

MicroVal Study (2023LR127): Qualitative Method

Summary Report for the Extension of the InviScreen® *Salmonella* spp. Detection Kit for the Detection of *Salmonella* Species in a Broad Range of Foods

Version 2
July 31, 2026

Method(s)/Kit(s):

InviScreen® *Salmonella* spp. Detection Kit

Instrument(s) and Software:

Bio-Rad CFX96 Deep Well (*for all categories*)

Applied Biosystems QuantStudio™ 5 Real-Time PCR System (*for all categories*)

Bio-Rad CFX OPUS Deep Well (*for Animal Food & Feed and Environmental samples
categories only*)

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Table of Contents

1	Introduction	5
2	Method protocols	6
2.1	Reference method	6
2.2	Alternative method	6
2.2.1	Principle	6
2.2.2	Protocol	6
2.3	Study design	8
3	Method comparison study	8
3.1	Sensitivity Study	8
3.1.1	Number and nature of samples	9
3.1.2	Artificial contamination of samples	11
3.1.3	Test Results	13
3.1.4	Calculation of relative trueness (RT), sensitivity (SE), and false positive ratio (FPR)	18
3.1.5	Analysis of deviations and discordant results	25
3.1.6	PCR inhibition	30
3.1.7	Enrichment broth storage	31
3.2	Relative level of detection study	36
3.2.1	Experimental design	36
3.2.2	Test sample preparations	36
3.2.3	RLOD study results	37
3.2.4	Calculation of the LOD ₅₀	38
3.2.5	Conclusion RLOD study	38
4	Inclusivity/exclusivity study	38
4.1	Inclusivity and exclusivity study protocol	38
5	Interlaboratory study	46
6	Conclusions	39

ANNEX A: Flow Diagram of the Reference Method	47
ANNEX B: Flow Diagram of the Alternative Method	48
ANNEX C: Method Technical Product Information	49
ANNEX D: Artificial Contaminations	50
ANNEX E: Raw Data of Sensitivity Study	58
ANNEX F: Raw Data of RLOD Study	98
ANNEX G: Raw Data Inclusivity and Exclusivity Study	108

This report is prepared in accordance with ISO 16140-6:2019, ISO 16140-2:2016 Amd. 1 2024-09, and the MicroVal Technical Committee interpretation of 16140-2:2016 version 2.5.

Company: ALS Life Sciences Portugal

Expert Laboratory: Q Laboratories

Method/Kit name: InviScreen® *Salmonella* spp. Detection Kit

Reference method:

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

Scope of the Validation: The alternative method was previously validated for a broad range of foods claim for the following:

Category	Sample Size	Enrichment	Incubation Time	Incubation Temperature	Thermocyclers*
Heat Processed and Raw Milk and Dairy Products	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	16-24 h	37±1°C	1. Bio-Rad CFX96 Deep Well with standard settings 2. Applied Biosystems QuantStudio™ 5 Real-Time PCR System with standard settings.
Raw and RTE Meat Products			8-16 h	37±1°C	
Raw Poultry Products			8-16 h	37±1°C	
RTE/RTRH Poultry Products			8-16 h	37±1°C	
Eggs and Egg Products			16-24 h	37±1°C	
Fresh Produce and Fruits			16-24 h	37±1°C	

The scope of the extension included the following select categories with the additional use of the Bio-Rad CFX OPUS Deep Well thermocycler for the two categories covered in the extension only:

Category	Sample Size	Enrichment	Incubation Time	Incubation Temperature	Thermocyclers
Animal Food & Feed	25 g	25 g: 1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	16-24 h	37±1°C	1. Bio-Rad CFX96 Deep Well with standard settings 2. Applied Biosystems QuantStudio™ 5 Real-Time PCR System with standard settings
Environmental Samples	25 g and surface sampling	Sponge: 1:10 (90 mL) with pre-warmed (37±1°C) BPW-ISO Swab: 1:10 (9 mL) with pre-warmed (37±1°C) BPW-ISO			

Certification organization: Lloyd's Register

1 Introduction

The InviScreen® *Salmonella* spp. Detection Kit was originally validated in a broad range of foods. This validation evaluated the use of pre-warmed ($37\pm1^{\circ}\text{C}$) BPW-ISO as the primary enrichment media for 25 g sample sizes

The scope of the original validation study is provided in **Table 1** below.

Table 1. Scope of the original InviScreen® *Salmonella* spp. Detection Kit validation study

Category	Sample Size	Enrichment	Instrumentation
Heat Processed and Raw Milk and Dairy Products	25 g	1:10 dilution Scheme in pre-warmed ($37\pm1^{\circ}\text{C}$) BPW-ISO	Bio-Rad CFX96 (Deep Well) with standard settings
Raw and RTE Meat Products			Applied Biosystems QuantStudio™ 5 Real-Time PCR System with standard settings
Raw Poultry Products			
RTE/RTRH Poultry Products			
Eggs and Egg Products			
Fresh Produce and Fruits			

This scope of this evaluation was for the extension of the InviScreen® *Salmonella* spp. Detection Kit to claim an additional two categories, and additional use of the Bio-Rad CFX OPUS Deep Well thermocycler for the Animal Food & Feed and Environmental samples categories only. The scope of the extension is provided in **Table 2** below.

Table 2. Scope of the InviScreen® *Salmonella* spp. Detection Kit extension study

Category	Sample Size	Enrichment	Incubation Time	Incubation Temperature	Thermocyclers
Animal Food & Feed	25 g	25 g: 1:10 (225 mL) with pre-warmed ($37\pm1^{\circ}\text{C}$) BPW-ISO	16-24 h	$37\pm1^{\circ}\text{C}$	1. Bio-Rad CFX96 (Deep Well) with standard settings
Environmental Samples	25 g and surface sampling	Sponge: 1:10 (90 mL) with pre-warmed ($37\pm1^{\circ}\text{C}$) BPW-ISO Swab: 1:10 (9 mL) with pre-warmed ($37\pm1^{\circ}\text{C}$) BPW-ISO			2. Applied Biosystems QuantStudio™ 5 Real-Time PCR System with standard settings 3. Bio-Rad CFX OPUS-Deep Well with standard settings

The extension was performed by Q Laboratories as the MicroVal Expert Laboratory and consisted of:

- Method Comparison Study (MCS)
 - Sensitivity study
 - Relative level of detection (RLOD) study
 - Inclusivity and exclusivity Study (*For the additional Bio-Rad CFX OPUS Deep Well thermocycler only*)

2 Method protocols

2.1 Reference method

All work was conducted using the ISO 6579-1:2017 Microbiology of the food chain – Horizontal method for detection, enumeration and serotyping of *Salmonella* – Part 1: Detection of *Salmonella* spp. reference method, and ISO 6579-1:2017/Amd 1:2020 Microbiology of the food chain – Horizontal method for detection, enumeration and serotyping of *Salmonella* – Part 1: Detection of *Salmonella* spp. – Amendment 1: Broader range of incubation temperatures, amendment to the status of Annex D, and correction of the composition of MSRV and SC. A detailed description is given in **Annex A**.

2.2 Alternative method

2.2.1 Principle

The InviScreen® *Salmonella* spp. Detection Kit allows for real-time PCR detection of *Salmonella* spp. from a broad range of food products. The method consists of four steps: enrichment, DNA extraction, real-time PCR detection, and interpretation of results. The real-time PCR assay can be performed with three commercially available real-time PCR instruments equipped for detection of fluorescence emissions in the FAM and VIC or HEX channels. Sample results are interpreted as summarized in **Table 3** below.

Table 3. Summary of Result Interpretation

FAM Channel (<i>Salmonella</i> spp.)	VIC/HEX Channel (Internal Amplification Control)	Result
CT ≤ 35	+/-	Positive
-	+	Negative
-	-	Inconclusive
? (incomplete amplification curve)	+/-	Inconclusive

2.2.2 Protocol

Samples were diluted in accordance with all parts of ISO 6887 parts 1-5 unless otherwise specified in the IFU. Environmental surfaces were sampled according to ISO 18593:2018. Sample preparations of alternative method samples were conducted according to the instructions for use (IFU) as referenced in detailed **Annex B**.

A summary is outlined as follows:

1. For the food categories of the original validation, a summary of the different enrichment protocols of the InviScreen® *Salmonella* spp. Detection Kit are provided in **Table 4a** below.

2. For the two additional categories of the extension, a summary of the different enrichment protocols of the InviScreen® *Salmonella* spp. Detection Kit are provided in **Table 4b** below.

Table 4a. Summary of the alternative method enrichment protocols from the original validation

Category	Sample Size	Enrichment	Incubation Time ¹	Incubation Temperature
Heat Processed and Raw Milk and Dairy Products*	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	8-16 h	37±1°C
Raw and RTE Meat Products*	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	8-16 h	37±1°C
Raw Poultry Products	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	8-16 h	37±1°C
RTE/RTRH Poultry Products	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	8-16 h	37±1°C
Eggs and Egg Products	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	16-24 h	37±1°C
Fresh Produce and Fruits	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	16-24 h	37±1°C

¹All test portions were evaluated at the minimum enrichment time point (8 or 16 hours); *Combined categories

Table 4b. Summary of the alternative method enrichment protocols from the extension

Category	Sample Size	Enrichment	Incubation Time ¹	Incubation Temperature
Animal Food & Feed	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	16-24 h	37±1°C
Environmental Samples	25 g and surface sampling	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO Sponge: 1:10 (90 mL) with pre-warmed (37±1°C) BPW-ISO Swab: 1:10 (9 mL) with pre-warmed (37±1°C) BPW-ISO	16-24 h	37±1°C

¹All test portions were evaluated at the minimum enrichment time point (16 hours)

2. Following enrichment, DNA extraction was conducted following the InviScreen® *Salmonella* spp. Detection Kit according to package instructions with a 1 mL aliquot of sample enrichment.
3. PCR master mix was prepared according to package instructions and 20 µL was pipetted to PCR reaction tubes. A 5 µL aliquot of lysate was transferred to each corresponding PCR reaction tube with PCR master mix
4. Samples were analyzed on the following:
 - i. For the original validation: Bio-Rad CFX96 Deep Well with standard settings, and Applied Biosystems QuantStudio™ 5 Real-Time PCR System with standard settings

- ii. For the extension (for Animal Food & Feed and Environmental samples categories only): Bio-Rad CFX96 Deep Well with standard settings, Applied Biosystems QuantStudio™ 5 Real-Time PCR System (QS5) with standard settings, and Bio-Rad CFX OPUS Deep Well with standard settings.

5. Confirmation of positive results

- i. Confirmation of positive results in context of ISO general rules: Confirmations were performed by diverting a portion of the alternative method's incubated enrichment to that of the ISO 6579-1:2017 reference method. This began with a transfer of the primary enrichment to the secondary enrichment broths MKTTn and RVS at the minimum enrichment time (8 hours or 16 hours). For the extension confirmation occurred at the minimum enrichment time of 16 hours. The validation included confirmations on both XLD and Rapid *Salmonella* agar by the ISO 6579 reference method.

To assist laboratories the alternative method samples were also stored for 72 h at 2-8 °C. All presumptive positive and discrepant result samples were reanalyzed by the InviScreen® *Salmonella* spp. Detection Kit and confirmed following the ISO 6579-1:2017 reference method.

2.3 Study design

For all categories, there is no shared primary enrichment step for the reference and alternative method. **An unpaired study design** was utilized, and different test portions coming from the same batch of product (item) were used.

3 Method comparison study

The method comparison study was performed by the Expert Laboratory to compare the alternative method to the reference method. The method comparison study is comprised of three parts: sensitivity study, relative limit of detection (RLOD), and inclusivity and exclusivity study.

3.1 Sensitivity Study

The sensitivity study (SE) is the ability of the method selected to detect the analyte by either the reference or the alternative method. The sensitivity study is a comparative study between the reference method and alternative method using a broad range of food types. During the sensitivity study the alternative method must demonstrate that it can provide equivalent or better results than the standard reference method.

3.1.1 Number and nature of samples

For the extension study a total of 120 samples were analyzed in the sensitivity study. The categories, sample types, and number of samples analyzed for each type are presented in **Table 5a** below

Table 5a. Summary of categories, sample types and number of samples analyzed for the alternative method – extension study*

Category	Type	N+	N-
Animal Food and Feed	Animal Feed	10	10
	Pet Food	11	9
	Ingredients for feed products	9	11
Total = 60 samples		30	30
Environmental Samples	Swab/Sponge from Production Environment	11	9
	Process Water	10	10
	Dusts	10	10
Total = 60 samples		31	29
Overall Combined Total = 120 samples		61	59

**Identical results produced for all three thermocycler evaluated (Bio-Rad CFX96 Deep Well, QS5, Bio-Rad CFX OPUS Deep Well)*

Results from the extension study were combined with the results from the original validation where applicable (16 hour minimum enrichment times for the Bio-Rad CFX96 and QS5 thermocyclers). The summary of the original validation results and of these combined results are presented in **Table 5b** through **5e** below.

Table 5b. Summary of categories, sample types and number of samples analyzed for the alternative method from the original validation – Bio-Rad CFX96 8 hour*

Category	Type	N+	N-
Heat Processed and Raw Milk and Dairy Products	Raw milk	13	27
	Raw milk-based products (high fat content/and or high background microflora)	10	10
	Pasteurized or dry milk and dairy products	10	10
Total = 80 samples		33	47
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	10	11
	Raw, frozen meat	12	10
	Cooked meat products	11	10
Total = 64 samples		33	31
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	10	10
	Raw, ready to cook poultry (processed)	11	10
	Raw, frozen poultry	11	10
Total = 62 samples		32	30
RTE/RTRH Poultry Products	Ready to eat poultry	10	13
	Frozen cooked poultry	10	10
	Cured/smoked, Fermented/dried meat products	11	11
Total = 65 samples		31	34
Overall Combined Total = 271 samples		129	142

**8 hour time point not claimed for Egg and Produce categories*

Table 5c. Summary of categories, sample types and number of samples analyzed for the alternative method from the original validation – QS5 8 hour*

Category	Type	N+	N-
Heat Processed and Raw Milk and Dairy Products	Raw milk	13	27
	Raw milk-based products (high fat content/and or high background microflora)	10	10
	Pasteurized or dry milk and dairy products	10	10
Total = 80 samples		33	47
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	10	11
	Raw, frozen meat	12	10
	Cooked meat products	11	10
Total = 64 samples		33	31
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	10	10
	Raw, ready to cook poultry (processed)	11	10
	Raw, frozen poultry	11	10
Total = 62 samples		32	30
RTE/RTRH Poultry Products	Ready to eat poultry	10	13
	Frozen cooked poultry	10	10
	Cured/smoked, Fermented/dried meat products	11	11
Total = 65 samples		31	34
Overall Combined Total = 271 samples		129	142

*8 hour time point not claimed for Egg and Produce categories

Table 5d. Summary of categories, sample types and number of samples analyzed for the alternative method combined summary – Bio-Rad CFX96 16 hour

Category	Type	N+	N-
Heat Processed and Raw Milk and Dairy Products	Raw milk	14	26
	Raw milk-based products (high fat content/and or high background microflora)	10	10
	Pasteurized or dry milk and dairy products	10	10
Total = 80 samples		34	46
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	10	11
	Raw, frozen meat	12	10
	Cooked meat products	11	10
Total = 64 samples		33	31
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	10	10
	Raw, ready to cook poultry (processed)	11	10
	Raw, frozen poultry	11	10
Total = 62 samples		32	30
RTE/RTRH Poultry Products	Ready to eat poultry	10	13
	Frozen cooked poultry	10	10
	Cured/smoked, Fermented/dried meat products	11	11
Total = 65 samples		31	34
Eggs and Egg Products	Eggs (unprocessed)	11	10
	Egg products (heat processed)	10	12
	Dried egg products	10	15
Total = 68 samples		31	37
Fresh Produce and Fruits	Cut ready-to-eat vegetables	10	10
	Cut ready-to-eat fruits	11	10
	Leafy greens	11	10
Total = 62 samples		32	30
Animal Food and Feed	Animal Feed	10	10
	Pet Food	11	9
	Ingredients for feed products	9	11
Total = 60 samples		30	30
Environmental Samples	Swab/Sponge from Production Environment	11	9
	Process Water	10	10
	Dusts	10	10
Total = 60 samples		31	29
Overall Combined Total = 521 samples		254	267

Table 5e. Summary of categories, sample types and number of samples analyzed for the alternative method – QS5 16 hour

Category	Type	N+	N-
Heat Processed and Raw Milk and Dairy Products	Raw milk	14	26
	Raw milk-based products (high fat content/and or high background microflora)	10	10
	Pasteurized or dry milk and dairy products	10	10
Total = 80 samples		34	46
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	10	11
	Raw, frozen meat	12	10
	Cooked meat products	11	10
Total = 64 samples		33	31
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	10	10
	Raw, ready to cook poultry (processed)	11	10
	Raw, frozen poultry	11	10
Total = 62 samples		32	30
RTE/RTRH Poultry Products	Ready to eat poultry	10	13
	Frozen cooked poultry	10	10
	Cured/smoked, Fermented/dried meat products	11	11
Total = 65 samples		31	34
Eggs and Egg Products	Eggs (unprocessed)	11	10
	Egg products (heat processed)	10	12
	Dried egg products	10	15
Total = 68 samples		31	37
Fresh Produce and Fruits	Cut ready-to-eat vegetables	10	10
	Cut ready-to-eat fruits	11	10
	Leafy greens	11	10
Total = 62 samples		32	30
Animal Food and Feed	Animal Feed	10	10
	Pet Food	11	9
	Ingredients for feed products	9	11
Total = 60 samples		30	30
Environmental Samples	Swab/Sponge from Production Environment	10	10
	Process Water	11	9
	Dusts	9	11
Total = 60 samples		31	29
Overall Combined Total = 521 samples		254	267

3.1.2 Artificial contamination of samples

For the samples analyzed in the extension study, a total of 14 *Salmonella* spp. strains were used following seeding protocols. For artificially contaminated samples, 50 samples were inoculated at a level equal to or below 3 CFU/sample, 9 samples were inoculated at a level greater than three but less than 4 CFU/sample, and 2 samples were inoculated at a level between 4-10 CFU/sample. contaminated. **For the extension study 0.0% of the samples analyzed were naturally contaminated.** Four different seeding protocols were used for samples artificially contaminated:

1. Seeding with heat stressed cells (10±1 minute at 50±1 °C) at 2-8 °C for 48-72 h.
2. Seeding with diluted overnight cultures at 2-8 °C for 48-72 h.
3. Seeding with a lyophilized culture at 20-25 °C for two weeks.
4. Seeding of environmental surfaces: a diluted overnight culture and competitor organism (at 10x the level of the target organism) allowing to

dry for 16-24 hours prior to sampling. Sampled swabs and sponges were held at 20-25 °C for 2 hours.

Raw data and results for inoculated samples generated during the sensitivity portion of the extension and original validation can be found in **Annex D**.

The repartition of the positive samples of the extension is given below in **Table 6a** and related **Figure 1a** provides a visual representation.

The repartition of all positive samples combined (original validation and extension) is given below in **Table 6b** and related **Figure 1b** provides a visual representation.

Table 6a. Repartition of positive samples for the extension

	Artificial Contamination (CFU)			Naturally Contaminated	Total
	≤ 3	$3 < x < 4$	$4 < x \leq 10$		
Positive Samples	50	9	2	0	61
%	81.97%	14.75%	3.28%	0.00%	100.0%

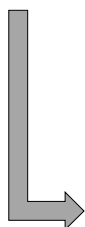


Figure 1a. Repartition of the positive samples

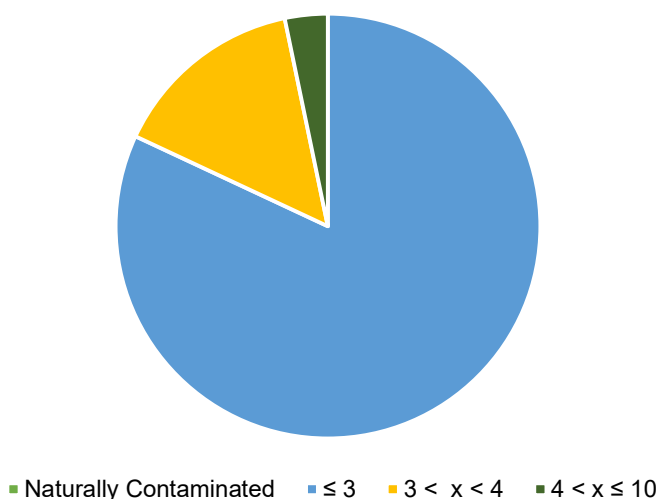


Table 6b. Repartition of all positive samples combined (original validation and extension)

	Artificial Contamination (CFU)			Naturally Contaminated	Total
	≤ 3	$3 < x < 4$	$4 < x \leq 10$		
Positive Samples	181	18	15	40	254
%	71.26%	7.09%	5.91%	15.75%	100.0%

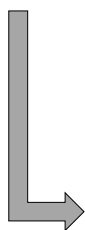
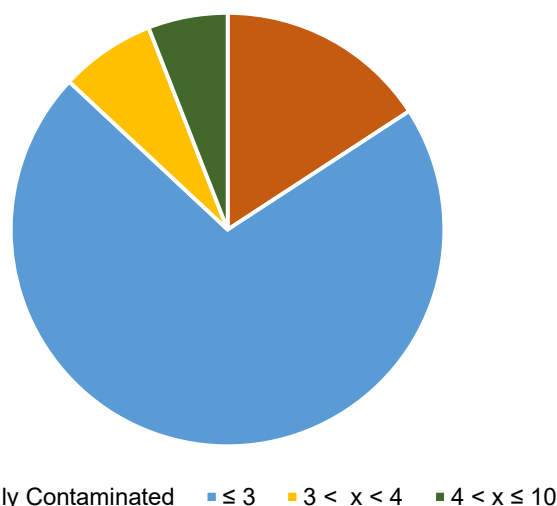


Figure 1b. Repartition positive samples (combined)



3.1.3 Test Results

Results obtained for the sensitivity testing completed during the extension are summarized below in **Table 7a** through **7d**.

Results from the extension study were combined with the results from the original validation where applicable (16 hour minimum enrichment times for the Bio-Rad CFX96 and QS5 thermocyclers). The summary of the original validation results and of these combined results are presented below in **Table 7b** through **7e**

All sensitivity raw data is presented in **Annex E**.

Table 7a. Summary of results obtained with the reference and alternative methods from the extension study*

Category	Type	PA*	NA	PD	ND	PA _{FP(alt)}	PD _{FP(alt)}	NA _{FN(alt)}	ND _{FN(alt)}	N+	N-
Animal Food and Feed	Animal Feed	4	10	4	2	0	0	0	0	10	10
	Pet Food	3	9	4	4	0	0	0	0	11	9
	Ingredients for feed products	3	11	4	2	0	0	0	0	9	11
Total = 60 samples		10	30	12	8	0	0	0	0	30	30
Environmental Samples	Swab/Sponge from Production Environment	4	9	4	3	0	0	0	0	11	9
	Process Water	4	10	3	3	0	0	0	0	10	10
	Dusts	4	10	2	4	0	0	0	0	10	10
Total = 60 samples		12	29	9	10	0	0	0	0	31	29
Overall Combined Total = 120 samples		22	59	21	18	0	0	0	0	61	59

*Identical results produced for all three thermocycler evaluated (Bio-Rad CFX96 Deep Well, QS5, Bio-Rad CFX OPUS Deep Well)

Table 7b. Summary of results obtained with the reference and alternative methods from the original validation – Bio-Rad CFX96 8 hour

Category	Type	PA*	NA	PD	ND	PA _{FP(alt)}	PD _{FP(alt)}	NA _{FN(alt)}	ND _{FN(alt)}	N+	N-
Heat Processed and Raw Milk and Dairy Products	Raw milk	9	27	3	1	0	0	0	0	13	27
	Raw milk-based products (high fat content/and or high background microflora)	4	10	2	3	0	0	0	1	10	10
	Pasteurized or dry milk and dairy products	5	10	1	1	0	0	2	1	10	11
Total = 80 samples		18	47	6	5	0	0	2	2	33	48
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	4	11	4	2	0	0	0	0	10	11
	Raw, frozen meat	5	10	2	4	0	0	0	1	12	10
	Cooked meat products	5	10	3	3	0	0	0	0	11	10
Total = 64 samples		14	31	9	10	0	0	0	1	33	31
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	5	10	3	2	0	0	0	0	10	10
	Raw, ready to cook poultry (processed)	6	10	3	2	0	0	0	0	11	10
	Raw, frozen poultry	6	10	3	2	0	0	0	0	11	10
Total = 62 samples		17	30	9	6	0	0	0	0	32	30
RTE/RTRH Poultry Products	Ready to eat poultry	4	13	4	2	0	0	0	0	10	13
	Frozen cooked poultry	4	10	2	4	0	0	0	0	10	10
	Cured/smoked, Fermented/dried meat products	3	11	4	3	0	0	1	0	11	11
Total = 65 samples		11	34	10	9	0	0	1	0	31	34
Overall Combined Total = 271 samples		60	142	34	29	0	0	3	3	129	142

* Where PA: Positive agreement, NA: Negative agreement, PD: Positive deviation, ND: Negative deviation, N+: Total number of positive samples, N-: Total number of negative samples

Table 7c. Summary of results obtained with the reference and alternative methods from the original validation - QS5 8 hour

Category	Type	PA*	NA	PD	ND	PA _{FP(alt)}	PD _{FP(alt)}	NA _{FN(alt)}	ND _{FN(alt)}	N+	N-
Heat Processed and Raw Milk and Dairy Products	Raw milk	9	27	3	1	0	0	0	0	13	27
	Raw milk-based products (high fat content/and or high background microflora)	5	10	2	3	0	0	0	0	10	10
	Pasteurized or dry milk and dairy products	6	10	3	1	0	0	0	0	10	10
Total = 80 samples		20	47	8	5	0	0	0	0	33	47
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	4	11	4	2	0	0	0	0	10	11
	Raw, frozen meat	5	10	2	4	0	0	0	1	12	10
	Cooked meat products	5	10	3	3	0	0	0	0	11	10
Total = 64 samples		14	31	9	10	0	0	0	1	33	31
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	5	10	3	2	0	0	0	0	10	10
	Raw, ready to cook poultry (processed)	6	10	3	2	0	0	0	0	11	10
	Raw, frozen poultry	5	10	3	2	0	0	0	1	11	10
Total = 62 samples		16	30	9	7	0	0	0	1	32	30
RTE/RTRH Poultry Products	Ready to eat poultry	4	13	4	2	0	0	0	0	10	13
	Frozen cooked poultry	4	10	2	4	0	0	0	0	10	10
	Cured/smoked, Fermented/dried meat products	3	11	5	3	0	0	0	0	11	11
Total = 65 samples		11	34	11	9	0	0	0	0	31	34
Overall Combined Total = 271 samples		61	142	37	31	0	0	0	2	129	142

* Where PA: Positive agreement, NA: Negative agreement, PD: Positive deviation, ND: Negative deviation, N+: Total number of positive samples, N-: Total number of negative samples

Table 7d. Summary of results obtained with the reference and alternative methods combined summary – Bio-Rad CFX96 16 hour

Category	Type	PA*	NA	PD	ND	PA _{FP(alt)}	PD _{FP(alt)}	NA _{FN(alt)}	ND _{FN(alt)}	N+	N
Heat Processed and Raw Milk and Dairy Products	Raw milk	9	26	3	1	0	0	1	0	14	26
	Raw milk-based products (high fat content/and or high background microflora)	4	10	2	3	0	0	0	1	10	10
	Pasteurized or dry milk and dairy products	6	10	3	1	0	0	0	0	10	10
Total = 80 samples		19	46	8	5	0	0	1	1	34	46
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	4	11	4	2	0	0	0	0	10	11
	Raw, frozen meat	6	10	2	4	0	0	0	0	12	10
	Cooked meat products	5	10	3	3	0	0	0	0	11	10
Total = 64 samples		15	31	9	9	0	0	0	0	33	31
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	5	10	3	2	0	0	0	0	10	10
	Raw, ready to cook poultry (processed)	6	10	3	2	0	0	0	0	11	10
	Raw, frozen poultry	6	10	3	2	0	0	0	0	11	10
Total = 62 samples		17	30	9	6	0	0	0	0	32	30
RTE/RTRH Poultry Products	Ready to eat poultry	4	13	4	2	0	0	0	0	10	14
	Frozen cooked poultry	4	10	2	4	0	0	0	0	10	10
	Cured/smoked, Fermented/dried meat products	3	11	5	3	0	0	0	0	11	11
Total = 65 samples		11	34	11	9	0	0	0	0	31	34
Eggs and Egg Products	Eggs (unprocessed)	4	10	4	3	0	0	0	0	11	10
	Egg products (heat processed)	3	12	2	5	0	0	0	0	10	12
	Dried egg products	3	15	4	3	0	0	0	0	10	15
Total = 68 samples		10	37	10	11	0	0	0	0	31	37
Fresh Produce and Fruits	Cut ready-to-eat vegetables	2	10	4	2	0	0	0	2	10	10
	Cut ready-to-eat fruits	4	10	4	3	0	0	0	0	11	10
	Leafy greens	4	10	4	3	0	0	0	0	11	9
Total = 62 samples		10	30	12	8	0	0	0	2	32	30
Animal Food and Feed	Animal Feed	4	10	4	2	0	0	0	0	10	10
	Pet Food	3	9	4	4	0	0	0	0	11	9
	Ingredients for feed products	3	11	4	2	0	0	0	0	9	11
Total = 60 samples		10	30	12	8	0	0	0	0	30	30
Environmental Samples	Swab/Sponge from Production Environment	4	9	4	3	0	0	0	0	11	9
	Process Water	4	10	3	3	0	0	0	0	10	10
	Dusts	4	10	2	4	0	0	0	0	10	10
Total = 60 samples		12	29	9	10	0	0	0	0	31	29
Overall Combined Total = 521 samples		104	267	80	66	0	0	1	3	254	267

* Where PA: Positive agreement, NA: Negative agreement, PD: Positive deviation, ND: Negative deviation, N+: Total number of positive samples, N-: Total number of negative samples

Table 7c. Summary of results obtained with the reference and alternative methods combined summary - QS5 16 hour

Category	Type	PA*	NA	PD	ND	PA _{FP(alt)}	PD _{FP(alt)}	NA _{FN(alt)}	ND _{FN(alt)}	N+	N
Heat Processed and Raw Milk and Dairy Products	Raw milk	9	26	3	1	0	0	1	0	14	26
	Raw milk-based products (high fat content/and or high background microflora)	5	10	2	3	0	0	0	0	10	10
	Pasteurized or dry milk and dairy products	6	10	3	1	0	0	0	0	10	10
Total = 80 samples		20	46	8	5	0	0	1	0	34	36
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	4	11	4	2	0	0	0	0	10	11
	Raw, frozen meat	6	10	2	4	0	0	0	0	12	10
	Cooked meat products	5	10	3	3	0	0	0	0	11	10
Total = 64 samples		15	31	9	9	0	0	0	0	33	31
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	5	10	3	2	0	0	0	0	10	10
	Raw, ready to cook poultry (processed)	6	10	3	2	0	0	0	0	11	10
	Raw, frozen poultry	6	10	3	2	0	0	0	0	11	10
Total = 62 samples		17	30	9	6	0	0	0	0	32	30
RTE/RTRH Poultry Products	Ready to eat poultry	4	13	4	2	0	0	0	0	10	13
	Frozen cooked poultry	4	10	2	4	0	0	0	0	10	10
	Cured/smoked, Fermented/dried meat products	3	11	5	3	0	0	0	0	11	11
Total = 65 samples		11	34	11	9	0	0	0	0	31	34
Eggs and Egg Products	Eggs (unprocessed)	4	10	4	3	0	0	0	0	11	10
	Egg products (heat processed)	3	12	2	5	0	0	0	0	10	12
	Dried egg products	3	15	4	3	0	0	0	0	10	15
Total = 68 samples		10	37	10	11	0	0	0	0	31	37
Fresh Produce and Fruits	Cut ready-to-eat vegetables	2	10	4	2	0	0	0	2	10	10
	Cut ready-to-eat fruits	4	10	4	3	0	0	0	0	11	10
	Leafy greens	4	10	4	3	0	0	0	0	11	10
Total = 62 samples		10	29	12	10	0	0	0	2	32	30
Animal Food and Feed	Animal Feed	4	10	4	2	0	0	0	0	10	10
	Pet Food	3	9	4	4	0	0	0	0	11	9
	Ingredients for feed products	3	11	4	2	0	0	0	0	9	11
Total = 60 samples		10	30	12	8	0	0	0	0	30	30
Environmental Samples	Swab/Sponge from Production Environment	4	9	4	3	0	0	0	0	11	9
	Process Water	4	10	3	3	0	0	0	0	10	10
	Dusts	4	10	2	4	0	0	0	0	10	10
Total = 60 samples		12	29	9	10	0	0	0	0	31	29
Overall Combined Total = 521 samples		105	267	80	66	0	0	1	2	254	267

* Where PA: Positive agreement, NA: Negative agreement, PD: Positive deviation, ND: Negative deviation, N+: Total number of positive samples, N-: Total number of negative samples

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

The formulas presented in **Table 8** were used to calculate RT, SE, and FPR. Results were calculated considering all confirmation protocols.

Final calculated results for the extension are summarized below in **Table 9a**.

Results from the extension study were combined with the results from the original validation where applicable (16 hour minimum enrichment times for the Bio-Rad CFX96 and QS5 thermocyclers). The calculated results of the original validation and of these combined results are presented below **Table 9b** through **9e**.

Table 8. Formulas used to determine RT, SE, and FPR

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

*Where *N* is the total number of samples (PA+PD+TND+TNA)

Table 9a. Results for the calculation of the relative trueness (RT), sensitivity (SE), false positive ratio (FPR), and false negative ratio (FNR) for the extension**

Category	Type	PA*	NA	PD	ND	PA _{FP(alt)}	PD _{FP(alt)}	NA _{FN(alt)}	ND _{FN(alt)}	TND	TNA	SE _{alt} %	SE _{ref} %	RT %	FPR %	FNR%	N+	N-
Animal Food and Feed	Animal Feed	4	10	4	2	0	0	0	0	2	10	80.0	60.0	70.0	0.0	0.0		
	Pet Food	3	9	4	4	0	0	0	0	4	9	63.6	63.6	60.0	0.0	0.0		
	Ingredients for feed products	3	11	4	2	0	0	0	0	2	11	77.8	55.6	70.0	0.0	0.0		
Total = 60 samples		10	30	12	8	0	0	0	0	8	30	73.3	60.0	66.7	0.0	0.0	30	30
Environmental Samples	Swab/Sponge from Production Environment	4	9	4	3	0	0	0	0	3	9	72.7	63.6	65.0	0.0	0.0		
	Process Water	4	10	3	3	0	0	0	0	3	10	70.0	70.0	70.0	0.0	0.0		
	Dusts	4	10	2	4	0	0	0	0	4	10	70.0	80.0	70.0	0.0	0.0		
Total = 60 samples		12	29	9	10	0	0	0	0	10	29	67.7	71.0	68.3	0.0	0.0	31	29
Overall Combined Total = 120 samples		22	59	21	18	0	0	0	0	18	59	70.5	65.6	67.5	0.0	0.0	61	59

* Where PA: Positive agreement, NA: Negative agreement, PD: Positive Deviation, ND: Negative Deviation, N+: Total number of positive samples, N-: Total number of negative samples

**Identical results produced for all three thermocyclers evaluated (Bio-Rad CFX96 Deep Well, QS5, Bio-Rad CFX OPUS Deep Well)

Table 9b. Results for the calculation of the relative trueness (RT), sensitivity (SE), false positive ratio (FPR), and false negative ratio (FNR) for the original validation – Bio-Rad CFX96 8 hour

Category	Type	PA*	NA	PD	ND	PA _{FP(alt)}	PD _{FP(alt)}	NA _{FN(alt)}	ND _{FN(alt)}	TND	TNA	SE alt %	SE ref %	RT %	FPR %	FNR%	N+	N-
Heat Processed and Raw Milk and Dairy Products	Raw milk	9	27	3	1	0	0	0	0	1	27	92.3	76.9	90.0	0.0	0.0		
	Raw milk-based products (high fat content/and or high background microflora)	4	10	2	3	0	0	0	1	4	10	60.0	80.0	70.0	0.0	10.0		
	Pasteurized or dry milk and dairy products	5	10	1	1	0	0	2	1	2	12	75.0	87.5	85.0	0.0	37.5		
Total = 80 samples		18	47	6	5	0	0	2	2	7	49	75.0	81.3	82.5	0.0	12.9	33	47
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	4	11	4	2	0	0	0	0	2	11	80.0	60.0	71.4	0.0	0.0		
	Raw, frozen meat	5	10	2	4	0	0	0	1	5	10	58.3	83.3	68.2	0.0	8.3		
	Cooked meat products	5	10	3	3	0	0	0	0	3	10	72.7	72.7	71.4	0.0	0.0		
Total = 64 samples		14	31	9	10	0	0	0	1	10	31	69.7	72.7	70.3	0.0	3.0	33	31
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	5	10	3	2	0	0	0	0	2	10	80.0	70.0	75.0	0.0	0.0		
	Raw, ready to cook poultry (processed)	6	10	3	2	0	0	0	0	2	10	81.8	72.7	76.2	0.0	0.0		
	Raw, frozen poultry	6	10	3	2	0	0	0	0	2	10	81.8	72.7	76.2	0.0	0.0		
Total = 62 samples		17	30	9	6	0	0	0	0	6	30	81.3	71.9	75.8	0.0	0.0	32	30
RTE/RTRH Poultry Products	Ready to eat poultry	4	13	4	2	0	0	0	0	2	13	80.0	60.0	73.9	0.0	0.0		
	Frozen cooked poultry	4	10	2	4	0	0	0	0	4	10	60.0	80.0	70.0	0.0	0.0		
	Cured/smoked, Fermented/dried meat products	3	11	4	3	0	0	1	0	3	12	70.0	60.0	68.2	0.0	10.0		
Total = 65 samples		11	34	10	9	0	0	1	0	9	35	70.0	66.7	70.8	0.0	3.3	31	34
Overall Combined Total = 271 samples		60	142	34	29	0	0	3	3	32	145	76.4	72.4	75.4	0.0	4.2	129	142

* Where PA: Positive agreement, NA: Negative agreement, PD: Positive Deviation, ND: Negative Deviation, N+: Total number of positive samples, N-: Total number of negative samples

Table 9C. Results for the calculation of the relative trueness (RT), sensitivity (SE), false positive ratio (FPR), and false negative ratio (FNR) for the original validation – QS5 8 hour

Category	Type	PA*	NA	PD	ND	PA _{FP(alt)}	PD _{FP(alt)}	NA _{FN(alt)}	ND _{FN(alt)}	TND	TNA	SE _{alt} %	SE _{ref} %	RT %	FPR %	FNR%	N+	N-
Heat Processed and Raw Milk and Dairy Products	Raw milk	9	27	3	1	0	0	0	0	1	27	92.3	76.9	90.0	0.0	0.0		
	Raw milk-based products (high fat content/and or high background microflora)	5	10	2	3	0	0	0	0	3	10	70.0	80.0	75.0	0.0	0.0		
	Pasteurized or dry milk and dairy products	6	10	3	1	0	0	0	0	1	10	90.0	70.0	80.0	0.0	0.0		
Total = 80 samples		20	47	8	5	0	0	0	0	5	47	84.8	75.8	83.8	0.0	0.0	33	47
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	4	11	4	2	0	0	0	0	2	11	80.0	60.0	71.4	0.0	0.0		
	Raw, frozen meat	5	10	2	4	0	0	0	1	5	10	58.3	83.3	68.2	0.0	8.3		
	Cooked meat products	5	10	3	3	0	0	0	0	3	10	72.7	72.7	71.4	0.0	0.0		
Total = 64 samples		14	31	9	9	0	0	0	1	10	31	69.7	72.7	70.3	0.0	0.0	33	31
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	5	10	3	2	0	0	0	0	2	10	80.0	70.0	75.0	0.0	0.0		
	Raw, ready to cook poultry (processed)	6	10	3	2	0	0	0	0	2	10	81.8	72.7	76.2	0.0	0.0		
	Raw, frozen poultry	5	10	3	2	0	0	0	1	3	10	72.7	72.7	71.4	0.0	9.1		
Total = 62 samples		16	30	9	6	0	0	0	1	7	30	78.1	71.9	74.2	0.0	3.1	32	30
RTE/RTRH Poultry Products	Ready to eat poultry	4	13	4	2	0	0	0	0	2	13	80.0	60.0	73.9	0.0	0.0		
	Frozen cooked poultry	4	10	2	4	0	0	0	0	4	10	60.0	80.0	70.0	0.0	0.0		
	Cured/smoked, Fermented/dried meat products	3	11	5	3	0	0	0	0	3	11	72.7	54.5	63.6	0.0	0.0		
Total = 65 samples		11	34	11	9	0	0	0	0	9	34	71.0	64.5	69.2	0.0	0.0	31	34
Overall Combined Total = 271 samples		61	142	37	29	0	0	0	2	31	142	77.2	70.9	75.5	0.0	1.4	129	142

* Where PA: Positive agreement, NA: Negative agreement, PD: Positive Deviation, ND: Negative Deviation, N+: Total number of positive samples, N-: Total number of negative samples

Table 9d. Results for the calculation of the relative trueness (RT), sensitivity (SE), false positive ratio (FPR), and false negative ratio (FNR) combined summary – Bio-Rad CFX96 16 hour

Category	Type	PA*	NA	PD	ND	PA _{FP(alt)}	PD _{FP(alt)}	NA _{FN(alt)}	ND _{FN(alt)}	TND	TNA	SE _{alt} %	SE _{ref} %	RT %	FPR %	FNR%	N+	N-
Heat Processed and Raw Milk and Dairy Products	Raw milk	9	26	3	1	0	0	1	0	1	27	92.3	76.9	90.0	0.0	7.7	34	46
	Raw milk-based products (high fat content/and or high background microflora)	4	10	2	3	0	0	0	1	4	10	60.0	80.0	70.0	0.0	10.0		
	Pasteurized or dry milk and dairy products	6	10	3	1	0	0	0	0	1	10	90.0	70.0	80.0	0.0	0.0		
Total = 80 samples		19	46	8	5	0	0	1	1	6	47	81.8	75.8	82.5	0.0	6.1		
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	4	11	4	2	0	0	0	0	2	11	80.0	60.0	71.4	0.0	0.0	33	31
	Raw, frozen meat	6	10	2	4	0	0	0	0	4	10	66.7	83.3	72.7	0.0	0.0		
	Cooked meat products	5	10	3	3	0	0	0	0	3	10	72.7	72.7	71.4	0.0	0.0		
Total = 64 samples		15	31	9	9	0	0	0	0	9	31	72.7	72.7	71.9	0.0	0.0		
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	5	10	3	2	0	0	0	0	2	10	80.0	70.0	75.0	0.0	0.0	32	30
	Raw, ready to cook poultry (processed)	6	10	3	2	0	0	0	0	2	10	81.8	72.7	76.2	0.0	0.0		
	Raw, frozen poultry	6	10	3	2	0	0	0	0	2	10	81.8	72.7	76.2	0.0	0.0		
Total = 62 samples		17	30	9	6	0	0	0	0	6	30	81.3	71.9	75.8	0.0	0.0		
RTE/RTRH Poultry Products	Ready to eat poultry	4	13	4	2	0	0	0	0	2	13	80.0	60.0	73.9	0.0	0.0	31	34
	Frozen cooked poultry	4	10	2	4	0	0	0	0	4	10	60.0	80.0	70.0	0.0	0.0		
	Cured/smoked, Fermented/dried meat products	3	11	5	3	0	0	0	0	3	11	72.7	54.5	63.6	0.0	0.0		
Total = 65 samples		11	34	11	9	0	0	0	0	9	34	71.0	64.5	69.2	0.0	0.0		
Eggs and Egg Products	Eggs (unprocessed)	4	10	4	3	0	0	0	0	3	10	72.7	63.6	66.7	0.0	0.0	31	37
	Egg products (heat processed)	3	12	2	5	0	0	0	0	5	12	50.0	80.0	68.2	0.0	0.0		
	Dried egg products	3	15	4	3	0	0	0	0	3	15	70.0	60.0	72.0	0.0	0.0		
Total = 68 samples		10	37	10	11	0	0	0	0	11	37	64.5	67.7	69.1	0.0	0.0		
Fresh Produce and Fruits	Cut ready-to-eat vegetables	2	10	4	2	0	0	0	2	4	10	60.0	60.0	60.0	0.0	20.0	32	30
	Cut ready-to-eat fruits	4	10	4	3	0	0	0	0	3	10	72.7	63.6	66.7	0.0	0.0		
	Leafy greens	4	10	4	3	0	0	0	0	3	10	72.7	63.6	66.7	0.0	0.0		
Total = 62 samples		10	30	12	8	0	0	0	2	10	30	68.8	62.5	64.5	0.0	6.3		
Animal Food and Feed	Animal Feed	4	10	4	2	0	0	0	0	2	10	80.0	60.0	65.0	0.0	0.0	30	30
	Pet Food	3	9	4	4	0	0	0	0	4	9	63.6	63.6	60.0	0.0	0.0		
	Ingredients for feed products	3	11	4	2	0	0	0	0	2	11	77.8	55.6	70.0	0.0	0.0		
Total = 60 samples		10	30	12	8	0	0	0	0	8	30	73.3	60.0	66.7	0.0	0.0		
Environmental Samples	Swab/Sponge from Production Environment	4	9	4	3	0	0	0	0	3	9	72.7	63.5	65.0	0.0	0.0	31	29
	Process Water	4	10	3	3	0	0	0	0	3	10	70.0	70.0	70.0	0.0	0.0		
	Dusts	4	10	2	4	0	0	0	0	4	10	60.0	80.0	70.0	0.0	0.0		
Total = 60 samples		12	29	9	10	0	0	0	0	10	29	67.7	71.0	68.3	0.0	0.0		
Overall Combined Total = 521 samples		104	267	80	66	0	0	1	3	69	268	72.7	68.4	71.4	0.0	1.6	254	267

* Where PA: Positive agreement, NA: Negative agreement, PD: Positive Deviation, ND: Negative Deviation, N+: Total number of positive samples, N-: Total number of negative samples

Table 9d. . Results for the calculation of the relative trueness (RT), sensitivity (SE), false positive ratio (FPR), and false negative ratio (FNR) combined summary – QS5 16 hour

Category	Type	PA*	NA	PD	ND	PA _{FP(alt)}	PD _{FP(alt)}	NA _{FN(alt)}	ND _{FN(alt)}	TND	TNA	SE _{alt} %	SE _{ref} %	RT %	FPR %	FNR%	N+	N-
Heat Processed and Raw Milk and Dairy Products	Raw milk	9	26	3	1	0	0	1	0	1	27	92.3	76.9	90.0	0.0	7.7		
	Raw milk-based products (high fat content/and or high background microflora)	5	10	2	3	0	0	0	0	3	10	70.0	80.0	75.0	0.0	0.0		
	Pasteurized or dry milk and dairy products	6	10	3	1	0	0	0	0	1	10	90.0	70.0	80.0	0.0	0.0		
Total = 80 samples		20	46	8	5	0	0	1	0	5	47	84.8	75.8	83.8	0.0	3.0	34	46
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	4	11	4	2	0	0	0	0	2	11	80.0	60.0	71.4	0.0	0.0		
	Raw, frozen meat	6	10	2	4	0	0	0	0	4	10	66.7	83.3	72.7	0.0	0.0		
	Cooked meat products	5	10	3	3	0	0	0	0	3	10	72.7	72.7	71.4	0.0	0.0		
Total = 64 samples		15	31	9	9					0	0	72.7	72.7	71.9	0.0	0.0	33	31
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	5	10	3	2	0	0	0	0	2	10	80.0	70.0	75.0	0.0	0.0		
	Raw, ready to cook poultry (processed)	6	10	3	2	0	0	0	0	2	10	81.8	72.7	76.2	0.0	0.0		
	Raw, frozen poultry	6	10	3	2	0	0	0	0	2	10	81.8	72.7	76.2	0.0	0.0		
Total = 62 samples		17	30	9	6	0	0	0	0	6	30	81.3	71.9	75.8	0.0	0.0	32	30
RTE/RTRH Poultry Products	Ready to eat poultry	4	13	4	2	0	0	0	0	2	13	80.0	60.0	73.9	0.0	0.0		
	Frozen cooked poultry	4	10	2	4	0	0	0	0	4	10	60.0	80.0	70.0	0.0	0.0		
	Cured/smoked, Fermented/dried meat products	3	11	5	3	0	0	0	0	3	11	72.7	54.5	63.6	0.0	0.0		
Total = 65 samples		11	34	11	9	0	0	0	0	9	34	71.0	64.5	69.2	0.0	0.0	31	34
Eggs and Egg Products	Eggs (unprocessed)	4	10	4	3	0	0	0	0	3	10	72.7	63.6	66.7	0.0	0.0		
	Egg products (heat processed)	3	12	2	5	0	0	0	0	5	12	50.0	80.0	68.2	0.0	0.0		
	Dried egg products	3	15	4	3	0	0	0	0	3	15	70.0	60.0	72.0	0.0	0.0		
Total = 68 samples		10	37	10	11	0	0	0	0	11	37	64.5	67.7	69.1	0.0	0.0	31	37
Fresh Produce and Fruits	Cut ready-to-eat vegetables	2	10	4	2	0	0	0	2	4	10	60.0	60.0	60.0	0.0	20.0		
	Cut ready-to-eat fruits	4	10	4	3	0	0	0	0	3	10	72.7	63.6	66.7	0.0	0.0		
	Leafy greens	4	10	4	3	0	0	0	0	3	10	72.7	63.6	66.7	0.0	0.0		
Total = 62 samples		10	30	12	8	0	0	0	2	10	30	68.8	62.5	64.5	0.0	6.3	32	30
Animal Food and Feed	Animal Feed	4	10	4	2	0	0	0	0	2	10	80.0	60.0	70.0	0.0	0.0		
	Pet Food	3	9	4	4	0	0	0	0	4	9	63.6	63.6	60.0	0.0	0.0		
	Ingredients for feed products	3	11	4	2	0	0	0	0	2	11	77.8	55.6	70.0	0.0	0.0		
Total = 60 samples		10	30	12	8	0	0	0	0	8	30	73.3	60.0	66.7	0.0	0.0	30	30
Environmental Samples	Swab/Sponge from Production Environment	4	9	4	3	0	0	0	0	3	9	72.7	63.6	65.0	0.0	0.0		
	Process Water	4	10	3	3	0	0	0	0	3	10	70.0	70.0	70.0	0.0	0.0		
	Dusts	4	10	2	4	0	0	0	0	4	10	60.0	80.0	70.0	0.0	0.0		
Total = 60 samples		12	29	9	10	0	0	0	0	10	29	67.7	71.0	68.3	0.0	0.0	31	29
Overall Combined Total = 521 samples		105	267	80	66	0	0	1	2	68	268	73.1	68.4	71.6	0.0	1.2	254	267

* Where PA: Positive agreement, NA: Negative agreement, PD: Positive Deviation, ND: Negative Deviation, N+: Total number of positive samples, N-: Total number of negative samples

A summary of the calculated results for all categories of the extension, the original validation, and combined (16 hour minimum enrichment times for the Bio-Rad CFX96 and QS5 thermocyclers) are presented in **Table 10** below.

Table 10. Summary of results for all categories

Evaluation	Instrument	Calculation	Results for all the categories (%)
Extension*	Bio-Rad CFX96, QS5, Bio-Rad CFX OPUS	Sensitivity for the alternative method	70.5%
		Sensitivity for the reference method	65.6%
		Relative trueness	67.5%
		False positive ratio for the alternative method	0.0%
		False negative ratio for the alternative method	0.0%
Original Validation	CFX96 8 hour	Sensitivity for the alternative method	76.4%
		Sensitivity for the reference method	72.4%
		Relative trueness	75.4%
		False positive ratio for the alternative method	0.0%
		False negative ratio for the alternative method	4.2%
Original Validation	QS5 8 hour	Sensitivity for the alternative method	77.2%
		Sensitivity for the reference method	70.9%
		Relative trueness	75.5%
		False positive ratio for the alternative method	0.0%
		False negative ratio for the alternative method	1.4%
Combined	CFX 96 16 hour	Sensitivity for the alternative method	72.7%
		Sensitivity for the reference method	68.4%
		Relative trueness	71.4%
		False positive ratio for the alternative method	0.0%
		False negative ratio for the alternative method	1.6
	QS5 16 hour	Sensitivity for the alternative method	73.1%
		Sensitivity for the reference method	68.4%
		Relative trueness	71.6%
		False positive ratio for the alternative method	0.0%
		False negative ratio for the alternative method	1.2%

**Identical results produced for all three thermocycler evaluated (Bio-Rad CFX96 Deep Well, QS5, Bio-Rad CFX OPUS Deep Well)*

The sensitivity values are similar between the alternative method protocols and enrichment according to the reference standard.

3.1.5 Analysis of deviations and discordant results

For the extension study there were zero (0) positive (false positive) or negative (false negative) discordant results for the InviScreen® *Salmonella* spp. Detection Kit.

For the original validation, a total of 10 negative discordant results were observed on the CFX-96 PCR instrument and 5 negative discordant results were observed on the QS5 instrument. A total of 8 negative discordant results were observed at 8 hours incubation and 7 negative discordant results were observed at 16 hours incubation. Overall, 15 negative discordant results (false negatives) were observed over a total of 10 samples (2.5% of all samples). There were no positive discordant results (false positives) observed for the study. A summary of the discordant results of the original validation are presented in **Table 11** below.

All negative discordant results were evaluated in subsequent replicates (analyzed in triplicate) to evaluate root-cause, and all results were in agreement with the original result. All samples were contaminated at a level below 3 CFU or naturally contaminated. These levels of contamination may have been at or below the level of detection for the assay.

Table 11. Summary of observed discordant results of the original validation

Item	Inoculation Level	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)								Final Agreement				
		Sample No	Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)					Final Result (8 Hr)	Final Result(16 Hr)	Sample No	ISO 6579-1:2017 Confirmation								Final Result		
							MKTTn		RVS		Identification ¹	MKTTn		RVS		Identification ¹				MKTTn		RVS		Identification ¹						
			CFX		QS5																								XLD	
			8 Hr	16 Hr	8 Hr	16 Hr	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA	XLD				RSA	XLD	RSA	XLD	RSA	XLD	RSA	XLD		RSA	8 Hr
Frozen Raw Boneless Skinless Chicken Thighs	5.6 (7,6,5,9,1)	47	34.84	16.70	-	29.04	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	107	t	t	t	t	Salmonella spp.	Pos	ND _{FN(alt)} /PA	PA			
Pure Beef Patties (85% Lean)	2.6 (1,0,4,5,3)	148	-	23.28	-	24.50	t	t	ng	ng	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	208	m	m	m	t	Salmonella spp.	Pos	ND _{FN(alt)}	PA			
Original Turkey Jerky	1.6 (2,0,2,1,3)	286	-	17.61	34.57	16.52	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	346	ng	ng	ng	ng		Neg	NA _{FN(alt)} /PD	PD			
Spinach and Arugula Mix	1.6 (2,0,3,0,3)	481 ^a		-		-						t	t	t	t	Salmonella spp		Pos	541	t	t	t	t	Salmonella spp.	Pos	Not claimed	ND _{FN(alt)}			
Spinach, Arugula, and other Mix	2.4 (4,3,5,0,0)	491 ^a		-		-						t	t	t	t	Salmonella spp		Pos	551	t	t	t	t	Salmonella spp.	Pos	Not claimed	ND _{FN(alt)}			
Raw Milk	Naturally contaminated	604	-	-	-	-	at	at	ng	ng		m	m	t	t	Salmonella spp	Neg	Pos	664	at	at	ng	ng		Neg	NA	NA _{FN(alt)}			
Kaltbach Le Cremeux	Naturally contaminated	623	-	-	34.26	34.67	m	m	m	m	Salmonella spp.	m	m	m	m	Salmonella spp	Pos	Pos	683	m	t	m	t	Salmonella spp.	Pos	ND _{FN(alt)} /PA	ND _{FN(alt)} /PA			
Part Skim Shredded Mozzarella Cheese	1.6 (2,2,1,0,3)	646	-	24.11	33.08	23.55	m	m	m	m	Salmonella spp	t	t	t	t	Salmonella spp.	Pos	Pos	706	ng	ng	ng	ng		Neg	NA _{FN(alt)} /PD	PD			
Pepper Jack Cheese	1.2 (0,1,1,4,0)	648	-	16.32	33.38	15.62	m	t	m	t	Salmonella spp	t	m	t	m	Salmonella spp.	Pos	Pos	708	ng	ng	at	at		Neg	ND _{FN(alt)} /PD	PD			
Guyere Cheese	Naturally contaminated	660	-	17.86	32.74	14.87	m	t	m	t	Salmonella spp	m	t	m	t	Salmonella spp.	Pos	Pos	720	m	t	m	t	Salmonella spp.	Pos	ND _{FN(alt)} /PA	PA			

^a Samples not claimed at 8 hour per enrichment protocol.

An unpaired study design was utilized, and different test portions coming from the same batch of product (item) were used. As a results both positive (PD) and negative (ND) deviations were observed as expected.

For each category, the difference between Total ND (TND) and PD was calculated and then compared to the Acceptability Limits (AL) defined in the ISO 16140-2:2016 Amd. 1 2024-09 standard.

Analysis of the discordant results for the extension are presented in **Table 12a** below.

Results from the extension study were combined with the results from the original validation where applicable (16 hour minimum enrichment times for the Bio-Rad CFX96 and QS5 thermocyclers). The analysis of discordant results of the original validation and of these combined results are presented below in **Table 12b** through **12e**.

Table 12a. Analysis of discordant results for the extension**

Category	Type	TND*	PD	TND-PD	
				AL	
Animal Food and Feed	Animal Feed	2	4		
	Pet Food	4	4		
	Ingredients for feed products	2	4		
Total		8	12	-4	3
Environmental Samples	Swab/Sponge from Production Environment	3	4		
	Process Water	3	3		
	Dusts	4	2		
Total		10	9	1	3
Overall Combined Total		18	21	-3	4

* Where TND = ND+ND_{FN(alt)}+PA_{FP(alt)}

**Identical results produced for all three thermocycler evaluated (Bio-Rad CFX96 Deep Well, QS5, Bio-Rad CFX OPUS Deep Well)

Table 12b. Analysis of discordant results for the original validation – Bio-Rad CFX96 8 hour

Category	Type	TND*	PD	TND-PD	
				AL	
Heat Processed and Raw Milk and Dairy Products	Raw milk	1	3		
	Raw milk-based products (high fat content/and or high background microflora)	4	2		
	Pasteurized or dry milk and dairy products	2	11		
Total		7	6	1	3
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	2	4		
	Raw, frozen meat	5	2		
	Cooked meat products	3	3		
Total		10	9	1	3
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	2	3		
	Raw, ready to cook poultry (processed)	2	3		
	Raw, frozen poultry	2	3		
Total		6	9	-3	3
RTE/RTRH Poultry Products	Ready to eat poultry	2	4		
	Frozen cooked poultry	4	2		
	Cured/smoked, Fermented/dried meat products	3	4		
Total		9	10	-1	3
Overall Combined Total		32	34	-5	5

* Where TND = ND+ND_{FN(alt)}+PA_{FP(alt)}

Table 12c. Analysis of discordant results for the original validation – QS5 8 hour

Category	Type	TND*	PD	TND-PD	
				AL	
Heat Processed and Raw Milk and Dairy Products	Raw milk	1	3		
	Raw milk-based products (high fat content/and or high background microflora)	3	2		
	Pasteurized or dry milk and dairy products	1	3		
Total		5	8	-3	3
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	2	4		
	Raw, frozen meat	5	2		
	Cooked meat products	3	3		
Total		10	9	1	3
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	2	3		
	Raw, ready to cook poultry (processed)	2	3		
	Raw, frozen poultry	3	3		
Total		7	9	-2	3
RTE/RTRH Poultry Products	Ready to eat poultry	2	4		
	Frozen cooked poultry	4	2		
	Cured/smoked, Fermented/dried meat products	3	5		
Total		9	11	-2	3
Overall Combined Total		31	37	-8	5

* Where TND = ND+ND_{FN(alt)}+PA_{FP(alt)}

**Table 12d. Analysis of discordant results for combined results – Bio-Rad CFX96
16 hour**

Category	Type	TND*	PD	TND-PD	
				AL	
Heat Processed and Raw Milk and Dairy Products	Raw milk	1	3		
	Raw milk-based products (high fat content/and or high background microflora)	4	2		
	Pasteurized or dry milk and dairy products	1	3		
Total		6	8	-2	3
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	2	4		
	Raw, frozen meat	4	2		
	Cooked meat products	3	3		
Total		9	9	0	3
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	2	3		
	Raw, ready to cook poultry (processed)	2	3		
	Raw, frozen poultry	2	3		
Total		6	9	-3	3
RTE/RTRH Poultry Products	Ready to eat poultry	2	4		
	Frozen cooked poultry	4	2		
	Cured/smoked, Fermented/dried meat products	3	5		
Total		9	11	-2	3
Eggs and Egg Products	Eggs (unprocessed)	3	4		
	Egg products (heat processed)	5	2		
	Dried egg products	3	4		
Total		11	10	1	3
Fresh Produce and Fruits	Cut ready-to-eat vegetables	4	4		
	Cut ready-to-eat fruits	3	4		
	Leafy greens	3	4		
Total		10	12	-2	3
Animal Food and Feed	Animal Feed	2	4		
	Pet Food	4	4		
	Ingredients for feed products	2	4		
Total		8	12	-4	3
Environmental Samples	Swab/Sponge from Production Environment	3	4		
	Process Water	3	3		
	Dusts	4	2		
Total		10	9	1	3
Overall Combined Total		69	80	-11	7

* Where ND = ND + PPND and NA = NA + PPNA

Table 12e. Analysis of discordant results for combined results – QS5 16 hour

Category	Type	ND*	PD	ND-PD	
				AL	
Heat Processed and Raw Milk and Dairy Products	Raw milk	1	3		
	Raw milk-based products (high fat content/and or high background microflora)	3	2		
	Pasteurized or dry milk and dairy products	1	3		
Total		5	8	-3	3
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	2	4		
	Raw, frozen meat	4	2		
	Cooked meat products	3	3		
Total		9	9	0	3
Raw Poultry Products	Raw, ready to cook poultry (unprocessed)	2	3		
	Raw, ready to cook poultry (processed)	2	3		
	Raw, frozen poultry	2	3		
Total		6	9	-3	3
RTE/RTRH Poultry Products	Ready to eat poultry	2	4		
	Frozen cooked poultry	4	2		
	Cured/smoked, Fermented/dried meat products	3	5		
Total		9	11	-2	3
Eggs and Egg Products	Eggs (unprocessed)	3	4		
	Egg products (heat processed)	5	2		
	Dried egg products	3	4		
Total		11	10	1	3
Fresh Produce and Fruits	Cut ready-to-eat vegetables	4	4		
	Cut ready-to-eat fruits	3	4		
	Leafy greens	3	4		
Total		10	12	-2	3
Animal Food and Feed	Animal Feed	2	4		
	Pet Food	4	4		
	Ingredients for feed products	2	4		
Total		8	12	-4	3
Environmental Samples	Swab/Sponge from Production Environment	3	4		
	Process Water	3	3		
	Dusts	4	2		
Total		10	9	-1	3
Overall Combined Total		68	50	-12	6

* Where ND = ND + PPND and NA = NA + PPNA

For all categories analyzed, the TND-PD is lower than the acceptability limit (AL).

3.1.6 PCR inhibition

For the extension and original validation, zero samples produced an “Invalid” result. Should PCR inhibition be observed per the instruction of use (IFU), it is recommended to perform a 1:2 and 1:10 dilution of the DNA extract in DNase/RNase free water and repeat the Real Time PCR reaction.

3.1.7 Enrichment broth storage

For the validation study, enrichment broth (pre-warmed (37 ± 1 °C) BPW-ISO) was stored at 2-8 °C for 72 h, and all confirmed positive and discrepant samples were tested again. Cold storage was performed for both the minimum enrichment time point (8 hours) and after the maximum enrichment time (16 hours) for the original validation. Cold storage was performed for the minimum enrichment time point (16 hours) only for the extension

For the extension zero (0) changes or discordant results were observed.

For the original validation, a total of 33 changes were observed as summarized in **Table 14** below.

Table 14. Enrichment broth storage changes observed in the original validation

Category	Sample No	Results before storage				Results after storage			
		CFX	QS5	Confirmation	Agreement	CFX	QS5	Confirmation	Agreement
Heat Processed and Raw Milk and Dairy Products (8 Hr)	784	+	+	+	PA	-	+	-	ND/ PA _{FP(alt)}
	786	+	+	+	PA	-	+	-	ND/ PA _{FP(alt)}
	787	+	+	+	PA	-	+	-	ND/ PA _{FP(alt)}
	789	+	+	+	PA	-	+	-	ND/ PA _{FP(alt)}
	790	+	+	+	PA	-	+	-	ND/ PA _{FP(alt)}
	623	/	+	+	PA	/	-	+	ND _{FN(alt)} /
	635	+	/	+	PA	-	/	+	ND _{FN(alt)} /
	645	+	/	+	PD	-	/	+	NA _{FN(alt)} /
	646	/	+	+	PD	/	-	+	NA _{FN(alt)} /
	648	/	+	+	PD	/	-	+	NA _{FN(alt)} /
Heat Processed and Raw Milk and Dairy Products (16 Hr)	650	+	+	+	PA	-	-	+	ND _{FN(alt)} /
	784	+	+	+	PA	+	+	-	PA _{FP(alt)}
	786	+	/	+	PA	-	/	+	ND _{FN(alt)} /
	787	+	/	+	PA	-	/	+	ND _{FN(alt)} /
	789	+	+	+	PA	+	-	-	PA _{FP(alt)} /ND
	790	+	/	+	PA	-	/	+	ND _{FN(alt)} /
Raw Poultry Products (8 Hr)	623	/	+	+	PA	/	-	+	ND _{FN(alt)} /
	4	+	+	-	PD	-	-	-	NA _{FN(alt)} /
	30	/	+	+	PA	/	-	+	ND _{FN(alt)} /
	47	+	/	+	PA	-	/	+	ND _{FN(alt)} /
Raw Poultry Products (16 Hr)	51	+	/	+	PA	-	/	+	ND _{FN(alt)} /
	4	/	+	-	PD	/	-	-	NA _{FN(alt)} /
	51	+	/	+	PA	-	/	+	ND _{FN(alt)} /
	53	+	/	+	PA	-	/	+	ND _{FN(alt)} /
RTE/RTRH Poultry Products (8 or 16 hours)	56	+	/	+	PA	-	/	+	ND _{FN(alt)} /
	254	/	+	-	PD	/	-	-	NA _{FN(alt)} /
Eggs and Egg Products (16 hour)	416	+	/	-	PD	-	/	-	NA _{FN(alt)} /
Fresh Produce and Fruits (16 hour)	487	/	+	+	PA	/	-	+	ND _{FN(alt)} /
	490	/	+	-	PD	/	-	-	NA _{FN(alt)} /
	514	/	+	+	PA	/	-	+	ND _{FN(alt)} /
	521	/	+	+	PA	/	-	+	ND _{FN(alt)} /
	522	/	+	-	PD	/	-	-	NA _{FN(alt)} /
	529	+	+	-	PD	-	-	-	NA _{FN(alt)} /

For the original validation, of the 33 changes observed, 17 were for the Heat Processed and Raw Milk and Dairy Products category, eight (8) for the Raw Poultry Products category, and six (6) for the Fresh Produce and Fruits category. The remaining two (2) changes were observed in the RTE/RTRH Poultry Products and Eggs and Egg Products categories. For the Heat Processed and Raw Milk and Dairy Products, the majority of the observed changes occurred from naturally contaminated raw milk samples. The samples from this category underwent a change from positive to negative including confirmation. The level of contamination may have been low enough to be below the detection of the assay to recover. All other observed changes went from a positive result to a negative result all of which were negative discordant results (false negatives).

Due to the significant number of observed changes the following categories **were not claimed** for enrichment broth storage:

- Heat Processed and Raw Milk and Dairy Products category
- Raw Poultry Products
- Fresh Produce and Fruit

For the remaining categories that were claimed for enrichment broth storage, a total of 3 negative discordant results were observed on the CFX instrument and 2 negative discordant results were observed on the QS5 instrument. A total of 4 negative discordant results were observed at 8 hours incubation and 1 negative discordant result was observed at 16 hours incubation. Overall, 4 negative discordant results (false negatives) were observed (1.0% of all samples). The discordant results are provided in **Table 15** below.

All negative discordant results were evaluated in subsequent replicates (analyzed in triplicate) to evaluate root-cause, and all results were in agreement with the original result. All samples were contaminated at a level below 3 CFU, this level of contamination may have been at or below the level of detection for the assay.

Table 15. Enrichment broth storage discordant results of the claimed categories of the original validation

Item	Inoculation Level	CANDIDATE (25 g)														ISO REFERENCE STANDARD (25 g)								Final Agreement			
		Sample No	Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)				ISO 6579-1:2017 (16 Hour)				Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation				Final Result					
							MKTn		RVS		Identification ¹	MKTn		RVS				Identification ¹	MKTn		RVS		Identification ¹				
			CFX		QS5		XLD	RSA	XLD	RSA		XLD	RSA	XLD					RSA	XLD	RSA						
			8 Hour	16 Hour	8 Hour	16 Hour																		8 Hr	16 Hr		
Pure Beef Patties (85% Lean)	2.6 (1,0,4,5,3)	148	-	25.01	-	23.22	t	t	ng	ng	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	208	m	t	m	t	Salmonella spp.	Pos	ND _{FN(alt)}	PA
Chicken Chunks- White Meat	1.0 (1,0,1,2,1)	254	33.35	14.69	-	14.40	m	t	at	t	Salmonella spp.	m	t	at	t	Salmonella spp.	Pos	Pos	314	ng	ng	ng	ng		Neg	PD/ NA _{FN(alt)}	PD
Original Turkey Jerky	1.6 (2,0,2,1,3)	286	-	17.51	34.22	17.45	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	346	ng	ng	ng	ng		Neg	NA _{FN(alt)} / PD	PD
Dried Egg Whites 8	0.8 (1,3,0,0,0)	416 ^a		-		34.06						t	t	ng	ng	Salmonella spp.		Pos	476	ng	ng	ng	ng		Neg	Not claimed	NA _{FN(alt)} / PD

^a Samples not claimed at 8 hour per enrichment protocol.

Interpretation of results for the categories that will be claimed for enrichment broth storage for the extension are presented in **Table 16a**.

Result for the categories that will be claimed for enrichment broth storage from the extension study were combined with the results from the original validation where applicable (16 hour minimum enrichment times for the Bio-Rad CFX96 and QS5 thermocyclers). The interpretation of results of the original validation and of these combined results are presented below Table **16b** through **16e**.

Table 16a. Interpretation of sensitivity study results after storage of the enrichment broth for the extension**

Category	Type	TND*	PD	TND-PD	AL
Animal Food and Feed	Animal Feed	2	4		
	Pet Food	4	4		
	Ingredients for feed products	2	4		
Total		8	12	-4	3
Environmental Samples	Swab/Sponge from Production Environment	3	4		
	Process Water	3	3		
	Dusts	4	2		
Total		10	9	1	3
All Categories		18	21	-3	5

* Where TND = ND+ND_{FN(alt)}+PA_{FP(alt)}

**Identical results produced for all three thermocycler evaluated (Bio-Rad CFX96 Deep Well, QS5, Bio-Rad CFX OPUS Deep Well)

Table 16b. Interpretation of sensitivity study results after storage of the enrichment broth for the original validation – Bio-Rad CFX96 8 hour

Category	Type	TND*	PD	TND-PD	AL
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	2	4		
	Raw, frozen meat	5	2		
	Cooked meat products	3	3		
Total		10	9	1	3
RTE/RTRH Poultry Products	Ready to eat poultry	2	4		
	Frozen cooked poultry	4	2		
	Cured/smoked, Fermented/dried meat products	4	4		
Total		10	10	0	3
All Categories		20	19	1	5

* Where TND = ND+ND_{FN(alt)}+PA_{FP(alt)}

Table 16c. Interpretation of sensitivity study results after storage of the enrichment broth for the original validation – QS5 8 hour

Category	Type	TND*	PD	ND-PD	AL
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	2	4		
	Raw, frozen meat	5	2		
	Cooked meat products	3	3		
Total		10	9	1	3
RTE/RTRH Poultry Products	Ready to eat poultry	3	3		
	Frozen cooked poultry	4	2		
	Cured/smoked, Fermented/dried meat products	3	5		
Total		10	10	0	3
All Categories		20	19	1	5

* Where TND = ND+ND_{FN(alt)}+PA_{FP(alt)}

Table 16d. Interpretation of sensitivity study results after storage of the enrichment broth combined – Bio-Rad CFX96 16 hour

Category	Type	TND*	PD	TND-PD	AL
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	2	4		
	Raw, frozen meat	4	2		
	Cooked meat products	3	3		
Total		9	9	0	3
RTE/RTRH Poultry Products	Ready to eat poultry	2	4		
	Frozen cooked poultry	4	2		
	Cured/smoked, Fermented/dried meat products	3	5		
Total		9	11	-2	3
Eggs and Egg Products	Eggs (unprocessed)	3	4		
	Egg products (heat processed)	5	2		
	Dried egg products	3	3		
Total		11	9	2	3
Animal Food and Feed	Animal Feed	2	4		
	Pet Food	4	4		
	Ingredients for feed products	2	4		
Total		8	12	-4	3
Environmental Samples	Swab/Sponge from Production Environment	3	4		
	Process Water	3	3		
	Dusts	4	2		
Total		10	9	1	3
All Categories		26	28	-3	5

* Where TND = ND+ND_{FN(alt)}+PA_{FP(alt)}

Table 16e. Interpretation of sensitivity study results after storage of the enrichment broth combined – QS5 16 hour

Category	Type	TND*	PD	TND-PD	AL
Raw and RTE Meat Products	Raw, ready-to-cook meat (unprocessed)	2	4		
	Raw, frozen meat	4	2		
	Cooked meat products	3	3		
Total		9	9	0	3
RTE/RTRH Poultry Products	Ready to eat poultry	2	4		
	Frozen cooked poultry	4	2		
	Cured/smoked, Fermented/dried meat products	3	5		
Total		9	11	-2	3
Eggs and Egg Products	Eggs (unprocessed)	3	4		
	Egg products (heat processed)	5	2		
	Dried egg products	3	4		
Total		11	10	1	3
Animal Food and Feed	Animal Feed	2	4		
	Pet Food	4	4		
	Ingredients for feed products	2	4		
Total		8	12	-4	3
Environmental Samples	Swab/Sponge from Production Environment	3	4		
	Process Water	3	3		
	Dusts	4	2		
Total		10	9	1	3
All Categories		47	27	-4	6

* Where TND = ND+ND_{FN(alt)}+PA_{FP(alt)}

For all categories analyzed, the (ND+PPND)-PD is lower than the acceptability limit (AL).

3.2 Relative level of detection study

The relative limit of detection (RLOD) is the level of detection (LOD) at P = 0.50 (LOD₅₀) of the alternative method divided by the level of detection at P = 0.50 (LOD₅₀) of the reference method.

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

$$RLOD = \frac{LOD_{alt}}{LOD_{ref}}$$

3.2.1 Experimental design

Per category, one type and one relevant target micro-organism for this type was chosen in the RLOD study, as shown in **Table 17**, below. Three levels of contamination were evaluated for the matrix/strain combination. This combination consisted of:

- 5 uninoculated test portions, analyzed as the negative control level
- 20 test portions, evaluated at the theoretical level of detection (low level)
- 5 test portions, evaluated just above the theoretical detection threshold

A total of 30 test portions were analyzed per RLOD. All test portions were compared to the ISO 6579-1:2017 reference standard and carried out according to ISO 16140-2:2016. A total plate count was performed on the day of analysis to determine the total microbial load.

Table 17. List of selected types and strains as tested within the RLOD study

Category	Type/Item	Strain	Origin	Inoculation and Storage	Replicates
Animal Food and Feed	Dry dog kibble (25 g)	<i>Salmonella</i> Montevideo QL 024.16	Environmental	Lyophilized culture; Held at 20 – 25 °C for 2 weeks	5 uninoculated
					20 low
					5 high
Environmental Samples	Stainless Steel (sponges)	<i>Salmonella</i> Tennessee QL 024.6 & <i>Enterococcus faecalis</i> ATCC 19433	Environmental & Not Available	Overnight culture; Held at 2 –8°C for 48-72 h	5 uninoculated
					20 low
					5 high

3.2.2 Test sample preparations

Three levels of artificial contamination were prepared for each type:

- Negative control level: One uninoculated lot x 5 test portions
- Low level: One inoculated lot between 0.2 and 2.0 CFU/sample 20 test portions, providing fractional recovery (5-15 positive results out of 20)
- High level: One inoculated lot between 2.0 and 8.0 CFU/sample x 5 test portions, contaminated at a higher level

A bulk lot of the matrix was inoculated at each level, homogenized, and stored, as described in **Table 17**.

3.2.3 RLOD study results

The tabulated raw data for the RLOD study of the extension and original validation is given in **Annex F**.

The RLOD calculations were performed using the Excel spread sheet <https://standards.iso.org/iso/16140/> (version 2024-01-10) of the international standard as described in EN ISO 16140-2: 2016.

The RLOD per type is given in **Table 18a** for the extension study with the Acceptability Limits (AL).

Results from the extension study were combined with the results from the original validation where applicable (16 hour minimum enrichment times for the Bio-Rad CFX96 and QS5 thermocyclers). The RLOD per type for the original validation and of these combined results are presented below in **Table 18b** and **18c** below with the Acceptability Limits (AL).

Table 18a. RLOD before and after confirmation of the alternative method results for the extension

Name	RLOD	AL	RLODL	RLODU	b=ln(RLOD)	sd(b)	z-Test statistic
Dry dog kibble (25 g)	0.843	2.5	0.297	2.397	-0.170	0.522	0.326
Stainless Steel (sponges)	1.00	2.5	0.413	2.419	0.000	0.442	0.000
Combined	0.916	2.5	0.433	1.938	-0.088	0.375	0.235

Table 18b. RLOD before and after confirmation of the alternative method results – for the original validation 8 Hour

Name	RLOD	AL	RLODL	RLODU	b=ln(RLOD)	sd(b)	z-Test statistic
Raw Milk (25 mL)	0.652	2.5	0.265	1.609	-0.427	0.451	0.946
Raw Ground Beef (25 g)	1.000	2.5	0.429	2.334	0.000	0.454	0.000
Raw Ground Turkey (25 g)	0.597	2.5	0.206	1.729	-0.516	0.532	0.971
Deli Turkey (25 g)	1.152	2.5	0.471	2.817	0.142	0.447	0.316
Combined	0.829	2.5	0.514	1.336	-0.188	0.239	0.786

Table 18c. RLOD before and after confirmation of the alternative method results – for combined results 16 Hour

Name	RLOD	AL	RLODL	RLODU	b=ln(RLOD)	sd(b)	z-Test statistic
Raw Milk (25 mL)	0.652	2.5	0.265	1.609	-0.427	0.451	0.946
Raw Ground Beef (25 g)	1.000	2.5	0.403	2.334	0.000	0.424	0.000
Raw Ground Turkey (25 g)	0.597	2.5	0.206	1.729	-0.516	0.532	0.971
Deli Turkey (25 g)	1.152	2.5	0.471	2.817	0.142	0.447	0.316
Liquid egg, pasteurized (25 g)	0.776	2.5	0.202	2.978	-0.254	0.673	0.378
Cut Cantaloupe (25 g)	1.388	2.5	0.501	3.844	0.328	0.509	0.643
Dry dog kibble (25 g)	0.843	2.5	0.297	2.397	-0.170	0.522	0.326
Stainless Steel (sponges)	1.000	2.5	0.413	2.419	0.000	0.442	0.000
Combined	0.907	2.5	0.629	1.292	-0.104	0.180	0.579

3.2.4 Calculation of the LOD₅₀

Results for the from the extension study were combined with the results from the original validation and the LOD₅₀ value was calculated according to the Wilrich & Wilrich POD-LOD calculation program (version 10, 2021-04-05), to provide an easy access to end-users who will run the method verification according to the NF EN ISO 16140-3:2021 (presented in **Table 19** below).

Table 19. Presentation of LOD₅₀

PODLOD calculation results with the LOD for d in cfu / A ₀ • ALS Salmonella Extension • Salmonella • 11-4-25											
No. i	Matrix	Matrix effect $\hat{f}$	ln matrix effect $\hat{f}$	SD of ln matrix effect $s_{\hat{f}}$	LOD _{50%} = 50 % limit of detection			LOD _{95%} = 95 % limit of detection			Test statistic matrix effect z
					Detection limit $\hat{d}_{0.5}$	Lower conf. limit $\hat{d}_{0.5,L}$	Upper conf. limit $\hat{d}_{0.5,U}$	Detection limit $\hat{d}_{0.95}$	Lower conf. limit $\hat{d}_{0.95,L}$	Upper conf. limit $\hat{d}_{0.95,U}$	
1	Raw Milk	0.625	-0.469	0.264	1.108	0.653	1.880	4.790	2.824	8.124	1.775
2	Raw Ground Beef	0.602	-0.507	0.291	1.150	0.643	2.058	4.972	2.779	8.896	1.859
3	Raw Ground Turkey	0.805	-0.217	0.297	0.861	0.475	1.560	3.722	2.055	6.743	0.750
4	Deli Turkey	0.481	-0.732	0.267	1.441	0.846	2.456	6.230	3.655	10.616	2.870
5	Liquid Egg, Pasteurized	0.347	-1.059	0.317	1.998	1.059	3.769	8.636	4.579	16.289	3.927
6	Cut Cantaloupe	0.588	-0.531	0.325	1.179	0.615	2.258	5.094	2.658	9.759	1.763
7	Dry Dog Kibble	1.095	0.091	0.307	0.633	0.343	1.170	2.736	1.480	5.058	0.291
8	Stainless Steel (Sponges)	1.063	0.061	0.327	0.652	0.339	1.256	2.819	1.465	5.427	0.184
Combined results		0.622	-0.475	0.105	1.114	0.904	1.374	4.816	3.905	5.940	4.733
The combined results are based on the data of matrices 1, 2, 3, 4, 5, 6, 7 and 8.											

3.2.5 Conclusion RLOD study

The RLOD values (using the confirmed alternative method results) meet the acceptability limit of 2.5 for unpaired test portions for all types tested.

4 Inclusivity/exclusivity study

4.1 Inclusivity and exclusivity study protocol

The Inclusivity and Exclusivity from the original validation meet all acceptance criteria.

For the extension, the stored lysates from the original validation were analyzed on the additional thermocycler Bio-Rad CFX OPUS Deep Well (with standard settings) for all inclusivity and exclusivity strains. All 105 *Salmonella* strains were correctly detected, while all non-*Salmonella* strains were excluded.

Tabulated raw data for the inclusivity/exclusivity is given in **Annex G**.

5 Interlaboratory Study

5.1 General Overview

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

A total of 16 sample sets were sent to 12 laboratories. Three laboratories, not involved in the development or validation of the method agreed to analyze two sets of samples at their location. The study was conducted with RTE deli turkey samples inoculated with *Salmonella* Enteritidis ATCC 4931 in an unpaired study design. Samples were inoculated and sent on Friday November 1, 2024, as described below:

- 36 blind coded samples (25 g) for analysis of *Salmonella* with the ALS method (red label)
- 36 blind coded samples (25 g) for analysis of *Salmonella* by the ISO 6579 reference method (blue label)
- 1 RTE deli turkey sample (marked “APC”) for aerobic mesophilic flora enumeration by ISO 4833 method
- USB temperature probe

All participants were trained on the ILS procedures during virtual meetings held on 31 October and 1 November 2024.

Preparation of Inoculum and Test Portions

The *Salmonella* Enteritidis ATCC 4931 culture used in this evaluation was propagated onto Tryptic Soy Agar with 5% Sheep Blood (SBA) from a Q Laboratories frozen stock culture stored at -70°C. A single, well-isolated

colony from SBA was transferred into brain heart infusion (BHI) broth and incubated at 37 ± 2 °C for 18-24 hours. Appropriate dilutions were prepared based on previously established growth curves for both low and high inoculation levels, resulting in fractional positive outcomes for the low level. A bulk lot of the RTE deli turkey was inoculated with a liquid inoculum and mixed thoroughly by hand kneading to ensure an even distribution of microorganisms. The matrix was inoculated on the day of shipment so that all test portions would have been held for 96 hours by the day testing was initiated.

The inoculated test product was packaged into separate 25 g samples in sterile Whirl-Pak® bags and shipped to the collaborators.

The targeted inoculation levels were:

- A control level at 0 CFU/25 g
- A low level at 0.2-2 CFU/25g (level providing fractional positive results)
- A high level at 2-5 CFU/25 g.

Blinded samples were placed in isothermal boxes, which contained cooling blocks, and express-shipped to the different laboratories. A temperature probe containing a sensor was added to the package to register the temperature profile during the transport, the package delivery and storage until analyses.

The samples were shipped via Federal Express or DHL priority express in isotherm packages according to IATA regulations for Category B Biological Substances. The temperature conditions had to stay lower or equal to 8°C during transport.

The *Salmonella* detection was performed by the reference and the alternative methods using either the CFX-96 or QS5 instruments. The minimum incubation time was tested for the alternative method, i.e. 8 h at 37°C. The analyses were started on Wednesday 7th or Thursday 8th November 2024.

Stability Data

In order to detect *Salmonella* spp., the EN ISO 6579 method was performed to screen five deli turkey test portions (25 g) before the inoculation. All the results were negative. The APC of the product was 1.4×10^2 CFU/g prior to inoculation.

Inoculum Level Verification

To determine the level of *Salmonella* in the food type, a 5-tube most probable number (MPN) was conducted by the coordinating laboratory on the day of the initiation of analysis using the ISO 6579 reference method. The MPN for each contamination level was determined by analyzing 5 x 50 g test portions, the reference method test portions from the collaborating laboratories that analyzed sample sets (132 x 25 g) and 5 x 10 g test portions. The MPN and 95% confidence intervals were calculated using the LCF MPN Calculator, Version 1.6, (<http://www.lcfltd.com/customer/LCFMPNCalculator.exe>).

provided by AOAC Research Institute (RI). Table 19 presents the MPN results for the ILS evaluation.

Table 19: MPN Data

RTE Deli Turkey <i>Salmonella Enteritidis</i> ATCC 4931					
Target Low Level Inoculation (0.2-2 CFU/25g)					
Replicate	A	B	C	D	E
5 x 10 g	-	-	+	+	-
132 x 25 g (reference test portions)	59/132				
5 x 50 g	+	-	+	+	-
MPN	0.60				
Low Conf. Limit MPN/Test Portion	0.47				
Upper Conf. Limit MPN/Test Portion	0.77				
Target High Inoculation Level (2-10 CFU/25 g)					
5 x 10 g	+	+	+	+	-
132 x 25 g (reference test portions)	132/132				
5 x 50 g	+	+	+	+	+
MPN	6.22				
Low Conf. Limit MPN/Test Portion	2.98				
Upper Conf. Limit MPN/Test Portion	13.07				

Stability of Test Portions

All participants provided the data from the temperature probe and the APC result and reported to the Expert Laboratory on the Sample Receipt Confirmation forms provided. Table 20 summarizes the temperature data and Table 21 summarizes the APC result/participant. The average APC result obtained by the collaborators was 2.3×10^3 CFU/g with low and high data points of $<1.0 \times 10^1$ CFU/g and 1.5×10^4 CFU/g.

Table 20- Temperature Data by Laboratory

Laboratory	Temperature Data (°C)
A*	N/A*
B	3.5
C*	N/A
D1*	N/A
D2*	N/A
E	0.7
F	0.5
G	1.5
H1	2.5
H2	2.4
I	2.6
J	3.8
K1	2.8
K2	3.0
L	2.4

*Samples did not arrive at location and were excluded from analysis

Table 21 – APC Data by Laboratory

Laboratory	APC Result (CFU/g)
A*	N/A
B	2.3×10^2
C*	N/A
D1*	N/A
D2*	N/A
E	$<1.0 \times 10^1$
F	3.0×10^3
G	7.5×10^1
H1	2.8×10^3
H2	3.7×10^3
I	$<1.0 \times 10^1$
J	1.5×10^4
K1	4.0×10^1
K2	4.0×10^1
L	6.4×10^1

*Samples did not arrive at location and were excluded from analysis

Results

Table 22 summarizes the collaborative study results for each participant. For each level (L0, L1, L2) 12 unpaired test portions were evaluated by each collaborator. There were three laboratories that did not receive their samples due to customs and import permit issues. Those labs were excluded from the evaluation. Results for the raw data can be found in Appendix H.

Table 22 Results of the ILS Study by Participant and Inoculation Level

Laboratory*	Alternative Method Presumptive Result			Alternative Method Confirmed Result			ISO 6579 Reference Method		
	L ₀	L ₁	L ₂	L ₀	L ₁	L ₂	L ₀	L ₁	L ₂
Inoculation Level									
A	-	-	-	-	-	-	-	-	-
B	0	4	12	0	4	12	0	3	12
C	-	-	-	-	-	-	-	-	-
D1									
D2									
E	0	7	12	0	7	12	0	4	12
F	0	4	12	0	4	12	0	5	12
G	0	7	12	0	7	12	0	5	12
H1	0	7	12	0	7	12	0	4	12
H2	0	8	12	0	8	12	0	7	12
I	0	3	12	0	3	12	0	5	12
J	0	6	12	0	6	12	0	7	12
K1	0	6	12	0	6	12	0	5	12
K2	0	4	12	0	4	12	0	8	12
L	0	3	12	0	3	12	0	6	12

*Laboratory A, C and D did not receive samples in time and were excluded from the analysis.

Expert Laboratory

The Expert Lab analyzed a set of test portions on the day of testing initiation. Table 23 provides the results from the quality control testing performed by the Expert Lab.

Table 23 Expert Lab Results

Method	Alternative Method Presumptive Result			Alternative Method Confirmed Result			ISO 6579 Reference Method		
	L ₀	L ₁	L ₂	L ₀	L ₁	L ₂	L ₀	L ₁	L ₂
Day of Analysis	0	7	12	0	7	12	0	6	12

Calculation of Specificity Percentage

The specificity of the reference and alternative method are calculated using level L0. These values are obtained from the following equations, where N₋ is the total number of tests at L0, and P₀ and CP₀ are the number of false positive results with the uninoculated controls.

$$SP_{ref} = \left(1 - \left(\frac{P_0}{N_-} \right) \right) \times 100 \% = \quad SP_{alt} = \left(1 - \left(\frac{CP_0}{N_-} \right) \right) \times 100 \% =$$

A 100.0% specificity was obtained for the reference method and 100.0% specificity for the alternative method.

Calculation of Sensitivity (SE_{alt}, S_{eref}), Relative Trueness and False Positive Ratio for the Alternative Method (FPR)

From the data obtained in the ILS, fractional positive results were obtained for the low inoculation level (L1). This level was used for the calculation. The data used for the calculation is presented in Table 24 below

Table 24: Summary of agreements and deviations for the ILS for L1

	Reference Method Positive (R+)	Reference Method Negative (R-)
Alternative Method Positive (A+)	Positive Agreement (+/+) 41	Positive Deviation (-/+) 11
Alternative Method Negative (A-)	Negative Deviation (+/-) 11	Negative Agreement (-/-) 69

Using the values in Table 24, the sensitivity of the reference and alternative methods were determined, along with relative trueness and false positive rate. Calculations for

each statistic is provided below. Additionally, the requirement of fractional positive results was obtained for both the alternative and reference method. A summary of results is presented in Table 25.

Figure 1: Calculation for the Sensitivity of the Alternative Method

$$SE_{alt} = \frac{(PA+PD)}{(PA+PD+ND)} \times 100\% =$$

Figure 2: Calculation for the Sensitivity of the Reference Method

$$SE_{ref} = \frac{(PA+ND)}{(PA+PD+ND)} \times 100\% =$$

Figure 3: Calculation for the Relative Trueness

$$RT = \frac{(PA+NA)}{N} \times 100\% =$$

Figure 4: Calculation for the False Positive Rate of the Alternative Method

$$FPR = \frac{FP}{NA} \times 100\% =$$

Table 25: Summary of Statistical Analysis of the ILS Study

Sensitivity for the Alternative Method	82.54%
Sensitivity for the Reference Method	82.54%
Relative Trueness	83.33%
False Positive Ratio for the Alternative Method	0.00 %

For an unpaired study, the difference between (ND – PD) at L1 shall not be higher than the AL. The AL is defined as [(ND-PD)max] and is calculated using the following equations and the sum of (ND+PD) are calculated for the level where fractional recovery was obtained (L_1). The values found for (ND – PD) and (ND + PD) shall not be higher than the acceptability limits (AL).

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

Where

P_x is the number of samples with a positive result obtained with the reference method at the fractional level for all collaborators

N_x is the number of samples tested at the fractional level with the reference method by all collaborators

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

Where

CP_x is the number of samples with a confirmed positive result obtained with the alternative method at the fractional level for all collaborators

N_x is the number of samples tested at the fractional level with the alternative method by all collaborators

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

Where

N_x is the number of samples tested at the fractional level with the reference method by all collaborators

The results of the alternative method when compared to the AL are presented in Table 22.

Table 26: Evaluation of the AL for the alternative method

N_x	132
$(p+)_{ref}$	0.4
$(p+)_{alt}$	0.4
$(ND-PD)_{max}$	13.8
$(ND - PD)$	0

The value obtained during the ILS is lower than the AL as determined by $(ND-PD)_{max}$ indicated by the alternative method.

Evaluation of the RLOD Between Laboratories

The RLOD for the ILS was calculated using the available Excel spread sheet (<http://standards.iso.org/iso/16140>) as listed in ISO 1614-2:2016. These results are provided for informational purposes only.

Table 27: RLOD Between Laboratories

Method	Method Effect	Log Method Effect	SD of log Method Effect	LOD _{50%} = 50% limit of detection in CFU per sample size			LOD _{95%} = 95% limit of detection in CFU per sample size		
				Detection Limit	Lower Conf. Limit	Upper Conf. Limit	Detection Limit	Lower Conf. Limit	Upper Conf. Limit
Reference	1.014	0.014	0.121	0.68	0.54	0.87	2.95	2.32	3.77
Alternative	1.014	0.014	0.121	0.68	0.54	0.87	2.95	2.32	3.77
Conclusion	The methods are <u>not significantly</u> different at the 5% significance level (change in deviance of the model with method effects to the null model $D_{method} = 0$ with 1 degree of freedom, p-value 1).								
	The relative limit of detection (RLOD) of the alternative method, as compared to the reference method, is 1 with a 90% confidence interval of 0.75 - 1.33.								

Conclusion Interlaboratory Study

The data obtained during the ILS meets the criteria set forth in ISO 16140-2:2016 and indicates that the alternative method, the ALS InviScreen *Salmonella* method is considered equivalent to the ISO 6579 reference method.

6 Conclusions

Method Comparison Study

- For categories analyzed, the observed values TND-PD, were lower than the acceptability limit (AL) (observed values $\leq$ AL).
- **8 hour enrichment:** Heat-processed and Raw Milk and Dairy Products, Raw and RTE Meat Products, Raw Poultry Products, RTE/RTRH Poultry Products
- **16 hour enrichment:** Heat-processed and Raw Milk and Dairy Products, Raw and RTE Meat Products, Raw Poultry Products, RTE/RTRH Poultry Products, Eggs and Egg Products, Fresh Produce and Fruits, Animal Food and Feed, and Environmental Samples
- For the following categories, the observed values TND-PD, were lower than the acceptability limit (AL) (observed values $\leq$ AL) after enrichment broth storage: Raw and RTE Meat Products, RTE/RTRH Poultry Products, Eggs and Egg Products, Animal Food and Feed, Environmental Samples
- The RLOD values (using the confirmed alternative method results) meet the acceptability limit, which is 2.5 for unpaired studies, for all categories tested.
- The InviScreen® *Salmonella* spp. Detection Kit correctly detected all 105 *Salmonella* species, while excluding all non-*Salmonella* species.

- Sample analysis using the following thermocyclers:

- Bio-Rad CFX96 Deep Well (for all categories)
- QS5 instrument (for all categories)
- Bio-Rad CFX CFX OPUS Deep Well (for Animal Food & Feed and Environmental samples categories only)

Interlaboratory Study

The data obtained during the ILS meets the criteria set forth in ISO 16140-2:2016 and indicates that the alternative method, the ALS InviScreen *Salmonella* spp method is considered equivalent to the ISO 6579-1:2017 reference method.

General Conclusion

The InviScreen® *Salmonella* spp. Detection Kit offers flexibility for the analysis of a broad range of foods. The performances of this alternative methods meet the requirements for the Method Comparison study as outlined in the ISO 16140-2 validation standard.

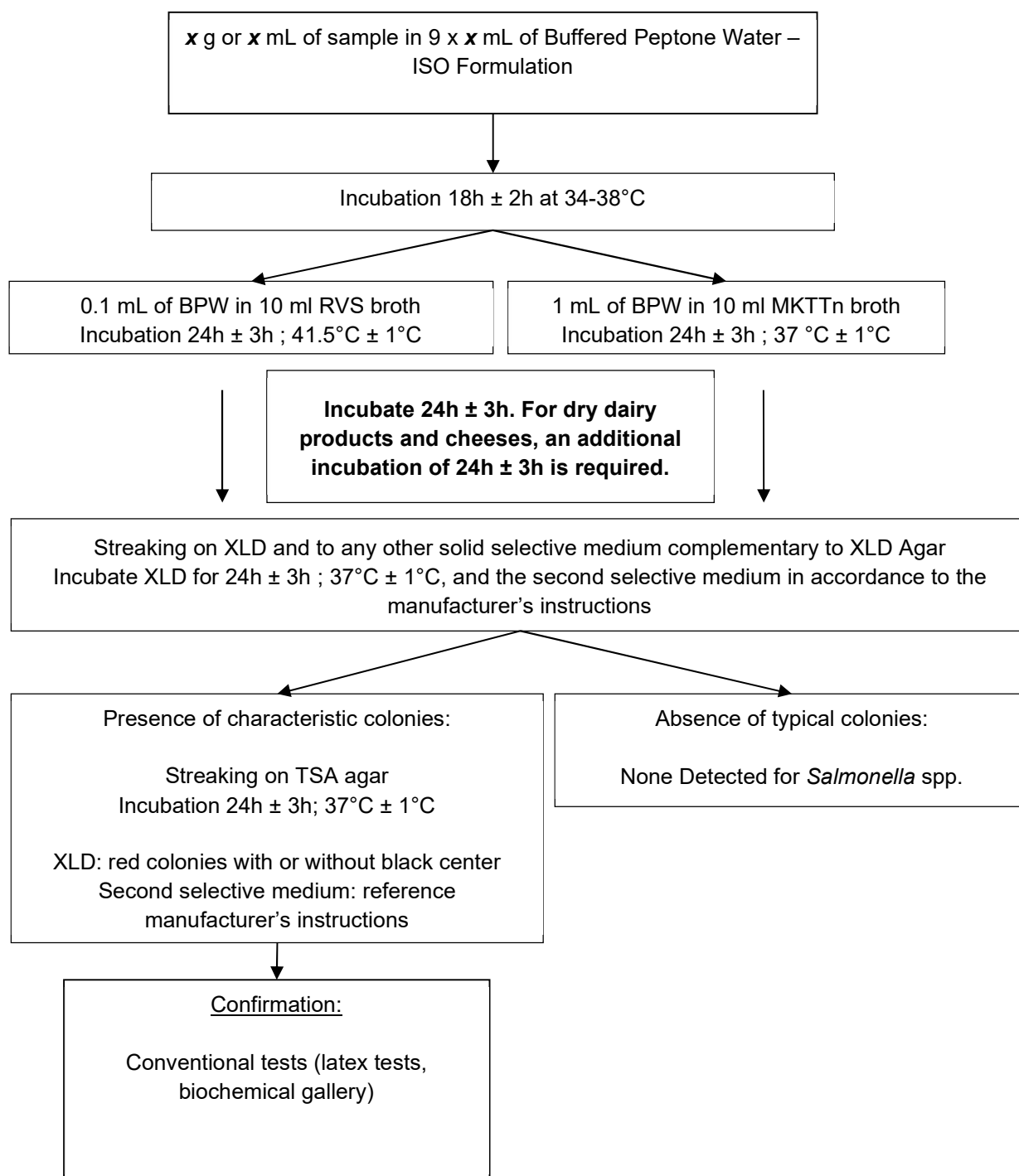
On the July 31, 2026,

I attest to the validation of the verification and the conformity of the report, both the opinion and interpretation. I attest to the validation of the results of the analysis carried out were under A2LA accreditation.



Benjamin Bastin; Director Operations, Q Laboratories

ANNEX A: Flow Diagram of the Reference Method



ANNEX B:

Flow Diagram of the Alternative Method

ENRICHMENT:

Category	Sample Size	Enrichment	Incubation Time	Incubation Temperature
Original Validation				
Heat Processed and Raw Milk and Dairy Products	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	16-24 h	37±1°C
Raw and RTE Meat Products	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	8-16 h	37±1°C
Raw Poultry Products	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	8-16 h	37±1°C
RTE/RTRH Poultry Products	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	8-16 h	37±1°C
Eggs and Egg Products	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	16-24 h	37±1°C
Fresh Produce and Fruits	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	16-24 h	37±1°C
Extension				
Animal Food and Feed	25 g	1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO	16-24 h	37±1°C
Environmental Samples	25 g or Surface Sampling	25 g: 1:10 (225 mL) with pre-warmed (37±1°C) BPW-ISO Sponge: 1:10 (90 mL) with pre-warmed (37±1°C) BPW-ISO Swab: 1:10 (9 mL) with pre-warmed (37±1°C) BPW-ISO	16-24 h	37±1°C



LYSIS:

package insert (1 mL of enrichment)²



PCR:

Preparation of reaction mixture (20 µL per sample and control),
followed by addition of lysate (5 µL of lysate)



Load and run PCR on the following:

1. Bio-Rad CFX96 Deep Well (*for all categories*)
2. QS5 instrument (*for all categories*)
3. Bio-Rad CFX OPUS Deep Well (*for Animal Food & Feed and Environmental samples categories only*)



CONFIRMATION¹:

- According to the ISO general rules
 - Option 1: Any ISO 16410-6:2019 validated confirmation method from isolated colonies on XLD or selective agar (RAPID' *Salmonella* agar will be used in validation).
 - Option 2: ISO 6579-1:2017 confirmation procedure from XLD or selective agar (RAPID' *Salmonella* Agar was used in validation)

¹ All test portions were evaluated at the minimum enrichment time point (8 or 16 hours);

² Possible to hold samples for 72 hours at 2-8°C prior to DNA extraction for the following categories only: Raw and RTE Meat Products, RTE/RTRH Poultry Products, Eggs and Egg Products, Animal Food and Feed, and Environmental Samples

ANNEX C: Method Technical Product Information

Reference provided Package Insert

ANNEX D: Artificial Contaminations

Table 1. Artificial contaminations of the extension

Category	Type	Alternative Method Sample No.	Reference Method Sample No.	Item	Inoculating Strain	Inoculation level	Level of Injury
1	A	1	61	Raw Beef and Bison Blend	S. Saintpaul QL 242281-4B	2.2 (3,3,0,4,1)	
1	A	3	63	Coarse Ground Chicken	S. Saintpaul QL 242281-4B	2.2 (4,0,0,3,4)	
1	A	5	65	Grass Fed Lamb	S. Saintpaul QL 242281-4B	2.0 (2,2,0,4,2)	
1	A	7	67	Cage Free Chicken	S. Saintpaul QL 242281-4B	1.8 (1,1,5,0,2)	
1	A	9	69	Ground Turkey	S. Saintpaul QL 242281-4B	2.4 (3,3,0,4,2)	
1	A	11	71	Ground Goat Meat	S. Montevideo QL 244349-4	2.0 (1,1,2,5,1)	
1	A	13	73	Rabbit and Small Game	S. Montevideo QL 244349-4	2.8 (3,0,3,4,4)	
1	A	15	75	Poultry Grain Based Feed	S. Montevideo QL 244349-4	2.6 (2,2,4,0,5)	
1	A	18	78	Livestock Commodity Mix Feed	S. Montevideo QL 244349-4	2.6 (6,0,1,3,3)	
1	A	20	80	Dried Worm and Grain Blends	S. Montevideo QL 244349-4	2.0 (3,0,2,1,4)	
1	B	21	81	Small Breed Adult Dog Kibble	S. Westhampton QL 227400-149	3.0 (3,3,0,4,5)	
1	B	22	82	Dry Puppy Kibble – Chicken	S. Westhampton QL 227400-149	2.2 (5,3,0,2,1)	
1	B	24	84	Canned Turkey with Gravy for Dogs	S. Sylvania QL 22740-140	2.6 (5,0,4,2,2)	0.62
1	B	26	86	Dry Cat Food – Adult	S. Westhampton QL 227400-149	2.2 (1,1,5,2,2)	
1	B	27	87	Dry Biscuit Treats – Goat	S. Westhampton QL 227400-149	2.8 (0,1,3,3,7)	
1	B	28	88	Dry Cat Treats – Catnip Flavor	S. Westhampton QL 227400-149	2.6 (0,6,1,1,5)	
1	B	30	90	Chicken Puree Wet Cat Treat	S. Sylvania QL 22740-140	2.8 (4,0,2,2,6)	0.62
1	B	32	92	Kitten Kibble Blend	S. Worthington QL 227400-103	2.0 (2,2,0,4,2)	
1	B	35	95	Canned Chicken and Pumpkin Dog Food	S. Sylvania QL 22740-140	2.4 (4,0,4,3,1)	0.62
1	B	37	97	Duck Pate for Dogs	S. Sylvania QL 22740-140	2.8 (2,3,1,0,8)	0.62
1	B	39	99	Pot Pie Canned Dog Food	S. Sylvania QL 22740-140	2.4 (2,2,2,5,1)	0.62
1	C	42	102	Raw Duck Neck	S. Livingstone QL 225626-86	2.6 (3,3,0,5,2)	
1	C	43	103	Chicken Feet	S. Livingstone QL 225626-86	2.6 (1,0,5,5,2)	
1	C	45	105	Beef Whole Bone	S. Livingstone QL 225626-86	2.4 (1,1,4,6,0)	
1	C	48	108	Chicken Gizzards	S. Livingstone QL 225626-86	2.4 (3,3,4,0,2)	
1	C	49	109	Raw Pig Ears	S. Livingstone QL 225626-86	2.4 (1,1,0,5,5)	
1	C	52	112	All Livestock Supplement Oil	S. Heidelberg QL 244344-14	2.2 (2,0,1,4,4)	0.55
1	C	54	114	Raw Beef Knuckle Bone	S. Heidelberg QL 244344-14	2.4 (1,2,3,0,6)	
1	C	58	118	Whole Smelt Fish (with bone)	S. Heidelberg QL 244344-14	2.2 (3,3,0,0,5)	
1	C	60	120	Raw Pig Ears	S. Heidelberg QL 244344-14	2.6 (2,4,2,1,4)	

Category	Type	Alternative Method Sample No.	Reference Method Sample No.	Item	Inoculating Strain	Inoculation level	Level of Injury
2	A	121	181	Sponge 1	S. Sylvania QL 227400-75	3.8 (5,5,6,0,3)	
2	A	123	183	Sponge 3	S. Sylvania QL 227400-75	2.4 (4,4,2,1,1)	
2	A	125	185	Sponge 5	S. Sylvania QL 227400-75	3.0 (5,5,0,0,5)	
2	A	127	187	Sponge 7	S. Sylvania QL 227400-75	2.8 (3,6,3,1,1)	
2	A	129	189	Sponge 9	S. Sylvania QL 227400-75	3.0 (2,5,4,0,4)	
2	A	130	190	Sponge 10	S. Westhampton QL 227400-5	4.4 (2,6,7,0,7)	
2	A	132	192	Swab 2	S. Westhampton QL 227400-5	2.6 (3,3,1,1,5)	
2	A	134	194	Swab 4	S. Westhampton QL 227400-5	3.0 (6,5,0,0,4)	
2	A	136	196	Swab 6	S. Westhampton QL 227400-5	3.8 (2,7,4,4,2)	
2	A	138	198	Swab 8	S. Westhampton QL 227400-5	2.8 (3,2,4,4,1)	
2	A	140	200	Swab 10	S. Worthington QL 227400-82	2.4 (1,1,0,8,2)	
2	B	141	201	Process Water 1	S. Newport ATCC BAA-3138	3.0 (3,3,4,5,0)	
2	B	143	203	Process Water 3	S. Newport ATCC BAA-3138	4.0 (3,3,8,6,0)	
2	B	144	204	Process Water 4	S. Newport ATCC BAA-3138	2.6 (3,2,2,5,1)	
2	B	146	206	Process Water 6	S. Newport ATCC BAA-3138	3.4 (6,0,1,8,2)	
2	B	148	208	Process Water 8	S. Newport ATCC BAA-3138	4.0 (6,6,4,2,2)	
2	B	150	210	Process Water 10	S. Rubislaw ATCC BAA-3140	3.2 (3,3,5,5,0)	
2	B	151	211	Washing Water 1	S. Rubislaw ATCC BAA-3140	2.8 (1,4,1,5,3)	
2	B	153	213	Washing Water 3	S. Rubislaw ATCC BAA-3140	2.4 (1,2,0,8,1)	
2	B	156	216	Washing Water 6	S. Rubislaw ATCC BAA-3140	1.8 (3,3,0,2,1)	
2	B	159	219	Washing Water 9	S. Rubislaw ATCC BAA-3140	3.8 (6,6,5,0,2)	
2	C	162	222	Dust 2	S. Worthington QL 227400-82	2.6 (2,5,0,4,2)	
2	C	164	224	Dust 4	S. Worthington QL 227400-82	3.2 (2,5,5,3,1)	
2	C	165	225	Dust 5	S. Worthington QL 227400-82	2.4 (2,2,6,1,1)	
2	C	166	226	Dust 6	S. Worthington QL 227400-82	3.0 (5,4,3,1,2)	
2	C	167	227	Dust 7	S. Livingstone QL 091313.1	2.8 (1,8,0,1,4)	
2	C	170	230	Dust 10	S. Livingstone QL 091313.1	4.2 (6,6,5,2,2)	
2	C	171	231	Sweeping 1	S. Livingstone QL 091313.1	2.2 (4,2,0,4,1)	
2	C	174	234	Sweeping 4	S. Livingstone QL 091313.1	2.2 (2,2,6,1,0)	
2	C	176	236	Sweeping 6	S. Livingstone QL 091313.1	2.4 (3,3,0,4,2)	
2	C	180	240	Sweeping 10	S. Orthmarshen QL 024.13	3.4 (6,0,3,6,2)	

Table 2. Artificial contaminations of the original validation

Item	Inoculating Strain	Inoculation Level	Level of Injury	Sample No	Sample No
Raw Goats Milk	S. Menhaden QL 024.20	0.2 (0,0,1,0,0)		774	801
Raw Camel Milk	S. Menhaden QL 024.20	1.6 (3,0,2,0,3)		775	802
Raw Goats Milk	S. Tennessee QL 11037.3	5.4 (6,6,8,4,3)		777	804
Raw Goats Milk	S. Tennessee QL 11037.3	2.6 (7,0,1,5,0)		778	805
Raw Camel Milk	S. Tennessee QL 11037.3	1.4 (4,0,0,3,0)		783	810
Raw Bovine Milk	Natural Contamination			784	811
Raw Bovine Milk	S. Typhimurium ATCC BAA-215	1.8 (0,2,2,5,0)		785	812
Raw Bovine Milk	Natural Contamination			786	813
Raw Bovine Milk	Natural Contamination			787	814
Raw Bovine Milk	S. Typhimurium ATCC BAA-215	2.0 (3,1,1,2,3)		788	815
Raw Bovine Milk	Natural Contamination			789	816
Raw Bovine Milk	Natural Contamination			790	817
Raw Bovine Milk	S. Typhimurium ATCC BAA-215	2.8 (5,6,1,1,1)		791	818
Fourme d'Ambert	Natural Contamination			622	682
Kaltbach Le Cremeux	Natural Contamination			623	683
Buttermilk Bleu Affinee	Natural Contamination			624	684
Fontina Val D'Aosta	Natural Contamination			626	686
Comte HOP Reserve	Natural Contamination			628	688
Roquefort Sociele Bee	Natural Contamination			629	689
Raw Milk French Raclette	Natural Contamination			630	690
Fourme d'Ambert	Natural Contamination			633	693
Buttermilk Bleu Affinee	Natural Contamination			635	695
Fontina Val D'Aosta	Natural Contamination			637	697
4% Milkfat cottage cheese	S. Poona NCTC 4840	1.0 (0,3,2,0,0)	0.62	641	701
Whole Milk Yogurt	Natural Contamination			642	702
1% Low Fat Milk	S. Poona NCTC 4840	1.2 (0,1,1,4,0)	0.58	645	705
Part Skim Shredded Mozzarella Cheese	S. Poona NCTC 4840	1.6 (2,2,1,0,3)	0.66	646	706
Pepper Jack Cheese	S. Poona NCTC 4840	1.2 (0,1,1,4,0)	0.64	648	708
Smoked Provolone Cheese	S. Poona NCTC 4840	1.0 (1,1,1,1,1)	0.54	649	709
Cheddar and Gruyere Cheese Blend	S. Pomona ATCC 10729	0.8 (3,0,1,0,0)	0.62	650	710
Whole Milk Yogurt-Vanilla	S. Pomona ATCC 10729	1.0 (2,0,1,1,1)	0.60	652	712
Low Fat Skim Milk	S. Pomona ATCC 10729	1.0 (0,2,1,1,1)	0.52	655	715
Guyere Cheese	Natural Contamination			660	720

Item	Inoculating Strain	Inoculation Level	Level of Injury	Sample No	Sample No
Boneless Pork Chops	S.Typhimurium ATCC 14028	1.2 (1,2,3,0,0)		122	182
Shaved Beef Steak	Natural Contamination			123	183
Ground Bison (90% Lean)	S.Typhimurium ATCC 14028	1.6 (0,5,0,1,2)		125	185
Raw Ground Beef Patties (80% Lean)	Natural Contamination			126	186
Diced Beef	S.Typhimurium ATCC 14028	1.6 (2,3,0,0,0)		130	190
Fresh Ground Pork	Natural Contamination			132	192
Raw Ground Bison (90% Lean)	Natural Contamination			134	194
Raw Ground Sirloin Beef Patties (93% Lean)	S.Typhimurium ATCC 14028	1.4 (4,3,0,0,0)		136	196
Fresh Raw Ground Beef (80% Lean)	S.Anatum ATCC 9270	1.6 (1,3,0,0,4)		138	198
Lamb Chop	S.Seftenberg QL 11031.2	1.8 (0,0,4,3,2)		723	745
Raw Ground Beef Crumbles (80% Lean)	Natural Contamination			142	202
Raw Angus Chuck Beef Patties	S.Anatum ATCC 9270	1.8 (1,1,1,3,3)		143	203
Raw Thin and Seasoned Beef Patties	S.Anatum ATCC 9270	2.0 (1,3,2,2,2)		144	204
Spicy Sicilian Pork Meatballs	Natural Contamination			146	206
Pure Beef Patties (85% Lean)	S.Anatum ATCC 9270	2.6 (1,0,4,5,3)		148	208
Frozen Sliced Beef Liver	Natural Contamination			149	209
Frozen Pork Scrapple	Natural Contamination			150	210
Frozen Raw Ground Beef (80% Lean)	S.Anatum ATCC 9270	2.0 (7,1,3,0,0)		152	212
Raw Frozen Meatballs- Pork	S. Enteritidis QL 341302-20	1.8 (2,3,3,1,0)		155	215
Raw Frozen Meatballs- Pork	S. Enteritidis QL 341302-20	1.0 (1,0,2,0,2)		156	216
Raw Beef Patties (91% Lean)	S. Enteritidis QL 341302-20	3.8 (3,3,0,4,4)		157	217
Raw Diced Beef Liver	Natural Contamination			159	219
Sliced Smoked Ham - Boneless	S. Enteritidis QL 341302-20	1.8 (5,1,1,1,1)	0.56	161	221
Brown Sugar Sliced Country Ham	S. Heidelberg QL 341302-48	1.0 (1,1,1,1,1)	0.64	162	222
Cubed Ham (96% Fat Free)	S. Heidelberg QL 341302-48	0.4 (0,0,0,1,1)	0.54	163	223
Sliced Ham Steaks (97% Fat Free)	Natural Contamination			164	224
Pork Liverwurst Pate with Bacon added	S. Heidelberg QL 341302-48	0.8 (1,2,0,1,0)	0.56	165	225
Honey Cured Sliced Ham	S. Heidelberg QL 341302-48	3.2 (4,6,0,0,6)	0.66	168	228
Ultra-thin sliced Roast Beef with Seasoning	S. Galiema QL 024.2	1.4 (3,1,0,1,2)	0.54	169	229
Sliced Ham with Sugar seasoning	S. Galiema QL 024.2	2.2 (3,5,1,1,1)	0.55	172	232
Smoked Ham Flanks (95% Fat Free)	S. Galiema QL 024.2	1.8 (2,2,1,2,2)	0.52	174	234
Thin Sliced Roast Beef	S. Galiema QL 024.2	0.4 (2,0,0,0,0)	0.65	177	237
Sliced Roast Beef with Seasoning	S. Galiema QL 024.2	1.6 (3,0,0,4,1)	0.60	179	239

Item	Inoculating Strain	Inoculation Level	Sample No	Sample No
Chicken Tenderloins	Natural Contaminaiton		2	62
Boneless Skinless Chicken Breast	S.arizonae NCTC 7303	3.4 (0,1,4,1,11)	4	64
Turkey Breast Skinless	Natural Contaminaiton		7	67
Chicken Wing Drumettes with Skin	Natural Contaminaiton		9	69
Chicken Breast with Skin	S.arizonae NCTC 7303	4.6 (5,8,6,1,3)	14	74
Raw Chicken Breast	S. Melagris QL 12704-1	2.4 (5,4,3,0,0)	765	792
Raw Chicken Thigh	S. Melagris QL 12704-1	2.4 (0,2,4,6,0)	766	793
Raw Chicken Tenderloins	S. Melagris QL 12704-1	2.2 (3,5,0,2,1)	767	794
Raw Turkey Breast	S. Melagris QL 12704-1	1.2 (1,1,2,1,1)	768	795
Raw Turkey Breast with Skin	S. Melagris QL 12704-1	1.4 (3,0,0,4,0)	769	796
Raw Ground Turkey (93% Lean)	Natural Contaminaiton		21	81
Raw Ground Chicken Breast (98 % Lean)	S. Enteritidis USDA AR12	3.8 (3,7,7,1,1)	22	82
Raw Ground Turkey (93% Lean)	Natural Contaminaiton		24	84
Raw Ground Chicken Patties (92% Lean)	Natural Contaminaiton		27	87
Raw Ground Turkey (85% Lean)	Natural Contaminaiton		29	89
Raw Ground Chicken Breast (93% Lean)	S. Enteritidis USDA AR12	3.0 (8,1,1,2,3)	30	90
Raw Turkey Burger Patties (93% Lean)	S. Enteritidis QL 341302-18	3.4 (6,6,2,3,0)	32	92
Raw Ground Turkey (85% Lean)	S. Enteritidis QL 341302-18	2.6 (3,2,2,1,5)	35	95
Raw Turkey Sausage Links (95% Lean)	S. Enteritidis QL 341302-18	4.2 (4,2,9,6,0)	38	98
Raw Turkey Sausage	S. Menhaden QL 024.20	1.8 (5,0,2,1,1)	770	797
Raw Breakfast Turkey Sausage Patties	S. Menhaden QL 024.20	2.4 (3,3,3,1,2)	771	798
Frozen Raw Diced Chicken Breast	S. Enteritidis QL 341302-18	3.6 (2,3,6,3,4)	42	102
Frozen Raw Ground Turkey Breast (85% Lean)	S. Heidelberg QL 341302-27	4.4 (6,5,3,3,5)	44	104
Frozen Raw Boneless Chicken Breast with Rib Meat	S. Heidelberg QL 341302-27	4.2 (4,7,6,2,2)	45	105
Frozen Raw Chicken Tenderloins	S. Heidelberg QL 341302-27	4.8 (8,9,3,3,1)	46	106
Frozen Raw Boneless Skinless Chicken Thighs	S. Heidelberg QL 341302-27	5.6 (7,6,5,9,1)	47	107
Frozen Raw Chicken Wings with Bone	S. Heidelberg QL 341302-27	1.8 (3,2,2,2,0)	49	109
Frozen Raw Chicken Breast with Skin	S. Indiana NCTC 17304	4.6 (2,4,2,9,6)	50	110
Frozen Raw Whole Chicken Wings	S. Indiana NCTC 17304	5.0 (5,9,7,3,1)	51	111
Frozen Raw Chicken Tenderloins	S. Indiana NCTC 17304	5.8 (8,9,4,6,2)	53	113
Frozen Raw Chicken Tenderloins	S. Indiana NCTC 17304	4.0 (4,4,6,3,3)	56	116
Frozen Raw Boneless and Skinless Duck Breast	S. Indiana NCTC 17304	4.4 (3,5,6,3,5)	58	118

Item	Inoculating Strain	Inoculation Level	Level of Injury	Sample No	Sample No
Honey Turkey Breast	S.Typhi QL 16078-2A	2.0 (2,3,2,2,1)	0.56	242	302
Chicken Chunks- White Meat	S. Typhi QL 16078-2A	1.4 (1,1,3,2,0)	0.58	244	304
Rotisserie Seasoned Sliced Chicken Breast	S. Typhi QL 16078-2A	1.8 (0,3,3,2,1)	0.64	247	307
Chicken Breast Chunks- with Rib Meat	S. Typhi QL 16078-2A	2.2 (2,2,1,3,3)	0.62	248	308
Oven Roasted Sliced Turkey Breast	S. Typhi QL 16078-2A	1.6 (0,3,2,1,2)	0.60	250	310
Honey Turkey Breast	S. Typhi FSL R6-0540	1.8 (5,1,1,1,1)	0.50	252	312
Chicken Chunks- White Meat	S.Typhi FSL R6-0540	1.0 (1,0,1,2,1)	0.66	254	314
Sliced Chicken	S.Seftenberg QL 11031.2	1.8 (2,3,3,1,0)	0.50	727	749
Chicken Breast Meat Chunks	S.Seftenberg QL 11031.2	0.4 (1,0,0,1,0)	0.52	728	750
Turkey Slices	S.Seftenberg QL 11031.2	3 (2,2,5,0,6)	0.54	729	751
Diced Popcorn Chicken with Rib Meat	S. Livingstone QL 227163-2R	2.8 (2,2,2,6,2)	0.66	262	322
Boneless Skinless Sliced Chicken Breast Strips	S. Livingstone QL 227163-2R	1.4 (1,2,1,3,0)	0.72	263	323
Crispy Chicken Breast with Rib Meat	S. Livingstone QL 227163-2R	1.6 (0,0,2,2,4)	0.60	264	324
Lightly Breaded Chicken Breast Chunks with Rib Meat	S. Livingstone QL 227163-2R	2.6 (3,3,4,0,5)	0.64	266	326
Seasoned Chicken Breast Strips	S. Livingstone QL 227163-2R	1.8 (1,1,4,3,0)	0.68	268	328
Grilled Chicken Breast- Diced Pieces	S. Arizonae QL 11007	3.6 (1,3,5,7,2)	0.50	270	330
Breaded Chicken Nuggets	S. Arizonae QL 11007	2.6 (2,0,3,2,6)	0.52	271	331
Popcorn Chicken	S. Arizonae QL 11007	1.6 (2,3,2,0,1)	0.54	272	332
Grilled Chicken Breast Strips	S. Arizonae QL 11007	1.0 (0,2,3,0,0)	0.56	273	333
Diced Chicken Breast with Oven Roast Seasoning	S. Arizonae QL 11007	1.8 (1,2,4,0,2)	0.56	277	337
Mild Original Turkey Stick	S. Jerusalem QL 024.12	3.0 (2,4,3,3,3)	0.62	281	341
Smoke Sausage Turkey Bites	S. Jerusalem QL 024.12	2.2 (0,0,4,3,4)	0.60	284	344
Smoked Turkey Pepperoni	S. Jerusalem QL 024.12	1.8 (2,2,2,2,1)	0.60	285	345
Original Turkey Jerky	S. Jerusalem QL 024.12	1.6 (2,0,2,1,3)	0.58	286	346
Turkey Pepperoni	S. Jerusalem QL 024.12	1.6 (0,1,3,1,3)	0.56	288	348
Smoked Turkey Sausage Bites	S. Newport ATCC 6962	1.6 (0,0,3,2,3)	0.54	290	350
Original Turkey Jerky	S. Newport ATCC 6962	2.4 (5,2,3,1,1)	0.62	292	352
Chicken Jerky Sticks	S. Newport ATCC 6962	2.4 (3,1,3,3,2)	0.68	293	353
	S. Newport ATCC 6962	1.0 (1,1,1,1,1)	0.56	297	357
Turkey Pepperoni	S.Seftenberg QL 11031.2	4.4 (8,9,1,1,3)	0.54	730	752
Turkey Jerky	S. Oranienberg QL 024.3	2.4 (5,4,3,0,0)	0.66	731	753

Item	Inoculating Strain	Inoculation Level	Level of Injury	Sample No	Sample No
Whole Shell Egg 1	S.Westhampton QL 227400-1	0.4 (2,0,0,0,0)		361	421
Whole Shell Egg 4	S.Westhampton QL 227400-1	0.6 (1,1,1,0,0)		364	424
Whole Shell Egg 5	S.Westhampton QL 227400-1	1.6 (3,1,3,1,0)		365	425
Whole Shell Egg 7	S.Westhampton QL 227400-1	0.8 (0,0,2,1,1)		367	427
Whole Shell Egg 10	S.Westhampton QL 227400-1	1.0 (1,2,1,1,0)		370	430
Whole Shell Egg 11	S.Sylvénia QL 227400-36	1.6 (3,3,1,1,0)		371	431
Whole Shell Egg 12	S.Sylvénia QL 227400-36	1.6 (6,1,0,1,0)		372	432
Whole Shell Egg 14	S.Sylvénia QL 227400-36	1.2 (2,2,1,1,0)		374	434
Whole Shell Egg 18	S.Sylvénia QL 227400-36	1.0 (1,1,1,1,1)		378	438
Whole Shell Egg 19	S.Sylvénia QL 227400-36	0.2 (1,0,0,0,0)		379	439
Whole Shell Egg	S. Oranienberg QL 024.3	1.4 (0,0,1,2,4)		732	754
Liquid Whole Egg 1	S. Arizonae NCTC 7315	0.4 (1,0,0,1,0)	0.72	381	441
Liquid Whole Egg 2	S. Arizonae NCTC 7315	0.6 (1,0,2,0,0)	0.68	385	445
Liquid Egg Whites 5	S. Arizonae NCTC 7315	0.4 (0,0,1,1,0)	0.64	387	447
Liquid Egg Whites 6	S.Heidelberg QL 341302-49	0.8 (0,0,3,1,0)	0.62	388	448
Liquid Egg Whites 8	S.Heidelberg QL 341302-49	1.6 (3,3,2,0,1)	0.60	391	451
Liquid Whole Eggs 4	S.Heidelberg QL 341302-49	2.2 (3,5,2,1,0)	0.58	393	453
Liquid Egg Whites 12	S.Heidelberg QL 341302-49	1.6 (3,3,2,0,1)	0.56	396	456
Liquid Whole Egg 5	S.Heidelberg QL 341302-49	0.8 (0,3,1,0,0)	0.58	399	459
Liquid Whole Egg	S. Oranienberg QL 024.3	5.2 (5,6,7,3,5)	0.50	733	755
Liquid Whole Egg	S. Oranienberg QL 024.3	0.4 (0,0,0,1,1)	0.76	734	756
Dried Whole Eggs 1	S. Kaitaan QL 024.7	1.6 (1,4,0,2,1)		401	461
Dried Whole Eggs 3	S. Kaitaan QL 024.7	0.8 (0,0,0,1,3)		405	465
Dried Egg Whites 3	S. Kaitaan QL 024.7	1.2 (1,0,3,2,0)		407	467
Dried Egg Whites 5	S. Kaitaan QL 024.7	1.4 (1,0,1,2,3)		411	471
Dried Egg Whites 8	S. Pullorum ATCC 13036	0.8 (1,3,0,0,0)		416	476
Dried Whole Egg	S. Oranienberg QL 024.3	0.8 (2,2,0,0,0)		735	757
Dried Egg Whites	S. Orthmarshen QL 0243.13	2.4 (3,0,4,0,5)		736	758
Dried Whole Egg	S. Orthmarshen QL 0243.13	2.6 (0,0,3,3,7)		737	759
Dried Egg Whites	S. Orthmarshen QL 0243.13	2.6 (6,4,0,2,1)		738	760
Dried Whole Egg	S. Orthmarshen QL 0243.13	1.6 (0,1,2,2,3)		739	761

Item	Inoculating Strain	Inoculation Level	Sample No	Sample No
Spinach and Arugula Mix	S. Munchen ATCC BAA 1594	1.6 (2,0,3,0,3)	481	541
Shredded Broccoli Slaw	S. Munchen ATCC BAA 1594	1.0 (1,1,0,1,2)	483	543
Mixed Cabbage Coleslaw	S. Munchen ATCC BAA 1594	0.6 (0,0,0,3,0)	485	545
Shredded Baby Carrots	S. Munchen ATCC BAA 1594	1.6 (2,1,1,2,2)	487	547
Mixed Greens with Romaine Lettuce	S. Munchen ATCC BAA 1594	0.4 (1,0,0,0,1)	489	549
Shredded Stir Fry Vegetables	S. Preston QL 024.16	1.8 (3,3,2,0,1)	490	550
Spinach, Arugula, and other Mix	S. Preston QL 024.16	2.4 (4,3,5,0,0)	491	551
Vegetable Blend with Cucumber and Carrot Mix	S. Preston QL 024.16	2.2 (1,1,4,3,2)	494	554
Mixed Shredded Broccoli	S. Preston QL 024.16	1.8 (2,4,0,1,2)	496	556
Shredded Cabbage with Carrots	S. Preston QL 024.16	1.4 (3,0,0,4,0)	498	558
Honeydew	S. Schalkwijk QL 024.10	3.4 (5,3,1,2,6)	501	561
Watermelon	Natural Contamination		502	562
Dragon Fruit	S. Schalkwijk QL 024.10	2.8 (8,0,4,1,1)	505	565
Cantaloupe	S. Schalkwijk QL 024.10	1.0 (1,1,0,3,0)	506	566
Pineapple, Strawberry, and Kiwi Mix	Natural Contamination		507	567
Mangos	S. Schalkwijk QL 024.10	0.2 (0,0,1,0,0)	509	569
Honeydew #2	S. Schalkwijk QL 024.10	2.4 (6,3,1,2,0)	511	571
Seedless Watermelon	S. Diarizonae QL 011414.1	0.6 (3,0,0,0,0)	512	572
Diced Strawberries	S. Diarizonae QL 011414.1	0.4 (0,0,2,0,0)	514	574
Cut Cantaloupe	Natural Contamination		516	576
Diced Mangos	S. Diarizonae QL 011414.1	1.4 (0,0,1,5,1)	519	579
Cilantro	S. Diarizonae QL 011414.1	2.0 (2,2,2,2,2)	521	581
Kale	S. Diarizonae QL 011414.1	0.6 (0,1,1,1,0)	522	582
Green Onions	Natural Contamination		524	584
Spinach	S. Poona ATCC BAA-139	1.6 (0,1,1,3,3)	526	586
Red Leaf Lettuce	S. Poona ATCC BAA-139	1.8 (5,0,0,4,0)	527	587
Romaine Hearts	Natural Contamination		529	589
Romaine Lettuce	S. Poona ATCC BAA-139	1.4 (1,1,1,2,2)	530	590
Kale	Natural Contamination		532	592
Green Onions	S. Poona ATCC BAA-139	1.6 (1,0,3,3,1)	534	594
Red Lettuce	S. Poona ATCC BAA-139	1.4 (0,0,7,0,0)	537	597
Baby Spinach	S. Orthmarshen QL 0243.13	2.8 (3,5,0,6,0)	741	763

ANNEX E: Raw Data of Sensitivity Study

Observations of the culture plates		Data comparison between the alternative and the reference methods	
t	Only typical colonies present	PA	Positive Agreement
at	Only atypical colonies present	NA	Negative Agreement
m	Both typical and atypical colonies present	PD	Positive Deviation
ng	No growth present	ND	Negative Deviation
+	Positive reaction	PA _{FP(alt)}	Positive Agreement due to False Positive Alternative Method Result
-	Negative reaction	PD _{FP(alt)}	Positive Deviation due to False Positive Alternative Method Result
Pos	Positive	NA _{FN(alt)}	Negative Agreement due to False Negative Alternative Method Result
Neg	Negative	ND _{FN(alt)}	Negative Deviation due to False Negative Alternative Method Result

Extension Sensitivity – Raw Data

Category	Type	Item	Alternative Method Samples										ISO 6579-1:2017 Reference Samples								Final Agreement
			Sample No.	CFX96	CFX CFX OPUS DW	QS5	ISO 6579-1:2017 Confirmation				Final Result	Sample No.	MKTTn		RVS		Identification ¹	Final Result			
							MKTTn		RVS												
							XLD	RSA	XLD	RSA											
1	A	Raw Beef and Bison Blend	1	17.28	15.32	13.30	t	t	t	t	Salmonella spp.	Pos	61	t	t	t	t	Salmonella spp.	Pos	PA	
1	A	Boneless Ground Beef	2	N/A	N/A	N/A	at	at	at	at		Neg	62	at	at	at	at		Neg	NA	
1	A	Coarse Ground Chicken	3	29.04	27.60	27.99	m	m	m	m	Salmonella spp.	Pos	63	at	at	at	at		Neg	PD	
1	A	Beef Livers	4	N/A	N/A	N/A	at	at	at	at		Neg	64	at	at	at	at		Neg	NA	
1	A	Grass Fed Lamb	5	20.39	27.01	14.69	m	m	m	m	Salmonella spp.	Pos	65	m	m	m	m	Salmonella spp.	Pos	PA	
1	A	Cage Free Turkey	6	N/A	N/A	N/A	at	at	at	at		Neg	66	at	at	at	at		Neg	NA	
1	A	Cage Free Chicken	7	N/A	N/A	N/A	at	at	at	at		Neg	67	m	m	m	m	Salmonella spp.	Pos	ND	
1	A	Ground Beef with Organ Meat	8	N/A	N/A	N/A	at	at	at	at		Neg	68	at	at	at	at		Neg	NA	
1	A	Ground Turkey	9	26.21	25.35	30.16	m	m	m	m	Salmonella spp.	Pos	69	at	at	at	at		Neg	PD	
1	A	Lamb – Shank	10	N/A	N/A	N/A	at	at	at	at		Neg	70	at	at	at	at		Neg	NA	
1	A	Ground Goat Meat	11	15.56	17.74	23.75	t	t	t	t	Salmonella spp.	Pos	71	t	t	t	t	Salmonella spp.	Pos	PA	
1	A	Turkey and Sardine Recipe	12	N/A	N/A	N/A	at	at	at	at		Neg	72	at	at	at	at		Neg	NA	
1	A	Rabbit and Small Game	13	26.13	32.59	32.91	m	m	m	m	Salmonella spp.	Pos	73	at	at	at	at		Neg	PD	
1	A	Beef and Rabbit Blend	14	N/A	N/A	N/A	at	at	at	at		Neg	74	at	at	at	at		Neg	NA	
1	A	Poultry Grain Based Feed	15	N/A	N/A	N/A	at	at	at	at		Neg	75	m	m	m	m	Salmonella spp.	Pos	ND	
1	A	Cracked Corn Animal Feed	16	N/A	N/A	N/A	at	at	at	at		Neg	76	at	at	at	at		Neg	NA	
1	A	Small Mamal Rabbit Feed and Grains	17	N/A	N/A	N/A	at	at	at	at		Neg	77	at	at	at	at		Neg	NA	
1	A	Livestock Commodity Mix Feed	18	18.94	17.55	14.91	m	m	m	m	Salmonella spp.	Pos	78	m	m	m	m	Salmonella spp.	Pos	PA	
1	A	Livestock Protein Pellets	19	N/A	N/A	N/A	at	at	at	at		Neg	79	at	at	at	at		Neg	NA	
1	A	Dried Worm and Grain Blends	20	27.03	25.49	25.90	m	m	m	m	Salmonella spp.	Pos	80	at	at	at	at		Neg	PD	

¹Obtained through biochemical galleries and Poly O and H serology

Category	Type	Item	Alternative Method Samples									ISO 6579-1:2017 Reference Samples								Final Agreement
			Sample No.	CFX96	CFX CFX OPUS DW	QS5	ISO 6579-1:2017 Confirmation				Final Result	Sample No.	MKTTn		RVS		Identification ¹	Final Result		
							MKTTn		RVS											
							XLD	RSA	XLD	RSA										
1	B	Small Breed Adult Dog Kibble	21	16.32	16.36	12.17	m	m	m	m	Salmonella spp.	Pos	81	at	at	at	at		Neg	PD
1	B	Dry Puppy Kibble – Chicken	22	N/A	N/A	N/A	ng	ng	ng	ng		Neg	82	t	t	t	t	Salmonella spp.	Pos	ND
1	B	Whitefish and Lentil Pate for Dogs	23	N/A	N/A	N/A	at	at	at	at		Neg	83	at	at	at	at		Neg	NA
1	B	Canned Turkey with Gravy for Dogs	24	15.99	16.56	33.56	t	t	t	t	Salmonella spp.	Pos	84	t	t	t	t	Salmonella spp.	Pos	PA
1	B	Whitefish and Tuna Wet Cat Food	25	N/A	N/A	N/A	ng	ng	ng	ng		Neg	85	ng	ng	ng	ng		Neg	NA
1	B	Dry Cat Food – Adult	26	15.36	16.09	27.79	t	t	t	t	Salmonella spp.	Pos	86	ng	ng	ng	ng		Neg	PD
1	B	Dry Biscuit Treats – Goat	27	14.89	16.02	12.78	t	t	t	t	Salmonella spp.	Pos	87	ng	ng	ng	ng		Neg	PD
1	B	Dry Cat Treats – Catnip Flavor	28	N/A	N/A	N/A	at	at	at	at		Neg	88	m	m	m	m	Salmonella spp.	Pos	ND
1	B	Beef and Sweet Potato Pate	29	N/A	N/A	N/A	ng	ng	ng	ng		Neg	89	ng	ng	ng	ng		Neg	NA
1	B	Chicken Puree Wet Cat Treat	30	16.02	16.81	13.86	m	t	m	t	Salmonella spp.	Pos	90	m	t	m	t	Salmonella spp.	Pos	PA
1	B	Easy Paste for Dogs – Bacon & Cheddar	31	N/A	N/A	N/A	ng	ng	ng	ng		Neg	91	ng	ng	ng	ng		Neg	NA
1	B	Kitten Kibble Blend	32	N/A	N/A	N/A	at	at	at	at		Neg	92	m	m	m	m	Salmonella spp.	Pos	ND
1	B	Farm Raise Chicken Pate	33	N/A	N/A	N/A	ng	ng	ng	ng		Neg	93	ng	ng	ng	ng		Neg	NA
1	B	Whole Beef and Gravy – Cat Canned	34	N/A	N/A	N/A	at	at	at	at		Neg	94	at	at	at	at		Neg	NA
1	B	Canned Chicken and Pumpkin Dog Food	35	N/A	N/A	N/A	ng	ng	ng	ng		Neg	95	t	t	t	t	Salmonella spp.	Pos	ND
1	B	Adult Dog Kibble – Salmon & Potato	36	N/A	N/A	N/A	ng	ng	ng	ng		Neg	96	ng	ng	ng	ng		Neg	NA
1	B	Duck Pate for Dogs	37	16.60	16.57	13.12	t	t	t	t	Salmonella spp.	Pos	97	t	t	t	t	Salmonella spp.	Pos	PA
1	B	Cat Kibble with Soft Bites	38	N/A	N/A	N/A	at	at	at	at		Neg	98	at	at	at	at		Neg	NA
1	B	Pot Pie Canned Dog Food	39	16.15	16.03	12.98	t	t	t	t	Salmonella spp.	Pos	99	ng	ng	ng	ng		Neg	PD
1	B	Grain Free Kibble – Beef and Bison	40	N/A	N/A	N/A	ng	ng	ng	ng		Neg	100	ng	ng	ng	ng		Neg	NA

¹Obtained through biochemical galleries and Poly O and H serology

Category	Type	Item	Alternative Method Samples										ISO 6579-1:2017 Reference Samples								Final Agreement
			Sample No.	CFX96	CFX CFX OPUS DW	QS5	ISO 6579-1:2017 Confirmation				Final Result	Sample No.	MKTTn		RVS		Identification ¹	Final Result			
							MKTTn		RVS												
							XLD	RSA	XLD	RSA											
1	C	Raw Chicken Neck	41	N/A	N/A	N/A	at	at	at	at		Neg	101	at	at	at	at		Neg	NA	
1	C	Raw Duck Neck	42	20.13	22.79	14.64	m	m	m	m	Salmonella spp.	Pos	102	m	m	m	m	Salmonella spp.	Pos	PA	
1	C	Chicken Feet	43	21.80	23.80	18.03	m	m	m	m	Salmonella spp.	Pos	103	m	m	m	m	Salmonella spp.	Pos	PA	
1	C	Ox Tail	44	N/A	N/A	N/A	at	at	at	at		Neg	104	at	at	at	at		Neg	NA	
1	C	Beef Whole Bone	45	21.12	22.72	24.33	m	m	m	m	Salmonella spp.	Pos	105	at	at	at	at		Neg	PD	
1	C	Beef Bone Marrow	46	N/A	N/A	N/A	at	at	at	at		Neg	106	at	at	at	at		Neg	NA	
1	C	Assorted Poultry Organs	47	N/A	N/A	N/A	at	at	at	at		Neg	107	at	at	at	at		Neg	NA	
1	C	Chicken Gizzards	48	24.65	25.64	18.81	m	m	m	m	Salmonella spp.	Pos	108	at	at	at	at		Neg	PD	
1	C	Raw Pig Ears	49	N/A	N/A	N/A	at	at	at	at		Neg	109	m	m	m	m	Salmonella spp.	Pos	ND	
1	C	Poultry Cell Chicken Oil	50	N/A	N/A	N/A	at	at	at	at		Neg	110	at	at	at	at		Neg	NA	
1	C	Sunflower Oil Dietary Supplement	51	N/A	N/A	N/A	at	at	at	at		Neg	111	at	at	at	at		Neg	NA	
1	C	All Livestock Supplement Oil	52	N/A	N/A	N/A	at	at	at	at		Neg	112	m	m	m	m	Salmonella spp.	Pos	ND	
1	C	Buffalo Rib Bones	53	N/A	N/A	N/A	at	at	at	at		Neg	113	at	at	at	at		Neg	NA	
1	C	Raw Beef Knuckle Bone	54	19.69	18.30	18.40	m	m	m	m	Salmonella spp.	Pos	114	at	at	at	at		Neg	PD	
1	C	Frozen Lamb Bones	55	N/A	N/A	N/A	at	at	at	at		Neg	115	at	at	at	at		Neg	NA	
1	C	Pork Rib Bones	56	N/A	N/A	N/A	at	at	at	at		Neg	116	at	at	at	at		Neg	NA	
1	C	Raw Pig Ears	57	N/A	N/A	N/A	at	at	at	at		Neg	117	at	at	at	at		Neg	NA	
1	C	Whole Smelt Fish (with bone)	58	23.22	27.02	33.40	m	m	m	m	Salmonella spp.	Pos	118	at	at	at	at		Neg	PD	
1	C	Salmon Oil	59	N/A	N/A	N/A	at	at	at	at		Neg	119	at	at	at	at		Neg	NA	
1	C	Raw Pig Ears	60	23.12	29.71	30.82	m	m	m	m	Salmonella spp.	Pos	120	m	m	m	m	Salmonella spp.	Pos	PA	

¹Obtained through biochemical galleries and Poly O and H serology

Category	Type	Item	Alternative Method Samples										ISO 6579-1:2017 Reference Samples								Final Agreement
			Sample No.	CFX96	CFX CFX OPUS DW	QS5	ISO 6579-1:2017 Confirmation				Final Result	Sample No.	MKTTn		RVS		Identification¹	Final Result			
							MKTTn		RVS												
							XLD	RSA	XLD	RSA											
2	A	Sponge 1	121	18.70	16.72	14.39	t	t	t	t	Salmonella spp.	Pos	181	ng	ng	ng	ng		Neg	PD	
2	A	Sponge 2	122	N/A	N/A	N/A	ng	ng	ng	ng	Neg	Neg	182	ng	ng	ng	ng		Neg	NA	
2	A	Sponge 3	123	18.61	17.50	14.81	t	t	t	t	Salmonella spp.	Pos	183	t	t	t	t	Salmonella spp.	Pos	PA	
2	A	Sponge 4	124	N/A	N/A	N/A	ng	ng	ng	ng	Neg	Neg	184	ng	ng	ng	ng		Neg	NA	
2	A	Sponge 5	125	N/A	N/A	N/A	ng	ng	ng	ng	Neg	Neg	185	t	t	t	t	Salmonella spp.	Pos	ND	
2	A	Sponge 6	126	N/A	N/A	N/A	ng	ng	ng	ng	Neg	Neg	186	ng	ng	ng	ng		Neg	NA	
2	A	Sponge 7	127	19.11	16.95	14.94	m	m	m	m	Salmonella spp.	Pos	187	at	ng	at	ng		Neg	PD	
2	A	Sponge 8	128	N/A	N/A	N/A	at	ng	at	ng	Neg	Neg	188	at	ng	at	ng		Neg	NA	
2	A	Sponge 9	129	N/A	N/A	N/A	ng	ng	ng	ng	Neg	Neg	189	t	t	t	t	Salmonella spp.	Pos	ND	
2	A	Sponge 10	130	18.71	16.73	14.98	t	t	t	t	Salmonella spp.	Pos	190	t	t	t	t	Salmonella spp.	Pos	PA	
2	A	Swab 1	131	N/A	N/A	N/A	ng	ng	ng	ng	Neg	Neg	191	ng	ng	ng	ng		Neg	NA	
2	A	Swab 2	132	18.89	16.38	14.55	t	t	t	t	Salmonella spp.	Pos	192	t	t	t	t	Salmonella spp.	Pos	PA	
2	A	Swab 3	133	N/A	N/A	N/A	ng	ng	ng	ng	Neg	Neg	193	ng	ng	ng	ng		Neg	NA	
2	A	Swab 4	134	N/A	N/A	N/A	ng	ng	ng	ng	Neg	Neg	194	t	t	t	t	Salmonella spp.	Pos	ND	
2	A	Swab 5	135	N/A	N/A	N/A	ng	ng	ng	ng	Neg	Neg	195	ng	ng	ng	ng		Neg	NA	
2	A	Swab 6	136	19.21	16.66	15.17	t	t	t	t	Salmonella spp.	Pos	196	ng	ng	ng	ng		Neg	PD	
2	A	Swab 7	137	N/A	N/A	N/A	ng	ng	ng	ng	Neg	Neg	197	ng	ng	ng	ng		Neg	NA	
2	A	Swab 8	138	19.31	17.61	14.56	m	m	m	m	Salmonella spp.	Pos	198	m	m	m	m	Salmonella spp.	Pos	PA	
2	A	Swab 9	139	N/A	N/A	N/A	ng	ng	ng	ng	Neg	Neg	199	ng	ng	ng	ng		Neg	NA	
2	A	Swab 10	140	19.04	16.65	14.98	t	t	t	t	Salmonella spp.	Pos	200	ng	ng	ng	ng		Neg	PD	

¹Obtained through biochemical galleries and Poly O and H serology

Category	Type	Item	Alternative Method Samples										ISO 6579-1:2017 Reference Samples								Final Agreement
			Sample No.	CFX96	CFX CFX OPUS DW	QS5	ISO 6579-1:2017 Confirmation				Final Result	Sample No.	MKTTn		RVS		Identification ¹	Final Result			
							MKTTn		RVS												
							XLD	RSA	XLD	RSA											
2	B	Process Water 1	141	19.23	17.66	15.43	t	t	t	t	Salmonella spp.	Pos	201	ng	ng	ng	ng		Neg	PD	
2	B	Process Water 2	142	N/A	N/A	N/A	ng	ng	ng	ng		Neg	202	ng	ng	ng	ng		Neg	NA	
2	B	Process Water 3	143	19.46	18.18	16.32	t	t	t	t	Salmonella spp.	Pos	203	t	t	t	t	Salmonella spp.	Pos	PA	
2	B	Process Water 4	144	19.79	18.07	15.47	t	t	t	t	Salmonella spp.	Pos	204	t	t	t	t	Salmonella spp.	Pos	PA	
2	B	Process Water 5	145	N/A	N/A	N/A	ng	ng	ng	ng		Neg	205	ng	ng	ng	ng		Neg	NA	
2	B	Process Water 6	146	N/A	N/A	N/A	ng	ng	ng	ng		Neg	206	t	t	t	t	Salmonella spp.	Pos	ND	
2	B	Process Water 7	147	N/A	N/A	N/A	ng	ng	ng	ng		Neg	207	ng	ng	ng	ng		Neg	NA	
2	B	Process Water 8	148	19.36	17.97	15.30	t	t	t	t	Salmonella spp.	Pos	208	t	t	t	t	Salmonella spp.	Pos	PA	
2	B	Process Water 9	149	N/A	N/A	N/A	ng	ng	ng	ng		Neg	209	ng	ng	ng	ng		Neg	NA	
2	B	Process Water 10	150	19.11	18.50	15.19	t	t	t	t	Salmonella spp.	Pos	210	ng	ng	ng	ng		Neg	PD	
2	B	Washing Water 1	151	19.54	18.45	16.20	t	t	t	t	Salmonella spp.	Pos	211	ng	ng	ng	ng		Neg	PD	
2	B	Washing Water 2	152	N/A	N/A	N/A	ng	ng	ng	ng		Neg	212	ng	ng	ng	ng		Neg	NA	
2	B	Washing Water 3	153	N/A	N/A	N/A	ng	ng	ng	ng		Neg	213	t	t	t	t	Salmonella spp.	Pos	ND	
2	B	Washing Water 4	154	N/A	N/A	N/A	ng	ng	ng	ng		Neg	214	ng	ng	ng	ng		Neg	NA	
2	B	Washing Water 5	155	N/A	N/A	N/A	ng	ng	ng	ng		Neg	215	ng	ng	ng	ng		Neg	NA	
2	B	Washing Water 6	156	18.81	17.45	14.51	t	t	t	t	Salmonella spp.	Pos	216	t	t	t	t	Salmonella spp.	Pos	PA	
2	B	Washing Water 7	157	N/A	N/A	N/A	ng	ng	ng	ng		Neg	217	ng	ng	ng	ng		Neg	NA	
2	B	Washing Water 8	158	N/A	N/A	N/A	ng	ng	ng	ng		Neg	218	ng	ng	ng	ng		Neg	NA	
2	B	Washing Water 9	159	N/A	N/A	N/A	ng	ng	ng	ng		Neg	219	t	t	t	t	Salmonella spp.	Pos	ND	
2	B	Washing Water 10	160	N/A	N/A	N/A	ng	ng	ng	ng		Neg	220	ng	ng	ng	ng		Neg	NA	

¹Obtained through biochemical galleries and Poly O and H serology

Category	Type	Item	Alternative Method Samples									ISO 6579-1:2017 Reference Samples							Final Agreement	
			Sample No.	CFX96	CFX CFX OPUS DW	QS5	ISO 6579-1:2017 Confirmation				Final Result	Sample No.	MKTTn		RVS		Identification¹	Final Result		
							MKTTn		RVS											
							XLD	RSA	XLD	RSA										
2	C	Dust 1	161	N/A	N/A	N/A	at	ng	at	ng		Neg	221	at	ng	at	ng		Neg	NA
2	C	Dust 2	162	19.01	17.34	14.73	t	t	t	t	Salmonella spp.	Pos	222	t	t	t	t	Salmonella spp.	Pos	PA
2	C	Dust 3	163	N/A	N/A	N/A	ng	ng	ng	ng		Neg	223	ng	ng	ng	ng		Neg	NA
2	C	Dust 4	164	18.70	17.15	14.83	t	t	t	t	Salmonella spp.	Pos	224	t	t	t	t	Salmonella spp.	Pos	PA
2	C	Dust 5	165	N/A	N/A	N/A	ng	ng	ng	ng		Neg	225	t	t	t	t	Salmonella spp.	Pos	ND
2	C	Dust 6	166	N/A	N/A	N/A	at	ng	at	ng		Neg	226	m	t	m	t	Salmonella spp.	Pos	ND
2	C	Dust 7	167	20.36	17.09	15.80	m	t	m	t	Salmonella spp.	Pos	227	at	ng	at	ng		Neg	PD
2	C	Dust 8	168	N/A	N/A	N/A	ng	ng	ng	ng		Neg	228	ng	ng	ng	ng		Neg	NA
2	C	Dust 9	169	N/A	N/A	N/A	ng	ng	ng	ng		Neg	229	ng	ng	ng	ng		Neg	NA
2	C	Dust 10	170	19.18	17.52	15.18	t	t	t	t	Salmonella spp.	Pos	230	t	t	t	t	Salmonella spp.	Pos	PA
2	C	Sweeping 1	171	N/A	N/A	N/A	at	ng	at	ng		Neg	231	m	t	m	t	Salmonella spp.	Pos	ND
2	C	Sweeping 2	172	N/A	N/A	N/A	ng	ng	ng	ng		Neg	232	ng	ng	ng	ng		Neg	NA
2	C	Sweeping 3	173	N/A	N/A	N/A	ng	ng	ng	ng		Neg	233	ng	ng	ng	ng		Neg	NA
2	C	Sweeping 4	174	20.47	17.04	15.00	t	t	t	t	Salmonella spp.	Pos	234	ng	ng	ng	ng		Neg	PD
2	C	Sweeping 5	175	N/A	N/A	N/A	at	ng	at	ng		Neg	235	at	ng	at	ng		Neg	NA
2	C	Sweeping 6	176	18.75	16.89	15.26	t	t	t	t	Salmonella spp.	Pos	236	t	t	t	t	Salmonella spp.	Pos	PA
2	C	Sweeping 7	177	N/A	N/A	N/A	ng	ng	ng	ng		Neg	237	ng	ng	ng	ng		Neg	NA
2	C	Sweeping 8	178	N/A	N/A	N/A	ng	ng	ng	ng		Neg	238	ng	ng	ng	ng		Neg	NA
2	C	Sweeping 9	179	N/A	N/A	N/A	at	ng	at	ng		Neg	239	at	ng	at	ng		Neg	NA
2	C	Sweeping 10	180	N/A	N/A	N/A	ng	ng	ng	ng		Neg	240	t	t	t	t	Salmonella spp.	Pos	ND

¹Obtained through biochemical galleries and Poly O and H serology

Original Validation Sensitivity – Raw Data

Category	Item	Inoculation Level	CANDIDATE (25 g)														ISO REFERENCE STANDARD (25 g)							Final Agreement				
			Sample No	Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)				ISO 6579-1:2017 (16 Hour)				Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation									
								MKTn		RVS		Identification ¹	MKTn		RVS				Identification ¹	MKTn		RVS				Identification ¹	Final Result	
				CFX	QS5	XLD	RSA	XLD	RSA	XLD	RSA		XLD	RSA	XLD					RSA	XLD	RSA						
Raw Milk	Raw Milk		601	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	661	at	at	at	at		Neg	NA	NA
	Raw Milk		602	-	-	-	-	at	at	at	ng		at	at	at	at		Neg	Neg	662	at	at	at	at		Neg	NA	NA
	Raw Milk		603	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	663	at	at	ng	ng		Neg	NA	NA
	Raw Milk		604	-	-	-	-	at	at	ng	ng		m	m	t	t	Salmonella spp.	Neg	Pos	664	at	at	ng	ng		Neg	NA	NA _{FN(alt)}
	Raw Milk		605	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	665	at	at	ng	ng		Neg	NA	NA
	Raw Milk		606	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	666	at	at	ng	ng		Neg	NA	NA
	Raw Milk		607	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	667	at	at	ng	ng		Neg	NA	NA
	Raw Milk		608	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	668	at	at	ng	ng		Neg	NA	NA
	Raw Milk		609	-	-	-	-	at	at	ng	ng		at	at	at	at		Neg	Neg	669	at	at	ng	ng		Neg	NA	NA
	Raw Milk		610	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	670	at	at	ng	ng		Neg	NA	NA
	Raw Milk		611	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	671	at	at	ng	ng		Neg	NA	NA
	Raw Milk		612	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	672	at	at	ng	ng		Neg	NA	NA
	Raw Milk		613	-	-	-	-	at	at	at	at		at	at	at	ng		Neg	Neg	673	at	at	ng	ng		Neg	NA	NA
	Raw Milk		614	-	-	-	-	at	at	at	at		at	at	at	ng		Neg	Neg	674	at	at	ng	ng		Neg	NA	NA
	Raw Milk		615	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	675	at	at	ng	at		Neg	NA	NA
	Raw Milk		616	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	676	at	at	ng	ng		Neg	NA	NA
	Raw Milk		617	-	-	-	-	at	at	at	ng		at	at	at	at		Neg	Neg	677	at	at	ng	ng		Neg	NA	NA
	Raw Milk		618	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	678	at	at	ng	at		Neg	NA	NA
	Raw Milk		619	-	-	-	-	at	at	ng	ng		at	at	at	at		Neg	Neg	679	at	at	ng	at		Neg	NA	NA
	Raw Milk		620	-	-	-	-	at	at	ng	ng		at	at	at	at		Neg	Neg	680	at	at	ng	at		Neg	NA	NA

¹Obtained through biochemical galleries and Poly O and H serology

Category	Item	Inoculation Level	CANDIDATE (25 g)																	ISO REFERENCE STANDARD (25 g)										Final Agreement	
			Sample No	Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)					Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation										
								MKTn		RVS		Identification ¹	MKTn		RVS		Identification ¹				MKTn		RVS		Identification ¹	Final Result					
				CFX		QS5		XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA					XLD	RSA									
				8 Hour	16 Hour	8 Hour	16 Hour																XLD	RSA			XLD	RSA	XLD	RSA	XLD
Raw Milk	Raw Kefir	3.6 (4,5,3,6,0)	772	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	799	ng	ng	ng	ng		Neg	NA	NA			
	Raw Goats Milk		773	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	800	at	at	at	at		Neg	NA	NA			
	Raw Goats Milk	0.2 (0,0,1,0,0)	774	28.62	20.91	23.98	20.74	t	t	t	m	Salmonella spp.	t	t	t	m	Salmonella spp.	Pos	Pos	801	m	t	m	at	Salmonella spp.	Pos	PA	PA			
	Raw Camel Milk	1.6 (3,0,2,0,3)	775	29.73	19.35	25.91	18.74	t	m	t	ng	Salmonella spp.	m	t	m	at	Salmonella spp.	Pos	Pos	802	at	ng	at	at		Neg	PD	PD			
	Raw Kefir		776	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	803	ng	ng	ng	ng		Neg	NA	NA			
	Raw Goats Milk	5.4 (6,6,8,4,3)	777	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	804	m	m	m	m	Salmonella spp.	Pos	ND	ND			
	Raw Goats Milk	2.6 (7,0,1,5,0)	778	27.92	19.78	26.18	20.16	m	at	m	m	Salmonella spp.	m	m	m	at	Salmonella spp.	Pos	Pos	805	at	at	at	at		Neg	PD	PD			
	Raw Camel Milk		779	-	-	-	-	ng	ng	at	ng		at	at	at	at		Neg	Neg	806	at	at	at	at		Neg	NA	NA			
	Raw Kefir		780	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	807	ng	ng	ng	ng		Neg	NA	NA			
	Raw Goats Milk		781	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	808	at	at	at	at		Neg	NA	NA			
	Raw Goats Milk		782	-	-	-	-	at	ng	at	ng		at	at	at	ng		Neg	Neg	809	at	at	at	at		Neg	NA	NA			
	Raw Camel Milk	1.4 (4,0,0,3,0)	783	28.39	19.78	24.46	19.04	m	t	m	ng	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	810	m	m	m	at	Salmonella spp.	Pos	PA	PA			
	Raw Bovine Milk		784	33.75	33.39	25.97	34.37	m	ng	ng	ng	Salmonella spp.	m	ng	m	ng	Salmonella spp.	Pos	Pos	811	t	t	t	t	Salmonella spp.	Pos	PA	PA			
	Raw Bovine Milk	1.8 (0,2,2,5,0)	785	32.44	14.96	31.93	13.50	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	812	ng	ng	at	ng		Neg	PD	PD			
	Raw Bovine Milk		786	33.80	29.17	31.59	30.40	m	ng	m	ng	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	813	t	t	t	t	Salmonella spp.	Pos	PA	PA			
	Raw Bovine Milk		787	33.54	33.73	31.92	33.28	m	ng	ng	m	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	814	t	t	t	t	Salmonella spp.	Pos	PA	PA			
	Raw Bovine Milk	2.0 (3,1,1,2,3)	788	31.58	15.52	30.20	12.64	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	815	m	t	m	t	Salmonella spp.	Pos	PA	PA			
	Raw Bovine Milk		789	34.23	34.12	34.37	31.97	t	ng	t	ng	Salmonella spp.	t	ng	m	ng	Salmonella spp.	Pos	Pos	816	t	t	t	t	Salmonella spp.	Pos	PA	PA			
	Raw Bovine Milk		790	33.78	26.21	33.30	24.92	t	ng	t	ng	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	817	t	t	t	t	Salmonella spp.	Pos	PA	PA			
	Raw Bovine Milk	2.8 (5,6,1,1,1)	791	32.88	14.79	33.38	13.57	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	818	t	t	t	t	Salmonella spp.	Pos	PA	PA			

¹Obtained through biochemical galleries and Poly O and H serology

Category	Item	Inoculation Level	CANDIDATE (25 g)																	ISO REFERENCE STANDARD (25 g)										Final Agreement	
			Sample No	Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)					Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation										
								MKTn		RVS		Identification¹	MKTn		RVS		Identification¹				MKTn		RVS		Identification¹	Final Result					
				CFX		QS5																					XLD		RSA		XLD
				8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA					XLD	RSA	XLD	RSA			XLD	RSA	XLD	RSA	XLD
Raw milk-based products (high fat content/and or high background microflora)	Raw Butter		621	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	681	at	at	ng	ng		Neg	NA	NA			
	Fourme d'Ambert		622	31.91	18.12	29.77	15.02	t	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	682	ng	ng	ng	ng		Neg	PD	PD			
	Kaltbach Le Cremeux		623	-	-	34.26	34.67	m	m	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	683	m	t	m	t	Salmonella spp.	Pos	ND _{FN(alt)} / PA	ND _{FN(alt)} / PA			
	Buttermilk Bleu Affinee		624	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	684	m	m	m	m	Salmonella spp.	Pos	ND	ND			
	Bayley Hazen Blue		625		-	-	-	ng	ng	ng	ng		ng	at	ng	ng		Neg	Neg	685	ng	ng	ng	ng		Neg	NA	NA			
	Fontina Val D'Aosta		626	33.37	28.11	31.29	27.18	t	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	686	m	t	m	t	Salmonella spp.	Pos	PA	PA			
	Roquefort ADP Papillon Black		627	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	687	ng	ng	ng	ng		Neg	NA	NA			
	Comte HOP Reserve		628	33.22	17.02	30.59	14.24	t	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	688	m	t	m	t	Salmonella spp.	Pos	PA	PA			
	Roquefort Sociele Bee		629	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	689	m	m	m	t	Salmonella spp.	Pos	ND	ND			
	Raw Milk French Raclette		630	30.51	18.64	28.58	16.61	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	690	m	t	m	t	Salmonella spp.	Pos	PA	PA			
	Bleu d'Auvergne		631	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	691	ng	ng	ng	ng		Neg	NA	NA			
	Raw Butter		632	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	692	ng	ng	ng	ng		Neg	NA	NA			
	Fourme d'Ambert		633	32.63	18.69	30.73	16.90	m	t	m	t	Salmonella spp.	m	t	t	t	Salmonella spp.	Pos	Pos	693	ng	ng	ng	ng		Neg	PD	PD			
	Kaltbach Le Cremeux		634	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	694	ng	ng	ng	ng		Neg	NA	NA			
	Buttermilk Bleu Affinee		635	33.90	15.88	31.84	13.58	t	t	m	t	Salmonella spp..	m	t	m	t	Salmonella spp.	Pos	Pos	695	m	m	m	t	Salmonella spp.	Pos	PA	PA			
	Bayley Hazen Blue		636	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	696	ng	ng	ng	ng		Neg	NA	NA			
	Fontina Val D'Aosta		637	-	-	-	-	ng	ng	ng	ng		at	ng	at	ng		Neg	Neg	697	m	t	m	t	Salmonella spp.	Pos	ND	ND			
	Roquefort ADP Papillon Black		638	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	698	ng	ng	ng	ng		Neg	NA	NA			
	Comte HOP Reserve		639	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	699	ng	ng	ng	ng		Neg	NA	NA			
	Roquefort Sociele Bee		640	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	700	ng	ng	ng	ng		Neg	NA	NA			

¹Obtained through biochemical galleries and Poly O and H serology

Category	Item	Inoculation Level	Sample No	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)										Final Agreement	
				Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)						Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation									
								MKTTn		RVS		Identification¹	MKTTn		RVS		Identification¹	MKTTn				RVS		Identification¹	Final Result						
				CFX	QS5	XLD	RSA	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA		XLD				RSA									
Pasteurized or dry milk and dairy products	4% Milkfat cottage cheese	1.0 (0,3,2,0,0)	641	35.16	30.86	32.41	28.26	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	701	m	t	m	t	Salmonella spp.	Pos	PA	PA			
	Whole Milk Yogurt		642	34.23	27.20	31.59	24.97	m	m	m	m	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	702	m	t	t	t	Salmonella spp.	Pos	PA	PA			
	Buttermilk		643	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	703	ng	ng	ng	ng		Neg	NA	NA			
	Heavy Whipping Cream		644	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	704	ng	ng	ng	ng		Neg	NA	NA			
	1% Low Fat Milk	1.2 (0,1,1,4,0)	645	34.65	30.85	32.66	30.55	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	705	ng	ng	ng	ng		Neg	PD	PD			
	Part Skim Shredded Mozzarella Cheese	1.6 (2,2,1,0,3)	646	-	24.11	33.08	23.55	m	m	m	m	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	706	ng	ng	ng	ng		Neg	NA _{FN(alt)} /PD	PD			
	Sharp Shredded Cheddar Cheese		647	-	-	-	-	ng	ng	ng	ng		ng	at	ng	ng		Neg	Neg	707	ng	ng	ng	ng		Neg	NA	NA			
	Pepper Jack Cheese	1.2 (0,1,1,4,0)	648	-	16.32	33.38	15.62	m	t	m	t	Salmonella spp.	t	m	t	m	Salmonella spp.	Pos	Pos	708	ng	ng	at	at		Neg	NA _{FN(alt)} /PD	PD			
	Smoked Provolone Cheese	1.0 (1,1,1,1,1)	649	-	-	-	-	ng	ng	ng	ng		ng	ng	at	ng		Neg	Neg	709	m	t	m	t	Salmonella spp.	Pos	ND	ND			
	Cheddar and Gruyere Cheese Blend	0.8 (3,0,1,0,0)	650	34.79	18.13	33.77	11.91	m	t	m	t	Salmonella spp..	m	t	m	t	Salmonella spp.	Pos	Pos	710	m	t	m	t	Salmonella spp.	Pos	PA	PA			
	Whole Milk Cottage Cheese		651	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	711	ng	ng	ng	ng		Neg	NA	NA			
	Whole Milk Yogurt-Vanilla	1.0 (2,0,1,1,1)	652	32.23	28.13	30.59	26.32	m	m	m	m	Salmonella spp.	t	t	m	t	Salmonella spp.	Pos	Pos	712	t	t	t	t	Salmonella spp.	Pos	PA	PA			
	Buttermilk		653	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	713	ng	ng	ng	ng		Neg	NA	NA			
	Heavy Whipping Cream		654	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	714	ng	ng	ng	ng		Neg	NA	NA			
	Low Fat Skim Milk	1.0 (0,2,1,1,1)	655	33.84	32.26	33.33	29.76	t	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	715	m	t	m	t	Salmonella spp.	Pos	PA	PA			
	Skim Mozzarella Cheese Slices		656	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	716	ng	ng	ng	ng		Neg	NA	NA			
	Sharp Cheddar Cheese Slices		657	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	717	ng	at	ng	ng		Neg	NA	NA			
	Pepper Jack Cheese		658	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	718	ng	ng	ng	ng		Neg	NA	NA			
	Provolone Cheese		659	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	719	ng	ng	ng	ng		Neg	NA	NA			
	Gruyere Cheese		660	-	17.86	32.74	14.87	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	720	m	t	m	t	Salmonella spp.	Pos	ND _{FN(alt)} PA	PA			

¹Obtained through biochemical galleries and Poly O and H serology

Category	Item	Inoculation Level	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)										Final Agreement	
			Sample No	Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)					Final Result (8 Hr)	Final Result(16 Hr)	Sample No	ISO 6579-1:2017 Confirmation							Final Result		
								MKTn		RVS		Identification ¹	MKTn		RVS		Identification ¹				MKTn		RVS		Identification ¹	Final Result				
				CFX		QS5		XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA					XLD	RSA								
				8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA					XLD	RSA	XLD	RSA			XLD		RSA	XLD
Raw, ready-to-cook meat (unprocessed)	Diced Pork		121	-	-	-	-	ng	ng	at	ng		at	at	at	at		Neg	Neg	181	ng	ng	ng	ng		Neg	NA	NA		
	Boneless Pork Chops	1.2 (1,2,3,0,0)	122	34.02	21.26	23.94	22.25	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	182	m	m	t	m	Salmonella spp.	Pos	PA	PA		
	Shaved Beef Steak		123	20.41	15.17	19.97	14.59	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	183	t	t	t	t	Salmonella spp.	Pos	PA	PA		
	Ground Lamb		124	-	-	-	-	at	ng	at	ng		at	at	at	at		Neg	Neg	184	at	at	at	ng		Neg	NA	NA		
	Ground Bison (90% Lean)	1.6 (0,5,0,1,2)	125	-	-	-	-	ng	ng	at	ng		at	at	at	ng		Neg	Neg	185	m	t	m	t	Salmonella spp.	Pos	ND	ND		
	Raw Ground Beef Patties (80% Lean)		126	23.24	18.34	23.46	18.32	t	t	m	t	Salmonella spp.	m	m	m	t	Salmonella spp.	Pos	Pos	186	at	at	at	at		Neg	PD	PD		
	Ground Fresh Pork		127	-	-	-	-	at	at	at	ng		at	at	at	at		Neg	Neg	187	at	at	at	at		Neg	NA	NA		
	Raw Ground Sirloin Beef Patties (90% Lean)		128	-	-	-	-	at	ng	at	ng		at	at	at	at		Neg	Neg	188	at	at	at	at		Neg	NA	NA		
	Fresh Boneless Beef Steak		129	-	-	-	-	ng	ng	at	at		at	at	at	at		Neg	Neg	189	at	at	at	ng		Neg	NA	NA		
	Diced Beef	1.6 (2,3,0,0,0)	130	34.93	24.05	28.02	24.56	t	t	m	t	Salmonella spp.	m	m	t	t	Salmonella spp.	Pos	Pos	190	m	m	t	t	Salmonella spp.	Pos	PA	PA		
	Boneless Pork Chops		131	-	-	-	-	at	at	ng	ng		at	at	at	at		Neg	Neg	191	at	at	at	at		Neg	NA	NA		
	Fresh Ground Pork		132	25.80	18.46	28.78	18.35	t	t	m	t	Salmonella spp.	m	m	m	t	Salmonella spp.	Pos	Pos	192	m	m	t	t	Salmonella spp.	Pos	PA	PA		
	Fresh Ground Lamb		133	-	-	-	-	at	at	at	ng		at	at	at	at		Neg	Neg	193	at	at	at	ng		Neg	NA	NA		
	Raw Ground Bison (90% Lean)		134	21.93	17.17	21.32	17.27	t	t	t	t	Salmonella spp.	m	t	t	t	Salmonella spp.	Pos	Pos	194	at	at	at	ng		Neg	PD	PD		
	Raw Ground Beef Patties (90% Lean)		135	-	-	-	-	at	ng	at	at		at	at	at	at		Neg	Neg	195	ng	ng	at	at		Neg	NA	NA		
	Raw Ground Sirloin Beef Patties (93% Lean)	1.4 (4,3,0,0,0)	136	29.96	18.34	31.36	18.16	m	t	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	196	at	at	at	ng		Neg	PD	PD		
	Diced Stew Beef Pieces		137	-	-	-	-	at	at	at	ng		at	at	at	at		Neg	Neg	197	at	at	at	ng		Neg	NA	NA		
	Fresh Raw Ground Beef (80% Lean)	1.6 (1,3,0,0,4)	138	-	-	-	-	ng	ng	ng	ng		at	at	at	at		Neg	Neg	198	m	t	t	t	Salmonella spp.	Pos	ND	ND		
	Raw Shaved Beef Steak		139	-	-	-	-	at	ng	ng	ng		at	ng	at	ng		Neg	Neg	199	at	ng	ng	ng		Neg	NA	NA		
	Raw Diced Pork		140	-	-	-	-	ng	ng	at	at		at	at	at	at		Neg	Neg	200	at	ng	at	ng		Neg	NA	NA		
	Lamb Chop	1.8 (0,0,4,3,2)	723	30.07	20.11	31.55	19.71	t	t	t	t	Salmonella spp.	t	t	m	t	Salmonella spp.	Pos	Pos	745	at	ng	at	ng		Neg	PD	PD		

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Category	Item	Inoculation Level	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)										Final Agreement	
			Sample No	Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)					Final Result (8 Hr)	Final Result(16 Hr)	Sample No	ISO 6579-1:2017 Confirmation					Final Result				
								CFX		QS5		MKTTn		RVS		Identification ¹	MKTTn				RVS		Identification ¹	MKTTn			RVS			
				8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA		XLD				RSA	XLD		RSA	XLD		RSA			
Raw, frozen meat	Frozen Raw Ground Beef Burgers (80% Lean)		141	-	-	-	-	ng	ng	ng	ng		at	at	at	at		Neg	Neg	201	ng	ng	ng	ng		Neg	NA	NA		
	Raw Ground Beef Crumbles (80% Lean)		142	18.26	15.43	18.06	15.55	m	t	t	t	Salmonella spp.	m	m	m	t	Salmonella spp.	Pos	Pos	202	at	at	at	at		Neg	PD	PD		
	Raw Angus Chuck Beef Patties	1.8 (1,1,1,3,3)	143	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	203	m	m	m	m	Salmonella spp.	Pos	ND	ND		
	Raw Thin and Seasoned Beef Patties	2.0 (1,3,2,2,2)	144	22.39	16.45	23.08	16.66	m	t	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	204	at	at	at	at		Neg	PD	PD		
	Italian Style Pork Meatballs		145	-	-	-	-	at	at	ng	ng		at	at	at	at		Neg	Neg	205	at	at	ng	ng		Neg	NA	NA		
	Spicy Sicilian Pork Meatballs		146	-	-	-	-	ng	ng	at	ng		at	at	at	at		Neg	Neg	206	m	t	t	t	Salmonella spp.	Pos	ND	ND		
	Pure Beef Patties (91% Lean)		147	-	-	-	-	m	at	m	at		at	at	at	at		Neg	Neg	207	at	at	at	at		Neg	NA	NA		
	Pure Beef Patties (85% Lean)	2.6 (1,0,4,5,3)	148	-	23.28	-	24.50	t	t	ng	ng	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	208	m	m	m	t	Salmonella spp.	Pos	ND _{FN(alt)}	PA		
	Frozen Sliced Beef Liver		149	31.21	29.14	34.18	29.99	m	at	m	m	Salmonella spp.	m	at	m	m	Salmonella spp.	Pos	Pos	209	m	at	m	m	Salmonella spp.	Pos	PA	PA		
	Frozen Pork Scrapple		150	18.53	15.35	18.43	15.42	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	210	t	t	t	t	Salmonella spp.	Pos	PA	PA		
	Raw Beef Burgers (80% Lean)		151	-	-	-	-	ng	ng	ng	ng		at	ng	at	at		Neg	Neg	211	at	ng	at	ng		Neg	NA	NA		
	Frozen Raw Ground Beef (80% Lean)	2.0 (7,1,3,0,0)	152	-	-	-	-	at	at	at	ng		at	at	at	at		Neg	Neg	212	m	m	t	t	Salmonella spp.	Pos	ND	ND		
	Raw Chuck Beef Patties		153	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	213	at	at	at	at		Neg	NA	NA		
	Raw Angus Sirloin Beef Patties		154	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	214	at	at	at	at		Neg	NA	NA		
	Raw Frozen Meatballs- Pork	1.8 (2,3,3,1,0)	155	-	-	-	-	at	at	ng	ng		at	at	at	at		Neg	Neg	215	m	m	m	m	Salmonella spp.	Pos	ND	ND		
	Raw Frozen Meatballs- Pork	1.0 (1,0,2,0,2)	156	26.11	18.03	28.27	18.78	t	t	t	t	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	216	at	at	at	at	Salmonella spp.	Pos	PA	PA		
	Raw Beef Patties (91% Lean)	3.8 (3,3,0,4,4)	157	23.31	16.72	24.50	17.37	m	m	t	t	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	217	t	t	t	t	Salmonella spp.	Pos	PA	PA		
	Raw Bison Patties (85% Lean)		158	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	218	at	at	at	at		Neg	NA	NA		
	Raw Diced Beef Liver		159	31.59	29.84	33.81	30.94	m	at	m	m	Salmonella spp.	at	at	m	m	Salmonella spp.	Pos	Pos	219	m	m	m	m	Salmonella spp.	Pos	PA	PA		
	Raw Pork Sausage		160	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	220	ng	ng	ng	ng		Neg	NA	NA		
	Frozen Pork Sausage		724	-	-	-	-	at	at	ng	ng		at	at	at	at		Neg	Neg	746	at	ng	ng	at		Neg	NA	NA		
	Frozen Burger Patties		725	-	-	-	-	ng	ng	ng	ng		at	at	at	at		Neg	Neg	747	ng	ng	ng	at		Neg	NA	NA		

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Category	Item	Inoculation Level	Sample No	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)								Final Agreement	
				Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)				ISO 6579-1:2017 (16 Hour)				Final Result (8 Hr)	Final Result(16 Hr)	Sample No	ISO 6579-1:2017 Confirmation				Final Result						
								MKTn		RVS		Identification ¹	MKTn		RVS				Identification ¹	MKTn		RVS		Identification ¹	Final Result				
				CFX	QS5	XLD	RSA	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA	XLD	RSA		XLD	RSA	8 Hr	16 Hr						
Cooked meat products	Sliced Smoked Ham - Boneless	1.8 (5,1,1,1,1)	161	23.32	14.69	24.08	13.74	t	t	t	t	Salmonella spp.	t	m	t	t	Salmonella spp.	Pos	Pos	221	t	t	t	t	Salmonella spp.	Pos	PA	PA	
	Brown Sugar Sliced Country Ham	1.0 (1,1,1,1,1)	162	22.33	13.18	23.17	13.90	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	222	ng	ng	ng	ng		Neg	PD	PD	
	Cubed Ham (96% Fat Free)	0.4 (0,0,0,1,1)	163	25.31	19.66	26.83	20.78	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	223	ng	ng	ng	ng		Neg	PD	PD	
	Sliced Ham Steaks (97% Fat Free)		164	24.08	13.58	26.36	14.58	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	224	at	ng	ng	ng		Neg	PD	PD	
	Pork Liverwurst Pate with Bacon added	0.8 (1,2,0,1,0)	165	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	225	t	t	t	t	Salmonella spp.	Pos	ND	ND	
	Cooked Hardwood Smoked Bacon		166	-	-	-	-	ng	ng	ng	ng		ng	ng	at	at		Neg	Neg	226	ng	ng	at	at		Neg	NA	NA	
	Traditional Sliced Roast Beef		167	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	227	ng	ng	ng	ng		Neg	NA	NA	
	Honey Cured Sliced Ham	3.2 (4,6,0,0,6)	168	25.94	13.75	26.92	14.04	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	228	t	t	t	t	Salmonella spp.	Pos	PA	PA	
	Ultra-thin sliced Roast Beef with Seasoning	1.4 (3,1,0,1,2)	169	-	-	-	-	ng	ng	ng	ng		at	at	ng	ng		Neg	Neg	229	t	t	t	t	Salmonella spp.	Pos	ND	ND	
	Smoked Thinly Sliced Ham		170	-	-	-	-	ng	ng	ng	ng		at	ng	ng	ng		Neg	Neg	230	at	ng	ng	ng		Neg	NA	NA	
	Sliced Ham - Boneless		171	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	231	ng	ng	ng	ng		Neg	NA	NA	
	Sliced Ham with Sugar seasoning	2.2 (3,5,1,1,1)	172	-	-	-	-	ng	ng	ng	ng		at	ng	ng	ng		Neg	Neg	232	t	t	t	m	Salmonella spp.	Pos	ND	ND	
	Diced Ham (99% Fat Free)		173	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	233	ng	ng	ng	ng		Neg	NA	NA	
	Smoked Ham Flanks (95% Fat Free)	1.8 (2,2,1,2,2)	174	21.93	13.20	22.07	14.42	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	234	t	t	t	t	Salmonella spp.	Pos	PA	PA	
	Pork Liver Pate		175	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	235	ng	ng	ng	ng		Neg	NA	NA	
	Cooked Bacon		176	-	-	-	-	ng	ng	ng	ng		ng	ng	at	ng		Neg	Neg	236	ng	ng	ng	ng		Neg	NA	NA	
	Thin Sliced Roast Beef	0.4 (2,0,0,0,0)	177	24.23	14.10	25.23	14.19	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	237	t	t	t	t	Salmonella spp.	Pos	PA	PA	
	Uncured Sliced Ham		178	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	238	ng	ng	ng	ng		Neg	NA	NA	
	Sliced Roast Beef with Seasoning	1.6 (3,0,0,4,1)	179	25.23	14.00	27.01	14.18	t	t	t	m	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	239	t	t	t	t	Salmonella spp.	Pos	PA	PA	
	Sliced Smoked Ham - Honey Seasoning		180	-	-	-	-	ng	ng	ng	ng		at	ng	ng	ng		Neg	Neg	240	ng	ng	ng	ng		Neg	NA	NA	
	Roast Beef		726	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	748	ng	ng	ng	ng		Neg	NA	NA	

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Category	Item	Inoculation Level	CANDIDATE (25 g)																	ISO REFERENCE STANDARD (25 g)										Final Agreement	
			Sample No	Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)					Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation										
				CFX		QS5		MKTn		RVS		Identification ¹	MKTn		RVS		Identification ¹				MKTn		RVS		Identification ¹	Final Result					
				8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA					XLD	RSA	XLD	RSA							
Raw, ready to cook poultry (unprocessed)	Chicken Gizzards and Hearts		1	-	-	-	-	ng	ng	at	at		at	ng	ng	ng	Neg	Neg	61	at	at	at	at		Neg	NA	NA				
	Chicken Tenderloins		2	27.07	23.33	25.45	24.04	t	t	t	t	Salmonella spp.	m	t	t	t	Salmonella spp.	Pos	Pos	62	at	ng	at	ng		Neg	PD	PD			
	Boneless Skinless Chicken Thighs		3	-	-	-	-	at	at	at	at		at	at	ng	ng	Neg	Neg	63	at	ng	at	ng		Neg	NA	NA				
	Boneless Skinless Chicken Breast	3.4 (0,1,4,1,11)	4	32.49	31.32	32.99	28.53	m	m	m	m	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	64	m	at	m	at		Neg	PD	PD			
	Turkey Wings with Skin		6	-	-	-	-	at	at	at	at		at	at	ng	ng	Neg	Neg	66	at	at	at	at		Neg	NA	NA				
	Turkey Breast Skinless		7	-	-	-	-	at	at	at	at		ng	at	ng	ng	Neg	Neg	67	t	t	t	t	Salmonella spp.	Pos	ND	ND				
	Chicken Drumsticks with Skin		8	-	-	-	-	at	at	at	at		ng	at	ng	at	Neg	Neg	68	ng	ng	t	t		Neg	NA	NA				
	Chicken Wing Drumettes with Skin		9	28.51	24.28	26.03	24.30	t	t	t	t	Salmonella spp..	t	t	t	t	Salmonella spp..	Pos	Pos	69	t	t	t	t	Salmonella spp.	Pos	PA	PA			
	Chicken Gizzards		11	-	-	-	-	at	at	at	at		at	ng	ng	ng	Neg	Neg	71	at	at	at	ng		Neg	NA	NA				
	Chicken Thighs with Skin		13	-	-	-	-	at	at	at	at		at	ng	at	ng	Neg	Neg	73	at	at	at	at		Neg	NA	NA				
	Chicken Breast with Skin	4.6 (5,8,6,1,3)	14	-	-	-	-	at	at	at	at		at	ng	at	ng	Neg	Neg	74	m	t	m	t	Salmonella spp.	Pos	ND	ND				
	Skinless Chicken Breast with Rib Meat		15	-	-	-	-	at	at	at	at		at	at	ng	ng	Neg	Neg	75	at	at	at	at		Neg	NA	NA				
	Chicken Drumsticks with Skin		17	-	-	-	-	at	at	at	at		at	at	ng	ng	Neg	Neg	77	at	at	at	at		Neg	NA	NA				
	Chicken Tenderloins		19	-	-	-	-	at	at	at	at		at	at	ng	ng	Neg	Neg	79	at	at	at	at		Neg	NA	NA				
	Skinless Chicken Breast		20	-	-	-	-	at	at	at	at		at	ng	ng	ng	Neg	Neg	80	at	at	at	at		Neg	NA	NA				
	Raw Chicken Breast	2.4 (5,4,3,0,0)	765	28.36	21.44	26.44	20.73	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	792	m	t	m	t	Salmonella spp.	Pos	PA	PA			
	Raw Chicken Thigh	2.4 (0,2,4,6,0)	766	33.32	29.53	30.92	28.42	m	t	m	m	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	793	m	t	m	t	Salmonella spp.	Pos	PA	PA			
	Raw Chicken Tenderloins	2.2 (3,5,0,2,1)	767	33.56	31.15	30.47	31.06	m	t	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	794	m	t	m	m	Salmonella spp.	Pos	PA	PA			
Raw Turkey Breast	1.2 (1,1,2,1,1)	768	24.93	20.03	22.81	20.08	m	t	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	795	m	t	m	m	Salmonella spp.	Pos	PA	PA				
Raw Turkey Breast with Skin	1.4 (3,0,0,4,0)	769	24.78	20.11	23.39	20.10	t	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	796	at	at	at	at		Neg	PD	PD				

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Category	Item	Inoculation Level	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)										Final Agreement	
			Sample No	Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)					Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation									
								MKTtN		RVS		Identification ¹	MKTtN		RVS		Identification ¹				MKTtN		RVS		Identification ¹	Final Result				
				CFX	QS5	XLD	RSA	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA														
				8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA					XLD	RSA	XLD	RSA			XLD	RSA	8 Hr	16 Hr
Raw, ready to cook poultry (processed)	Raw Ground Turkey (93% Lean)		21	23.88	21.76	22.07	21.91	m	m	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	81	at	at	at	ng		Neg	PD	PD		
	Raw Ground Chicken Breast (98 % Lean)	3.8 (3,7,7,1,1)	22	-	-	-	-	at	at	at	at		at	at	at	ng		Neg	Neg	82	m	m	m	m	Salmonella spp.	Pos	ND	ND		
	Raw Gound Turkey Breast (99% Lean)		23	-	-	-	-	at	ng	at	ng		at	ng	at	ng		Neg	Neg	83	at	at	at	at		Neg	NA	NA		
	Raw Ground Turkey (93% Lean)		24	25.28	18.86	23.00	18.93	t	t	t	t	Salmonella spp.	m	t	t	t	Salmonella spp.	Pos	Pos	84	at	at	at	at		Neg	PD	PD		
	Raw Turkey Burger Patties (93% Lean)		26	-	-	-	-	at	at	at	at		at	at	ng	ng		Neg	Neg	86	at	at	at	at		Neg	NA	NA		
	Raw Ground Chicken Patties (92% Lean)		27	21.30	16.43	19.78	15.97	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	87	t	t	t	t	Salmonella spp.	Pos	PA	PA		
	Raw Turkey Breakfast Sausage (93% Lean)		28	-	-	-	-	at	at	at	at		at	ng	at	ng		Neg	Neg	88	at	at	at	at		Neg	NA	NA		
	Raw Ground Turkey (85% Lean)		29	-	-	-	-	ng	ng	ng	ng		at	ng	at	at		Neg	Neg	89	t	t	t	t	Salmonella spp.	Pos	ND	ND		
	Raw Ground Chicken Breast (93% Lean)	3.0 (8,1,1,2,3)	30	18.69	17.16	31.95	19.11	t	t	m	t	Salmonella spp.	m	m	t	t	Salmonella spp.	Pos	Pos	90	m	m	m	m	Salmonella spp.	Pos	PA	PA		
	Raw Turkey Burger Patties (93% Lean)	3.4 (6,6,2,3,0)	32	31.42	21.04	31.71	21.97	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	92	t	t	t	t	Salmonella spp.	Pos	PA	PA		
	Raw Ground Chicken Breast (98 % Lean)		33	-	-	-	-	t	t	t	t		ng	ng	ng	ng		Neg	Neg	93	ng	ng	at	ng		Neg	NA	NA		
	Raw Ground Chicken (90 % Lean)		34	-	-	-	-	at	ng	at	ng		at	at	at	at		Neg	Neg	94	at	at	at	at		Neg	NA	NA		
	Raw Ground Turkey (85% Lean)	2.6 (3,2,2,1,5)	35	34.44	19.73	30.61	11.58	m	t	t	t	Salmonella spp.	m	m	t	t	Salmonella spp.	Pos	Pos	95	m	m	m	m	Salmonella spp.	Pos	PA	PA		
	Raw Ground Chicken Patties (90% Lean)		36	-	-	-	-	at	at	at	at		at	at	ng	ng		Neg	Neg	96	at	at	at	at		Neg	NA	NA		
	Raw Chicken Breakfast Sausage (90% Lean)		37	-	-	-	-	at	ng	at	at		at	at	at	at		Neg	Neg	97	at	at	at	at		Neg	NA	NA		
	Raw Turkey Sausage Links (95% Lean)	4.2 (4,2,9,6,0)	38	30.17	18.48	28.12	16.23	1	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	98	at	at	m	m		Neg	PD	PD		
	Raw Ground Turkey Breast (99% Lean)		39	-	-	-	-	at	ng	at	ng		at	ng	at	ng		Neg	Neg	99	at	at	at	at		Neg	NA	NA		
	Raw Ground Turkey (83% Lean)		40	-	-	-	-	ng	ng	ng	ng		at	ng	at	ng		Neg	Neg	100	at	at	at	ng		Neg	NA	NA		
	Ground Chicken		721	-	-	-	-	ng	ng	ng	ng		at	at	at	at		Neg	Neg	743	at	at	ng	ng		Neg	NA	NA		
	Raw Turkey Sausage	1.8 (5,0,2,1,1)	770	22.79	15.60	22.02	14.69	t	t	t	ng	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	797	t	t	m	m	Salmonella spp.	Pos	PA	PA		
	Raw Breakfast Turkey Sausage Patties	2.4 (3,3,3,1,2)	771	22.53	16.01	21.36	15.33	t	ng	m	at	Salmonella spp.	m	ng	t	at	Salmonella spp.	Pos	Pos	798	t	ng	m	at	Salmonella spp.	Pos	PA	PA		

¹Obtained through biochemical galleries and Poly O and H serology

Category	Item	Inoculation Level	Sample No	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)								Final Agreement	
				Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)				ISO 6579-1:2017 (16 Hour)				Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation										
								MKTtN		RVS		Identification ¹	MKTtN		RVS				Identification ¹	MKTtN		RVS		Identification ¹	Final Result				
				CFX	QS5	XLD	RSA	XLD	RSA	XLD	RSA		XLD	RSA	XLD					RSA	XLD	RSA							
				8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA				XLD	RSA	XLD	RSA			8 Hr	16 Hr		
Raw, frozen poultry	Frozen Raw Boneless Duck Breast with Skin		41	-	-	-	-	at	at	at	at		at	at	at	ng		Neg	Neg	101	ng	at	at	at		Neg	NA	NA	
	Frozen Raw Diced Chicken Breast	3.6 (2,3,6,3,4)	42	27.02	18.15	25.97	15.94	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	102	t	t	t	t	Salmonella spp.	Pos	PA	PA	
	Frozen Uncooked Chicken Wings with Skin		43	-	-	-	-	at	at	at	at		ng	ng	ng	at		Neg	Neg	103	at	at	at	at		Neg	NA	NA	
	Frozen Raw Ground Turkey Breast (85% Lean)	4.4 (6,5,3,3,5)	44	30.62	18.16	27.13	13.60	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	104	ng	ng	ng	ng		Neg	PD	PD	
	Frozen Raw Boneless Chicken Breast with Rib Meat	4.2 (4,7,6,2,2)	45	33.47	23.18	30.83	23.76	m	t	t	t	Salmonella spp.	m	m	t	t	Salmonella spp.	Pos	Pos	105	at	at	at	at		Neg	PD	PD	
	Frozen Raw Chicken Tenderloins	4.8 (8,9,3,3,1)	46	29.48	26.69	28.13	14.20	t	t	m	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	106	t	t	t	t	Salmonella spp.	Pos	PA	PA	
	Frozen Raw Boneless Skinless Chicken Thighs	5.6 (7,6,5,9,1)	47	34.84	16.70	-	29.04	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	107	t	t	t	t	Salmonella spp.	Pos	PA/ NDFN(a1)	PA	
	Frozen Raw Diced Chicken Breast with Rib Meat		48	-	-	-	-	at	at	at	at		at	at	at	ng		Neg	Neg	108	at	at	at	at		Neg	NA	NA	
	Frozen Raw Chicken Wings with Bone	1.8 (3,2,2,2,0)	49	17.35	17.61	25.85	13.26	t	t	t	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	109	t	at	m	at		Neg	PD	PD	
	Frozen Raw Chicken Breast with Skin	4.6 (2,4,2,9,6)	50		-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	110	at	t	at	t	Salmonella spp.	Pos	ND	ND	
	Frozen Raw Whole Chicken Wings	5.0 (5,9,7,3,1)	51	31.28	17.35	28.79	15.42	at	t	at	t	Salmonella spp.	at	t	at	t	Salmonella spp.	Pos	Pos	111	at	t	at	t	Salmonella spp.	Pos	PA	PA	
	Frozen Raw Boneless and Skinless Chicken Tenderloins		52	-	-	-	-	ng	ng	at	ng		at	ng	ng	ng		Neg	Neg	112	at	at	at	at		Neg	NA	NA	
	Frozen Raw Chicken Tenderloins	5.8 (8,9,4,6,2)	53	32.06	20.07	26.92	17.44	at	t	at	t	Salmonella spp.	at	t	at	t	Salmonella spp.	Pos	Pos	113	at	t	at	t	Salmonella spp.	Pos	PA	PA	
	Frozen Raw Boneless Chicken Thighs with Skin		54	-	-	-	-	ng	ng	ng	ng		at	at	at	at		Neg	Neg	114	at	at	at	at		Neg	NA	NA	
	Frozen Raw Chicken Drumlets		55	-	-	-	-	at	at	at	at		ng	ng	ng	ng		Neg	Neg	115	at	at	at	at		Neg	NA	NA	
	Frozen Raw Chicken Tenderloins	4.0 (4,4,6,3,3)	56	29.88	19.36	31.91	11.74	at	t	at	t	Salmonella spp.	at	t	at	t	Salmonella spp.	Pos	Pos	116	at	t	at	t	Salmonella spp.	Pos	PA	PA	
	Frozen Raw Boneless and Skinless Chicken Breast		57	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	117	at	at	at	at		Neg	NA	NA	
	Frozen Raw Boneless and Skinless Duck Breast	4.4 (3,5,6,3,5)	58	-	-	-	-	at	at	at	at		ng	ng	ng	ng		Neg	Neg	118	at	t	at	t	Salmonella spp.	Pos	ND	ND	
	Frozen Raw Ground Turkey Breast (99% Lean)		59	-	-	-	-	at	at	at	at		ng	ng	ng	ng		Neg	Neg	119	at	at	at	at		Neg	NA	NA	
	Frozen Raw Boneless Skinless Chicken Thighs		60	-	-	-	-	at	at	at	at		at	ng	ng	ng		Neg	Neg	120	at	at	at	at		Neg	NA	NA	
Frozen Chicken Wing		722	-	-	-	-	ng	ng	ng	ng		at	at	at	ng		Neg	Neg	744	at	at	at	at		Neg	NA	NA		

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Category	Item	Inoculation Level	Sample No	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)										Final Agreement	
				Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)						Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation									
								MKTtn		RVS		Identification¹	MKTtn		RVS		Identification¹	MKTtn				RVS		Identification¹	Final Result						
				CFX		QS5																				XLD		RSA		XLD	
				8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA		XLD				RSA	XLD			RSA	XLD	RSA	XLD	RSA	XLD
Ready to eat poultry	Roasted Turkey Breast		241	-	-	-	-	ng	ng	ng	ng			ng	ng	ng		ng		Neg	Neg	301	ng			ng	ng	ng		Neg	NA
	Honey Turkey Breast	2.0 (2,3,2,2,1)	242	23.85	16.65	23.28	15.07	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	302	t	t	t	t	Salmonella spp.	Pos	PA	PA			
	Wildflower Honey Turkey Breast		243	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	303	ng	ng	ng	ng		Neg	NA	NA			
	Chicken Chunks- White Meat	1.4 (1,1,3,2,0)	244	25.35	15.71	18.74	14.45	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	304	ng	ng	ng	ng		Neg	PD	PD			
	Shredded Chicken Breast with Rib Meat		245	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	305	ng	ng	ng	ng		Neg	NA	NA			
	Thin Sliced Honey Cured Turkey Deli Meat		246	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	306	ng	ng	ng	ng		Neg	NA	NA			
	Rotisserie Seasoned Sliced Chicken Breast	1.8 (0,3,3,2,1)	247	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	307	t	t	t	t	Salmonella spp.	Pos	ND	ND			
	Chicken Breast Chunks- with Rib Meat	2.2 (2,2,1,3,3)	248	22.88	15.79	23.27	14.89	t	t	t	m	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	308	t	t	t	t	Salmonella spp.	Pos	PA	PA			
	Mesquite Seasoned Sliced Turkey Breast		249	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	309	ng	ng	ng	ng		Neg	NA	NA			
	Oven Roasted Sliced Turkey Breast	1.6 (0,3,2,1,2)	250	26.23	14.22	26.90	14.15	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	310	ng	ng	ng	ng		Neg	PD	PD			
	Oven Roasted Turkey Breast Chunks		251	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	311	ng	ng	ng	ng		Neg	NA	NA			
	Honey Turkey Breast	1.8 (5,1,1,1,1)	252	32.28	19.01	34.27	17.00	t	t	ng	ng	Salmonella spp.	t	t	ng	ng	Salmonella spp.	Pos	Pos	312	t	t	ng	ng	Salmonella spp.	Pos	PA	PA			
	Wildflower Honey Turkey Breast		253	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	313	ng	ng	ng	ng		Neg	NA	NA			
	Chicken Chunks- White Meat	1.0 (1,0,1,2,1)	254	34.76	16.14	33.45	15.06	t	t	ng	ng	Salmonella spp.	t	t	ng	ng	Salmonella spp.	Pos	Pos	314	ng	ng	ng	ng		Neg	PD	PD			
	Shredded Chicken Breast		255	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	315	ng	ng	ng	ng		Neg	NA	NA			
	Honey Turkey Breast Deli Slices		256	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	316	at	ng	ng	ng		Neg	NA	NA			
	Rotisserie Chicken		257	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	317	ng	ng	ng	ng		Neg	NA	NA			
	Sodium Free Chicken Breast Chunks		258	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	318	ng	ng	ng	ng		Neg	NA	NA			
	Mesquite Seasoned Sliced Turkey Breast		259	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	319	ng	ng	ng	ng		Neg	NA	NA			
	Oven Roasted Turkey Slices		260	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	320	ng	ng	ng	ng		Neg	NA	NA			
	Sliced Chicken	1.8 (2,3,3,1,0)	727	26.20	16.33	24.71	14.65	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos		749	ng	ng	ng		Neg	PD	PD			
	Chicken Breast Meat Chunks	0.4 (1,0,0,1,0)	728	25.53	16.07	25.51	13.75	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos		750	t	t	t	Salmonella spp.	Pos	PA	PA			
	Turkey Slices	3 (2,2,5,0,6)	729	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg		751	t	t	t	Salmonella spp.	Pos	ND	ND			

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Category	Item	Inoculation Level	CANDIDATE (25 g)																	ISO REFERENCE STANDARD (25 g)										Final Agreement	
			Sample No	Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)					Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation							Final Result			
				CFX		QS5		MKTTn		RVS		Identification ¹	MKTTn		RVS		Identification ¹				MKTTn		RVS		Identification ¹	Final Result					
				8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA					XLD	RSA	XLD	RSA							
Frozen cooked poultry	Frozen Chicken Breast with Rib Meat		261	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	321	ng	ng	ng	ng		Neg	NA	NA			
	Diced Popcorn Chicken with Rib Meat	2.8 (2,2,2,6,2)	262	26.00	16.69	26.27	15.78	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	322	ng	ng	ng	ng		Neg	PD	PD			
	Boneless Skinless Sliced Chicken Breast Strips	1.4 (1,2,1,3,0)	263	-	-	-	-	at	at	ng	ng		at	at	at	ng		Neg	Neg	323	t	t	t	t	Salmonella spp.	Pos	ND	ND			
	Crispy Chicken Breast with Rib Meat	1.6 (0,0,2,2,4)	264	25.07	16.97	25.97	15.93	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	324	ng	ng	ng	ng		Neg	PD	PD			
	Smoked Flavored Oven Roasted Chicken Wings		265	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	325	ng	ng	ng	ng		Neg	NA	NA			
	Lightly Breaded Chicken Breast Chunks with Rib Meat	2.6 (3,3,4,0,5)	266	27.73	17.89	29.33	15.66	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	326	t	t	t	t	Salmonella spp.	Pos	PA	PA			
	Oven Roasted Diced Chicken Breast- Skinless and Boneless		267	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	327	ng	ng	ng	ng		Neg	NA	NA			
	Seasoned Chicken Breast Strips	1.8 (1,1,4,3,0)	268	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	328	t	t	t	t	Salmonella spp.	Pos	ND	ND			
	Breaded Chicken Strips with Rib Meat		269	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	329	ng	ng	ng	ng		Neg	NA	NA			
	Grilled Chicken Breast- Diced Pieces	3.6 (1,3,5,7,2)	270	30.09	25.17	30.35	24.86	t	t	t	t	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	330	at	m	m	m	Salmonella spp.	Pos	PA	PA			
	Breaded Chicken Nuggets	2.6 (2,0,3,2,6)	271	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	331	m	t	m	t	Salmonella spp.	Pos	ND	ND			
	Popcorn Chicken	1.6 (2,3,2,0,1)	272	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	332	m	t	m	t	Salmonella spp.	Pos	ND	ND			
	Grilled Chicken Breast Strips	1.0 (0,2,3,0,0)	273	31.30	29.33	34.14	29.07	m	m	m	t	Salmonella spp.	t	m	t	t	Salmonella spp.	Pos	Pos	333	at	at	m	t	Salmonella spp.	Pos	PA	PA			
	Crispy Chicken Tenders		274	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	334	ng	ng	ng	ng		Neg	NA	NA			
	Smoked and Seasoned Chicken Wings		275	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	335	ng	ng	ng	ng		Neg	NA	NA			
	Frozen Chicken Breast Chunks		276	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	336	ng	ng	ng	ng		Neg	NA	NA			
	Diced Chicken Breast with Oven Roast Seasoning	1.8 (1,2,4,0,2)	277	34.08	25.25	31.05	29.80	m	t	m	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	337	m	t	m	t	Salmonella spp.	Pos	PA	PA			
	Seasoned Chicken Tenders		278	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	338	ng	ng	ng	ng		Neg	NA	NA			
	Breaded Chicken Tenders		279	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	339	ng	ng	ng	ng		Neg	NA	NA			
	Grilled Chicken Breast- Diced Pieces		280	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	340	at	at	at	at		Neg	NA	NA			

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Category	Item	Inoculation Level	Sample No	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)								Final Agreement	
				Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)				ISO 6579-1:2017 (16 Hour)				Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation				Final Result						
								CFX		QS5		MKTn		RVS					Identification ¹	MKTn		RVS		Identification ¹	MKTn		RVS		Identification ¹
				8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA	XLD		RSA	XLD	RSA							
Cured/smoked, Fermented/dried meat products	Mild Original Turkey Stick	3.0 (2,4,3,3,3)	281	24.08	15.85	25.14	14.35	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	341	t	t	t	t	Salmonella spp.	Pos	PA	PA	
	Turkey Pepperoni		282	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	342	ng	ng	ng	ng		Neg	NA	NA	
	Semi-Dry Turkey Snack Bites with Mild Seasoning		283	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	343	ng	ng	ng	ng		Neg	NA	NA	
	Smoke Sausage Turkey Bites	2.2 (0,0,4,3,4)	284	25.24	15.85	27.74	14.85	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	344	ng	ng	ng	ng		Neg	PD	PD	
	Smoked Turkey Pepperoni	1.8 (2,2,2,2,1)	285	25.34	15.66	28.17	14.68	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	345	ng	ng	ng	ng		Neg	PD	PD	
	Original Turkey Jerky	1.6 (2,0,2,1,3)	286	-	17.61	34.57	16.52	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	346	ng	ng	ng	ng		Neg	NA ^{FN(alt)} /PD	PD	
	Mini Turkey Sticks- Snack Bites		287	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	347	ng	ng	ng	ng		Neg	NA	NA	
	Turkey Pepperoni	1.6 (0,1,3,1,3)	288	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	348	t	t	t	t	Salmonella spp.	Pos	ND	ND	
	Turkey Snack Bites with Original Seasoning		289	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	349	ng	ng	ng	ng		Neg	NA	NA	
	Smoked Turkey Sausage Bites	1.6 (0,0,3,2,3)	290	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	350	t	t	t	t	Salmonella spp.	Pos	ND	ND	
	Turkey Pepperoni		291	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	351	ng	ng	ng	ng		Neg	NA	NA	
	Original Turkey Jerky	2.4 (5,2,3,1,1)	292	25.29	15.81	26.60	14.85	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	352	ng	ng	ng	ng		Neg	PD	PD	
	Chicken Jerky Sticks	2.4 (3,1,3,3,2)	293	25.38	15.34	27.75	14.59	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	353	t	t	t	t	Salmonella spp.	Pos	PA	PA	
	Honey and Brown sugar Turkey Stick Bites		294	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	354	ng	ng	ng	ng		Neg	NA	NA	
	All Natural Turkey Pepperoni		295	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	355	ng	ng	ng	ng		Neg	NA	NA	
	Turkey Pepperoni with Smoked Flavor		296	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	356	ng	ng	ng	ng		Neg	NA	NA	
		1.0 (1,1,1,1,1)	297	24.85	15.45	21.59	15.68	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	357	t	t	t	t	Salmonella spp.	Pos	PA	PA	
			298	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	358	ng	ng	ng	ng		Neg	NA	NA	
			299	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	359	ng	ng	ng	ng		Neg	NA	NA	
			300	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	360	ng	ng	ng	ng		Neg	NA	NA	
	Turkey Pepperoni	4.4 (8,9,1,1,3)	730	24.72	14.52	24.24	11.97	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	752	ng	ng	ng	ng		Neg	PD	PD	
	Turkey Jerky	2.4 (5,4,3,0,0)	731	-	-	-	-	ng	ng	ng	ng		at	at	at	at		Neg	Neg	753	t	t	t	t	Salmonella spp.	Pos	ND	ND	

¹Obtained through biochemical galleries and Poly O and H serology

Category	Item	Inoculation Level	Sample No	CANDIDATE (25 g)											ISO REFERENCE STANDARD (25 g)										Final Agreement 16 Hr
				Candidate Rapid Method			ISO 6579-1:2017 (16 Hour)						Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation										
							MKTn		RVS		Poly O	Poly H			Identification¹	MKTn		RVS		Poly O	Poly H	Identification¹	Final Result		
				CFX	QS5	Result	XLD	RSA	XLD	RSA						XLD	RSA	XLD	RSA						
Eggs (Unprocessed)	Whole Shell Egg 1	0.4 (2,0,0,0,0)	361	-	-	Neg	ng	ng	ng	ng				Neg	421	t	t	t	t	+	+	Salmonella spp.	Pos	ND	
	Whole Shell Egg 2		362	-	-	Neg	ng	ng	ng	ng				Neg	422	ng	ng	ng	ng				Neg	NA	
	Whole Shell Egg 3		363	-	-	Neg	ng	ng	ng	ng				Neg	423	ng	ng	ng	ng				Neg	NA	
	Whole Shell Egg 4	0.6 (1,1,1,0,0)	364	-	-	Neg	ng	ng	ng	ng				Neg	424	t	t	t	t	+	+	Salmonella spp.	Pos	ND	
	Whole Shell Egg 5	1.6 (3,1,3,1,0)	365	17.90	16.26	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	425	ng	ng	ng	ng				Neg	PD	
	Whole Shell Egg 6		366	-	-	Neg	ng	ng	ng	ng				Neg	426	ng	ng	ng	ng				Neg	NA	
	Whole Shell Egg 7	0.8 (0,0,2,1,1)	367	17.65	15.97	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	427	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Whole Shell Egg 8		368	-		Neg	ng	ng	ng	ng				Neg	428	ng	ng	ng	ng				Neg	NA	
	Whole Shell Egg 9		369	-	-	Neg	ng	ng	ng	ng				Neg	429	ng	ng	ng	ng				Neg	NA	
	Whole Shell Egg 10	1.0 (1,2,1,1,0)	370	15.83	15.51	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	430	ng	ng	ng	ng				Neg	PD	
	Whole Shell Egg 11	1.6 (3,3,1,1,0)	371	17.32	16.41	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	431	ng	ng	ng	ng				Neg	PD	
	Whole Shell Egg 12	1.6 (6,1,0,1,0)	372	-	-	Neg	ng	ng	ng	ng				Neg	432	t	t	t	t	+	+	Salmonella spp.	Pos	ND	
	Whole Shell Egg 13		373	-	-	Neg	ng	ng	ng	ng				Neg	433	ng	ng	ng	ng				Neg	NA	
	Whole Shell Egg 14	1.2 (2,2,1,1,0)	374	21.25	21.00	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	434	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Whole Shell Egg 15		375	-	-	Neg	ng	ng	ng	ng				Neg	435	ng	ng	ng	ng				Neg	NA	
	Whole Shell Egg 16		376	-	-	Neg	ng	ng	ng	ng				Neg	436	ng	ng	ng	ng				Neg	NA	
	Whole Shell Egg 17		377	-	-	Neg	ng	ng	ng	ng				Neg	437	ng	ng	ng	ng				Neg	NA	
	Whole Shell Egg 18	1.0 (1,1,1,1,1)	378	18.22	16.46	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	438	ng	ng	ng	ng				Neg	PD	
	Whole Shell Egg 19	0.2 (1,0,0,0,0)	379	17.97	15.73	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	439	t	t	t	t	+	+	Salmonella spp..	Pos	PA	
	Whole Shell Egg 20		380	-	-	Neg	ng	ng	ng	ng				Neg	440	ng	ng	ng	ng				Neg	NA	
		Whole Shell Egg	1.4 (0,0,1,2,4)	732	18.89	21.14	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	754	t	t	t	t	+	+	Salmonella spp.	Pos	PA

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Category	Item	Inoculation Level	CANDIDATE (25 g)												ISO REFERENCE STANDARD (25 g)										Final Agreement 16 Hr
			Sample No	Candidate Rapid Method			ISO 6579-1:2017 (16 Hour)						Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation										
							MKTn		RVS		Poly O	Poly H			Identification ¹	MKTn		RVS		Poly O	Poly H	Identification ¹	Final Result		
				CFX	QS5	Result	XLD	RSA	XLD	RSA						XLD	RSA	XLD	RSA						
Egg Products (Heat Processed)	Liquid Whole Egg 1	0.4 (1,0,0,1,0)	381	19.67	18.17	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	441	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Liquid Egg Whites 1		382	-	-	Neg	ng	ng	at	at				Neg	442	ng	ng	ng	ng				Neg	NA	
	Liquid Egg Whites 2		383	-	-	Neg	ng	ng	ng	ng				Neg	443	ng	ng	ng	ng				Neg	NA	
	Liquid Egg Whites 3		384	-	-	Neg	ng	ng	ng	ng				Neg	444	ng	ng	ng	ng				Neg	NA	
	Liquid Whole Egg 2	0.6 (1,0,2,0,0)	385	-	-	Neg	ng	ng	ng	ng				Neg	445	t	t	t	t	+	+	Salmonella spp.	Pos	ND	
	Liquid Egg Whites 4		386	-	-	Neg	ng	ng	ng	ng				Neg	446	ng	ng	ng	ng				Neg	NA	
	Liquid Egg Whites 5	0.4 (0,0,1,1,0)	387	-	-	Neg	ng	ng	ng	ng				Neg	447	t	t	t	t	+	+	Salmonella spp.	Pos	ND	
	Liquid Egg Whites 6	0.8 (0,0,3,1,0)	388	-	-	Neg	ng	ng	ng	ng				Neg	448	t	t	t	t	+	+	Salmonella spp.	Pos	ND	
	Liquid Whole Egg 3		389	-	-	Neg	ng	ng	ng	ng				Neg	449	ng	ng	ng	ng				Neg	NA	
	Liquid Egg Whites 7		390	-	-	Neg	ng	ng	ng	ng				Neg	450	ng	ng	ng	ng				Neg	NA	
	Liquid Egg Whites 8	1.6 (3,3,2,0,1)	391	17.00	15.23	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	451	ng	ng	ng	ng				Neg	PD	
	Liquid Egg Whites 9		392	-	-	Neg	ng	ng	ng	ng				Neg	452	ng	ng	ng	ng				Neg	NA	
	Liquid Whole Eggs 4	2.2 (3,5,2,1,0)	393	18.80	16.55	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	453	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Liquid Egg Whites 10		394	-	-	Neg	ng	ng	ng	ng				Neg	454	ng	ng	ng	ng				Neg	NA	
	Liquid Egg Whites 11		395	-	-	Neg	ng	ng	ng	ng				Neg	455	ng	ng	ng	ng				Neg	NA	
	Liquid Egg Whites 12	1.6 (3,3,2,0,1)	396	32.65	34.48	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	456	ng	ng	ng	ng				Neg	PD	
	Liquid Egg Whites 13		397	-	-	Neg	ng	ng	ng	ng				Neg	457	ng	ng	ng	ng				Neg	NA	
	Liquid Egg Whites 14		398	-	-	Neg	ng	ng	ng	ng				Neg	458	ng	ng	ng	ng				Neg	NA	
	Liquid Whole Egg 5	0.8 (0,3,1,0,0)	399	-	-	Neg	ng	ng	ng	ng				Neg	459	t	t	t	t	+	+	Salmonella spp.	Pos	ND	
	Liquid Egg Whites 15		400	-	-	Neg	ng	ng	ng	ng				Neg	460	ng	ng	ng	ng				Neg	NA	
	Liquid Whole Egg	5.2 (5,6,7,3,5)	733	15.01	13.56	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	755	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Liquid Whole Egg	0.4 (0,0,0,1,1)	734	-	-	Neg	at	at	at	at				Neg	756	t	t	t	t	+	+	Salmonella spp.	Pos	ND	

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Category	Item	Inoculation Level	CANDIDATE (25 g)												ISO REFERENCE STANDARD (25 g)										Final Agreement 16 Hr
			Sample No	Candidate Rapid Method			ISO 6579-1:2017 (16 Hour)						Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation										
							MKTTn		RVS		Poly O	Poly H			Identification ¹	MKTTn		RVS		Poly O	Poly H	Identification ¹	Final Result		
				CFX	QS5	Result	XLD	RSA	XLD	RSA						XLD	RSA	XLD	RSA						
Dried Egg Products	Dried Whole Eggs 1	1.6 (1,4,0,2,1)	401	-	-	Neg	ng	ng	ng	ng				Neg	461	t	t	t	t	+	+	Salmonella spp.	Pos	ND	
	Dried Whole Eggs 2		402	-	-	Neg	at	at	at	ng				Neg	462	at	at	at	at				Neg	NA	
	Dried Egg Whites 1		403	-	-	Neg	ng	ng	ng	ng				Neg	463	ng	ng	ng	ng				Neg	NA	
	Dried Egg Whites 2		404	-	-	neg	ng	ng	ng	ng				Neg	464	ng	ng	ng	ng				Neg	NA	
	Dried Whole Eggs 3	0.8 (0,0,0,1,3)	405	-	-	Neg	ng	ng	ng	ng				Neg	465	t	t	t	t	+	+	Salmonella spp.	Pos	ND	
	Dried Whole Eggs 4		406	-	-	Neg	at	at	ng	ng				Neg	466	ng	ng	ng	ng				Neg	NA	
	Dried Egg Whites 3	1.2 (1,0,3,2,0)	407	20.88	19.56	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	467	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Dried Egg Whites 4		408	-	-	Neg	ng	ng	ng	ng				Neg	468	ng	ng	ng	ng				Neg	NA	
	Dried Whole Eggs 5		409	-	-	Neg	ng	ng	ng	ng				Neg	469	ng	ng	ng	ng				Neg	NA	
	Dried Whole Eggs 6		410	-	-	Neg	at	at	at	at				Neg	470	at	at	at	at				Neg	NA	
	Dried Egg Whites 5	1.4 (1,0,1,2,3)	411	14.08	14.32	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	471	ng	ng	ng	ng				Neg	PD	
	Dried Egg Whites 6		412	-	-	Neg	ng	ng	ng	ng				Neg	472	ng	ng	ng	ng				Neg	NA	
	Dried Whole Eggs 7		413	-	-	Neg	ng	ng	ng	ng				Neg	473	ng	ng	ng	ng				Neg	NA	
	Dried Whole Eggs 8		414	-	-	Neg	at	at	at	at				Neg	474	at	at	ng	ng				Neg	NA	
	Dried Egg Whites 7		415	-	-	Neg	ng	ng	ng	ng				Neg	475	ng	ng	ng	ng				Neg	NA	
	Dried Egg Whites 8	0.8 (1,3,0,0,0)	416	34.80	33.64	Pos	t	t	ng	ng	+	+	Salmonella spp.	Pos	476	ng	ng	ng	ng				Neg	PD	
	Dried Whole Eggs 9		417	-	-	Neg	ng	ng	ng	ng				Neg	477	ng	at	ng	ng				Neg	NA	
	Dried Whole Eggs 10		418	-	-	Neg	ng	ng	ng	ng				Neg	478	ng	ng	ng	ng				Neg	NA	
	Dried Egg Whites 9		419	-	-	Neg	ng	ng	ng	ng				Neg	479	ng	ng	ng	ng				Neg	NA	
	Dried Egg Whites 10		420	-	-	Neg	ng	ng	ng	ng				Neg	480	ng	ng	ng	ng				Neg	NA	
	Dried Whole Egg		735	16.28	15.43	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	757	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Dried Egg Whites		736	14.01	13.58	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	758	ng	ng	ng	ng				Neg	PD	
	Dried Whole Egg		737	17.06	15.14	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	759	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Dried Egg Whites		738	-	-	Neg	ng	ng	ng	ng				Neg	760	t	t	t	t	+	+	Salmonella spp.	Pos	ND	
	Dried Whole Egg		739	16.79	15.99	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	761	ng	ng	ng	ng				Neg	PD	

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Category	Item	Inoculation Level	Sample No	CANDIDATE (25 g)											ISO REFERENCE STANDARD (25 g)										Final Agreement 16 Hr
				Candidate Rapid Method			ISO 6579-1:2017 (16 Hour)					Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation											
							MKTn		RVS		Poly O			Poly H	Identification ¹	MKTn		RVS		Poly O	Poly H	Identification ¹	Final Result		
				CFX	QS5	Result																		XLD	
Cut Ready-to-eat Vegetables	Spinach and Arugula Mix	1.6 (2,0,3,0,3)	481	-	-	Neg	t	t	t	t	+	+	Salmonella spp.	Pos	541	t	t	t	t	+	+	Salmonella spp.	Pos	ND _{FN(alt)}	
	Broccoli and Greens Salad Mix		482	-	-	Neg	at	at	at	at				Neg	542	at	at	at	at				Neg	NA	
	Shredded Broccoli Slaw	1.0 (1,1,0,1,2)	483	20.56	21.83	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	543	at	at	at	at				Neg	PD	
	Mixed Veggie Blend with Iceberg Lettuce		484	-	-	Neg	at	at	at	at				Neg	544	at	at	at	at				Neg	NA	
	Mixed Cabbage Coleslaw	0.6 (0,0,0,3,0)	485	-	-	Neg	at	at	at	at				Neg	545	t	t	t	t	+	+	Salmonella spp.	Pos	ND	
	Broccoli Slaw Mix		486	-	-	Neg	at	at	at	at				Neg	546	at	at	at	at				Neg	NA	
	Shredded Babby Carrots	1.6 (2,1,1,2,2)	487	25.70	31.41	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	547	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Shredded Cole Slaw Cabbage with Carrots		488	-	-	Neg	at	at	at	at				Neg	548	at	at	at	at				Neg	NA	
	Mixed Greens with Romaine Lettuce	0.4 (1,0,0,0,1)	489	28.40	28.49	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	549	at	at	at	at				Neg	PD	
	Shredded Stir Fry Vegetables	1.8 (3,3,2,0,1)	490	32.11	29.34	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	550	at	at	at	at				Neg	PD	
	Spinach, Arugula, and other Mix	2.4 (4,3,5,0,0)	491	-	-	Neg	t	t	t	t	+	+	Salmonella spp.	Pos	551	t	t	t	t	+	+	Salmonella spp.	Pos	ND _{FN(alt)}	
	Shredded Broccoli		492	-	-	Neg	at	at	at	at				Neg	552	at	at	at	at				Neg	NA	
	Shredded Broccoli with other Mixed Vegetables		493	-	-	Neg	at	at	at	at				Neg	553	at	at	at	at				Neg	NA	
	Vegetable Blend with Cucumber and Carrot Mix	2.2 (1,1,4,3,2)	494	16.04	14.80	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	554	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Mixed Shredded Cabbage		495	-	-	Neg	at	at	at	at				Neg	555	at	at	at	at				Neg	NA	
	Mixed Shredded Broccoli	1.8 (2,4,0,1,2)	496	-	-	Neg	at	at	at	at				Neg	556	t	t	t	t	+	+	Salmonella spp.	Pos	ND	
	Shredded Carrots		497	-	-	Neg	at	at	at	at				Neg	557	at	at	at	at				Neg	NA	
	Shredded Cabbage with Carrots	1.4 (3,0,0,4,0)	498	20.07	19.12	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	558	at	at	at	at				Neg	PD	
	Mixed Salad Blend		499	-	-	Neg	at	at	at	at				Neg	559	at	at	at	at				Neg	NA	
	Shredded Stir Fry Vegetables		500	-	-	Neg	at	at	at	at				Neg	560	at	at	at	at				Neg	NA	

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Category	Item	Inoculation Level	CANDIDATE (25 g)											ISO REFERENCE STANDARD (25 g)										Final Agreement 16 Hr	
			Sample No	Candidate Rapid Method			ISO 6579-1:2017 (16 Hour)						Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation										
							MKTTn		RVS		Poly O	Poly H			Identification ¹	MKTTn		RVS		Poly O	Poly H	Identification ¹	Final Result		
				16 Hour	QS5	Result	XLD	RSA	XLD	RSA						XLD	RSA	XLD	RSA						
Cut Ready-to-eat Fruit	Honeydew	3.4 (5,3,1,2,6)	501	22.38	22.93	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	561	at	at	at	at				Neg	PD	
	Watermelon		502	20.14	20.81	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	562	m	m	m	m	+	+	Salmonella spp.	Pos	PA	
	Pineapple Chunks		503	-	-	Neg	at	at	at	at				Neg	563	at	at	at	at				Neg	NA	
	Strawberries		504	-	-	Neg	at	at	at	at				Neg	564	at	at	at	at				Neg	NA	
	Dragon Fruit	2.8 (8,0,4,1,1)	505	15.48	15.46	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	565	at	at	at	at				Neg	PD	
	Cantaloupe	1.0 (1,1,0,3,0)	506	18.75	18.71	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	566	m	m	m	m	+	+	Salmonella spp.	Pos	PA	
	Pineapple, Strawberry, and Kiwi Mix		507	19.92	20.57	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	567	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Clementines		508	-	-	Neg	at	at	at	at				Neg	568	at	at	at	at				Neg	NA	
	Mangos	0.2 (0,0,1,0,0)	509	18.13	17.91	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	569	at	at	at	at				Neg	PD	
	Mixed Grapes		510	-	-	Neg	at	at	at	at				Neg	570	at	at	at	at				Neg	NA	
	Honeydew #2	2.4 (6,3,1,2,0)	511	20.92	20.78	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	571	at	at	at	at				Neg	PD	
	Seedless Watermelon	0.6 (3,0,0,0,0)	512	-	-	Neg	at	at	at	at				Neg	572	m	m	m	m	+	+	Salmonella spp.	Pos	ND	
	Pineapple Wedges		513	-	-	Neg	at	at	at	at				Neg	573	at	at	at	at				Neg	NA	
	Diced Strawberries	0.4 (0,0,2,0,0)	514	28.98	27.68	Pos	t	t	t	t	+	+	Salmonella spp..	Pos	574	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Cubed Dragon Fruit Chunks		515	-	-	Neg	at	at	at	at				Neg	575	at	at	at	at				Neg	NA	
	Cut Cantaloupe		516	-	-	Neg	at	at	at	at				Neg	576	m	m	m	m	+	+	Salmonella spp.	Pos	ND	
	Pineapple Spirals		517	-	-	Neg	at	at	at	at				Neg	577	at	at	at	at				Neg	NA	
	Clementines		518	-	-	Neg	at	at	at	at				Neg	578	at	at	at	at				Neg	NA	
	Diced Mangos	1.4 (0,0,1,5,1)	519	-	-	Neg	at	at	at	at				Neg	579	m	m	m	m	+	+	Salmonella spp..	Pos	ND	
	Cut Grapes		520	-	-	Neg	at	at	at	at				Neg	580	at	at	at	at				Neg	NA	
	Cut Mangos		740	-	-	Neg	ng	ng	ng	ng				Neg	762	ng	ng	ng	ng				Neg	NA	

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			Sample No	Candidate Rapid Method			ISO 6579-1:2017 (16 Hour)						Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation										
							MKTn		RVS		Poly O	Poly H			Identification¹	MKTn		RVS		Poly O	Poly H	Identification¹	Final Result		
				CFX	QS5	Result	XLD	RSA	XLD	RSA						XLD	RSA	XLD	RSA						
				16 Hour	16 Hour		XLD	RSA	XLD	RSA						XLD	RSA	XLD	RSA						
Leafy Greens	Cilantro	2.0 (2,2,2,2,2)	521	29.72	27.36	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	581	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Kale	0.6 (0,1,1,1,0)	522	26.16	28.77	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	582	at	at	at	at				Neg	PD	
	Romaine Lettuce		523	-	-	Neg	at	at	at	at				Neg	583	at	at	at	at				Neg	NA	
	Green Onions		524	-	-	Neg	at	at	at	at				Neg	584	m	m	m	m	+	+	Salmonella spp.	Pos	ND	
	Parsley		525	-	-	Neg	at	at	at	at				Neg	585	at	at	at	at				Neg	NA	
	Spinach	1.6 (0,1,1,3,3)	526	-	-	Neg	at	at	at	at				Neg	586	m	m	m	m	+	+	Salmonella spp.	Pos	ND	
	Red Leaf Lettuce	1.8 (5,0,0,4,0)	527	20.04	20.00	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	587	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Baby Spinach		528	-	-	Neg	at	at	at	at				Neg	588	at	at	at	at				Neg	NA	
	Romaine Hearts		529	29.69	29.66	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	589	at	at	at	at				Neg	PD	
	Romaine Lettuce	1.4 (1,1,1,2,2)	530	-	-	Neg	at	at	at	at				Neg	590	m	m	m	m	+	+	Salmonella spp.	Pos	ND	
	Cilantro		531	-	-	Neg	at	at	at	at				Neg	591	at	at	at	at				Neg	NA	
	Kale		532	34.42	29.35	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	592	at	at	at	at				Neg	PD	
	Iceberg Lettuce		533	-	-	Neg	at	at	at	at				Neg	593	at	at	at	at				Neg	NA	
	Green Onions	1.6 (1,0,3,3,1)	534	32.37	31.88	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	594	t	t	t	t	+	+	Salmonella spp.	Pos	PA	
	Parsley		535	-	-	Neg	at	at	at	at				Neg	595	at	at	at	at				Neg	NA	
	Spinach		536	-	-	Neg	at	at	at	at				Neg	596	at	at	at	at				Neg	NA	
	Red Lettuce	1.4 (0,0,7,0,0)	537	20.00	20.65	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	597	at	at	at	at				Neg	PD	
	Baby Spinach		538	-	-	Neg	at	at	at	at				Neg	598	at	at	at	at				Neg	NA	
	Romaine Hearts		539	-	-	Neg	at	at	at	at				Neg	599	at	at	at	at				Neg	NA	
	Romaine Lettuce		540	-	-	Neg	at	at	at	at				Neg	600	at	at	at	at				Neg	NA	
	Baby Spinach	2.8 (3,5,0,6,0)	741	18.68	-		m	t	m	t	+	+	Salmonella spp.	Pos	763	t	t	t	t	+	+	Salmonella spp.	Pos	PA	

¹Obtained through biochemical galleries and Poly O and H serology

Extension Sensitivity – 2 – 8° C, 72 hour hold

Category	Type	Item	Alternative Method Samples									ISO 6579-1:2017 Reference Samples							Final Agreement	
			Sample No.	CFX96	CFX CFX OPUS DW	QS5	ISO 6579-1:2017 Confirmation				Final Result	Sample No.	MKTTn		RVS		Identification ¹	Final Result		
							MKTTn		RVS											
							XLD	RSA	XLD	RSA			Identification ¹							
1	A	Raw Beef and Bison Blend	1	16.45	15.43	14.13	t	t	t	t	Salmonella spp.	Pos	61	t	t	t	t	Salmonella spp.	Pos	PA
1	A	Coarse Ground Chicken	3	28.67	27.03	25.02	m	m	m	m	Salmonella spp.	Pos	63	at	at	at	at		Neg	PD
1	A	Grass Fed Lamb	5	26.38	26.95	20.69	m	m	m	m	Salmonella spp.	Pos	65	m	m	m	m	Salmonella spp.	Pos	PA
1	A	Cage Free Chicken	7	N/A	N/A	N/A	at	at	at	at		Neg	67	m	m	m	m	Salmonella spp.	Pos	ND
1	A	Ground Turkey	9	29.94	27.24	26.09	m	m	m	m	Salmonella spp.	Pos	69	at	at	at	at		Neg	PD
1	A	Ground Goat Meat	11	17.20	16.09	14.06	t	t	t	t	Salmonella spp.	Pos	71	t	t	t	t	Salmonella spp.	Pos	PA
1	A	Rabbit and Small Game	13	28.68	29.13	22.26	m	m	m	m	Salmonella spp.	Pos	73	at	at	at	at		Neg	PD
1	A	Poultry Grain Based Feed	15	N/A	N/A	N/A	at	at	at	at		Neg	75	m	m	m	m	Salmonella spp.	Pos	ND
1	A	Livestock Commodity Mix Feed	18	20.30	23.08	25.59	m	m	m	m	Salmonella spp.	Pos	78	m	m	m	m	Salmonella spp.	Pos	PA
1	A	Dried Worm and Grain Blends	20	27.91	29.43	25.74	m	m	m	m	Salmonella spp.	Pos	80	at	at	at	at		Neg	PD
1	B	Small Breed Adult Dog Kibble	21	16.26	16.01	13.92	m	m	m	m	Salmonella spp.	Pos	81	at	at	at	at		Neg	PD
1	B	Dry Puppy Kibble – Chicken	22	N/A	N/A	N/A	ng	ng	ng	ng		Neg	82	t	t	t	t	Salmonella spp.	Pos	ND
1	B	Canned Turkey with Gravy for Dogs	24	17.09	16.40	14.31	t	t	t	t	Salmonella spp.	Pos	84	t	t	t	t	Salmonella spp.	Pos	PA
1	B	Dry Cat Food – Adult	26	16.32	15.23	14.39	t	t	t	t	Salmonella spp.	Pos	86	ng	ng	ng	ng		Neg	PD
1	B	Dry Biscuit Treats – Goat	27	15.86	14.00	14.11	t	t	t	t	Salmonella spp.	Pos	87	ng	ng	ng	ng		Neg	PD
1	B	Dry Cat Treats – Catnip Flavor	28	N/A	N/A	N/A	at	at	at	at		Neg	88	m	m	m	m	Salmonella spp.	Pos	ND
1	B	Chicken Puree Wet Cat Treat	30	16.67	15.91	14.18	m	t	m	t	Salmonella spp.	Pos	90	m	t	m	t	Salmonella spp.	Pos	PA
1	B	Kitten Kibble Blend	32	N/A	N/A	N/A	at	at	at	at		Neg	92	m	m	m	m	Salmonella spp.	Pos	ND
1	B	Canned Chicken and Pumpkin Dog Food	35	N/A	N/A	N/A	ng	ng	ng	ng		Neg	95	t	t	t	t	Salmonella spp.	Pos	ND
1	B	Duck Pate for Dogs	37	16.30	14.95	14.00	t	t	t	t	Salmonella spp.	Pos	97	t	t	t	t	Salmonella spp.	Pos	PA
1	B	Pot Pie Canned Dog Food	39	16.99	16.53	13.94	t	t	t	t	Salmonella spp.	Pos	99	ng	ng	ng	ng		Neg	PD
1	C	Raw Duck Neck	42	21.47	20.10	16.14	m	m	m	m	Salmonella spp.	Pos	102	m	m	m	m	Salmonella spp.	Pos	PA
1	C	Chicken Feet	43	23.90	22.66	20.28	m	m	m	m	Salmonella spp.	Pos	103	m	m	m	m	Salmonella spp.	Pos	PA
1	C	Beef Whole Bone	45	24.55	22.58	20.72	m	m	m	m	Salmonella spp.	Pos	105	at	at	at	at		Neg	PD
1	C	Chicken Gizzards	48	25.80	24.15	28.50	m	m	m	m	Salmonella spp.	Pos	108	at	at	at	at		Neg	PD
1	C	Raw Pig Ears	49	N/A	N/A	N/A	at	at	at	at		Neg	109	m	m	m	m	Salmonella spp.	Pos	ND
1	C	All Livestock Supplement Oil	52	N/A	N/A	N/A	at	at	at	at		Neg	112	m	m	m	m	Salmonella spp.	Pos	ND
1	C	Raw Beef Knuckle Bone	54	22.61	20.25	16.67	m	m	m	m	Salmonella spp.	Pos	114	at	at	at	at		Neg	PD
1	C	Whole Smelt Fish (with bone)	58	25.55	22.64	15.29	m	m	m	m	Salmonella spp.	Pos	118	at	at	at	at		Neg	PD
1	C	Raw Pig Ears	60	26.58	22.95	17.12	m	m	m	m	Salmonella spp.	Pos	120	m	m	m	m	Salmonella spp.	Pos	PA

¹Obtained through biochemical galleries and Poly O and H serology

Category	Type	Item	Alternative Method Samples										ISO 6579-1:2017 Reference Samples								Final Agreement
			Sample No.	CFX96	CFX CFX OPUS DW	QS5	ISO 6579-1:2017 Confirmation				Final Result	Sample No.	MKTTn		RVS		Identification ¹	Final Result			
							MKTTn		RVS												
							XLD	RSA	XLD	RSA											
2	A	Sponge 1	121	17.60	15.97	14.74	t	t	t	t	Salmonella spp.	Pos	181	ng	ng	ng	ng		Neg	PD	
2	A	Sponge 3	123	17.20	17.46	14.64	t	t	t	t	Salmonella spp.	Pos	183	t	t	t	t	Salmonella spp.	Pos	PA	
2	A	Sponge 5	125	N/A	N/A	N/A	ng	ng	ng	ng		Neg	185	t	t	t	t	Salmonella spp.	Pos	ND	
2	A	Sponge 7	127	18.71	16.66	14.85	m	m	m	m	Salmonella spp.	Pos	187	at	ng	at	ng		Neg	PD	
2	A	Sponge 9	129	N/A	N/A	N/A	ng	ng	ng	ng		Neg	189	t	t	t	t	Salmonella spp.	Pos	ND	
2	A	Sponge 10	130	18.02	16.82	15.27	t	t	t	t	Salmonella spp.	Pos	190	t	t	t	t	Salmonella spp.	Pos	PA	
2	A	Swab 2	132	17.68	16.19	14.64	t	t	t	t	Salmonella spp.	Pos	192	t	t	t	t	Salmonella spp.	Pos	PA	
2	A	Swab 4	134	N/A	N/A	N/A	ng	ng	ng	ng		Neg	194	t	t	t	t	Salmonella spp.	Pos	ND	
2	A	Swab 6	136	17.25	16.23	14.46	t	t	t	t	Salmonella spp.	Pos	196	ng	ng	ng	ng		Neg	PD	
2	A	Swab 8	138	17.17	16.82	14.66	m	m	m	m	Salmonella spp.	Pos	198	m	m	m	m	Salmonella spp.	Pos	PA	
2	A	Swab 10	140	17.05	16.42	14.45	t	t	t	t	Salmonella spp.	Pos	200	ng	ng	ng	ng		Neg	PD	
2	B	Process Water 1	141	18.37	17.27	15.18	t	t	t	t	Salmonella spp.	Pos	201	ng	ng	ng	ng		Neg	PD	
2	B	Process Water 3	143	19.00	18.00	15.61	t	t	t	t	Salmonella spp.	Pos	203	t	t	t	t	Salmonella spp.	Pos	PA	
2	B	Process Water 4	144	18.32	16.74	15.24	t	t	t	t	Salmonella spp.	Pos	204	t	t	t	t	Salmonella spp.	Pos	PA	
2	B	Process Water 6	146	N/A	N/A	N/A	ng	ng	ng	ng		Neg	206	t	t	t	t	Salmonella spp.	Pos	ND	
2	B	Process Water 8	148	20.92	17.59	16.63	t	t	t	t	Salmonella spp.	Pos	208	t	t	t	t	Salmonella spp.	Pos	PA	
2	B	Process Water 10	150	18.49	17.30	17.05	t	t	t	t	Salmonella spp.	Pos	210	ng	ng	ng	ng		Neg	PD	
2	B	Washing Water 1	151	17.46	17.54	15.66	t	t	t	t	Salmonella spp.	Pos	211	ng	ng	ng	ng		Neg	PD	
2	B	Washing Water 3	153	N/A	N/A	N/A	ng	ng	ng	ng		Neg	213	t	t	t	t	Salmonella spp.	Pos	ND	
2	B	Washing Water 6	156	18.44	18.02	16.73	t	t	t	t	Salmonella spp.	Pos	216	t	t	t	t	Salmonella spp.	Pos	PA	
2	B	Washing Water 9	159	N/A	N/A	N/A	ng	ng	ng	ng		Neg	219	t	t	t	t	Salmonella spp.	Pos	ND	
2	C	Dust 2	162	18.37	17.13	15.84	t	t	t	t	Salmonella spp.	Pos	222	t	t	t	t	Salmonella spp.	Pos	PA	
2	C	Dust 4	164	18.01	17.61	16.06	t	t	t	t	Salmonella spp.	Pos	224	t	t	t	t	Salmonella spp.	Pos	PA	
2	C	Dust 5	165	N/A	N/A	N/A	ng	ng	ng	ng		Neg	225	t	t	t	t	Salmonella spp.	Pos	ND	
2	C	Dust 6	166	N/A	N/A	N/A	at	ng	at	ng		Neg	226	m	t	m	t	Salmonella spp.	Pos	ND	
2	C	Dust 7	167	18.76	18.17	15.32	m	t	m	t	Salmonella spp.	Pos	227	at	ng	at	ng		Neg	PD	
2	C	Dust 10	170	32.84	18.48	16.68	t	t	t	t	Salmonella spp.	Pos	230	t	t	t	t	Salmonella spp.	Pos	PA	
2	C	Sweeping 1	171	N/A	N/A	N/A	at	ng	at	ng		Neg	231	m	t	m	t	Salmonella spp.	Pos	ND	
2	C	Sweeping 4	174	18.42	16.90	15.40	t	t	t	t	Salmonella spp.	Pos	234	ng	ng	ng	ng		Neg	PD	
2	C	Sweeping 6	176	18.49	17.27	15.05	t	t	t	t	Salmonella spp.	Pos	236	t	t	t	t	Salmonella spp.	Pos	PA	
2	C	Sweeping 10	180	N/A	N/A	N/A	ng	ng	ng	ng		Neg	240	t	t	t	t	Salmonella spp.	Pos	ND	

¹Obtained through biochemical galleries and Poly O and H serology

Original Validation Sensitivity – 2 – 8° C, 72 hour hold

Item	Inoculation Level	Sample No	CANDIDATE (25 g)														ISO REFERENCE STANDARD (25 g)							Final Agreement			
			Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)				Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation								
							MKTtn		RVS		Identification ¹	MKTtn		RVS					Identification ¹	MKTtn		RVS		Identification ¹	Final Result		
			CFX	QS5	XLD	RSA																				XLD	RSA
			8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA					XLD	RSA	XLD	RSA				
Raw Goats Milk	0.2 (0,0,1,0,0)	774	26.60	22.36	27.21	22.50	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	801	m	t	m	at	Salmonella spp.	Pos	PA	PA
Raw Camel Milk	1.6 (3,0,2,0,3)	775	28.22	18.56	28.78	18.12	t	t	m	m	Salmonella spp.	t	t	m	m	Salmonella spp.	Pos	Pos	802	at	ng	at	at		Neg	PD	PD
Raw Goats Milk	5.4 (6,6,8,4,3)	777	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	804	m	m	m	m	Salmonella spp.	Pos	ND	ND
Raw Goats Milk	2.6 (7,0,1,5,0)	778	28.19	18.28	25.74	18.14	m	m	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	805	at	at	at	at		Neg	PD	PD
Raw Camel Milk	1.4 (4,0,0,3,0)	783	28.01	19.10	28.79	17.69	m	t	m	m	Salmonella spp.	m	t	m	m	Salmonella spp.	Pos	Pos	810	m	m	m	at	Salmonella spp.	Pos	PA	PA
Raw Bovine Milk		784	-	27.11	30.91	33.18	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	811	t	t	t	t	Salmonella spp.	Pos	ND/ PAF _{FP(alt)}	PA _{FP(alt)}
Raw Bovine Milk	1.8 (0,2,2,5,0)	785	32.21	13.75	31.07	13.04	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	812	ng	ng	at	ng		Neg	PD	PD
Raw Bovine Milk		786	-	-	31.92	26.69	ng	ng	ng	ng		m	t	m	t	Salmonella spp.	Neg	Pos	813	t	t	t	t	Salmonella spp.	Pos	ND/ PAF _{FP(alt)}	ND _{FN(alt)} /PA
Raw Bovine Milk		787	-	-	32.20	32.25	ng	ng	ng	ng		t	t	m	t	Salmonella spp.	Neg	Pos	814	t	t	t	t	Salmonella spp.	Pos	ND/ PAF _{FP(alt)}	ND _{FN(alt)} /PA
Raw Bovine Milk	2.0 (3,1,1,2,3)	788	31.18	13.53	30.41	12.03	m	m	m	t	Salmonella spp.	m	m	m	t	Salmonella spp.	Pos	Pos	815	m	t	m	t	Salmonella spp.	Pos	PA	PA
Raw Bovine Milk		789	-	27.80	31.91	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	816	t	t	t	t	Salmonella spp.	Pos	ND/ PAF _{FP(alt)}	PA _{FP(alt)} /ND
Raw Bovine Milk		790	-	-	33.01	26.54	ng	ng	ng	ng		m	t	t	t	Salmonella spp.	Neg	Pos	817	t	t	t	t	Salmonella spp.	Pos	ND/ PAF _{FP(alt)}	ND _{FN(alt)} /PA
Raw Bovine Milk	2.8 (5,6,1,1,1)	791	31.48	14.05	31.93	13.35	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	818	t	t	t	t	Salmonella spp.	Pos	PA	PA
Fourme d'Ambert		622	33.50	18.53	28.87	17.59	t	m	t	t	Salmonella spp.	t	m	t	t	Salmonella spp.	Pos	Pos	682	ng	ng	ng	ng		Neg	PD	PD
Kaltbach Le Cremeux		623	-	-	-	-	m	m	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	683	m	t	m	t	Salmonella spp.	Pos	ND _{FN(alt)} /PA	ND _{FN(alt)} /PA
Buttermilk Bleu Affinee		624	-	-	-	-	ng	ng	ng	ng		ng	at	ng	ng		Neg	Neg	684	m	m	m	m	Salmonella spp.	Pos	ND	ND
Fontina Val D'Aosta		626	34.85	28.45	32.54	26.31	m	t	m	t	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	686	m	t	m	t	Salmonella spp.	Pos	PA	PA
Comte HOP Reserve		628	33.65	17.19	28.22	14.61	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	688	m	t	m	t	Salmonella spp.	Pos	PA	PA
Roquefort Societe Bee		629	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	689	m	m	m	t	Salmonella spp.	Pos	ND	ND
Raw Milk French Raclette		630	33.53	21.84	30.63	19.38	t	m	t	t	Salmonella spp.	m	m	t	t	Salmonella spp.	Pos	Pos	690	m	t	m	t	Salmonella spp.	Pos	PA	PA
Fourme d'Ambert		633	33.34	18.41	31.95	15.73	t	t	t	t	Salmonella spp.	t	m	t	t	Salmonella spp.	Pos	Pos	693	ng	ng	ng	ng		Neg	PD	PD
Buttermilk Bleu Affinee		635	-	16.38	32.29	14.03	t	t	t	t	Salmonella spp.	t	m	t	t	Salmonella spp.	Pos	Pos	695	m	m	m	t	Salmonella spp.	Pos	ND _{FN(alt)} /PA	PA
Fontina Val D'Aosta		637	-	-	-	-	at	ng	at	ng		at	ng	at	ng		Neg	Neg	697	m	t	m	t	Salmonella spp.	Pos	ND	ND

¹Obtained through biochemical galleries and Poly O and H serology

Item	Inoculation Level	Sample No	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)								Final Agreement	
			Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)						Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation							
							MKTn		RVS		Identification ¹	MKTn		RVS		Identification ¹	MKTn				RVS		Identification ¹	Final Result				
			CFX		QS5																				MKTn		RVS	
			8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA		XLD				RSA	XLD			RSA	XLD	RSA	XLD
4% Milkfat cottage cheese	1.0 (0,3,2,0,0)	641	34.79	29.82	30.71	27.65	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	701	m	t	m	t	Salmonella spp.	Pos	PA	PA	
Whole Milk Yogurt		642	34.95	26.84	32.46	24.54	m	m	m	m	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	702	m	t	t	t	Salmonella spp.	Pos	PA	PA	
1% Low Fat Milk	1.2 (0,1,1,4,0)	645	-	34.43	28.44	26.92	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	705	ng	ng	ng	ng		Neg	NA _{FN(alt)} /PD	PD	
Part Skim Shredded Mozzarella Cheese	1.6 (2,2,1,0,3)	646	-	24.55	-	22.70	m	m	m	m	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	706	ng	ng	ng	ng		Neg	NA _{FN(alt)}	PD	
Pepper Jack Cheese	1.2 (0,1,1,4,0)	648	-	16.73	-	12.50	m	m	m	m	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	708	ng	ng	at	at		Neg	NA _{FN(alt)}	PD	
Smoked Provolone Cheese	1.0 (1,1,1,1,1)	649	-	-	-	-	at	at	ng	ng		at	at	at	at		Neg	Neg	709	m	t	m	t	Salmonella spp.	Pos	ND	ND	
Cheddar and Gruyere Cheese Blend	0.8 (3,0,1,0,0)	650	-	17.78	-	18.30	t	t	ng	ng	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	710	m	t	m	t	Salmonella spp.	Pos	ND _{FN(alt)}	PA	
Whole Milk Yogurt-Vanilla	1.0 (2,0,1,1,1)	652	34.04	26.78	30.24	27.13	m	m	m	m	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	712	t	t	t	t	Salmonella spp.	Pos	PA	PA	
Low Fat Skim Milk	1.0 (0,2,1,1,1)	655	34.32	31.58	31.94	30.28	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	715	m	t	m	t	Salmonella spp.	Pos	PA	PA	
Gruyere Cheese		660	-	17.82	34.90	16.02	m	m	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	720	m	t	m	t	Salmonella spp.	Pos	NA _{FN(alt)} /PA	PA	

¹Obtained through biochemical galleries and Poly O and H serology

Item	Inoculation Level	Sample No	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)								Final Agreement	
			Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)					Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation								
							MKTn		RVS		Identification ¹	MKTn		RVS		Identification ¹				MKTn		RVS		Identification ¹	Final Result			
			8 Hour	16 Hour	8 Hour	16 Hour																				XLD	RSA	XLD
Boneless Pork Chops	1.2 (1,2,3,0,0)	122	34.57	21.78	34.99	20.40	t	t	t	t	Salmonella spp.	m	t	t	t	Salmonella spp.	Pos	Pos	182	m	m	m	t	Salmonella spp.	Pos	PA	PA	
Shaved Beef Steak		123	21.36	17.59	20.27	15.63	t	t	t	t	Salmonella spp.	m	t	t	t	Salmonella spp.	Pos	Pos	183	t	t	t	t	Salmonella spp.	Pos	PA	PA	
Ground Bison (90% Lean)	1.6 (0,5,0,1,2)	125	-	-	-	-	ng	ng	at	ng		ng	ng	at	ng		Neg	Neg	185	t	t	t	t	Salmonella spp.	Pos	ND	ND	
Raw Ground Beef Patties (80% Lean)		126	23.71	18.55	21.93	13.84	t	t	m	t	Salmonella spp.	m	t	t	t	Salmonella spp.	Pos	Pos	186	at	at	at	at		Neg	PD	PD	
Diced Beef	1.6 (2,3,0,0,0)	130	35.52	26.03	33.84	24.21	t	t	m	t	Salmonella spp.	t	t	m	t	Salmonella spp.	Pos	Pos	190	m	m	m	t	Salmonella spp.	Pos	PA	PA	
Fresh Ground Pork		132	27.66	19.29	26.06	16.47	m	t	m	t	Salmonella spp.	m	m	t	t	Salmonella spp.	Pos	Pos	192	m	m	m	t	Salmonella spp.	Pos	PA	PA	
Raw Ground Bison (90% Lean)		134	22.24	19.34	19.39	16.81	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	194	at	at	at	at		Neg	PD	PD	
Raw Ground Sirloin Beef Patties (93% Lean)	1.4 (4,3,0,0,0)	136	30.21	18.73	29.36	16.58	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	196	at	at	at	at		Neg	PD	PD	
Fresh Raw Ground Beef (80% Lean)	1.6 (1,3,0,0,4)	138	-	-	-	-	at	ng	at	ng		at	ng	at	ng		Neg	Neg	198	m	t	m	t	Salmonella spp.	Pos	ND	ND	
Lamb Chop	1.8 (0,0,4,3,2)	723	30.60	14.32	28.13	19.70	t	t	t	t	Salmonella spp	t	t	m	t	Salmonella spp	Pos	Pos	745	at	ng	at	ng		Neg	PD	PD	
Raw Ground Beef Crumbles (80% Lean)		142	19.88	17.31	11.51	14.70	m	t	m	t	Salmonella spp..	t	t	m	t	Salmonella spp.	Pos	Pos	202	at	at	at	at		Neg	PD	PD	
Raw Angus Chuck Beef Patties	1.8 (1,1,1,3,3)	143	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	203	m	m	m	m	Salmonella spp.	Pos	ND	ND	
Raw Thin and Seasoned Beef Patties	2.0 (1,3,2,2,2)	144	28.24	17.19	22.98	12.56	m	t	m	t	Salmonella spp..	m	m	t	t	Salmonella spp..	Pos	Pos	204	at	at	at	at		Neg	PD	PD	
Spicy Sicilian Pork Meatballs		146	-	-	-	-	ng	ng	ng	at		ng	ng	at	at		Neg	Neg	206	t	t	t	t	Salmonella spp.	Pos	ND	ND	
Pure Beef Patties (85% Lean)	2.6 (1,0,4,5,3)	148	-	25.01	-	23.22	t	t	ng	ng	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	208	m	t	m	t	Salmonella spp.	Pos	ND _{FN(alt)}	PA	
Frozen Sliced Beef Liver		149	32.30	30.46	30.51	30.46	m	m	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	209	m	m	m	m	Salmonella spp.	Pos	PA	PA	
Frozen Pork Scrapple		150	19.96	16.12	17.49	14.77	m	m	m	m	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	210	t	t	t	t	Salmonella spp.	Pos	PA	PA	
Frozen Raw Ground Beef (80% Lean)	2.0 (7,1,3,0,0)	152	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	212	m	m	t	t	Salmonella spp.	Pos	ND	ND	
Raw Frozen Meatballs- Pork	1.8 (2,3,3,1,0)	155	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	215	m	m	m	t	Salmonella spp.	Pos	ND	ND	
Raw Frozen Meatballs- Pork	1.0 (1,0,2,0,2)	156	24.63	19.36	24.70	17.15	m	m	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	216	m	t	m	t	Salmonella spp.	Pos	PA	PA	
Raw Beef Patties (91% Lean)	3.8 (3,3,0,4,4)	157	24.31	17.09	25.53	15.38	m	m	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	217	m	t	m	t	Salmonella spp.	Pos	PA	PA	
Raw Diced Beef Liver		159	33.14	30.45	30.53	31.25	m	m	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	219	m	m	m	m	Salmonella spp.	Pos	PA	PA	

¹Obtained through biochemical galleries and Poly O and H serology

Item	Inoculation Level	Sample No	CANDIDATE (25 g)															ISO REFERENCE STANDARD (25 g)								Final Agreement	
			Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)					Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation							
							MKTTn		RVS		Identification ¹	MKTTn		RVS		Identification ¹				MKTTn		RVS		Identification ¹	Final Result		
			CFX		QS5												XLD		RSA							XLD	
			8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA	XLD	RSA	8 Hr		16 Hr		
Sliced Smoked Ham - Boneless	1.8 (5,1,1,1,1)	161	23.73	13.19	23.02	12.87	t	t	t	t	Salmonella spp.	m	m	t	t	Salmonella spp.	Pos	Pos	221	t	t	t	t	Salmonella spp.	Pos	PA	PA
Brown Sugar Sliced Country Ham	1.0 (1,1,1,1,1)	162	22.38	14.22	21.29	13.86	m	m	t	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	222	ng	ng	ng	ng		Neg	PD	PD
Cubed Ham (96% Fat Free)	0.4 (0,0,0,1,1)	163	26.28	20.09	26.89	18.32	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	223	ng	ng	ng	ng		Neg	PD	PD
Sliced Ham Steaks (97% Fat Free)		164	23.27	14.97	21.84	12.72	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	224	at	at	at	at		Neg	PD	PD
Pork Liverwurst Pate with Bacon added	0.8 (1,2,0,1,0)	165	-	-	-	-	ng	ng	ng	ng		at	ng	ng	ng		Neg	Neg	225	t	t	t	t	Salmonella spp.	Pos	ND	ND
Honey Cured Sliced Ham	3.2 (4,6,0,0,6)	168	24.47	13.38	26.47	16.05	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp..	Pos	Pos	228	t	t	t	t	Salmonella spp.	Pos	PA	PA
Ultra-thin sliced Roast Beef with Seasoning	1.4 (3,1,0,1,2)	169	-	-	-	-	at	at	at	ng		at	at	ng	ng		Neg	Neg	229	t	t	t	t	Salmonella spp.	Pos	ND	ND
Sliced Ham with Sugar seasoning	2.2 (3,5,1,1,1)	172	-	-	-	-	at	ng	ng	ng		at	ng	ng	ng		Neg	Neg	232	t	t	t	t	Salmonella spp.	Pos	ND	ND
Smoked Ham Flanks (95% Fat Free)	1.8 (2,2,1,2,2)	174	21.30	15.07	23.85	21.30	t	t	t	t	Salmonella spp.	m	m	t	t	Salmonella spp.	Pos	Pos	234	t	t	t	t	Salmonella spp.	Pos	PA	PA
Thin Sliced Roast Beef	0.4 (2,0,0,0,0)	177	22.74	16.22	22.96	17.97	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	237	t	t	t	t	Salmonella spp.	Pos	PA	PA
Sliced Roast Beef with Seasoning	1.6 (3,0,0,4,1)	179	24.68	16.37	23.32	16.43	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	239	t	t	t	t	Salmonella spp.	Pos	PA	PA

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Item	Inoculation Level	Sample No	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)								Final Agreement	
			Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)						Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation							
							MKTn		RVS		Identification ¹	MKTn		RVS		Identification ¹	MKTn				RVS		Identification ¹	Final Result				
			CFX	QS5																								
			8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA	8 Hr	16 Hr				
Chicken Tenderloins		2	28.56	25.75	26.82	24.52	t	t	t	t	Salmonella spp.	m	t	t	t	Salmonella spp.	Pos	Pos	62	at	ng	at	ng		Neg	PD	PD	
Boneless Skinless Chicken Breast	3.4 (0,1,4,1,11)	4	-	33.59	-	-	at	ng	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	64	at	at	at	at		Neg	NA _{FN(alt)}	PD/NA _{FN(alt)}	
Turkey Breast Skinless		7	-	-	-	-	at	ng	at	ng		at	at	at	at		Neg	Neg	67	m	t	t	t	Salmonella spp.	Pos	ND	ND	
Chicken Wing Drumettes with Skin		9	29.06	26.38	27.41	23.96	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	69	m	t	t	t	Salmonella spp.	Pos	PA	PA	
Chicken Breast with Skin	4.6 (5,8,6,1,3)	14	-	-	-	-	at	ng	at	at		at	at	at	at		Neg	Neg	74	m	t	m	t	Salmonella spp.	Pos	ND	ND	
Raw Chicken Breast	2.4 (5,4,3,0,0)	765	29.48	22.02	28.69	22.42	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	792	m	t	m	t	Salmonella spp.	Pos	PA	PA	
Raw Chicken Thigh	2.4 (0,2,4,6,0)	766	34.73	29.40	34.79	29.54	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	793	m	t	m	t	Salmonella spp.	Pos	PA	PA	
Raw Chicken Tenderloins	2.2 (3,5,0,2,1)	767	33.72	31.42	31.87	32.10	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	794	m	t	m	m	Salmonella spp.	Pos	PA	PA	
Raw Turkey Breast	1.2 (1,1,2,1,1)	768	23.06	20.15	23.00	20.95	m	m	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	795	m	t	m	m	Salmonella spp.	Pos	PA	PA	
Raw Turkey Breast with Skin	1.4 (3,0,0,4,0)	769	24.17	20.18	24.60	19.70	m	t	t	t	Salmonella spp.	m	t	t	t	Salmonella spp.	Pos	Pos	796	at	at	at	at		Neg	PD	PD	
Raw Ground Turkey (93% Lean)		21	24.93	23.71	19.55	22.49	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	81	at	at	at	at		Neg	PD	PD	
Raw Ground Chicken Breast (98 % Lean)	3.8 (3,7,7,1,1)	22	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	82	m	m	m	m	Salmonella spp.	Pos	ND	ND	
Raw Ground Turkey (93% Lean)		24	26.31	20.52	24.81	19.97	m	t	m	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	84	at	at	at	at		Neg	PD	PD	
Raw Ground Chicken Patties (92% Lean)		27	21.57	18.73	20.22	17.89	m	t	m	t	Salmonella spp.	m	t	m	m	Salmonella spp.	Pos	Pos	87	t	t	t	t	Salmonella spp.	Pos	PA	PA	
Raw Ground Turkey (85% Lean)		29	-	-	-	-	ng	ng	ng	ng		at	at	at	at		Neg	Neg	89	t	t	t	t	Salmonella spp.	Pos	ND	ND	
Raw Ground Chicken Breast (93% Lean)	3.0 (8,1,1,2,3)	30	33.87	23.89	-	23.29	m	t	m	t	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	90	m	m	m	m	Salmonella spp.	Pos	PA/ND _{FN(alt)}	PA	
Raw Turkey Burger Patties (93% Lean)	3.4 (6,6,2,3,0)	32	33.66	23.97	30.28	23.80	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	92	t	t	m	t	Salmonella spp.	Pos	PA	PA	
Raw Ground Turkey (85% Lean)	2.6 (3,2,2,1,5)	35	33.31	19.46	29.74	12.36	t	t	t	t	Salmonella spp.	m	t	m	t	Salmonella spp.	Pos	Pos	95	t	t	t	t	Salmonella spp.	Pos	PA	PA	
Raw Turkey Sausage Links (95% Lean)	4.2 (4,2,9,6,0)	38	29.31	18.95	27.73	17.07	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	98	at	ng	at	ng		Neg	PD	PD	
Raw Turkey Sausage	1.8 (5,0,2,1,1)	770	21.41	15.82	19.04	13.66	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	797	t	t	m	m	Salmonella spp.	Pos	PA	PA	
Raw Breakfast Turkey Sausage Patties	2.4 (3,3,3,1,2)	771	21.71	16.06	21.70	16.06	m	m	m	m	Salmonella spp.	m	m	m	m	Salmonella spp.	Pos	Pos	798	t	ng	m	at	Salmonella spp.	Pos	PA	PA	

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Item	Inoculation Level	Sample No	CANDIDATE (25 g)														ISO REFERENCE STANDARD (25 g)								Final Agreement		
			Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)				ISO 6579-1:2017 (16 Hour)				Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation				Final Result					
							MKTtn		RVS		Identification¹	MKTtn		RVS				Identification¹	MKTtn		RVS		Identification¹	Final Result			
			CFX		QS5		XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA	XLD	RSA		XLD	RSA	8 Hr	16 Hr					
			8 Hour	16 Hour	8 Hour	16 Hour																					
Frozen Raw Diced Chicken Breast	3.6 (2,3,6,3,4)	42	25.73	18.29	24.16	16.79	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	102	t	t	t	t	Salmonella spp.	Pos	PA	PA
Frozen Raw Ground Turkey Breast (85% Lean)	4.4 (6,5,3,3,5)	44	31.03	20.28	29.97	16.25	t	t	t	t	Salmonella spp.	m	t	t	t	Salmonella spp.	Pos	Pos	104	ng	ng	ng	ng		Neg	PD	PD
Frozen Raw Boneless Chicken Breast with Rib Meat	4.2 (4,7,6,2,2)	45	34.06	23.39	32.06	17.94	m	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	105	at	at	at	at		Neg	PD	PD
Frozen Raw Chicken Tenderloins	4.8 (8,9,3,3,1)	46	29.14	18.70	27.29	10.50	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	106	t	t	t	t	Salmonella spp.	Pos	PA	PA
Frozen Raw Boneless Skinless Chicken Thighs	5.6 (7,6,5,9,1)	47	-	33.33	-	32.68	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	107	t	t	t	t	Salmonella spp.	Pos	ND _{FN(alt)}	PA
Frozen Raw Chicken Wings with Bone	1.8 (3,2,2,2,0)	49	29.33	16.50	26.69	13.50	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	109	at	at	at	at		Neg	PD	PD
Frozen Raw Chicken Breast with Skin	4.6 (2,4,2,9,6)	50	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	110	at	t	at	at	Salmonella spp.	Pos	ND	ND
Frozen Raw Whole Chicken Wings	5.0 (5,9,7,3,1)	51	-	-	32.70	12.73	at	t	at	ng	Salmonella spp.	at	t	at	t	Salmonella spp.	Pos	Pos	111	at	t	at	at	Salmonella spp.	Pos	ND _{FN(alt)/PA}	ND _{FN(alt)/PA}
Frozen Raw Chicken Tenderloins	5.8 (8,9,4,6,2)	53	27.37	-	28.19	19.26	at	t	at	at	Salmonella spp.	at	t	at	t	Salmonella spp.	Pos	Pos	113	at	t	at	t	Salmonella spp.	Pos	PA	ND _{FN(alt)/PA}
Frozen Raw Chicken Tenderloins	4.0 (4,4,6,3,3)	56	29.21	-	32.50	26.33	at	t	at	t	Salmonella spp.	at	t	at	t	Salmonella spp.	Pos	Pos	116	at	t	at	t	Salmonella spp.	Pos	PA	ND _{FN(alt)/PA}
Frozen Raw Boneless and Skinless Duck Breast	4.4 (3,5,6,3,5)	58	-	-	-	-	at	ng	at	ng		at	ng	at	ng		Neg	Neg	118	at	t	at	t	Salmonella spp.	Pos	ND	ND

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Item	Inoculation Level	CANDIDATE (25 g)																ISO REFERENCE STANDARD (25 g)								Final Agreement	
		Sample No	Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)					ISO 6579-1:2017 (16 Hour)					Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation							
							MKTn		RVS		Identification ¹	MKTn		RVS		Identification ¹				MKTn		RVS		Identification ¹	Final Result		
			CFX		QS5																					XLD	
			8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA				XLD	RSA	XLD	RSA	8 Hr	16 Hr		
Honey Turkey Breast	2.0 (2,3,2,2,1)	242	23.60	15.57	23.72	13.98	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	302	t	t	t	t	Salmonella spp.	Pos	PA	PA
Chicken Chunks- White Meat	1.4 (1,1,3,2,0)	244	23.68	14.81	24.65	12.56	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	304	ng	ng	ng	ng		Neg	PD	PD
Rotisserie Seasoned Sliced Chicken Breast	1.8 (0,3,3,2,1)	247	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	307	t	t	t	t	Salmonella spp.	Pos	ND	ND
Chicken Breast Chunks- with Rib Meat	2.2 (2,2,1,3,3)	248	21.73	14.72	22.01	13.10	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	308	t	t	t	t	Salmonella spp.	Neg	PA	PA
Oven Roasted Sliced Turkey Breast	1.6 (0,3,2,1,2)	250	25.08	13.43	26.79	13.63	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	310	ng	ng	ng	ng		Neg	PD	PD
Honey Turkey Breast	1.8 (5,1,1,1,1)	252	30.06	17.17	30.69	17.58	at	t	at	t	Salmonella spp.	at	t	at	t	Salmonella spp.	Pos	Pos	312	m	t	ng	ng	Salmonella spp.	Pos	PA	PA
Chicken Chunks- White Meat	1.0 (1,0,1,2,1)	254	33.35	14.69	-	14.40	m	t	at	t	Salmonella spp.	m	t	at	t	Salmonella spp.	Pos	Pos	314	ng	ng	ng	ng		Neg	PD/NA _{FN(alt)}	PD
Sliced Chicken	1.8 (2,3,3,1,0)	727	25.27	16.08	15.08	10.82	t	t	t	t	Salmonella spp.	t	t	m	t	Salmonella spp.	Pos	Pos	749	ng	ng	ng	ng		Neg	PD	PD
Chicken Breast Meat Chunks	0.4 (1,0,0,1,0)	728	23.13	16.66	21.55	12.33	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	750	t	t	t	t	Salmonella spp.	Pos	PA	PA
Turkey Slices	3 (2,2,5,0,6)	729	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	751	t	t	t	t	Salmonella spp.	Pos	ND	ND
Diced Popcorn Chicken with Rib Meat	2.8 (2,2,2,6,2)	262	27.64	15.49	33.62	15.66	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	322	ng	ng	at	ng		Neg	PD	PD
Boneless Skinless Sliced Chicken Breast Strips	1.4 (1,2,1,3,0)	263	-	-	-	-	at	at	at	at		at	at	at	at		Neg	Neg	323	m	m	m	m	Salmonella spp.	Pos	ND	ND
Crispy Chicken Breast with Rib Meat	1.6 (0,0,2,2,4)	264	23.49	15.36	33.71	15.17	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	324	ng	ng	at	ng		Neg	PD	PD
Lightly Breaded Chicken Breast Chunks with Rib Meat	2.6 (3,3,4,0,5)	266	27.38	15.87	27.90	16.76	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	326	t	t	t	t	Salmonella spp.	Pos	PA	PA
Seasoned Chicken Breast Strips	1.8 (1,1,4,3,0)	268	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	328	t	t	t	t	Salmonella spp.	Pos	ND	ND
Grilled Chicken Breast- Diced Pieces	3.6 (1,3,5,7,2)	270	31.31	23.65	26.91	25.95	m	m	m	m	Salmonella spp.	m	at	m	m	Salmonella spp.	Pos	Pos	330	at	at	m	m	Salmonella spp.	Pos	PA	PA
Breaded Chicken Nuggets	2.6 (2,0,3,2,6)	271	-	-	-	-	ng	ng	ng	ng		at	ng	ng	ng		Neg	Neg	331	m	t	m	t	Salmonella spp.	Pos	ND	ND
Popcorn Chicken	1.6 (2,3,2,0,1)	272	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	332	m	t	m	t	Salmonella spp.	Pos	ND	ND
Grilled Chicken Breast Strips	1.0 (0,2,3,0,0)	273	33.31	28.72	28.56	28.84	m	at	m	m	Salmonella spp.	m	at	m	m	Salmonella spp.	Pos	Pos	333	m	at	m	t	Salmonella spp.	Pos	PA	PA
Diced Chicken Breast with Oven Roast Seasoning	1.8 (1,2,4,0,2)	277	32.34	23.81	31.30	27.92	m	t	ng	ng	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	337	m	t	m	t	Salmonella spp.	Pos	PA	PA

¹Obtained through biochemical galleries and Poly O and H serology

Item	Inoculation Level	CANDIDATE (25 g)														ISO REFERENCE STANDARD (25 g)								Final Agreement			
		Sample No	Candidate Rapid Method				ISO 6579-1:2017 (8 Hour)				Identification ¹	ISO 6579-1:2017 (16 Hour)				Final Result (8 Hr)	Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation				Final Result				
							MKTTn		RVS			MKTTn		RVS					Identification ¹		MKTTn					RVS	
			CFX		QS5																			XLD			
			8 Hour	16 Hour	8 Hour	16 Hour	XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA				XLD	RSA	XLD	RSA		XLD	RSA	XLD	RSA
Mild Original Turkey Stick	3.0 (2,4,3,3,3)	281	23.30	14.22	30.12	12.71	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	341	t	t	t	t	Salmonella spp.	Pos	PA	PA
Smoke Sausage Turkey Bites	2.2 (0,0,4,3,4)	284	25.29	14.95	29.08	14.98	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	344	ng	ng	ng	ng		Neg	PD	PD
Smoked Turkey Pepperoni	1.8 (2,2,2,2,1)	285	23.82	14.25	28.73	11.70	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	345	ng	ng	ng	ng		Neg	PD	PD
Original Turkey Jerky	1.6 (2,0,2,1,3)	286	-	17.51	34.22	17.45	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	346	ng	ng	ng	ng		Neg	NA _{FN} (alt)/PD	PD
Turkey Pepperoni	1.6 (0,1,3,1,3)	288	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	348	t	t	t	t	Salmonella spp.	Pos	ND	ND
Smoked Turkey Sausage Bites	1.6 (0,0,3,2,3)	290	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	350	t	t	t	t	Salmonella spp.	Pos	ND	ND
Original Turkey Jerky	2.4 (5,2,3,1,1)	292	24.15	15.09	25.78	15.21	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	352	ng	ng	ng	ng		Neg	PD	PD
Chicken Jerky Sticks	2.4 (3,1,3,3,2)	293	23.72	13.22	25.17	12.66	t	t	ng	ng	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	353	t	t	t	t	Salmonella spp.	Pos	PA	PA
	1.0 (1,1,1,1,1)	297	24.19	15.41	26.88	14.59	t	t	ng	ng	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	357	t	t	t	t	Salmonella spp.	Pos	PA	PA
Turkey Pepperoni	4.4 (8,9,1,1,3)	730	23.11	15.79	33.63	16.79	t	t	t	t	Salmonella spp.	t	t	t	t	Salmonella spp.	Pos	Pos	752	ng	ng	ng	ng		Neg	PD	PD
Turkey Jerky	2.4 (5,4,3,0,0)	731	-	-	-	-	ng	ng	ng	ng		ng	ng	ng	ng		Neg	Neg	753	t	t	t	t	Salmonella spp.	Pos	ND	ND

¹Obtained through biochemical galleries and Poly O and H serology

Item	Inoculation Level	Sample No	CANDIDATE (25 g)								Final Result (16 Hr)	Sample No	ISO REFERENCE STANDARD (25 g)						Final Agreement
			Candidate Rapid Method		ISO 6579-1:2017 (16 Hour)				Identification ¹	ISO 6579-1:2017 Confirmation				Final Result					
					MKTTn		RVS			MKTTn			RVS						
			CFX	QS5	XLD	RSA	XLD	RSA		XLD			RSA		XLD	RSA	16 Hr		
Whole Shell Egg 1	0.4 (2,0,0,0,0)	361	-	-	ng	ng	ng	ng		Neg	421	m	t	m	t	Salmonella spp.	Pos	ND	
Whole Shell Egg 4	0.6 (1,1,1,0,0)	364	-	-	at	ng	at	ng		Neg	424	m	t	m	t	Salmonella spp.	Pos	ND	
Whole Shell Egg 5	1.6 (3,1,3,1,0)	365	14.39	12.88	m	t	m	t	Salmonella spp.	Pos	425	ng	ng	ng	ng		Neg	PD	
Whole Shell Egg 7	0.8 (0,0,2,1,1)	367	14.72	11.67	m	t	m	t	Salmonella spp.	Pos	427	t	t	m	t	Salmonella spp.	Pos	PA	
Whole Shell Egg 10	1.0 (1,2,1,1,0)	370	14.35	13.19	t	t	m	t	Salmonella spp.	Pos	430	ng	ng	ng	ng		Neg	PD	
Whole Shell Egg 11	1.6 (3,3,1,1,0)	371	14.11	12.69	t	t	t	t	Salmonella spp.	Pos	431	ng	ng	ng	ng		Neg	PD	
Whole Shell Egg 12	1.6 (6,1,0,1,0)	372	-	-	ng	ng	ng	ng		Neg	432	t	t	t	t	Salmonella spp.	Pos	ND	
Whole Shell Egg 14	1.2 (2,2,1,1,0)	374	16.86	15.48	m	t	m	t	Salmonella spp.	Pos	434	m	t	m	t	Salmonella spp.	Pos	PA	
Whole Shell Egg 18	1.0 (1,1,1,1,1)	378	15.75	14.40	t	t	t	t	Salmonella spp.	Pos	438	ng	ng	ng	ng		Neg	PD	
Whole Shell Egg 19	0.2 (1,0,0,0,0)	379	14.55	14.32	t	t	t	t	Salmonella spp.	Pos	439	t	t	t	t	Salmonella spp.	Pos	PA	
Whole Shell Egg	1.4 (0,0,1,2,4)	732	16.15	11.65	t	t	t	t	Salmonella spp.	Pos	754	t	t	t	t	Salmonella spp.	Pos	PA	
Liquid Whole Egg 1	0.4 (1,0,0,1,0)	381	19.88	20.01	t	m	t	t	Salmonella spp.	Pos	441	m	m	t	t	Salmonella spp.	Pos	PA	
Liquid Whole Egg 2	0.6 (1,0,2,0,0)	385	-	-	ng	ng	ng	ng		Neg	445	m	m	m	t	Salmonella spp.	Pos	ND	
Liquid Egg Whites 5	0.4 (0,0,1,1,0)	387	-	-	ng	ng	ng	ng		Neg	447	t	t	t	t	Salmonella spp.	Pos	ND	
Liquid Egg Whites 6	0.8 (0,0,3,1,0)	388	-	-	ng	ng	ng	ng		Neg	448	t	t	t	t	Salmonella spp.	Pos	ND	
Liquid Egg Whites 8	1.6 (3,3,2,0,1)	391	16.34	15.20	t	t	t	t	Salmonella spp.	Pos	451	ng	ng	ng	ng		Neg	PD	
Liquid Whole Eggs 4	2.2 (3,5,2,1,0)	393	15.65	14.61	t	m	t	t	Salmonella spp.	Pos	453	t	t	t	t	Salmonella spp.	Pos	PA	
Liquid Egg Whites 12	1.6 (3,3,2,0,1)	396	31.09	28.69	t	t	t	t	Salmonella spp.	Pos	456	at	ng	ng	ng		Neg	PD	
Liquid Whole Egg 5	0.8 (0,3,1,0,0)	399	-	-	ng	ng	ng	ng		Neg	459	t	m	t	t	Salmonella spp.	Pos	ND	
Liquid Whole Egg	5.2 (5,6,7,3,5)	733	14.09	14.75	t	t	t	t	Salmonella spp	Pos	755	t	t	t	t	Salmonella spp	Pos	PA	
Liquid Whole Egg	0.4 (0,0,0,1,1)	734	-	-	ng	ng	ng	ng		Neg	756	t	t	t	t	Salmonella spp	Pos	ND	

¹Obtained through biochemical galleries and Poly O and H serology

Item	Inoculation Level	CANDIDATE (25 g)									ISO REFERENCE STANDARD (25 g)								Final Agreement	
		Sample No	Candidate Rapid Method		ISO 6579-1:2017 (16 Hour)						Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation							
					MKTTn		RVS		Identification ¹	MKTTn			RVS		Identification ¹	Final Result				
			CFX	QS5																
			16 Hour	16 Hour	XLD	RSA	XLD	RSA		XLD			RSA	XLD			RSA			
Dried Whole Eggs 1	1.6 (1,4,0,2,1)	401	-	-	ng	ng	ng	ng		Neg	461	t	t	t	t	Salmonella spp.	Pos	ND		
Dried Whole Eggs 3	0.8 (0,0,0,1,3)	405	-	-	ng	ng	ng	ng		Neg	465	t	t	t	t	Salmonella spp.	Pos	ND		
Dried Egg Whites 3	1.2 (1,0,3,2,0)	407	20.69	20.25	t	t	t	t	Salmonella spp.	Pos	467	t	t	t	t	Salmonella spp.	Pos	PA		
Dried Egg Whites 5	1.4 (1,0,1,2,3)	411	15.53	13.67	t	t	t	t	Salmonella spp.	Pos	471	ng	ng	ng	ng		Neg	PD		
Dried Egg Whites 8	0.8 (1,3,0,0,0)	416	-	34.06	t	t	ng	ng	Salmonella spp.	Pos	476	ng	ng	ng	ng		Neg	NA _{FN(alt)} /PD		
Dried Whole Egg	0.8 (2,2,0,0,0)	735	16.34	16.36	t	t	t	t	Salmonella spp.	Pos	757	t	t	t	t	Salmonella spp.	Pos	PA		
Dried Egg Whites	2.4 (3,0,4,0,5)	736	14.50	11.43	t	t	t	t	Salmonella spp.	Pos	758	ng	ng	ng	ng		Neg	PD		
Dried Whole Egg	2.6 (0,0,3,3,7)	737	16.25	14.80	t	t	t	t	Salmonella spp.	Pos	759	t	t	t	t	Salmonella spp.	Pos	PA		
Dried Egg Whites	2.6 (6,4,0,2,1)	738	-	-	ng	ng	ng	ng		Neg	760	t	t	t	t	Salmonella spp.	Pos	ND		
Dried Whole Egg	1.6 (0,1,2,2,3)	739	16.56	15.94	t	t	t	t	Salmonella spp.	Pos	761	ng	ng	ng	ng		Neg	PD		

¹Obtained through biochemical galleries and Poly O and H serology

Item	Inoculation Level	Sample No	CANDIDATE (25 g)								ISO REFERENCE STANDARD (25 g)							Final Agreement	
			Candidate Rapid Method	ISO 6579-1:2017 (16 Hour)						Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation							Final Result
						MKTtN		RVS				Identification ¹	MKTtN		RVS		Identification ¹	Final Result	
				CFX	QS5	XLD	RSA	XLD	RSA				XLD	RSA	XLD	RSA			
			16 Hour	16 Hour														16 Hr	
Spinach and Arugula Mix	1.6 (2,0,3,0,3)	481	-	-	t	t	t	t	Salmonella spp.	Pos	541	t	t	t	t	Salmonella spp.	Pos	ND _{FN(alt)}	
Shredded Broccoli Slaw	1.0 (1,1,0,1,2)	483	20.93	22.23	t	t	t	t	Salmonella spp.	Pos	543	at	at	at	at		Neg	PD	
Mixed Cabbage Coleslaw	0.6 (0,0,0,3,0)	485	-	-	at	at	at	at		Neg	545	t	t	t	t	Salmonella spp.	Pos	ND	
Shredded Babby Carrots	1.6 (2,1,1,2,2)	487	24.07	-	t	t	t	t	Salmonella spp.	Pos	547	t	t	t	t	Salmonella spp.	Pos	PA/ ND _{FN(alt)}	
Mixed Greens with Romaine Lettuce	0.4 (1,0,0,0,1)	489	26.81	28.81	t	t	t	t	Salmonella spp.	Pos	549	at	at	at	at		Neg	PD	
Shredded Stir Fry Vegetables	1.8 (3,3,2,0,1)	490	30.91	-	t	t	t	t	Salmonella spp.	Pos	550	at	at	at	at		Neg	PD/ NA _{FN(alt)}	
Spinach, Arugula, and other Mix	2.4 (4,3,5,0,0)	491	-	-	t	t	t	t	Salmonella spp.	Pos	551	t	t	t	t	Salmonella spp.	Pos	ND _{FN(alt)}	
Vegetable Blend with Cucumber and Carrot Mix	2.2 (1,1,4,3,2)	494	17.40	14.37	t	t	t	t	Salmonella spp.	Pos	554	t	t	t	t	Salmonella spp.	Pos	PA	
Mixed Shredded Broccoli	1.8 (2,4,0,1,2)	496	-	-	at	at	at	at		Neg	556	t	t	t	t	Salmonella spp.	Pos	ND	
Shredded Cabbage with Carrots	1.4 (3,0,0,4,0)	498	20.45	18.18	t	t	t	t	Salmonella spp.	Pos	558	at	at	at	at		Neg	PD	
Honeydew	3.4 (5,3,1,2,6)	501	23.20	23.17	t	t	t	t	Salmonella spp.	Pos	561	at	at	at	at		Neg	PD	
Watermelon		502	21.59	15.65	t	t	t	t	Salmonella spp.	Pos	562	t	t	t	t	Salmonella spp.	Pos	PA	
Dragon Fruit	2.8 (8,0,4,1,1)	505	15.83	14.68	t	t	t	t	Salmonella spp.	Pos	565	at	at	at	at		Neg	PD	
Cantaloupe	1.0 (1,1,0,3,0)	506	19.23	19.25	t	t	t	t	Salmonella spp.	Pos	566	t	t	t	t	Salmonella spp.	Pos	PA	
Pineapple, Strawberry, and Kiwi Mix		507	21.51	20.77	t	t	t	t	Salmonella spp.	Pos	567	t	t	t	t	Salmonella spp.	Pos	PA	
Mangos	0.2 (0,0,1,0,0)	509	20.08	19.72	t	t	t	t	Salmonella spp.	Pos	569	at	at	at	at		Neg	PD	
Honeydew #2	2.4 (6,3,1,2,0)	511	22.09	22.35	t	t	t	t	Salmonella spp.	Pos	571	at	at	at	at		Neg	PD	
Seedless Watermelon	0.6 (3,0,0,0,0)	512	-	-	at	at	at	at		Neg	572	t	t	t	t	Salmonella spp.	Pos	ND	
Diced Strawberries	0.4 (0,0,2,0,0)	514	30.51	-	t	t	t	t	Salmonella spp.	Pos	574	t	t	t	t	Salmonella spp.	Pos	PA/ ND _{FN(alt)}	
Cut Cantaloupe		516	-	-	at	at	at	at		Neg	576	t	t	t	t	Salmonella spp.	Pos	ND	
Diced Mangos	1.4 (0,0,1,5,1)	519	-	-	at	at	at	at		Neg	579	t	t	t	t	Salmonella spp.	Pos	ND	

¹Obtained through biochemical galleries and Poly O and H serology

Item	Inoculation Level	CANDIDATE (25 g)									ISO REFERENCE STANDARD (25 g)							Final Agreement
		Sample No	Candidate Rapid Method		ISO 6579-1:2017 (16 Hour)				Final Result (16 Hr)	Sample No	ISO 6579-1:2017 Confirmation						Final Result	
					MKTTn		RVS				Identification ¹	MKTTn		RVS		Identification ¹		Final Result
			CFX	QS5														
			16 Hour	16 Hour	XLD	RSA	XLD	RSA			XLD	RSA	XLD	RSA			16 Hr	
Cilantro	2.0 (2,2,2,2,2)	521	29.84	-	t	t	t	t	Salmonella spp.	Pos	581	t	t	t	t	Salmonella spp.	Pos	PA/ ND _{FN(alt)}
Kale	0.6 (0,1,1,1,0)	522	33.99	-	t	t	t	t	Salmonella spp.	Pos	582	at	at	at	at		Neg	PD/ NA _{FN(alt)}
Green Onions		524	-	-	at	at	at	at		Neg	584	t	t	t	t	Salmonella spp.	Pos	ND
Spinach	1.6 (0,1,1,3,3)	526	-	-	at	at	at	at		Neg	586	t	t	t	t	Salmonella spp.	Pos	ND
Red Leaf Lettuce	1.8 (5,0,0,4,0)	527	20.43	13.63	t	t	t	t	Salmonella spp.	Pos	587	t	t	t	t	Salmonella spp.	Pos	PA
Romaine Hearts		529	-	-	t	t	t	t	Salmonella spp.	Pos	589	at	at	at	at		Neg	NA _{FN(alt)}
Romaine Lettuce	1.4 (1,1,1,2,2)	530	-	-	at	at	at	at		Neg	590	t	t	t	t	Salmonella spp.	Pos	ND
Kale		532	29.33	32.39	t	t	t	t	Salmonella spp.	Pos	592	at	at	at	at		Neg	PD
Green Onions	1.6 (1,0,3,3,1)	534	32.01	27.95	t	t	t	t	Salmonella spp.	Pos	594	t	t	t	t	Salmonella spp.	Pos	PA
Red Lettuce	1.4 (0,0,7,0,0)	537	20.28	18.34	t	t	t	t	Salmonella spp.	Pos	597	at	at	at	at		Neg	PD
Baby Spinach	2.8 (3,5,0,6,0)	741	19.37	12.05	m	m	m	t	Salmonella spp.	Pos	763	t	t	t	t	Salmonella spp.	Pos	PA

¹Obtained through biochemical galleries and Poly O and H serology

ANNEX F: Raw Data of RLOD Study

Matrix	APC ¹ (CFU/g)	<i>Salmonella</i> Pathogen Screen ² (25 g test portions)
Extension		
Dry Dog Kibble	1.8 x 10 ⁴	0/5
Original Validation		
Raw Milk	4.6 x 10 ⁴	0/5
Raw Ground Beef	2.8 x 10 ⁵	0/5
Raw Ground Turkey	3.2 x 10 ⁵	0/5
Deli Turkey	1.8 x 10 ²	0/5
Liquid Egg, Pasteurized	1.2 x 10 ¹	0/5
Cut Cantaloupe	5.2 x 10 ⁴	0/5

¹APC conducted in accordance with ISO 4833-1.

²*Salmonella* screen conducted following the ISO 6579 – 1:2017 reference method

Extension Raw RLOD Data:

Level (MPN/ Test portion)	Candidate Method: Dog Kibble (25 g)												Reference Method: Dog Kibble (25 g)																				
	Sample No	Candidate Method: ALS InviScreen Salmonella				Candidate Method Confirmation: ISO 6579-1:2017 (16 Hour)								Final Result	Sample No	ISO 6579-1:2017 Confirmation																	
		CFX	CFX OPUS DW	QS5	Result	MKTTn		RVS		Poly O	Poly H	Identification	MKTTn			RVS	Poly O	Poly H	Identification	Final Result													
						16 Hour	16 Hour	16 Hour	XLD												RSA	XLD	RSA	XLD	RSA	XLD	RSA						
Uninoculated (0)	63	-	-	-	Neg	ng	ng	ng	ng				Neg	91	ng	ng	ng	ng						Neg	91	ng	ng	ng	ng				Neg
	70	-	-	-	Neg	ng	ng	ng	ng				Neg	98	ng	ng	ng	ng						Neg	98	ng	ng	ng	ng				Neg
	71	-	-	-	Neg	ng	ng	ng	ng				Neg	105	ng	ng	ng	ng						Neg	105	ng	ng	ng	ng				Neg
	78	-	-	-	Neg	ng	ng	ng	ng				Neg	111	ng	ng	ng	ng						Neg	111	ng	ng	ng	ng				Neg
	90	-	-	-	Neg	ng	ng	ng	ng				Neg	114	ng	ng	ng	ng						Neg	114	ng	ng	ng	ng				Neg
Low (0.51)	62	19.74	20.55	15.87	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	93	ng	ng	ng	ng						Neg	93	ng	ng	ng	ng				Neg
	64	-	-	-	Neg	ng	ng	ng	ng				Neg	94	t	t	t	t	+	+	Salmonella spp.	Pos		Neg	94	t	t	t	t	+	+	Salmonella spp.	Pos
	65	20.83	22.82	20.28	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	95	ng	ng	ng	ng						Neg	95	ng	ng	ng	ng				Neg
	66	-	-	-	Neg	ng	ng	ng	ng				Neg	96	t	t	t	t	+	+	Salmonella spp.	Pos		Neg	96	t	t	t	t	+	+	Salmonella spp.	Pos
	67	-	-	-	Neg	ng	ng	ng	ng				Neg	97	ng	ng	ng	ng						Neg	97	ng	ng	ng	ng				Neg
	69	-	-	-	Neg	ng	ng	ng	ng				Neg	99	ng	ng	ng	ng						Neg	99	ng	ng	ng	ng				Neg
	72	-	-	-	Neg	ng	ng	ng	ng				Neg	100	t	t	t	t	+	+	Salmonella spp.	Pos		Neg	100	t	t	t	t	+	+	Salmonella spp.	Pos
	73	15.61	19.42	16.10	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	101	ng	ng	ng	ng						Neg	101	ng	ng	ng	ng				Neg
	74	-	-	-	Neg	ng	ng	ng	ng				Neg	103	ng	ng	ng	ng						Neg	103	ng	ng	ng	ng				Neg
	75	-	-	-	Neg	ng	ng	ng	ng				Neg	104	ng	ng	ng	ng						Neg	104	ng	ng	ng	ng				Neg
	77	-	-	-	Neg	ng	ng	ng	ng				Neg	106	t	t	t	t	+	+	Salmonella spp.	Pos		Neg	106	t	t	t	t	+	+	Salmonella spp.	Pos
	79	-	-	-	Neg	ng	ng	ng	ng				Neg	107	ng	ng	ng	ng						Neg	107	ng	ng	ng	ng				Neg
	80	19.14	21.68	19.21	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	109	ng	ng	ng	ng						Neg	109	ng	ng	ng	ng				Neg
	81	21.06	22.09	20.17	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	110	ng	ng	ng	ng						Neg	110	ng	ng	ng	ng				Neg
	82	-	-	-	Neg	ng	ng	ng	ng				Neg	112	ng	ng	ng	ng						Neg	112	ng	ng	ng	ng				Neg
	85	-	-	-	Neg	ng	ng	ng	ng				Neg	113	t	t	t	t	+	+	Salmonella spp.	Pos		Neg	113	t	t	t	t	+	+	Salmonella spp.	Pos
	86	26.29	20.55	18.80	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	115	t	t	t	t	+	+	Salmonella spp.	Pos		Neg	115	t	t	t	t	+	+	Salmonella spp.	Pos
	87	18.02	19.70	19.63	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	117	ng	ng	ng	ng						Neg	117	ng	ng	ng	ng				Neg
	88	17.85	19.31	18.24	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	119	ng	ng	ng	ng						Neg	119	ng	ng	ng	ng				Neg
	89	-	-	-	Neg	ng	ng	ng	ng				Neg	120	t	t	t	t	+	+	Salmonella spp.	Pos		Neg	120	t	t	t	t	+	+	Salmonella spp.	Pos
High 2.84	61	20.34	20.28	19.10	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	92	t	t	t	t	+	+	Salmonella spp.	Pos		Pos	92	t	t	t	t	+	+	Salmonella spp.	Pos
	68	19.56	19.99	17.80	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	102	t	t	t	t	+	+	Salmonella spp.	Pos		Pos	102	t	t	t	t	+	+	Salmonella spp.	Pos
	76	17.93	18.86	16.74	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	108	t	t	t	t	+	+	Salmonella spp.	Pos		Pos	108	t	t	t	t	+	+	Salmonella spp.	Pos
	83	17.82	20.52	17.73	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	116	t	t	t	t	+	+	Salmonella spp.	Pos		Pos	116	t	t	t	t	+	+	Salmonella spp.	Pos
	84	18.15	19.69	18.47	Pos	t	t	t	t	+	+	Salmonella spp.	Pos	118	t	t	t	t	+	+	Salmonella spp.	Pos		Pos	118	t	t	t	t	+	+	Salmonella spp.	Pos

Inoculation	Candidate Method: Stainless Steel 4x4 Sponge													Reference Method: Stainless Steel 4x4 Sponge									
	Sample No	Candidate Method: ALS InviScreen Salmonella				Candidate Method Confirmation: ISO 6579-1:2017 (16 Hour)						Final Result	Sample No	ISO 6579-1:2017 Confirmation									
		CFX	CFX OPUS DW	QS5	Result	MKTTn		RVS		Poly O	Poly H			Identification	MKTTn		RVS		Poly O	Poly H	Identification	Final Result	
						16 Hour	16 Hour	16 Hour	XLD						RSA	XLD	RSA	XLD					RSA
Uninoculated (0)	1	-	-	-	Neg	at	at	at	at	-	-		Neg	36	at	at	at	at	-	-		Neg	
	5	-	-	-	Neg	at	at	at	at	-	-		Neg	37	at	at	at	at	-	-		Neg	
	18	-	-	-	Neg	at	at	at	at	-	-		Neg	47	at	at	at	at	-	-		Neg	
	21	-	-	-	Neg	at	at	at	at	-	-		Neg	57	at	at	at	at	-	-		Neg	
	24	-	-	-	Neg	at	at	at	at	-	-		Neg	60	at	at	at	at	-	-		Neg	
Low (0.44)	3	20.59	23.80	20.90	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	31	m	m	m	m	+	+	Salmonella spp.	Pos	
	4	-	-	-	Neg	at	at	at	at	-	-		Neg	32	m	m	m	m	+	+	Salmonella spp.	Pos	
	6	-	-	-	Neg	at	at	at	at	-	-		Neg	33	at	at	at	at	-	-		Neg	
	7	21.02	23.11	19.71	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	35	at	at	at	at	-	-		Neg	
	8	-	-	-	Neg	at	at	at	at	-	-		Neg	38	at	at	at	at	-	-		Neg	
	10	20.70	21.90	20.00	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	39	at	at	at	at	-	-		Neg	
	11	-	-	-	Neg	at	at	at	at	-	-		Neg	41	at	at	at	at	-	-		Neg	
	13	-	-	-	Neg	at	at	at	at	-	-		Neg	42	m	m	m	m	+	+	Salmonella spp.	Pos	
	14	20.80	23.32	20.72	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	43	at	at	at	at	-	-		Neg	
	15	-	-	-	Neg	at	at	at	at	-	-		Neg	45	at	at	at	at	-	-		Neg	
	16	21.62	23.46	21.03	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	46	at	at	at	at	-	-		Neg	
	17	-	-	-	Neg	at	at	at	at	-	-		Neg	48	at	at	at	at	-	-		Neg	
	19	-	-	-	Neg	at	at	at	at	-	-		Neg	49	m	m	m	m	+	+	Salmonella spp.	Pos	
	20	-	-	-	Neg	at	at	at	at	-	-		Neg	50	at	at	at	at	-	-		Neg	
	22	-	-	-	Neg	at	at	at	at	at	-	-		Neg	51	m	m	m	m	+	+	Salmonella spp.	Pos
	23	22.09	22.08	21.10	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	53	m	m	m	m	+	+	Salmonella spp.	Pos	
25	-	-	-	Neg	at	at	at	at	-	-		Neg	54	at	at	at	at	-	-		Neg		
26	23.45	23.70	22.28	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	56	at	at	at	at	-	-		Neg		
28	-	-	-	Neg	at	at	at	at	-	-		Neg	58	at	at	at	at	-	-		Neg		
30	-	-	-	Neg	at	at	at	at	-	-		Neg	59	m	m	m	m	+	+	Salmonella spp.	Pos		
High 3.20	2	20.95	22.75	20.64	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	34	m	m	m	m	+	+	Salmonella spp.	Pos	
	9	21.40	21.52	20.67	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	40	m	m	m	m	+	+	Salmonella spp.	Pos	
	12	20.32	21.79	20.19	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	44	m	m	m	m	+	+	Salmonella spp.	Pos	
	27	21.55	23.30	21.99	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	52	m	m	m	m	+	+	Salmonella spp.	Pos	
	29	20.36	21.87	19.99	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	55	m	m	m	m	+	+	Salmonella spp.	Pos	

Original Validation Raw RLOD Data:

Inoculation Level	Raw Milk (25 g)																				Raw Milk (25 g)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	Sample No	Candidate Rapid Method					ISO 6579-1:2017 (8 Hour)							ISO 6579-1:2017 (16 Hour)								Sample No	ISO 6579-1:2017 Confirmation																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
							MKTTn		RVS		Poly O	Poly H	Identification	MKTTn		RVS		Poly O	Poly H	Identification	Final Result		MKTTn		RVS		Poly O	Poly H	Identification	Final Result																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		CFX	QS5	Result	XLD	RSA																									XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA	XLD	RSA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		8 Hour	16 Hour	8 Hour	16 Hour																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

316	16.35	15.22	15.29	15.48	Pos	t	t	t	t	+	+	<i>Salmonella</i> spp.	t	t	t	t	+	+	<i>Salmonella</i> spp.	Pos	358	t	t	t	t	+	+	<i>Salmonella</i> spp.	Pos
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Inoculation Level	Raw Ground Beef (25 g)																				Raw Ground Beef (25 g)										
	Sample No	Candidate Rapid Method					ISO 6579-1:2017 (8 Hour)							ISO 6579-1:2017 (16 Hour)								Sample No	ISO 6579-1:2017 Confirmation								
		CFX		QS5		Result	MKTTn		RVS		Poly O	Poly H	Identification	MKTTn		RVS		Poly O	Poly H	Identification	Final Result		MKTTn		RVS		Poly O	Poly H	Identification	Final Result	
		8 Hour	16 Hour	8 Hour	16 Hour		XLD	RSA	XLD	RSA				XLD	RSA	XLD	RSA						XLD	RSA	XLD	RSA					XLD
0.0	7	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	36	at	at	at	at				Neg	
	15	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	42	at	at	at	at				Neg	
	20	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	48	at	at	at	at				Neg	
	21	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	54	at	at	ng	at				Neg	
	27	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	56	at	at	at	at				Neg	
1.0	1	25.19	19.56	24.51	18.30	Pos	m	m	t	m	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	31	m	m	m	m	+	+	Salmonella spp.	Pos	
	3	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	34	at	at	at	at				Neg	
	4	24.95	19.75	24.26	18.53	Pos	m	m	t	m	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	35	m	m	m	m	+	+	Salmonella spp.	Pos	
	5	-	-	-	-	Neg	st	at	at	at				at	at	at	at				Neg	37	at	at	at	at				Neg	
	6	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	38	m	m	m	m	+	+	Salmonella spp.	Pos	
	9	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	39	m	m	m	m	+	+	Salmonella spp.	Pos	
	11	26.45	20.04	25.54	19.38	Pos	m	m	m	m	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	43	at	at	at	at				Neg	
	12	25.42	20.62	24.30	19.52	Pos	m	m	t	m	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	44	at	at	at	at				Neg	
	13	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	45	at	at	at	at				Neg	
	16	24.65	19.75	23.36	17.71	Pos	m	m	m	m	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	46	m	m	m	m	+	+	Salmonella spp.	Pos	
	17	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	47	at	at	at	at				Neg	
	18	25.01	20.28	24.94	18.51	Pos	m	m	m	t	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	49	at	at	at	at				Neg	
	19	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	50	at	at	at	at				Neg	
	23	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	51	at	at	at	at				Neg	
	24	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	52	at	at	at	at				Neg	
	25	27.01	19.04	25.78	17.14	Pos	m	m	m	m	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	53	m	m	m	at	+	+	Salmonella spp.	Pos	
	26	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	57	m	m	m	m	+	+	Salmonella spp.	Pos	
	28	26.54	19.12	25.48	16.76	Pos	m	m	at	m	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	58	at	at	at	at				Neg	
	29	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	59	at	at	at	at				Neg	
	30	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	60	m	m	m	m	+	+	Salmonella spp.	Pos	
3.6	2	23.65	18.96	22.67	16.43	Pos	m	m	t	m	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	32	m	m	m	m	+	+	Salmonella spp.	Pos	
	8	24.66	19.97	24.03	18.99	Pos	a	m	m	t	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	33	m	m	m	m	+	+	Salmonella spp.	Pos	
	10	25.16	19.45	24.24	17.93	Pos	m	m	m	m	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	40	m	m	m	m	+	+	Salmonella spp.	Pos	
	14	24.67	19.11	23.17	16.99	Pos	m	m	m	m	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	41	m	m	m	m	+	+	Salmonella spp.	Pos	

22	25.73	18.89	24.99	16.88	Pos	m	m	t	m	+	+	<i>Salmonella</i> spp.	m	m	m	m	+	+	<i>Salmonella</i> spp.	Pos	55	m	m	m	t	+	+	<i>Salmonella</i> spp.	Pos
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Inoculation Level	Raw Ground Turkey (25 g)																		Raw Ground Turkey (25 g)											
	Sample No	Candidate Rapid Method					ISO 6579-1:2017 (8 Hour)						ISO 6579-1:2017 (16 Hour)							Sample No	ISO 6579-1:2017 Confirmation									
		CFX		QS5		Result	MKTTn		RVS		Poly O	Poly H	Identification	MKTTn		RVS		Poly O	Poly H		Identification	Final Result	MKTTn		RVS		Poly O	Poly H	Identification	Final Result
0.0	62	-	-	-	-	Neg	at	ng	at	at				at	at	at	at				Neg	94	at	at	at	ng				Neg
	66	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	99	at	at	at	ng				Neg
	70	-	-	-	-	Neg	at	at	at	at				at	at	at	ng				Neg	102	at	at	at	at				Neg
	76	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	108	at	at	at	at				Neg
	82	-	-	-	-	Neg	at	at	at	at				at	ng	at	at				Neg	113	at	at	at	at				Neg
0.8	61	30.04	19.82	28.52	10.97	Pos	m	t	m	t	+	+	Salmonella spp.	t	t	m	t	+	+	Salmonella spp.	Pos	91	at	at	at	at				Neg
	63	-	-	-	-	Neg	at	ng	at	ng				at	ng	at	ng				Neg	92	t	m	m	t	+	+	Salmonella spp.	Pos
	64	31.39	19.45	24.36	17.57	Pos	t	t	t	t	+	+	Salmonella spp.	t	m	m	t	+	+	Salmonella spp.	Pos	93	at	ng	at	ng				Neg
	67	-	-	-	-	Neg	at	at	at	at				at	ng	at	at				Neg	95	m	t	m	t	+	+	Salmonella spp.	Pos
	69	32.07	19.70	32.94	17.44	Pos	t	t	m	t	+	+	Salmonella spp.	t	t	m	t	+	+	Salmonella spp.	Pos	96	at	at	at	at				Neg
	71	-	-	-	-	Neg	at	ng	at	ng				at	ng	at	ng				Neg	98	at	at	at	at				Neg
	72	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	100	m	m	m	t	+	+	Salmonella spp.	Pos
	74	31.56	17.43	26.77	16.04	Pos	t	t	t	t	+	+	Salmonella spp.	t	m	t	t	+	+	Salmonella spp.	Pos	103	at	at	at	at				Neg
	75	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	104	at	at	at	at	+	+	Salmonella spp.	Pos
	77	-	-	-	-	Neg	at	at	at	at				at	at	ng	at				Neg	105	at	at	at	at				Neg
	78	30.98	17.22	34.03	13.57	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	107	m	m	m	m	+	+	Salmonella spp.	Pos
	80	30.42	15.64	31.92	13.73	Pos	t	m	m	t	+	+	Salmonella spp.	t	m	m	t	+	+	Salmonella spp.	Pos	109	t	m	m	m	+	+	Salmonella spp.	Pos
	81	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	110	at	at	at	at				Neg
	83	-	-	-	-	Neg	at	at	at	at				at	at	at	ng				Neg	111	at	at	at	at				Neg
	85	34.16	16.98	32.37	15.69	Pos	m	m	m	m	+	+	Salmonella spp.	m	m	m	m	+	+	Salmonella spp.	Pos	112	at	at	at	at				Neg
	86	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	114	at	at	at	at				Neg
	87	34.56	17.36	30.51	10.93	Pos	m	m	m	m	+	+	Salmonella spp.	m	m	t	m	+	+	Salmonella spp.	Pos	115	at	at	at	at				Neg
88	34.93	16.89	31.41	12.86	Pos	m	m	m	m	+	+	Salmonella spp.	t	m	m	m	+	+	Salmonella spp.	Pos	116	at	at	at	at				Neg	
89	-	-	-	-	Neg	at	at	at	at				at	at	at	at				Neg	119	at	at	at	at				Neg	
90	-	-	-	-	Neg	at	at	at	at				at	ng	at	at				Neg	120	at	at	at	at				Neg	
4.0	65	30.55	20.01	29.16	16.27	Pos	t	t	m	t	+	+	Salmonella spp.	t	t	m	t	+	+	Salmonella spp.	Pos	97	t	t	t	t	+	+	Salmonella spp.	Pos
	68	30.33	17.23	27.96	16.23	Pos	t	t	t	t	+	+	Salmonella spp.	t	m	t	t	+	+	Salmonella spp.	Pos	101	m	m	t	t	+	+	Salmonella spp.	Pos
	73	32.58	18.36	30.81	14.81	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	m	+	+	Salmonella spp.	Pos	106	t	t	m	t	+	+	Salmonella spp.	Pos
	79	28.94	16.16	31.20	13.12	Pos	m	m	m	t	+	+	Salmonella spp.	m	t	m	t	+	+	Salmonella spp.	Pos	117	m	m	m	t	+	+	Salmonella spp.	Pos
	84	30.96	16.99	29.67	16.24	Pos	m	m	m	m	+	+	Salmonella spp.	m	m	t	m	+	+	Salmonella spp.	Pos	118	m	m	t	t	+	+	Salmonella spp.	Pos

Inoculation Level	Deli Turkey (25 g)																	Deli Turkey (25 g)												
	Sample No	Candidate Rapid Method					ISO 6579-1:2017 (8 Hour)						ISO 6579-1:2017 (16 Hour)						Sample No	ISO 6579-1:2017 Confirmation										
		CFX		QS5		Result	MKTTn		RVS		Poly O	Poly H	Identification	MKTTn		RVS		Poly O		Poly H	Identification	Final Result	MKTTn		RVS		Poly O	Poly H	Identification	Final Result
		8 Hour	16 Hour	8 Hour	16 Hour		XLD	RSA	XLD	RSA				XLD	RSA	XLD	RSA						XLD	RSA	XLD	RSA				
0.0	123	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	151	ng	ng	ng	ng				Neg
	128	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	154	ng	ng	ng	ng				Neg
	132	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	165	ng	ng	ng	ng				Neg
	137	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	168	ng	ng	ng	ng				Neg
	143	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	173	ng	ng	ng	ng				Neg
1.8	121	-	-	-	-	Neg	at	ng	ng	ng				ng	ng	at	ng				Neg	152	t	t	t	t	+	+	Salmonella spp.	Pos
	122	23.48	14.13	23.15	13.51	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	153	ng	ng	ng	ng				Neg
	124	26.90	13.38	25.22	13.77	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	156	ng	ng	ng	ng				Neg
	125	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	157	t	t	t	t	+	+	Salmonella spp.	Pos
	127	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	158	t	t	t	t	+	+	Salmonella spp.	Pos
	129	29.01	13.53	28.60	11.31	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	160	t	t	t	t	+	+	Salmonella spp.	Pos
	131	27.51	13.50	25.03	13.36	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	162	t	t	t	t	+	+	Salmonella spp.	Pos
	133	26.69	13.51	25.15	10.23	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	163	ng	ng	ng	ng				Neg
	135	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	164	t	t	t	t	+	+	Salmonella spp.	Pos
	136	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	167	ng	ng	ng	ng				Neg
	139	27.29	14.22	31.06	13.17	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	169	ng	ng	ng	ng				Neg
	140	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	170	t	t	t	t	+	+	Salmonella spp.	Pos
	141	29.05	14.08	24.98	13.57	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	171	ng	ng	ng	ng				Neg
	142	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	174	t	t	t	t	+	+	Salmonella spp.	Pos
	144	26.70	15.08	25.17	13.95	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	175	t	t	t	t	+	+	Salmonella spp.	Pos
	145	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	176	ng	ng	ng	ng				Neg
	147	29.48	14.31	23.45	12.27	Pos	t	t	m	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	177	t	t	t	t	+	+	Salmonella spp.	Pos
	148	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	178	t	t	t	t	+	+	Salmonella spp.	Pos
	149	32.00	14.07	28.18	13.50	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	179	ng	ng	ng	ng				Neg
	150	-	-	-	-	Neg	ng	ng	ng	ng				ng	ng	ng	ng				Neg	180	ng	ng	ng	ng				Neg
2.8	126	33.16	13.40	25.36	13.74	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	155	t	t	t	t	+	+	Salmonella spp.	Pos
	130	27.12	13.91	25.89	12.08	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	159	t	t	t	t	+	+	Salmonella spp.	Pos
	134	25.64	13.20	20.78	11.64	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	161	t	t	t	t	+	+	Salmonella spp.	Pos
	138	25.31	14.93	25.05	12.90	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	166	t	t	t	t	+	+	Salmonella spp.	Pos
	146	23.64	14.22	26.20	13.38	Pos	t	t	t	t	+	+	Salmonella spp.	t	t	t	t	+	+	Salmonella spp.	Pos	172	t	t	t	t	+	+	Salmonella spp.	Pos

Inoculation Level	Liquid Whole Egg (25 g)												Liquid Whole Egg (25 g)								
	Sample No	Candidate Rapid Method			ISO 6579-1:2017 (16 Hour)								Sample No	ISO 6579-1:2017 Confirmation							
				Result	MKTTn		RVS		Poly O	Poly H	Identification	Final Result		MKTTn		RVS		Poly O	Poly H	Identification	Final Result
		CFX	QS5		XLD	RSA	XLD	RSA						XLD	RSA	XLD	RSA				
		16 Hour	16 Hour		XLD	RSA	XLD	RSA						XLD	RSA	XLD	RSA				
0.0	244	-	-	Neg	ng	ng	ng	ng				Neg	271	ng	ng	ng	ng				Neg
	248	-	-	Neg	ng	ng	ng	ng				Neg	277	ng	ng	ng	ng				Neg
	253	-	-	Neg	ng	ng	ng	ng				Neg	281	ng	ng	ng	ng				Neg
	259	-	-	Neg	ng	ng	ng	ng				Neg	291	ng	ng	ng	ng				Neg
	263	-	-	Neg	ng	ng	ng	ng				Neg	296	ng	ng	ng	ng				Neg
1.2	241	-	-	Neg	ng	ng	ng	ng				Neg	272	ng	ng	ng	ng				Neg
	242	17.66	16.20	Pos	t	ng	t	ng	+	+	Salmonella spp.	Pos	273	t	ng	ng	ng	+	+	Salmonella spp.	Pos
	243	-	-	Neg	ng	ng	ng	ng				Neg	274	ng	ng	ng	ng				Neg
	245	-	-	Neg	ng	ng	ng	ng				Neg	275	t	ng	t	ng	+	+	Salmonella spp.	Pos
	246	-	-	Neg	ng	ng	ng	ng				Neg	276	ng	ng	ng	ng				Neg
	249	-	-	Neg	ng	ng	ng	ng				Neg	278	ng	ng	ng	ng				Neg
	250	-	-	Neg	ng	ng	ng	ng				Neg	280	ng	ng	ng	ng				Neg
	252	-	-	Neg	ng	ng	ng	ng				Neg	282	ng	ng	ng	ng				Neg
	254	-	-	Neg	ng	ng	ng	ng				Neg	283	ng	ng	ng	ng				Neg
	255	-	-	Neg	ng	ng	ng	ng				Neg	285	ng	ng	ng	ng				Neg
	256	-	-	Neg	ng	ng	ng	ng				Neg	287	ng	ng	ng	ng				Neg
	258	17.62	14.88	Pos	t	ng	t	ng	+	+	Salmonella spp.	Pos	288	ng	ng	ng	ng				Neg
	260	-	-	Neg	ng	ng	ng	ng				Neg	290	ng	ng	ng	ng				Neg
	262	17.43	15.48	Pos	t	ng	t	ng	+	+	Salmonella spp.	Pos	292	t	ng	ng	ng	+	+	Salmonella spp.	Pos
	264	-	-	Neg	ng	ng	ng	ng				Neg	293	ng	ng	ng	ng				Neg
	266	-	-	Neg	ng	ng	ng	ng				Neg	294	t	ng	t	ng	+	+	Salmonella spp.	Pos
	267	18.56	18.55	Pos	t	ng	t	ng	+	+	Salmonella spp.	Pos	295	ng	ng	ng	ng				Neg
	268	-	-	Neg	ng	ng	ng	ng				Neg	197	ng	ng	ng	ng				Neg
	269	24.06	18.26	Pos	t	ng	t	ng	+	+	Salmonella spp.	Pos	298	ng	ng	ng	ng				Neg
	270	-	-	Neg	ng	ng	ng	ng				Neg	299	ng	ng	ng	ng				Neg
4.2	247	20.13	17.86	Pos	t	ng	t	ng	+	+	Salmonella spp.	Pos	279	t	ng	t	ng	+	+	Salmonella spp.	Pos
	251	17.06	16.10	Pos	t	ng	t	ng	+	+	Salmonella spp.	Pos	284	t	ng	t	ng	+	+	Salmonella spp.	Pos
	257	16.34	14.56	Pos	t	ng	t	ng	+	+	Salmonella spp.	Pos	286	t	ng	t	ng	+	+	Salmonella spp.	Pos
	261	17.41	16.28	Pos	t	ng	t	ng	+	+	Salmonella spp.	Pos	289	t	ng	t	ng	+	+	Salmonella spp.	Pos
	265	17.45	16.51	Pos	t	ng	t	ng	+	+	Salmonella spp.	Pos	300	t	ng	t	ng	+	+	Salmonella spp.	Pos

Inoculation Level	Cut Cantaloupe (25 g)												Cut Cantaloupe (25 g)											
	Sample No	Candidate Rapid Method			ISO 6579-1:2017 (16 Hour)								Sample No	ISO 6579-1:2017 Confirmation										
					MKTTn		RVS		Poly O	Poly H	Identification	Final Result		MKTTn		RVS		Poly O	Poly H	Identification	Final Result			
		CFX	QS5	Result	XLD	RSA	XLD	RSA						XLD	RSA	XLD	RSA					XLD	RSA	
0.0	182	-	-	Neg	ng	ng	at	ng				Neg	216	at	at	ng	ng				Neg			
	188	-	-	Neg	at	at	at	at				Neg	219	at	at	at	ng				Neg			
	194	-	-	Neg	at	at	ng	ng				Neg	225	at	at	at	at				Neg			
	198	-	-	Neg	at	at	ng	ng				Neg	232	at	at	at	at				Neg			
	206	-	-	Neg	at	at	ng	ng				Neg	240	at	at	at	at				Neg			
0.8	181	-	-	Neg	at	at	ng	ng				Neg	211	t	t	t	t	+	+	Salmonella spp.	Pos			
	183	17.42	13.23	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	212	at	at	at	at				Neg			
	184	20.52	17.55	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	213	at	at	ng	ng				Neg			
	185	-	-	Neg	at	at	at	at				Neg	215	m	m	m	m	+	+	Salmonella spp.	Pos			
	187	-	-	Neg	at	at	at	at				Neg	217	m	m	m	m	+	+	Salmonella spp.	Pos			
	189	-	-	Neg	at	at	at	at				Neg	218	m	m	m	m	+	+	Salmonella spp.	Pos			
	190	-	-	Neg	at	at	at	at				Neg	220	at	at	at	at				Neg			
	192	24.83	24.74	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	221	at	at	at	at				Neg			
	193	-	-	Neg	at	at	ng	ng				Neg	223	m	m	m	m	+	+	Salmonella spp.	Pos			
	195	-	-	Neg	at	at	at	at				Neg	224	at	at	ng	ng				Neg			
	196	22.92	23.43	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	226	at	at	ng	at				Neg			
	197	-	-	Neg	at	at	at	at				Neg	228	at	at	at	at				Neg			
	199	-	-	Neg	at	at	ng	ng				Neg	229	m	m	m	t	+	+	Salmonella spp.	Pos			
	200	-	-	Neg	ng	ng	ng	ng				Neg	230	at	at	ng	ng				Neg			
	201	23.71	23.81	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	231	at	at	at	at				Neg			
	204	23.25	22.42	Pos	m	m	m	t	+	+	Salmonella spp.	Pos	233	m	m	m	m	+	+	Salmonella spp.	Pos			
	205	-	-	Neg	at	at	ng	ng				Neg	234	m	m	t	t	+	+	Salmonella spp.	Pos			
	207	-	-	Neg	at	at	ng	ng				Neg	237	at	at	at	at				Neg			
	209	20.51	17.92	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	238	m	m	m	m	+	+	Salmonella spp.	Pos			
	210	-	-	Neg	at	at	ng	ng				Neg	239	at	at	at	at				Neg			
5.6	186	20.52	19.88	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	214	m	m	t	t	+	+	Salmonella spp.	Pos			
	191	23.15	22.74	Pos	m	m	m	t	+	+	Salmonella spp.	Pos	222	m	m	m	m	+	+	Salmonella spp.	Pos			
	202	28.81	20.21	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	227	m	m	m	m	+	+	Salmonella spp.	Pos			
	203	22.76	22.07	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	235	m	m	t	t	+	+	Salmonella spp.	Pos			
	208	21.15	19.47	Pos	m	m	m	m	+	+	Salmonella spp.	Pos	236	m	m	m	m	+	+	Salmonella spp.	Pos			

ANNEX G: Raw Data Inclusivity and Exclusivity Study

Table 1. Inclusivity Raw Data

No.	Genus	Species	Subspecies	Serovar	Culture Collection	Reference Number/Strain	Level	CFX Result	Final CFX Result	QS5 Result	Final QS5 Result	Bio-Rad CFX OPUS DW	Final CFX OPUS DW Result
1	<i>Salmonella</i>	<i>enterica</i>	<i>arizonae</i>	-	Q Labs	QL11007-4	36	19.35	+	24.37	+	21.31	+
2	<i>Salmonella</i>	<i>enterica</i>	<i>arizonae</i>	-	CCUG	1743	50	19.55	+	23.26	+	22.45	+
3	<i>Salmonella</i>	<i>enterica</i>	<i>diarizonae</i>	-	ATCC	BAA-639	52	19.82	+	21.46	+	23.69	+
4	<i>Salmonella</i>	<i>enterica</i>	<i>diarizonae</i>	-	Q Labs	QL011414.1	44	19.59	+	21.74	+	21.61	+
5	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Abortusovis	NCTC	10241	78	14.59	+	16.86	+	21.73	+
6	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Adabraka	CCUG	34650	80	15.57	+	16.14	+	22.22	+
7	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Adelaide	UPENN	STS 2	92	14.35	+	17.47	+	20.93	+
8	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Agoueve	UPENN	STS 5	95	14.99	+	16.68	+	21.40	+
9	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Alachua	UPENN	STS 6	88	15.59	+	17.09	+	23.43	+
10	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Albany	UPENN	STS 7	80	16.08	+	16.65	+	23.01	+
11	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Anatum	ATCC	9270	64	16.91	+	17.81	+	22.71	+
12	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Arkansas	UPENN	STS 11	72	15.10	+	16.73	+	22.18	+
13	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Bareilly	FDA	1206H	78	16.70	+	16.43	+	23.93	+
14	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Berta	UPENN	STS 13	66	15.11	+	17.04	+	21.85	+
15	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Binza	UPENN	STS 14	74	16.61	+	17.92	+	21.96	+
16	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Bispebjerg	CCUG	39298	92	16.24	+	15.12	+	22.03	+
17	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Blockley	CCUG	21263	90	16.02	+	16.05	+	22.22	+
18	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Bloemfontein	CCUG	12654	82	16.14	+	16.62	+	22.01	+
19	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Bovismorbificans	UPENN	STS 16	80	15.42	+	14.55	+	22.61	+
20	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Cerro	UPENN	STS 22	72	16.42	+	16.97	+	22.66	+
21	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Chester	CCUG	21237	78	16.63	+	16.58	+	23.12	+
22	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Choleraesuis	ATCC	10708	66	14.93	+	17.57	+	22.71	+
23	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Choleraesuis var. Kunzendorf	ATCC	12011	64	16.04	+	17.61	+	22.36	+
24	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Concord	CCUG	12659	68	16.23	+	17.75	+	22.20	+
25	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Cubana	UPENN	STS 24	72	15.70	+	15.53	+	22.22	+
26	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Daytona	CCUG	12655	78	15.64	+	16.13	+	22.69	+
27	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Decatur	CCUG	12656	76	16.88	+	16.99	+	23.07	+
28	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Derby	NCTC	5721	44	17.42	+	26.71	+	23.82	+
29	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Drypool	UPENN	STS 26	98	16.55	+	17.20	+	23.09	+
30	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Dublin	UPENN	STS 27	92	16.35	+	16.56	+	22.65	+
31	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Eastbourne	FDA	4017H	84	16.37	+	17.56	+	24.50	+
32	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Emek	CCUG	21286	98	16.29	+	15.86	+	22.51	+
33	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Enteritidis	ATCC	4931	94	15.81	+	17.62	+	22.20	+
34	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Enteritidis	CCUG	9563	90	16.23	+	17.07	+	22.29	+
35	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Galiema	Q Labs	QL024.2	82	15.81	+	15.80	+	23.99	+
36	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Give	UPENN	STS 42	80	15.44	+	15.74	+	22.16	+
37	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Gnesta	CCUG	12640	98	16.19	+	15.73	+	23.28	+
38	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Haardt	UPENN	STS 44	80	15.78	+	17.84	+	22.73	+

39	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Hadar	ATCC	51956	88	15.80	+	16.68	+	22.81	+
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Table 1. Inclusivity Raw Data Continued

No.	Genus	Species	Subspecies	Serovar	Culture Collection	Reference Number/Strain	Level	CFX Result	Final CFX Result	QS5 Result	Final QS5 Result	Bio-Rad CFX OPUS DW	Final CFX OPUS DW Result
40	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Haelsingborg	CCUG	12645	82	16.42	+	17.06	+	21.50	+
41	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Havana	UPENN	STS 47	88	15.42	+	17.15	+	21.38	+
42	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Heidelberg	NCTC	5717	94	15.90	+	16.17	+	22.41	+
43	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Idikan	CCUG	21269	94	15.01	+	16.56	+	22.19	+
44	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Illinois	ATCC	11646	96	15.89	+	15.97	+	22.86	+
45	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Indiana	NCTC	11304	94	16.06	+	16.49	+	22.57	+
46	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Infantis	ATCC	51741	90	15.15	+	16.79	+	21.62	+
47	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Irumu	CCUG	12638	88	15.17	+	17.34	+	20.80	+
48	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Java	CCUG	9561	84	15.78	+	15.51	+	21.62	+
49	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Javiana	ATCC	10721	100	15.78	+	15.77	+	21.63	+
50	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Jerusalem	Q Labs	QL024.12	98	15.04	+	15.46	+	22.98	+
51	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Johannesburg	UPENN	STS 56	92	15.61	+	15.74	+	22.48	+
52	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Kahla	ATCC	17980	88	15.55	+	15.60	+	21.80	+
53	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Kaitaan	Q Labs	QL024.7	94	15.48	+	15.16	+	23.06	+
54	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Kentucky	ATCC	9263	96	15.02	+	16.81	+	22.31	+
55	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Kottbus	CCUG	21258	90	16.27	+	16.51	+	24.70	+
56	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Krefeld	UPENN	STS 58	100	15.93	+	16.40	+	22.55	+
57	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Lille	CCUG	12647	88	16.72	+	17.40	+	23.03	+
58	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Livingstone	Q Labs	QL091313.1	76	16.61	+	16.56	+	24.61	+
59	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Lomita	CCUG	12637	54	24.33	+	29.02	+	21.78	+
60	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	London	UPENN	STS 64	98	14.59	+	16.64	+	22.54	+
61	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Manhattan	UPENN	STS 65	98	16.05	+	16.07	+	22.23	+
62	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Mbandaka	Q Labs	QL11031.1	96	16.14	+	15.31	+	21.87	+
63	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Meleagridis	Q Labs	12074-1	100	16.06	+	16.20	+	22.96	+
64	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Menden	ATCC	15992	88	16.11	+	15.82	+	22.02	+
65	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Menhaden	Q Labs	QL024.20	86	16.76	+	17.67	+	22.22	+
66	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Minnesota	UPENN	STS 70	80	15.64	+	16.18	+	24.47	+
67	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Montevideo	Q Labs	QL024.19	90	15.38	+	16.90	+	22.16	+
68	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Muenchen	ATCC	BAA-1594	92	16.23	+	16.84	+	22.03	+
69	<i>Salmonella</i>	<i>enterica</i>	<i>salamae</i>	Neasden	Q Labs	QL024.4	98	15.11	+	15.94	+	22.50	+
70	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Newington	Q Labs	QL0248	98	14.93	+	16.84	+	22.47	+
71	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Newport	ATCC	6962	100	15.10	+	15.76	+	22.11	+
72	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Ohio	UPENN	STS 81	78	15.04	+	15.52	+	22.42	+
73	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Oranienburg	Q Labs	QL024.3	80	16.27	+	16.49	+	22.84	+
74	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Othmarshen	Q Labs	QL 024.13	84	15.65	+	16.94	+	21.39	+
75	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Panama	CCUG	21275	88	14.83	+	16.43	+	22.86	+
76	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Paratyphi B	ATCC	10719	86	15.74	+	17.23	+	21.65	+
77	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Paratyphi C	ATCC	13428	80	15.78	+	17.19	+	22.25	+
78	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Pomona	ATCC	10729	78	15.23	+	15.89	+	22.97	+
79	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Poona	NCTC	4840	92	15.46	+	15.61	+	22.08	+
80	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Potsdam	CCUG	12650	94	16.60	+	18.52	+	23.02	+

Table 1. Inclusivity Raw Data Continued

No.	Genus	Species	Subspecies	Serovar	Culture Collection	Reference Number/Strain	Level	CFX Result	Final CFX Result	QS5 Result	Final QS5 Result	Bio-Rad CFX OPUS DW	Final CFX OPUS DW Result
81	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Preston	Q Labs	QL024.16	98	15.36	+	15.65	+	22.92	+
82	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Richmond	CCUG	12657	100	15.83	+	16.39	+	21.68	+
83	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Rubislaw	UPENN	STS 92	98	16.04	+	16.04	+	22.76	+
84	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Saintpaul	ATCC	9712	98	16.07	+	15.50	+	23.09	+
85	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	San-Diego	UPENN	STS 94	96	15.07	+	16.08	+	23.35	+
86	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Schalkwijk	Q Labs	QL024.10	98	15.48	+	15.70	+	23.61	+
87	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Schwarzengrund	Q Labs	10021.1	100	15.57	+	16.05	+	21.65	+
88	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Senftenberg	Q Labs	QL11031.2	100	15.46	+	16.05	+	22.51	+
89	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Stanley	ATCC	7308	100	15.29	+	14.96	+	22.70	+
90	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Sylvania	Q Labs	QL091313.4	98	15.96	+	15.64	+	23.22	+
91	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Tallahassee	ATCC	12002	98	16.20	+	16.98	+	22.86	+
92	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Tennessee	Q Labs	QL024.6	96	15.72	+	17.64	+	22.11	+
93	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Thompson	FDA	2051H	92	16.76	+	17.39	+	22.37	+
94	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Typhi	Q Labs	QL 16078-2A	94	15.02	+	15.94	+	21.79	+
95	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Typhimurium	Q Labs	QL011414.2	94	15.00	+	15.28	+	22.83	+
96	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Utrecht	NCTC	10077	94	15.71	+	15.54	+	22.76	+
97	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Vellore	ATCC	15611	96	14.98	+	16.48	+	22.54	+
98	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Virchow	ATCC	51955	98	15.45	+	17.21	+	21.06	+
99	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Urbana	UPENN	STS 110	92	16.03	+	17.62	+	21.67	+
100	<i>Salmonella</i>	<i>enterica</i>	<i>enterica</i>	Westhampton	Q Labs	QL091313.2	94	15.33	+	15.83	+	23.48	+
101	<i>Salmonella</i>	<i>enterica</i>	<i>houtenae</i>	Halmstad	QL	QL 024.1	80	15.16	+	16.62	+	21.86	+
102	<i>Salmonella</i>	<i>enterica</i>	<i>salamae</i>	-	QL	QL 02415	88	15.77	+	16.85	+	22.19	+
103	<i>Salmonella</i>	<i>bongori</i>	-	-	CCUG	63587	48	24.26	+	27.00	+	22.07	+
104	<i>Salmonella</i>	<i>bongori</i>	-	-	NCTC	12419	52	22.98	+	26.74	+	21.83	+
105	<i>Salmonella</i>	<i>bongori</i>	-	-	ATCC	43975	60	23.47	+	26.79	+	23.55	+

Table 2. Exclusivity Raw Data

No.	Genus	Species	Source	Reference No.	CFX Result	Final CFX Result	QS5 Result	Final QS5 Result	Bio-Rad CFX OPUS DW	Final CFX OPUS DW Result
1	<i>Acidovorax</i>	<i>temperans</i>	Q Labs	QL21274-1	Negative	-	Negative	-	Negative	-
2	<i>Acinetobacter</i>	<i>junii</i>	Q Labs	QL 0696826.1	Negative	-	Negative	-	Negative	-
3	<i>Aeromonas</i>	<i>hydrophila</i>	Q Labs	QL 333046.21	Negative	-	Negative	-	Negative	-
4	<i>Alcaligenes</i>	<i>faecalis</i>	ATCC	8750	Negative	-	Negative	-	Negative	-
5	<i>Bordetella</i>	<i>bronchiseptica</i>	CCUG	56928	Negative	-	Negative	-	Negative	-
6	<i>Brevundimonas</i>	<i>mediterranea</i>	Q Labs	QL 0692733.2	Negative	-	Negative	-	Negative	-
7	<i>Burkholderia</i>	<i>cepacia</i>	ATCC	25416	Negative	-	Negative	-	Negative	-
8	<i>Citrobacter</i>	<i>youngae</i>	ATCC	11102	Negative	-	Negative	-	Negative	-
9	<i>Citrobacter</i>	<i>koseri</i>	ATCC	27156	Negative	-	Negative	-	Negative	-
10	<i>Citrobacter</i>	<i>braakii</i>	ATCC	43162	Negative	-	Negative	-	Negative	-
11	<i>Citrobacter</i>	<i>farmeri</i>	ATCC	51633	Negative	-	Negative	-	Negative	-
12	<i>Citrobacter</i>	<i>freundii</i>	Q Labs	QL 11007-10	Negative	-	Negative	-	Negative	-
13	<i>Cronobacter</i>	<i>dublinensis</i>	DSM	18707	Negative	-	Negative	-	Negative	-
14	<i>Cronobacter</i>	<i>condimenti</i>	DSM	27966	Negative	-	Negative	-	Negative	-
15	<i>Cronobacter</i>	<i>sakazakii</i>	Q Labs	QL 111717-1	Negative	-	Negative	-	Negative	-
16	<i>Edwardsiella</i>	<i>tarda</i>	Q Labs	QL 021111D	Negative	-	Negative	-	Negative	-
17	<i>Enterobacter</i>	<i>hormaechei</i>	CCUG	63314	Negative	-	Negative	-	Negative	-
18	<i>Enterobacter</i>	<i>amnigenus</i>	Q Labs	QL 112413-2	Negative	-	Negative	-	Negative	-
19	<i>Escherichia</i>	<i>coli</i>	Q Labs	QL 030716-1A	Negative	-	Negative	-	Negative	-
20	<i>Escherichia</i>	<i>fergusonii</i>	ATCC	35469	Negative	-	Negative	-	Negative	-
21	<i>Hafnia</i>	<i>alvei</i>	Q Labs	QL 102313	Negative	-	Negative	-	Negative	-
22	<i>Klebsiella</i>	<i>aerogenes</i>	ATCC	35029	Negative	-	Negative	-	Negative	-
23	<i>Kluyvera</i>	<i>intermedia</i>	Q Labs	QL 081215-1	Negative	-	Negative	-	Negative	-
24	<i>Morganella</i>	<i>morganii</i>	Q Labs	QL 22214-11	Negative	-	Negative	-	Negative	-
25	<i>Proteus</i>	<i>mirabilis</i>	Q Labs	QL 33046.2	Negative	-	Negative	-	Negative	-
26	<i>Proteus</i>	<i>vulgaris</i>	CCUG	18984	Negative	-	Negative	-	Negative	-
27	<i>Pseudomonas</i>	<i>aeruginosa</i>	ATCC	15442	Negative	-	Negative	-	Negative	-
28	<i>Pseudomonas</i>	<i>fluorescens</i>	Q Labs	QL 17041-3	Negative	-	Negative	-	Negative	-
29	<i>Serratia</i>	<i>marcescens</i>	Q Labs	QL 11007-1	Negative	-	Negative	-	Negative	-
30	<i>Stenotrophomonas</i>	<i>maltophilia</i>	Q Labs	QL 0695267.5a	Negative	-	Negative	-	Negative	-

Instructions for use InviScreen® *Salmonella* spp. Detection Kit

INVITEK
d i a g n o s t i c s



InviScreen®

Language: EN

REF 6015007200

 100 tests



ALS Life Sciences Portugal, S.A.
Zona Industrial de Tondela, ZIM II,
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IMPORTANT NOTES

Thank you for purchasing the InviScreen® *Salmonella* spp. Detection Kit from Invitek Diagnostics.

The product serves the purpose of manual isolation of DNA from bacteria in pre-enriched food, feed and environmental samples and detection of *Salmonella* spp. by real-time PCR.

WARNING! Improper handling and use for other than the intended purpose can cause danger and damage. Therefore, we ask you to read through these instructions for use and follow them carefully. Always keep them handy. To avoid personal injury, also observe the safety instructions.

All versions of the instructions for use can be found on our website for download or can be requested from us: [invitek.com](https://www.invitek.com)

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TABLE OF CONTENT

TITLE	PAGE
1. INTRODUCTION	4
2. INTENDED USE	4
3. PRODUCT DESCRIPTION	4
4. GENERAL WORKFLOW	5
5. KIT CONTENTS AND STORAGE	5
6. EQUIPMENT AND MATERIALS REQUIRED (NOT PROVIDED)	6
7. SAFETY PRECAUTIONS AND RECOMMENDATIONS	6
8. PROTOCOL	7
9. CONFIRMATION OF POSITIVE RESULTS	11
10. PERFORMANCE VALIDATION	11
ANNEX A REAL-TIME PCR MIX CALCULATION GUIDE	12
ANNEX B TROUBLESHOOTING	13

1. INTRODUCTION

One of the most common causes of foodborne illness is *Salmonella*, a genus of bacteria responsible for an infection called salmonellosis. Salmonellosis is a serious public health concern throughout the world. Release of contaminated foods can result in processing delays, product recalls, plant shutdowns, and legal action. It can cost food companies millions in revenue as well as their reputation, stock value, and future profitability.

A key to preventing *Salmonella* contamination is timely and accurate food pathogen testing. To be effective, a *Salmonella* test must detect low levels of the bacteria in a wide range of food types quickly, easily, and with high specificity. Traditionally, *Salmonella* testing has been performed using culture-based or immunoassay methods, which are time-consuming and labor-intensive. With culture-based methods, for example, the time-to-results can take up to 5 days, and interpretation of the results is highly subjective. Immunoassay-based methods can take up to 2 days and may lack specificity due to antibody binding interferences. In this context, the use of molecular biology technology by resorting to DNA testing have been highlighted. Real-Time PCR technology allows DNA amplification with robustness, sensitivity, and specificity.

2. INTENDED USE

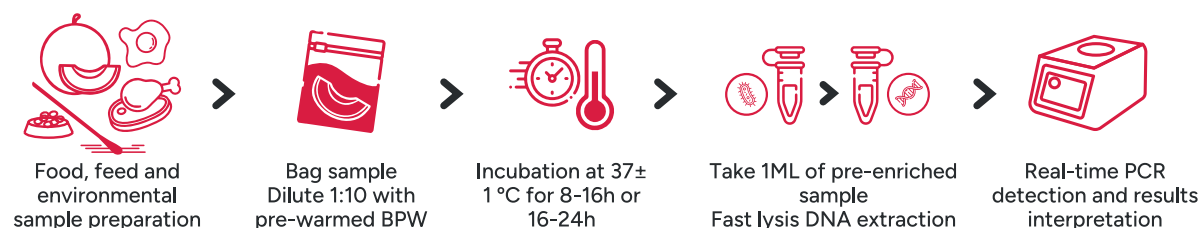
The InviScreen® *Salmonella* spp. Detection Kit is specifically designed for the qualitative detection of *Salmonella* spp. in food, feed and environmental samples. This kit is intended for use by trained laboratory professionals, providing a sensitive and reliable method for the detection of *Salmonella* spp. in a broad range of food products, including meat products, poultry products, dairy products, egg products and fresh produce and fruits, as well as animal food and feed, and environmental samples. Laboratory personnel should follow the instructions provided in this manual carefully, including the sample preparation and pre-enrichment, DNA extraction, Real-Time PCR amplification and result interpretation guidelines. This *Salmonella* spp. Real-Time PCR detection kit is a high-quality molecular biology solution to provide the general laboratory and research personnel an easy and quick ready-to-use kit for the detection of *Salmonella* spp. in different sample categories in one and a half hours after a one-step pre-enrichment, taking **less than 10 hours in total** for the majority of matrices.

3. PRODUCT DESCRIPTION

The InviScreen® *Salmonella* spp. Detection Kit method uses the real-time PCR technique to detect the presence of *Salmonella* spp. DNA in food, feed and environmental samples. The assay utilizes a fast extraction method and is based on the amplification of specific DNA using hydrolysis probes. The kit allows simultaneous amplification of the target DNA and an internal amplification control (IAC) to exclude false negative results due to PCR inhibition. This duplex detection system helps maximize amplification accuracy and simplify reaction setup. This real-time PCR method uses the commonly available FAM and VIC/HEX fluorescence channels. Enrichment culture media is not provided with the kit.

4. GENERAL WORKFLOW

This method is aimed to allow the qualitative detection of *Salmonella* spp. in food, feed and environmental samples previously enriched by culture. Pre-enrichment, DNA extraction and Real-Time PCR are the three main steps involved:



5. KIT CONTENTS AND STORAGE

One InviScreen® *Salmonella* spp. Detection Kit contains sufficient reagents for **100 tests**, according to the table below.

REF	COMPONENT	FUNCTION	CAP COLOR	QUANTITY	STORAGE (UPON ARRIVAL)
D41.01	PRIMER/PROBE MIX	TARGETED DETECTION	BROWN	1 TUBE, 1000 µL	-20 ± 5°C
D41.02	QPCR MASTER MIX	AMPLIFICATION	GREEN	1 TUBE, 1000 µL	-20 ± 5°C
D41.03	NEGATIVE CONTROL	NEGATIVE CONTROL	COLOURLESS	1 TUBE, 100 µL	-20 ± 5°C
D41.04	POSITIVE CONTROL	POSITIVE CONTROL	RED	1 TUBE, 100 µL	-20 ± 5°C
D41.05	FAST LYSIS REAGENT	DNA EXTRACTION	COLOURLESS	1 BOTTLE, 20 ML	ROOM TEMPERATURE

Fast lysis reagent should be stored at room temperature. The other reagents should be stored sealed at -20 ± 5°C. All reagents may be used until the expiration date shown on the package label. Expiry date refers to the product under rightful handling and storage conditions. It is not recommended the use of the kit after the expiry date stated on the box. Avoid unnecessary repeated freeze/thawing cycles (>5). Protect reagents from light exposure to prevent degradation.

6. EQUIPMENT AND MATERIALS REQUIRED (NOT PROVIDED)

- Stomacher bags (preferably with incorporated filter)
- Scale/dilumate
- Laboratory paddle blender for homogenizing test samples
- Buffered Peptone Water (BPW, ISO formulation)
- Incubator operating at 37 ± 1 °C
- Microbiology Pipettes and tips (1000 µL)
- 1.5 mL microcentrifuge tubes (preferably with lock cap)
- Microcentrifuge capable of speed $>10.000 \times g$
- Vortex mixer
- Dry bath capable of maintaining 99 °C and high-speed agitation
- Micropipettes and micropipette filter tips (1000 µL, 200 µL or 100 µL, 10 µL)
- White qPCR tubes and optical caps
- PCR cabinet to minimize the risk of contamination with foreign DNA
- Real-Time PCR instrument (Bio-Rad CFX96 Deep Well PCR, Applied Biosystems QuantStudio 5 RT PCR System (0.1 mL, 96-well block) and Bio-Rad CFX Opus Deep Well)

7. SAFETY PRECAUTIONS AND RECOMMENDATIONS

Anyone using this product should have received instructions in general safety practices for laboratories and the safety information provided in this document.

- The kit is designed for use by trained professionals in laboratory settings.
- The user assumes all responsibility for compliance with local regulations and guidelines for the use of this product.
- Samples and enrichment cultures must be handled as potentially infectious material and discarded according to local regulations.
- All potentially infectious material should be autoclaved (e.g. 121 °C for 20 min) before disposal.
- Every procedure should be performed in strict compliance with Good Laboratory Practices (example EN ISO 7218) especially concerning PCR.
- It is advised to follow the general requirements described in EN ISO 22174:2024 - Microbiology of the food chain - Polymerase Chain Reactions (PCR) for the detection and quantification of microorganisms - General requirements and definitions.

8. PROTOCOL

The procedure includes three main steps: pre-enrichment, DNA extraction and Real-Time PCR amplification.

PRE-ENRICHMENT

1. Pre-warm the BPW to the sample incubation temperature ($37 \pm 1^\circ\text{C}$) before use.
2. Add pre-warmed BPW to the sample **in a 1:10 dilution ratio**.
Note 1: The use of enrichment bag with incorporated filter is highly recommended.
3. Homogenize for **30 seconds in a stomacher**.
4. Incubate without shaking at **$37 \pm 1^\circ\text{C}$ for 8 to 16 hours or 16 to 24 hours** according to the tables below.

Note 2: It is possible to store the enriched samples at $2-8^\circ\text{C}$ for 72 hours maximum, following the incubation at 37°C , for the Raw and Ready-to-Eat (RTE) Meat Products, RTE and Ready-to-Reheat (RTRH) Poultry Products, Eggs and Egg Products, Animal Food and Feed and Environmental Samples. For Heat Processed and Raw Milk and Dairy Products, Raw Poultry Products and Fresh Produce and Fruits, following enrichment, proceed to the Fast Lysis DNA Extraction.

5. Proceed to the **Fast Lysis DNA Extraction**.

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MATRICES	SAMPLE PREPARATION	ENRICHMENT
Raw milk (25 mL)	Homogenize 25 mL of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 8-16 hours at $37 \pm 1^\circ\text{C}$
Raw ground beef (25 g)	Homogenize 25 g of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 8-16 hours at $37 \pm 1^\circ\text{C}$
Raw ground turkey (25 g)	Homogenize 25 g of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 8-16 hours at $37 \pm 1^\circ\text{C}$
Deli turkey (25 g)	Homogenize 25 g of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 8-16 hours at $37 \pm 1^\circ\text{C}$
Cut cantaloupe (25 g)	Homogenize 25 g of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 16-24 hours at $37 \pm 1^\circ\text{C}$
Pasteurized liquid egg (25 mL)	Homogenize 25 mL of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 16-24 hours at $37 \pm 1^\circ\text{C}$

MICROVAL 2023LR127

MATRICES	SAMPLE PREPARATION	ENRICHMENT
Heat Processed and Raw Milk and Dairy Products	Homogenize 25 g/25 mL of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 16-24 hours at 37 ± 1 °C
Raw and Ready-to-Eat (RTE) Meat Products	Homogenize 25 g of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 8-16 hours at 37 ± 1 °C
Raw Poultry Products	Homogenize 25 g of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 8-16 hours at 37 ± 1 °C
RTE and RTRH Poultry Products	Homogenize 25 g of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 8-16 hours at 37 ± 1 °C
Fresh Produce and Fruits	Homogenize 25 g of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 16-24 hours at 37 ± 1 °C
Eggs and Egg Products	Homogenize 25 g/25 mL of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 16-24 hours at 37 ± 1 °C
Animal Food and Feed*	Homogenize 25 g of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 16-24 hours at 37 ± 1 °C
Environmental Samples*	Homogenize 25 g/25 mL of sample in 225 mL of pre-warmed BPW (1:10 dilution)	Incubate 16-24 hours at 37 ± 1 °C
	Sponge: Homogenize with 90 mL of pre-warmed BPW (1:10 dilution) Swab: Homogenize with 9 mL of pre-warmed BPW (1:10 dilution)	

*Categories Animal Food and Feed and Environmental Samples were further validated on the Bio-Rad CFX Opus Deep Well.

FAST LYSIS DNA EXTRACTION

- Take **1 mL of the enriched sample** from the corresponding bag to each tube.

Note 3: Open bags and tubes carefully to avoid possible cross contamination.

- Centrifuge **1 mL aliquots** tubes at max. speed (>10.000 x g) for 2 min and carefully discard the supernatant. Use a 1000 µL micropipette, if necessary (make sure that all liquid is properly removed. If needed use a 100 µL pipette to fully remove all liquid).

Note 4: Enriched samples with a lot of food residues should be pre-cleared by centrifuging up to 2 mL of sample at 900 x g for 2 minutes. Then, use 1 mL of supernatant and centrifuge as described above in a fresh tube.

Note 5: For enriched samples showing a significant fat layer after the first centrifugation step, carefully remove fat together with supernatant.

Note 6: If necessary, pellets can be frozen at -20 °C in case DNA extraction has to be repeated.

- Release the pellet from the bottom of the tube by vortex or scraping the tube across the top of a tube rack.

9. Add **200 µL Fast Lysis reagent** to the tube.

Note 7: Shake the buffer well before use.

10. Vortex vigorously for **10 seconds**.
11. Incubate for **10 min at 99 °C** on a dry bath with constant shaking (e.g. 1.400 rpm).
12. Cool down at **room temperature for ≈2 min**.
13. Centrifuge for **2 min at max. speed (>10.000 x g)**.
14. Carefully transfer **100 µL of the supernatant**, without disturbing the pellet, to a clean tube. If carryover of sample pellet occurs and/or cell debris are still visible in the supernatant, repeat steps 14 and 15, to obtain a clearer supernatant.
15. The supernatant (DNA extract) can be stored at 4 °C up to 1 week or at -20 °C for longer periods.
16. Proceed to **Real-Time PCR detection of *Salmonella* spp.**

REAL-TIME PCR DETECTION OF *SALMONELLA* SPP.

PREPARATION OF THE PCR SETUP

All DNAs extracted from each sample should be analysed following the analytical conditions described below. For each Real-Time PCR run, at least one positive control reaction and one negative control reaction must be included. Allow all reagents of the *Salmonella* spp. Real-Time PCR detection kit to thaw at 2-8 °C, vortex and spin briefly to avoid drops on the vial cap.

17. For each sample prepare a reaction mix according to the table below:

REAGENT	VOLUME
PRIMER/PROBE MIX	10 µL
QPCR MASTER MIX	10 µL
TOTAL VOLUME	20 µL

18. Prepare the number of reactions needed according with the table in Annex A. An extra volume of at least one reaction should be prepared to account for pipetting deviations.
19. Homogenize the reaction mixture and pipette **20 µL** into individual wells according to the predicted qPCR plate or tubes set up.
20. Add **5 µL of DNA extract** to each well.
21. For the positive control reaction and negative control reaction, replace the sample in these wells with **5 µL of Positive Control** (Red cap) and **5 µL of Negative Control** (Colourless cap), respectively.

Note 8: It is recommended to prepare the reaction mixture carefully in a controlled environment, preferably in a nucleic acid-free zone.

Note 9: The addition of the positive control and sample DNA extract should preferably be carried out in a separate room.

AMPLIFICATION PROTOCOL

The amplification conditions for both validated instruments are as follows:

STEP	TEMPERATURE	TIME	CYCLE
ENZYMATIC ACTIVATION	95 °C	2 MIN	1
DENATURATION	95 °C	1 SEC	40
HYBRIDIZATION/EXTENSION PLATE READING	62 °C	20 SEC	

Fluorescence data must be obtained during this step through FAM (target DNA) and HEX/VIC (internal amplification control, IAC) channels. The assay was validated on Bio-Rad CFX96 Deep Well PCR, Applied Biosystems QuantStudio 5 RT PCR System (0.1 mL, 96-well block) and Bio-Rad CFX Opus Deep Well.

RESULTS INTERPRETATION

Analysis parameters should be set in accordance with the analysis software recommended by the Real-Time PCR instrument manufacturer. Automatic Baseline Threshold settings per instrument manufacturer's instructions should be used. The analysis outcome should be interpreted according to the scenarios referred below.

The result can only be considered valid under the following control conditions:

CONTROLS	<i>Salmonella</i> DNA (FAM)	IAC (HEX/VIC)
POSITIVE CONTROL	CT ≤ 26	+ (POSITIVE)
NEGATIVE CONTROL	- (NEGATIVE)	+ (POSITIVE)

If **no amplification** is observed for the positive control, the test results are invalid and must be repeated.

If **amplification** is observed for the negative control, it indicates that the reagents have become contaminated while setting up the run, invalidating test results. In each case, repeat the Real-Time PCR reaction.

The reaction includes an **IAC (HEX/VIC)** to monitor the reaction and to exclude the occurrence of PCR inhibition. A poor signal obtained for IAC indicates the presence of PCR inhibitors in the reaction which compromises an effective and accurate detection test.

Salmonella DNA amplification is monitored in FAM channel and a result is considered positive when **CT ≤ 35** for the tested DNA.

CONTROLS	<i>Salmonella</i> DNA (FAM)	IAC (HEX/VIC)
POSITIVE SAMPLE	CT ≤ 35	+ (POSITIVE) / - (NEGATIVE)
NEGATIVE SAMPLE	- (NEGATIVE)	+ (POSITIVE)
INCONCLUSIVE	- (NEGATIVE)	- (NEGATIVE)
INCONCLUSIVE	? (INCOMPLETE AMPLIFICATION CURVE)	+ (POSITIVE) / - (NEGATIVE)

An **inconclusive** test may be due to the presence of excessive DNA and/or **PCR inhibitors**. It is recommended to **perform a 1:2 and 1:10 dilution of the DNA extract** in DNase/RNase free water and repeat the Real Time PCR reaction. See Annex B for troubleshooting.

9. CONFIRMATION OF POSITIVE RESULTS

A positive InviScreen® *Salmonella* spp. Detection Kit is presumed to be positive and confirmation according to an appropriate reference method (example: ISO 6579) is recommended. Confirmation of presumptive positive results may be conducted according to ISO 6579 from enrichments stored at 2-8°C for a maximum of 72 hours for Raw and Ready-to-Eat (RTE) Meat Products, RTE and Ready-to-Reheat (RTRH) Poultry Products, Eggs and Egg Products, Animal Food and Feed and Environmental Samples. For Heat Processed and Raw Milk and Dairy Products, Raw Poultry Products and Fresh Produce and Fruits, confirmation shall begin following enrichment. Plate primary enrichments using the ISO 6579 secondary enrichment procedure and incubate as appropriate. After incubation, inspect the plates for typical colonies and confirm their identity using appropriate techniques specified in the reference method or an alternative method validated from ISO 16140-6 from isolated colonies on XLD or selective agar.

10. PERFORMANCE VALIDATION



The InviScreen® *Salmonella* spp. Detection Kit is certified by the AOAC Research Institute under PTM #102401 for the detection of *Salmonella* spp. in raw milk (25 mL), raw ground beef 80% lean (25 g), raw ground turkey (25 g), deli turkey (25 g), cut cantaloupe (25 g), and liquid pasteurized egg (25 mL). A positive result with the InviScreen® *Salmonella* spp. Detection Kit is presumed to be positive and confirmation according to an appropriate reference method is recommended. All sample types were validated on Bio-Rad CFX96 Deep Well PCR and Applied Biosystems QuantStudio 5 RT PCR System (0.1 mL, 96-well block).



The InviScreen® *Salmonella* spp. Detection Kit is certified by the MICROVAL NEN as an alternative to the reference method ISO 6579-1:2017 for the detection of *Salmonella* spp. in a broad range of foods including Heat-processed and Raw Milk and Dairy Products (25 mL), Raw and RTE Meat Products (25 g), Raw Poultry Products (25 g), RTE/RTRH Poultry Products (25 g), Fresh Produce and Fruits (25 g), Eggs and Egg Products (25 mL), Animal Food and Feed (25 g) and Environmental Samples (25 g and surface sampling). The validation protocol followed the ISO 16140-2: 2016 standard and included the use of Bio-Rad CFX96 Deep Well PCR, Applied Biosystems QuantStudio 5 RT PCR System (0.1 mL, 96-well block) and Bio-Rad CFX Opus Deep Well*.

*The validation for Bio-Rad CFX Opus Deep Well includes categories Animal Food and Feed and Environmental Samples.

ANNEX A | REAL-TIME PCR MIX CALCULATION GUIDE

To find the correct volumes to use when preparing the PCR mix, add the total number of samples and controls to be analysed and find the corresponding volumes of master mix and primer/probe mix in the table.

NUMBER OF REACTIONS	qPCR MASTER MIX (µl)	PRIMER/PROBE MIX (µl)	FINAL VOLUME (µl)
1	10	10	20
2	20	20	40
3	30	30	60
4	40	40	80
5	50	50	100
6	60	60	120
7	70	70	140
8	80	80	160
9	90	90	180
10	100	100	200
11	110	110	220
12	120	120	240
13	130	130	260
14	140	140	280
15	150	150	300
16	160	160	320
17	170	170	340
18	180	180	360
19	190	190	380
20	200	200	400
21	210	210	420
22	220	220	440
23	230	230	460
24	240	240	480
25	250	250	500
26	260	260	520
27	270	270	540
28	280	280	560
29	290	290	580
30	300	300	600
31	310	310	620
32	320	320	640
33	330	330	660
34	340	340	680
35	350	350	700
36	360	360	720
37	370	370	740
38	380	380	760
39	390	390	780
40	400	400	800
41	410	410	820
42	420	420	840
43	430	430	860
44	440	440	880
45	450	450	900
46	460	460	920
47	470	470	940
48	480	480	960

ANNEX B | TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	RECOMMENDATION
Low amount of nucleic acids	Bacterial pellet lost	Avoid disturbing the pellet when removing the supernatant.
	Incorrect storage of starting material	Ensure that starting material is appropriately stored. Avoid repeated thaw-freeze cycles of the sample material.
Degraded nucleic acids	Incorrect storage of starting material	Ensure the sample is taken and stored correctly.
	Old material	Ensure the sample is taken and stored correctly.
Nucleic acids do not perform well in downstream applications (e.g. PCR)	Inhibition	Dilute eluate in PCR grade water (e.g., 1:2 or 1:10).
	Carryover of sample pellet	When transferring the eluate to a fresh tube, strictly avoid transferring any pelleted material from the bottom of the tube.
A poor signal obtained for IAC	Inhibition	Dilute eluate 1:2 and/or 1:10 in PCR grade water.
Incomplete amplification curves	Low amount of DNA template	Repeat the Real-Time PCR for result confirmation.



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