Thermo Scientific Brilliance CampyCount Enumeration Method MicroVal Validation in Comparison to EN ISO 10272-2:2017 in Accordance with ISO 16140-2:2016

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INTRODUCTION

The Thermo Scientific™ *Brilliance*™ CampyCount Agar method (alternative method) enables the selective enumeration of thermo-tolerant *Campylobacter* species in raw and ready to cook poultry products.

A study was performed to renew the MicroVal[™] validation of the *Brilliance* CampyCount Agar in comparison to EN ISO/TS 10272-2:2017¹ in accordance with EN ISO 16140-2:2016².

MATERIALS AND METHODS

The protocol for the alternative method is summarised below in figure 1.

Figure 1. Protocol for the Thermo Scientific *Brilliance* CampyCount Agar Method and the EN ISO 10272-2:2017 Reference Method

Sample preparation

Add 10 g of poultry food sample to 90 mL of diluent and prepare decimal dilutions

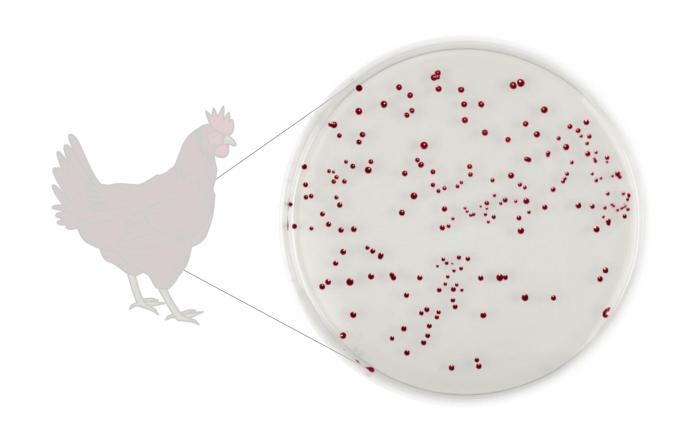
Inoculation

Inoculate onto *Brilliance*CampyCount Agar . Incubate at 41.5±1°C for 40-48 hours in microaerophilic conditions

Count and confirm

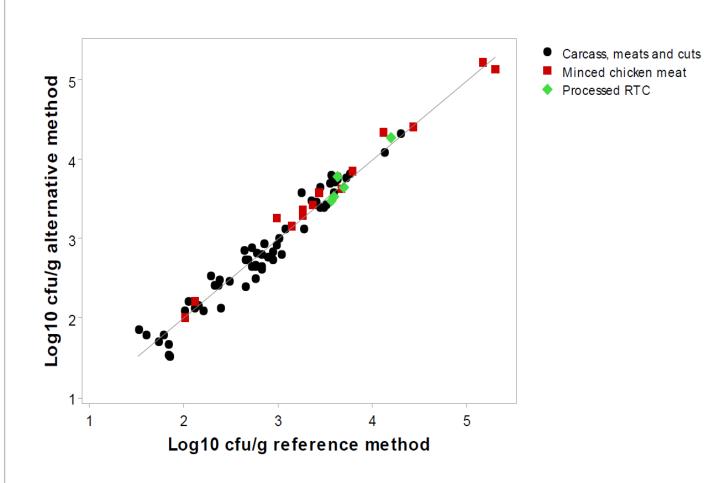
Count and confirm up to 5 typical colonies (shown in figure 2) and confirm using either the Thermo Scientific™ O.B.I.S Campy Test or the Thermo Scientific™ Campylobacter Latex Kit

Figure 2. *Brilliance* CampyCount Agar with Typical Thermotolerant *Campylobacter* species Colonies



RESULTS

Figure 3. Relative Trueness Scatterplot of the Reference Method vs the *Brilliance* CampyCount Agar Method



Relative Trueness

Five levels of contamination were used and samples were tested in duplicate. A total of 48 naturally and 15 artificially contaminated samples were tested.

The data presented in figure 3 shows extremely good agreement between the reference and alternative method with almost no positive or negative bias.

Accuracy profile

The poultry food category was tested with two separate batches of food type, using six samples per type. For each sample five different portions were tested (total of 30 analyses per food type).

The accuracy of the alternative method is acceptable as all samples met both the original 0.5 log and the re-calculated acceptability limits.

Inter-laboratory study

The inter-laboratory study performed as part of the original validation showed no statistically significant differences between the alternative method and the reference method.

Inclusivity

Of the 66 inclusivity strains tested, 61 were successfully detected. One *C. jejuni* subsp. *Doylei* strain, Two *C. upsaliensis* strains and one *C. hyointestinalis* strain were not detected by either method. One *C. lari* strain failed to grow via the alternative method but did grow via the reference method; the remaining two *C. lari* strains tested successfully recovered via both methods.

Exclusivity

Of the 44 exclusivity isolates tested, 39 were correctly excluded by both methods. Confirmatory tests confirmed the five detected strains as non-*Campylobacter* species for both methods.

CONCLUSION

- Enables selective enumeration of thermo-tolerant Campylobacter species in raw and ready-to-cook poultry products
- Accurate and reliable alternative to the EN ISO 10272-2:2017 reference method
- Successfully validated in accordance with EN ISO 16140-2:2016
- Certified by MicroVal; certificate number 2008LR12

REFERENCES

- EN ISO 10272-2:2017 'Microbiology of the food chain -Horizontal method for detection and enumeration of Campylobacter spp. - Part 2: Colony-count technique'
- EN ISO 16140-2:2016 Microbiology of the food chain -Method validation -- Part 2: Protocol for the validation
 of alternative (proprietary) methods against a reference
 method
- Preparation of test samples, initial suspension and decimal dilutions for microbiological examination -- Part 1: General rules for the preparation of the initial suspension and decimal dilutions

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