

## SHIGA TOXIN-PRODUCING *ESCHERICHIA COLI* (STEC)



# Protect your brand with the most robust detection tools in the food industry

**Accuracy. Ease of use. Zero compromise.**

## THE CHALLENGE

### HIGH STAKES IN FOOD PROTECTION CALLS FOR FASTER, MORE ROBUST TOOLS

New regulations, harsher penalties and numerous brand-threatening recalls have placed substantial pressures on food manufacturers. These market conditions require a paradigm change in food safety and quality monitoring programs.

## VERIFLOW TECHNOLOGY

### PROVEN PLATFORM DELIVERS ACCURACY, SPEED AND SENSITIVITY

Veriflow technology is proven to provide rapid, accurate, actionable detection of pathogen and spoilage indicators – with no compromises on ease of use and affordability. The technology is easily deployed on-site allowing you to identify microbial risks, take corrective action, and prevent large-scale contamination.

- ▶ Unsurpassed specificity across a wide spectrum of microbes
- ▶ Robust detection in both simple and complex matrices
- ▶ Sensitive and accurate to ensure confidence in your processes
- ▶ Reduces hold times and eliminates the need to ship at risk
- ▶ Saves money and resources throughout your process
- ▶ Meets the changing needs of the industry and allows you to protect your brand

## VERIFLOW STEC

### OFFERS ACCURATE DETECTION WITH HIGHEST DEGREE OF CONFIDENCE

Veriflow STEC provides robust specificity and sensitivity across an extensive variety of environmental surfaces and multiple food and beverage matrices, without complex and time consuming sample preparation.

#### Unmatched specificity

- ▶ Broad inclusivity of 50 STEC strains with 100% detection rate
- ▶ Correctly excludes all applicable strains tested

#### Unrivalled sensitivity

- ▶ Target amplification of a conserved gene marker for STEC
- ▶ Multiplex reaction that detects the presence of STX 1/2 virulence factors and EAE
- ▶ Reliable results in even the most challenging matrices

#### Unsurpassed ease of use

- ▶ Results in 20 hours versus 3-4 days with traditional methods
- ▶ Streamlines your quality management processes
- ▶ Easily implemented on site with existing resources
- ▶ Eliminates the need for proprietary media, two-step enrichment, and DNA extraction sample preparation

## PRODUCT OVERVIEW

Veriflow STEC is a molecular based assay for the presumptive detection of STEC. The Veriflow system utilizes a game-changing technology that combines proven diagnostic principles for microbial detection with innovative, first-in-class scientific approaches. The robust platform performs at the highest levels of accuracy even in the most challenging matrices, with vastly simplified sample preparation. The Veriflow® system eliminates the need for sample purification, gel electrophoresis, or fluorophore-based detection of target amplification. Results are visualized immediately on a hand-held cassette with no need for complex data analysis.

## PERFORMANCE VALIDATION

### Validation Overview

AOAC Performance Tested Methods<sup>SM</sup> Program was utilized for validation and verification of assay performance. Samples of raw meat were inoculated and assessed by both the Veriflow method and USDA/FSIS MLG 5.09 method.

### Synopsis of the Results

The results of the validation study demonstrated the specificity, accuracy and reliability of the Veriflow® STEC assay for the detection of STEC in raw meat, dry goods such as whey protein powder and produce such as spinach. POD statistical analysis of all matrices tested indicate that there is no significant difference in performance between the methods at specific time points as assayed in this study, and importantly, no false positive or false negative results were observed in the entirety of the study. The successful validation of the assay is further supported by data from the inclusivity and exclusivity testing, indicating that the Veriflow® STEC assay was able to accurately detect over 50 isolates while correctly excluding all non-specific bacteria tested.

### Conclusion

Extensive testing was conducted to validate the sensitivity of the Veriflow STEC assay. Over 100 samples were tested across a wide variety of challenging matrices without complex samples preparation after enrichment. The Veriflow® STEC assay provides flexibility and ease of use for the end user while delivering accurate results across multiple surfaces with sampling by either swabs or sponges, and across a variety of food matrices, without complex sample preparation after enrichment. The Veriflow® system also offers significant time savings by producing accurate presumptive results after a standard enrichment time of only 20 hours.

SPECIFICITY			
Assay	Strains	Results	
<b>Inclusivity</b>	50 STEC strains	100 % Detection Rate	Correctly identified all strains tested
<b>Exclusivity</b>	Non-STEC species	100 % Exclusion Rate	Correctly excluded all strains tested

SENSITIVITY			
Matrix	Demonstrated equivalence to USDA MLG	External Validation	Client References
<b>Raw Meat (ground beef)</b>	YES	YES	YES
<b>Whey Protein Powder</b>	YES	YES	YES
<b>Spinach</b>	YES	YES	YES

VERIFLOW STEC TECHNICAL SPECIFICATIONS	
<b>Specificity</b>	50 STEC strains
<b>Time to Results</b>	18 hours enrichment + 2 hour assay time
<b>Matrix Compatibility</b>	Validated in raw meats, whey protein powder and spinach
<b>Sensitivity</b>	Zero tolerance detection
<b>Assay Format</b>	Qualitative
<b>Test Stability</b>	1 year expiration with proper storage
<b>Enrichment</b>	Single step enrichment No selective supplements required
<b>Sample Preparation</b>	Molecular platform that eliminates need for DNA extraction or purification
<b>Work Flow</b>	Simple 3 step procedure
<b>Results Interpretation</b>	Immediate visualization on hand-held cassette - no complex data analysis

For more information or to place an order, please contact Invisible Sentinel at 215.966.6118 or [www.invisiblesentinel.com](http://www.invisiblesentinel.com)



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