

Evaluation of the New Atlas® E.coli O157:H7 Detection Assay for High Fat Ground Beef and Beef Trim Samples

Bettina Groschel, Kristin Livezey, Hua Yang, Michele Wisniewski, Greg Merrick, Edgar Kamantigue, Michael Reshatoff, and Michael Becker

Roka Bioscience, San Diego, CA

Introduction: Sensitive and specific methods are needed for the detection of pathogenic *Escherichia coli* O157:H7 in beef samples.

Purpose: The purpose of the study was to evaluate the Atlas E. coli O157:H7 Detection Assay sensitivity and specificity as well as detection of *E. coli* O157:H7 in artificially inoculated high fat ground beef (HFGB) and beef trim (BT) samples.

Methods: HFGB and BT samples in 375-g test portions were inoculated with low levels of *E. coli* O157:H7 and diluted in mTSB or in the media suggested by the reference method. All samples were incubated at 42°C, lysed to release bacterial mRNA, and loaded onto the Atlas System. The Atlas System combines Target Capture, Transcription-Mediated Amplification, and Hybridization Protection Assay. The results were compared to the FSIS reference method MLG 5.06. Sensitivity and specificity were evaluated by testing 50 *E. coli* O157:H7 strains at 10 X LOD of 1e4 CFU/mL and 30 non-O157:H7 *E. coli* strains at 1e8 CFU/mL.

Results: The assay performed equally compared to the FSIS reference method for 375-g HFGB and BT samples. No statistically significant difference was observed between the test method and reference method as determined by POD analysis. The test method showed sensitivity of 1e4 CFU/mL by detecting all 50 inclusive organisms and 100% specificity by not detecting 30 exclusive organisms.

Significance: The Atlas E. coli O157:H7 Detection Assay provides fast and highly accurate detection of pathogenic *E. coli* O157:H7 in 375-g HFGB and BT samples and results were comparable to the FSIS reference method.

For more information or to request the full poster of this abstract, please email: info@rokabio.com



20 Independence Boulevard | 4th Floor
Warren, New Jersey 07059

1.855.ROKABIO | 908.605.4700

www.rokabio.com

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