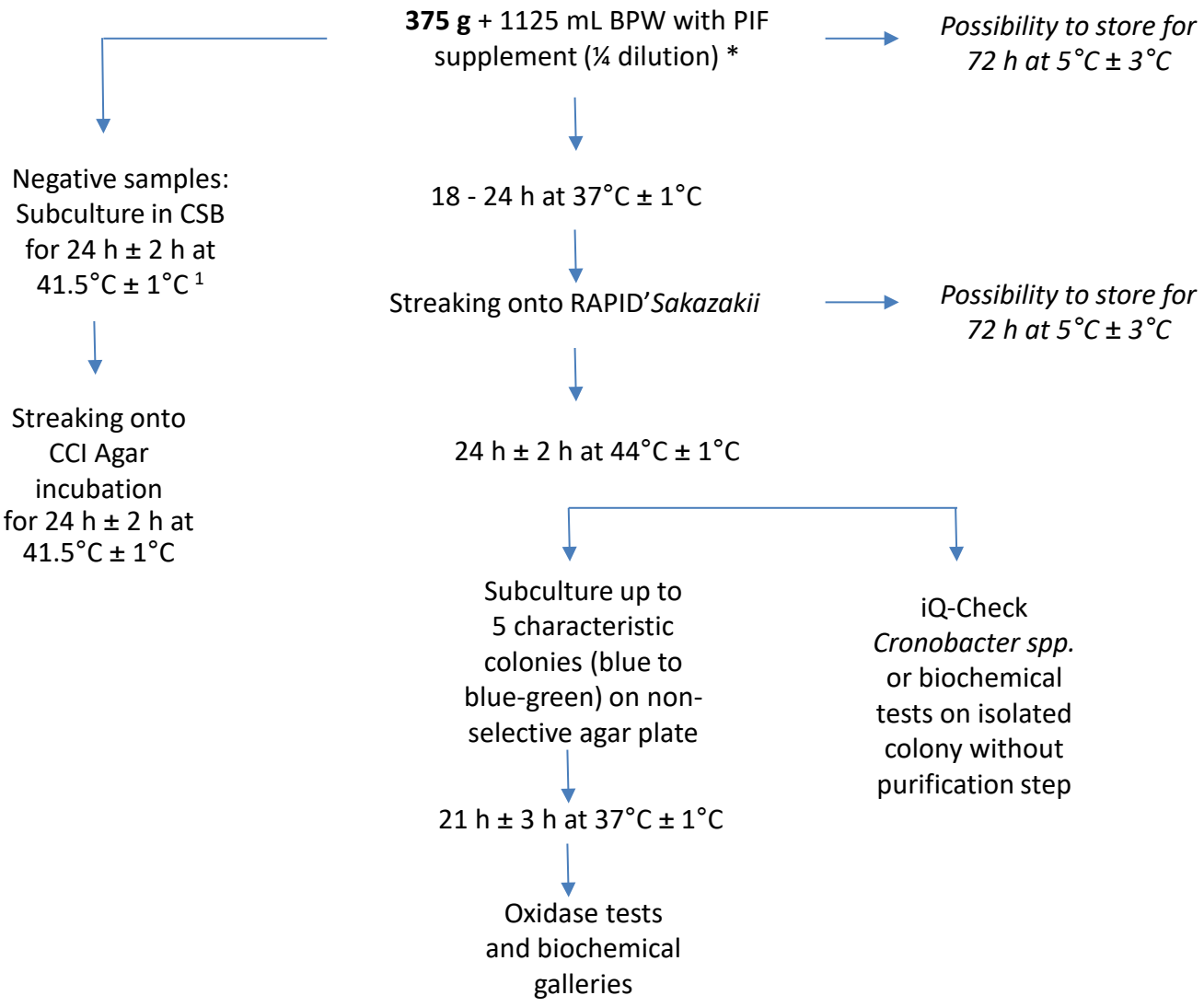
[1] This protocol was applied during the validation study in the sensitivity part for negative samples as requested by the ISO 16140-2 (2016)

Appendix A

Protocols of the alternative method: RAPID'*Sakazakii*

Infant formula and infant cereals with and without probiotics and ingredients (375 g sample size)

Protocol ❷



* Addition of alpha-amylase for infant cereals (0.1 g/L)

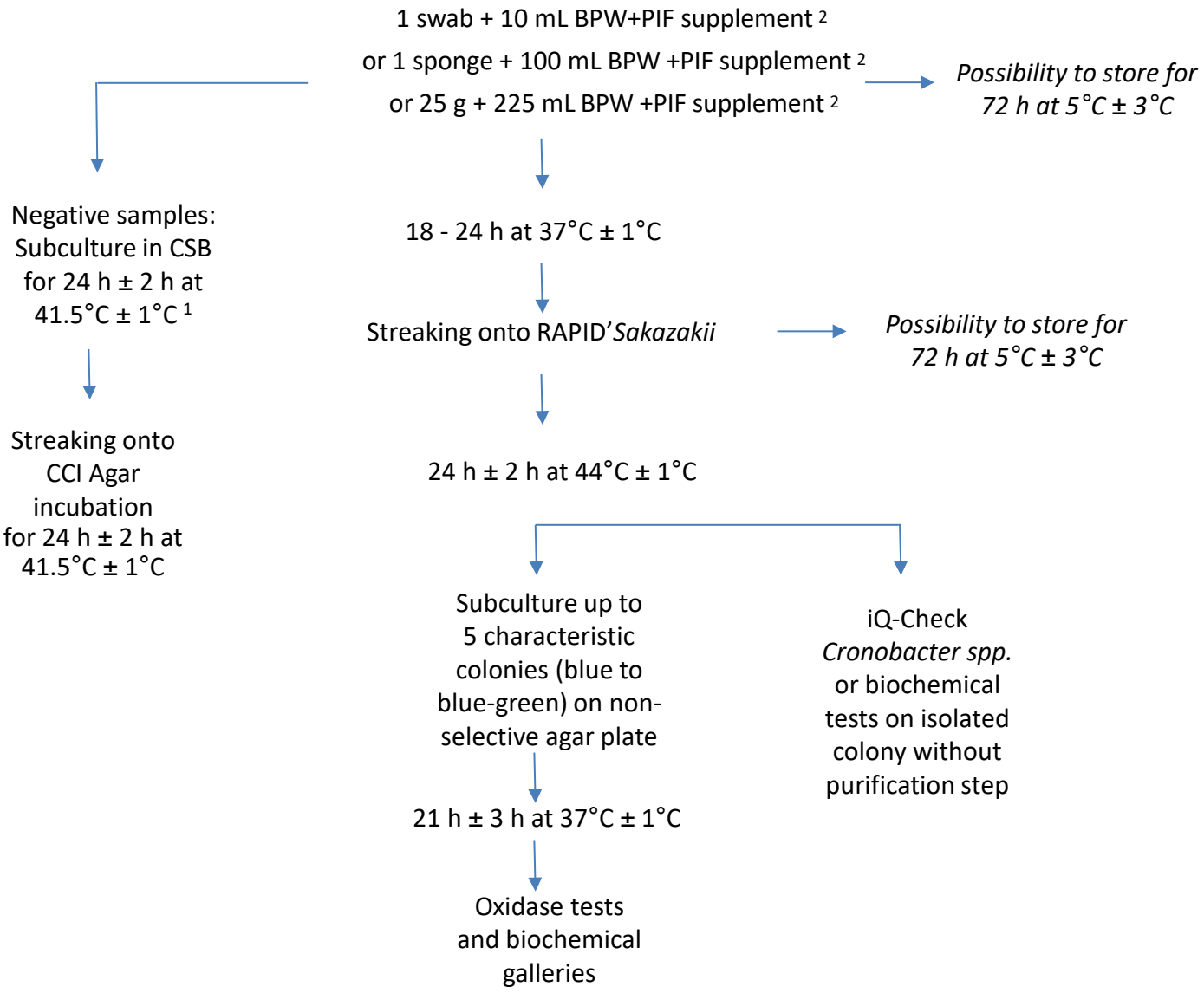
[1] This protocol was applied during the validation study in the sensitivity part for negative samples as requested by the ISO 16140-2 (2016)

Appendix A

Protocols of the alternative method: RAPID'*Sakazakii*

Environmental samples

Protocol ❸



1 This protocol was applied during the validation study in the sensitivity part for negative samples as requested by the ISO 16140-2 (2016)

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

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

Infant formula and ingredients:

10 g + 90 mL BPW

Environmental samples[2]**:**

1 swab + 10 mL BPW [2]

or 1 sponge + 100 mL BPW [2]

or 10 g + 90 mL BPW[2]

or 10 mL

↓

Incubation 18 h ± 2 h at 34 – 38°C

↓

0.1 mL + 10 mL CSB

↓

Incubation 24 h ± 2 h at 41.5°C ± 1°C

↓

Streaking onto CCI Agar plate

↓

Incubation 24 h ± 2 h at 41.5°C ± 1°C

↓

Confirmatory test on one typical colony, and four other colonies

(if the first one is negative (typical colony: blue to blue-green))

Streaking onto TSA

↓

Incubation 18 h – 24 h at 37°C ± 1°C

↓

Biochemical confirmation (oxidase, mini-galleries)

---

[3] For sampling after cleaning process premoisten

- 1 swab + 1 ml broth universal neutralizing (+ 9 ml BPW)
- 1 sponge + 10 ml broth universal neutralizing (+ 90 ml BPW)
- 1 wipe + BPW + 10 % neutralizing agent (+ 225 ml BPW)

Appendix C – Artificial contamination of samples - renewal (2020)

Year of analysis	Sample N°	Product	Artificial contamination (Q-Laboratories Inc.)						Global result	Category	Type
			Strain	Origine	Injury protocol	Injury measurement	Inoculation level/sample				
							Enumeration	Mean			
2020	6a	Multigrain banana infant cereal	*Cronobacter condimenti* QL 17031.1	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	2	2	+	1	a
2020	9a	Oatmeal banana infant cereal	*Cronobacter condimenti* QL 17031.1	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	4-5-3-5-4	4,2	+	1	a
2020	10a	single grain raisin infant cereal	*Cronobacter condimenti* QL 17031.1	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	4-5-3-5-4	4,2	+	1	a
2020	12a	Pure Bliss Infant Formula	*Cronobacter condimenti* QL 17031.1	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	4-5-3-5-4	4,2	+	1	a
2020	14a	Infant formula with iron, 0-12 Months	*Cronobacter condimenti* QL 17031.1	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	4-5-3-5-4	4,2	+	1	a
2020	20a	Organic Stage 2 infant formula	*Cronobacter sakazakii* QL 120117-1	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	3-3-5-2-6	3,8	+	1	a
2020	2b	Rice and banana apple - infant cereal with probiotics	*Cronobacter sakazakii* QL 120117-1	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	3-3-5-2-6	3,8	+	1	b
2020	3b	Multi-Grain - infant cereal with probiotics	*Cronobacter sakazakii* QL 120117-1	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	3-3-5-2-6	3,8	+	1	b
2020	6b	Oats and Quinoa - infant cereal with probiotics	*Cronobacter sakazakii* QL 120117-1	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	3-3-5-2-6	3,8	+	1	b
2020	8b	Oatmeal Infant cereal with probiotics	*Cronobacter sakazakii* QL 120117-1	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	3-3-5-2-6	3,8	+	1	b
2020	13b	Good Start - infant formula with probiotics	*Cronobacter turicensis* QL 17031.5	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	5-3-7-4-5	4,8	+	1	b
2020	18b	Sensitive - infant formula with probiotics	*Cronobacter turicensis* QL 17031.5	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	5-3-7-4-5	4,8	+	1	b
2020	19b	Fat malabsorption problems - infant formula with probiotics	*Cronobacter turicensis* QL 17031.5	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	5-3-7-4-5	4,8	+	1	b
2020	1c	Organic Coconut oil	*Cronobacter sakazakii* FSL F6-044	Food	Heat treatment (50 - 55°C for 10-15 minutes)	0,56	4-2-3	3	+	1	c
2020	2c	Whole Wheat Flour	*Cronobacter turicensis* QL 17031.5	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	5-3-7-4-5	4,8	+	1	c
2020	5c	Old Fashioned Oats	*Cronobacter turicensis* QL 17031.5	Infant Formula	Storage for 2 weeks at room temperature (20-25°C)	/	5-3-7-4-5	4,8	+	1	c
2020	8c	Organic Soy Oil	*Cronobacter sakazakii* FSL F6-044	Food	Heat treatment (50 - 55°C for 10-15 minutes)	0,56	4-2-3	3	+	1	c
2020	11c	Non-fat dry milk powder	*Cronobacter sakazakii* QL 111717-2	Powdered Milk	Storage for 2 weeks at room temperature (20-25°C)	/	3-2-4-1	2,5	+	1	c
2020	13c	Instant milk powder	*Cronobacter sakazakii* QL 111717-2	Powdered Milk	Storage for 2 weeks at room temperature (20-25°C)	/	3-2-4-1	2,5	+	1	c
2020	14c	Skim milk powder	*Cronobacter sakazakii* QL 111717-2	Powdered Milk	Storage for 2 weeks at room temperature (20-25°C)	/	3-2-4-1	2,5	+	1	c
2020	16c	Whey protein	*Cronobacter sakazakii* QL 111717-2	Powdered Milk	Storage for 2 weeks at room temperature (20-25°C)	/	3-2-4-1	2,5	+	1	c
2020	17c	Organic sunflower oil	*Cronobacter sakazakii* FSL F6-044	Food	Heat treatment (50 - 55°C for 10-15 minutes)	0,56	4-2-3	3	+	1	c

Year of analysis	Sample N°	Product	Product (French name)	Artificial contaminations (ADRIA)					Global result	Category	Type
				Strain	Origin	Injury protocol	Injury measu-rement	Inoculation level CFU/sample Mean			
2019	**7720**	**Infant cereals without probiotic multi cereals**	**Céréales infantiles sans probiotique multicéréales**	*Cronobacter sakazakii* Ad2848	Cereals	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,5	+	2	a
2019	**7721**	**Infant cereals without probiotic brioche**	**Céréales infantiles sans probiotique saveur briochée**	*Cronobacter sakazakii* Ad2848	Cereals	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,5	+	2	a
2019	**7722**	**Infant cereals without probiotic 5 cereals**	**Céréales infantiles sans probiotique 5 céréales**	*Cronobacter sakazakii* Ad2848	Cereals	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,5	+	2	a
2019	**7723**	**Infant cereals without probiotic vanilla (10 months+)**	**Céréales infantiles sans probiotique babivanille (10+ mois)**	*Cronobacter sakazakii* Ad2848	Cereals	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,5	+	2	a
2019	**7724**	**Infant cereals without probiotic cocoa biscuit**	**Céréales infantiles sans probiotique chocobiscuité**	*Cronobacter sakazakii* Ad2848	Cereals	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,5	+	2	a
2019	**7725**	**Infant cereals without probiotic vanilla**	**Céréales infantiles sans probiotique vanille gourmande**	*Cronobacter sakazakii* Ad2848	Cereals	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,5	+	2	a
2019	**7726**	**Infant formula stage 2**	**Poudre de lait infantile 2ème âge sans probiotique**	*Cronobacter sakazakii* Ad1418	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	2,3	+	2	a
2019	**7727**	**Infant formula stage 2**	**Poudre de lait infantile 2ème âge sans probiotique**	*Cronobacter sakazakii* Ad1418	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	2,3	+	2	a
2019	**7728**	**Infant formula stage 2 organic**	**Poudre de lait infantile bio 2ème âge sans probiotique**	*Cronobacter sakazakii* Ad1418	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	2,3	+	2	a
2019	**7729**	**Follow-up infant formula**	**Poudre de lait infantile sans probiotique lait de suite bio 2ème âge**	*Cronobacter sakazakii* Ad1418	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	2,3	+	2	a
2019	**7730**	**Infant formula stage 1**	**Poudre de lait infantile sans probiotique premier âge**	*Cronobacter sakazakii* Ad1418	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	2,3	+	2	a
2019	**7731**	**Infant formula stage 2**	**Poudre de lait infantile sans probiotique 2ème âge**	*Cronobacter sakazakii* Ad1418	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	2,3	+	2	a
2019	**7732**	**Infant formula with probiotics stage 2 (B.infantis 8,3.10⁴ CFU/g)**	**Poudre de lait avec probiotiques 2ème âge (B.infantis 8,3.10⁴ CFU/g)**	*Cronobacter turincensis* Ad1445	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,4	+	2	b
2019	**7733**	**Infant formula with probiotics thick formula with starch stage 2 (Bifidobacteria 8,3.10⁴ CFU/g)**	**Poudre de lait avec probiotiques formule épaissie amidon 2ème âge (Bifidobactéries 8,3.10⁴ CFU/g)**	*Cronobacter turincensis* Ad1445	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,4	+	2	b
2019	**7734**	**Infant formula with probiotics thick formula stage 2 (B.infantis 3,7.10⁶ CFU/g)**	**Poudre de lait avec probiotiques actigest formule épaisse 2ème âge (B.infantis 8,3.10⁴ CFU/g)**	*Cronobacter turincensis* Ad1445	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,4	+	2	b
2019	**7735**	**Infant formula with probiotics stage 2 (L. reuteri 9,8.10⁵ CFU/g)**	**Poudre de lait avec probiotiques relais 2ème âge (L. reuteri 9,8.10⁵ CFU/g)**	*Cronobacter sakazakii* Ad2349	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	2,9	+	2	b
2019	**7736**	**Infant formula with probiotics thick formula stage 2 (Bifidobacteria 1,5.10³ CFU/g)**	**Poudre de lait avec probiotiques formule épaissie 2ème âge (Bifidobacteries 1,5.10³ CFU/g)**	*Cronobacter sakazakii* Ad2349	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	2,9	+	2	b
2019	**7737**	**Infant formula with probiotics stage 2 (B.lactis 5,2.10⁵ CFU/g)**	**Poudre de lait avec probiotiques 2ème âge (B.lactis 5,2.10⁵ CFU/g)**	*Cronobacter sakazakii* Ad2349	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	2,9	-	2	b
2019	**7738**	**Infant cereals with probiotics vanilla (B. lactis 5,3.10⁵ CFU/g)**	**Céréales infantiles vanille avec probiotiques (B.lactis 5,3.10⁵ CFU/g)**	*Cronobacter sakazakii* Ad2849	Cereals	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,1	+	2	b
2019	**7739**	**Infant cereals with probiotics 5 cereals (B. lactis 2,7.10⁶ CFU/g)**	**Céréales infantiles 5 céréales avec probiotiques (B.lactis 2,7.10⁶ CFU/g)**	*Cronobacter sakazakii* Ad2849	Cereals	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,1	+	2	b
2019	**7740**	**Infant cereals with probiotics cocoa vanilla (B. lactis 4,5.10⁶ CFU/g)**	**Céréales infantiles vanille chocolat au lait avec probiotiques (B.lactis 4,5.10⁶ CFU/g)**	*Cronobacter sakazakii* Ad2849	Cereals	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,1	+	2	b
2019	**7741**	**Infant cereals with probiotics biscuit (B. lactis 1,1.10⁶ CFU/g)**	**Céréales infantiles saveur biscuit avec probiotiques (B.lactis 1,1.10⁶ CFU/g)**	*Cronobacter sakazakii* Ad2849	Cereals	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,1	+	2	b
2019	**7742**	**Infant cereals with probiotics oat and wheat (B. lactis 2,7.10⁶ CFU/g)**	**Céréales infantiles avoine et blé avec probiotiques (B.lactis 2,7.10⁶ CFU/g)**	*Cronobacter sakazakii* Ad2849	Cereals	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,1	+	2	b
2019	**7743**	**Infant cereals with probiotics biscuit and nut (B. lactis 4,0.10⁶ CFU/g)**	**Céréales infantiles noisette biscuit avec probiotiques (B.lactis 4,0.10⁶ CFU/g)**	*Cronobacter sakazakii* Ad2849	Cereals	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,1	+	2	b

Year of analysis	Sample N°	Product	Product (French name)	Artificial contaminations (ADRIA)					Global result	Category	Type
				Strain	Origin	Injury protocol	Injury measu-rement	Inoculation level CFU/sample Mean			
2019	**7744**	**Maltodextrin**	**Maltodextrine**	*Cronobacter dublinensis* DSM18705	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,0	+	2	c
2019	**7745**	**Maltodextrin**	**Maltodextrine**	*Cronobacter sakazakii* Ad947	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	0,4	+	2	c
2019	**7746**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	*Cronobacter dublinensis* DSM18705	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,0	+	2	c
2019	**7747**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	*Cronobacter sakazakii* Ad947	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	0,4	+	2	c
2019	**7748**	**Whey**	**Lactoserum**	*Cronobacter dublinensis* DSM18705	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,0	-	2	c
2019	**7749**	**Whey**	**Lactoserum**	*Cronobacter sakazakii* Ad947	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	0,4	-	2	c
2019	**7750**	**Whey**	**Lactoserum**	*Cronobacter sakazakii* Ad947	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	0,4	+	2	c
2019	**7751**	**Maltodextrin**	**Maltodextrine**	*Cronobacter sakazakii* Ad947	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	0,4	+	2	c
2019	**7752**	**Lactoserum**	**Lactoserum**	*Cronobacter dublinensis* DSM18705	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,0	+	2	c
2019	**7753**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	*Cronobacter sakazakii* Ad947	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	0,4	+	2	c
2019	**7754**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	*Cronobacter dublinensis* DSM18705	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,0	+	2	c
2019	**7755**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	*Cronobacter dublinensis* DSM18705	Milk powder	Seeding Lyophilised strain 2 weeks ambiant temperature	/	1,0	+	2	c

#	Matrix	Strain	Reference	Origin	Injury protocol	Injury measurement	Inoculation level CFU/sample	Result
3110714	BIP dust with probiotics *L.reuteri* DSM 17938	*Cronobacter sakazakii*	JCT201	Milk powder	Spiking	0,93	2,4	+
3110715	Cereal residues	*Cronobacter dublinensis*	KGRB59	Wheat	Spiking	1,47	2,0	+
3110722	Cereal residues	*Cronobacter malonaticus*	HSE385	Cereals	Spiking	0,57	2,6	+
3110723	Milk powder residues without probiotics	*Cronobacter sakazakii*	JCT201	Milk powder	Spiking	0,93	2,4	+
3178250	Residues PIF with probiotics for children of 1 at 3 years old	*Cronobacter turicensis*	HZN090	Dairy environment	Spiking	0,6	4,6	+
3178251	Residues PIF with probiotics for children of 1 at 3 years old	*Cronobacter sakazakii*	JBU888	Dairy environment	Spiking	1,3	2,6	+
3178252	Infant cereals residues with 3 cereals and vanilla	*Cronobacter dublinensis*	KGRB59	Wheat	Spiking	1,2	1,8	+
3178253	Infant cereals residues with 5 cereals and banae and apple	*Cronobacter dublinensis*	KGRB60	Wheat	Spiking	1,2	1,8	+
3178254	Infant cereals dusts with wholegrain cereals and cocoa	*Cronobacter malonaticus*	HSE385	Cereals	Spiking	1,2	3,2	+
3112798	Infant cereals dusts with 8 wholegrain cereals	*Cronobacter malonaticus*	HSE386	Cereals	Spiking	1,4	4,8	+
3110716	Tank milk rinse water.	*Cronobacter turicensis*	HZN090	Dairy environment	Seeding	/	2,8	+
3110717	Process water cheese shop	*Cronobacter sakazakii*	JCT201	Milk powder	Seeding	/	3,2	+
3110724	Tank milk rinse water.	*Cronobacter sakazakii*	JCT201	Milk powder	Spiking	0,93	2,4	+
3055096	Process water cheese shop	*Cronobacter malonaticus*	HSE385	Cereals	Spiking	0,57	2,6	+
3112787	Cleaning water	*Cronobacter sakazakii*	KQEK24	Biscuit flour	Seeding	/	2,6	+
3112788	Cleaning water:infant cereals dusts with wholegrain cereals and cocoa	*Cronobacter sakazakii*	KQEK24	Biscuit flour	Seeding	/	2,6	+
3112789	Cleaning water :infant cereals dusts with 8 wholegrain cereals	*Cronobacter sakazakii*	KJEM47	Cereal flour	Seeding	/	3,0	+
3112799	Cleaning water: PIF with probiotics	*Cronobacter sakazakii*	JBU888	Dairy environment	Spiking	0,6	1,8	+
3112801	Cleaning water: organic infant cereals residues with 3 cereals and vanilla	*Cronobacter sakazakii*	KJEM47	Cereal flour	Spiking	0,5	2,8	+
3112802	Tank milk rinse water.	*Cronobacter sakazakii*	JBU888	Dairy environment	Spiking	0,6	1,8	+
3112800	Cleaning water: PIF without probiotic for children of 1 at 3 years old	*Cronobacter sakazakii*	JAY280	Dairy environment	Spiking	0,6	3,6	-
3110718	Swab: milking sleeve	*Cronobacter turicensis*	HZN090	Dairy environment	Seeding	/	2,8	+
3110719	Sponge: dairy wall	*Cronobacter turicensis*	HZN090	Dairy environment	Seeding	/	2,8	+
3110720	Swipe: Dairy sink syphon	*Cronobacter sakazakii*	JCT201	Milk powder	Seeding	/	3,2	+
3110721	Swipe : Cereal Soil	*Cronobacter malonaticus*	HSE385	Cereals	Seeding	/	2,6	+
3071938	Sponge:Inside milk cooling tank	*Cronobacter sakazakii*	JBU888	Dairy environment	Spiking	1,6	1,8	+
3071942	Sponge:Storage cage infant cereals	*Cronobacter sakazakii*	KQEK24	Biscuit flour	Spiking	1,0	2,4	+
3112790	Swipe:carpet infant cereals	*Cronobacter sakazakii*	KJEM47	Cereal flour	Seeding	/	3,0	+
3112804	Swab:bucket for the milk	*Cronobacter sakazakii*	JAY280	Dairy environment	Spiking	0,6	3,6	+

INFANT FORMULA AND INFANT CEREALS WITH AND WITHOUT PROBIOTICS INCLUDING INGREDIENTS (30 g sample size) - Study realized by Q-Laboratories Inc.																									
Year of analysis	Sample N°	Product	Products (French name)	Reference method				Alternative method: RAPID'*Sakazakii* 30 g + 270 mL BPW - 16 h 2 h at 37°C ± 1°C															Category	Type
								RAPID'*Sakazakii* (direct streaking 10 µl)																	
									Confirmation										Negative samples (Subculture CSB+ streaking onto CCI)	All confir-matory tests	Final result	Agree-ment		
									Without purification step						With purification step										
				CCI	Oxidase	Identification	Result	Typical colonies	Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/ APF Fast)			Oxidase	Biochemical gallery (API ID32)										
											Cq	I.C. Cq	Final result												
2020	1a	Organic baby cereal	Céréales infantiles bio	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,24	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	a
2020	2a	Step 1 infant cereal	Céréales infantiles 1er âge	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	a
2020	3a	Step 3 infant cereal	Céréales infantiles 3ème âge	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	a
2020	4a	Stage 1 infant cereal	Céréales infantiles 1er âge	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	a
2020	5a	Stage 2 infant cereal	Céréales infantiles 2ème âge	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,58	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	a
2020	6a	**Multigrain banana infant cereal**	**Céréales infantiles multigraines, banane**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	30,92	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	a
2020	7a	Oatmeal	Avoine infantile	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	a
2020	8a	Single grain infant cereal	Céréales infantiles	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	a
2020	9a	**Oatmeal banana infant cereal**	**Avoine infantiles, banane**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,38	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	a
2020	10a	**single grain raisin infant cereal**	**Céréales infantiles raisins**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,21	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	a
2020	11a	Neosure infant formula	Poudre de lait infantiles	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	a
2020	12a	**Pure Bliss Infant Formula**	**Poudres de lait infantiles**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,42	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	a
2020	13a	State 1 Non-GMO Infant Formula	Poudres de lait infantiles, 1er âge	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,55	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	a
2020	14a	**Infant formula with iron, 0-12 Months**	**Poudre de lait infantiles, 0-12 mois, avec fer**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,47	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	a
2020	15a	Stage 23 infant formula	Poudre de lait infantiles, 1er-2ème âge	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	a
2020	16a	Soy based infant formula	Poudre de lait infantiles, soja	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	a
2020	17a	Non-GMO Infant Formula	Poudre de lait infantiles sans OGM	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,69	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	a
2020	18a	Infant formula with iron	Poudre de lait infantiles, avec fer	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,42	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	a
2020	19a	Organic infant formula with lactose	Poudre de lait infantiles, avec lactose	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	a
2020	20a	**Organic Stage 2 infant formula**	**Poudre de lait infantiles, 2ème âge**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,24	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	a
2020	1b	Frawler - infant cereal with probiotics ($8{,}2.10^5$ CFU/g)	Céréales infantiles avec probiotiques	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	b
2020	2b	**Rice and banana apple - infant cereal with probiotics ($4{,}9.10^6$ CFU/g)**	**Céréales infantiles avec probiotiques, riz, banane, pomme**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,4	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	b
2020	3b	**Multi-Grain - infant cereal with probiotics ($6{,}5.10^6$ CFU/g)**	**Céréales infantiles avec probiotiques, multi-graines**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,59	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	b

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									Without purification step						With purification step											
				CCI	Oxidase	Identification	Result	Typical colonies	Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/ APF Fast)			Oxidase	Biochemical gallery (API ID32)											
											Cq	I.C. Cq	Final result													
2020	4b	Organic with DHA - Infant Cereal with probiotics (2,3.10^6 CFU/g)	Céréales infantiles avec probiotiques, bio avec DHA	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,26	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	b
2020	5b	Single grain rice - infant cereal with probiotics (5,0.10^6 CFU/g)	Céréales infantiles avec probiotiques, riz	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,3	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	b
2020	6b	**Oats and Quinoa - infant cereal with probiotics (8,9.10^5 CFU/g)**	**Céréales infantiles avec probiotiques, avoine et quinoa**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	25	31,41	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	b
2020	7b	Singlegrain variety pack - infant cereal with probiotics (8,2.10^6 CFU/g)	Céréales infantiles avec probiotiques	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	b
2020	8b	**Oatmeal Infant cereal with probiotics (1,3.10^6 CFU/g)**	**Avoine infantile avec probiotiques**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,34	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	b
2020	9b	Organic oatmeal with choline - infant cereal with probiotics (1,8.10^6 CFU/g)	Céréales infantiles avec probiotiques, avoine	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	b
2020	10b	Oatmeal banana strawberry - infant cereal with probiotics (4,5.10^6 CFU/g)	Céréales infantiles avec probiotiques, avoine, banane, fraise	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,53	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	b
2020	11b	Comfort - infant formula with probiotics (9,6.105 CFU/g)	Poudre de lait infantiles avec probiotiques	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	b
2020	12b	With iron - infant formula with probiotics (7,2.10^5 CFU/g)	Poudre de lait infantiles avec probiotiques avec fer	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	b
2020	13b	**Good Start - infant formula with probiotics (6,8.10^6 CFU/g)**	**Poudre de lait infantiles avec probiotiques avec fer**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	34,68	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	b
2020	14b	For spit up - infant formula with probiotics (8,8.10^6 CFU/g)	Poudre de lait infantiles avec probiotiques avec fer	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	b
2020	15b	Total comfort - infant formula with probiotics (2,9.10^6 CFU/g)	Poudre de lait infantiles avec probiotiques avec fer	-	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	1	b
2020	16b	Organic Lactose - infant formula with probiotics (5,7.10^6 CFU/g)	Poudre de lait infantiles avec probiotiques, avec lactose bio	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,53	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	b
2020	17b	Milk based - infant formula with probiotics (3,6.10^6 CFU/g)	Poudre de lait infantiles avec probiotiques	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,14	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	b

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Year of analysis	Sample N°	Product	Products (French name)	Reference method				Alternative method: RAPID'*Sakazakii* 30 g + 270 mL BPW - 16 h 2 h at 37°C ± 1°C														Category	Type
								RAPID'*Sakazakii* (direct streaking 10 µl)												Negative samples (Subculture CSB+ streaking onto CCI)	All confir-matory tests	Final result	Agree-ment		
									Confirmation															
									Without purification step							With purification step								
				CCI	Oxidase	Identification	Result	Typical colonies	Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/ APF Fast)			Oxidase	Biochemical gallery (API ID32)									
											Cq	I.C. Cq	Final result											
2020	18b	**Sensitive - infant formula with probiotics (7,8.10^5 CFU/g)**	**Poudre de lait infantiles avec probiotiques**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,43	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	b
2020	19b	**Fat malabsorption problems - infant formula with probiotics (3,1.10^6 CFU/g)**	**Poudre de lait infantiles avec probiotiques, problème d'absorption de la matière grasse**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,25	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	b
2020	20b	Gentle start - infant formula with probiotics (6,4.10^6 CFU/g)	Poudre de lait infantiles avec probiotiques, 1er âge	-	/	/	-	-	/	/	/	/	/	/	/	/	-	-	-	**NA**	1	b
2020	1c	**Organic Coconut oil**	**Huile de coco bio**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,58	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	c
2020	2c	**Whole Wheat Flour**	**Farine de blé entier**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	27	31,6	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	c
2020	3c	Organic Brown Rice Flour	Farine de riz bio	+1/2	-	*Cronobacter* spp.	+	d (- on several plates)	-	*Enterobacter cloacae*	-	32,27	-	-	*Enterobacter cloacae*	-	-	-	**ND**	1	c
2020	4c	Quinoa Flour	Farine de quinoa	-	/	/	-	-	/	/	/	/	/	/	/	/	-	-	-	**NA**	1	c
2020	5c	**Old Fashioned Oats**	**Avoine**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,51	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	c
2020	6c	Brown Rice Flour	Farine de riz	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	29	31,62	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	c
2020	7c	All purpose Flour	Farine	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	30	32,02	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	c
2020	8c	**Organic Soy Oil**	**Huile de soja bio**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	30	32,18	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	c
2020	9c	Sodium Citrate	Citrate de sodium	-	/	/	-	-	/	/	/	/	/	/	/	/	-	-	-	**NA**	1	c
2020	10c	Folic Acid	Acide folique	-	/	/	-	-	/	/	/	/	/	/	/	/	-	-	-	**NA**	1	c
2020	11c	**Non-fat dry milk powder**	**Poudre de lait écrémé**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	30	31,96	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	c
2020	12c	Organic goat milk powder	Poudre de lait de chèvre bio	-	/	/	-	-	/	/	/	/	/	/	/	/	-	-	-	**NA**	1	c
2020	13c	**Instant milk powder**	**Poudre de lait**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	29	31,47	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	c
2020	14c	**Skim milk powder**	**Poudre de lait écrémé**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	25	31,09	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	c
2020	15c	Organic fat free milk powder	Poudre de lait écrémé bio	+1/2	-	*Cronobacter* spp.	+	d (- on several plates)	-	*Enterobacter cloacae*	-	32,52	-	-	*Enterobacter cloacae*	-	-	-	**ND**	1	c
2020	16c	Whey protein	**Lactoserum**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	29	32,16	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	c
2020	17c	Organic sunflower oil	**Huile de tournesol bio**	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,63	+	-	*Cronobacter* spp.	/	+	+	**PA**	1	c
2020	18c	Manganese sulfate	Sulfate de manganese	-	/	/	-	-	/	/	/	/	/	/	/	/	-	-	-	**NA**	1	c

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								RAPID'*Sakazakii* (direct streaking 10 µl)																	
									Confirmation																
									Without purification step							With purification step									
				CCI	Oxidase	Identification	Result	Typical colonies	Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/ APF Fast)			Oxidase	Biochemical gallery (API ID32)										
											Cq	I.C. Cq	Final result												
2020	19c	Sinc sulfate	Sulfate de zinc	+1/2	-	*Cronobacter* spp.	+	+M	-	*Cronobacter* spp.	28	31,59	+	-	*Cronobacter* spp.				/	+	+	**PA**	1	c
2020	20c	Biotin	Biotine	-	/	/	-	-	/	/	/	/	/	/	/				-	-	-	**NA**	1	c

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				30 g + 270 mL BPW 16 h at 37°C ± 1°C + enrichment broth storage for 48h at 5 ±3 °C										30 g + 270 mL BPW 16 h at 37°C ± 1°C + plates storage for 72h at 5 ±3 °C									
				RAPID'*Sakazakii* (direct streaking 10 µl)										Rapid'sakazakii (direct streaking 10 µl)										
				Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment		Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment			
					Without purification step										Without purification step										
					Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/APF Fast)								Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/APF Fast)								
							Cq	I.C. Cq	Final result								Cq	I.C. Cq	Final result						
2020	1a	Organic baby cereal	+	+M	-	*Cronobacter* spp.	26	32,04	+	+	+	PA		+M	-	*Cronobacter* spp.	29	31,86	+	+	+	PA	1	a
2020	2a	Step 1 infant cereal	-											-	/	/	/	/	/	/	-	NA	1	a
2020	3a	Step 3 infant cereal	-											-	/	/	/	/	/	/	-	NA	1	a
2020	4a	Stage 1 infant cereal	-											-	/	/	/	/	/	/	-	NA	1	a
2020	5a	Stage 2 infant cereal	+	+M	-	*Cronobacter* spp.	26	31,72	+	+	+	PA		+M	-	*Cronobacter* spp.	29	31,48	+	+	+	PA	1	a
2020	6a	Multigrain banana infant cereal	+	+M	-	*Cronobacter* spp.	28	30,65	+	+	+	PA		+M	-	*Cronobacter* spp.	25	30,52	+	+	+	PA	1	a
2020	7a	Oatmeal	-											-	/	/	/	/	/	/	-	NA	1	a
2020	8a	Single grain infant cereal	-											-	/	/	/	/	/	/	-	NA	1	a
2020	9a	Oatmeal banana infant cereal	+	+M	-	*Cronobacter* spp.	26	32,11	+	+	+	PA		+M	-	*Cronobacter* spp.	29	31,96	+	+	+	PA	1	a
2020	10a	single grain raisin infant cereal	+	+M	-	*Cronobacter* spp.	26	32,47	+	+	+	PA		+M	-	*Cronobacter* spp.	29	31,57	+	+	+	PA	1	a
2020	11a	Neosure infant formula	-											-	/	/	/	/	/	/	-	NA	1	a
2020	12a	Pure Bliss Infant Formula	+	+M	-	*Cronobacter* spp.	26	31,98	+	+	+	PA		+M	-	*Cronobacter* spp.	29	31,53	+	+	+	PA	1	a
2020	13a	State 1 Non-GMO Infant Formula	+	+M	-	*Cronobacter* spp.	26	31,62	+	+	+	PA		+M	-	*Cronobacter* spp.	28	31,52	+	+	+	PA	1	a
2020	14a	Infant formula with iron, 0-12 Months	+	+M	-	*Cronobacter* spp.	26	32,2	+	+	+	PA		+M	-	*Cronobacter* spp.	29	31,75	+	+	+	PA	1	a
2020	15a	Stage 23 infant formula	-											-	/	/	/	/	/	/	-	NA	1	a
2020	16a	Soy based infant formula	-											-	/	/	/	/	/	/	-	NA	1	a
2020	17a	Non-GMO Infant Formula	+	+M	-	*Cronobacter* spp.	26	31,97	+	+	+	PA		+M	-	*Cronobacter* spp.	29	31,52	+	+	+	PA	1	a
2020	18a	Infant formula with iron	+	+M	-	*Cronobacter* spp.	26	31,89	+	+	+	PA		+M	-	*Cronobacter* spp.	29	31,4	+	+	+	PA	1	a
2020	19a	Organic infant formula with lactose	-											-	/	/	/	/	/	/	-	NA	1	a
2020	20a	Organic Stage 2 infant formula	+	+M	-	*Cronobacter* spp.	25	31,63	+	+	+	PA		+M	-	*Cronobacter* spp.	28	31,52	+	+	+	PA	1	a
2020	1b	Frawler - infant cereal with probiotics ($8,2.10^5$ CFU/g)	-											-	/	/	/	/	/	/	-	NA	1	b
2020	2b	Rice and banana apple - infant cereal with probiotics ($4,9.10^6$ CFU/g)	+	+M	-	*Cronobacter spp.*	25	30,85	+	+	+	PA		+M	-	*Cronobacter spp.*	29	29,16	+	+	+	PA	1	b
2020	3b	Multi-Grain - infant cereal with probiotics ($6,5.10^6$ CFU/g)	+	+M	-	*Cronobacter spp.*	25	30,88	+	+	+	PA		+M	-	*Cronobacter spp.*	29	32,08	+	+	+	PA	1	b
2020	4b	Organic with DHA - Infant Cereal with probiotics ($2,3.10^6$ CFU/g)	+	+M	-	*Cronobacter spp.*	24	28,48	+	+	+	PA		+M	-	*Cronobacter spp.*	29	31,9	+	+	+	PA	1	b
2020	5b	Single grain rice - infant cereal with probiotics ($5,0.10^6$ CFU/g)	+	+M	-	*Cronobacter* spp.	25	30,52	+	+	+	PA		+M	-	*Cronobacter* spp.	29	31,55	+	+	+	PA	1	b
2020	6b	Oats and Quinoa - infant cereal with probiotics ($8,9.10^5$ CFU/g)	+	+M	-	*Cronobacter* spp.	26	31,87	+	+	+	PA		+M	-	*Cronobacter* spp.	29	31,49	+	+	+	PA	1	b

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				RAPID'*Sakazakii* (direct streaking 10 µl)										Rapid'sakazakii (direct streaking 10 µl)										
				Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment		Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment			
					Without purification step										Without purification step										
					Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/APF Fast)								Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/APF Fast)								
							Cq	I.C. Cq	Final result								Cq	I.C. Cq	Final result						
2020	7b	Singlegrain variety pack - infant cereal with probiotics (8,2.10^6 CFU/g)	-											-	/	/	/	/	/	/	-	**NA**	1	b
2020	8b	Oatmeal Infant cereal with probiotics (1,3.10^6 CFU/g)	+	+M	-	*Cronobacter* spp.	26	31,71	+	+	+	**PA**		+M	-	*Cronobacter* spp..	29	31,6	+	+	+	**PA**	1	b
2020	9b	Organic oatmeal with choline - infant cereal with probiotics (1,8.10^6 CFU/g)	-											-	/	/	/	/	/	/	-	**NA**	1	b
2020	10b	Oatmeal banana strawberry - infant cereal with probiotics (4,5.10^6 CFU/g)	+	+M	-	*Cronobacter* spp.	26	31,85	+	+	+	**PA**		+M	-	*Cronobacter* spp.	29	32,01	+	+	+	**PA**	1	b
2020	11b	Comfort - infant formula with probiotics (9,6.105 CFU/g)	-											-	/	/	/	/	/	/	-	**NA**	1	b
2020	12b	With iron - infant formula with probiotics (7,2.10^5 CFU/g)	-											-	/	/	/	/	/	/	-	**NA**	1	b
2020	13b	Good Start - infant formula with probiotics (6,8.10^6 CFU/g)	+	+M	-	*Cronobacter* spp.	26	32,12	+	+	+	**PA**		+M	-	*Cronobacter* spp.	29	31,81	+	+	+	**PA**	1	b
2020	14b	For spit up - infant formula with probiotics (8,8.10^6 CFU/g)	-											-	/	/	/	/	/	/	-	**NA**	1	b
2020	15b	Total comfort - infant formula with probiotics (2,9.10^6 CFU/g)	-											-	/	/	/	/	/	/	-	**NA**	1	b
2020	16b	Organic Lactose - infant formula with probiotics (5,7.10^6 CFU/g)	+	+M	-	*Cronobacter* spp.	26	32,51	+	+	+	**PA**		+M	-	*Cronobacter* spp.	29	32,01	+	+	+	**PA**	1	b
2020	17b	Milk based - infant formula with probiotics (3,6.10^6 CFU/g)	+	+M	-	*Cronobacter* spp.	30	31,72	+	+	+	**PA**		+M	-	*Cronobacter* spp.	29	31,59	+	+	+	**PA**	1	b
2020	18b	Sensitive - infant formula with probiotics (7,8.105 CFU/g)	+	+M	-	*Cronobacter* spp.	26	32,1	+	+	+	**PA**		+M	-	*Cronobacter* spp.	29	31,17	+	+	+	**PA**	1	b
2020	19b	Fat malabsorption problems - infant formula with probiotics (3,1.10^6 CFU/g)	+	+M	-	*Cronobacter* spp.	25	31,94	+	+	+	**PA**		+M	-	*Cronobacter* spp.	29	31,33	+	+	+	**PA**	1	b
2020	20b	Gentle start - infant formula with probiotics (6,4.10^6 CFU/g)	-											-	/	/	/	/	/	/	-	**NA**	1	b
2020	1c	Organic Coconut oil	+	+M	-	*Cronobacter* spp.	29	31,83	+	+	+	**PA**		+M	-	*Cronobacter* spp.	26	31,22	+	+	+	**PA**	1	c
2020	2c	Whole Wheat Flour	+	+M	-	*Cronobacter* spp.	29	31,55	+	+	+	**PA**		+M	-	*Cronobacter* spp.	26	31,55	+	+	+	**PA**	1	c
2020	3c	Organic Brown Rice Flour	+	d (- on several plates)	-	*Enterobacter cloacae*	-	32,26	-	-	-	**ND**		d	-	*Enterobacter cloacae*	-	32	-	-	-	**ND**	1	c
2020	4c	Quinoa Flour	-											-	/	/	/	/	/	/	-	**NA**	1	c

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					Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/APF Fast)								Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/APF Fast)								
							Cq	I.C. Cq	Final result								Cq	I.C. Cq	Final result						
2020	5c	Old Fashioned Oats	+	+M	-	*Cronobacter* spp.	29	31,27	+	+	+	PA		+M	-	*Cronobacter* spp.	26	31,14	+	+	+	PA	1	c
2020	6c	Brown Rice Flour	+	+M	-	*Cronobacter* spp.	29	31,59	+	+	+	PA		+M	-	*Cronobacter* spp.	26	31,22	+	+	+	PA	1	c
2020	7c	All purpose Flour	+	+M	-	*Cronobacter* spp.	29	31,51	+	+	+	PA		+M	-	*Cronobacter* spp.	26	31,23	+	+	+	PA	1	c
2020	8c	Organic Soy Oil	+	+M	-	*Cronobacter* spp.	29	31,33	+	+	+	PA		+M	-	*Cronobacter* spp.	26	31,17	+	+	+	PA	1	c
2020	9c	Sodium Citrate	-											-	/	/	/	/	/	/	-	NA	1	c
2020	10c	Folic Acid	-											-	/	/	/	/	/	/	-	NA	1	c
2020	11c	Nonfat dry milk powder	+	+M	-	*Cronobacter* spp.	28	31,11	+	+	+	PA		+M	-	*Cronobacter* spp.	26	31,47	+	+	+	PA	1	c
2020	12c	Organic goat milk powder	-			*Cronobacter* spp.								-	/	/	/	/	/	/	-	NA	1	c
2020	13c	Instant milk powder	+	+M	-	*Cronobacter* spp.	29	31,43	+	+	+	PA		+M	-	*Cronobacter* spp.	26	30,95	+	+	+	PA	1	c
2020	14c	Skim milk powder	+	+M	-	*Cronobacter* spp.	29	31,32	+	+	+	PA		+M	-	*Cronobacter* spp.	26	31,45	+	+	+	PA	1	c
2020	15c	Organic fat free milk powder	+	d (- on several plates)	-	*Enterobacter cloacae*	-	32,33	-	-	-	ND		d	-	*Enterobacter cloacae*	-	31,61	-	-	-	ND	1	c
2020	16c	Whey protein	+	+M	-	*Cronobacter* spp.	29	31,33	+	+	+	PA		+M	-	*Cronobacter* spp.	26	31,61	+	+	+	PA	1	c
2020	17c	Organic sunflower oil	+	+M	-	*Cronobacter* spp.	29	31,77	+	+	+	PA		+M	-	*Cronobacter* spp.	26	31,2	+	+	+	PA	1	c
2020	18c	Manganese sulfate	-											-	/	/	/	/	/	/	-	NA	1	c
2020	19c	Sinc sulfate	+	+M	-	*Cronobacter* spp.	29	32,08	+	+	+	PA		+M	-	*Cronobacter* spp.	26	31,06	+	+	+	PA	1	c
2020	20c	Biotin	-											-	/	/	/	/	/	/	-	NA	1	c

INFANT FORMULA AND INFANT CEREALS WITH AND WITHOUT PROBIOTICS INCLUDING INGREDIENTS (375 g sample size) - Study realised by ADRIA																							
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								RAPID'*Sakazakii* (direct streaking 10 µl)									Negative samples (Subculture CSB + streaking onto CCI)	All confir-matory tests	Final result	Agree-ment		
									Confirmation														
									Without purification step						With purification step								
				CCI	Oxidase	Identification	Result	Typical colonies	Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/APF Fast)			Oxidase	Biochemical gallery (API ID32)								
											Target Cq	I.C. Cq	Final result										
2019	**7720**	**Infant cereals without probiotic multi cereals**	**Céréales infantiles sans probiotique multicéréales**	st	/	/	-	+p	-	*Cronobacter* spp.	22,57	32,74	+	-	*Cronobacter* spp.	/	+	+	**PD**	2	a
2019	**7721**	**Infant cereals without probiotic brioche**	**Céréales infantiles sans probiotique saveur briochée**	+p	-	+	+	+p	-	*Cronobacter* spp.	23,05	32,56	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	a
2019	**7722**	**Infant cereals without probiotic 5 cereals**	**Céréales infantiles sans probiotique 5 céréales**	+p	-	+	+	+p	-	*Cronobacter* spp.	23,26	32,23	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	a
2019	**7723**	**Infant cereals without probiotic vanilla (10 months+)**	**Céréales infantiles sans probiotique babivanille (10+ mois)**	+p	-	+	+	+p	-	*Cronobacter* spp.	24,24	32,07	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	a
2019	**7724**	**Infant cereals without probiotic cocoa biscuit**	**Céréales infantiles sans probiotique chocobiscuité**	+p	-	+	+	+p	-	*Cronobacter* spp.	22,84	33,54	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	a
2019	**7725**	**Infant cereals without probiotic vanilla**	**Céréales infantiles sans probiotique vanille gourmande**	+p	-	+	+	+p	-	*Cronobacter* spp.	22,56	33,38	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	a
2019	**7726**	**Infant formula stage 2**	**Poudre de lait infantile 2ème âge sans probiotique**	+p	-	+	+	+p	-	*Cronobacter* spp.	23,74	35,5	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	a
2019	**7727**	**Infant formula stage 2**	**Poudre de lait infantile 2ème âge sans probiotique**	+p	-	+	+	+p	-	*Cronobacter* spp.	24,00	33,57	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	a
2019	**7728**	**Infant formula stage 2 organic**	**Poudre de lait infantile bio 2ème âge sans probiotique**	+p	-	+	+	+p	-	*Cronobacter* spp.	23,9	32,03	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	a
2019	**7729**	**Follow-up infant formula**	**Poudre de lait infantile sans probiotique lait de suite bio 2ème âge**	+p	-	+	+	+p	-	*Cronobacter* spp.	24,25	34,75	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	a
2019	**7730**	**Infant formula stage 1**	**Poudre de lait infantile sans probiotique premier âge**	+p	-	+	+	+p	-	*Cronobacter* spp.	24,59	39,67	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	a
2019	**7731**	**Infant formula stage 2**	**Poudre de lait infantile sans probiotique 2ème âge**	+p	-	+	+	+p	-	*Cronobacter* spp.	23,68	32,76	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	a
2019	8011	Infant formula stage 2	Poudre de lait infantile 2ème âge sans probiotique	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	a
2019	8012	Infant formula stage 2	Poudre de lait infantile bio 2ème âge sans probiotique	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	a
2019	8013	Infant formula stage 2	Poudre de lait infantile 2ème âge sans probiotique	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	a
2019	8014	Infant formula stage 2	Poudre de lait infantile 2ème âge sans probiotique	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	a
2019	8015	Follow-up infant formula	Poudre de lait infantile sans probiotique lait de suite bio 2ème âge	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	a
2019	8016	Infant cereals without probiotic vanilla (10 months+)	Céréales infantiles sans probiotique babivanille (10+ mois)	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	a
2019	8017	Infant cereals without probiotic vanilla	Céréales infantiles sans probiotique vanille gourmande	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	a

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								RAPID'*Sakazakii* (direct streaking 10 µl)									Negative samples (Subculture CSB + streaking onto CCI)	All confir-matory tests	Final result	Agree-ment		
									Confirmation														
									Without purification step						With purification step								
				CCI	Oxidase	Identification	Result	Typical colonies	Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/APF Fast)			Oxidase	Biochemical gallery (API ID32)								
											Target Cq	I.C. Cq	Final result										
2019	8018	Infant cereals without probiotic brioche	Céréales infantiles sans probiotique saveur briochée	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	a
2019	8019	Infant cereals without probiotic multi cereals	Céréales infantiles sans probiotique multicéréales	st	/	/	-	+p	-	*Cronobacter* spp.	22,47	33,01	+	-	*Cronobacter* spp.	/	+	+	**PD**	2	a
2019	8020	Infant cereals without probiotic 5 cereals	Céréales infantiles sans probiotique 5 céréales	st	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	2	a
2019	**7732**	**Infant formula with probiotics stage 2 (B.infantis 8,3.10⁴ CFU/g)**	**Poudre de lait avec probiotiques 2ème âge (B.infantis 8,3.10⁴ CFU/g)**	+p	-	+	+	+p	-	*Cronobacter* spp.	23,03	32,28	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	b
2019	**7733**	**Infant formula with probiotics thick formula with starch stage 2 (Bifidobacteria 8,3.10⁴ CFU/g)**	**Poudre de lait avec probiotiques formule épaissie amidon 2ème âge (Bifidobacteries 8,3.10⁴ CFU/g)**	st	/	/	-	+p	-	*Cronobacter* spp.	23,66	32,04	+	-	*Cronobacter* spp.	/	+	+	**PD**	2	b
2019	**7734**	**Infant formula with probiotics thick formula stage 2 (B.infantis 3,7.10⁶ CFU/g)**	**Poudre de lait avec probiotiques actigest formule épaisse 2ème âge (B.infantis 8,3.10⁴ CFU/g)**	+p	-	+	+	+p	-	*Cronobacter* spp.	23,97	32,88	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	b
2019	**7735**	**Infant formula with probiotics stage 2 (L. reuteri 9,8.10⁵ CFU/g)**	**Poudre de lait avec probiotiques relais 2ème âge (L. reuteri 9,8.10⁵ CFU/g)**	st	/	/	-	+p	-	*Cronobacter* spp.	23,25	33,17	+	-	*Cronobacter* spp.	/	+	+	**PD**	2	b
2019	**7736**	**Infant formula with probiotics thick formula stage 2 (Bifidobacteria 1,5.10³ CFU/g)**	**Poudre de lait avec probiotiques formule épaissie 2ème âge (Bifidobacteries 1,5.10³ CFU/g)**	+p	-	+	+	+p	-	*Cronobacter* spp.	23,38	33,15	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	b
2019	**7737**	**Infant formula with probiotics stage 2 (B.lactis 5,2.10⁵ CFU/g)**	**Poudre de lait avec probiotiques 2ème âge (B.lactis 5,2.10⁵ CFU/g)**	st	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	2	b
2019	**7738**	**Infant cereals with probiotics vanilla (B. lactis 5,3.10⁵ CFU/g)**	**Céréales infantiles vanille avec probiotiques (B.lactis 5,3.10⁵ CFU/g)**	+p	-	+	+	+p	-	*Cronobacter* spp.	19,52	34,12	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	b
2019	**7739**	**Infant cereals with probiotics 5 cereals (B. lactis 2,7.10⁶ CFU/g)**	**Céréales infantiles 5 céréales avec probiotiques (B.lactis 2,7.10⁶ CFU/g)**	+p	-	+	+	+p	-	*Cronobacter* spp.	19,56	34,08	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	b
2019	**7740**	**Infant cereals with probiotics cocoa vanilla (B. lactis 4,5.10⁶ CFU/g)**	**Céréales infantiles vanille chocolat au lait avec probiotiques (B.lactis 4,5.10⁶ CFU/g)**	+p	-	+	+	+p	-	*Cronobacter* spp.	21,33	32,05	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	b
2019	**7741**	**Infant cereals with probiotics biscuit (B. lactis 1,1.10⁶ CFU/g)**	**Céréales infantiles saveur biscuit avec probiotiques (B.lactis 1,1.10⁶ CFU/g)**	+p	-	+	+	+p	-	*Cronobacter* spp.	19,83	33,73	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	b
2019	**7742**	**Infant cereals with probiotics oat and wheat (B. lactis 2,7.10⁶ CFU/g)**	**Céréales infantiles avoine et blé avec probiotiques (B.lactis 2,7.10⁶ CFU/g)**	+p	-	+	+	+p	-	*Cronobacter* spp.	19,81	34,66	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	b

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											Target Cq	I.C. Cq	Final result											
2019	**7743**	**Infant cereals with probiotics biscuit and nut (B. lactis 4,0.10⁶ CFU/g)**	**Céréales infantiles noisette biscuit avec probiotiques (B.lactis 4,0.10⁶ CFU/g)**	+p	-	+	+	+p	-	*Cronobacter* spp.	18,71	39,49	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	b
2019	8104	Infant cereals with probiotics biscuit (B. lactis 1,1.10⁶ CFU/g)	Céréales infantiles saveur biscuit avec probiotiques (B.lactis 1,1.10⁶ CFU/g)	-	/	/	-	-	/	/	/	/	/	/	/	st	-	-	**NA**	2	b
2019	8105	Infant cereals with probiotics 5 cereals (B. lactis 2,7.10⁶ CFU/g)	Céréales infantiles 5 céréales avec probiotiques (B.lactis 2,7.10⁶ CFU/g)	-	/	/	-	-	/	/	/	/	/	/	/	st	-	-	**NA**	2	b
2019	8106	Infant cereals with probiotics cocoa vanilla (B. lactis 4,5.10⁶ CFU/g)	Céréales infantiles vanille chocolat au lait avec probiotiques (B.lactis 4,5.10⁶ CFU/g)	-	/	/	-	-	/	/	/	/	/	/	/	st	-	-	**NA**	2	b
2019	8107	Infant cereals with probiotics biscuit and nut (B. lactis 4,0.10⁶ CFU/g)	Céréales infantiles noisette biscuit avec probiotiques (B.lactis 4,0.10⁶ CFU/g)	-	/	/	-	-	/	/	/	/	/	/	/	st	-	-	**NA**	2	b
2019	8108	Infant cereals with probiotics vanilla (B. lactis 5,3.10⁵ CFU/g)	Céréales infantiles vanille avec probiotiques (B.lactis 5,3.10⁵ CFU/g)	-	/	/	-	-	/	/	/	/	/	/	/	st	-	-	**NA**	2	b
2019	8109	Infant formula with probiotics thick formula stage 2 (Bifidobacteria 1,5.10⁶ CFU/g)	Poudre de lait avec probiotiques formule épaissie 2ème âge (Bifidobacteries 1,5.10⁶ CFU/g)	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	b
2019	8110	Infant formula with probiotics stage 2 (L. reuteri 3,2.10⁶ CFU/g)	Poudre de lait avec probiotiques relais 2ème âge (L. reuteri 3,2.10⁶ CFU/g)	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	b
2019	8111	Infant formula with probiotics stage 2 (Lactobacillus fermentum hereditum 1,4.10⁵ CFU/g)	Poudre de lait avec probiotiques 2ème âge (Lactobacillus fermentum hereditum 1,4.10⁵ CFU/g)	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	b
2019	8112	Infant formula with probiotics stage 2 (L. reuteri 6,5.10³ CFU/g)	Poudre de lait avec probiotiques relais 2ème âge (L. reuteri 6,5.10³ CFU/g)	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	b
2019	8113	Infant formula with probiotics stage 2 (Bifidobacteria 3,2.10⁴ CFU/g)	Poudre de lait avec probiotiques 2ème âge (Bifidobacteries 3,2.10⁴ CFU/g)	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	b
2019	**7744**	**Maltodextrin**	**Maltodextrine**	st	/	/	-	+p	-	*Cronobacter* spp.	21,09	32,12	+	-	*Cronobacter* spp.	/	+	+	**PD**	2	c
2019	**7745**	**Maltodextrin**	**Maltodextrine**	st	/	/	-	+p	-	*Cronobacter* spp.	20,91	31,88	+	-	*Cronobacter* spp.	/	+	+	**PD**	2	c
2019	**7746**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	+p	-	+	+	+p	-	*Cronobacter* spp.	20,73	31,22	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	c
2019	**7747**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	+p	-	+	+	+p	-	*Cronobacter* spp.	18,91	34,56	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	c
2019	**7748**	**Whey**	**Lactoserum**	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	c

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								RAPID'*Sakazakii* (direct streaking 10 µl)								Negative samples (Subculture CSB + streaking onto CCI)	All confir-matory tests	Final result	Agree-ment		
									Confirmation														
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				CCI	Oxidase	Identification	Result	Typical colonies	Oxidase	Biochemical gallery (API ID32)	PCR on colony (without FDRS/APF Fast)			Oxidase	Biochemical gallery (API ID32)								
											Target Cq	I.C. Cq	Final result										
2019	**7749**	**Whey**	**Lactoserum**	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	c
2019	**7750**	**Whey**	**Lactoserum**	+p	-	+	+	+p	-	*Cronobacter* spp.	19,53	32,8	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	c
2019	**7751**	**Maltodextrin**	**Maltodextrine**	+p	-	+	+	+p	-	*Cronobacter* spp.	21,08	31,74	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	c
2019	**7752**	**Whey**	**Lactoserum**	st	/	/	-	+p	-	*Cronobacter* spp.	20,12	30,94	+	-	*Cronobacter* spp.	/	+	+	**PD**	2	c
2019	**7753**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	+p	-	+	+	+p	-	*Cronobacter* spp.	19,63	31,85	+	-	*Cronobacter* spp.	/	+	+	**PA**	2	c
2019	**7754**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	st	/	/	-	+p	-	*Cronobacter* spp.	19,63	32,51	+	-	*Cronobacter* spp.	/	+	+	**PD**	2	c
2019	**7755**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	st	/	/	-	+p	-	*Cronobacter* spp.	19,95	32,04	+	-	*Cronobacter* spp.	/	+	+	**PD**	2	c
2019	8021	Non-fat dry milk powder	Poudre de lait écrémé	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	c
2019	8022	Maltodextrin	Maltodextrine	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	c
2019	8023	Whey	Lactoserum	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	c
2019	8024	Whey	Lactoserum	st	/	/	-	-	/	/	/	/	/	/	/	-	-	-	**NA**	2	c
2019	8025	Whey	Lactoserum	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	c
2019	8114	Non-fat dry milk powder	Poudre de lait écrémé	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	c
2019	8115	Non-fat dry milk powder	Poudre de lait écrémé	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	c
2019	8116	Milk powder ingredient	Ingredient poudre de lait	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	c
2019	8117	Milk powder ingredient	Ingredient poudre de lait	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	c
2019	8118	Maltodextrin	Maltodextrine	st	/	/	-	st	/	/	/	/	/	/	/	st	-	-	**NA**	2	c

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					375 g + 1125 mL pre-warmed (37°C) BPW with PIF supplement - 18h at 37°C ± 1°C + enrichment broth storage for 72h at 5°C ±3°C									375 g + 1125 mL pre-warmed (37°C) BPW with PIF supplement - 18h at 37°C ± 1°C + plates storage for 72h at 5°C ±3°C											
					RAPID'*Sakazakii* (direct streaking 10 µl)									RAPID'*Sakazakii* (direct streaking 10 µl)											
				Result	Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment	Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment		
						Without purification step									Without purification step										
						Oxi-dase	Biochemical gallery (APID ID32)	PCR on colony (without FDRS/APF Fast)							Oxi-dase	Biochemical gallery (APID ID32)	PCR on colony (without FDRS/APF Fast)								
								Target Cq	I.C. Cq	Final result							Target Cq	I.C. Cq	Final result						
2019	**7720**	**Infant cereals without probiotic multi cereals**	**Céréales infantiles sans probiotique multicéréales**	-	+p	-	*Cronobacter* spp.	20,16	36,11	+	+	+	**PD**	+p	-	*Cronobacter* spp.	19,46	34,13	+	+	+	**PD**	2	a
2019	**7721**	**Infant cereals without probiotic brioche**	**Céréales infantiles sans probiotique saveur briochée**	+	+p	-	*Cronobacter* spp.	20,24	34,87	+	+	+	**PA**	+p	-	NI/ *Cronobacter* spp.	21,62	32,27	+	+	+	**PA**	2	a
2019	**7722**	**Infant cereals without probiotic 5 cereals**	**Céréales infantiles sans probiotique 5 céréales**	+	+p	-	NI/ *Cronobacter* spp.	19,1	36,04	+	+	+	**PA**	+p	-	NI/ *Cronobacter* spp.	19,15	33,42	+	+	+	**PA**	2	a
2019	**7723**	**Infant cereals without probiotic vanilla (10 months+)**	**Céréales infantiles sans probiotique babivanille (10+ mois)**	+	+p	-	*Cronobacter* spp.	20,52	34,73	+	+	+	**PA**	+p	-	*Cronobacter* spp.	19,78	33,46	+	+	+	**PA**	2	a
2019	**7724**	**Infant cereals without probiotic cocoa biscuit**	**Céréales infantiles sans probiotique chocobiscuité**	+	+p	-	*Cronobacter* spp.	19,62	35,6	+	+	+	**PA**	+p	-	*Cronobacter* spp.	18,79	34,05	+	+	+	**PA**	2	a
2019	**7725**	**Infant cereals without probiotic vanilla**	**Céréales infantiles sans probiotique vanille gourmande**	+	+p	-	*Cronobacter* spp.	19,91	34,37	+	+	+	**PA**	+p	-	*Cronobacter* spp.	19,22	34,56	+	+	+	**PA**	2	a
2019	**7726**	**Infant formula stage 2**	**Poudre de lait infantile 2ème âge sans probiotique**	+	+p	-	*Cronobacter* spp.	19,28	33,28	+	+	+	**PA**	+p	-	*Cronobacter* spp.	20,89	31,96	+	+	+	**PA**	2	a
2019	**7727**	**Infant formula stage 2**	**Poudre de lait infantile 2ème âge sans probiotique**	+	+p	-	*Cronobacter* spp.	20,05	33,53	+	+	+	**PA**	+p	-	NI/ *Cronobacter* spp..	20,96	33,66	+	+	+	**PA**	2	a
2019	**7728**	**Infant formula stage 2 organic**	**Poudre de lait infantile bio 2ème âge sans probiotique**	+	+p	-	*Cronobacter* spp.	19,4	35,17	+	+	+	**PA**	+p	-	*Cronobacter* spp.	20,27	32,21	+	+	+	**PA**	2	a
2019	**7729**	**Infant formula without probiotic**	**Poudre de lait infantile sans probiotique lait de suite bio 2ème âge**	+	+p	-	NI/ *Cronobacter* spp..	19,73	33,12	+	+	+	**PA**	+p	-	*Cronobacter* spp.	20,73	31,84	+	+	+	**PA**	2	a
2019	**7730**	**Infant formula stage 1**	**Poudre de lait infantile sans probiotique premier âge**	+	+p	-	*Cronobacter* spp.	18,54	41,18	+	+	+	**PA**	+p	-	*Cronobacter* spp.	20,07	32,81	+	+	+	**PA**	2	a
2019	**7731**	**Infant formula stage 2**	**Poudre de lait infantile sans probiotique 2ème âge**	+	+p	-	*Cronobacter* spp.	19,27	34,53	+	+	+	**PA**	+p	-	*Cronobacter* spp.	18,45	32,96	+	+	+	**PA**	2	a
2019	8011	Infant formula stage 2	Poudre de lait infantile 2ème âge sans probiotique	-										st	/	/	/	/	/	-	-	**NA**	2	a
2019	8012	Infant formula stage 2 organic	Poudre de lait infantile bio 2ème âge sans probiotique	-										st	/	/	/	/	/	-	-	**NA**	2	a

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					375 g + 1125 mL pre-warmed (37°C) BPW with PIF supplement - 18h at 37°C ± 1°C + enrichment broth storage for 72h at 5°C ±3°C									375 g + 1125 mL pre-warmed (37°C) BPW with PIF supplement - 18h at 37°C ± 1°C + plates storage for 72h at 5°C ±3°C												
					RAPID'*Sakazakii* (direct streaking 10 µl)									RAPID'*Sakazakii* (direct streaking 10 µl)												
				Result	Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment	Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment		
						Without purification step									Without purification step										
						Oxi-dase	Biochemical gallery (APID ID32)	PCR on colony (without FDRS/APF Fast)							Oxi-dase	Biochemical gallery (APID ID32)	PCR on colony (without FDRS/APF Fast)								
								Target Cq	I.C. Cq	Final result							Target Cq	I.C. Cq	Final result						
2019	8013	Infant formula stage 2	Poudre de lait infantile 2ème âge sans probiotique	-										st	/	/	/	/	/	-	-	**NA**	2	a
2019	8014	Infant formula stage 2	Poudre de lait infantile 2ème âge sans probiotique	-										st	/	/	/	/	/	-	-	**NA**	2	a
2019	8015	Follow-up infant formula	Poudre de lait infantile sans probiotique lait de suite bio 2ème âge	-										st	/	/	/	/	/	-	-	**NA**	2	a
2019	8016	Infant cereals without probiotic vanilla (10 months+)	Céréales infantiles sans probiotique babivanille (10+ mois)	-										st	/	/	/	/	/	-	-	**NA**	2	a
2019	8017	Infant cereals without probiotic vanilla	Céréales infantiles sans probiotique vanille gourmande	-										st	/	/	/	/	/	-	-	**NA**	2	a
2019	8018	Infant cereals without probiotic brioche	Céréales infantiles sans probiotique saveur briochée	-										st	/	/	/	/	/	-	-	**NA**	2	a
2019	8019	Infant cereals without probiotic multi cereals	Céréales infantiles sans probiotique multicéréales	-	+p	-	*Cronobacter* spp.	21,31	34,07	+	+	**+**	**PD**	+p	-	*Cronobacter* spp.	22,47	34,46	+	+	**+**	**PD**	2	a
2019	8020	Infant cereals without probiotic 5 cereals	Céréales infantiles sans probiotique 5 céréales	-										-	/	/	/	/	/	-	-	**NA**	2	a
2019	**7732**	**Infant formula with probiotics stage 2 (B.infantis 8,3.10^4 CFU/g)**	**Poudre de lait avec probiotiques 2ème âge (B.infantis 8,3.10^4 CFU/g)**	+	+p	-	*Cronobacter* spp.	21,21	32,32	+	+	**+**	**PA**	+p	-	NI/ *Cronobacter* spp.	20,38	32,6	+	+	**+**	**PA**	2	b
2019	**7733**	**Infant formula with probiotics thick formula with starch stage 2 (Bifidobacteria 8,3.10^4 CFU/g)**	**Poudre de lait avec probiotiques formule épaissie amidon 2ème âge (Bifidobacteries 8,3.10^4 CFU/g)**	-	+p	-	*Cronobacter* spp.	19,39	33,47	+	+	**+**	**PD**	+p	-	NI/ *Cronobacter* spp.	20,51	32,82	+	+	**+**	**PD**	2	b
2019	**7734**	**Infant formula with probiotics thick formula stage 2 (B.infantis 3,7.10^6 CFU/g)**	**Poudre de lait avec probiotiques actigest formule épaisse 2ème âge (B.infantis 8,3.10^4 CFU/g)**	+	+p	-	*Cronobacter* spp.	27,77	31,57	+	+	**+**	**PA**	+p	-	NI/ *Cronobacter* spp.	23,32	31,18	+	+	**+**	**PA**	2	b
2019	**7735**	**Infant formula with probiotics stage 2 (L. reuteri 9,8.10^5 CFU/g)**	**Poudre de lait avec probiotiques relais 2ème âge (L. reuteri 9,8.10^5 CFU/g)**	-	+p	-	*Cronobacter spp.*	19,46	-	+	+	**+**	**PD**	+p	-	*Cronobacter* spp.	21,19	37,69	+	+	**+**	**PD**	2	b
2019	**7736**	**Infant formula with probiotics thick formula stage 2 (Bifidobacteria 1,5.10^3 CFU/g)**	**Poudre de lait avec probiotiques formule épaissie 2ème âge (Bifidobacteries 1,5.10^3 CFU/g)**	+	+p	-	*Cronobacter spp.*	20,19	-	+	+	**+**	**PA**	+p	-	*Cronobacter* spp.	19,79	35,81	+	+	**+**	**PA**	2	b

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					RAPID'*Sakazakii* (direct streaking 10 µl)									RAPID'*Sakazakii* (direct streaking 10 µl)											
				Result	Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment	Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment		
						Without purification step									Without purification step										
						Oxi-dase	Biochemical gallery (APID ID32)	PCR on colony (without FDRS/APF Fast)							Oxi-dase	Biochemical gallery (APID ID32)	PCR on colony (without FDRS/APF Fast)								
								Target Cq	I.C. Cq	Final result							Target Cq	I.C. Cq	Final result						
2019	**7737**	**Infant formula with probiotics stage 2 (B.lactis 5,2.10^5 CFU/g)**	**Poudre de lait avec probiotiques 2ème âge (B.lactis 5,2.10^5 CFU/g)**	-										-	/	/	/	/	/	-	-	**NA**	2	b
2019	**7738**	**Infant cereals with probiotics vanilla (B. lactis 5,3.10^5 CFU/g)**	**Céréales infantiles vanille avec probiotiques (B.lactis 5,3.10^5 CFU/g)**	+	+p	-	*Cronobacter* spp.	21,53	32,33	+	+	+	**PA**	+p	-	*Cronobacter* spp.	20,67	39,21	+	+	+	**PA**	2	b
2019	**7739**	**Infant cereals with probiotics 5 cereals (B. lactis 2,7.10^6 CFU/g)**	**Céréales infantiles 5 céréales avec probiotiques (B.lactis 2,7.10^6 CFU/g)**	+	+p	-	*Cronobacter* spp.	24,89	31,91	+	+	+	**PA**	+p	-	*Cronobacter* spp.	21,31	34,32	+	+	+	**PA**	2	b
2019	**7740**	**Infant cereals with probiotics cocoa vanilla (B. lactis 4,5.10^6 CFU/g)**	**Céréales infantiles vanille chocolat au lait avec probiotiques (B.lactis 4,5.10^6 CFU/g)**	+	+p	-	*Cronobacter* spp.	22,03	33,38	+	+	+	**PA**	+p	-	*Cronobacter* spp.	23,57	31,66	+	+	+	**PA**	2	b
2019	**7741**	**Infant cereals with probiotics biscuit (B. lactis 1,1.10^6 CFU/g)**	**Céréales infantiles saveur biscuit avec probiotiques (B.lactis 1,1.10^6 CFU/g)**	+	+p	-	*Cronobacter* spp.	21,25	34,4	+	+	+	**PA**	+p	-	*Cronobacter* spp.	19,52	37,7	+	+	+	**PA**	2	b
2019	**7742**	**Infant cereals with probiotics oat and wheat (B. lactis 2,7.10^6 CFU/g)**	**Céréales infantiles avoine et blé avec probiotiques (B.lactis 2,7.10^6 CFU/g)**	+	+p	-	*Cronobacter* spp.	23,11	32,3	+	+	+	**PA**	+p	-	*Cronobacter* spp.	19,77	37,96	+	+	+	**PA**	2	b
2019	**7743**	**Infant cereals with probiotics biscuit and nut (B. lactis 4,0.10^6 CFU/g)**	**Céréales infantiles noisette biscuit avec probiotiques (B.lactis 4,0.10^6 CFU/g)**	+	+p	-	*Cronobacter* spp.	22,12	32,54	+	+	+	**PA**	+p	-	*Cronobacter* spp.	20,6	35,32	+	+	+	**PA**	2	b
2019	8104	Infant cereals with probiotics biscuit (B. lactis 1,1.10^6 CFU/g)	Céréales infantiles saveur biscuit avec probiotiques (B.lactis 1,1.10^6 CFU/g)	-										-	/	/	/	/	/	-	-	**NA**	2	b
2019	8105	Infant cereals with probiotics 5 cereals (B. lactis 2,7.10^6 CFU/g)	Céréales infantiles 5 céréales avec probiotiques (B.lactis 2,7.10^6 CFU/g)	-										-	/	/	/	/	/	-	-	**NA**	2	b
2019	8106	Infant cereals with probiotics cocoa vanilla (B. lactis 4,5.10^6 CFU/g)	Céréales infantiles vanille chocolat au lait avec probiotiques (B.lactis 4,5.10^6 CFU/g)	-										-	/	/	/	/	/	-	-	**NA**	2	b
2019	8107	Infant cereals with probiotics biscuit and nut (B. lactis 4,0.10^6 CFU/g)	Céréales infantiles noisette biscuit avec probiotiques (B.lactis 4,0.10^6 CFU/g)	-										-	/	/	/	/	/	-	-	**NA**	2	b

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					RAPID'*Sakazakii* (direct streaking 10 µl)									RAPID'*Sakazakii* (direct streaking 10 µl)												
				Result	Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment	Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment		
						Without purification step									Without purification step												
						Oxi-dase	Biochemical gallery (APID ID32)	PCR on colony (without FDRS/APF Fast)							Oxi-dase	Biochemical gallery (APID ID32)	PCR on colony (without FDRS/APF Fast)									
								Target Cq	I.C. Cq	Final result							Target Cq	I.C. Cq	Final result							
2019	8108	Infant cereals with probiotics vanilla (B. lactis 5,3.10^5 CFU/g)	Céréales infantiles vanille avec probiotiques (B.lactis 5,3.10^5 CFU/g)	-										-	/	/	/	/	/	-	-	**NA**	2	b
2019	8109	Infant formula with probiotics thick formula stage 2 (Bifidobacteria 1,5.10^6 CFU/g)	Poudre de lait avec probiotiques formule épaissie 2ème âge (Bifidobacteries 1,5.10^6 CFU/g)	-										st	/	/	/	/	/	-	-	**NA**	2	b
2019	8110	Infant formula with probiotics stage 2 (L. reuteri 3,2.10^6 CFU/g)	Poudre de lait avec probiotiques relais 2ème âge (L. reuteri 3,2.10^6 CFU/g)	-										st	/	/	/	/	/	-	-	**NA**	2	b
2019	8111	Infant formula with probiotics stage 2 (Lactobacillus fermentum hereditum 1,4.10^5 CFU/g)	Poudre de lait avec probiotiques 2ème âge (Lactobacillus fermentum hereditum 1,4.10^5 CFU/g)	-										st	/	/	/	/	/	-	-	**NA**	2	b
2019	8112	Infant formula with probiotics stage 2 (L. reuteri 6,5.10^3 CFU/g)	Poudre de lait avec probiotiques relais 2ème âge (L. reuteri 6,5.10^3 CFU/g)	-										st	/	/	/	/	/	-	-	**NA**	2	b
2019	8113	Infant formula with probiotics stage 2 (Bifidobacteria 3,2.10^4 CFU/g)	Poudre de lait avec probiotiques 2ème âge (Bifidobacteries 3,2.10^4 CFU/g)	-										st	/	/	/	/	/	-	-	**NA**	2	b
2019	**7744**	**Maltodextrin**	**Maltodextrine**	-	+p	-	NI/ *Cronobacter* spp.	22,19	32,17	+	+	+	**PD**	+p	-	*Cronobacter* spp.	21,49	33,01	+	+	+	**PD**	2	c
2019	**7745**	**Maltodextrin**	**Maltodextrine**	-	+p	-	*Cronobacter* spp.	21,03	32,56	+	+	+	**PD**	+p	-	*Cronobacter* spp.	21,34	32,75	+	+	+	**PD**	2	c
2019	**7746**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	+	+p	-	NI/ *Cronobacter* spp.	22,98	31,93	+	+	+	**PA**	+p	-	*Cronobacter* spp.	20,67	32,69	+	+	+	**PA**	2	c
2019	**7747**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	+	+p	-	*Cronobacter* spp.	22,34	32,08	+	+	+	**PA**	+p	-	*Cronobacter* spp.	18,68	35,31	+	+	+	**PA**	2	c
2019	**7748**	**Whey**	**Lactoserum**	-										st	/	/	/	/	/	-	-	**NA**	2	c
2019	**7749**	**Whey**	**Lactoserum**	-										st	/	/	/	/	/	-	-	**NA**	2	c
2019	**7750**	**Whey**	**Lactoserum**	+	+p	-	*Cronobacter* spp.	22,29	32,02	+	+	+	**PA**	+p	-	*Cronobacter* spp.	19,56	33,78	+	+	+	**PA**	2	c
2019	**7751**	**Maltodextrin**	**Maltodextrine**	+	+p	-	*Cronobacter* spp.	20,86	33,04	+	+	+	**PA**	+p	-	*Cronobacter* spp.	22,41	32,11	+	+	+	**PA**	2	c
2019	**7752**	**Whey**	**Lactoserum**	-	+p	-	NI/ *Cronobacter* spp.	21,1	32,4	+	+	+	**PD**	+p	-	*Cronobacter* spp.	20,69	32,76	+	+	+	**PD**	2	c

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					RAPID'*Sakazakii* (direct streaking 10 µl)									RAPID'*Sakazakii* (direct streaking 10 µl)											
				Result	Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment	Typical colonies	Confirmation					All confir-matory tests	Final result	Agree-ment		
						Without purification step									Without purification step										
						Oxi-dase	Biochemical gallery (APID ID32)	PCR on colony (without FDRS/APF Fast)							Oxi-dase	Biochemical gallery (APID ID32)	PCR on colony (without FDRS/APF Fast)								
								Target Cq	I.C. Cq	Final result							Target Cq	I.C. Cq	Final result						
2019	**7753**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	+	+p	-	*Cronobacter* spp.	21,58	33,29	+	+	+	**PA**	+p	-	*Cronobacter* spp.	19,31	33,46	+	+	+	**PA**	2	c
2019	**7754**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	-	+p	-	NI/ *Cronobacter* spp.	22,48	32,11	+	+	+	**PD**	+p	-	*Cronobacter* spp.	21,71	32,22	+	+	+	**PD**	2	c
2019	**7755**	**Non-fat dry milk powder**	**Poudre de lait écrémé**	-	+p	-	NI/ *Cronobacter* spp.	21,05	32,9	+	+	+	**PD**	+p	-	*Cronobacter* spp.	20,15	33,75	+	+	+	**PD**	2	c
2019	8021	Non-fat dry milk powder	Poudre de lait écrémé	-										st	/	/	/	/	/	-	-	**NA**	2	c
2019	8022	Maltodextrin	Maltodextrine	-										st	/	/	/	/	/	-	-	**NA**	2	c
2019	8023	Whey	Lactoserum	-										st	/	/	/	/	/	-	-	**NA**	2	c
2019	8024	Whey	Lactoserum	-										-	/	/	/	/	/	-	-	**NA**	2	c
2019	8025	Whey	Lactoserum	-										st	/	/	/	/	/	-	-	**NA**	2	c
2019	8114	Non-fat dry milk powder	Poudre de lait écrémé	-										st	/	/	/	/	/	-	-	**NA**	2	c
2019	8115	Non-fat dry milk powder	Poudre de lait écrémé	-										st	/	/	/	/	/	-	-	**NA**	2	c
2019	8116	Milk powder ingredient	Ingredient poudre de lait	-										st	/	/	/	/	/	-	-	**NA**	2	c
2019	8117	Milk powder ingredient	Ingredient poudre de lait	-										st	/	/	/	/	/	-	-	**NA**	2	c
2019	8118	Maltodextrin	Maltodextrine	-										st	/	/	/	/	/	-	-	**NA**	2	c

Appendix D
Sensitivity study - raw results

Bacterial burden	*Distribution of flora*
Ø: no culture	A = pure culture of suspect colonies
L = low	B = mixture with a majority of suspect colonies
M = moderate	C = mixture with a minority of suspect colonies
H = high	D = mixture with rare suspect colonies
/: not realized	E = absence of suspect colonies
	(x): x colonies characteristic of Cronobacter if x ≤ 5

PA: positive agreement
NA: negative agreement
ND: negative deviation
PD: positive deviation
/: not realized

			Reference method ISO 22964* - 20h at 37°C				BPW +PIF supplement - 18h at 37°C										BPW +PIF supplement - 18h at 37°C Storage 5±3°C - 72 h				Rapid'*Sakazakii* plate Storage 5±3°C - 72 h			
Type	#	Sample	CCI After CSB	Confirmatory tests		Final result	Rapid *Sakazakii*	Conf. ISO with purification	Conf. ISO without purification	Conf. PCR on colony	Final result	Agreement	ISO conf.				Rapid *Sakazakii*	Conf. ISO without purification	Final result	Agreement	Rapid *Sakazakii*	Conf. ISO without purification	Final result	Agreement
				Ox.	Gallery								CCI after CSB	Ox.	Gallery									
a+	3110714	PIF dust with probiotics	+ (AH)	-	*Cronobacter sp.*	P	+ (AH)	*Cronobacter sp.*	*Cronobacter sp.*	+20,74	P	PA	+ (BH)	-	*Cronobacter sp.*		+ (AH)	*Cronobacter sp.*	P	PA	+ (AH)	*Cronobacter sp.*	P	PA
a+	3110715	Cereal residues	- (EH)	/	/	A	+ (BM) réiso:+(AH)	*Cronobacter sp.*	*Cronobacter sp.*	+19,58	P	PD	+ (BH)	-	*Cronobacter sp.*		+ (BH)	*Cronobacter sp.*	P	PD	+ (BM)	*Cronobacter sp.*	P	PD
a+	3110722	Cereal residues	+ (BH)	-	*Cronobacter sp.*	P	+(BH)	*Cronobacter sp.*	*Cronobacter sp.*	+21,01	P	PA	+ (BH)	–	*Cronobacter sp.*		+ (BH)	*Cronobacter sp.*	P	PA	+(BH)	*Cronobacter sp.*	P	PA
a+	3110723	Milk powder residues without probiotics	+ (BH)	-	*Cronobacter sp.*	P	- (EH)	/	/	/	A	ND	- (EH)	/	/		- (EH)	/	A	ND	- (EH)	/	A	ND
a+	3178250	Residues PIF with probiotics	+ (BM)	-	*Cronobacter sp.*	P	+ (AL)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,21	P	PA	+ (BM)	-	*Cronobacter sp.*		+ (AL)	*Cronobacter sp.*	P	PA	+ (AL)	*Cronobacter sp.*	P	PA
a+	3178251	Residues PIF without probiotics for children of 1 at 3 years old	+ (AM)	-	*Cronobacter sp.*	P	+ (BM)	*Cronobacter sp.*	*Cronobacter sp.*	+ 18,91	P	PA	+ (BM)	-	*Cronobacter sp.*		+ (BM)	*Cronobacter sp.*	P	PA	+ (BM)	*Cronobacter sp.*	P	PA
a+	3178252	Infant cereals residues with 3 cereals and vanilla	+ (BM)	-	*Cronobacter sp.*	P	+ (BM)	*Cronobacter sp.*	*Cronobacter sp.*	+ 18,72	P	PA	+ (AM)	-	*Cronobacter sp.*		+ (BM)	*Cronobacter sp.*	P	PA	+ (BM)	*Cronobacter sp.*	P	PA
a+	3178253	Infant cereals residues with 5 cereals and banae and apple	+ (BM)	-	*Cronobacter sp.*	P	- (EM)	/	/	/	A	ND	- (EM)	/	/		- (EM)	/	A	ND	- (EM)	/	A	ND
a+	3178254	Infant cereals dusts with wholegrain cereals and cocoa	+ (AM)	-	*Cronobacter sp.*	P	+ (BM)	*Cronobacter sp.*	*Cronobacter sp.*	+ 18,93	P	PA	+ (AM)	–	*Cronobacter sp.*		+ (BM)	*Cronobacter sp.*	P	PA	+ (BM)	*Cronobacter sp.*	P	PA
a+	3112798	Infant cereals dusts with 8 wholegrain cereals	+ (AM)	-	*Cronobacter sp.*	P	+ (BH)	*Cronobacter sp.*	*Cronobacter sp.*	+ 23,43	P	PA	+ (BM)	-	*Cronobacter sp.*		+ (BH)	*Cronobacter sp.*	P	PA	+ (BH)	*Cronobacter sp.*	P	PA
a-	3153346	PIF dust with probiotics	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
a-	3153347	Cereal residues with fruits	- (EM)	/	/	A	Ø	/	/	/	A	NA	- (EM)	/	/		Ø	/	A	NA	Ø	/	A	NA
a-	3153349	Milk powder residues without probiotics	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
a-	3153350	PIF dusts with probiotics	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
a-	3153351	PIFdusts without probiotics	Ø	/	/	A	- (EM)	/	/	/	A	NA	- (EM)	/	/		- (EM)	/	A	NA	- (EM)	/	A	NA
a-	3153352	Organic infant cereals residues with 3 cereals and vanilla	- (EM)	/	/	A	Ø	/	/	/	A	NA	- (EM)	/	/		Ø	/	A	NA	Ø	/	A	NA
a-	3153353	Organic infant cereals residues with 5 cereals and banana and apple	- (EM)	/	/	A	Ø	/	/	/	A	NA	- (EI)	/	/		Ø	/	A	NA	Ø	/	A	NA
a-	3153354	Infant cereals dusts with wholegrain cereals and cocoa	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
a-	3153355	Infant cereals dusts with 8 wholegrain cereals	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
a-	3178256	PIFdusts without probiotics for children of 0 at 12 month old	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
b+	3110716	Tank milk rinse water.	+ (AM)	-	*Cronobacter sp.*	P	+ (BM)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,84	P	PA	+ (BH)	-	*Cronobacter sp.*		+ (BM)	*Cronobacter sp.*	P	PA	+ (BM)	*Cronobacter sp.*	P	PA
b+	3110717	Process water cheese shop	+ (BH)	-	*Cronobacter sp.*	P	+ (BM)	*Cronobacter sp.*	*Cronobacter sp.*	+ 20,35	P	PA	+ (BH)	-	*Cronobacter sp.*		+ (BM)	*Cronobacter sp.*	P	PA	+ (BM)	*Cronobacter sp.*	P	PA
b+	3110724	Tank milk rinse water.	+ (BH)	–	*Cronobacter sp.*	P	+ (BH)	*Cronobacter sp.*	*Cronobacter sp.*	+ 21,23	P	PA	+ (BM)	-	*Cronobacter sp.*		+ (BH)	*Cronobacter sp.*	P	PA	+ (BH)	*Cronobacter sp.*	P	PA
b+	3055096	Process water cheese shop	- (EH)	/	/	A	+ (AH)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,54	P	PD	+ (BH)	-	*Cronobacter sp.*		+ (AH)	*Cronobacter sp.*	P	PD	+ (AH)	*Cronobacter sp.*	P	PD
b+	3112787	Cleaning water:organic infant cereals residues with 5 cereals and banae and apple	+ (BM)	-	*Cronobacter sp.*	P	+ (AM)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,81	P	PA	+ (BM)	-	*Cronobacter sp.*		+ (AM)	*Cronobacter sp.*	P	PA	+ (AM)	*Cronobacter sp.*	P	PA
b+	3112788	Cleaning water:infant cereals dusts with wholegrain cereals and cocoa	+ (BM)	-	*Cronobacter sp.*	P	+ (AM)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,27	P	PA	+ (BM)	-	*Cronobacter sp.*		+ (AM)	*Cronobacter sp.*	P	PA	+ (AM)	*Cronobacter sp.*	P	PA
b+	3112789	Cleaning water :infant cereals dusts with 8 wholegrain cereals	+ (BM)	-	*Cronobacter sp.*	P	+ (DM) Re-isolation:+ (BM)	*Cronobacter sp.*	*Cronobacter sp.*	+ 21,32	P	PA	+ (BM)	-	*Cronobacter sp.*		+ (DM)	*Cronobacter sp.*	P	PA	+ (DM)	*Cronobacter sp.*	P	PA
b+	3112799	Cleaning water: PIF with probiotics Bfidobacterium lactis	+ (BM)	-	*Cronobacter sp.*	P	+ (BM)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,76	P	PA	+ (BM)	-	*Cronobacter sp.*		+ (BM)	*Cronobacter sp.*	P	PA	+ (BM)	*Cronobacter sp.*	P	PA
b+	3112801	Cleaning water: organic infant cereals residues with 3 cereals and vanilla	+ (BM)	-	*Cronobacter sp.*	P	+ (BH)	*Cronobacter sp.*	*Cronobacter sp.*	+ 22,11	P	PA	+ (BM)	-	*Cronobacter sp.*		+ (BH)	*Cronobacter sp.*	P	PA	+ (BH)	*Cronobacter sp.*	P	PA
b+	3112802	Tank milk rinse water.	+ (BM)	–	*Cronobacter sp.*	P	+ (BH)	*Cronobacter sp.*	*Cronobacter sp.*	+ 18,65	P	PA	+ (BM)	-	*Cronobacter sp.*		+ (BH)	*Cronobacter sp.*	P	PA	+ (BH)	*Cronobacter sp.*	P	PA
b-	3168831	Cleaning water :cheese shop 2	- (EM)	/	/	A	-(EM)	/	/	/	A	NA	- (EM)	/	/		Réiso: -(EM)	/	A	NA	-(EM)	/	A	NA
b-	3168832	Cleaning water: PIF with probiotics Bfidobacterium lactis	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
b-	3168833	Cleaning water: PIF without probioticfor children of 1 at 3 years old	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
b-	3168834	Cleaning water: organic infant cereals residues with 3 cereals and vanilla	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
b-	3168835	Cleaning water:organic infant cereals residues with 5 cereals and banae and apple	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
b-	3168836	Cleaning water:infant cereals dusts with wholegrain cereals and cocoa	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
b-	3168837	Cleaning water :infant cereals dusts with 8 wholegrain cereals	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
b-	3112800	Cleaning water: PIF without probiotic for children of 1 at 3 years old	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/		Ø	/	A	NA	Ø	/	A	NA
b-	3112795	Dairy process water	- (EM)	/	/	A	- (EM)	/	/	/	A	NA	- (EM)	/	/		- (EM)	/	A	NA	- (EM)	/	A	NA
b-	3112796	Cleaning water: milk tank cleaning water	- (EM)	/	/	A	- (EM)	/	/	/	A	NA	- (EM)	/	/		- (EM)	/	A	NA	- (EM)	/	A	NA

			Reference method ISO 22964* - 20h at 37°C				BPW +PIF supplement - 18h at 37°C										BPW +PIF supplement - 18h at 37°C Storage 5±3°C - 72 h				Rapid'*Sakazakii* plate Storage 5±3°C - 72 h			
Type	#	Sample	CCI After CSB	Confirmatory tests		Final result	Rapid *Sakazakii*	Conf. ISO with purification	Conf. ISO without purification	Conf. PCR on colony	Final result	Agreement	ISO conf.			Agreement	Rapid *Sakazakii*	Conf. ISO without purification	Final result	Agreement	Rapid *Sakazakii*	Conf. ISO without purification	Final result	Agreement
				Ox.	Gallery								CCI after CSB	Ox.	Gallery									
c+	3110718	Swab: milking sleeve	+ (BM)	-	*Cronobacter sp.*	P	+ (AH)	*Cronobacter sp.*	*Cronobacter sp.*	+ 21,28	P	PA	+ (BH)	-	*Cronobacter sp.*	PA	+ (AH)	*Cronobacter sp.*	P	PA	+ (AH)	*Cronobacter sp.*	P	PA
c+	3110719	Sponge: dairy wall	+ (BM)	-	*Cronobacter sp.*	P	- (EM)	/	/	/	A	ND	- (EM)	/	/	ND	- (EM)	/	A	ND	- (EM)	/	A	ND
c+	3110720	Swipe: Dairy sink syphon	+ (BH)	-	*Cronobacter sp.*	P	+ (CM) réiso:+(AH)	*Cronobacter sp.*	*Cronobacter sp.*	+ 21,56	P	PA	+ (BH)	-	*Cronobacter sp.*	PA	+ (CM) réiso:+(AH)	*Cronobacter sp.*	P	PA	+ (CM)	*Cronobacter sp.*	P	PA
c+	3110721	Swipe : Cereal Soil	+ (BH)	-	*Cronobacter sp.*	P	+ (BM) réiso:+(AH)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,68	P	PA	+ (BH)	-	*Cronobacter sp.*	PA	+ (BM) réiso:+(AH)	*Cronobacter sp.*	P	PA	+ (BM)	*Cronobacter sp.*	P	PA
c+	3071938	Sponge:Inside milk cooling tank	+ (CM)	-	*Cronobacter sp.*	P	- (EM)	/	/	/	A	ND	- (EM)	/	/	ND	- (EM)	/	A	ND	- (EM)	/	A	ND
c+	3071942	Sponge:Swipee cage infant cereals	+ (BM)	-	*Cronobacter sp.*	P	+ (BM)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,28	P	PA	+ (BM)	-	*Cronobacter sp.*	PA	+ (BM)	*Cronobacter sp.*	P	PA	+ (BM)	*Cronobacter sp.*	P	PA
c+	3112790	Swipe:carpet infant cereals	+ (BM)	-	*Cronobacter sp.*	P	+ (BM)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,6	P	PA	+ (BM)	-	*Cronobacter sp.*	PA	+ (BM)	*Cronobacter sp.*	P	PA	+ (BM)	*Cronobacter sp.*	P	PA
c+	3112804	Swab:bucket for the milk	+ (BM)	-	*Cronobacter sp.*	P	+ (AH)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,62	P	PA	+ (AM)	-	*Cronobacter sp.*	PA	+ (AH)	*Cronobacter sp.*	P	PA	+ (AH)	*Cronobacter sp.*	P	PA
c+	3112805	Swab:Storage bin for infant cereals	+ (BM)	-	*Cronobacter sp.*	P	- (EM)	/	/	/	A	ND	- (EM)	/	/	ND	- (EM)	/	A	ND	- (EM)	/	A	ND
c+	3112619	Swab:Syphon for infant cereals	+ (BM)	-	*Cronobacter sp.*	P	+ (BM)	*Cronobacter sp.*	*Cronobacter sp.*	+ 19,41	P	PA	+ (BM)	-	*Cronobacter sp.*	PA	+ (BM)	*Cronobacter sp.*	P	PA	+ (BM)	*Cronobacter sp.*	P	PA
c-	3168838	Sponge:Inside milk cooling tank	- (EM)	/	/	A	- (EM)	/	/	/	A	NA	- (EM)	/	/	NA	- (EM)	/	A	NA	- (EM)	/	A	NA
c-	3168839	Swipe:Floor milking robot	- (EM)	/	/	A	- (EM)	/	/	/	A	NA	- (EM)	/	/	NA	- (EM)	/	A	NA	- (EM)	/	A	NA
c-	3168840	Swipe:Dairy floor	- (EM)	/	/	A	- (EM)	/	/	/	A	NA	- (EM)	/	/	NA	- (EM)	/	A	NA	- (EM)	/	A	NA
c-	3168841	Swab: milking sleeve	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/	NA	Ø	/	A	NA	Ø	/	A	NA
c-	3168842	Swab:bucket for the milk	- (EM)	/	/	A	Ø	/	/	/	A	NA	- (EM)	/	/	NA	Ø	/	A	NA	Ø	/	A	NA
c-	3168843	Swab:Swipee bin for infant cereals	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/	NA	Ø	/	A	NA	Ø	/	A	NA
c-	3168844	Swab:Syphon for infant cereals	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/	NA	Ø	/	A	NA	Ø	/	A	NA
c-	3168845	Sponge:StoSwipee cage infant cereals	- (EM)	/	/	A	Ø	/	/	/	A	NA	- (EM)	/	/	NA	Ø	/	A	NA	Ø	/	A	NA
c-	3168846	Swipe:carpet infant cereals	- (EM)	/	/	A	Ø	/	/	/	A	NA	- (EL)	/	/	NA	Ø	/	A	NA	Ø	/	A	NA
c-	3168847	Swipe:infant cereals floor	Ø	/	/	A	Ø	/	/	/	A	NA	Ø	/	/	NA	Ø	/	A	NA	Ø	/	A	NA

Appendix E – Relative level of detection study: raw data

Matrix: Infant cereals with probiotics - 30g

Study realized by Q-Laboratories Inc

***Strain: Cronobacter sakazakii* QL 11007.9**
Seeding protocol with lyophilized strain storage for 2 weeks at ambient temperature
Unpaired
Lactic acid bacteria: $2{,}4.10^3$ CFU/g

Level	Inoculation level (cfu/25g)	Sample N° (reference method)	ISO 22964					Sample N° (alternative method)	Alternative method: RAPID'*Sakazakii*- 30 g + 270 mL BPW - 16h at 37 ± 1°C								
									RAPID'*Sakazakii* (direct streaking 10 µl)						All confirmatory tests	RAPID'*Sakazakii*	
										Confirmatory tests							
			CCI	Oxidase	Identification	Result	Positive Results/Total (ISO22964)		Typical colonies	Oxidase	Biochemical gallery (API ID32)	PCR on colony (APF Fast without FDRS)				Final result	Positive results/Total
												Target Cq	I.C. Cq	Final result			
0	0	8	-	/	/	-	0/5	3	-	/	/	/	/	/	-	-	0/5
		10	-	/	/	-		16	-	/	/	/	/	/	-	-	
		12	-	/	/	-		18	-	/	/	/	/	/	-	-	
		16	-	/	/	-		23	-	/	/	/	/	/	-	-	
		27	-	/	/	-		24	-	/	/	/	/	/	-	-	
Low	1	1	-	/	/	-	7/20	1	-	/	/	/	/	/	-	-	8/20
		2	-	/	/	-		2	+M	-	*Cronobacter* spp.	26,57	31,29	+	+	+	
		4	-	/	/	-		4	+M	-	*Cronobacter* spp.	26,82	32,3	+	+	+	
		5	+M	-	*Cronobacter* spp.	+		5	+M	-	*Cronobacter* spp.	26,35	30/,8	+	+	+	
		6	-	/	/	-		6	-	/	/	/	/	/	-	-	
		7	-	/	/	-		7	+M	-	*Cronobacter* spp.	27,04	31,28	+	+	+	
		9	-	/	/	-		9	-	/	/	/	/	/	-	-	
		11	+M	-	*Cronobacter* spp.	+		10	+M	-	*Cronobacter* spp.	26,44	30,67	+	+	+	
		13	+M	-	*Cronobacter* spp.	+		11	-	/	/	/	/	/	-	-	
		14	-	/	/	-		12	+M	-	*Cronobacter* spp.	26,43	31,13	+	+	+	
		15	-	/	/	-		13	-	/	/	/	/	/	-	-	
		17	+M	-	*Cronobacter* spp.	+		14	-	/	/	/	/	/	-	-	
		18	-	/	/	-		15	-	/	/	/	/	/	-	-	
		19	-	/	/	-		19	-	/	/	/	/	/	-	-	
		20	+M	-	*Cronobacter* spp.	+		21	-	/	/	/	/	/	-	-	
		21	-	/	/	-		25	+M	-	*Cronobacter* spp.	26,38	30,75	+	+	+	
		25	-	/	/	-		26	+M	-	*Cronobacter* spp.	26,27	31,01	+	+	+	
		26	+M	-	*Cronobacter* spp.	+		27	-	/	/	/	/	/	-	-	
		29	-	/	/	-		28	-	/	/	/	/	/	-	-	
		30	+M	-	*Cronobacter* spp.	+		29	-	/	/	/	/	/	-	-	
High	8	3	+M	-	*Cronobacter* spp.	+	5/5	8	+M	-	*Cronobacter* spp.	26,59	31,01	+	+	+	5/5
		22	+M	-	*Cronobacter* spp.	+		17	+M	-	*Cronobacter* spp.	26,73	31,28	+	+	+	
		23	+M	-	*Cronobacter* spp.	+		20	+M	-	*Cronobacter* spp.	26,73	31,28	+	+	+	
		24	+M	-	*Cronobacter* spp.	+		22	+M	-	*Cronobacter* spp.	26,28	31,11	+	+	+	
		28	+M	-	*Cronobacter* spp.	+		30	+M	-	*Cronobacter* spp.	26,26	30,07	+	+	+	

Matrix : Powdered infant formula with probiotics - 375g
Strain : *Cronobacter sakazakii* Ad1418
Seeding protocol with lyophilized strain storage for 2 weeks at ambient temperature
Unpaired
Lactic count: 1,7.10^{6} CFU/g

Study realized by ADRIA

Sample N°	Level	Inoculation level (cfu/10g)	Reference method: ISO 22964					Alternative method: RAPID'*Sakazakii* 375g + 1125 mL pre-warmed (37°C) BPW with PIF supplement - 18h at 37°C±1°C								
								RAPID'*Sakazakii* (direct streaking 10 µl)						All confirmatory tests	RAPID'*Sakazakii*	
									Confirmatory tests							
			CCI	Oxidase	Identification	Result	Positive results/ Total (ISO22964)	Typical colonies	Oxidase	Biochemical gallery (API ID32)	PCR on colony (APF Fast without FDRS)				Final result	Positive Results/Total
											Target Cq	I.C. Cq	Final result			
8205	0	/	st	/	/	-	0 /5	st	/	/	/	/	/	-	-	0 /5
8206			st	/	/	-		st	/	/	/	/	/	-	-	
8207			st	/	/	-		st	/	/	/	/	/	-	-	
8208			st	/	/	-		st	/	/	/	/	/	-	-	
8209			st	/	/	-		st	/	/	/	/	/	-	-	
8268	Low	1,9	st	/	/	-	14/20	+p	-	*Cronobacter* spp.	23,17	32,30	+	+	+	15/20
8269			+p	-	+	+		+p	-	*Cronobacter* spp.	23,96	31,53	+	+	+	
8270			st	/	/	-		+p	-	*Cronobacter* spp.	23,35	36,40	+	+	+	
8271			+p	-	+	+		+p	-	*Cronobacter* spp.	23,78	32,70	+	+	+	
8272			+p	-	+	+		st	/	/	/	/	/	-	-	
8273			+p	-	+	+		+p	-	*Cronobacter* spp.	23,54	32,62	+	+	+	
8274			st	/	/	-		+p	-	*Cronobacter* spp.	23,79	34,70	+	+	+	
8275			st	/	/	-		+p	-	*Cronobacter* spp.	23,12	33,49	+	+	+	
8276			+p	-	+	+		+p	-	*Cronobacter* spp.	23,58	32,79	+	+	+	
8277			st	/	/	-		+d/+	-	*Cronobacter* spp.	23,09	32,17	+	+	+	
8278			+p	-	+	+		st	/	/	/	/	/	-	-	
8279			st	/	/	-		st	/	/	/	/	/	-	-	
8280			+p	-	+	+		+p	-	*Cronobacter* spp.	24,13	32,93	+	+	+	
8281			+p	-	+	+		+p	-	*Cronobacter* spp.	23,77	32,95	+	+	+	
8282			+p	-	+	+		+p	-	*Cronobacter* spp.	23,97	31,09	+	+	+	
8283			+p	-	+	+		st	/	/	/	/	/	-	-	
8284			+p	-	+	+		+p	-	*Cronobacter* spp.	24,13	31,76	+	+	+	
8285			+p	-	+	+		st	/	/	/	/	/	-	-	
8286			+p	-	+	+		+p	-	*Cronobacter* spp.	23,96	32,12	+	+	+	
8287			+p	-	+	+		+p	-	*Cronobacter* spp.	24,40	33,35	+	+	+	
8288	High	5,1	+p	-	+	+	5 /5	+p	-	*Cronobacter* spp.	23,96	33,50	+	+	+	5 /5
8289			+p	-	+	+		+p	-	*Cronobacter* spp.	23,67	32,22	+	+	+	
8290			+p	-	+	+		+p	-	*Cronobacter* spp.	24,09	35,82	+	+	+	
8291			+p	-	+	+		+p	-	*Cronobacter* spp.	24,42	31,25	+	+	+	
8292			+p	-	+	+		+p	-	*Cronobacter* spp.	23,65	32,82	+	+	+	

Appendix E: RLOD study - raw results

					Reference method ISO 22964* - 20h at 37°C					P1 - BPW +PIF supplement - 18h at 37°C			
#	Sample	Strain	Injury protocol	Inoculation level	CCI After CSB	Confirmatory tests		Final result		Rapid *Sakazakii*	Conf. ISO	Final result	
						Ox.	Gallery						
3178319	Water process 25 g	*Cronobacter sakazakii* HZN090	Seeding	0	- (EM)	/	/	A	0/5+	- (EM)	/	A	0/5+
3178320					- (EM)	/	/	A		- (EM)	/	A	
3178321					- (EM)	/	/	A		- (EM)	/	A	
3178322					- (EM)	/	/	A		- (EM)	/	A	
3178323					- (EM)	/	/	A		- (EM)	/	A	
3178324				1,0	- (EM)	/	/	A	9/20+	+ (BM)	*Cronobacter spp*	P	11/20+
3178325					+ (BM)	-	*Cronobacter spp*	P		+ (DM)	*Cronobacter spp*	P	
3178326					- (EM)	/	/	A		+ (DM)	*Cronobacter spp*	P	
3178327					+ (BM)	-	*Cronobacter spp*	P		- (EM)	/	A	
3178328					+ (BM)	-	*Cronobacter spp*	P		- (EM)	/	A	
3178329					- (EM)	/	/	A		+ (BM)	*Cronobacter spp*	P	
3178330					- (EM)	/	/	A		- (EM)	/	A	
3178331					+ (BM)	-	*Cronobacter spp*	P		+ (DM)	*Cronobacter spp*	P	
3178332					+ (BM)	-	*Cronobacter spp*	P		- (EM)	/	A	
3178333					+ (BM)	-	*Cronobacter spp*	P		+ (BM)	*Cronobacter spp*	P	
3178334					- (EM)	/	/	A		+ (CM)	*Cronobacter spp*	P	
3178335					- (EM)	/	/	A		- (EM)	/	A	
3178336					- (EM)	/	/	A		- (EM)	/	A	
3178337					- (EM)	/	/	A		- (EM)	/	A	
3178338					+ (BM)	-	*Cronobacter spp*	P		+ (BM)	*Cronobacter spp*	P	
3178339					- (EM)	/	/	A		+ (BM)	*Cronobacter spp*	P	
3178340					+ (BM)	-	*Cronobacter spp*	P		+ (CM)	*Cronobacter spp*	P	
3178341					- (EM)	/	/	A		- (EM)	/	A	
3178342					- (EM)	/	/	A		+ (CM)	*Cronobacter spp*	P	
3178343					+ (BM)	-	*Cronobacter spp*	P		- (EM)	/	A	
3178344				3,0	+ (BM)	-	*Cronobacter spp*	P	5/5+	- (EM)	/	A	3/5+
3178345					+ (BM)	-	*Cronobacter spp*	P		+ (CM)	*Cronobacter spp*	P	
3178346					+ (BM)	-	*Cronobacter spp*	P		+ (CM)	*Cronobacter spp*	P	
3178347					+ (BM)	-	*Cronobacter spp*	P		+ (DM)	*Cronobacter spp*	P	
3178348					+ (BM)	-	*Cronobacter spp*	P		- (EM)	/	A	

Appendix F – Inclusivity and exclusivity study: raw data

INCLUSIVITY (Initial validation study, 2012)							
No	**Genus**	**Species**	**Reference**	**Origin**	**Inoculation level** CFU/ 225ml BPW	**RAPID'*Sakazakii***	**Confirmation** (oxidase, biochemical tests)
1.	*Cronobacter*	*dublinensis*	DSM18705	Dairy Product	2	+	+
2.	*Cronobacter*	*malonaticus*	DSM18702	Dairy Product	22	+	+
3.	*Cronobacter*	*malonaticus*	Ad 1708	Dairy product	19	+	+
4.	*Cronobacter*	*muytjensii*	CIP103581	/	1	+	+
5.	*Cronobacter*	*sakazakii*	Ad 939	Infant formula	3	+	+
6.	*Cronobacter*	*sakazakii*	Ad 940	Infant formula	1	+	+
7.	*Cronobacter*	*sakazakii*	Ad 941	Infant formula	1	+	+
8.	*Cronobacter*	*sakazakii*	Ad 942	Infant formula	7	+	+
9.	*Cronobacter*	*sakazakii*	Ad 943	Infant formula	5	+	+
10.	*Cronobacter*	*sakazakii*	Ad 944	Infant formula	2	+	+
11.	*Cronobacter*	*sakazakii*	Ad 945	Infant formula	4	+	+
12.	*Cronobacter*	*sakazakii*	Ad 946	Infant formula	1	+	+
13.	*Cronobacter*	*sakazakii*	Ad 947	Infant formula	4	+	+
14.	*Cronobacter*	*sakazakii*	Ad 948	Infant formula	31	+	+
15.	*Cronobacter*	*sakazakii*	Ad 949	Infant formula	3	+	+
16.	*Cronobacter*	*sakazakii*	Ad 950	Infant formula	4	+	+
17.	*Cronobacter*	*sakazakii*	Ad 951	Infant formula	1	+	+
18.	*Cronobacter*	*sakazakii*	Ad 952	Infant formula	6	+	+
19.	*Cronobacter*	*sakazakii*	Ad 953	Infant formula	4	+	+
20.	*Cronobacter*	*sakazakii*	Ad 963	Infant formula	2	+	+
21.	*Cronobacter*	*sakazakii*	95	Infant formula	8	+	+
22.	*Cronobacter*	*sakazakii*	Ad 704	Infant formula	3	+	+
23.	*Cronobacter*	*sakazakii*	Ad 831	Infant formula	4	+	+

INCLUSIVITY (Initial validation study, 2012)							
No	**Genus**	**Species**	**Reference**	**Origin**	**Inoculation level** CFU/ 225ml BPW	**RAPID'*Sakazakii***	**Confirmation** (oxidase, biochemical tests)
24.	*Cronobacter*	*sakazakii*	Ad 829	Infant formula	5	+	+
25.	*Cronobacter*	*sakazakii*	Ad 916	Infant formula	2	+	+
26.	*Cronobacter*	*sakazakii*	Ad 893	Infant formula	6	+	+
27.	*Cronobacter*	*sakazakii*	Ad 894	Infant formula	8	+	+
28.	*Cronobacter*	*sakazakii*	Ad 895	Infant formula	6	+	+
29.	*Cronobacter*	*sakazakii*	Ad 896	Infant formula	2	+	+
30.	*Cronobacter*	*sakazakii*	Ad 897	Infant formula	4	+	+
31.	*Cronobacter*	*sakazakii*	Ad 898	Infant formula	56	+	+
32.	*Cronobacter*	*dublinensis lactaridi*	DSMZ18707 T	Dairy Product	18	+	+
33.	*Cronobacter*	*dublinensis lausannensis*	DSMZ 18706 T	Dairy Product	12	+	+
34.	*Cronobacter*	*sakazakii*	Ad 1418	Infant formula	5	+	+
35.	*Cronobacter*	*sakazakii*	Ad 1419	Infant formula	16	+	+
36.	*Cronobacter*	*sakazakii*	Ad 1420	Infant formula	4	+	+
37.	*Cronobacter*	*sakazakii*	Ad 1421	Infant formula	8	+	+
38.	*Cronobacter*	*sakazakii*	Ad 1424	Infant formula	7	+	+
39.	*Cronobacter*	*sakazakii*	Ad 1425	Infant formula	3	+	+
40.	*Cronobacter*	*sakazakii*	Ad 1426	Infant formula	11	+	+
41.	*Cronobacter*	*sakazakii*	Ad 1427	Infant formula	12	+	+
42.	*Cronobacter*	*sakazakii*	Ad 1428	Infant formula	4	+	+
43.	*Cronobacter*	*sakazakii*	Ad 1429	Infant formula	3	+	+
44.	*Cronobacter*	*sakazakii*	Ad 1430	Infant formula	4	+	+
45.	*Cronobacter*	*sakazakii*	Ad 1431	Infant formula	10	+	+
46.	*Cronobacter*	*sakazakii*	Ad 1432	Infant formula	5	+	+
47.	*Cronobacter*	*sakazakii*	Ad 1433	Infant formula	17	+	+
48.	*Cronobacter*	*sakazakii*	Ad 1434	Infant formula	6	+	+

INCLUSIVITY (Initial validation study, 2012)							
No	**Genus**	**Species**	**Reference**	**Origin**	**Inoculation level** CFU/ 225ml BPW	**RAPID'*Sakazakii***	**Confirmation** (oxidase, biochemical tests)
49.	*Cronobacter*	*sakazakii*	Ad 1435	Infant formula	4	+	+
50.	*Cronobacter*	*sakazakii*	Ad 1436	Infant formula	4	+	+
51.	*Cronobacter*	*turicencis*	Ad 1445	Infant formula	7	+	+
52.	*Cronobacter*	*turicencis*	DSMZ 18703	/	4	+	+

INCLUSIVITY (ADRIA, 2019)														
Strains						**RAPID'*Sakazakii* - (37°c) BPW + specific supplement (d¼). Incubation for 18 h at 37°C ± 1°C**								
No	Genus	Species	N°	Origin	Inoculation Level (CFU/ 225ml BPW)	**Confirmation**		**PCR on colonies**						
								APF Classic			**APF Fast**			
						RAPID'*Sakazakii* Agar (24 h ± 2 h at 44°C ± 1°C)	Api ID 32E	Cq	I.C. Cq	Result	Cq	I.C. Cq	Result
1	*Cronobacter*	*dublinensis*	DSM18705	Dairy Product	12	+p	+	20,6	34,12	+	21,69	34,8	+
2	*Cronobacter*	*malonaticus*	DSM18702	Dairy Product	2	+p	+	21,24	32,14	+	21,04	32,34	+
3	*Cronobacter*	*malonaticus*	Ad1708	Dairy Product	21	+p	+	20,27	33,22	+	20,4	33,93	+
4	*Cronobacter*	*muytjensii*	CIP103581	/	6	+p	+	16,16	-	+	18,19	-	+
5	*Cronobacter*	*sakazakii*	Ad939	Infant formula	14	+p	+	19,86	32,39	+	19,86	33,67	+
6	*Cronobacter*	*sakazakii*	Ad940	Infant formula	53	+p	+	18,66	-	+	19,33	39,99	+
7	*Cronobacter*	*sakazakii*	Ad941	Infant formula	22	+p	+	18,18	-	+	19,47	40,56	+
8	*Cronobacter*	*sakazakii*	Ad942	Infant formula	27	+p	+	20,27	33,08	+	20,58	35,04	+
9	*Cronobacter*	*sakazakii*	Ad943	Infant formula	10	+p	+	25,76	31,62	+	16,27	31,71	+
10	*Cronobacter*	*sakazakii*	Ad944	Infant formula	20	+p	+	21,6	33,17	+	21,75	34,09	+
11	*Cronobacter*	*sakazakii*	Ad945	Infant formula	14	+p	+	19,36	33,85	+	26,09	-	+
12	*Cronobacter*	*sakazakii*	Ad946	Infant formula	14	+p	+	20,15	44,01	+	21,45	36,75	+
13	*Cronobacter*	*sakazakii*	Ad947	Infant formula	20	+p	+	19,91	32,13	+	28,7	35,81	+
14	*Cronobacter*	*sakazakii*	Ad948	Infant formula	24	+p	+	19,19	33,5	+	22,99	31,7	+
15	*Cronobacter*	*sakazakii*	Ad949	Infant formula	8	+p	+	23,35	36,44	+	24,34	33,12	+
16	*Cronobacter*	*sakazakii*	Ad950	Infant formula	19	+p	+	23,31	31,52	+	23,78	31,54	+
17	*Cronobacter*	*sakazakii*	Ad951	Infant formula	14	+p	+	21,7	-	+	23,63	32,53	+
18	*Cronobacter*	*sakazakii*	Ad952	Infant formula	24	+p	+	19,5	32,84	+	18,65	35,28	+
19	*Cronobacter*	*sakazakii*	Ad953	Infant formula	32	+p	+	21,48	32,93	+	22,8	32,69	+
20	*Cronobacter*	*sakazakii*	Ad963	Infant formula	19	+p	+	20,75	36,17	+	21,72	42,42	+

INCLUSIVITY (ADRIA, 2019)														
Strains						**RAPID'*Sakazakii* - (37°c) BPW + specific supplement (d¼). Incubation for 18 h at 37°C ± 1°C**								
No	Genus	Species	N°	Origin	Inoculation Level (CFU/ 225ml BPW)	**Confirmation**		**PCR on colonies**						
								APF Classic			**APF Fast**			
						RAPID'*Sakazakii* Agar (24 h ± 2 h at 44°C ± 1°C)	Api ID 32E	Cq	I.C. Cq	Result	Cq	I.C. Cq	Result
21	*Cronobacter*	*sakazakii*	95	Infant formula	21	+p	+	22,38	32,05	+	21,63	32,27	+
22	*Cronobacter*	*sakazakii*	Ad704	Infant formula	26	+p	+	17,63	-	+	20,38	33,97	+
23	*Cronobacter*	*sakazakii*	Ad831	Infant formula	26	+p	+	20,84	32,57	+	20,49	33,96	+
24	*Cronobacter*	*sakazakii*	Ad829	Infant formula	16	+p	+	19,48	34,63	+	19,56	38,28	+
25	*Cronobacter*	*sakazakii*	Ad916	Infant formula	15	+p	+	19,19	-	+	21,05	33,09	+
26	*Cronobacter*	*sakazakii*	Ad893	Infant formula	17	+p	+	19,7	34,13	+	20,1	33,13	+
27	*Cronobacter*	*sakazakii*	Ad894	Infant formula	14	+p	+	19,38	34,67	+	19,95	36,22	+
28	*Cronobacter*	*sakazakii*	Ad895	Infant formula	7	+p	+	19,02	-	+	18,35	-	+
29	*Cronobacter*	*sakazakii*	Ad896	Infant formula	13	+p	+	19,87	32,58	+	19,51	35,85	+
30	*Cronobacter*	*sakazakii*	Ad897	Infant formula	21	+p	+	19,44	36,76	+	19,58	36,79	+
31	*Cronobacter*	*sakazakii*	Ad898	Infant formula	9	+p	+	19,97	32,88	+	20,22	33,94	+
32	*Cronobacter*	*dublinensis lactaridi*	DSMZ18707 T	Dairy Product	12	+p	+	21,21	32,2	+	21,49	31,9	+
33	*Cronobacter*	*dublinensis lausannensis*	DSMZ 18706 T	Dairy Product	23	+p	+	21,52	33,1	+	19,76	36,52	+
34	*Cronobacter*	*sakazakii*	Ad1418	Infant formula	17	+p	+	21,24	32,03	+	21,28	32,29	+
35	*Cronobacter*	*sakazakii*	Ad1419	Infant formula	24	+p	+	20,41	31,66	+	21,03	32,08	+
36	*Cronobacter*	*sakazakii*	Ad1420	Infant formula	14	+p	+	18,49	37,31	+	18,12	38,45	+
37	*Cronobacter*	*sakazakii*	Ad1421	Infant formula	12	+p	+	20,14	33,01	+	20,05	32,95	+
38	*Cronobacter*	*sakazakii*	Ad1424	Infant formula	16	+p	+	18,36	38,13	+	18,22	41,11	+
39	*Cronobacter*	*sakazakii*	Ad1425	Infant formula	11	+p	+	20,01	33,8	+	19,58	40,55	+

INCLUSIVITY (ADRIA, 2019)														
Strains						**RAPID'*Sakazakii* - (37°c) BPW + specific supplement (d¼). Incubation for 18 h at 37°C ± 1°C**								
No	Genus	Species	N°	Origin	Inoculation Level (CFU/ 225ml BPW)	**Confirmation**		**PCR on colonies**						
								APF Classic			**APF Fast**			
						RAPID'*Sakazakii* Agar (24 h ± 2 h at 44°C ± 1°C)	Api ID 32E	Cq	I.C. Cq	Result	Cq	I.C. Cq	Result
40	*Cronobacter*	*sakazakii*	Ad1426	Infant formula	26	+p	+	20,8	32,04	+	21,27	31,48	+
41	*Cronobacter*	*sakazakii*	Ad1427	Infant formula	33	+p	+	16,89	-	+	17,35	-	+
42	*Cronobacter*	*sakazakii*	Ad1428	Infant formula	13	+p	+	23,5	32,41	+	23,4	32,04	+
43	*Cronobacter*	*sakazakii*	Ad1429	Infant formula	12	+p	+	22,11	31,99	+	22,31	31,47	+
44	*Cronobacter*	*sakazakii*	Ad1430	Infant formula	27	+p	+	21,19	31,81	+	21,27	31,62	+
45	*Cronobacter*	*sakazakii*	Ad1431	Infant formula	21	+p	+	20,21	31,78	+	20,96	32,38	+
46	*Cronobacter*	*sakazakii*	Ad1432	Infant formula	16	+p	+	20,92	33,28	+	21,14	34,21	+
47	*Cronobacter*	*sakazakii*	Ad1433	Infant formula	19	+p	+	21,53	32,76	+	20,05	34,98	+
48	*Cronobacter*	*sakazakii*	Ad1434	Infant formula	18	+p	+	22,51	32,72	+	20,24	36,59	+
49	*Cronobacter*	*sakazakii*	Ad1435	Infant formula	15	+p	+	23,18	34,1	+	19,61	-	+
50	*Cronobacter*	*sakazakii*	Ad1436	Infant formula	9	+p	+	19,37	34,79	+	19,55	34,32	+
51	*Cronobacter*	*turicencis*	Ad 1445	Infant formula	20	+p	+	20,98	31,21	+	20,26	33,46	+
52	*Cronobacter*	*turicencis*	DSMZ 18703	/	20	+p	+	19,29	33,45	+	20,45	32,48	+

EXCLUSIVITY (Initial validation study, 2012)						
No	Genus	Species	Reference	Origin	Inoculation level CFU/ml BPW	RAPID'*Sakazakii*
1	*Citrobacter*	*braakii*	Ad833	Beef	3.90E+05	Clear blue colonies
2	*Citrobacter*	*diversus*	Ad173	Dairy product	1.70E+05	-
3	*Citrobacter*	*fameri*	Ad116	Environmental sample	3.10E+05	Purple colonies
4	*Citrobacter*	*freundi*	39	Environmental sample	2.20E+05	Purple-blue colonies
5	*Citrobacter*	*koseri*	CIP105177		2.50E+05	-
6	*Enterobacter*	*aerogenes*	Ad889	Meat flour	1.70E+05	-
7	*Enterobacter*	*agglomerans*	11	Dairy product	2.60E+05	Few pale purple colonies
8	*Enterobacter*	*agglomerans*	136	Dairy product	1.00E+03	-
9	*Enterobacter*	*amnigenus*	52	Vegetables	8.00E+03	-
10	*Enterobacter*	*amnigenus*	129	Raw milk	3.60E+05	-
11	*Enterobacter*	*amnigenus*	A00C068	Poultry	1.40E+05	-
12	*Enterobacter*	*cloacae*	51	Vegetables	5.60E+05	-
13	*Enterobacter*	*cloacae*	10	Dairy product	3.00E+05	-
14	*Enterobacter*	*fergusonii*	2876	Environmental sample	3.90E+05	Pale purple colonies
15	*Enterobacter*	*gergoviae*	CIP76.1	/	2.00E+05	-
16	*Enterobacter*	*hormaechei*	Ad990	Butter	3.00E+05	Pale purple colonies
17	*Enterobacter*	*intermedius*	60	Vegetables	1.80E+05	-
18	*Enterobacter*	*kobei*	Ad706	Milk powder	2.40E+05	-
19	*Escherichia*	*coli*	16	Dairy product	5.70E+05	Clear blue colonies
20	*Escherichia*	*hermanii*	Ad462	Dairy product	2.20E+05	Clear blue micro-colonies
21	*Hafnia*	*alvei*	Ad245	Dairy product	8.30E+04	-
22	*Klebsiella*	*pneumoniae*	122	Dairy product	9.50E+04	Clear blue colonies
23	*Kluyvera*	*oxytoca*	MI030497b	Milk powder	2.10E+05	Clear blue colonies
24	*Leclercia*	*adecarboxylata*	Ad707	Milk powder	9.80E+04	-
25	*Salmonella*	*diarizonae* SIIIb 65 :c :z	Ad 1298	Dairy environmental sample	2.20E+05	Purple colonies
26	*Salmonella*	Typhimurium	Ad1333	Dairy product	5.80E+05	Purple colonies
27	*Serratia*	*ficaria*	113	Vegetables	4.20E+05	Clear blue colonies
28	*Serratia*	*marcescens*	Ad455	Raw milk	5.80E+05	-
29	*Salmonella*	*arizonae (51:z4,z23)*	CIP 5523	/	4.80E+05	-
30	*Yersinia*	*intermediae*	Ad133	Dairy product	2.20E+05	-
31	*Enterobacter*	*helveticus*	DSM 18396 T	Fruit powder	4.20E+04	Pale blue micro-colonies

Appendix G – Inter-laboratory study: results obtained by the collaborative laboratories and the expert laboratory (Initial validation study, 2012)

Laboratory A

Aerobic mesophilic flora: 66/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
A2	-	/	/	/	-	-	/	/	/	-	**NA**
A6	-	/	/	/	-	-	/	/	/	-	**NA**
A10	-	/	/	/	-	-	/	/	/	-	**NA**
A11	-	/	/	/	-	-	/	/	/	-	**NA**
A17	-	/	/	/	-	-	/	/	/	-	**NA**
A19	-	/	/	/	-	-	/	/	/	-	**NA**
A22	-	/	/	/	-	-	/	/	/	-	**NA**
A24	-	/	/	/	-	-	/	/	/	-	**NA**
A1	+	+	-	+	+	+	+	-	+	+	**PA**
A4	-	/	/	/	-	-	/	/	/	-	**NA**
A9	-	/	/	/	-	-	/	/	/	-	**NA**
A12	-	/	/	/	-	-	/	/	/	-	**NA**
A14	-	/	/	/	-	-	/	/	/	-	**NA**
A18	-	/	/	/	-	-	/	/	/	-	**NA**
A20	-	/	/	/	-	-	/	/	/	-	**NA**
A21	-	/	/	/	-	-	/	/	/	-	**NA**
A3	+	+	-	+	+	+	+	-	+	+	**PA**
A5	+	+	-	+	+	+	+	-	+	+	**PA**
A7	+	+	-	+	+	+	+	-	+	+	**PA**
A8	+	+	-	+	+	+	+	-	+	+	**PA**
A13	+	+	-	+	+	+	+	-	+	+	**PA**
A15	+	+	-	+	+	+	+	-	+	+	**PA**
A16	+	+	-	+	+	+	+	-	+	+	**PA**
A23	+	+	-	+	+	+	+	-	+	+	**PA**

Laboratory **B**

Aerobic mesophilic flora: 44/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
B2	-	/	/	/	-	-	/	/	/	-	**NA**
B6	-	/	/	/	-	-	/	/	/	-	**NA**
B10	-	/	/	/	-	-	/	/	/	-	**NA**
B11	-	/	/	/	-	-	/	/	/	-	**NA**
B17	-	/	/	/	-	-	/	/	/	-	**NA**
B19	-	/	/	/	-	-	/	/	/	-	**NA**
B22	-	/	/	/	-	-	/	/	/	-	**NA**
B24	-	/	/	/	-	-	/	/	/	-	**NA**
B1	-	/	/	/	-	-	/	/	/	-	**NA**
B4	-	/	/	/	-	-	/	/	/	-	**NA**
B9	-	/	/	/	-	-	/	/	/	-	**NA**
B12	-	/	/	/	-	-	/	/	/	-	**NA**
B14	-	/	/	/	-	-	/	/	/	-	**NA**
B18	-	/	/	/	-	-	/	/	/	-	**NA**
B20	+	+	-	+	+	+	+	-	+	+	**PA**
B21	+	+	-	+	+	+	+	-	+	+	**PA**
B3	+	+	-	+	+	+	+	-	+	+	**PA**
B5	+	+	-	+	+	+	+	-	+	+	**PA**
B7	+	+	-	+	+	+	+	-	+	+	**PA**
B8	+	+	-	+	+	+	+	-	+	+	**PA**
B13	+	+	-	+	+	+	+	-	+	+	**PA**
B15	+	+	-	+	+	+	+	-	+	+	**PA**
B16	+	+	-	+	+	+	+	-	+	+	**PA**
B23	+	+	-	+	+	+	+	-	+	+	**PA**

Laboratory **C**

Reference method: micropipette was used to transfer 0,1ml into mLST+V

Aerobic mesophilic flora:46 cfu/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
C2	-	/	/	/	-	-	/	/	/	-	NA
C6	+	+	-	+	+	-	/	/	/	-	ND
C10	-	/	/	/	-	-	/	/	/	-	NA
C11	-	/	/	/	-	-	/	/	/	-	NA
C17	-	/	/	/	-	-	/	/	/	-	NA
C19	-	/	/	/	-	-	/	/	/	-	NA
C22	+	+	-	+	+	+	+	-	+	+	PA
C24	-	/	/	/	-	-	/	/	/	-	NA
C1	+	+	-	+	+	+	+	-	+	+	PA
C4	+	+	-	+	+	+	+	-	+	+	PA
C9	+	+	-	+	+	+	+	-	+	+	PA
C12	+	+	+	-	+	+	+	-	+	+	PA
C14	+	+	+	-	+	+	+	-	+	+	PA
C18	-	/	/	/	-	-	/	/	/	-	NA
C20	-	/	/	/	-	-	/	/	/	-	NA
C21	-	/	/	/	-	-	/	/	/	-	NA
C3	+	+	-	+	+	+	+	-	+	+	PA
C5	+	+	-	+	+	+	+	-	+	+	PA
C7	+	+	-	+	+	+	+	-	+	+	PA
C8	+	+	-	+	+	+	+	-	+	+	PA
C13	+	+	-	+	+	+	+	-	+	+	PA
C15	+	+	-	+	+	+	+	-	+	+	PA
C16	+	+	-	+	+	+	+	-	+	+	PA
C23	+	+	-	+	+	+	+	-	+	+	PA

Laboratory **D**

Aerobic mesophilic flora:50 cfu/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
D2	-	/	/	/	-	-	/	/	/	-	**NA**
D6	-	/	/	/	-	-	/	/	/	-	**NA**
D10	-	/	/	/	-	-	/	/	/	-	**NA**
D11	-	/	/	/	-	-	/	/	/	-	**NA**
D17	-	/	/	/	-	-	/	/	/	-	**NA**
D19	-	/	/	/	-	-	/	/	/	-	**NA**
D22	-	/	/	/	-	-	/	/	/	-	**NA**
D24	-	/	/	/	-	-	/	/	/	-	**NA**
D1	+	+	-	+	+	+	+	-	+	+	**PA**
D4	-	/	/	/	-	-	/	/	/	-	**NA**
D9	+	+	-	+	+	+	+	-	+	+	**PA**
D12	+	+	-	+	+	+	+	-	+	+	**PA**
D14	+	+	-	+	+	+	+	-	+	+	**PA**
D18	-	/	/	/	-	-	/	/	/	-	**NA**
D20	-	/	/	/	-	-	/	/	/	-	**NA**
D21	-	/	/	/	-	-	/	/	/	-	**NA**
D3	+	+	-	-	+	+	+	-	+	+	**PA**
D5	+	+	-	+	+	+	+	-	+	+	**PA**
D7	+	+	-	+	+	+	+	-	+	+	**PA**
D8	+	+	-	+	+	+	+	-	+	+	**PA**
D13	+	+	-	+	+	+	+	-	+	+	**PA**
D15	+	+	-	+	+	+	+	-	+	+	**PA**
D16	+	+	-	+	+	+	+	-	+	+	**PA**
D23	+	+	-	+	+	+	+	-	+	+	**PA**

Laboratory **E**

Aerobic mesophilic flora: 33cfu/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
E2	-	/	/	/	-	-	/	/	/	-	**NA**
E6	-	/	/	/	-	-	/	/	/	-	**NA**
E10	-	/	/	/	-	-	/	/	/	-	**NA**
E11	-	/	/	/	-	-	/	/	/	-	**NA**
E17	-	/	/	/	-	-	/	/	/	-	**NA**
E19	-	/	/	/	-	-	/	/	/	-	**NA**
E22	-	/	/	/	-	-	/	/	/	-	**NA**
E24	-	/	/	/	-	-	/	/	/	-	**NA**
E1	+	+	-	+	+	+	+	-	+	+	**PA**
E4	-	/	/	/	-	-	/	/	/	-	**NA**
E9	+	+	-	+	+	+	+	-	+	+	**PA**
E12	+	+	-	+	+	+	+	-	+	+	**PA**
E14	+	+	-	+	+	+	+	-	+	+	**PA**
E18	+	+	-	+	+	+	+	-	+	+	**PA**
E20	+	+	-	+	+	+	+	-	+	+	**PA**
E21	-	/	/	/	-	-	/	/	/	-	**NA**
E3	+	+	-	+	+	+	+	-	+	+	**PA**
E5	+	+	-	+	+	+	+	-	+	+	**PA**
E7	+	+	-	+	+	+	+	-	+	+	**PA**
E8	+	+	-	+	+	+	+	-	+	+	**PA**
E13	+	+	-	+	+	+	+	-	+	+	**PA**
E15	+	+	-	+	+	+	+	-	+	+	**PA**
E16	+	+	-	+	+	+	+	-	+	+	**PA**
E23	+	+	-	+	+	+	+	-	+	+	**PA**

Laboratory **F**

Reference method: micropipette was used to transfer 0,1ml into mLST+V

Aerobic mesophilic flora:37 cfu/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
F2	-	/	/	/	-	-	/	/	/	-	NA
F6	-	/	/	/	-	-	/	/	/	-	NA
F10	-	/	/	/	-	-	/	/	/	-	NA
F11	-	/	/	/	-	-	/	/	/	-	NA
F17	-	/	/	/	-	-	/	/	/	-	NA
F19	-	/	/	/	-	-	/	/	/	-	NA
F22	-	/	/	/	-	-	/	/	/	-	NA
F24	+	+	-	+	+	-	/	/	/	-	ND
F1	+	+	-	+	+	+	+	-	+	+	PA
F4	+	+	-	+	+	+	+	-	+	+	PA
F9	+	+	-	+	+	+	+	-	+	+	PA
F12	-	/	/	/	-	-	/	/	/	-	NA
F14	+	+	-	+	+	+	+	-	+	+	PA
F18	+	+	-	+	+	-	/	/	/	-	ND
F20	+	+	-	+	+	+	+	-	+	+	PA
F21	-	/	/	/	-	-	/	/	/	-	NA
F3	+	+	-	+	+	+	+	-	+	+	PA
F5	+	+	-	+	+	+	+	-	+	+	PA
F7	+	+	-	+	+	+	+	-	+	+	PA
F8	+	+	-	+	+	+	+	-	+	+	PA
F13	+	+	-	+	+	+	+	-	+	+	PA
F15	+	+	-	+	+	+	+	-	+	+	PA
F16	+	+	-	+	+	+	+	-	+	+	PA
F23	+	+	-	+	+	+	+	-	+	+	PA

Laboratory **G**

Reference method: micropipette was used to transfer 0,1ml into mLST+V

Aerobic mesophilic flora:50(Ne)cfu/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
G2	-	/	/	/	-	-	/	/	/	-	**NA**
G6	-	/	/	/	-	-	/	/	/	-	**NA**
G10	-	/	/	/	-	-	/	/	/	-	**NA**
G11	-	/	/	/	-	-	/	/	/	-	**NA**
G17	+	+	-	+	+	+	+	-	+	+	**PA**
G19	-	/	/	/	-	-	/	/	/	-	**NA**
G22	+	+	-	+	+	+	+	-	+	+	**PA**
G24	-	/	/	/	-	-	/	/	/	-	**NA**
G1	-	/	/	/	-	-	/	/	/	-	**NA**
G4	+	+	-	+	+	+	+	-	+	+	**PA**
G9	-	/	/	/	-	-	/	/	/	-	**NA**
G12	-	/	/	/	-	-	/	/	/	-	**NA**
G14	+	+	-	+	+	-	/	/	/	-	**ND**
G18	+	+	-	+	+	+	+	-	+	+	**PA**
G20	+	+	-	+	+	+	+	-	+	+	**PA**
G21	-	/	/	/	-	-	/	/	/	-	**NA**
G3	+	+	-	+	+	+	+	-	+	+	**PA**
G5	+	+	-	+	+	+	+	-	+	+	**PA**
G7	+	+	-	+	+	+	+	-	+	+	**PA**
G8	+	+	-	+	+	+	+	-	+	+	**PA**
G13	+	+	-	+	+	+	+	-	+	+	**PA**
G15	+	+	-	+	+	+	+	-	+	+	**PA**
G16	+	+	-	+	+	+	+	-	+	+	**PA**
G23	+	+	-	+	+	+	+	-	+	+	**PA**

Laboratory **H**

Reference method: micropipette was used to transfer 0,1ml into mLST+V

Aerobic mesophilic flora:48 cfu/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
H2	-	/	/	/	-	-	/	/	/	-	**NA**
H6	+	+	-	+	+	+	+	-	+	+	**PA**
H10	-	/	/	/	-	-	/	/	/	-	**NA**
H11	+	+	-	+	+	-	/	/	/	-	**ND**
H17	-	/	/	/	-	+	+	-	+	+	**PD**
H19	+	+	-	+	+	-	/	/	/	-	**ND**
H22	+1col	+	-	+	-	+	+	-	+	+	**PD**
H24	-	/	/	/	-	-	/	/	/	-	**NA**
H1	+	+	-	+	+	+	+	-	+	+	**PA**
H4	-	/	/	/	-	-	/	/	/	-	**NA**
H9	-	/	/	/	-	+	+	-	+	+	**PD**
H12	+	+	-	+	+	+	+	-	+	+	**PA**
H14	+	+	-	+	+	+	+	-	+	+	**PA**
H18	+	+	-	+	+	+ 1 col	+	-	+	+	**PA**
H20	+	+	-	+	+	+	+	-	+	+	**PA**
H21	+	+	-	+	+	+	+	-	+	+	**PA**
H3	+	+	-	+	+	+	+	-	+	+	**PA**
H5	+	+	-	+	+	+	+	-	+	+	**PA**
H7	+	+	-	+	+	+	+	-	+	+	**PA**
H8	+	+	-	+	+	+	+	-	+	+	**PA**
H13	+	+	-	+	+	+	+	-	+	+	**PA**
H15	+	+	-	+	+	+	+	-	+	+	**PA**
H16	+	+	-	+	+	+	+	-	+	+	**PA**
H23	+	+	-	+	+	+	+	-	+	+	**PA**

Laboratory **I**

Aerobic mesophilic flora: 43 cfu/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
I2	-	/	/	/	-	-	/	/	/	-	**NA**
I6	-	/	/	/	-	-	/	/	/	-	**NA**
I10	-	/	/	/	-	-	/	/	/	-	**NA**
I11	-	/	/	/	-	-	/	/	/	-	**NA**
I17	-	/	/	/	-	-	/	/	/	-	**NA**
I19	-	/	/	/	-	-	/	/	/	-	**NA**
I22	-	/	/	/	-	-	/	/	/	-	**NA**
I24	-	/	/	/	-	-	/	/	/	-	**NA**
I1	+	+	-	+	+	+	+	-	+	+	**PA**
I4	-	/	/	/	-	-	/	/	/	-	**NA**
I9	+	+	-	+	+	+	+	-	+	+	**PA**
I12	-	/	/	/	-	-	/	/	/	-	**NA**
I14	+	+	-	+	+	+	+	-	+	+	**PA**
I18	+	+	-	+	+	+	+	-	+	+	**PA**
I20	-	/	/	/	-	-	/	/	/	-	**NA**
I21	+	+	-	+	+	+	+	-	+	+	**PA**
I3	+	+	-	+	+	+	+	-	+	+	**PA**
I5	+	+	-	+	+	+	+	-	+	+	**PA**
I7	+	+	-	+	+	+	+	-	+	+	**PA**
I8	+	+	-	+	+	+	+	-	+	+	**PA**
I13	+	+	-	+	+	+	+	-	+	+	**PA**
I15	+	+	-	+	+	+	+	-	+	+	**PA**
I16	+	+	-	+	+	+	+	-	+	+	**PA**
I23	+	+	-	+	+	+	+	-	+	+	**PA**

Laboratory **J**

Aerobic mesophilic flora: 8 cfu/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
J2	-	/	/	/	-	-	/	/	/	-	**NA**
J6	-	/	/	/	-	-	/	/	/	-	**NA**
J10	-	/	/	/	-	-	/	/	/	-	**NA**
J11	-	/	/	/	-	-	/	/	/	-	**NA**
J17	-	/	/	/	-	-	/	/	/	-	**NA**
J19	-	/	/	/	-	-	/	/	/	-	**NA**
J22	-	/	/	/	-	-	/	/	/	-	**NA**
J24	-	/	/	/	-	-	/	/	/	-	**NA**
J1	-	/	/	/	-	-	/	/	/	-	**NA**
J4	+	+	-	+	+	+	+	-	+	+	**PA**
J9	+	+	-	+	+	+	+	-	+	+	**PA**
J12	+	+	-	+	+	+	+	-	+	+	**PA**
J14	+	+	-	+	+	+	+	-	+	+	**PA**
J18	+	+	-	+	+	+	+	-	+	+	**PA**
J20	+	+	-	+	+	+	+	-	+	+	**PA**
J21	-	/	/	/	-	-	/	/	/	-	**NA**
J3	+	+	-	+	+	+	+	-	+	+	**PA**
J5	+	+	-	+	+	+	+	-	+	+	**PA**
J7	+	+	-	+	+	+	+	-	+	+	**PA**
J8	+	+	-	+	+	+	+	-	+	+	**PA**
J13	+	+	-	+	+	+	+	-	+	+	**PA**
J15	+	+	-	+	+	+	+	-	+	+	**PA**
J16	+	+	-	+	+	+	+	-	+	+	**PA**
J23	+	+	-	+	+	+	+	-	+	+	**PA**

Laboratory **K**

Aerobic mesophilic flora:2,0 10^5 cfu/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
K2	-	/	/	/	-	-	/	/	/	-	**NA**
K6	-	/	/	/	-	-	/	/	/	-	**NA**
K10	-	/	/	/	-	-	/	/	/	-	**NA**
K11	-	/	/	/	-	-	/	/	/	-	**NA**
K17	-	/	/	/	-	-	/	/	/	-	**NA**
K19	-	/	/	/	-	-	/	/	/	-	**NA**
K22	-	/	/	/	-	-	/	/	/	-	**NA**
K24	-	/	/	/	-	-	/	/	/	-	**NA**
K1	-	/	/	/	-	-	/	/	/	-	**NA**
K4	-	/	/	/	-	-	/	/	/	-	**NA**
K9	-	/	/	/	-	-	/	/	/	-	**NA**
K12	+	+	-	+	+	+	+	-	+	+	**PA**
K14	-	/	/	/	-	-	/	/	/	-	**NA**
K18	+	+	-	+	+	+	+	-	+	+	**PA**
K20	-	/	/	/	-	-	/	/	/	-	**NA**
K21	+	+	-	+	+	+	+	-	+	+	**PA**
K3	+	+	-	+	+	+	+	-	+	+	**PA**
K5	+	+	-	+	+	+	+	-	+	+	**PA**
K7	+	+	-	+	+	+	+	-	+	+	**PA**
K8	+	+	-	+	+	+	+	-	+	+	**PA**
K13	+	+	-	+	+	+	+	-	+	+	**PA**
K15	+	+	-	+	+	+	+	-	+	+	**PA**
K16	+	+	-	+	+	+	+	-	+	+	**PA**
K23	+	+	-	+	+	+	+	-	+	+	**PA**

Laboratory **L**

Aerobic mesophilic flora: 43/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
L2	-	/	/	/	-	-	/	/	/	-	NA
L6	-	/	/	/	-	-	/	/	/	-	NA
L10	-	/	/	/	-	-	/	/	/	-	NA
L11	-	/	/	/	-	-	/	/	/	-	NA
L17	-	/	/	/	-	-	/	/	/	-	NA
L19	-	/	/	/	-	-	/	/	/	-	NA
L22	-	/	/	/	-	-	/	/	/	-	NA
L24	-	/	/	/	-	-	/	/	/	-	NA
L1	-	/	/	/	-	-	/	/	/	-	NA
L4	-	/	/	/	-	-	/	/	/	-	NA
L9	-	/	/	/	-	-	/	/	/	-	NA
L12	+	+	-	+	+	+	+	-	+	+	PA
L14	+	+	-	+	+	+	+	-	+	+	PA
L18	-	/	/	/	-	-	/	/	/	-	NA
L20	+	+	-	+	+	+	+	-	+	+	PA
L21	-	-	-	-	-	-	/	/	/	-	NA
L3	+	+	-	+	+	+	+	-	+	+	PA
L5	+	+	-	+	+	+	+	-	+	+	PA
L7	+	+	-	+	+	+	+	-	+	+	PA
L8	+	+	-	+	+	+	+	-	+	+	PA
L13	+	+	-	+	+	+	+	-	+	+	PA
L15	+	+	-	+	+	+	+	-	+	+	PA
L16	+	+	-	+	+	+	+	-	+	+	PA
L23	+	+	-	+	+	+	+	-	+	+	PA

Laboratory **M**

Aerobic mesophilic flora: 50/ml

N°Sample	Reference method ISO / TS 22964					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
M2	-	/	/	/	-	-	/	/	/	-	**NA**
M6	-	/	/	/	-	-	/	/	/	-	**NA**
M10	-	/	/	/	-	+	+	-	+	+	**PD**
M11	-	/	/	/	-	-	/	/	/	-	**NA**
M17	-	/	/	/	-	-	/	/	/	-	**NA**
M19	-	/	/	/	-	-	/	/	/	-	**NA**
M22	-	/	/	/	-	-	/	/	/	-	**NA**
M24	-	/	/	/	-	-	/	/	/	-	**NA**
M1	-	/	/	/	-	-	/	/	/	-	**NA**
M4	-	/	/	/	-	-	/	/	/	-	**NA**
M9	-	/	/	/	-	-	/	/	/	-	**NA**
M12	+	+	-	+	+	+	+	-	+	+	**PA**
M14	+	+	-	+	+	+	+	-	+	+	**PA**
M18	+	+	-	+	+	+	+	-	+	+	**PA**
M20	-	/	/	/	-	-	/	/	/	-	**NA**
M21	-	/	/	/	-	-	/	/	/	-	**NA**
M3	+	+	-	+	+	+	+	-	+	+	**PA**
M5	+	+	-	+	+	+	+	-	+	+	**PA**
M7	+	+	-	+	+	+	+	-	+	+	**PA**
M8	+	+	-	+	+	+	+	-	+	+	**PA**
M13	+	+	-	+	+	+	+	-	+	+	**PA**
M15	+	+	-	+	+	+	+	-	+	+	**PA**
M16	+	+	-	+	+	+	+	-	+	+	**PA**
M23	+	+	-	+	+	+	+	-	+	+	**PA**

Laboratory **N (ADRIA)**
Aerobic mesophilic flora:145cfu/ml

N°Sample	Reference method ISO / TS 22964 ♦					Alternative method:RAPID'*Sakazakii*					Agreement
	Typical colonies		Confirmation		Final result	RAPID'*Sakazakii*	Confirmation			Final result	
	COMPASS *Enterobacter sakazakii*	TCS	Oxidase	API 20E			TCS	Oxidase	API 20E		
N2	-	/	/	/	-	-	/	/	/	-	**NA**
N6	-	/	/	/	-	-	/	/	/	-	**NA**
N10	-	/	/	/	-	-	/	/	/	-	**NA**
N11	-	/	/	/	-	-	/	/	/	-	**NA**
N17	-	/	/	/	-	-	/	/	/	-	**NA**
N19	-	/	/	/	-	-	/	/	/	-	**NA**
N22	-	/	/	/	-	-	/	/	/	-	**NA**
N24	-	/	/	/	-	-	/	/	/	-	**NA**
N1	+	+	-	+	+	+	+	-	+	+	**PA**
N4	+	+	-	+	+	+	+	-	+	+	**PA**
N9	-	/	/	/	-	-	/	/	/	-	**NA**
N12	+	+	-	+	+	+	+	-	+	+	**PA**
N14	-	/	/	/	-	-	/	/	/	-	**NA**
N18	-	/	/	/	-	-	/	/	/	-	**NA**
N20	+	+	-	+	+	+	+	-	+	+	**PA**
N21	-	/	/	/	-	-	/	/	/	-	**NA**
N3	+	+	-	+	+	+	+	-	+	+	**PA**
N5	+	+	-	+	+	+	+	-	+	+	**PA**
N7	+	+	-	+	+	+	+	-	+	+	**PA**
N8	+	+	-	+	+	+	+	-	+	+	**PA**
N13	+	+	-	+	+	+	+	-	+	+	**PA**
N15	+	+	-	+	+	+	+	-	+	+	**PA**
N16	+	+	-	+	+	+	+	-	+	+	**PA**
N23	+	+	-	+	+	+	+	-	+	+	**PA**