Simultaneous Detection and Differentiation of Campylobacter from Poultry in under 24 Hours

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INTRODUCTION

Campylobacter jejuni, C. coli and C. lari from contaminated poultry are causative agents of invasive infections resulting in 1.3 million cases in the United States annually. It is challenging to differentiate these species due to their similar 16s rRNA sequences and phenotypic traits.

This study evaluated performance of the Thermo Scientific™ SureTect™ Campylobacter jejuni, C. coli and C. lari PCR Assay in detecting and differentiating three Campylobacter targets in poultry samples versus the Hygiena™ BAX™ System Real-Time PCR Assay for Campylobacter.

MATERIALS AND METHODS

Pure Isolate Study

Fifty-three Campylobacter isolates and 52 closely-related isolates were used to test inclusivity (Figure 1) and exclusivity (Figure 2) respectively.

Matrix Study

Ninety-three poultry samples including carcass rinse, raw meat with skin and ready to re-heat meat were spiked with Campylobacter isolates and tested via PCR using the SureTect (Figure 3) and BAX (Figure 4) methods.

RESULTS

The SureTect PCR Assay method demonstrated superior inclusivity compared to the BAX PCR Assay for C. coli and C. lari (Figure 5).

Exclusivity of both Assays was 100%.

The method comparison demonstrated that the 22 hour SureTect workflow was better able to detect Campylobacter species contaminated poultry samples than the BAX workflow (Figure 6).

CONCLUSIONS

The SureTect PCR Assay demonstrated superior inclusivity performance to the BAX PCR assay.

The SureTect workflow enables users to reliably detect and differentiate Campylobacter from poultry samples, without using gas jars, within 24 hours.

TRADEMARKS/LICENSING

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