MicroVal Study 2017LR69: Quantitative Method

Renewal Validation of the Peel Plate EB (*Enterobacteriaceae*), for the Enumeration of *Enterobacteriaceae* in Select Categories Following ISO 16140-2:2016 in a Harmonized Study

Version 2
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The report is prepared in accordance with ISO 16140-2:2016 and MicroVal Technical Committee interpretation of ISO 16140-2, version 2.5 and the Guidance on the transition from ISO 16140 (2003) to ISO 16140-2 (2016).

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Method/Kit name: Peel Plate® EB

Validation standard: ISO 16140-2: 2016 Microbiology of food chain – Method Validation – Part 2: Protocol for the validation of alternative (proprietary) methods against a reference method.

Reference methods:

ISO 21528-1:2017 Microbiology of the food chain – Horizontal method for detection and enumeration of *Enterobacteriaceae* – Part 1: Detection of *Enterobacteriaceae*

ISO 21528-2:2017 Microbiology of the food chain – Horzontal method for detection and enumeration of *Enterobacteriaceae* – Part 2: Colony-count technique

Scope of validation: Heat Processed Milk and Dairy Products, Infant Formula and Infant Cereal

Certification organization: Lloyd's Register

List of abbreviations

- AL Acceptability Limit
- AP Accuracy Profile
- Art. Cont. Artificial contamination
- CFU Colony Forming Units
- CL confidence limit (usually 95%)
- EL Expert Laboratory
- $\bar{d}$ Average difference
- g Gram
- h Hour
- ILS Interlaboratory Study
- Incl/Excl Inclusivity and Exclusivity
- MCS Method Comparison Study
- min minute

- ml Millilitre
- MR (MicroVal) Method Reviewer
- MVTC MicroVal Technical Committee
- n number of samples
- na not applicable
- RT Relative Trueness
- SD standard deviation of differences
- 10^{-1} dilution 10-fold dilution of original food
- 10^{-2} dilution 100-fold dilution of original food
- BPW Buffered Peptone Water
- PSD Peptone Salt Diluent
- VRBG Violet Red Bile Glucose agar
- GA Glucose Agar
- NA Nutrient Agar
- TNTC Too numerous to count

Table of Contents

1 Introduction

This project, is a MicroVal renewal study for the Charm Peel Plate *Enterobacteriaceae* (Peel Plate EB) method. The original data was validated according to ISO 16140-2:2016 for the enumeration of *Enterobacteriaceae* in 2 different (food) categories. The data from the original study was reanalyzed according to the statistical guidlines outlined in ISO 16140-2:2016 to dermine if the acceptance criteria was met.

Below is a summary of the Peel Plate EB method.

For each food type, 25 g test portions were diluted at a 1:10 ratio using 0.1% PSD, except for infant cereal, which was evaluated at a 1:50 ratio using 0.1% PSD. For the low level only, BPW (ISO) was used as the diluent to pair samples with ISO 21528-1. See Annex A – E for flow charts and kit inserts of the methods. Paired 25 g test portions were evaluated for the alternative and reference methods for all food types in the scope.

1.1. After dilution, 1.0 ml of sample was dispensed onto the Peel Plate (for infant cereal, 5.0 ml was spread across 5 Peel Plates or a single High Volume (HV) EB Plate). Plates were incubated at 37 ± 1ºC. All colonies were enumerated at both 24 and 48 hours.
1.2. For the purposes of the MicroVal Validation, all colonies were confirmed as EB by direct streak to NA followed by incubation at 24 ± 2 hours at 37 ± 1 ºC. Colonies were then evaluated for oxidase reaction and glucose fermentation.

Reference method: ISO 21528-1:2017 for low levels of contamination (<100 CFU/g or ml) and ISO 21528-2:2017 or medium to high levels of contamination (>100 CFU/g or ml).

Scope of the validation study is: Select food matrices.

Samples were prepared in accordance with ISO 6887: parts1, 4, and 5

Categories included:

(Original Categories) validated according to ISO 16140-2:2016

- Heat Processed Milk and Dairy Products
- Infant Formula and Infant Cereals

Criteria evaluated during the study:

- Method Comparison Study (MCS) : Reanalyzed according to revised standard, ISO 16140-2:2016
    - Relative Trueness: ISO 16140-2:2016

- Accuracy Profile Study: ISO 16140-2:2016

- Interlaboratory Study (ILS) : Reanalyzed according to revised standard, ISO 16140-2:2016
  - Specificity
  - Sensitivity
  - Relative trueness
  - False positive ratio

- Inclusivity and Exclusivity

2 Method Protocols

The Method Comparison Study for the original vaidation (MicroVal 2017LR69) was carried out using 25 gram test portions of sample material for all food matrices. In both the trueness and accuracy studies, the Peel Plate EB method was evaluated after both 24 and 48 hours of incubation. Data from these studies was reanalyzed statistically to ensure acceptance criteria for the ISO 16140-2:2016 standard were met.

2.1 Reference Method

See the flow diagram in **Annex A** and **B**.

Sample preparations used in the reference method and PeelPlate EB were conducted according to ISO 6887 (parts 1, 4 and 5), ISO 21528-1:2017 (low levels of contamination; <100 CFU/g or mL) and 21528-2:2017 (medium to high levels of contamination; >100 CFU/g or mL) for infant formula and infant cereal and heat processed dairy and milk products. Test portions analyzed by the reference method were 25 g.

2.2 Alternative method

See the Peel Plate EB method kit insert in **Annex C** and the Peel Plate EB High Volume (EBHV) method kit insert in **Annex D**.

The Peel Plate EB test is based on bile salt selective agar, glucose, and multiple colorimetric enzyme substrates to support growth and colorimetrically identify the growth of the family of *Enterobacteriaceae* bacteria. The media also contains gelling and wicking agents which absorb and diffuse the sample and is intended for use with infant formula, infant cereals, and heat processed dairy and milk products.

The food samples are prepared using 25 g test portions with 0.1% PSD as the diluent. Results are available in 24-48 hours.

2.3 Study design

For all test portions, the reference and the alternative method shared the same diluent, PSD or BPW (ISO). All resulting data was treated as **paired** data (EN-ISO 16140-2:2016).

3 Methods Comparison Study

3.1 Sample Preparation

For the Method Comparison Study of the original validation (MicroVal 2017LR69) was carried out using 25 gram test portions. The samples were prepared for analysis and diluted in accordance with ISO 6887 (parts 1, 4 and 5). A 1:10 dilution was performed for all food types except infant cereals, which was evaluted using a 1:50 dilution. All analysis were conducted using paired samples. The Method Comparison Study consisted of a Relative Trueness Study and Accuracy Profile Study

The results of the Method Comparison Study of the original validation (MicroVal 2017LR69) were reanalyzed following the statistical parameters of ISO 16140-2:2016.

3.2 Relative Trueness Study

A total of 2 categories were included in the original study. Three types were evaluated within each category. Within each type, a minimum of 5 samples that covered a representative variety of products within that type were evaluated. A minimum of 15 items producing interpretable results for each category were required.

The selected types per category tested are listed in **Table 1** below

Table 1. List of Categories and Types of Items Tested Within The Trueness Study.

Category	Types	Total Number of Samples Evaluated[1]	Total Number of Positive Samples
Heat Processed	Pasteurized dairy products	11	5

Milk and Dairy Products	(milk, butter, etc.)		
	Pasteurized milk based products (ice creams, milk based desserts)	12	5
	Milk Powders	13	5
Infant Formula and Infant Cereals	Probiotic Infant Formula	12	5
	Non-Probiotic Infant Formula	15	5
	Non-Probiotic Infant Cereal	12	5

[1]Total Number of samples evaluted to obtain 5 positive replicates

3.2.1 Test sample preparation

All samples combined covered a wide range of target contamination that could be observed in the food items (10 CFU/g to 10^5 CFU/g). Samples were evaluated for natural contamination of the target organisms. A natural contamination rate of 20% was obtained for total samples evaluated. For positive samples used in the evaluation, 50% were obtained from natural contaminated samples.

In case where natural contamination was not found, artificial contamination was required.The inoculation of samples was at the range usually associated with the test organisms and within the capabilities of the test methods. Enumeration methods covered the range 10^1 CFU/g to 10^5 CFU/g.The following seeding protocols were utilized to inoculate food items:

1.1. Overnight cultures of *Enterobacteriaceae* were inoculated at the target contamination level into the food matrix and then stored under relevant conditions for the food matrix being analyzed prior to analysis:

1.1.1. For refrigerated products, samples were stored at 5 ± 3°C for 48 - 72 hours.

1.1.2. For shelf stable products, samples were stored at room temperature (20 - 25°C) for a minimum of 2 weeks.

1.2. For infant formula and infant cereals the *Enterobacteriaceae* isolates used to inoculate were lyophilized prior to inoculation. The cultures were propagated onto Tryptic Soy Agar with 5% Sheep Blood (SBA) from a Q Laboratories frozen stock culture stored at -70°C. To prepare the culture for lyophilization, a single, well isolated colony from SBA was transferred into brain heart infusion (BHI) broth and incubated at 37 ± 2 ºC for 18-24 hours. The culture was diluted in a sterile cryoprotectant, reconstituted 10% non-fat dry milk (NFDM), and freeze dried for 48-72 hours. A bulk lot of the test matrix was inoculated with the culture at the target contamination levels. After inoculation, the matrix was held for a minimum of 2 weeks at ambient temperature (20 - 25ºC).

A list of strains that were used for artificial inoculations are presented in **Table 2**. These cultures originated from comparable sample types as the ones to be inoculated.

Table 2. List of Inoculation Organisms for the RelativeTrueness Study

Organism	Source	Origin
Citrobacter freundii	QL 100813-2A	Sliced Deli Turkey Meat
Cronobacter condimenti	DSM 27966	Infant Formula
Enterobacter amnigenus	ATCC 51816	Milk, Minnesota
Escherichia coli	QL 11010-2	Bottled Water
Hafnia alvei	ATCC 51815	Milk, Minnesota
Klebsiella pneumonia	QL 11007-7	Meat
Salmonella Newport	ATCC 6962	Food Poisoning Fatality
Serratia marcescens	ATCC 8100	Milk, Cork Ireland

3.2.2 Calculations and Interpretation

All results from the original study (MicroVal 2017LR69) were reanalyzed according to ISO 16140-2:2016. The data for each food item per category and all food items in all categories were plotted. The line of identity was drawn (y=x) . The data obtained was analyzed using the scatter plot and the line of identity. **Figures 1A** through **1F** below display a summary of the data. The raw data from the relative trueness study are presented in **Annex G** and the results and calculations are presented in **Annex H**.

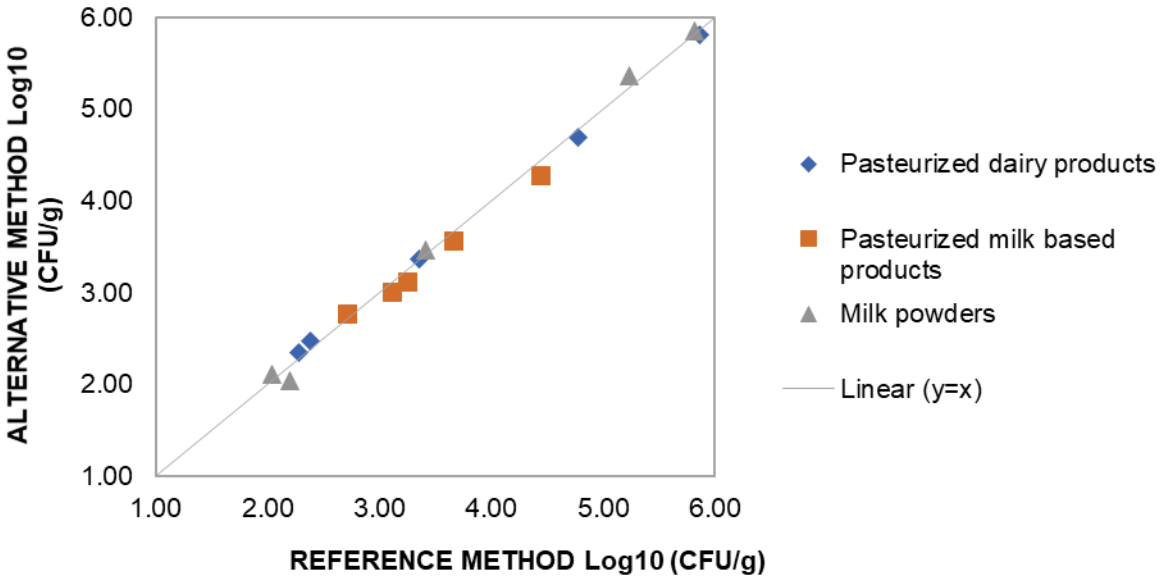


Figure 1A: Heat Processed Milk and Dairy Products – 24 Hr Read

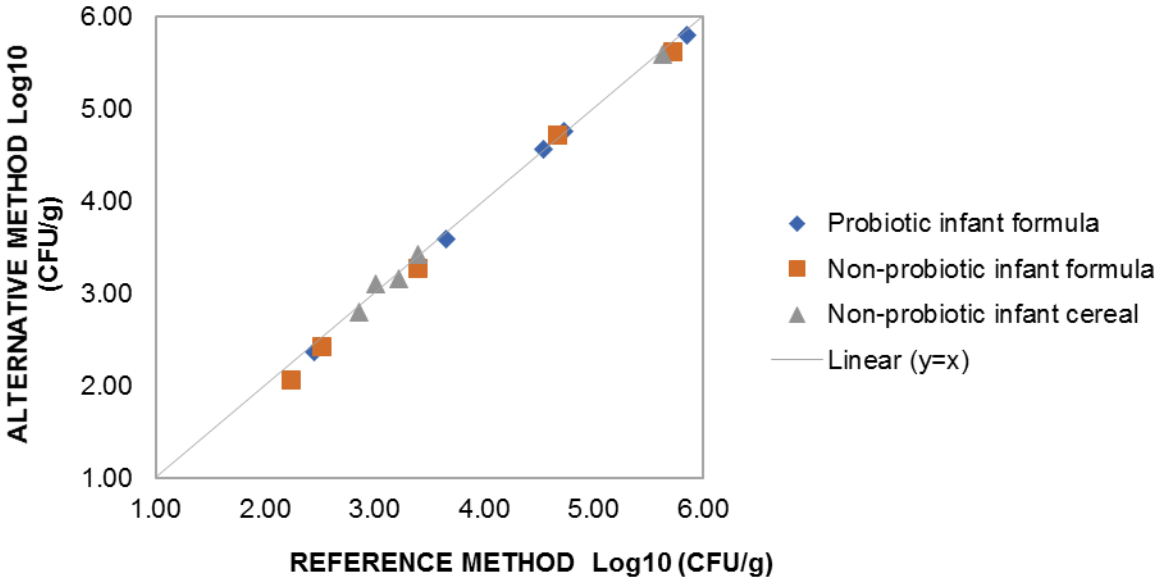


Figure 1B: Infant Formula and Infant Cereals – 24 Hr Read

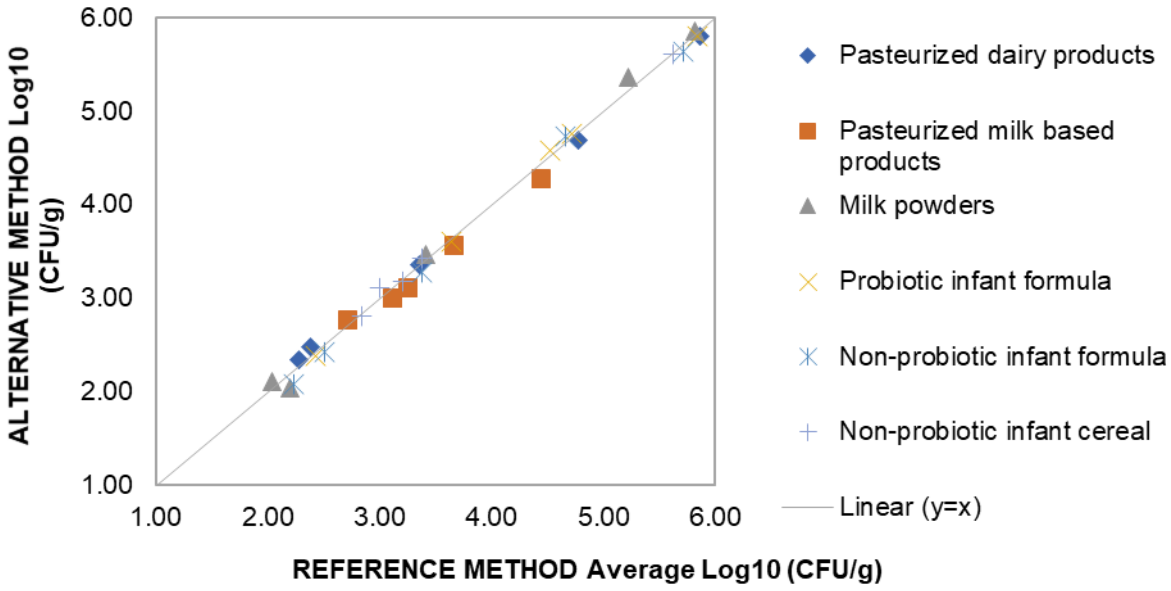


Figure 1C: Both Categories– 24 Hr Read

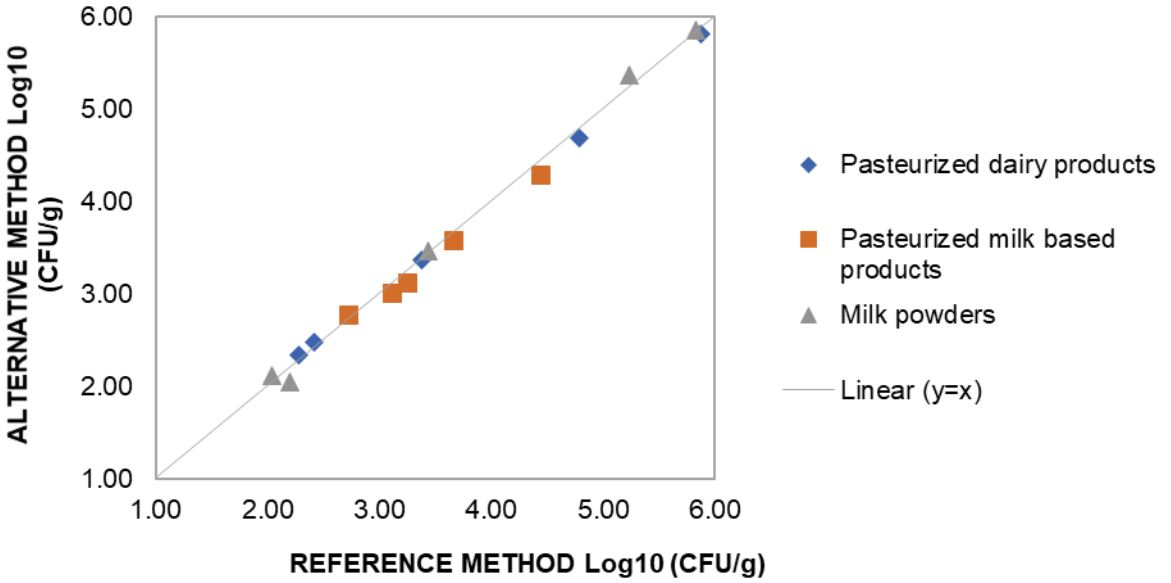


Figure 1D: Heat Processed Milk and Dairy Products – 48 Hr Read

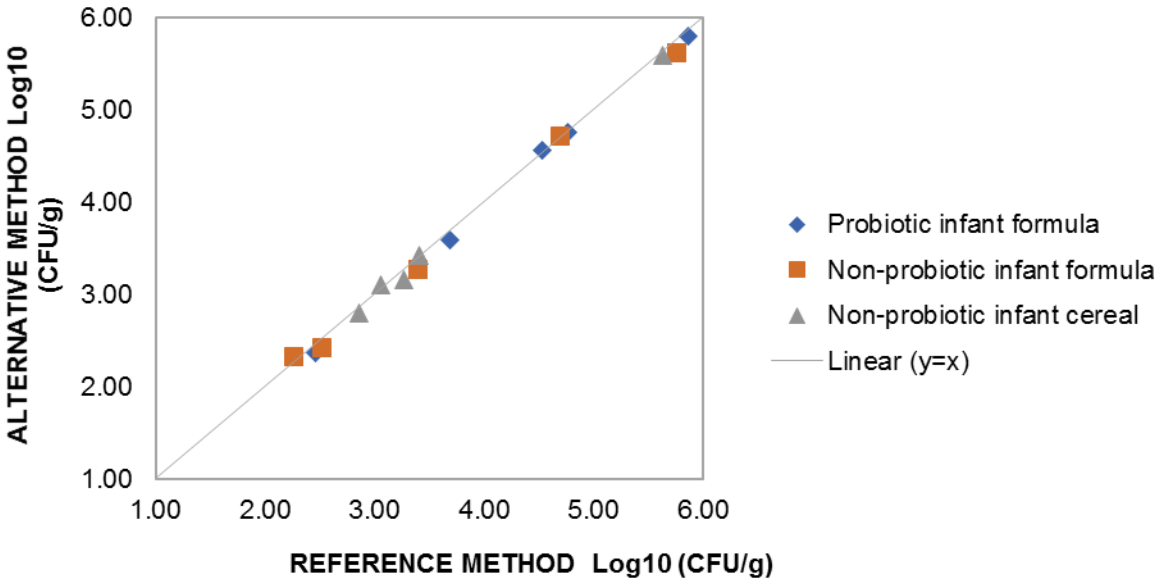


Figure 1E: Infant Formula and Infant Cereals – 48 Hr Read

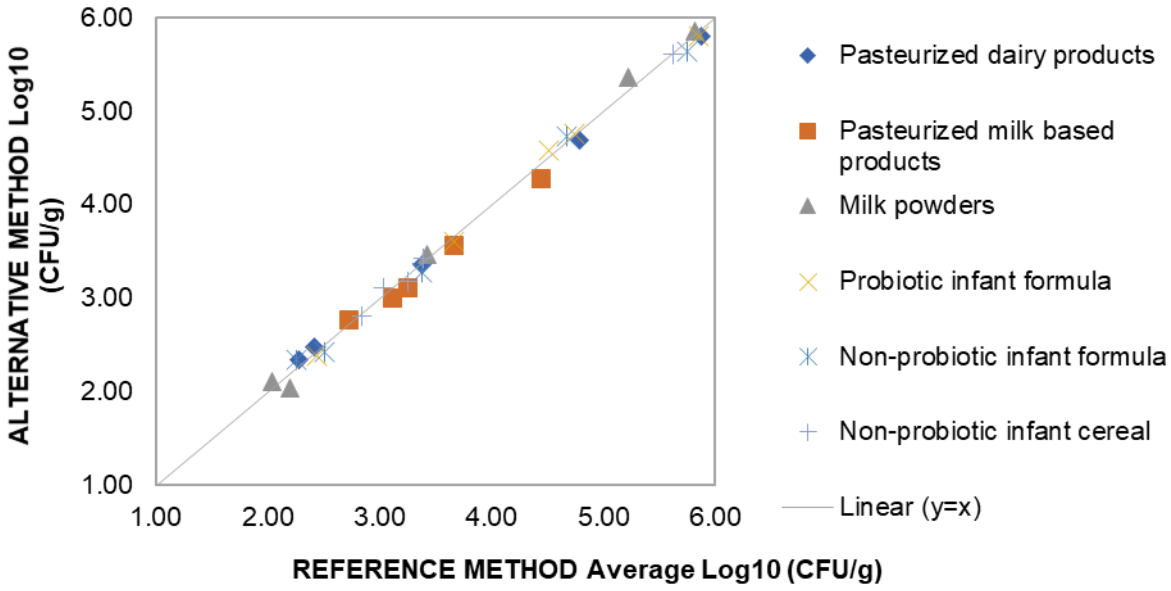


Figure 1F: Both Categories – 48 Hr Read

According to ISO 16140-2:2016, section 6.1.2.3, the results of the scatter plots and the line of identity were interpreted based on a visual observation on the amount of bias and extreme results. The data appears to be acceptable per category and as a whole.

The obtained results were reanalyzed using the Bland-Altman method as detailed in section 6.1.2.3 in ISO 16140-2:2016. The results of the difference and scatter plot were interpreted, based on a visual observation on the amount of bias and extreme results. It was expected that not more than 1 in 20 data values would lie outside the confidence limits. Any disagreements with the expectation were recorded.

The symbols used ensure the different types of product in each category are clearly identified. The average of each pair of data values and the difference between these values were calculated for each sample and for each category. The calculated differences and confidence limits are provided in **Table 3**. The Band-Altman plots are provided in **Figure 2A** through **2F** below.

Table 3. Summary of the Calculated Differences and Confidence Limits

Food Category	Time Point	n	$\overline{D}$	s_D	95% Lower Limit	95% Upper Limit
Heat Processed Milk and Dairy Products	24 Hour Read	15	-0.0222	0.1011	-0.2392	0.1947
Infant Formula and Infant Cereals		15	-0.2000	0.0715	-0.1733	0.1333
Both Categories		30	-0.0211	0.0861	-0.1971	0.1549
Heat Processed Milk and Dairy Products	48 Hour Read	15	-0.0301	0.0975	-0.2392	0.1789
Infant Formula and Infant Cereals		15	-0.0195	0.0667	-0.1624	0.1235
Both Categories		30	-0.0248	0.0822	-0.1929	0.1434

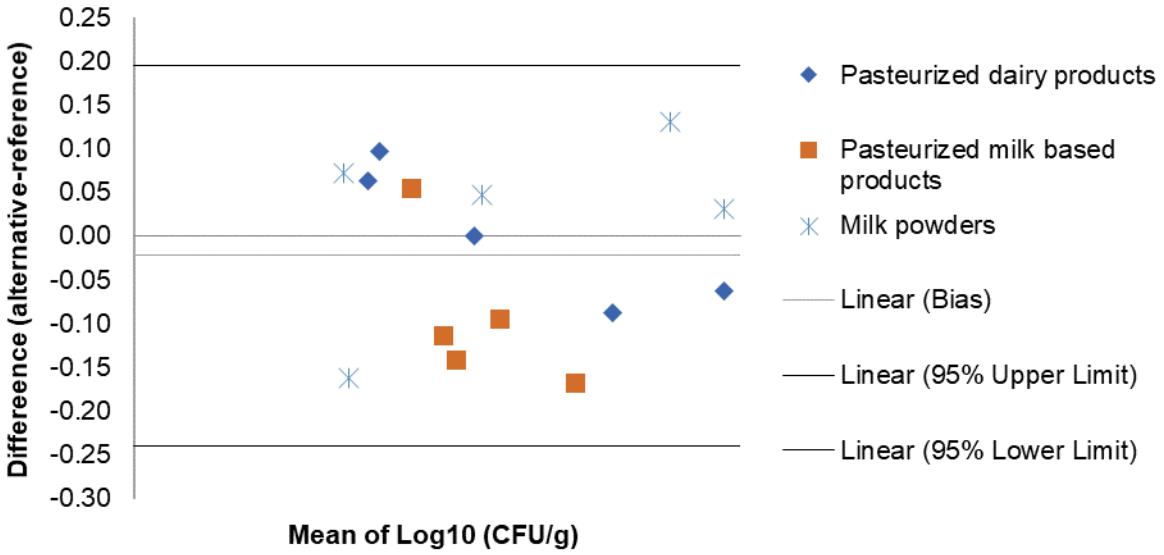


Figure 2A: Bland-Altman Plot for Heat Processed Milk and Dairy Products – 24 Hr Read

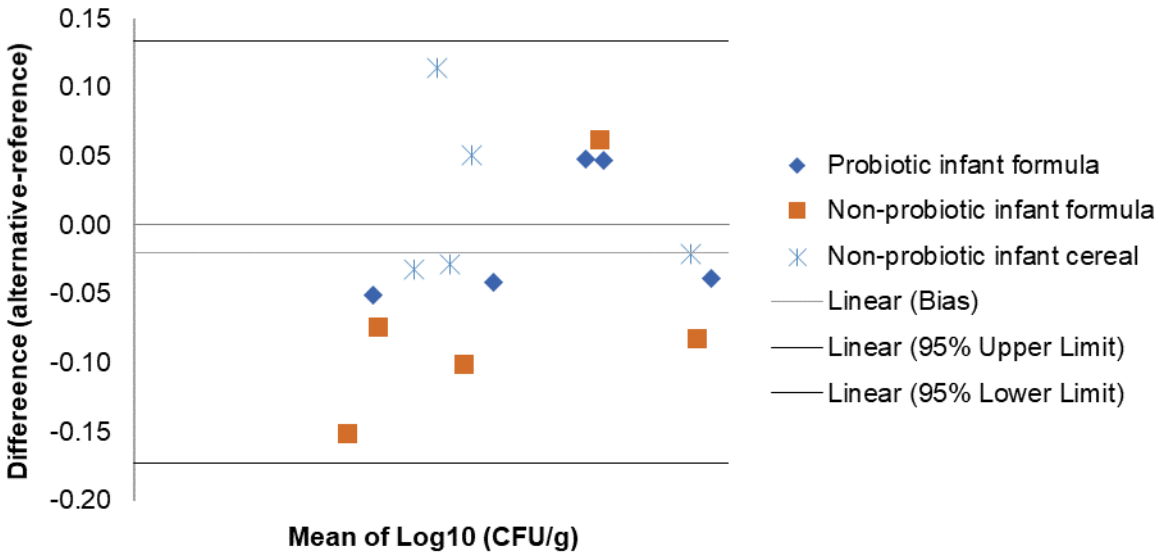


Figure 2B: Bland-Altman Plot for Infant Formula and Infant Cereals – 24 Hr Read

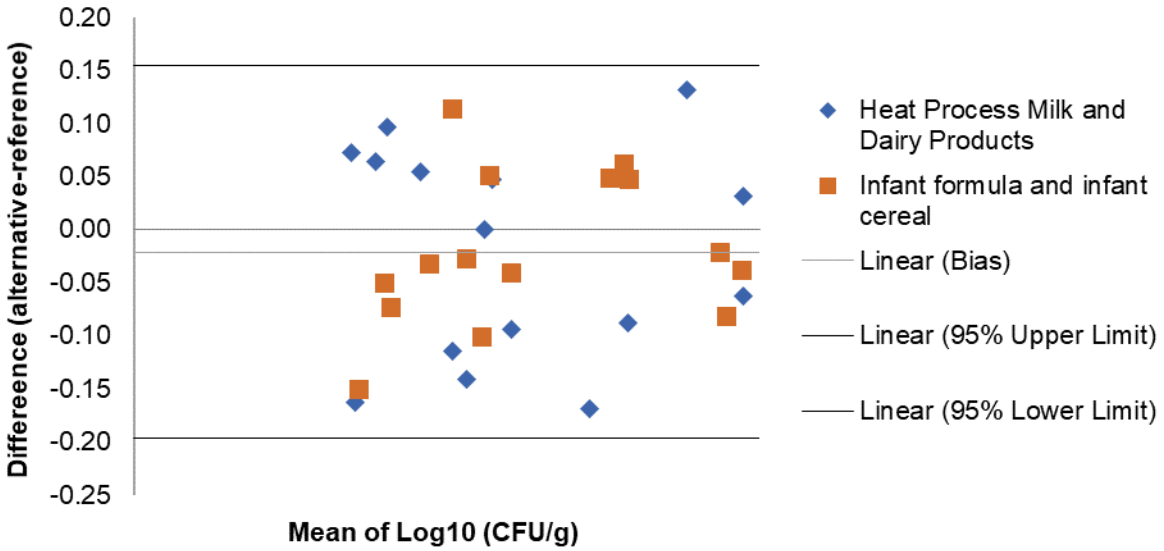


Figure 2C: Bland-Altman Plot for Both Categories – 24 Hr Read

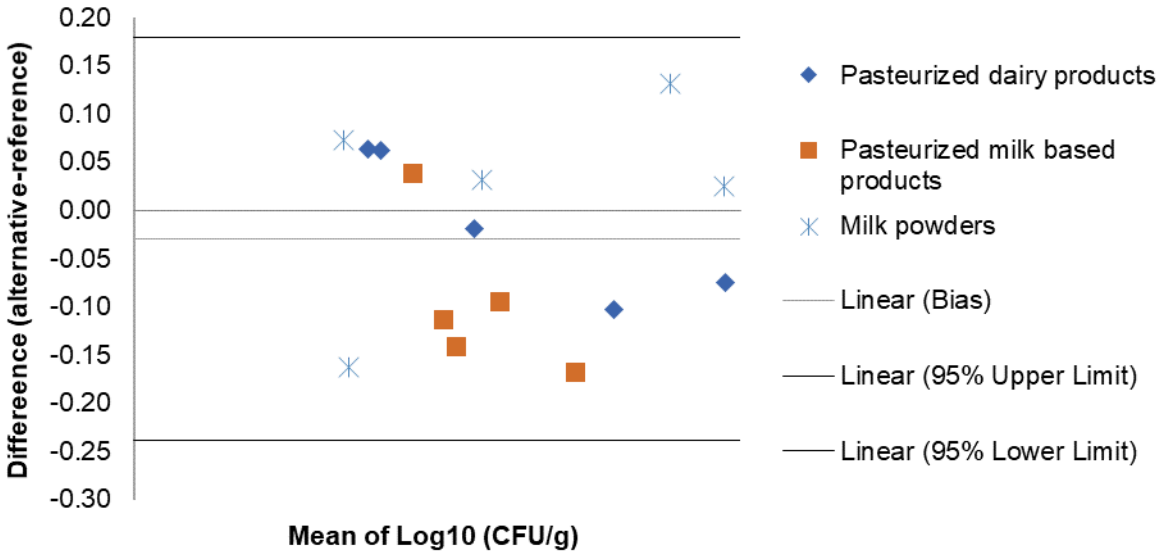


Figure 2D: Bland-Altman Plot for Heat Processed Milk and Dairy Products – 48 Hr Read

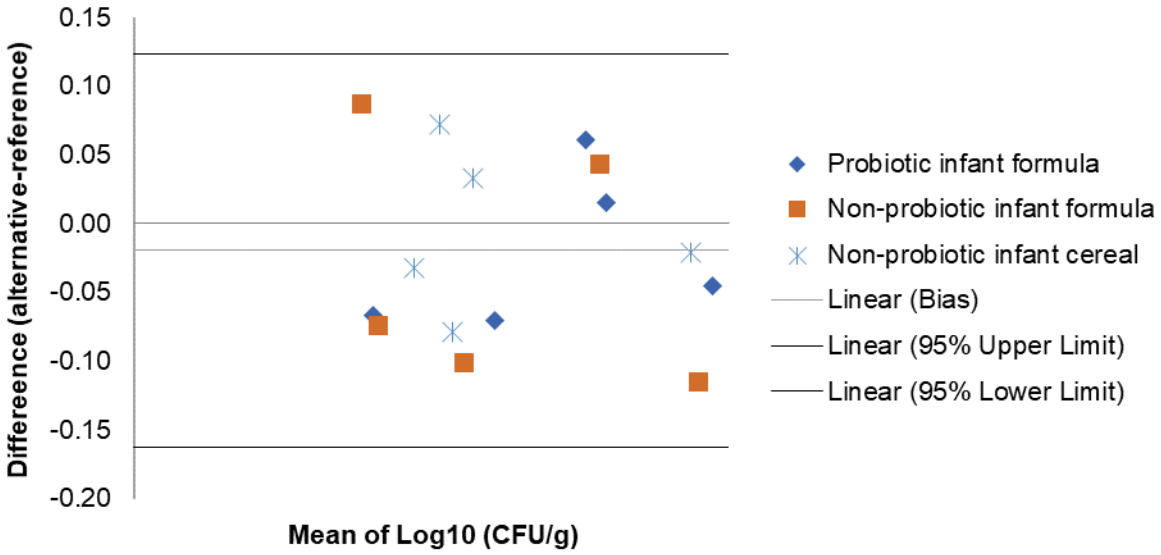


Figure 2E: Bland-Altman Plot for Infant Formula and Infant Cereals – 48 Hr Read

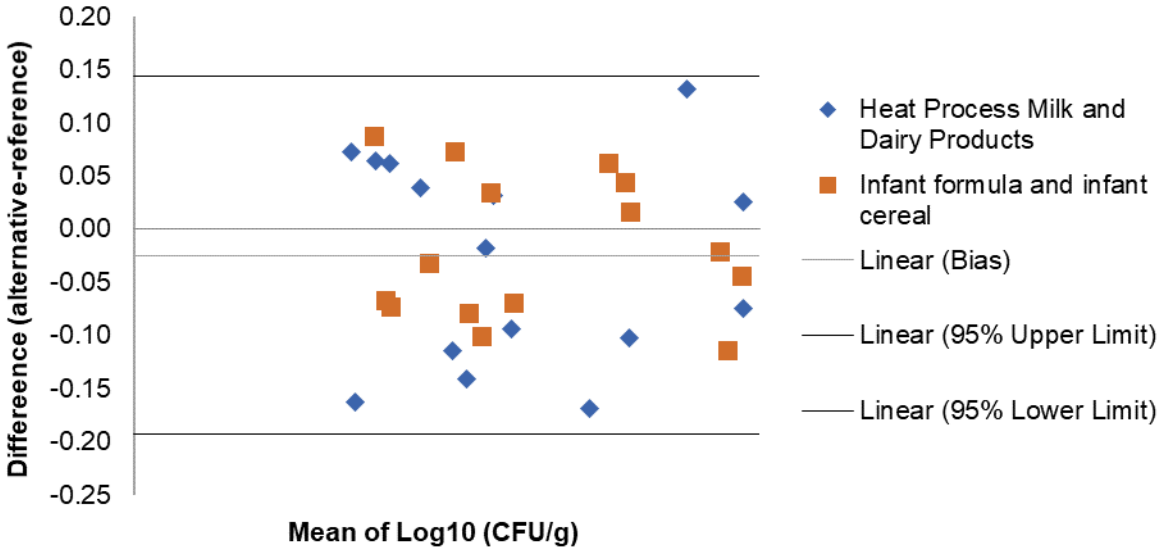


Figure 2F: Bland-Altman Polot for Both Categories – 48 Hr Read

3.2.3 Conclusion of the Relative Trueness Study

Based on the data obtained in the evaluation, the relative trueness study of the alternative method is considered equivalent to the reference methods.

3.3 Accuracy Profile Study

The accuracy profile study is a comparative study between the results obtained by the reference method and the results of the alternative method. A total of two categories were included in the original study (MicroVal 2017LR69). For each category examined, 2 food types were tested at three levels of contamination (low, medium and high). The levels were designed to cover the entire range of contamination of the selected food type.The study was conducted using artificially contaminated samples.

Test portions from the low contamination level were evaluated following ISO 21528-1. Test portions from the medium and high contamination levels were evaluated following ISO 21528-2.

The categories types and strains used are summarized in **Table 4** below.

Table 4: Summary of Categories, Types, Items, Strains and Inoculation Level for the Accuracy Study

Food Category	Food Type	Food Item	Replicates/ Test Portion Size	Inoculating Organism (Culture Conditions)	Achieved Contamination Levels
Heat Processed Milk and Dairy Products	Pasteurized Milk Based Products	3.25% Pasteurized Whole Milk	5 x 25g	*Enterobacter amnigenus* ATCC 51816 (Heat Stressed)	10-100 CFU/ml
			5 x 25g		100-5,000 CFU/ml
			5 x 25g		5,000-100,000 CFU/ml
	Dry Milk Powder	Milk Powder	5 x 25g	*Hafnia alvei* ATCC 51815 (Lyophilized)	10-100 CFU/ml
			5 x 25g		100-5,000 CFU/ml
			5 x 25g		5,000-100,000 CFU/ml
Infant Formula and Infant Cereals	Infant Formula (milk based) with Probiotics	Infant Formula with Probiotics	5 x 25g	*Cronobacter sakazakii* CCUG 28863 (Lyophilized)	10-100 CFU/ml
			5 x 25g		100-5,000 CFU/ml
			5 x 25g		5,000-100,000 CFU/ml
	Infant Cereal with Probiotics	Infant Cereal with Probiotics	5 x 25g	*Escherichia coli* ATCC 25922 (Lyophilized)	10-100 CFU/ml
			5 x 25g		100-5,000 CFU/ml
			5 x 25g		5,000-100,000 CFU/ml

3.3.1 Test sample preparation

For each contamination level, a bulk lot was inoculated and blended in large sterile stainless steel containers. Sterile spatulas were used to mix the bulk portions to ensure the inoculum was evenly distributed throughout the matrix. Each bulk lot was split into two, and five (5) replicate test portions were evaluated from each bulk lot. From each contamination level a total of 10 replicates are reported. Each matrix was artificially contaminated with a different *Enterobacteriaceae* strain.

For 3.25% pasteurized whole milk,the inoculum was prepared by transferring a single colony from SBA into BHI broth and incubating the culture at 35 ± 2ºC for 24 ± 2 hours. Following incubation, the culture was diluted to a target level using BHI as the diluent. The broth culture inoculum was heat stressed in a waterbath for 10 ± 1 minute at 50 ± 1°C. The degree of injury was estimated by plating an aliquot of diluted culture onto Violet Red Bile (VRB) agar and NA. The agars were incubated at 35 ± 1°C for 24 ± 2 hours and the colonies enumerated. The degree of injury was estimated as

$$(1-\frac{n_{select}}{n_{nonselect}})x100$$

Where n_{select} = number of colonies on selective agar and $n_{nonselect}$ = number of colonies on non-selective agar. Following inoculation, the 3.25% pasteurized whole milk was held for 48-72 hours at refrigerated temperature (2-8ºC) prior to analysis to allow time for the organism to equilibrate within the sample.

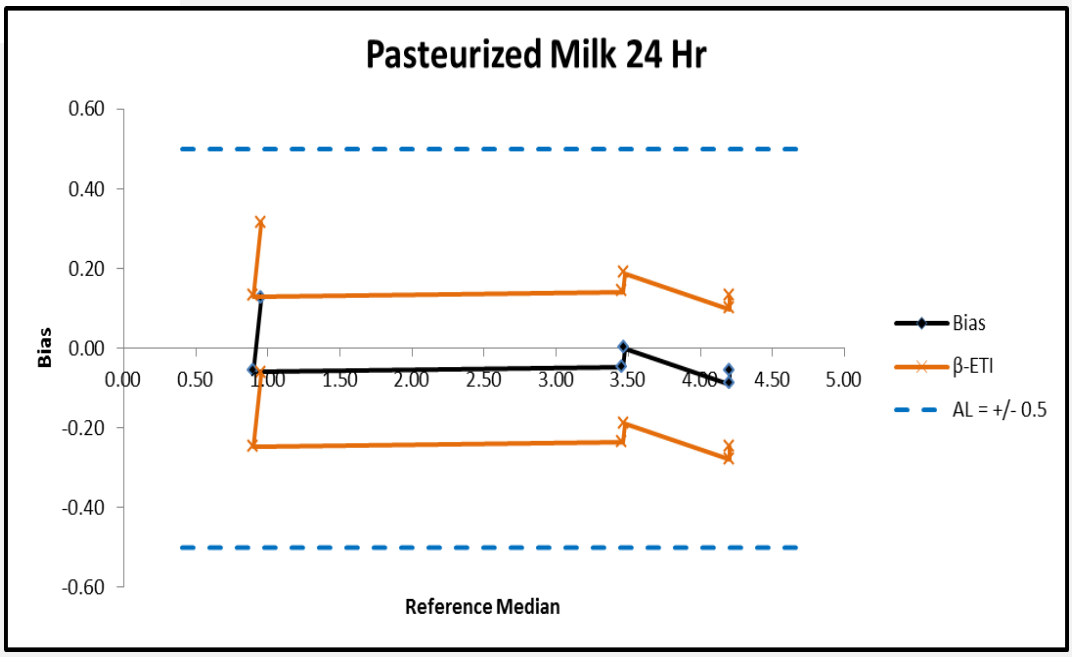
For non-fat dry milk powder, infant formula with probiotic and infant cereal with probiotic a lyophilized inoculum was used. A single well isolated colony from SBA was transferred into BHI broth and incubated at 37 ± 2 ºC for 18-24 hours. The culture was diluted to a target level in a sterile cryoprotectant, reconstituted 10% NFDM, and freeze dried for 48-72 hours. After inoculation, the matrix was held for a minimum of 2 weeks at ambient temperature (20 - 25ºC).

3.3.2 Calculation and Data Interpretation

The accuracy profile is used to check the requirement that the alternative method produces a result for a sample that differs from the value produced by the reference method by less than a certain acceptability criterion. According to the study design, three different levels of contamination were examined.

All results from the original study (MicroVal 2017LR69) were reanalyzed according to ISO 16140-2:2016. For the Accuracy Profile calculations, the Excel® spreadsheet provided on the ISO website (http://standards.iso.org/iso/16140) was used. The raw data is provided in

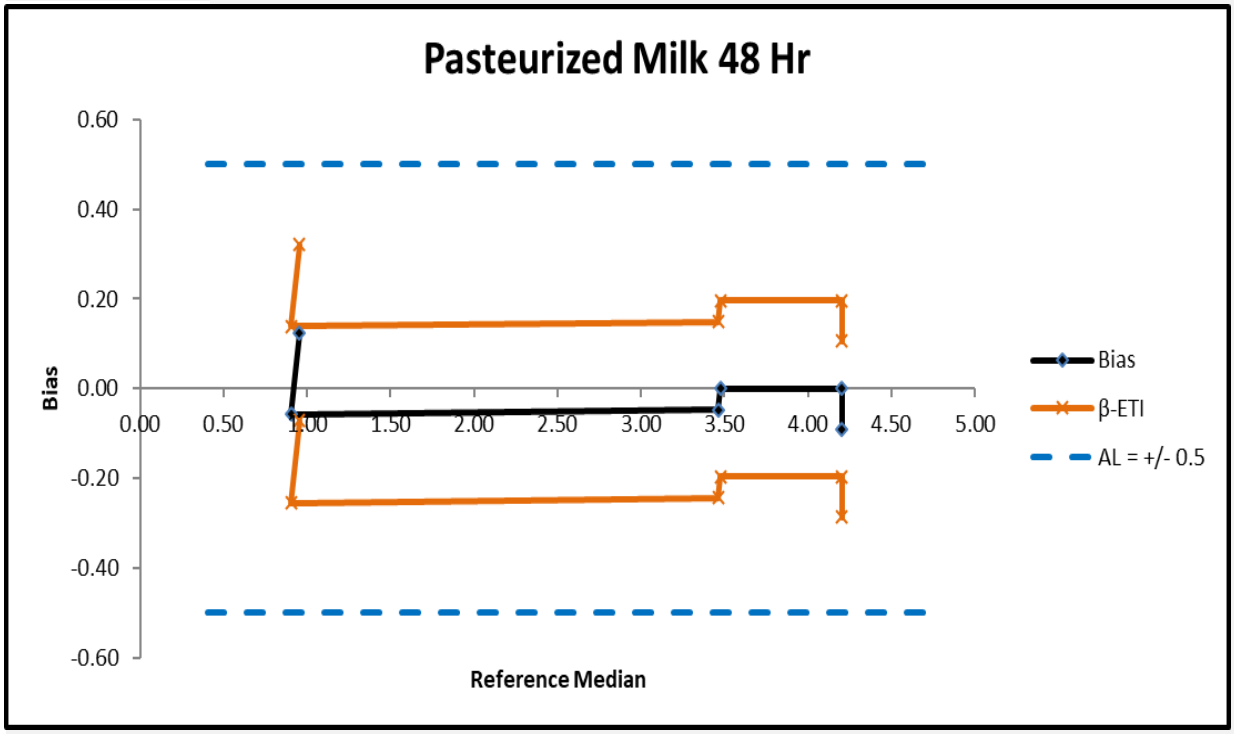
Annex I. The statistical analysis and the accuracy profiles are displayed below in **Figures 3A** through **3J**.



Sample Name	Reference central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1A	0.95	0.125	-0.064	0.314	YES	YES
1B	0.90	-0.058	-0.247	0.131	YES	YES
2A	3.46	-0.047	-0.237	0.142	YES	YES
2B	3.48	0.000	-0.189	0.189	YES	YES
3A	4.20	-0.090	-0.279	0.099	YES	YES
3B	4.20	-0.058	-0.247	0.131	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.178	0.131	NO	+/- 0.500

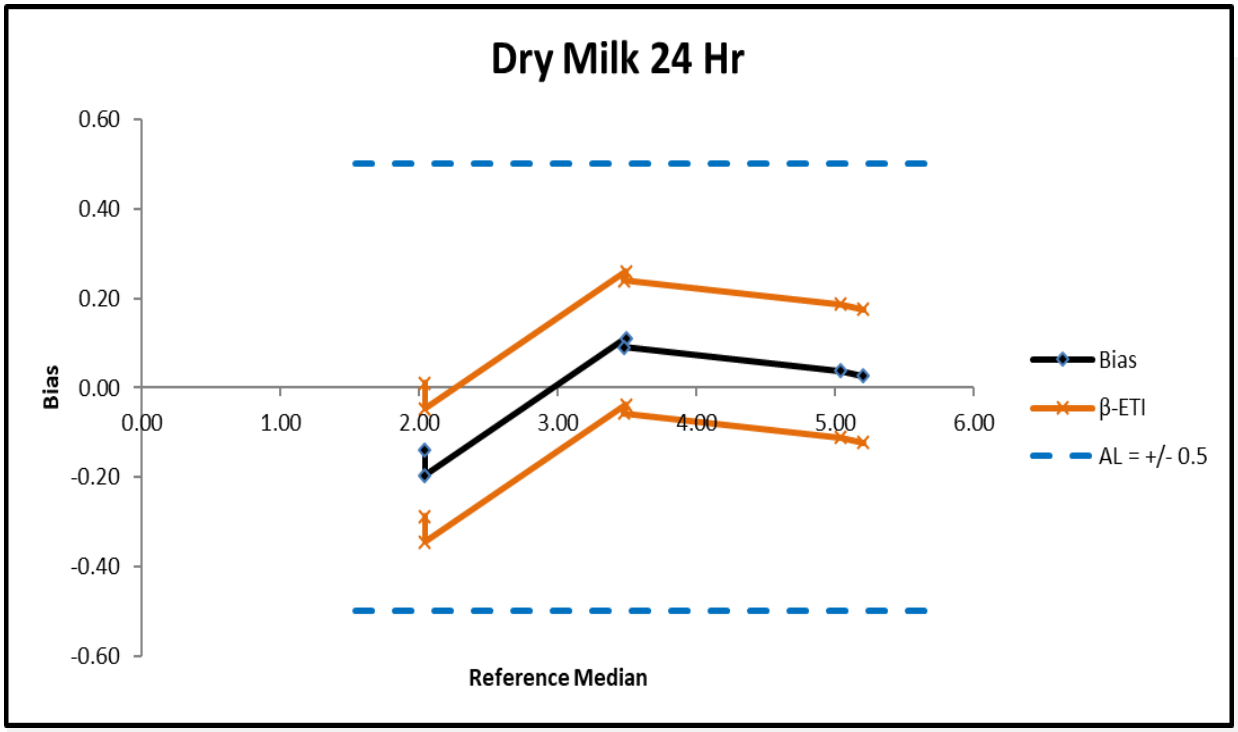
Figure 3A: Accuracy Statistical Analysis of 3.25% Pasteurized Whole Milk – Peel Plate EB (24 Hr Read)



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1A	0.95	0.125	-0.071	0.321	YES	YES
1B	0.90	-0.058	-0.254	0.138	YES	YES
2A	3.46	-0.047	-0.244	0.149	YES	YES
2B	3.48	0.000	-0.196	0.196	YES	YES
3A	4.20	0.000	-0.196	0.196	YES	YES
3B	4.20	-0.090	-0.287	0.106	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.178	0.136	NO	+/- 0.500

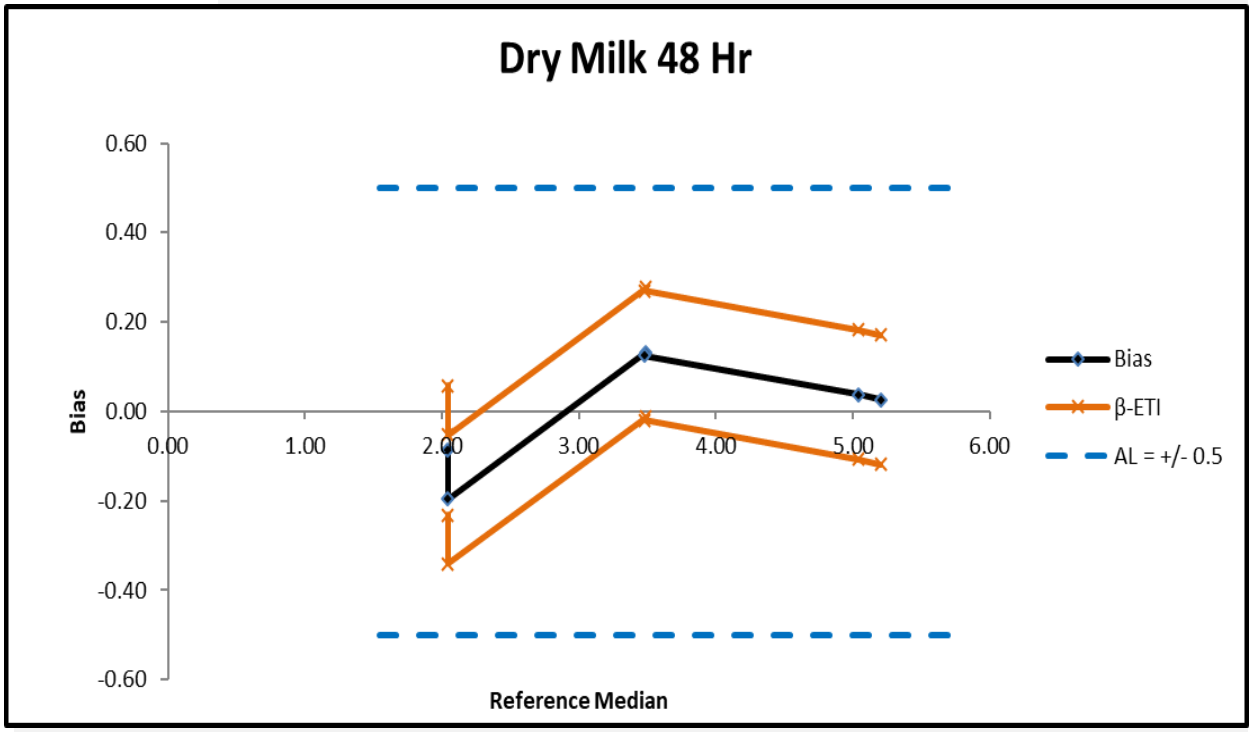
Figure 3B: Accuracy Statistical Analysis of 3.25% Pasteurized Whole Milk – Peel Plate EB (48 Hr Read)



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1A	2.04	-0.138	-0.287	0.010	YES	YES
1B	2.04	-0.196	-0.345	-0.048	YES	YES
2A	3.49	0.111	-0.038	0.259	YES	YES
2B	3.48	0.091	-0.058	0.240	YES	YES
3A	5.04	0.038	-0.111	0.186	YES	YES
3B	5.20	0.026	-0.122	0.175	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.137	0.103	NO	+/- 0.500

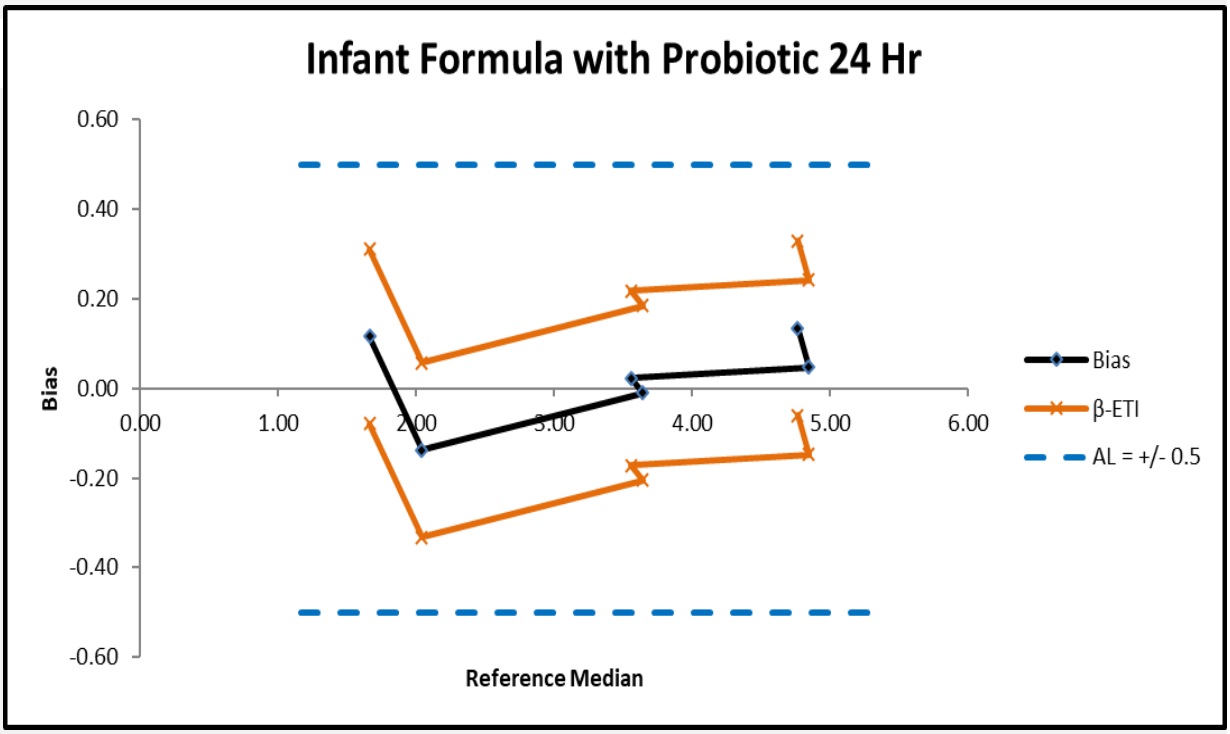
Figure 3C: Accuracy Statistical Analysis of Dry Milk Powder – Peel Plate EB (24 Hr Read)



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1A	2.04	-0.087	-0.232	0.057	YES	YES
1B	2.04	-0.196	-0.341	-0.052	YES	YES
2A	3.49	0.132	-0.012	0.276	YES	YES
2B	3.48	0.125	-0.019	0.269	YES	YES
3A	5.04	0.038	-0.107	0.182	YES	YES
3B	5.20	0.026	-0.118	0.171	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.137	0.100	NO	+/- 0.500

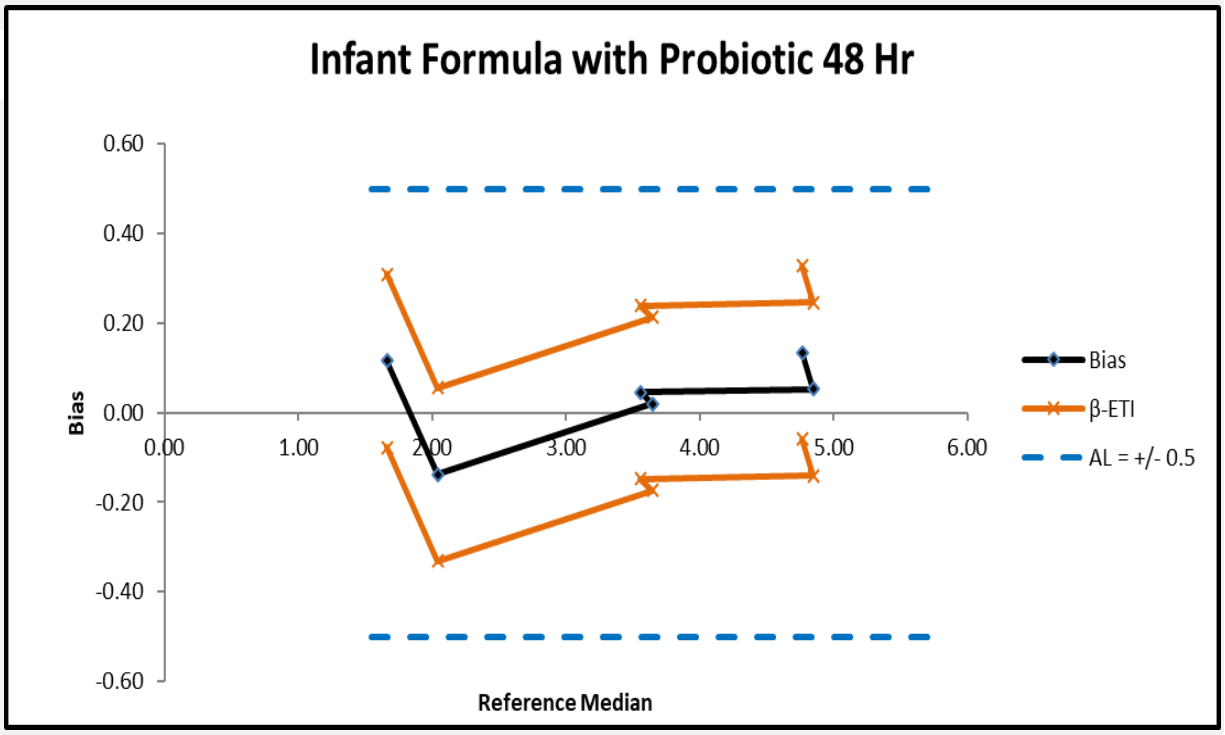
Figure 3D: Accuracy Statistical Analysis of Dry Milk Powder – Peel Plate EB (48 Hr Read)



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1A	1.66	0.115	-0.079	0.310	YES	YES
1B	2.04	-0.138	-0.333	0.057	YES	YES
2A	3.64	-0.010	-0.205	0.185	YES	YES
2B	3.56	0.023	-0.171	0.218	YES	YES
3A	4.85	0.047	-0.148	0.242	YES	YES
3B	4.76	0.134	-0.061	0.329	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.170	0.135	NO	+/- 0.500

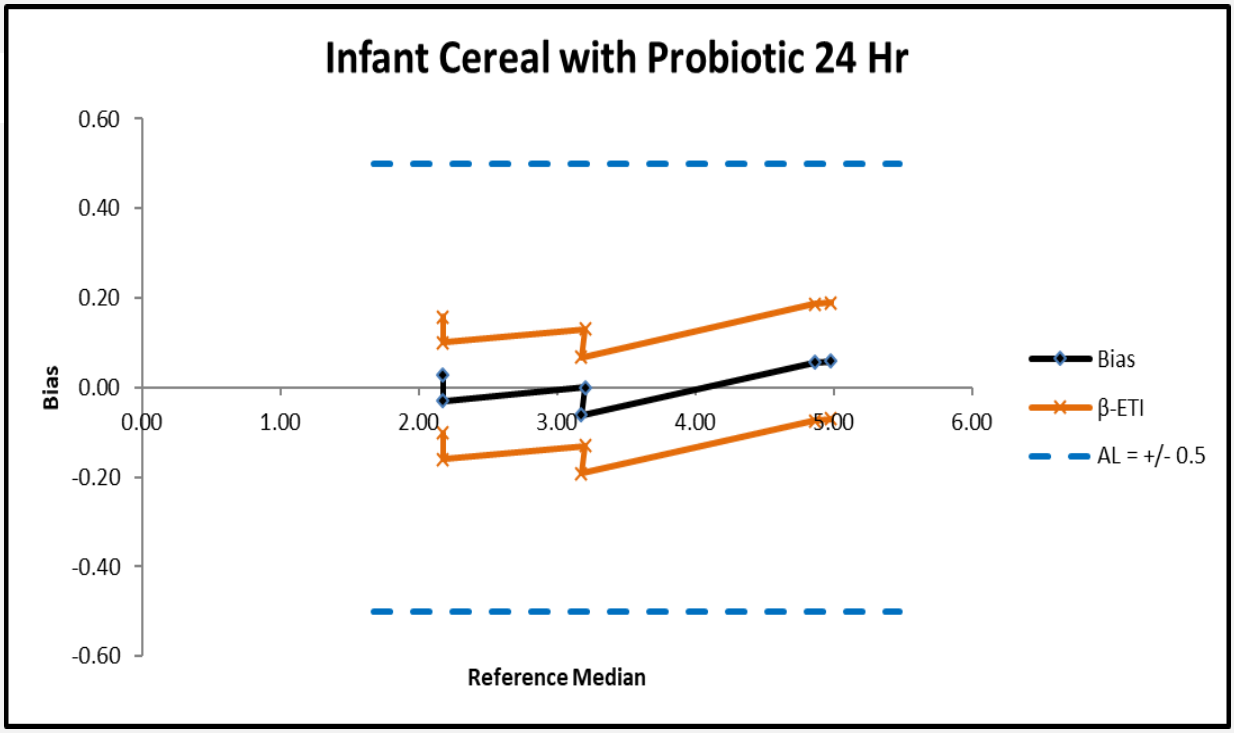
Figure 3E: Accuracy Statistical Analysis of Infant Formula with Probiotic – Peel Plate EB (24 Hr Read)



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1A	1.66	0.115	-0.078	0.309	YES	YES
1B	2.04	-0.138	-0.332	0.055	YES	YES
2A	3.64	0.019	-0.174	0.213	YES	YES
2B	3.56	0.046	-0.148	0.239	YES	YES
3A	4.85	0.053	-0.141	0.246	YES	YES
3B	4.76	0.134	-0.059	0.328	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.170	0.134	NO	+/- 0.500

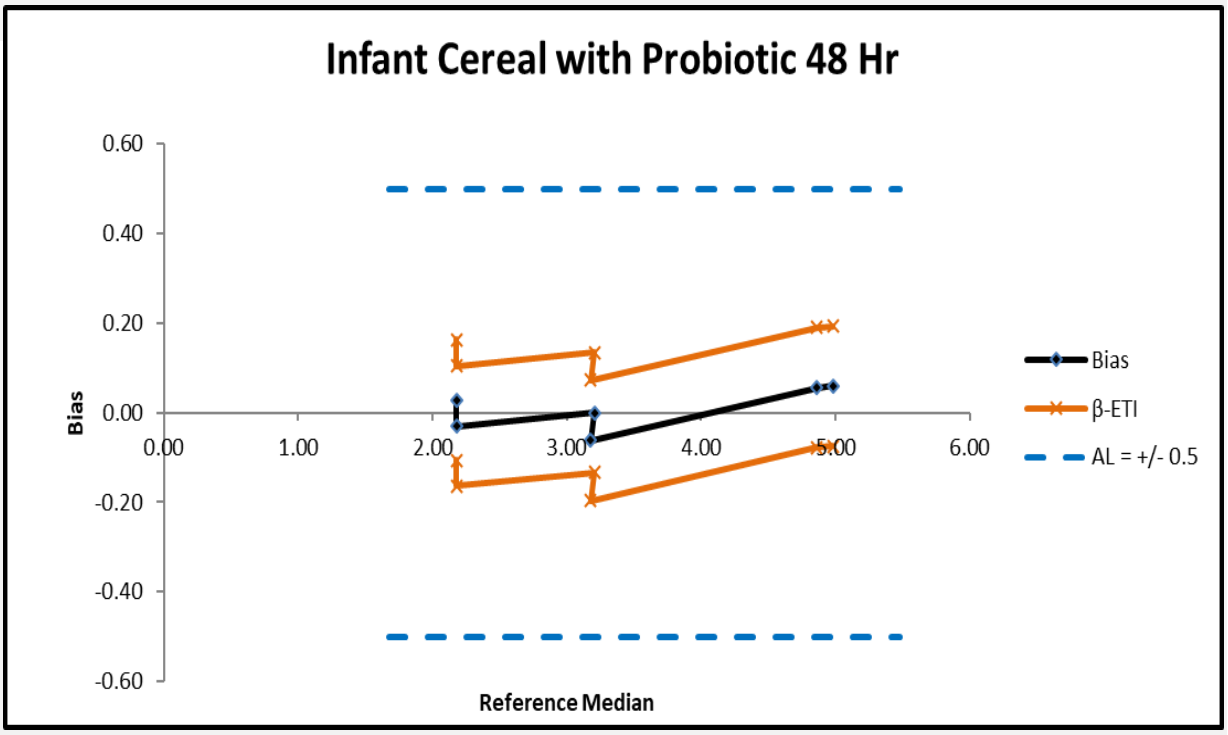
Figure 3F: Accuracy Statistical Analysis of Infant Formula with Probiotic – Peel Plate EB (48 Hr Read)



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1A	2.18	0.028	-0.102	0.158	YES	YES
1B	2.18	-0.030	-0.160	0.100	YES	YES
2A	3.20	0.000	-0.130	0.130	YES	YES
2B	3.18	-0.062	-0.192	0.068	YES	YES
3A	4.86	0.056	-0.074	0.186	YES	YES
3B	4.98	0.059	-0.071	0.189	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.143	0.090	NO	+/- 0.500

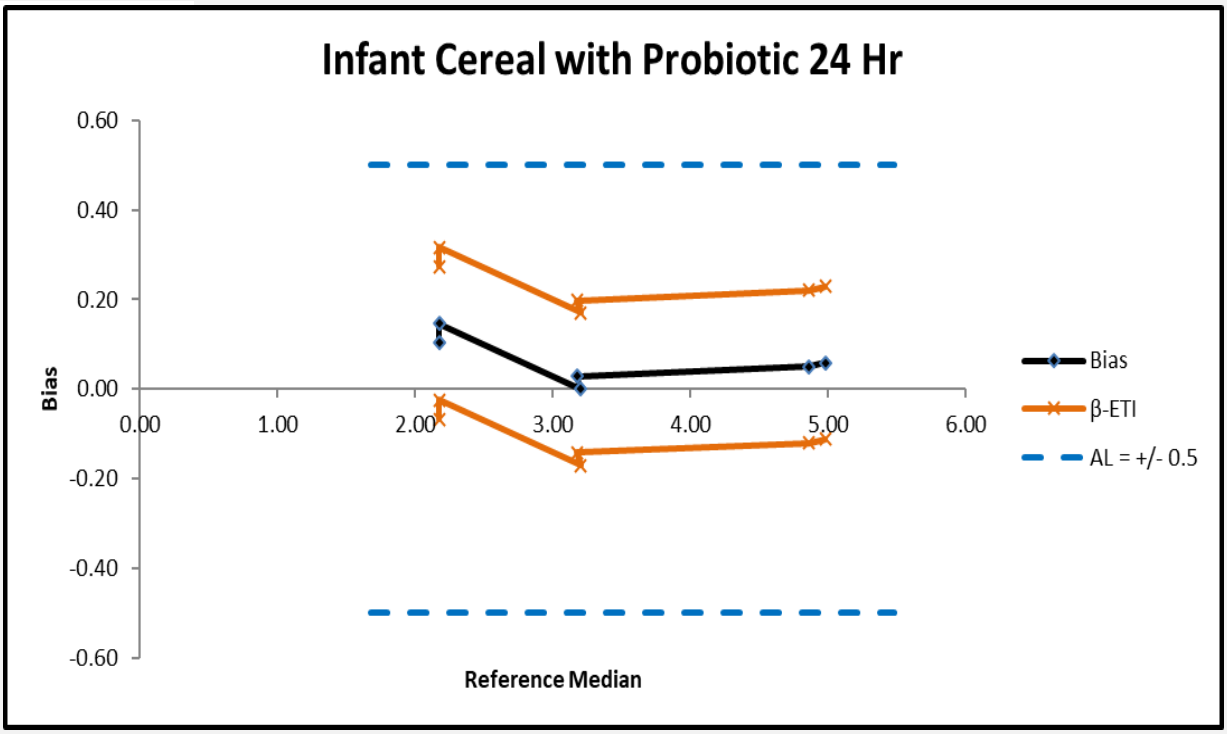
Figure 3G: Accuracy Statistical Analysis of Infant Cereal with Probiotic – Peel Plate EB (24 Hr Read)



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1A	2.18	0.028	-0.106	0.162	YES	YES
1B	2.18	-0.030	-0.164	0.104	YES	YES
2A	3.20	0.000	-0.134	0.134	YES	YES
2B	3.18	-0.062	-0.196	0.072	YES	YES
3A	4.86	0.056	-0.079	0.190	YES	YES
3B	4.98	0.059	-0.075	0.193	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.143	0.093	NO	+/- 0.500

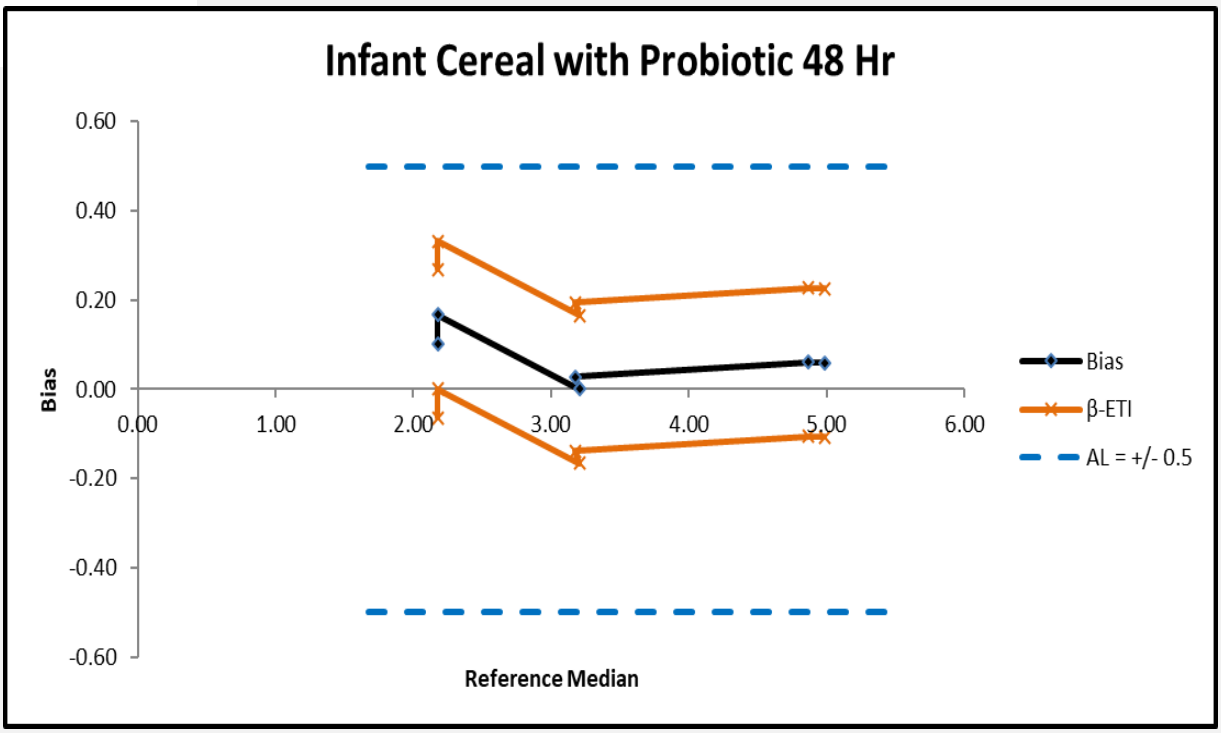
Figure 3H: Accuracy Statistical Analysis of Infant Cereal with Probiotic – Peel Plate EB (48 Hr Read)



Sample Name	Reference central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1A	2.18	0.103	-0.068	0.273	YES	YES
1B	2.18	0.146	-0.024	0.316	YES	YES
2A	3.20	0.000	-0.170	0.170	YES	YES
2B	3.18	0.028	-0.142	0.198	YES	YES
3A	4.86	0.050	-0.120	0.221	YES	YES
3B	4.98	0.059	-0.111	0.229	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.143	0.118	NO	+/- 0.500

Figure 3I: Accuracy Statistical Analysis of Infant Cereal with Probiotic – Peel Plate EBHV (24 Hr Read)



Sample Name	Reference Central value	Bias	Lower β-ETI	Upper β-ETI	β-ETI compared to AL=±0.5 Acceptable	β-ETI compared to final AL Acceptable
1A	2.18	0.103	-0.063	0.269	YES	YES
1B	2.18	0.166	0.000	0.332	YES	YES
2A	3.20	0.000	-0.166	0.166	YES	YES
2B	3.18	0.028	-0.138	0.194	YES	YES
3A	4.86	0.061	-0.105	0.227	YES	YES
3B	4.98	0.059	-0.107	0.225	YES	YES

	Reference method	Alternative method	SD repeatability of reference method <= 0.125	Final AL
SD Repeatability	0.143	0.115	NO	+/- 0.500

Figure 3J: Accuracy Statistical Analysis of Infant Cereal with Probiotic – Peel Plate EBHV (48 Hr Read)

3.3.3 Conclusion of the Accuracy Profile Study

The data generated for each category meet the acceptance criteria outlined in ISO 16140-2:2016, section 6.1.3.3. Based on the statistical analysis, the alternative method is considered equivalent to the reference method.

3.4 Inclusivity and Exclusivity Study

Testing from the original validation met the requirements of the current ISO 16140-2:2016 and no further analysis was conducted. For the inclusivity and exclusivity strains, 54 *Enterobacteriaceae* strains and 30 non-target strains were enriched in non-selective medium at 37 ± 1ºC for 18-24 hours. Serial dilutions were conducted in order to plate ~100 cells/ml. Following the plating of the organisms on the Peel Plate EB, the plates were incubated at 37 ± 1ºC. The plates were enumerated at both 24 hours and 48 hours after incubation. A list of the inclusivity and exclusivity strains are provided in **Table 4** and **Table 5** below.

Table 4: Inclusivity Strains

Number	Genus	species	Subspecies	Source	Origin
1	*Citrobacter*	*amalonaticus*		ATCC[1] 25405	Feces
2	*Citrobacter*	*koseri*		ATCC 27156	Not Available
3	*Citrobacter*	*braakii*		ATCC 43162	Clinical isolate, California
4	*Citrobacter*	*farmeri*		ATCC 51633	Human feces
5	*Citrobacter*	*freundii*		QL[2] 100813-2A	Sliced deli meat (turkey)
6	*Cronobacter*	*dublinensis*		DSM[3] 18706	Infant Formula
7	*Cronobacter*	*condimenti*		DSM 27966	Infant Formula
8	*Cronobacter*	*helveticus*		CCUG[4] 66106	Product industry
9	*Cronobacter*	*malonaticus*		CCUG 28859	Formula
10	*Cronobacter*	*muytjensii*		DSM 21870	Product industry
11	*Cronobacter*	*pulveris*		DSM 19145	Product industry
12	*Cronobacter*	*sakazakii*		CCUG 28863	Human cerebrospinal fluid
13	*Edwardsiella*	*tarda*		ATCC 15947	Feces, human
14	*Enterobacter*	*aerogenes*		ATCC 35029	Not Available
15	*Enterobacter*	*amnigenus*		ATCC 51816	Milk, Minnesota
16	*Enterobacter*	*cancerogenus*		QL 11010-2	Bottled Water
17	*Enterobacter*	*cloacae*		NBRC[5] 13536	Not Available
18	*Enterobacter*	*gergoviae*		ATCC 33028	Urine, France
19	*Escherichia*	*coli*		ATCC 8739	Feces
20	*Escherichia*	*vulneris*		ATCC 29943	Human Wound
21	*Escherichia*	*fergusonii*		ATCC 35469	Feces, Human
22	*Escherichia*	*hermannii*		ATCC 33651	Arm wound
23	*Shimwellia*	*blattae*		ATCC 29907	Insect (hindgut of cockroach)
24	*Hafnia*	*alvei*		ATCC 51815	Milk, Minnesota
25	*Klebsiella*	*pneumoniae*		ATCC 11296	Not Available
26	*Klebsiella*	*oxytoca*		ATCC 43165	Clinical Isolate
27	*Kluyvera*	*intermedia*		ATCC 33110	Surface water
28	*Pantoea*	*agglomerans*		ATCC 19552	Sewage
29	*Morganella*	*morganii*		ATCC 25829	Human
30	*Proteus*	*hauseri*		ATCC 13315	Human Feces
31	*Proteus*	*mirabilis*		ATCC 9240	Unknown
32	*Proteus*	*vulgaris*		ATCC 6380	Clinical Isolate
33	*Providencia*	*rettgeri*		ATCC 14505	Not Available
34	*Providencia*	*stuartii*		QL 11007-5	Environmental Isolate
35	*Rahnella*	*aquatilis*		ATCC 55046	Soil, Wisconsin
36	*Salmonella*	*bongori*		NCTC 10946	Amphibian;frog
37	*Salmonella*	*enterica*	Anatum	ATCC 9270	Pork liver, Chicago, IL
38	*Salmonella*	*enterica*	arizonae	QL 11007-4	Veterinary
39	*Salmonella*	*enterica*	Choleraesuis	ATCC 53000	X-ray induced mutant of an equine isolate
40	*Salmonella*	*enterica*	diarizonae	QL 011414.1	Environmental Isolate
41	*Salmonella*	*enterica*	diarizonae	ATCC BAA-639	Feces, human
42	*Salmonella*	*enterica*	Infantis	ATCC 51741	Pasta
43	*Salmonella*	*enterica*	Newport	ATCC 6962	Food poisoning fatality
44	*Salmonella*	*enterica*	Pullorum	ATCC 13036	Egg
45	*Salmonella*	*enterica*	Typhimurium	ATCC 14028	Tissue, animal
46	*Salmonella*	*Enteritidis*		ATCC 13076	Not Available
47	*Serratia*	*liquefacians*		ATCC 27592	Milk, Cork, Ireland
48	*Serratia*	*marcescens*		ATCC 8100	Not Available
49	*Siccibacter*	*turicensis*		CCUG 54945	Not Available
50	*Yersinia*	*enterocolitica*		ATCC 49397	Clinical specimen
51	*Salmonella*	*enterica*	indica	NCTC 10458	Ceylonese dessicated coconut
52	*Salmonella*	*enterica*	houtenae	ATCC 15783	Boa constrictor, Netherlands
53	*Salmonella*	*enterica*	salamae	QL 02415	Dry pet food
54	*Shigella*	*boydii*		ATCC 9207	Pork liver

[1.]ATCC-American Type Culture Collection, [2.] QL- Q Laboratories Culture Collection, [3.] DSM-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH, [4.]CCUG-University of Goteborg Culture Collection, [5.] NBRC-Nite Biological Resource Center,

Table 5: Exclusivity Strains

Number	Genus	species	Source	Origin
1	*Acinetobacter*	*baumanii*	ATCC[1] 19606	Urine
2	*Aeromonas*	*viridans*	QL[2] 17041-8	Raw Milk Isolate
3	*Alcaligenes*	*faecalis*	ATCC 8750	Not Available
4	*Bacillus*	*cereus*	ATCC 6464	Soil
5	*Bacillus*	*subtilis*	ATCC 6633	Not Available
6	*Bordetella*	*bronchiseptica*	ATCC 10580	Lung of dog
7	*Brochothrix*	*thermosphacta*	ATCC 11509	Animal-derived foodstuff
8	*Enterococcus*	*durans*	ATCC 19432	Not Available
9	*Enterococcus*	*faecalis*	ATCC 29212	Urine
10	*Enterococcus*	*faecium*	ATCC 51559	Clinical isolate
11	*Enterococcus*	*hirae*	ATCC 8043	Not Available
12	*Haemophilus*	*influenzae*	ATCC 19418	Not Available
13	*Kurthia*	*gibsonii*	ATCC 43195	meat
14	*Kurthia*	*zopfii*	ATCC 10538	Not Available
15	*Leuconostoc*	*mesenteroides*	ATCC 8293	fermenting olives
16	*Listeria*	*innocua*	ATCC 33090	cow brain
17	*Listeria*	*ivanovii*	ATCC BAA-139	washing water
18	*Listeria*	*monocytogenes*	ATCC 7644	1/2 C
19	*Listeria*	*seeligeri*	ATCC 11289	6B
20	*Listeria*	*welshimeri*	ATCC 43549	6B
21	*Micrococcus*	*luteus*	ATCC 10240	air
22	*Pseudomonas*	*alcaligenes*	ATCC 14909	swimming-pool water
23	*Pseudomonas*	*extremorientalis*	QL 17041-1	Raw Milk Isolate
24	*Pseudomonas*	*fluorescens*	QL 17041-3	Raw Milk Isolate
25	*Staphylococcus*	*hominis*	ATCC 27844	Human skin
26	*Staphylococcus*	*aureus*	ATCC 6538	human lesion
27	*Streptococcus*	*pneumoniae*	ATCC 6302	Not Available
28	*Streptococcus*	*pyogenes*	ATCC 19615	Pharynx of child following sore throat.
29	*Vibrio*	*parahaemolyticus*	ATCC 17802	Shirasu food poisoning
30	*Vibrio*	*vulnificus*	QL 021111A	Seafood Product

[1.]ATCC-American Type Culture Collection, [2.] QL-Q Laboratories Culture Collection.

3.4.1 Data Intrepreation for Inclusivity and Exclusivity Study

For the inclusivity and exclusivity study, all 54 inclusivity organisms were correctly identified by the Charm Peel Plate EB method and all 30 exclusivity organisms were correctly excluded by the Charm Peel Plate EB method. Raw data for the inclusivity and exclusivity study can be found in **Annex J**.

4 Interlaboratory Study

The interlaboratory study (ILS) was preformed during the original validation and was evaluated according to the statistical guidelines provided in ISO 16140-2:2016.

4.1 Organization

The ILS was performed using 11 collaborators from 9 organizations representing 5 different countries.

The food item used in the evaluation was powdered infant formula (milk based with iron and DHA) containing probiotics (*Lactobacillus reuteri)*.

The food item was obtained from a local retailer and screened for the presence of naturally occurring *Enterobacteriaceae* by the ISO 21528-1 reference method. No natural contamination was observed so four separate levels of contamination were targeted for the evaluation: uninoculated (0 CFU/g), low (10-100 CFU/g), medium(100-1,000 CFU/g) and high (1,000-10,000 CFU/g). To obtain the required contamination levels, bulk lots of the matrix were artificially contaminated with a lyophilized culture of *Cronobacter sakazakii* [Q Laboratories (QL) isolate 17031.4 (origin – powdered infant formula)] at each target contamination level. Two replicate samples from each of the four contamination levels were analyzed by both the alternative and reference methods in a paired study design.

4.1.1 Preparation of the Inocula and Test Portions

The *C. sakazakii* isolate used in this evaluation was lyophilized prior to inoculation. The culture was first propagated onto SBA from a Q Laboratories frozen stock culture stored at -70°C. To prepare the culture for lyophilization, a single, well isolated colony from SBA was transferred into BHI broth and incubated at 37 ± 2 ^{o}C for 18-24 hours. The culture was diluted in a sterile cryoprotectant, reconstituted 10% NFDM, and freeze dried for 48-72 hours. A bulk lot of the test matrix was inoculated with the culture at a high level expected to yield all positive results. An aliquot of the high-level inoculum was further mixed with uninoculated powdered infant formula to produce the medium and low-level contamination levels. After inoculation, the matrix was held for a minimum of 2 weeks at ambient temperature (20 - 25^{o}C). The inoculated test product was packaged into separate 25 g samples in sterile Whirl-Pak® bags and shipped to the collaborators.

4.1.2 Test Portion Distribution

All samples were labeled with a randomized, blind-coded 3 digit number affixed to the sample container. Eleven (11) participants from 10 separate locations participated. Test portions were shipped in leak-proof insulated containers via overnight delivery according to the Category B Dangerous Goods shipment regulations set forth by International Air Transport Association (IATA). Test portions were shipped at ambient temperatures (20-25^{o}C). Upon receipt, samples were held at ambient temperature until analysis was initiated. In addition to each of the test portions, collaborators received a test portion for the matrix labeled as Lactic Acid Bacteria (LAB), to determine total background count in the matrix. The LAB background screen samples were prepared from the bulk lot of test matrix, prior to inoculation. Additionally, a temperature probe was included in the shipment. Participants were instructed to submit the data from the temperature probe upon receipt of the shipment.

Table 6: Sample receipt temperature data for ILS samples

Collaborator	Temperature (°C)
1	22.0
2	24.8
3	20.9
4	21.2
5	20.1
6	24.4
7	24.5
8	22.6
9	23.5
10	23.8
11	22.9

4.1.3 Calculations and interpretation of data

The data from the collaborative trial was reanalyzed according to section ISO 16140-2:2016 using the freely available Excel® spreadsheet (http://standards.iso.org/iso/16140).

The log transformed data from the 24 hr and 48 hr results of the alternative method and reference method are presented in **Table 7** and **Table 8**, respectively below. The Accuracy profile graphs are shown in **Figure 4A** and **Figure 4B** below.

Table 7: Summary of the results of the ILS: Peel Plate EB 24 hr.

Collaborators	Level	Reference method		Alternative method	
		ISO 21528-1		Peel Plate EB 24 hr.	
1	Uninoculated	<3	<3	<10	<10
2	Uninoculated	<3	<3	<10	<10
3	Uninoculated	<3	<3	<10	<10
4	Uninoculated	<3	<3	<10	<10
5	Uninoculated	<3	<3	<10	<10
6	Uninoculated	<3	<3	<10	<10
7	Uninoculated	<3	<3	<10	<10
8	Uninoculated	<3	<3	<10	<10
9	Uninoculated	<3	<3	<10	<10
10	Uninoculated	<3	<3	<10	<10
11	Uninoculated	<3	<3	<10	<10
1	Low	1.146	0.968	1.000	1.000
2	Low	0.362	0.362	-*	-*
3	Low	1.146	0.903	1.000	1.000
4	Low	0.968	0.968	1.000	1.301
5	Low	1.380	0.968	1.000	1.301
6	Low	0.903	0.362	1.000	-*
7	Low	1.633	1.633	1.000	1.301
8	Low	0.362	0.580	1.000	1.000
9	Low	1.380	1.380	1.000	1.000
10	Low	0.362	0.964	-*	1.000
11	Low	1.380	1.633	1.000	1.000
Collaborators	**Level**	**ISO 21528-2**		**Peel Plate EB 24 hr.**	
1	Medium	1.903	2.176	2.176	2.279
2	Medium	2.851	2.477	3.041	2.806
3	Medium	2.505	2.531	2.279	2.568
4	Medium	2.681	2.000	2.613	2.041
5	Medium	2.380	2.204	2.556	2.176
6	Medium	2.322	2.146	2.380	2.279
7	Medium	2.000	2.041	2.114	2.255
8	Medium	2.477	2.380	2.447	2.462
9	Medium	2.362	2.000	2.886	2.491
10	Medium	2.813	2.041	2.519	2.643
11	Medium	2.362	2.000	2.580	2.342
1	High	3.146	3.230	3.114	3.230
2	High	3.322	3.146	3.633	3.531
3	High	3.000	3.079	3.415	3.505
4	High	3.462	3.602	3.505	3.653
5	High	3.462	3.462	3.556	3.462
6	High	3.279	3.623	3.322	3.568
7	High	2.991	2.987	3.146	3.114
8	High	3.041	3.079	3.255	3.176
9	High	3.079	3.204	3.279	3.580
10	High	3.041	3.079	3.230	3.431
11	High	3.146	3.114	3.491	3.301

*A count of <10 was obtained.

Table 8: Summary of the results of the ILS: Peel Plate EB 48 hr.

Collaborators	Level	Reference method		Alternative method	
		ISO 21528-1		Peel Plate EB 48 hr.	
1	Uninoculated	<3	<3	<10	<10
2	Uninoculated	<3	<3	<10	<10
3	Uninoculated	<3	<3	<10	<10
4	Uninoculated	<3	<3	<10	<10
5	Uninoculated	<3	<3	<10	<10
6	Uninoculated	<3	<3	<10	<10
7	Uninoculated	<3	<3	<10	<10
8	Uninoculated	<3	<3	<10	<10
9	Uninoculated	<3	<3	<10	<10
10	Uninoculated	<3	<3	<10	<10
11	Uninoculated	<3	<3	<10	<10
1	Low	1.146	0.968	1.000	1.000
2	Low	0.362	0.362	-*	-*
3	Low	1.146	0.903	1.000	1.301
4	Low	0.968	0.968	1.000	1.301
5	Low	1.380	0.968	1.000	1.301
6	Low	0.903	0.362	1.000	-*
7	Low	1.633	1.633	1.000	1.301
8	Low	0.362	0.580	1.000	1.000
9	Low	1.380	1.380	1.000	1.000
10	Low	0.362	0.964	-*	1.000
11	Low	1.380	1.633	1.000	1.000
Collaborators	**Level**	**ISO 21528-2**		**Peel Plate EB 48 hr.**	
1	Medium	1.903	2.176	2.204	2.380
2	Medium	2.851	2.477	3.041	2.806
3	Medium	2.505	2.531	2.279	2.568
4	Medium	2.681	2.000	2.623	2.079
5	Medium	2.380	2.204	2.556	2.176
6	Medium	2.322	2.146	2.380	2.279
7	Medium	2.000	2.041	2.114	2.255
8	Medium	2.477	2.380	2.491	2.462
9	Medium	2.362	2.000	2.886	2.491
10	Medium	2.813	2.041	2.531	2.643
11	Medium	2.362	2.000	2.580	2.398
1	High	3.146	3.230	3.114	3.230
2	High	3.322	3.146	3.633	3.531
3	High	3.000	3.079	3.415	3.505
4	High	3.462	3.602	3.531	3.672
5	High	3.462	3.462	3.556	3.462
6	High	3.279	3.623	3.322	3.568
7	High	2.991	2.987	3.146	3.204
8	High	3.041	3.079	3.255	3.176
9	High	3.079	3.204	3.279	3.580
10	High	3.041	3.079	3.230	3.431
11	High	3.146	3.114	3.491	3.322

*A count of <10 was obtained.

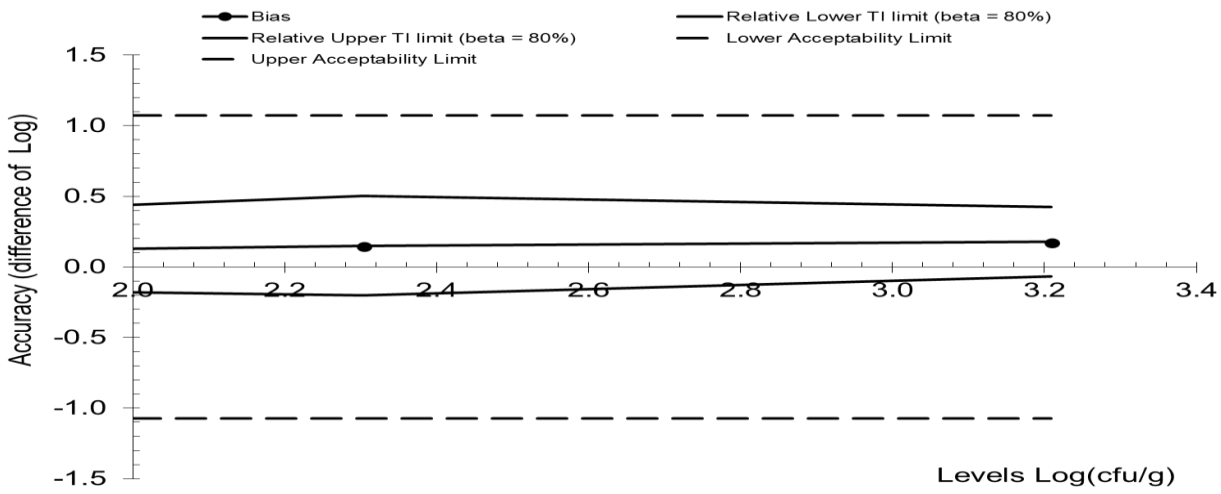


Figure 4A: Accuracy profile of the alternative method (24 hr) in the ILS

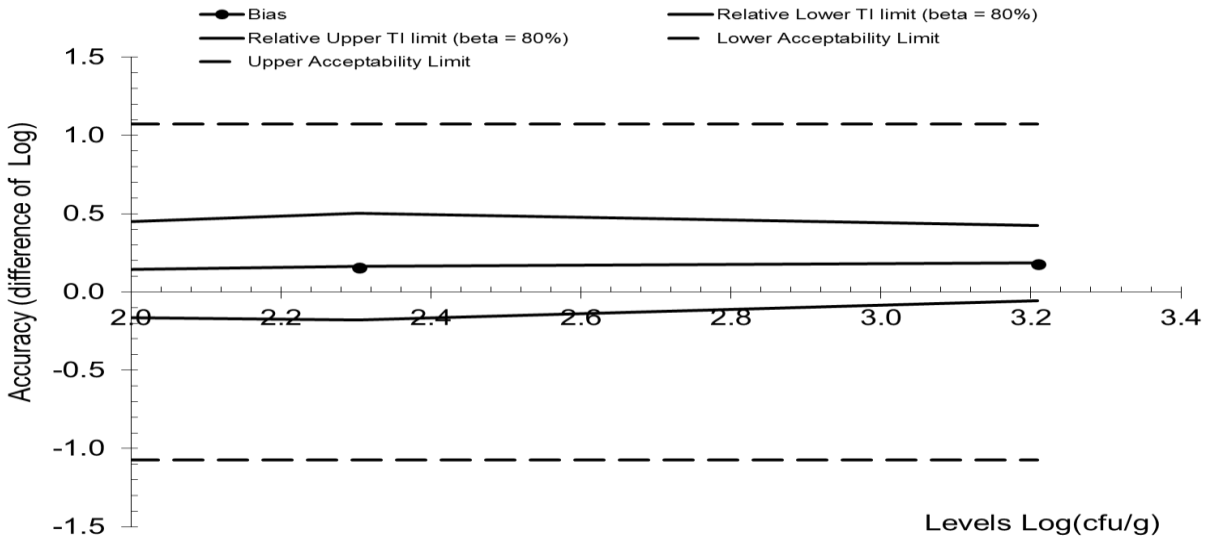


Figure 4B: Accuracy profile of the alternative method (48 hr) in the ILS

The ILS statistical analysis is presented in **Table 9** below and **Table 10** below. Based on data presented in these tables, the repeatibility standard deviations (Sr) and between-labs standard devaiations (S_L) indicate similar results between the alternative and reference method. The reproducibility standard deviation (S_R) indicated slightly better results with the alternative method than the reference method.

According to the ISO 16140-2:2016 standard, if any of the values of the β-ETI fall outside of the ±0.5 log AL then a further calculation is required. None of

the β-ETI values fell outside the range, indicating no additonal calculations were required. Based on the data obtained within these studies, the alternative method is considered equivalent to the reference methods.

Table 9: Statistical analysis of the ILS data (Peel Plate EB 24 Hr)

Accuracy profile	0.5		
Study Name	Charm Peel Plate EB		
Date	May-18		
Coordinator	Q Laboratories		
Tolerance probability (beta)	80%	80%	80%
Acceptability limit in log (lambda)	1.07	1.07	1.07

TRUE

Application of clause 6.2.3
Step 8: If any of the values for the β-ETI fall outside the acceptability limits, calculate the pooled average reproducibility standard deviation of the reference method.
Step 9: Calculate new acceptability limits as a function of this standard deviation.

	Alternative method			Reference method		
Levels	**Low**	**Medium**	**High**	**Low**	**Medium**	**High**
Target value	**0.988**	**2.302**	**3.208**			
Number of participants (K)	9	11	11	11	11	11
Average for alternative method	1.050	2.452	3.386	0.988	2.302	3.208
Repeatability standard deviation (sr)	0.123	0.200	0.116	0.216	0.270	0.096
Between-labs standard deviation (sL)	0.000	0.160	0.133	0.392	0.052	0.177
Reproducibility standard deviation (sR)	0.123	0.256	0.177	0.448	0.275	0.202
Corrected number of dof	16.941	17.609	15.226	12.609	20.853	12.526
Coverage factor	1.370	1.373	1.387			
Interpolated Student t	1.334	1.332	1.340			
Tolerance interval standard deviation	0.1263	0.2641	0.1831			
Lower TI limit	0.882	2.100	3.141			
Upper TI limit	1.219	2.803	3.632			
Bias	**0.062**	**0.149**	**0.178**			
Relative Lower TI limit (beta = 80%)	**-0.107**	**-0.203**	**-0.067**	FALSE		
Relative Upper TI limit (beta = 80%)	**0.230**	**0.501**	**0.424**	TRUE		
Lower Acceptability Limit	**-1.07**	**-1.07**	**-1.07**			
Upper Acceptability Limit	**1.07**	**1.07**	**1.07**			

New acceptability limits may be based on reference method pooled variance

Pooled repro standard dev of reference	0.325

Table 10: Statistical analysis of the ILS data (Peel Plate EB 48 Hr)

Study Name	Charm Peel Plate EB				
Date	May-18				
Coordinator	Q Laboratories			TRUE	
Tolerance probability (beta)	80%	80%	80%		
Acceptability limit in log (lambda)	1.07	1.07	1.07		
	Alternative method			**Reference method**	
Levels	**Low**	**Medium**	**High**	**Low**	**Medium**	**High**
Target value	**0.988**	**2.302**	**3.208**			
Number of participants (K)	9	11	11	11	11	11
Average for alternative method	1.067	2.465	3.394	0.988	2.302	3.208
Repeatability standard deviation (sr)	0.142	0.196	0.115	0.216	0.270	0.096
Between-labs standard deviation (sL)	0.000	0.154	0.129	0.392	0.052	0.177
Reproducibility standard deviation (sR)	0.142	0.249	0.173	0.448	0.275	0.202
Corrected number of dof	16.941	17.736	15.343	12.609	20.853	12.526
Coverage factor	1.370	1.372	1.386			
Interpolated Student t	1.334	1.331	1.339			
Tolerance interval standard deviation	0.1458	0.2566	0.1790			
Lower TI limit	0.872	2.123	3.154			
Upper TI limit	1.261	2.806	3.633			
Bias	**0.078**	**0.162**	**0.185**			
Relative Lower TI limit (beta = 80%)	**-0.116**	**-0.179**	**-0.054**	FALSE		
Relative Upper TI limit (beta = 80%)	**0.273**	**0.504**	**0.425**	TRUE		
Lower Acceptability Limit	**-1.07**	**-1.07**	**-1.07**			
Upper Acceptability Limit	**1.07**	**1.07**	**1.07**			

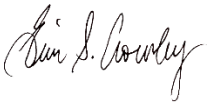
New acceptability limits may be based on reference method pooled variance

Pooled repro standard dev of reference	0.325

Application of clause 6.2.3
Step 8: If any of the values for the β-ETI fall outside the acceptability limits, calculate the pooled average reproducibility standard deviation of the reference method.
Step 9: Calculate new acceptability limits as a function of this standard deviation.

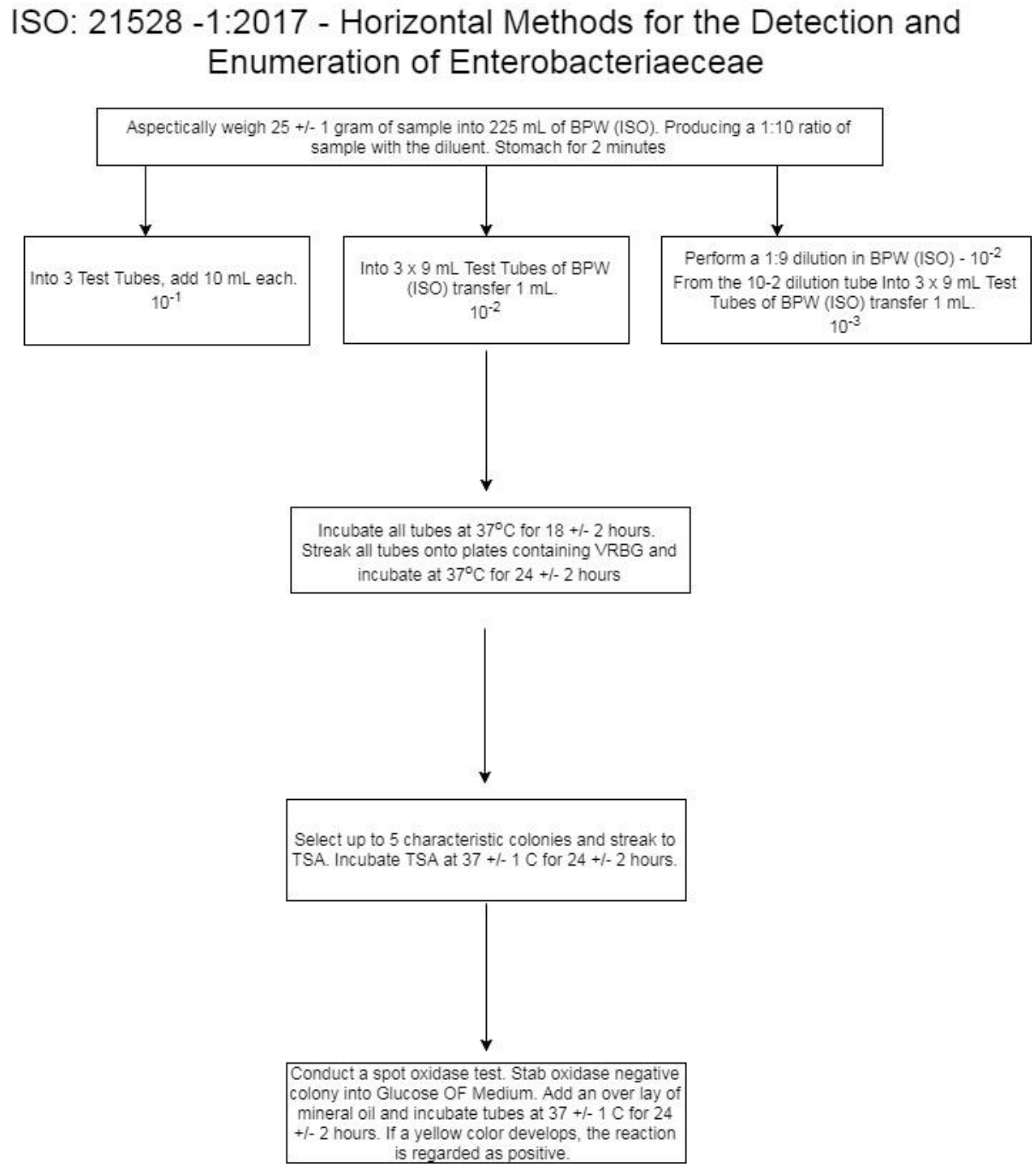
On the 16 May 2022,

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.

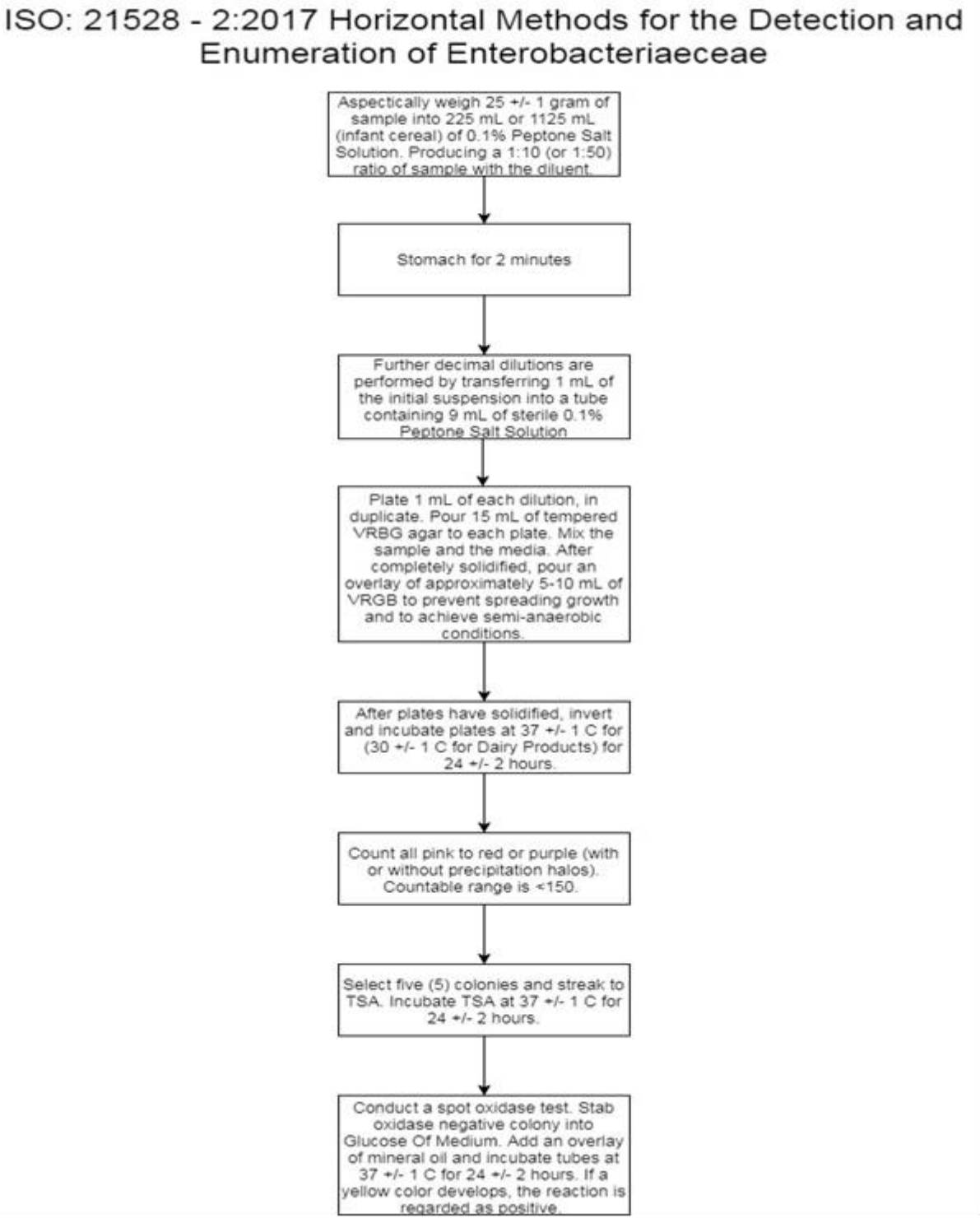


Erin S. Crowley
Chief Scientific Officer, Q Laboratories

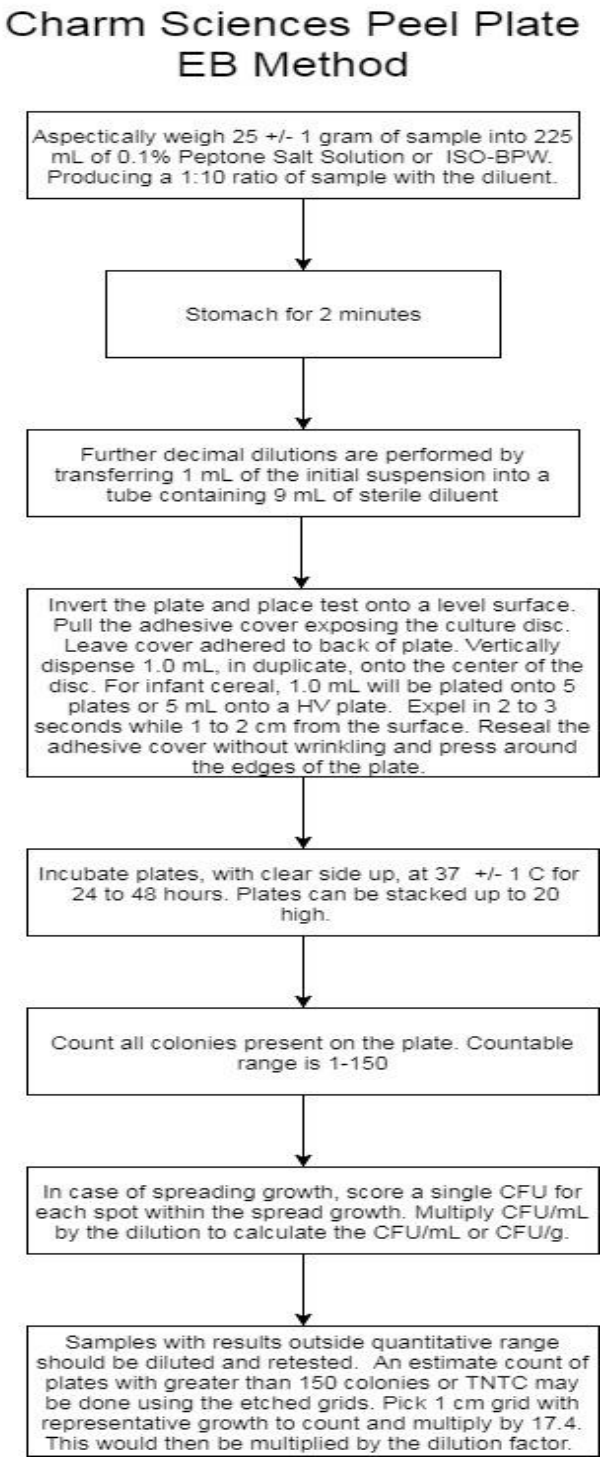
ANNEX A: Flow Diagram of ISO 21528-1:2017 Method



ANNEX B: Flow Diagram of the ISO 21528-2:2017 Method



ANNEX C: Flow Diagram for Peel Plate EB Method



ANNEX D: Kit Insert for Peel Plate EB

See the attached document.

ANNEX E: Kit Insert for Peel Plate EBHV

See the attached document.

ANNEX F: Summary of Artificial Contamination

Trueness Study									
Category	**Type**	**Sample #**	**Item**	**Target Inoculum Level**	**Inoculating Organism**	**Origin**	**Heat Stress**	**Hold Time**	**Log10 Injury**
Heat Processed Milk and Dairy Products	Pasteurized Dairy Products	QL006	Whole Chocolate Milk	1.0×10^3	*Serratia marcescens* ATCC 8100	Milk, Ireland	Heat 50ºC for 10 mins	5 ± 3ºC for 48-72 Hours	0.65
		QL009	Organic Sour Creme	1.0×10^4					
		QL011	Whipped Buttery Spread	1.0×10^5					
	Pasteurized Milk Based Products	QL018	Rice Pudding	1.0×10^3	*Klebsiella pneumonia* QL 11007-7	Meat	Heat 50ºC for 10 mins	5 ± 3ºC for 48-72 Hours	0.68
		QL022	Crème Brulee	1.0×10^4					
	Milk Powders	QL031	Organic Nonfat Dry Milk	1.0×10^3	*Escherichia coli* QL 11010-2 (Lyophilized)	Bottled water		Ambient 2 weeks	
		QL032	Full Cream Milk Powder	1.0×10^4					
		QL036	Malted Milk	1.0×10^5					
Infant Formula and Infant Cereal	Infant Formula with Probiotic	QL040	Stage 1	1.0×10^3	*Cronobacter condimenti* DSM 27966 (Lyophilized)	Infant Formula		Ambient 2 weeks	
		QL042	Infant 0-12 Months	1.0×10^5					
		QL043	Closest to Breast Milk	1.0×10^4					
	Infant Formula without Probiotic	QL061	Neosure	1.0×10^4	*Salmonella* Newport ATCC 6962 (Lyophilized)	Food poisioing fatality		Ambient 2 weeks	
		QL063	Stage 3	1.0×10^5					
	Infant Cereal without Probiotic	QL070	Rice Single Grain	1.0×10^3	*Citrobacter freundii* QL 100813-2A (Lyophilized)	Sliced deli turkey		Ambient 2 weeks	
		QL073	Oatmeal Single Grain	1.0×10^5					

Accuracy Study								
Category	**Type**	**Item**	**Target Inoculum Level**	**Inoculating Organism**	**Origin**	**Heat Stress**	**Hold Time**	**% Injury**
Heat Processed Milk and Dairy Products	Pasteurized Dairy Products	3.25% Pasteurized Whole Milk	~1.0 x 10^1	*Enterobacter amnigenus* ATCC 51816 (Heat Stressed)	Milk, Minnesota	Heat 50ºC for 10 mins	5 ± 3ºC for 48-72 Hours	0.52
			~1.0 x 10^3					
			~1.0 x 10^4					
	Milk Powders	Non-fat Dry Milk Powder	~1.0 x 10^2	*Hafnia alvei* ATCC 51815 (Lyophilized)	Milk		Ambient 2 weeks	
			~1.0 x 10^3					
			~1.0 x 10^5					
Infant Formula and Infant Cereal	Infant Formula with Probiotic	Infant Formula with Probiotic	~1.0 x 10^2	*Cronobacter sakazakii* CCUG 28863 (Lyophilized)	Human cerebrospinal fluid		Ambient 2 weeks	
			~1.0 x 10^3					
			~1.0 x 10^5					
	Infant Cereal without Probiotic	Infant Cereal with Probiotic	~1.0 x 10^2	*Escherichia coli* ATCC 29522 (Lyophilized)	Clinical isolate		Ambient 2 weeks	
			~1.0 x 10^3					
			~1.0 x 10^5					

ANNEX G: Raw Data for Trueness Study

Category: Heat Processed Milk and Dairy Products (24 Hour Read)															
Type	Item	Reference					CFU/g or ml	Log	Alternative					CFU/g or ml	Log
		Dilution							Dilution						
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
Pasteurized Dairy Products	Whole Chocolate Milk	TN	**22**	**3**	0	0	2.3×10^3	3.36	TN	**22**	**3**	0	0	2.3×10^3	3.36
	Half & Half Creamer[1]	**24**	**3**	0	0	0	2.4×10^2	2.38	**29**	**4**	0	0	0	3.0×10^2	2.48
	Peach Cottage Cheese[1]	**19**	**2**	0	0	0	1.9×10^2	2.28	**22**	**2**	0	0	0	2.2×10^2	2.34
	Organic Sour Creme	TN	TN	**61**	**5**	0	6.0×10^4	4.78	TN	TN	**50**	**4**	0	4.9×10^4	4.69
	Whipped Buttery Spread	TN	TN	TN	**73**	**9**	$7.4x\ 10^5$	5.87	TN	TN	TN	**64**	**7**	6.4×10^5	5.81
Pasteurized Milk Based Products	Peanut Butter Ice Cream[1]	TN	**17**	**3**	0	0	1.8×10^3	3.26	TN	**12**	**2**	0	0	1.3×10^3	3.11
	Golden Custard Nog[1]	**51**	**6**	0	0	0	5.2×10^2	2.71	**59**	**6**	0	0	0	5.9×10^2	2.77
	Rice Pudding	TN	**12**	**2**	0	0	1.3×10^3	3.11	TN	**10**	**1**	0	0	1.0×10^3	3.00
	Puff Pastry Sheets[1]	TN	**44**	**6**	0	0	4.6×10^3	3.66	TN	**37**	**4**	0	0	3.7×10^3	3.57
	Crème Brulee	TN	TN	**28**	**3**	0	2.8×10^4	4.45	TN	TN	**19**	**2**	0	1.9×10^4	4.28
Milk Powders	Nonfat Instant Dry Milk[1]	**10**	**2**	0	0	0	1.1×10^2	2.04	**13**	**1**	0	0	0	1.3×10^2	2.11
	Organic Nonfat Dry Milk	TN	**26**	**3**	0	0	2.6×10^3	3.41	TN	**29**	**3**	0	0	2.9×10^3	3.46
	Full Cream Milk Powder	TN	TN	TN	**17**	**2**	1.7×10^5	5.23	TN	TN	TN	**24**	**1**	2.3×10^5	5.36
	Organic Whole Milk Powder[1]	**16**	**2**	0	0	0	1.6×10^2	2.20	**11**	**1**	0	0	0	1.1×10^2	2.04
	Malted Milk	TN	TN	TN	**64**	**8**	6.6×10^5	5.82	TN	TN	TN	**71**	**7**	7.1×10^5	5.85

1. Natural Contamination Present

Category: Heat Processed Milk and Dairy Products (48 Hour Read)															
Type	Item	Reference (ISO 21528-2)					CFU/g or ml	Log	Alternative					CFU/g or ml	Log
		Dilution							Dilution						
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
Pasteurized Dairy Products	Whole Chocolate Milk	TN	**23**	**3**	0	0	2.4×10^3	3.38	TN	**22**	**3**	0	0	2.3×10^3	3.36
	Half & Half Creamer[1]	**26**	**3**	0	0	0	2.6×10^2	2.41	**29**	**4**	0	0	0	3.0×10^2	2.48
	Peach Cottage Cheese[1]	**19**	**2**	0	0	0	1.9×10^2	2.28	**22**	**2**	0	0	0	2.2×10^2	2.34
	Organic Sour Creme	TN	TN	**63**	**5**	0	6.2×10^4	4.79	TN	TN	**50**	**4**	0	4.9×10^4	4.69
	Whipped Buttery Spread	TN	TN	TN	**73**	**10**	7.6×10^5	5.88	TN	TN	TN	**64**	**7**	6.4×10^5	5.81
Pasteurized Milk Based Products	Peanut Butter Ice Cream[1]	TN	**17**	**3**	0	0	1.8×10^3	3.26	TN	**12**	**2**	0	0	1.3×10^3	3.11
	Golden Custard Nog[1]	**54**	**6**	0	0	0	5.4×10^2	2.73	**59**	**6**	0	0	0	5.9×10^2	2.77
	Rice Pudding	TN	**12**	**2**	0	0	1.3×10^3	3.11	TN	**10**	**1**	0	0	1.0×10^3	3.00
	Puff Pastry Sheets[1]	TN	**45**	**6**	0	0	4.6×10^3	3.66	TN	**37**	**4**	0	0	3.7×10^3	3.57
	Crème Brulee	TN	TN	**28**	**3**	0	2.8×10^4	4.45	TN	TN	**19**	**2**	0	1.9×10^4	4.28
Milk Powders	Nonfat Instant Dry Milk[1]	**10**	**2**	0	0	0	1.1×10^2	2.04	**13**	**1**	0	0	0	1.3×10^2	2.11
	Organic Nonfat Dry Milk	TN	**26**	**4**	0	0	2.7×10^3	3.43	TN	**29**	**3**	0	0	2.9×10^3	3.46
	Full Cream Milk Powder	TN	TN	TN	**17**	**2**	1.7×10^5	5.23	TN	TN	TN	**24**	**1**	2.3×10^5	5.36
	Organic Whole Milk Powder[1]	**16**	**2**	0	0	0	1.6×10^2	2.20	**11**	**1**	0	0	0	1.1×10^2	2.04
	Malted Milk	TN	TN	TN	**66**	**8**	6.7×10^5	5.83	TN	TN	TN	**71**	**7**	7.1×10^5	5.85

1. Natural Contamination Present

Category: Infant Formula and Infant Cereals (24 Hour Read)															
Type	Item	Reference (ISO 21528-2)					CFU/g or ml	Log	Alternative					CFU/g or ml	Log
		Dilution							Dilution						
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
Infant Formula with Probiotic	Fussiness and Gas[1]	TN	TN	**33**	**4**	0	3.4×10^4	4.53	TN	TN	**39**	**3**	0	3.8×10^4	4.58
	Stage 1	TN	**44**	**5**	0	0	4.4×10^3	3.64	TN	**41**	**3**	0	0	4.0×10^3	3.60
	Stage 2[1]	**27**	**3**	0	0	0	2.7×10^2	2.43	**24**	**2**	0	0	0	2.4×10^2	2.38
	Infant 0-12 Months	TN	TN	TN	**71**	**6**	7.0×10^5	5.85	TN	TN	TN	**63**	**7**	6.4×10^5	5.81
	Closest to Breast Milk	TN	TN	**53**	**4**	0	5.2×10^4	4.72	TN	TN	**58**	**6**	0	5.8×10^4	4.76
Infant Formula without Probiotic	Pure Bliss[1]	TN	**25**	**2**	0	0	2.4×10^3	3.38	TN	**19**	**2**	0	0	1.9×10^3	3.28
	Neosure	TN	TN	**46**	**5**	0	4.6×10^4	4.66	TN	TN	**53**	**5**	0	5.3×10^4	4.72
	Added Rice Starch[1]	**17**	**2**	0	0	0	1.7×10^2	2.23	**21**	**3**	0	0	0	1.2×10^2	2.08
	Supplementations[1]	**31**	**4**	0	0	0	3.2×10^2	2.51	**27**	**3**	0	0	0	2.7×10^2	2.43
	Stage 3	TN	TN	TN	**51**	**6**	5.2×10^5	5.72	TN	TN	TN	**43**	**4**	4.3×10^5	5.63
Infant Cereal without Probiotic[2]	Organic Rice[1]	**19**	**3**	0	0	0	1.0×10^3	3.00	**26**	**2**	0	0	0	1.3×10^3	3.11
	Rice Single Grain	**47**	**6**	0	0	0	2.4×10^3	3.38	**55**	**5**	0	0	0	2.7×10^3	3.43
	Oatmeal Single Grain	TN	TN	**83**	**9**	0	4.2×10^5	5.62	TN	TN	**81**	**6**	0	4.0×10^5	5.60
	Multigrain[1]	**32**	**4**	0	0	0	1.6×10^3	3.20	**30**	**3**	0	0	0	1.5×10^3	3.18
	Banana Apple Blend[1]	**13**	**2**	0	0	0	7.0×10^2	2.85	**13**	**1**	0	0	0	6.5×10^2	2.81

1. Natural Contamination Present, 2. An initial 1:50 dilution conducted, therefore counts multiplied by 50.

Category: Infant Formula and Infant Cereals (48 Hour Read)															
Type	Item	Reference (ISO 21528-2)					CFU/g or ml	Log	Alternative					CFU/g or ml	Log
		Dilution							Dilution						
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
Infant Formula with Probiotic	Fussiness and Gas[1]	TNTC	TN	**32**	**4**	0	3.3×10^4	4.52	TN	TN	**39**	**3**	0	3.8×10^4	4.58
	Stage 1	TN	**47**	**5**	0	0	4.7×10^3	3.67	TN	**41**	**3**	0	0	4.0×10^3	3.60
	Stage 2[1]	**27**	**4**	0	0	0	2.8×10^2	2.45	**24**	**2**	0	0	0	2.4×10^2	2.38
	Infant 0-12 Months	TN	TN	TN	**71**	**7**	7.1×10^5	5.85	TN	TN	TN	**63**	**7**	6.4×10^5	5.81
	Closest to Breast Milk	TN	TN	**57**	**4**	0	5.6×10^4	4.75	TN	TN	**58**	**6**	0	5.8×10^4	4.76
Infant Formula without Probiotic	Pure Bliss[1]	TN	**25**	**2**	0	0	2.4×10^3	3.38	TN	**19**	**2**	0	0	1.9×10^3	3.28
	Neosure	TN	TN	**47**	**6**	0	4.8×10^4	4.68	TN	TN	**53**	**5**	0	5.3×10^4	4.72
	Added Rice Starch[1]	**18**	**2**	0	0	0	1.8×10^2	2.26	**21**	**3**	0	0	0	2.2×10^2	2.34
	Supplementations[1]	**31**	**4**	0	0	0	3.2×10^2	2.51	**27**	**3**	0	0	0	2.7×10^2	2.43
	Stage 3	TN	TN	TN	**55**	**6**	5.6×10^5	5.75	TN	TN	TN	**43**	**4**	4.3×10^5	5.63
Infant Cereal without Probiotic[2]	Organic Rice[1]	**21**	**3**	0	0	0	1.1×10^3	3.04	**26**	**2**	0	0	0	1.3×10^3	3.11
	Rice Single Grain[1]	**49**	**6**	0	0	0	2.5×10^3	3.40	**55**	**5**	0	0	0	2.7×10^3	3.43
	Oatmeal Single Grain	TN	TN	**83**	**9**	0	4.2×10^5	5.62	TN	TN	**81**	**6**	0	4.0×10^5	5.60
	Multigrain[1]	**36**	**4**	0	0	0	1.8×10^3	3.26	**30**	**3**	0	0	0	1.5×10^3	3.18
	Banana Apple Blend[1]	**13**	**2**	0	0	0	7.0×10^2	2.85	**13**	**1**	0	0	0	6.5×10^2	2.81

1. Natural Contamination Present, 2. An initial 1:50 dilution conducted, therefore counts multiplied by 50.

ANNEX H: Results and Calculations for Trueness for All Categories

Category: Heat Processed Milk and Dairy Products (24 Hour Read)					
Type	Item	Reference (ISO 21528-2) Log (CFU/g or ml)	Alternative Log (CFU/g or ml)	Mean	Difference
Pasteurized Dairy Products	Whole Chocolate Milk	3.36	3.36	3.36	0.00
	Half & Half Creamer	2.38	2.48	2.43	0.10
	Peach Cottage Cheese	2.28	2.34	2.31	0.06
	Organic Sour Creme	4.78	4.69	4.73	-0.09
	Whipped Buttery Spread	5.87	5.81	5.84	-0.06
Pasteurized Milk Based Products	Peanut Butter Ice Cream	3.26	3.11	3.18	-0.14
	Golden Custard Nog	2.72	2.77	2.74	0.05
	Rice Pudding	3.11	3.00	3.06	-0.11
	Puff Pastry Sheets	3.66	3.57	3.62	-0.09
	Crème Brulee	4.45	4.28	4.36	-0.17
Milk Powders	Nonfat Instant Dry Milk	2.04	2.11	2.08	0.07
	Organic Nonfat Dry Milk	3.41	3.46	3.44	0.05
	Full Cream Milk Powder	5.23	5.36	5.30	0.13
	Organic Whole Milk Powder	2.20	2.04	2.12	-0.16
	Malted Milk	5.82	5.85	5.84	0.03
Category: Infant Formula and Infant Cereals (24 Hour Read)					
Infant Formula with Probiotic	Fussiness and Gas	4.53	4.58	4.56	0.05
	Stage 1	3.64	3.60	3.62	-0.04
	Stage 2	2.43	2.38	2.41	-0.05
	Infant 0-12 Months	5.85	5.81	5.83	-0.04
	Closest to Breast Milk	4.72	4.76	4.74	0.05
Infant Formula without Probiotic	Pure Bliss	3.38	3.28	3.33	-0.10
	Neosure	4.66	4.72	4.69	0.06
	Added Rice Starch	2.23	2.08	2.15	-0.15
	Supplementations	2.51	2.43	2.47	-0.07
	Stage 3	5.72	5.63	5.67	-0.08
Infant Cereal without Probiotic	Organic Rice	3.00	3.11	3.06	0.11
	Rice Single Grain	3.38	3.43	3.41	0.05
	Oatmeal Single Grain	5.62	5.60	5.61	-0.02
	Multigrain	3.20	3.18	3.19	-0.03
	Banana Apple Blend	2.85	2.81	2.83	-0.03

Category: Heat Processed Milk and Dairy Products (48 Hour Read: Alternative method only)					
Type	Item	Reference (ISO 21528-2) Log (CFU/g or ml)	Alternative Log (CFU/g or ml)	Mean	Difference
Pasteurized Dairy Products	Whole Chocolate Milk	3.38	3.36	3.37	-0.02
	Half & Half Creamer	2.41	2.48	2.45	0.06
	Peach Cottage Cheese	2.28	2.34	2.31	0.06
	Organic Sour Creme	4.79	4.69	4.74	-0.10
	Whipped Buttery Spread	5.88	5.81	5.84	-0.07
Pasteurized Milk Based Products	Peanut Butter Ice Cream	3.26	3.11	3.18	-0.14
	Golden Custard Nog	2.73	2.77	2.75	0.04
	Rice Pudding	3.11	3.00	3.06	-0.11
	Puff Pastry Sheets	3.66	3.57	3.62	-0.09
	Crème Brulee	4.45	4.28	4.36	-0.17
Milk Powders	Nonfat Instant Dry Milk	2.04	2.11	2.08	0.07
	Organic Nonfat Dry Milk	3.43	3.46	3.45	0.03
	Full Cream Milk Powder	5.23	5.36	5.30	0.13
	Organic Whole Milk Powder	2.20	2.04	2.12	-0.16
	Malted Milk	5.83	5.85	5.84	0.03
Category: Infant Formula and Infant Cereals (48 Hour Read: Alternative method only)					
Infant Formula with Probiotic	Fussiness and Gas	4.52	4.58	4.55	0.06
	Stage 1	3.67	3.60	3.64	-0.07
	Stage 2	2.45	2.38	2.41	-0.07
	Infant 0-12 Months	5.85	5.81	5.83	-0.05
	Closest to Breast Milk	4.75	4.76	4.76	0.02
Infant Formula without Probiotic	Pure Bliss	3.38	3.28	3.33	-0.10
	Neosure	4.68	4.72	4.70	0.04
	Added Rice Starch	2.26	2.34	2.30	0.09
	Supplementations	2.51	2.43	2.47	-0.07
	Stage 3	5.75	5.63	5.69	-0.11
Infant Cereal without Probiotic	Organic Rice	3.04	3.11	3.08	0.07
	Rice Single Grain	3.40	3.43	3.41	0.03
	Oatmeal Single Grain	5.62	5.60	5.61	-0.02
	Multigrain	3.26	3.18	3.22	-0.08
	Banana Apple Blend	2.85	2.81	2.83	-0.03

ANNEX I: Raw Data for Accuracy Profile

3.25% Pasteurized Whole Milk (24 Hour Read)																				
Level	Sample Replicate	Alternative (Peel Plate EB)					CFU/ ml	Log	Reference: ISO 21528-1									MPN/ml	Log
		Dilution							Test Portion										
		-0	-0	-1	-3	-4			1 ml			0.1 ml			0.01 ml				
Low	1A	**6**	**8**	0	0	0	7.0×10^0	0.85	+	+	+	-	+	-	-	+	-	8	0.90
	2A	**17**	**12**	0	0	0	1.4×10^1	1.15	+	+	+	+	+	-	+	-	-	15	1.18
	3A	**5**	**8**	0	0	0	6.0×10^0	0.78	+	-	+	+	-	+	+	-	+	4	0.60
	4A	**8**	**15**	0	0	0	1.2×10^1	1.08	+	+	+	+	+	-	-	-	-	9	0.95
	5A	**21**	**12**	0	0	0	1.6×10^1	1.20	+	+	+	+	+	+	-	-	-	24	1.38
	1B	**4**	**7**	0	0	0	6.0×10^0	0.78	+	+	+	-	-	+	-	-	+	8	0.90
	2B	**5**	**6**	0	0	0	6.0×10^0	0.78	+	+	+	+	-	-	+	-	-	8	0.90
	3B	**12**	**9**	0	0	0	1.0×10^1	1.00	+	+	+	+	-	+	+	-	+	22	1.34
	4B	**7**	**7**	0	0	0	7.0×10^0	0.85	+	+	+	+	-	-	+	-	-	8	0.90
	5B	**9**	**10**	0	0	0	1.0×10^1	1.00	+	+	+	+	-	+	+	-	-	15	1.18
3.25% Pasteurized Whole Milk (48 Hour Read: Alternative method only)																				
Low	1A	**6**	**8**	0	0	0	7.0×10^0	0.85	+	+	+	-	+	-	-	+	-	8	0.90
	2A	**17**	**12**	0	0	0	1.4×10^1	1.15	+	+	+	+	+	-	+	-	-	15	1.18
	3A	**5**	**8**	0	0	0	6.0×10^0	0.78	+	-	+	+	-	+	+	-	+	4	0.60
	4A	**8**	**15**	0	0	0	1.2×10^1	1.08	+	+	+	+	+	-	-	-	-	9	0.95
	5A	**22**	**14**	0	0	0	1.8×10^1	1.26	+	+	+	+	+	+	-	-	-	24	1.38
	1B	**4**	**7**	0	0	0	6.0×10^0	0.78	+	+	+	-	-	+	-	-	+	8	0.90
	2B	**5**	**6**	0	0	0	6.0×10^0	0.78	+	+	+	+	-	-	+	-	-	8	0.90
	3B	**12**	**9**	0	0	0	1.0×10^1	1.00	+	+	+	+	-	+	+	-	+	22	1.34
	4B	**7**	**7**	0	0	0	7.0×10^0	0.85	+	+	+	+	-	-	+	-	-	8	0.90
	5B	**9**	**10**	0	0	0	1.0×10^1	1.00	+	+	+	+	-	+	+	-	-	15	1.18

3.25% Pasteurized Whole Milk (24 Hour Read)																
Level	Sample Replicate	Alternative (Peel Plate EB)					CFU/ml	Log	Reference: ISO 21528-2					CFU/ml	Log
		Dilution							Dilution						
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
Medium	1A	TNTC	**21**	**3**	0	0	2.2×10^3	3.34	TNTC	**21**	**2**	0	0	2.1×10^3	3.32
	2A	TNTC	**27**	**2**	0	0	2.6×10^3	3.42	TNTC	**34**	**2**	0	0	3.3×10^3	3.52
	3A	TNTC	**34**	**4**	0	0	3.4×10^3	3.53	TNTC	**29**	**3**	0	0	2.9×10^3	3.46
	4A	TNTC	**47**	**3**	0	0	4.6×10^3	3.66	TNTC	**36**	**4**	0	0	3.6×10^3	3.56
	5A	TNTC	**20**	**3**	0	0	2.1×10^3	3.32	TNTC	**22**	**2**	0	0	2.2×10^3	3.34
	1B	TNTC	**31**	**2**	0	0	3.0×10^3	3.48	TNTC	**20**	**2**	0	0	2.0×10^3	3.30
	2B	TNTC	**29**	**2**	0	0	2.8×10^3	3.45	TNTC	**31**	**2**	0	0	3.0×10^3	3.48
	3B	TNTC	**41**	**3**	0	0	4.0×10^3	3.60	TNTC	**36**	**4**	0	0	3.6×10^3	3.56
	4B	TNTC	**51**	**3**	0	0	4.9×10^3	3.69	TNTC	**46**	**5**	0	0	4.6×10^3	3.67
	5B	TNTC	**26**	**2**	0	0	2.6×10^3	3.41	TNTC	**27**	**2**	0	0	2.6×10^3	3.42
3.25% Pasteurized Whole Milk (48 Hour Read: Alternative method only)															
Medium	1A	TNTC	**22**	**3**	0	0	2.3×10^3	3.36	TNTC	**21**	**2**	0	0	2.1×10^3	3.32
	2A	TNTC	**27**	**2**	0	0	2.6×10^3	3.42	TNTC	**34**	**2**	0	0	3.3×10^3	3.52
	3A	TNTC	**34**	**4**	0	0	3.4×10^3	3.53	TNTC	**29**	**3**	0	0	2.9×10^3	3.46
	4A	TNTC	**49**	**4**	0	0	4.8×10^3	3.68	TNTC	**36**	**4**	0	0	3.6×10^3	3.56
	5A	TNTC	**21**	**3**	0	0	2.2×10^3	3.34	TNTC	**22**	**2**	0	0	2.2×10^3	3.34
	1B	TNTC	**31**	**2**	0	0	3.0×10^3	3.48	TNTC	**20**	**2**	0	0	2.0×10^3	3.30
	2B	TNTC	**29**	**2**	0	0	2.8×10^3	3.45	TNTC	**31**	**2**	0	0	3.0×10^3	3.48
	3B	TNTC	**42**	**4**	0	0	4.2×10^3	3.62	TNTC	**36**	**4**	0	0	3.6×10^3	3.56
	4B	TNTC	**52**	**5**	0	0	5.2×10^3	3.71	TNTC	**46**	**5**	0	0	4.6×10^3	3.67
	5B	TNTC	**26**	**2**	0	0	2.6×10^3	3.41	TNTC	**27**	**2**	0	0	2.6×10^3	3.42

3.25% Pasteurized Whole Milk (24 Hour Read)																
Level	Sample Replicate	Alternative (Peel Plate EB)					CFU/ml	Log	Reference: ISO 21528-2					CFU/ml	Log
		Dilution							Dilution						
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
High	1A	TNTC	TNTC	**12**	**1**	0	1.2×10^4	4.07	TNTC	TNTC	**12**	**1**	0	1.2×10^4	4.07
	2A	TNTC	TNTC	**14**	**2**	0	1.4×10^4	4.16	TNTC	TNTC	**16**	**1**	0	1.6×10^4	4.19
	3A	TNTC	TNTC	**21**	**2**	0	2.1×10^4	4.32	TNTC	TNTC	**17**	**2**	0	1.7×10^4	4.24
	4A	TNTC	TNTC	**11**	**1**	0	1.1×10^4	4.04	TNTC	TNTC	**11**	**2**	0	1.2×10^4	4.07
	5A	TNTC	TNTC	**13**	**1**	0	1.3×10^4	4.10	TNTC	TNTC	**21**	**2**	0	2.1×10^4	4.32
	1B	TNTC	TNTC	**15**	**1**	0	1.4×10^4	4.16	TNTC	TNTC	**14**	**2**	0	1.4×10^4	4.15
	2B	TNTC	TNTC	**16**	**1**	0	1.6×10^4	4.20	TNTC	TNTC	**16**	**2**	0	1.6×10^4	4.20
	3B	TNTC	TNTC	**14**	**2**	0	1.4×10^4	4.15	TNTC	TNTC	**22**	**3**	0	2.3×10^4	4.36
	4B	TNTC	TNTC	**13**	**1**	0	1.3×10^4	4.11	TNTC	TNTC	**11**	**1**	0	1.1×10^4	4.04
	5B	TNTC	TNTC	**22**	**3**	0	2.3×10^4	4.36	TNTC	TNTC	**25**	**2**	0	2.4×10^4	4.38
3.25% Pasteurized Whole Milk (48 Hour Read: Alternative method only)															
High	1A	TNTC	TNTC	**12**	**1**	0	1.2×10^4	4.07	TNTC	TNTC	**12**	**1**	0	1.2×10^4	4.07
	2A	TNTC	TNTC	**14**	**2**	0	1.4×10^4	4.16	TNTC	TNTC	**16**	**1**	0	1.6×10^4	4.19
	3A	TNTC	TNTC	**21**	**2**	0	2.1×10^4	4.32	TNTC	TNTC	**17**	**2**	0	1.7×10^4	4.24
	4A	TNTC	TNTC	**11**	**1**	0	1.1×10^4	4.04	TNTC	TNTC	**11**	**2**	0	1.2×10^4	4.07
	5A	TNTC	TNTC	**13**	**1**	0	1.3×10^4	4.10	TNTC	TNTC	**21**	**2**	0	2.1×10^4	4.32
	1B	TNTC	TNTC	**16**	**1**	0	1.6×10^4	4.20	TNTC	TNTC	**14**	**2**	0	1.4×10^4	4.15
	2B	TNTC	TNTC	**17**	**1**	0	1.6×10^4	4.20	TNTC	TNTC	**16**	**2**	0	1.6×10^4	4.20
	3B	TNTC	TNTC	**14**	**2**	0	1.4×10^4	4.15	TNTC	TNTC	**22**	**3**	0	2.3×10^4	4.36
	4B	TNTC	TNTC	**13**	**1**	0	1.3×10^4	4.11	TNTC	TNTC	**11**	**1**	0	1.1×10^4	4.04
	5B	TNTC	TNTC	**23**	**3**	0	2.3×10^4	4.36	TNTC	TNTC	**25**	**2**	0	2.4×10^4	4.38

Dry Milk Powder (24 Hour Read)																				
Level	Sample Replicate	Alternative (Peel Plate EB)					CFU/ml	Log	Reference: ISO 21528-1									MPN/ml	Log
		Dilution							Test Portion										
		-1	-1	-2	-3	-4			1 ml			0.1 ml			0.01 ml				
Low	1A	**5**	**4**	0	0	0	4.0×10^1	1.60	+	+	+	+	+	+	-	-	+	46	1.67
	2A	**9**	**9**	0	0	0	9.0×10^1	1.95	+	+	+	+	+	+	-	+	+	110	2.04
	3A	**6**	**4**	0	0	0	5.0×10^1	1.70	+	+	+	+	+	+	-	+	-	46	1.67
	4A	**9**	**7**	0	0	0	8.0×10^1	1.90	+	+	+	+	+	+	-	+	+	110	2.04
	5A	**9**	**6**	0	0	0	8.0×10^1	1.90	+	+	+	+	+	+	+	+	-	110	2.04
	1B	**7**	**4**	0	0	0	6.0×10^1	1.78	+	+	+	+	+	+	-	+	+	46	1.67
	2B	**6**	**8**	0	0	0	7.0×10^1	1.85	+	+	+	+	+	+	+	-	+	110	2.04
	3B	**5**	**5**	0	0	0	5.0×10^1	1.70	+	+	+	+	+	+	-	+	+	110	2.04
	4B	**11**	**10**	0	0	0	1.0×10^2	2.00	+	+	+	+	+	+	-	+	+	110	2.04
	5B	**5**	**10**	0	0	0	8.0×10^1	1.90	+	+	+	+	+	+	+	+	-	110	2.04
Dry Milk Powder (48 Hour Read: Alternative method only.)																			
Low	1A	**5**	**5**	0	0	0	5.0×10^1	1.70	+	+	+	+	+	+	-	-	+	46	1.67
	2A	**10**	**10**	0	0	0	1.0×10^2	2.00	+	+	+	+	+	+	-	+	+	110	2.04
	3A	**6**	**5**	0	0	0	6.0×10^1	1.78	+	+	+	+	+	+	-	+	-	46	1.67
	4A	**10**	**9**	0	0	0	1.0×10^2	2.00	+	+	+	+	+	+	-	+	+	110	2.04
	5A	**10**	**8**	0	0	0	9.0×10^1	1.95	+	+	+	+	+	+	+	+	-	110	2.04
	1B	**7**	**4**	0	0	0	6.0×10^1	1.78	+	+	+	+	+	+	-	+	+	46	1.67
	2B	**6**	**8**	0	0	0	7.0×10^1	1.85	+	+	+	+	+	+	+	-	+	110	2.04
	3B	**5**	**5**	0	0	0	5.0×10^1	1.70	+	+	+	+	+	+	-	+	+	110	2.04
	4B	**11**	**10**	0	0	0	1.0×10^2	2.00	+	+	+	+	+	+	-	+	+	110	2.04
	5B	**5**	**10**	0	0	0	8.0×10^1	1.90	+	+	+	+	+	+	+	+	-	110	2.04

Dry Milk Powder (24 Hour Read)															
Level	Sample Replicate	Alternative (Peel Plate EB)					CFU/ml	Log	Reference: ISO 21528-2					CFU/ml	Log
		Dilution							Dilution						
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
Medium	1A	TNTC	**41**	**3**	0	0	4.0×10^3	3.60	TNTC	**30**	**3**	0	0	3.0×10^3	3.48
	2A	TNTC	**36**	**3**	0	0	3.6×10^3	3.56	TNTC	**32**	**2**	0	0	3.1×10^3	3.49
	3A	TNTC	**47**	**4**	0	0	4.6×10^3	3.67	TNTC	**36**	**4**	0	0	3.6×10^3	3.56
	4A	TNTC	**40**	**3**	0	0	3.9×10^3	3.59	TNTC	**24**	**2**	0	0	2.4×10^3	3.38
	5A	TNTC	**51**	**4**	0	0	5.0×10^3	3.70	TNTC	**42**	**4**	0	0	4.2×10^3	3.62
	1B	TNTC	**35**	**3**	0	0	3.4×10^3	3.54	TNTC	**31**	**2**	0	0	3.0×10^3	3.48
	2B	TNTC	**39**	**2**	0	0	3.7×10^3	3.57	TNTC	**27**	**3**	0	0	2.7×10^3	3.44
	3B	TNTC	**49**	**5**	0	0	4.9×10^3	3.69	TNTC	**36**	**3**	0	0	3.6×10^3	3.55
	4B	TNTC	**35**	**2**	0	0	3.4×10^3	3.53	TNTC	**22**	**4**	0	0	2.4×10^3	3.37
	5B	TNTC	**44**	**5**	0	0	4.4×10^3	3.65	TNTC	**48**	**4**	0	0	4.7×10^3	3.67
Dry Milk Powder (48 Hour Read: Alternative method only)															
Medium	1A	TNTC	**43**	**3**	0	0	4.2×10^3	3.62	TNTC	**30**	**3**	0	0	3.0×10^3	3.48
	2A	TNTC	**37**	**3**	0	0	3.6×10^3	3.56	TNTC	**32**	**2**	0	0	3.1×10^3	3.49
	3A	TNTC	**49**	**4**	0	0	4.8×10^3	3.68	TNTC	**36**	**4**	0	0	3.6×10^3	3.56
	4A	TNTC	**40**	**4**	0	0	4.0×10^3	3.60	TNTC	**24**	**2**	0	0	2.4×10^3	3.38
	5A	TNTC	**51**	**5**	0	0	5.1×10^3	3.71	TNTC	**42**	**4**	0	0	4.2×10^3	3.62
	1B	TNTC	**38**	**4**	0	0	3.8×10^3	3.58	TNTC	**31**	**2**	0	0	3.0×10^3	3.48
	2B	TNTC	**41**	**3**	0	0	4.0×10^3	3.60	TNTC	**27**	**3**	0	0	2.7×10^3	3.44
	3B	TNTC	**50**	**5**	0	0	5.0×10^3	3.70	TNTC	**36**	**3**	0	0	3.6×10^3	3.55
	4B	TNTC	**36**	**2**	0	0	3.4×10^3	3.54	TNTC	**22**	**4**	0	0	2.4×10^3	3.37
	5B	TNTC	**44**	**6**	0	0	4.6×10^3	3.66	TNTC	**48**	**4**	0	0	4.7×10^3	3.67

Dry Milk Powder (24 Hour Read)															
Level	Sample Replicate	Alternative (Peel Plate EB)					CFU/ml	Log	Reference: ISO 21528-2					CFU/ml	Log
		Dilution							Dilution						
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
High	1A	TNTC	TNTC	TNTC	**10**	**2**	1.1×10^5	5.04	TNTC	TNTC	**84**	**9**	0	8.4×10^4	4.93
	2A	TNTC	TNTC	TNTC	**18**	**2**	1.8×10^5	5.26	TNTC	TNTC	TNTC	**14**	**3**	1.6×10^5	5.19
	3A	TNTC	TNTC	TNTC	**18**	**1**	1.7×10^5	5.24	TNTC	TNTC	TNTC	**13**	**2**	1.4×10^5	5.13
	4A	TNTC	TNTC	TNTC	**17**	**3**	1.8×10^5	5.26	TNTC	TNTC	TNTC	**16**	**2**	1.6×10^5	5.21
	5A	TNTC	TNTC	TNTC	**13**	**1**	1.3×10^5	5.10	TNTC	TNTC	TNTC	**17**	**2**	1.7×10^5	5.24
	1B	TNTC	TNTC	TNTC	**12**	**1**	1.2×10^5	5.07	TNTC	TNTC	TNTC	**11**	**1**	1.1×10^5	5.04
	2B	TNTC	TNTC	TNTC	**15**	**2**	1.6×10^5	5.18	TNTC	TNTC	TNTC	**13**	**2**	1.4×10^5	5.15
	3B	TNTC	TNTC	TNTC	**16**	**2**	1.6×10^5	5.20	TNTC	TNTC	TNTC	**12**	**1**	1.2×10^5	5.08
	4B	TNTC	TNTC	TNTC	**10**	**1**	1.0×10^5	5.00	TNTC	TNTC	TNTC	**10**	**2**	1.1×10^5	5.04
	5B	TNTC	TNTC	TNTC	**11**	**1**	1.1×10^5	5.04	TNTC	TNTC	TNTC	**10**	**1**	1.0×10^5	5.00
Dry Milk Powder (48 Hour Read: Alternative method only)															
High	1A	TNTC	TNTC	TNTC	**10**	**2**	1.1×10^5	5.04	TNTC	TNTC	**84**	**9**	0	8.4×10^4	4.93
	2A	TNTC	TNTC	TNTC	**18**	**2**	1.8×10^5	5.26	TNTC	TNTC	TNTC	**14**	**3**	1.6×10^5	5.19
	3A	TNTC	TNTC	TNTC	**18**	**1**	1.7×10^5	5.24	TNTC	TNTC	TNTC	**13**	**2**	1.4×10^5	5.13
	4A	TNTC	TNTC	TNTC	**17**	**3**	1.8×10^5	5.26	TNTC	TNTC	TNTC	**16**	**2**	1.6×10^5	5.21
	5A	TNTC	TNTC	TNTC	**13**	**1**	1.3×10^5	5.10	TNTC	TNTC	TNTC	**17**	**2**	1.7×10^5	5.24
	1B	TNTC	TNTC	TNTC	**12**	**1**	1.2×10^5	5.07	TNTC	TNTC	TNTC	**11**	**1**	1.1×10^5	5.04
	2B	TNTC	TNTC	TNTC	**15**	**2**	1.6×10^5	5.18	TNTC	TNTC	TNTC	**13**	**2**	1.4×10^5	5.15
	3B	TNTC	TNTC	TNTC	**17**	**2**	1.7×10^5	5.23	TNTC	TNTC	TNTC	**12**	**1**	1.2×10^5	5.08
	4B	TNTC	TNTC	TNTC	**10**	**1**	1.0×10^5	5.00	TNTC	TNTC	TNTC	**10**	**2**	1.1×10^5	5.04
	5B	TNTC	TNTC	TNTC	**11**	**1**	1.1×10^5	5.04	TNTC	TNTC	TNTC	**10**	**1**	1.0×10^5	5.00

Infant Formula with Probiotic (24 Hour Read)																				
Level	Sample Replicate	Alternative (Peel Plate EB)					CFU/g	Log	Reference: ISO 21528-1									MPN/g	Log
		Dilution							Test Portion										
		-1	-1	-2	-3	-4			1 g			0.1 g			0.01 g				
Low	1A	**5**	**4**	0	0	0	4.0×10^1	1.60	+	+	+	+	+	-	+	+	+	29	1.47
	2A	**7**	**5**	0	0	0	6.0×10^1	1.78	+	+	+	-	+	+	+	+	+	29	1.47
	3A	**7**	**9**	0	0	0	8.0×10^1	1.90	+	+	+	+	+	+	+	-	-	46	1.67
	4A	**8**	**5**	0	0	0	6.0×10^1	1.78	+	+	+	+	+	+	-	+	-	46	1.67
	5A	**4**	**9**	0	0	0	6.0×10^1	1.78	+	+	+	+	+	+	+	+	-	110	2.04
	1B	**8**	**8**	0	0	0	8.0×10^1	1.90	+	+	+	+	+	+	-	+	+	110	2.04
	2B	**7**	**4**	0	0	0	6.0×10^1	1.78	+	+	+	+	+	+	-	-	-	24	1.38
	3B	**9**	**7**	0	0	0	8.0×10^1	1.90	+	+	+	+	+	+	+	-	+	110	2.04
	4B	**10**	**9**	0	0	0	1.0×10^2	2.00	+	+	+	+	+	+	+	+	-	110	2.04
	5B	**9**	**8**	0	0	0	8.0×10^1	1.90	+	+	+	+	+	+	-	-	+	46	1.67
Infant Formula with Probiotic (48 Hour Read: Alternative method only)																				
Low	1A	**5**	**4**	0	0	0	4.0×10^1	1.60	+	+	+	+	+	-	+	+	+	29	1.47
	2A	**7**	**5**	0	0	0	6.0×10^1	1.78	+	+	+	-	+	+	+	+	+	29	1.47
	3A	**8**	**9**	0	0	0	8.0×10^1	1.90	+	+	+	+	+	+	+	-	-	46	1.67
	4A	**8**	**5**	0	0	0	6.0×10^1	1.78	+	+	+	+	+	+	-	+	-	46	1.67
	5A	**5**	**9**	0	0	0	7.0×10^1	1.85	+	+	+	+	+	+	+	+	-	110	2.04
	1B	**8**	**8**	0	0	0	8.0×10^1	1.90	+	+	+	+	+	+	-	+	+	110	2.04
	2B	**7**	**4**	0	0	0	6.0×10^1	1.78	+	+	+	+	+	+	-	-	-	24	1.38
	3B	**9**	**7**	0	0	0	8.0×10^1	1.90	+	+	+	+	+	+	+	-	+	110	2.04
	4B	**10**	**9**	0	0	0	1.0×10^2	2.00	+	+	+	+	+	+	+	+	-	110	2.04
	5B	**9**	**8**	0	0	0	8.0×10^1	1.90	+	+	+	+	+	+	-	-	+	46	1.67

Infant Formula with Probiotic (24 Hour Read)															
Level	Sample Replicate	Alternative (Peel Plate EB)					CFU/g	Log	Reference: ISO 21528-2					CFU/g	Log
		Dilution							Dilution						
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
Medium	1A	TNTC	**40**	**3**	0	0	3.9×10^3	3.59	TNTC	**44**	**4**	0	0	4.4×10^3	3.64
	2A	TNTC	**54**	**4**	0	0	5.3×10^3	3.72	TNTC	**46**	**4**	0	0	4.6×10^3	3.66
	3A	TNTC	**43**	**4**	0	0	4.3×10^3	3.63	TNTC	**37**	**3**	0	0	3.6×10^3	3.56
	4A	TNTC	**42**	**5**	0	0	4.3×10^3	3.63	TNTC	**41**	**5**	0	0	4.2×10^3	3.62
	5A	TNTC	**50**	**4**	0	0	4.9×10^3	3.69	TNTC	**48**	**3**	0	0	4.6×10^3	3.66
	1B	TNTC	**38**	**2**	0	0	3.6×10^3	3.56	TNTC	**37**	**2**	0	0	3.6×10^3	3.55
	2B	TNTC	**59**	**3**	0	0	5.6×10^3	3.75	TNTC	**57**	**3**	0	0	3.4×10^3	3.74
	3B	TNTC	**35**	**4**	0	0	3.6×10^3	3.55	TNTC	**42**	**4**	0	0	4.2×10^3	3.62
	4B	TNTC	**44**	**5**	0	0	4.4×10^3	3.65	TNTC	**36**	**4**	0	0	3.6×10^3	3.56
	5B	TNTC	**39**	**3**	0	0	3.8×10^3	3.58	TNTC	**34**	**2**	0	0	3.3×10^3	3.51
Infant Formula with Probiotic (48 Hour Read: Alternative method only)															
Medium	1A	TNTC	**41**	**3**	0	0	4.0×10^3	3.60	TNTC	**44**	**4**	0	0	4.4×10^3	3.64
	2A	TNTC	**58**	**4**	0	0	5.6×10^3	3.75	TNTC	**46**	**4**	0	0	4.6×10^3	3.66
	3A	TNTC	**46**	**4**	0	0	4.6×10^3	3.66	TNTC	**37**	**3**	0	0	3.6×10^3	3.56
	4A	TNTC	**43**	**5**	0	0	4.4×10^3	3.64	TNTC	**41**	**5**	0	0	4.2×10^3	3.62
	5A	TNTC	**50**	**4**	0	0	4.9×10^3	3.69	TNTC	**48**	**3**	0	0	4.6×10^3	3.66
	1B	TNTC	**40**	**2**	0	0	3.8×10^3	3.58	TNTC	**37**	**2**	0	0	3.6×10^3	3.55
	2B	TNTC	**62**	**4**	0	0	6.0×10^3	3.78	TNTC	**57**	**3**	0	0	3.4×10^3	3.74
	3B	TNTC	**38**	**4**	0	0	3.8×10^3	3.58	TNTC	**42**	**4**	0	0	4.2×10^3	3.62
	4B	TNTC	**44**	**5**	0	0	4.4×10^3	3.65	TNTC	**36**	**4**	0	0	3.6×10^3	3.56
	5B	TNTC	**41**	**3**	0	0	4.0×10^3	3.60	TNTC	**34**	**2**	0	0	3.3×10^3	3.51

Infant Formula with Probiotic (24 Hour Read)																
Level	Sample Replicate	Alternative (Peel Plate EB)					CFU/g	Log	Reference: ISO 21528-2					CFU/g	Log
		Dilution							Dilution						
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
High	1A	TNTC	TNTC	**62**	**6**	0	6.2×10^4	4.79	TNTC	TNTC	**71**	**7**	0	7.1×10^4	4.85
	2A	TNTC	TNTC	TNTC	**13**	**1**	1.3×10^5	5.10	TNTC	TNTC	TNTC	**11**	**2**	1.2×10^5	5.07
	3A	TNTC	TNTC	**78**	**8**	0	7.8×10^4	4.89	TNTC	TNTC	**68**	**9**	0	7.0×10^4	4.85
	4A	TNTC	TNTC	TNTC	**19**	**2**	1.9×10^5	5.28	TNTC	TNTC	**57**	**4**	0	5.6×10^4	4.74
	5A	TNTC	TNTC	**68**	**7**	0	6.8×10^4	4.83	TNTC	TNTC	**60**	**6**	0	6.0×10^4	4.78
	1B	TNTC	TNTC	**54**	**5**	0	5.4×10^4	4.73	TNTC	TNTC	**48**	**4**	0	4.7×10^4	4.67
	2B	TNTC	TNTC	**66**	**6**	0	6.6×10^4	4.82	TNTC	TNTC	**51**	**5**	0	5.1×10^4	4.71
	3B	TNTC	TNTC	TNTC	**12**	**2**	1.3×10^5	5.11	TNTC	TNTC	**59**	**5**	0	5.8×10^4	4.76
	4B	TNTC	TNTC	TNTC	**14**	**3**	1.6×10^5	5.20	TNTC	TNTC	**63**	**7**	0	6.4×10^4	4.81
	5B	TNTC	TNTC	**79**	**8**	0	7.9×10^4	4.90	TNTC	TNTC	**74**	**8**	0	7.2×10^4	4.86
Infant Formula with Probiotic (48 Hour Read: Alternative method only)															
High	1A	TNTC	TNTC	**64**	**6**	0	6.4×10^4	4.80	TNTC	TNTC	**71**	**7**	0	7.1×10^4	4.85
	2A	TNTC	TNTC	TNTC	**13**	**1**	1.3×10^5	5.10	TNTC	TNTC	TNTC	**11**	**2**	1.2×10^5	5.07
	3A	TNTC	TNTC	**78**	**9**	0	7.9×10^4	4.90	TNTC	TNTC	**68**	**9**	0	7.0×10^4	4.85
	4A	TNTC	TNTC	TNTC	**19**	**2**	1.9×10^5	5.28	TNTC	TNTC	**57**	**4**	0	5.6×10^4	4.74
	5A	TNTC	TNTC	**70**	**7**	0	7.0×10^4	4.85	TNTC	TNTC	**60**	**6**	0	6.0×10^4	4.78
	1B	TNTC	TNTC	**57**	**5**	0	5.6×10^4	4.75	TNTC	TNTC	**48**	**4**	0	4.7×10^4	4.67
	2B	TNTC	TNTC	**66**	**7**	0	6.6×10^4	4.82	TNTC	TNTC	**51**	**5**	0	5.1×10^4	4.71
	3B	TNTC	TNTC	TNTC	**12**	**2**	1.3×10^5	5.11	TNTC	TNTC	**59**	**5**	0	5.8×10^4	4.76
	4B	TNTC	TNTC	TNTC	**14**	**3**	1.6×10^5	5.20	TNTC	TNTC	**63**	**7**	0	6.4×10^4	4.81
	5B	TNTC	TNTC	**79**	**8**	0	7.9×10^4	4.90	TNTC	TNTC	**74**	**8**	0	7.2×10^4	4.86

Infant Cereal with Probiotic (24 Hour Read)																				
Level	Sample Replicate	Alternative (Peel Plate EB)					CFU/g	Log	Reference: ISO 21528-1									MPN/g	Log
		Dilution[1]							Test Portion[2]										
		-1	-1	-2	-3	-4			1 g			0.1 g			0.01 g				
Low	1A	**18**	**24**	**2**	0	0	2.1×10^2	2.32	+	+	+	+	+	+	-	+	-	230	2.36
	2A	**17**	**15**	**1**	0	0	1.6×10^2	2.20	+	+	+	+	-	+	+	+	+	150	2.18
	3A	**21**	**19**	**3**	0	0	2.0×10^2	2.30	+	+	+	+	+	+	-	-	+	230	2.36
	4A	**13**	**11**	**1**	0	0	1.2×10^2	2.08	+	+	+	+	-	+	+	-	+	100	2.00
	5A	**14**	**11**	**2**	0	0	1.3×10^2	2.11	+	+	+	+	+	-	+	+	+	150	2.18
	1B	**16**	**12**	**2**	0	0	1.4×10^2	2.15	+	+	+	+	+	+	-	-	-	120	2.08
	2B	**21**	**14**	**3**	0	0	1.8×10^2	2.26	+	+	+	+	+	+	+	-	-	230	2.36
	3B	**11**	**13**	**1**	0	0	1.2×10^2	2.08	+	+	+	+	+	-	+	+	+	150	2.18
	4B	**19**	**15**	**2**	0	0	1.7×10^2	2.23	+	+	+	+	+	+	-	-	+	230	2.36
	5B	**14**	**13**	**1**	0	0	1.3×10^2	2.11	+	+	+	+	+	+	-	-	-	120	2.08
Infant Cereal with Probiotic (48 Hour Read: Alternative method only)																				
Low	1A	**18**	**24**	**2**	0	0	2.1×10^2	2.32	+	+	+	+	+	+	-	+	-	230	2.36
	2A	**17**	**15**	**1**	0	0	1.6×10^2	2.20	+	+	+	+	-	+	+	+	+	150	2.18
	3A	**21**	**20**	**3**	0	0	2.1×10^2	2.32	+	+	+	+	+	+	-	-	+	230	2.36
	4A	**13**	**12**	**1**	0	0	1.2×10^2	2.08	+	+	+	+	-	+	+	-	+	100	2.00
	5A	**15**	**11**	**2**	0	0	1.3×10^2	2.11	+	+	+	+	+	-	+	+	+	150	2.18
	1B	**16**	**12**	**2**	0	0	1.4×10^2	2.15	+	+	+	+	+	+	-	-	-	120	2.08
	2B	**21**	**16**	**3**	0	0	1.9×10^2	2.28	+	+	+	+	+	+	+	-	-	230	2.36
	3B	**11**	**13**	**1**	0	0	1.2×10^2	2.08	+	+	+	+	+	-	+	+	+	150	2.18
	4B	**19**	**16**	**2**	0	0	1.8×10^2	2.26	+	+	+	+	+	+	-	-	+	230	2.36
	5B	**14**	**14**	**1**	0	0	1.4×10^2	2.15	+	+	+	+	+	+	-	-	-	120	2.08

1. Each dilution consists of the sum of 1 ml plated across five plates. 2.An initial 1:50 dilution was conducted, therefore the final MPN value obtained from the MPN Table in ISO 7218:2007 was multiplied by 5.

Infant Cereal with Probiotic (24 Hour Read)																
Level	Sample Replicate	Alternative (Peel Plate EB) Dilution[1]					CFU/g	Log	Reference: ISO 21528-2 Dilution[2]					CFU/g	Log
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
Medium	1A	TNTC	**12**	**2**	0	0	1.3×10^3	3.11	**32**	**3**	0	0	0	1.6×10^3	3.20
	2A	TNTC	**19**	**2**	0	0	1.9×10^3	3.28	**44**	**4**	0	0	0	2.2×10^3	3.34
	3A	TNTC	**18**	**1**	0	0	1.7×10^3	3.23	**49**	**5**	0	0	0	2.4×10^3	3.38
	4A	TNTC	**15**	**1**	0	0	1.4×10^3	3.15	**29**	**3**	0	0	0	1.4×10^3	3.15
	5A	TNTC	**16**	**1**	0	0	1.6×10^3	3.20	**27**	**2**	0	0	0	1.3×10^3	3.11
	1B	TNTC	**11**	**2**	0	0	1.2×10^3	3.07	**30**	**3**	0	0	0	1.5×10^3	3.18
	2B	TNTC	**13**	**1**	0	0	1.3×10^3	3.10	**51**	**3**	0	0	0	2.4×10^3	3.39
	3B	TNTC	**17**	**2**	0	0	1.7×10^3	3.24	**40**	**4**	0	0	0	2.0×10^3	3.30
	4B	TNTC	**20**	**2**	0	0	2.0×10^3	3.30	**24**	**1**	0	0	0	1.1×10^3	3.04
	5B	TNTC	**12**	**2**	0	0	1.3×10^3	3.10	**22**	**2**	0	0	0	1.1×10^3	3.04
Infant Cereal with Probiotic (48 Hour Read: Alternative method only)																
Medium	1A	TNTC	**12**	**2**	0	0	1.3×10^3	3.11	**32**	**3**	0	0	0	1.6×10^3	3.20
	2A	TNTC	**20**	**2**	0	0	2.0×10^3	3.30	**44**	**4**	0	0	0	2.2×10^3	3.34
	3A	TNTC	**18**	**1**	0	0	1.7×10^3	3.23	**49**	**5**	0	0	0	2.4×10^3	3.38
	4A	TNTC	**15**	**1**	0	0	1.4×10^3	3.15	**29**	**3**	0	0	0	1.4×10^3	3.15
	5A	TNTC	**16**	**1**	0	0	1.6×10^3	3.20	**27**	**2**	0	0	0	1.3×10^3	3.11
	1B	TNTC	**11**	**2**	0	0	1.2×10^3	3.07	**30**	**3**	0	0	0	1.5×10^3	3.18
	2B	TNTC	**13**	**1**	0	0	1.3×10^3	3.10	**51**	**3**	0	0	0	2.4×10^3	3.39
	3B	TNTC	**17**	**2**	0	0	1.7×10^3	3.24	**40**	**4**	0	0	0	2.0×10^3	3.30
	4B	TNTC	**20**	**2**	0	0	2.0×10^3	3.30	**24**	**1**	0	0	0	1.1×10^3	3.04
	5B	TNTC	**12**	**2**	0	0	1.3×10^3	3.10	**22**	**2**	0	0	0	1.1×10^3	3.04

1. Each dilution consists of the sum of 1 ml plated across five plates. 2. An initial 1:50 dilution was conducted, plate count value multiplied by 50.

Infant Cereal with Probiotic (24 Hour Read)															
Level	Sample Replicate	Alternative (Peel Plate EB)					CFU/g	Log	Reference: ISO 21528-2					CFU/g	Log
		Dilution[1]							Dilution[2]						
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
High	1A	TNTC	TNTC	TNTC	**10**	**2**	1.1×10^5	5.04	TNTC	TNTC	**18**	**2**	0	9.1×10^4	4.96
	2A	TNTC	TNTC	TNTC	**10**	**1**	1.0×10^5	5.00	TNTC	TNTC	**14**	**3**	0	7.3×10^4	4.89
	3A	TNTC	TNTC	**77**	**8**	0	7.7×10^4	4.89	TNTC	**81**	**7**	0	0	4.0×10^4	4.60
	4A	TNTC	TNTC	**71**	**7**	0	7.1×10^4	4.85	TNTC	TNTC	**12**	**2**	0	6.4×10^4	4.80
	5A	TNTC	TNTC	**82**	**9**	0	8.3×10^4	4.92	TNTC	TNTC	**23**	**2**	0	1.1×10^5	5.06
	1B	TNTC	TNTC	TNTC	**12**	**2**	1.3×10^5	5.10	TNTC	TNTC	**19**	**2**	0	9.6×10^4	4.98
	2B	TNTC	TNTC	TNTC	**11**	**1**	1.1×10^5	5.04	TNTC	TNTC	**21**	**2**	0	1.1×10^5	5.04
	3B	TNTC	TNTC	**86**	**9**	0	8.6×10^4	4.94	TNTC	TNTC	**11**	**1**	0	5.4×10^4	4.73
	4B	TNTC	TNTC	**79**	**8**	0	7.9×10^4	4.90	TNTC	TNTC	**14**	**3**	0	7.7×10^4	4.89
	5B	TNTC	TNTC	TNTC	**13**	**2**	1.4×10^5	5.13	TNTC	TNTC	**19**	**2**	0	9.6×10^4	4.98
Infant Cereal with Probiotic (48 Hour Read: Alternative method only)															
High	1A	TNTC	TNTC	TNTC	**10**	**2**	1.1×10^5	5.04	TNTC	TNTC	**18**	**2**	0	9.1×10^4	4.96
	2A	TNTC	TNTC	TNTC	**11**	**1**	1.1×10^5	5.04	TNTC	TNTC	**14**	**3**	0	7.3×10^4	4.89
	3A	TNTC	TNTC	**79**	**8**	0	7.9×10^4	4.90	TNTC	**81**	**7**	0	0	4.0×10^4	4.60
	4A	TNTC	TNTC	**71**	**7**	0	7.1×10^4	4.85	TNTC	TNTC	**12**	**2**	0	6.4×10^4	4.80
	5A	TNTC	TNTC	**82**	**9**	0	8.3×10^4	4.92	TNTC	TNTC	**23**	**2**	0	1.1×10^4	5.06
	1B	TNTC	TNTC	TNTC	**12**	**2**	1.3×10^5	5.10	TNTC	TNTC	**19**	**2**	0	9.6×10^4	4.98
	2B	TNTC	TNTC	TNTC	**11**	**1**	1.1×10^5	5.04	TNTC	TNTC	**21**	**2**	0	1.1×10^5	5.04
	3B	TNTC	TNTC	**86**	**10**	0	8.7×10^4	4.94	TNTC	TNTC	**11**	**1**	0	5.4×10^4	4.73
	4B	TNTC	TNTC	**81**	**9**	0	8.2×10^4	4.91	TNTC	TNTC	**14**	**3**	0	7.7×10^4	4.89
	5B	TNTC	TNTC	TNTC	**13**	**2**	1.4×10^5	5.13	TNTC	TNTC	**19**	**2**	0	9.6×10^4	4.98

1. Each dilution consists of the sum of 1 ml plated across five plates. 2. An initial 1:50 dilution was conducted, plate count value multiplied by 50.

Infant Cereal with Probiotic (24 Hour Read)																				
Level	Sample Replicate	Alternative (Peel Plate EBHV) Dilution					CFU/g	Log	Reference: ISO 21528-1 Test Portion[1]									MPN/g	Log
									1 g			0.1 g			0.01 g				
		-1	-1	-2	-3	-4													
Low	1A	**25**	**21**	**2**	0	0	2.3×10^2	2.36	+	+	+	+	+	+	-	+	-	230	2.36
	2A	**21**	**16**	**2**	0	0	1.9×10^2	2.27	+	+	+	+	-	+	+	+	+	150	2.18
	3A	**26**	**20**	**2**	0	0	2.3×10^2	2.36	+	+	+	+	+	+	-	-	+	230	2.36
	4A	**16**	**12**	**1**	0	0	1.4×10^2	2.15	+	+	+	+	-	+	+	-	+	100	2.00
	5A	**15**	**14**	**1**	0	0	1.4×10^2	2.15	+	+	+	+	+	-	+	+	+	150	2.18
	1B	**20**	**20**	**3**	0	0	2.1×10^2	2.32	+	+	+	+	+	+	-	-	-	120	2.08
	2B	**19**	**24**	**2**	0	0	2.1×10^2	2.32	+	+	+	+	+	+	+	-	-	230	2.36
	3B	**16**	**22**	**3**	0	0	2.0×10^2	2.30	+	+	+	+	+	-	+	+	+	150	2.18
	4B	**21**	**25**	**2**	0	0	2.3×10^2	2.36	+	+	+	+	+	+	-	-	+	230	2.36
	5B	**31**	**22**	**2**	0	0	2.6×10^2	2.41	+	+	+	+	+	+	-	-	-	120	2.08
Infant Cereal with Probiotic (48 Hour Read: Alternative method only)																				
Low	1A	**25**	**21**	**2**	0	0	2.3×10^2	2.36	+	+	+	+	+	+	-	+	-	230	2.36
	2A	**21**	**16**	**2**	0	0	1.9×10^2	2.27	+	+	+	+	-	+	+	+	+	150	2.18
	3A	**26**	**21**	**2**	0	0	2.3×10^2	2.36	+	+	+	+	+	+	-	-	+	230	2.36
	4A	**16**	**13**	**1**	0	0	1.4×10^2	2.15	+	+	+	+	-	+	+	-	+	100	2.00
	5A	**15**	**15**	**1**	0	0	1.5×10^2	2.18	+	+	+	+	+	-	+	+	+	150	2.18
	1B	**20**	**20**	**3**	0	0	2.1×10^2	2.32	+	+	+	+	+	+	-	-	-	120	2.08
	2B	**20**	**24**	**2**	0	0	2.2×10^2	2.34	+	+	+	+	+	+	+	-	-	230	2.36
	3B	**18**	**22**	**3**	0	0	2.0×10^2	2.30	+	+	+	+	+	-	+	+	+	150	2.18
	4B	**21**	**25**	**2**	0	0	2.3×10^2	2.36	+	+	+	+	+	+	-	-	+	230	2.36
	5B	**31**	**22**	**2**	0	0	2.6×10^2	2.41	+	+	+	+	+	+	-	-	-	120	2.08

1. An initial 1:50 dilution was conducted, therefore the final MPN value obtained from the MPN Table in ISO 7218:2007 was multiplied by 5.

Infant Cereal with Probiotic (24 Hour Read)																
Level	Sample Replicate	Alternative (Peel Plate EBHV) Dilution					CFU/g	Log	Reference: ISO 21528-2 Dilution[1]					CFU/g	Log
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
Medium	1A	TNTC	**15**	**2**	0	0	1.6×10^3	3.20	**32**	**3**	0	0	0	1.6×10^3	3.20
	2A	TNTC	**16**	**2**	0	0	1.6×10^3	3.20	**44**	**4**	0	0	0	2.2×10^3	3.34
	3A	TNTC	**22**	**2**	0	0	2.2×10^3	3.34	**49**	**5**	0	0	0	2.4×10^3	3.38
	4A	TNTC	**15**	**1**	0	0	1.4×10^3	3.15	**29**	**3**	0	0	0	1.4×10^3	3.15
	5A	TNTC	**13**	**1**	0	0	1.3×10^3	3.11	**27**	**2**	0	0	0	1.3×10^3	3.11
	1B	TNTC	**13**	**2**	0	0	1.4×10^3	3.15	**30**	**3**	0	0	0	1.5×10^3	3.18
	2B	TNTC	**16**	**1**	0	0	1.6×10^3	3.20	**51**	**3**	0	0	0	2.4×10^3	3.38
	3B	TNTC	**20**	**1**	0	0	1.9×10^3	3.28	**40**	**4**	0	0	0	2.0×10^3	3.30
	4B	TNTC	**14**	**2**	0	0	1.4×10^3	3.15	**24**	**1**	0	0	0	1.1×10^3	3.04
	5B	TNTC	**15**	**3**	0	0	1.6×10^3	3.20	**22**	**2**	0	0	0	1.1×10^3	3.04
Infant Cereal with Probiotic (48 Hour Read: Alternative method only)																
Medium	1A	TNTC	**15**	**2**	0	0	1.6×10^3	3.20	**32**	**3**	0	0	0	1.6×10^3	3.20
	2A	TNTC	**16**	**2**	0	0	1.6×10^3	3.20	**44**	**4**	0	0	0	2.2×10^3	3.34
	3A	TNTC	**22**	**2**	0	0	2.2×10^3	3.34	**49**	**5**	0	0	0	2.4×10^3	3.38
	4A	TNTC	**15**	**1**	0	0	1.4×10^3	3.15	**29**	**3**	0	0	0	1.4×10^3	3.15
	5A	TNTC	**13**	**1**	0	0	1.3×10^3	3.11	**27**	**2**	0	0	0	1.3×10^3	3.11
	1B	TNTC	**13**	**2**	0	0	1.4×10^3	3.15	**30**	**3**	0	0	0	1.5×10^3	3.18
	2B	TNTC	**16**	**1**	0	0	1.6×10^3	3.20	**51**	**3**	0	0	0	2.4×10^3	3.38
	3B	TNTC	**20**	**1**	0	0	1.9×10^3	3.28	**40**	**4**	0	0	0	2.0×10^3	3.30
	4B	TNTC	**14**	**2**	0	0	1.4×10^3	3.15	**24**	**1**	0	0	0	1.1×10^3	3.04
	5B	TNTC	**15**	**3**	0	0	1.6×10^3	3.20	**22**	**2**	0	0	0	1.1×10^3	3.04

1. An initial 1:50 dilution was conducted, plate count multiplied by 50.

Infant Cereal with Probiotic (24 Hour Read)															
Level	Sample Replicate	Alternative (Peel Plate EBHV) Dilution					CFU/g	Log	Reference: ISO 21528-2 Dilution[1]					CFU/g	Log
		-1	-2	-3	-4	-5			-1	-2	-3	-4	-5		
High	1A	TNTC	TNTC	TNTC	**10**	**2**	1.1×10^5	5.04	TNTC	TNTC	**18**	**2**	0	9.1×10^4	4.96
	2A	TNTC	TNTC	**83**	**7**	0	8.2×10^4	4.91	TNTC	TNTC	**14**	**3**	0	7.3×10^4	4.89
	3A	TNTC	TNTC	**66**	**6**	0	6.6×10^4	4.82	TNTC	**81**	**7**	0	0	4.0×10^4	4.60
	4A	TNTC	TNTC	**57**	**5**	0	5.6×10^4	4.75	TNTC	TNTC	**12**	**2**	0	6.4×10^4	4.80
	5A	TNTC	TNTC	TNTC	**11**	**2**	1.2×10^5	5.08	TNTC	TNTC	**23**	**2**	0	1.1×10^5	5.06
	1B	TNTC	TNTC	TNTC	**11**	**1**	1.1×10^5	5.04	TNTC	TNTC	**19**	**2**	0	9.6×10^4	4.98
	2B	TNTC	TNTC	TNTC	**12**	**2**	1.3×10^5	5.11	TNTC	TNTC	**21**	**2**	0	1.1×10^5	5.04
	3B	TNTC	TNTC	**49**	**5**	0	4.9×10^4	4.69	TNTC	TNTC	**11**	**1**	0	5.4×10^4	4.73
	4B	TNTC	TNTC	**61**	**7**	0	6.2×10^4	4.79	TNTC	TNTC	**14**	**3**	0	7.7×10^4	4.89
	5B	TNTC	TNTC	TNTC	**12**	**2**	1.3×10^5	5.11	TNTC	TNTC	**19**	**2**	0	9.6×10^4	4.98
Infant Cereal with Probiotic (48 Hour Read: Alternative method only)															
High	1A	TNTC	TNTC	TNTC	**10**	**2**	1.1×10^5	5.04	TNTC	TNTC	**18**	**2**	0	9.1×10^4	4.96
	2A	TNTC	TNTC	**86**	**7**	0	8.4×10^4	4.93	TNTC	TNTC	**14**	**3**	0	7.3×10^4	4.89
	3A	TNTC	TNTC	**68**	**6**	0	6.7×10^4	4.83	TNTC	**81**	**7**	0	0	4.0×10^4	4.60
	4A	TNTC	TNTC	**57**	**5**	0	5.6×10^4	4.75	TNTC	TNTC	**12**	**2**	0	6.4×10^4	4.80
	5A	TNTC	TNTC	TNTC	**11**	**2**	1.2×10^5	5.08	TNTC	TNTC	**23**	**2**	0	1.1×10^5	5.06
	1B	TNTC	TNTC	TNTC	**11**	**1**	1.1×10^5	5.04	TNTC	TNTC	**19**	**2**	0	9.6×10^4	4.98
	2B	TNTC	TNTC	TNTC	**12**	**2**	1.3×10^5	5.11	TNTC	TNTC	**21**	**2**	0	1.1×10^5	5.04
	3B	TNTC	TNTC	**49**	**6**	0	5.0×10^4	4.70	TNTC	TNTC	**11**	**1**	0	5.4×10^4	4.73
	4B	TNTC	TNTC	**61**	**7**	0	6.2×10^4	4.79	TNTC	TNTC	**14**	**3**	0	7.7×10^4	4.89
	5B	TNTC	TNTC	TNTC	**12**	**2**	1.3×10^5	5.11	TNTC	TNTC	**19**	**2**	0	9.6×10^4	4.98

1. An initial 1:50 dilution was conducted, plate count multiplied by 50.

ANNEX J: Raw Data for Inclusivity and Exclusivity Study

Inclusivity Results – 24 Hr Read																
Number	Genus	species	Source	Reference				Alternative				Non-selective (TSA)				
				Dilution				Dilution				Dilution				
				-6	-7	-8	CFU/ml	-6	-7	-8	CFU/ml	-6	-7	-8	CFU/ml	
1	*Citrobacter*	*amalonaticus*	ATCC 25405	TNTC	**14**	**1**	1.4×10^8	TNTC	**14**	**2**	1.4×10^8	TNTC	**16**	**1**	1.6×10^8	
2	*Citrobacter*	*koseri*	ATCC 27156	TNTC	**12**	**1**	1.2×10^8	TNTC	**14**	**1**	1.4×10^8	TNTC	**15**	**2**	1.6×10^8	
3	*Citrobacter*	*braakii*	ATCC 43162	TNTC	**16**	**2**	1.6×10^8	TNTC	**18**	**2**	1.8×10^8	TNTC	**16**	**4**	1.8×10^8	
4	*Citrobacter*	*farmeri*	ATCC 51633	TNTC	**23**	**3**	2.4×10^8	TNTC	**20**	**3**	2.1×10^8	TNTC	**24**	**2**	3.4×10^8	
5	*Citrobacter*	*freundii*	QL 100813-2A	TNTC	**35**	**3**	3.4×10^8	TNTC	**31**	**5**	3.3×10^8	TNTC	**35**	**4**	3.6×10^8	
6	*Cronobacter*	*dublinensis*	DSM 18706	TNTC	**28**	**1**	2.6×10^8	TNTC	**33**	**4**	3.4×10^8	TNTC	**29**	**3**	2.9×10^8	
7	*Cronobacter*	*condimenti*	DSM 27966	TNTC	**36**	**4**	3.6×10^8	TNTC	**43**	**2**	4.1×10^8	TNTC	**31**	**3**	3.1×10^8	
8	*Cronobacter*	*helveticus*	CCUG 66106	TNTC	**44**	**3**	4.3×10^8	TNTC	**37**	**4**	3.7×10^8	TNTC	**39**	**4**	3.9×10^8	
9	*Cronobacter*	*malonaticus*	CCUG 28859	TNTC	**27**	**2**	2.6×10^8	TNTC	**28**	**1**	2.6×10^8	TNTC	**30**	**3**	3.0×10^8	
10	*Cronobacter*	*muytjensii*	DSM 21870	TNTC	**49**	**4**	4.8×10^8	TNTC	**52**	**7**	5.4×10^8	TNTC	**53**	**5**	5.3×10^8	
11	*Cronobacter*	*pulveris*	DSM 19145	TNTC	**62**	**5**	6.1×10^8	TNTC	**66**	**6**	6.6×10^8	TNTC	**58**	**4**	5.6×10^8	
12	*Cronobacter*	*sakazakii*	CCUG 28863	TNTC	**21**	**1**	2.0×10^8	TNTC	**24**	**3**	2.4×10^8	TNTC	**17**	**2**	1.7×10^8	
13	*Edwardsiella*	*tarda*	ATCC 15947	**82**	**7**	0	8.1×10^7	**76**	**7**	0	7.6×10^7	**73**	**7**	0	7.3×10^7	
14	*Enterobacter*	*aerogenes*	ATCC 35029	TNTC	**18**	**2**	1.8×10^8	TNTC	**23**	**4**	2.4×10^8	TNTC	**20**	**2**	2.0×10^8	
15	*Enterobacter*	*amnigenus*	ATCC 51816	TNTC	**11**	**3**	1.3×10^8	TNTC	**19**	**3**	2.0×10^8	TNTC	**16**	**2**	1.6×10^8	
16	*Enterobacter*	*cancerogenus*	QL 11010-2	TNTC	**42**	**4**	4.2×10^8	TNTC	**51**	**4**	5.0×10^8	TNTC	**55**	**5**	5.4×10^8	
17	*Enterobacter*	*cloacae*	NBRC 13536	TNTC	**60**	**6**	6.0×10^8	TNTC	**66**	**8**	6.7×10^8	TNTC	**74**	**5**	7.2×10^8	
18	*Enterobacter*	*gergoviae*	ATCC 33028	TNTC	**54**	**3**	5.2×10^8	TNTC	**48**	**3**	4.6×10^8	TNTC	**41**	**4**	4.1×10^8	
19	*Escherichia*	*coli*	ATCC 8739	TNTC	**14**	**1**	1.4×10^8	TNTC	**19**	**1**	1.8×10^8	TNTC	**19**	**2**	1.9×10^8	
20	*Escherichia*	*vulneris*	ATCC 29943	TNTC	**17**	**3**	1.8×10^8	TNTC	**20**	**1**	1.9×10^8	TNTC	**24**	**2**	2.4×10^8	
21	*Escherichia*	*fergusonii*	ATCC 35469	**72**	**7**	0	7.2×10^7	**69**	**7**	0	6.9×10^7	**61**	**5**	0	6.0×10^7	
22	*Escherichia*	*hermannii*	ATCC 33651	**63**	**8**	0	6.4×10^7	**77**	**8**	0	7.7×10^7	**71**	**7**	0	7.1×10^7	
23	*Shimwellia*	*blattae*	ATCC 29907	TNTC	**55**	**5**	5.4×10^8	TNTC	**52**	**7**	5.4×10^8	TNTC	**47**	**4**	4.6×10^8	
24	*Hafnia*	*alvei*	ATCC 51815	**51**	**4**	0	5.0×10^7	**59**	**6**	0	5.9×10^7	**66**	**4**	0	6.4×10^7	
25	*Klebsiella*	*pneumoniae*	ATCC 11296	TNTC	**19**	**2**	1.9×10^8	TNTC	**28**	**5**	3.0×10^8	TNTC	**25**	**3**	2.6×10^8	
26	*Klebsiella*	*oxytoca*	ATCC 43165	**48**	**4**	0	4.7×10^7	**51**	**5**	0	5.1×10^7	**53**	**3**	0	5.1×10^7	
27	*Kluyvera*	*intermedia*	ATCC 33110	**75**	**7**	0	7.4×10^7	**63**	**6**	0	6.3×10^7	**60**	**5**	0	5.9×10^7	

Inclusivity Results – 24 Hr Read															
Number	Genus	species	Source	Reference				Alternative				Non-selective (TSA)			
				Dilution				Dilution				Dilution			
				-6	-7	-8	CFU/ml	-6	-7	-8	CFU/ml	-6	-7	-8	CFU/ml
28	*Pantoea*	*agglomerans*	ATCC 19552	**58**	**7**	0	5.9×10^7	**59**	**5**	0	5.8×10^7	**43**	**4**	0	4.3×10^7
29	*Morganella*	*morganii*	ATCC 25829	**71**	**8**	0	7.2×10^7	**66**	**5**	0	6.4×10^7	**69**	**6**	0	6.8×10^7
30	*Proteus*	*hauseri*	ATCC 13315	TNTC	**16**	**2**	1.6×10^8	TNTC	**24**	**2**	3.4×10^8	TNTC	**22**	**2**	2.2×10^8
31	*Proteus*	*mirabilis*	ATCC 9240	TNTC	**15**	**1**	1.4×10^8	TNTC	**17**	**1**	1.6×10^8	TNTC	**18**	**2**	1.8×10^8
32	*Proteus*	*vulgaris*	ATCC 6380	TNTC	**15**	**2**	1.6×10^8	TNTC	**19**	**2**	1.9×10^8	TNTC	**15**	**1**	1.4×10^8
33	*Providencia*	*rettgeri*	ATCC 14505	**79**	**9**	0	8.0×10^7	**76**	**7**	0	7.6×10^7	**82**	**8**	0	8.2×10^7
34	*Providencia*	*stuartii*	QL 11007-5	**54**	**6**	0	5.4×10^7	**47**	**5**	0	4.7×10^7	**52**	**6**	0	5.3×10^7
35	*Rahnella*	*aquatilis*	ATCC 55046	TNTC	**28**	**3**	2.8×10^8	TNTC	**33**	**4**	3.4×10^8	TNTC	**29**	**2**	2.8×10^8
36	*Salmonella*	*bongori*	NCTC 10946	TNTC	**64**	**7**	6.4×10^8	TNTC	**51**	**7**	5.3×10^8	TNTC	**67**	**7**	6.7×10^8
37	*Salmonella enterica*	Anatum	ATCC 9270	TNTC	**71**	**5**	6.9×10^8	TNTC	**61**	**6**	6.1×10^8	TNTC	**64**	**6**	6.4×10^8
38	*Salmonella enterica*	arizonae	QL 11007-4	TNTC	**55**	**4**	5.4×10^8	TNTC	**47**	**6**	4.8×10^8	TNTC	**44**	**4**	4.4×10^8
39	*Salmonella enterica*	Choleraesuis	ATCC 53000	TNTC	**63**	**5**	6.2×10^8	TNTC	**59**	**6**	5.9×10^8	TNTC	**51**	**5**	5.1×10^8
40	*Salmonella enterica*	diarizonae	QL 011414.1	TNTC	**49**	**5**	4.9×10^8	TNTC	**55**	**5**	5.4×10^8	TNTC	**57**	**4**	5.6×10^8
41	*Salmonella enterica*	diarizonae	ATCC BAA-639	TNTC	**66**	**7**	6.6×10^8	TNTC	**60**	**6**	6.0×10^8	TNTC	**73**	**5**	7.1×10^8
42	*Salmonella enterica*	Infantis	ATCC 51741	TNTC	**76**	**8**	7.6×10^8	TNTC	**71**	**7**	7.1×10^8	TNTC	**83**	**7**	8.2×10^8
43	*Salmonella enterica*	Newport	ATCC 6962	TNTC	**34**	**2**	3.3×10^8	TNTC	**49**	**4**	4.8×10^8	TNTC	**41**	**4**	4.1×10^8
44	*Salmonella enterica*	Pullorum	ATCC 13036	TNTC	**47**	**5**	4.7×10^8	TNTC	**51**	**5**	5.1×10^8	TNTC	**58**	**5**	5.7×10^8
45	*Salmonella enterica*	Typhimurium	ATCC 14028	TNTC	**30**	**6**	3.3×10^8	TNTC	**36**	**4**	3.6×10^8	TNTC	**43**	**5**	4.4×10^8
46	*Salmonella enterica*	*Enteritidis*	ATCC 13076	TNTC	**57**	**7**	5.8×10^8	TNTC	**40**	**7**	4.3×10^8	TNTC	**58**	**6**	5.8×10^8
47	*Serratia*	*liquefacians*	ATCC 27592	TNTC	**32**	**2**	3.1×10^8	TNTC	**45**	**3**	4.4×10^8	TNTC	**39**	**3**	3.8×10^8
48	*Serratia*	*marcescens*	ATCC 8100	TNTC	**29**	**3**	2.9×10^8	TNTC	**39**	**4**	3.9×10^8	TNTC	**34**	**5**	3.6×10^8
49	*Siccibacter*	*turicensis*	CCUG 54945	TNTC	**41**	**4**	4.1×10^8	TNTC	**53**	**3**	5.1×10^8	TNTC	**49**	**4**	4.8×10^8
50	*Yersinia*	*enterocolitica*	ATCC 49397	TNTC	**16**	**1**	1.6×10^8	TNTC	**28**	**2**	2.7×10^8	TNTC	**21**	**2**	2.1×10^8
51	*Salmonella enterica*	indica	NCTC 10458	TNTC	**29**	**4**	3.0×10^8	TNTC	**31**	**3**	3.1×10^8	TNTC	**36**	**3**	3.6×10^8
52	*Salmonella enterica*	houtenae	ATCC 15783	TNTC	**33**	**3**	3.3×10^8	TNTC	**30**	**2**	2.9×10^8	TNTC	**28**	**2**	2.7×10^8
53	*Salmonella enterica*	salamae	QL 02415	TNTC	**59**	**7**	6.0×10^8	TNTC	**53**	**6**	5.4×10^8	TNTC	**67**	**6**	6.6×10^8
54	*Shigella*	*boydii*	ATCC 9207	TNTC	**44**	**6**	4.6×10^8	TNTC	**49**	**5**	4.9×10^8	TNTC	**53**	**5**	5.3×10^8

Exclusivity Results – 24 Hr Read																
Number	Genus	species	Source	Reference				Alternative				Non-selective (TSA)				
				Dilution				Dilution				Dilution				
				-6	-7	-8	CFU/ml	-6	-7	-8	CFU/ml	-6	-7	-8	CFU/ml	
1	*Acinetobacter*	*baumanii*	ATCC 19606	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**32**	**4**	0	3.3×10^7	
2	*Aeromonas*	*viridans*	QL 17041-8	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**19**	**2**	0	2.3×10^7	
3	*Alcaligenes*	*faecalis*	ATCC 8750	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**49**	**3**	0	2.7×10^7	
4	*Bacillus*	*cereus*	ATCC 6464	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**30**	**2**	2.5×10^8	
5	*Bacillus*	*subtilis*	ATCC 6633	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**24**	**3**	3.4×10^8	
6	*Bordetella*	*bronchiseptica*	ATCC 10580	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**44**	**5**	2.6×10^8	
7	*Brochothrix*	*thermosphacta*	ATCC 11509	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**15**	**1**	0	2.2×10^7	
8	*Enterococcus*	*durans*	ATCC 19432	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**66**	**7**	2.8×10^8	
9	*Enterococcus*	*faecalis*	ATCC 29212	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**51**	**6**	2.7×10^8	
10	*Enterococcus*	*faecium*	ATCC 51559	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**20**	**3**	2.3×10^8	
11	*Enterococcus*	*hirae*	ATCC 8043	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**24**	**2**	2.4×10^8	
12	*Haemophilus*	*influenzae*	ATCC 19418	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**43**	**4**	2.6×10^8	
13	*Kurthia*	*gibsonii*	ATCC 43195	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**79**	**8**	0	2.9×10^7	
14	*Kurthia*	*zopfii*	ATCC 10538	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**53**	**5**	0	2.7×10^7	
15	*Leuconostoc*	*mesenteroides*	ATCC 8293	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**15**	**2**	1.6×10^8	
16	*Listeria*	*innocua*	ATCC 33090	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**19**	**2**	0	1.9×10^7	
17	*Listeria*	*ivanovii*	ATCC BAA-139	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**66**	**7**	6.6×10^8	
18	*Listeria*	*monocytogenes*	ATCC 7644	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**51**	**8**	5.4×10^8	
19	*Listeria*	*seeligeri*	ATCC 11289	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**49**	**5**	4.9×10^8	
20	*Listeria*	*welshimeri*	ATCC 43549	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**38**	**5**	3.9×10^8	
21	*Micrococcus*	*luteus*	ATCC 10240	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**44**	**4**	4.4×10^8	
22	*Pseudomonas*	*alcaligenes*	ATCC 14909	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**32**	**4**	0	3.3×10^7	
23	*Pseudomonas*	*extremorientalis*	QL 17041-1	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**66**	**3**	6.3×10^8	
24	*Pseudomonas*	*fluorescens*	QL 17041-3	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**22**	**4**	2.4×10^8	
25	*Staphylococcus*	*hominis*	ATCC 27844	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**40**	**3**	3.9×10^8	
26	*Staphylococcus*	*aureus*	ATCC 6538	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**51**	**3**	4.9×10^8	
27	*Streptococcus*	*pneumoniae*	ATCC 6302	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**69**	**8**	7.0×10^8	
28	*Streptococcus*	*pyogenes*	ATCC 19615	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**55**	**6**	5.6×10^8	
29	*Vibrio*	*parahaemolyticus*	ATCC 17802	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**18**	**2**	1.8×10^8	
30	*Vibrio*	*vulnificus*	QL 021111A	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**17**	**1**	1.6×10^8	

Inclusivity Results – 48 Hr Read: Alternative method only																
Number	Genus	species	Source	Reference				Alternative				Non-selective (TSA)				
				Dilution				Dilution				Dilution				
				-6	-7	-8	CFU/ml	-6	-7	-8	CFU/ml	-6	-7	-8	CFU/ml	
1	*Citrobacter*	*amalonaticus*	ATCC 25405	TNTC	**14**	**1**	1.4×10^8	TNTC	**14**	**2**	1.4×10^8	TNTC	**16**	**1**	1.6×10^8	
2	*Citrobacter*	*koseri*	ATCC 27156	TNTC	**12**	**1**	1.2×10^8	TNTC	**14**	**1**	1.4×10^8	TNTC	**15**	**2**	1.6×10^8	
3	*Citrobacter*	*braakii*	ATCC 43162	TNTC	**16**	**2**	1.6×10^8	TNTC	**18**	**3**	1.9×10^8	TNTC	**16**	**4**	1.8×10^8	
4	*Citrobacter*	*farmeri*	ATCC 51633	TNTC	**23**	**3**	2.4×10^8	TNTC	**20**	**3**	2.1×10^8	TNTC	**24**	**2**	3.4×10^8	
5	*Citrobacter*	*freundii*	QL 100813-2A	TNTC	**35**	**3**	3.4×10^8	TNTC	**34**	**5**	3.6×10^8	TNTC	**35**	**4**	3.6×10^8	
6	*Cronobacter*	*dublinensis*	DSM 18706	TNTC	**28**	**1**	2.6×10^8	TNTC	**33**	**4**	3.4×10^8	TNTC	**29**	**3**	2.9×10^8	
7	*Cronobacter*	*condimenti*	DSM 27966	TNTC	**36**	**4**	3.6×10^8	TNTC	**43**	**2**	4.1×10^8	TNTC	**31**	**3**	3.1×10^8	
8	*Cronobacter*	*helveticus*	CCUG 66106	TNTC	**44**	**3**	4.3×10^8	TNTC	**37**	**4**	3.7×10^8	TNTC	**39**	**4**	3.9×10^8	
9	*Cronobacter*	*malonaticus*	CCUG 28859	TNTC	**27**	**2**	2.6×10^8	TNTC	**28**	**1**	2.6×10^8	TNTC	**30**	**3**	3.0×10^8	
10	*Cronobacter*	*muytjensii*	DSM 21870	TNTC	**49**	**4**	4.8×10^8	TNTC	**56**	**7**	5.7×10^8	TNTC	**53**	**5**	5.3×10^8	
11	*Cronobacter*	*pulveris*	DSM 19145	TNTC	**62**	**5**	6.1×10^8	TNTC	**69**	**6**	6.8×10^8	TNTC	**58**	**4**	5.6×10^8	
12	*Cronobacter*	*sakazakii*	CCUG 28863	TNTC	**21**	**1**	2.0×10^8	TNTC	**24**	**3**	2.4×10^8	TNTC	**17**	**2**	1.7×10^8	
13	*Edwardsiella*	*tarda*	ATCC 15947	**82**	**7**	0	8.1×10^7	**81**	**8**	0	8.1×10^7	**73**	**7**	0	7.3×10^7	
14	*Enterobacter*	*aerogenes*	ATCC 35029	TNTC	**18**	**2**	1.8×10^8	TNTC	**23**	**4**	2.4×10^8	TNTC	**20**	**2**	2.0×10^8	
15	*Enterobacter*	*amnigenus*	ATCC 51816	TNTC	**11**	**3**	1.3×10^8	TNTC	**19**	**3**	2.0×10^8	TNTC	**16**	**2**	1.6×10^8	
16	*Enterobacter*	*cancerogenus*	QL 11010-2	TNTC	**42**	**4**	4.2×10^8	TNTC	**51**	**4**	5.0×10^8	TNTC	**55**	**5**	5.4×10^8	
17	*Enterobacter*	*cloacae*	NBRC 13536	TNTC	**60**	**6**	6.0×10^8	TNTC	**66**	**8**	6.7×10^8	TNTC	**74**	**5**	7.2×10^8	
18	*Enterobacter*	*gergoviae*	ATCC 33028	TNTC	**54**	**3**	5.2×10^8	TNTC	**48**	**3**	4.6×10^8	TNTC	**41**	**4**	4.1×10^8	
19	*Escherichia*	*coli*	ATCC 8739	TNTC	**14**	**1**	1.4×10^8	TNTC	**19**	**2**	1.9×10^8	TNTC	**19**	**2**	1.9×10^8	
20	*Escherichia*	*vulneris*	ATCC 29943	TNTC	**17**	**3**	1.8×10^8	TNTC	**20**	**3**	2.1×10^8	TNTC	**24**	**2**	2.4×10^8	
21	*Escherichia*	*fergusonii*	ATCC 35469	**72**	**7**	0	7.2×10^7	**70**	**7**	0	7.0×10^7	**61**	**5**	0	6.0×10^7	
22	*Escherichia*	*hermannii*	ATCC 33651	**63**	**8**	0	6.4×10^7	**77**	**8**	0	7.7×10^7	**71**	**7**	0	7.1×10^7	
23	*Shimwellia*	*blattae*	ATCC 29907	TNTC	**55**	**5**	5.4×10^8	TNTC	**52**	**7**	5.4×10^8	TNTC	**47**	**4**	4.6×10^8	
24	*Hafnia*	*alvei*	ATCC 51815	**51**	**4**	0	5.0×10^7	**59**	**6**	0	5.9×10^7	**66**	**4**	0	6.4×10^7	
25	*Klebsiella*	*pneumoniae*	ATCC 11296	TNTC	**19**	**2**	1.9×10^8	TNTC	**28**	**5**	3.0×10^8	TNTC	**25**	**3**	2.6×10^8	
26	*Klebsiella*	*oxytoca*	ATCC 43165	**48**	**4**	0	4.7×10^7	**51**	**5**	0	5.1×10^7	**53**	**3**	0	5.1×10^7	
27	*Kluyvera*	*intermedia*	ATCC 33110	**75**	**7**	0	7.4×10^7	**64**	**7**	0	6.4×10^7	**60**	**5**	0	5.9×10^7	

Inclusivity Results – 48 Hr Read: Alternative method only															
Number	Genus	species	Source	Reference				Alternative				Non-selective (TSA)			
				Dilution				Dilution				Dilution			
				-6	-7	-8	CFU/ml	-6	-7	-8	CFU/ml	-6	-7	-8	CFU/ml
28	*Pantoea*	*agglomerans*	ATCC 19552	**58**	**7**	0	5.9×10^7	**59**	**5**	0	5.8×10^7	**43**	**4**	0	4.3×10^7
29	*Morganella*	*morganii*	ATCC 25829	**71**	**8**	0	7.2×10^7	**69**	**6**	0	6.8×10^7	**69**	**6**	0	6.8×10^7
30	*Proteus*	*hauseri*	ATCC 13315	TNTC	**16**	**2**	1.6×10^8	TNTC	**24**	**2**	3.4×10^8	TNTC	**22**	**2**	2.2×10^8
31	*Proteus*	*mirabilis*	ATCC 9240	TNTC	**15**	**1**	1.4×10^8	TNTC	**17**	**1**	1.6×10^8	TNTC	**18**	**2**	1.8×10^8
32	*Proteus*	*vulgaris*	ATCC 6380	TNTC	**15**	**2**	1.6×10^8	TNTC	**19**	**2**	1.9×10^8	TNTC	**15**	**1**	1.4×10^8
33	*Providencia*	*rettgeri*	ATCC 14505	**79**	**9**	0	8.0×10^7	**79**	**7**	0	7.8×10^7	**82**	**8**	0	8.2×10^7
34	*Providencia*	*stuartii*	QL 11007-5	**54**	**6**	0	5.4×10^7	**47**	**5**	0	4.7×10^7	**52**	**6**	0	5.3×10^7
35	*Rahnella*	*aquatilis*	ATCC 55046	TNTC	**28**	**3**	2.8×10^8	TNTC	**33**	**4**	3.4×10^8	TNTC	**29**	**2**	2.8×10^8
36	*Salmonella*	*bongori*	NCTC 10946	TNTC	**64**	**7**	6.4×10^8	TNTC	**51**	**7**	5.3×10^8	TNTC	**67**	**7**	6.7×10^8
37	*Salmonella enterica*	Anatum	ATCC 9270	TNTC	**71**	**5**	6.9×10^8	TNTC	**61**	**6**	6.1×10^8	TNTC	**64**	**6**	6.4×10^8
38	*Salmonella enterica*	arizonae	QL 11007-4	TNTC	**55**	**4**	5.4×10^8	TNTC	**51**	**6**	5.2×10^8	TNTC	**44**	**4**	4.4×10^8
39	*Salmonella enterica*	Choleraesuis	ATCC 53000	TNTC	**63**	**5**	6.2×10^8	TNTC	**59**	**6**	5.9×10^8	TNTC	**51**	**5**	5.1×10^8
40	*Salmonella enterica*	diarizonae	QL 011414.1	TNTC	**49**	**5**	4.9×10^8	TNTC	**55**	**7**	5.6×10^8	TNTC	**57**	**4**	5.6×10^8
41	*Salmonella enterica*	diarizonae	ATCC BAA-639	TNTC	**66**	**7**	6.6×10^8	TNTC	**60**	**6**	6.0×10^8	TNTC	**73**	**5**	7.1×10^8
42	*Salmonella enterica*	Infantis	ATCC 51741	TNTC	**76**	**8**	7.6×10^8	TNTC	**71**	**7**	7.1×10^8	TNTC	**83**	**7**	8.2×10^8
43	*Salmonella enterica*	Newport	ATCC 6962	TNTC	**34**	**2**	3.3×10^8	TNTC	**49**	**4**	4.8×10^8	TNTC	**41**	**4**	4.1×10^8
44	*Salmonella enterica*	Pullorum	ATCC 13036	TNTC	**47**	**5**	4.7×10^8	TNTC	**51**	**5**	5.1×10^8	TNTC	**58**	**5**	5.7×10^8
45	*Salmonella enterica*	Typhimurium	ATCC 14028	TNTC	**30**	**6**	3.3×10^8	TNTC	**37**	**4**	3.7×10^8	TNTC	**43**	**5**	4.4×10^8
46	*Salmonella enterica*	*Enteritidis*	ATCC 13076	TNTC	**57**	**7**	5.8×10^8	TNTC	**40**	**7**	4.3×10^8	TNTC	**58**	**6**	5.8×10^8
47	*Serratia*	*liquefacians*	ATCC 27592	TNTC	**32**	**2**	3.1×10^8	TNTC	**45**	**3**	4.4×10^8	TNTC	**39**	**3**	3.8×10^8
48	*Serratia*	*marcescens*	ATCC 8100	TNTC	**29**	**3**	2.9×10^8	TNTC	**39**	**4**	3.9×10^8	TNTC	**34**	**5**	3.6×10^8
49	*Siccibacter*	*turicensis*	CCUG 54945	TNTC	**41**	**4**	4.1×10^8	TNTC	**53**	**5**	5.3×10^8	TNTC	**49**	**4**	4.8×10^8
50	*Yersinia*	*enterocolitica*	ATCC 49397	TNTC	**16**	**1**	1.6×10^8	TNTC	**28**	**2**	2.7×10^8	TNTC	**21**	**2**	2.1×10^8
51	*Salmonella enterica*	indica	NCTC 10458	TNTC	**29**	**4**	3.0×10^8	TNTC	**31**	**3**	3.1×10^8	TNTC	**36**	**3**	3.6×10^8
52	*Salmonella enterica*	houtenae	ATCC 15783	TNTC	**33**	**3**	3.3×10^8	TNTC	**33**	**2**	3.2×10^8	TNTC	**28**	**2**	2.7×10^8
53	*Salmonella enterica*	salamae	QL 02415	TNTC	**59**	**7**	6.0×10^8	TNTC	**53**	**6**	5.4×10^8	TNTC	**67**	**6**	6.6×10^8
54	*Shigella*	*boydii*	ATCC 9207	TNTC	**44**	**6**	4.6×10^8	TNTC	**52**	**5**	5.2×10^8	TNTC	**53**	**5**	5.3×10^8

Exclusivity Results – 48 Hr Read: Alternative method only															
Number	Genus	species	Source	Reference				Alternative				Non-selective (TSA)			
				Dilution				Dilution				Dilution			
				-6	-7	-8	CFU/ml	-6	-7	-8	CFU/ml	-6	-7	-8	CFU/ml
1	*Acinetobacter*	*baumanii*	ATCC 19606	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**32**	**4**	0	3.3×10^7
2	*Aeromonas*	*viridans*	QL 17041-8	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**19**	**2**	0	2.3×10^7
3	*Alcaligenes*	*faecalis*	ATCC 8750	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**49**	**3**	0	2.7×10^7
4	*Bacillus*	*cereus*	ATCC 6464	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**30**	**2**	2.5×10^8
5	*Bacillus*	*subtilis*	ATCC 6633	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**24**	**3**	3.4×10^8
6	*Bordetella*	*bronchiseptica*	ATCC 10580	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**44**	**5**	2.6×10^8
7	*Brochothrix*	*thermosphacta*	ATCC 11509	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**15**	**1**	0	2.2×10^7
8	*Enterococcus*	*durans*	ATCC 19432	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**66**	**7**	2.8×10^8
9	*Enterococcus*	*faecalis*	ATCC 29212	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**51**	**6**	2.7×10^8
10	*Enterococcus*	*faecium*	ATCC 51559	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**20**	**3**	2.3×10^8
11	*Enterococcus*	*hirae*	ATCC 8043	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**24**	**2**	2.4×10^8
12	*Haemophilus*	*influenzae*	ATCC 19418	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**43**	**4**	2.6×10^8
13	*Kurthia*	*gibsonii*	ATCC 43195	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**79**	**8**	0	2.9×10^7
14	*Kurthia*	*zopfii*	ATCC 10538	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**53**	**5**	0	2.7×10^7
15	*Leuconostoc*	*mesenteroides*	ATCC 8293	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**15**	**2**	1.6×10^8
16	*Listeria*	*innocua*	ATCC 33090	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	**19**	**2**	0	1.9×10^7
17	*Listeria*	*ivanovii*	ATCC BAA-139	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**66**	**7**	6.6×10^8
18	*Listeria*	*monocytogenes*	ATCC 7644	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**51**	**8**	5.4×10^8
19	*Listeria*	*seeligeri*	ATCC 11289	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**49**	**5**	4.9×10^8
20	*Listeria*	*welshimeri*	ATCC 43549	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**38**	**5**	3.9×10^8
21	*Micrococcus*	*luteus*	ATCC 10240	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	**44**	**4**	4.4×10^8
22	*Pseudomonas*	*alcaligenes*	ATCC 14909	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	32	4	0	3.3×10^7
23	*Pseudomonas*	*extremorientalis*	QL 17041-1	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	66	3	6.3×10^8
24	*Pseudomonas*	*fluorescens*	QL 17041-3	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	22	4	2.4×10^8
25	*Staphylococcus*	*hominis*	ATCC 27844	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	40	3	3.9×10^8
26	*Staphylococcus*	*aureus*	ATCC 6538	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	51	3	4.9×10^8
27	*Streptococcus*	*pneumoniae*	ATCC 6302	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	69	8	7.0×10^8
28	*Streptococcus*	*pyogenes*	ATCC 19615	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	55	6	5.6×10^8
29	*Vibrio*	*parahaemolyticus*	ATCC 17802	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	18	2	1.8×10^8
30	*Vibrio*	*vulnificus*	QL 021111A	**0**	0	0	$<1.0 \times 10^6$	**0**	0	0	$<1.0 \times 10^6$	TNTC	17	1	1.6×10^8