



# Complex matrices demand robust solutions

**Nutraceuticals require microbial detection tools designed for challenging matrices**



# PROTECT YOUR BRAND WITH THE DETECTION TOOL IN THE FOOD INDUSTRY






## VERIFLOW DNA SIGNATURE CAPTURING TECHNOLOGY

- DNA Amplification** Proprietary reagents eliminate need for sample purification
- DNA Identification** Proprietary DNA signature detection specifically targeting food pathogens
- Visualization of Results** Proprietary vertical flow mediated visualization of results for easy interpretation

## THE CHALLENGE

Nutraceutical manufacturing is complex from many perspectives: natural-sourced ingredients, diverse raw materials, multi-faceted supply chain, intricacy of the final product, changing regulations and complicated distribution networks. These complexities along with increased consumer concerns about food safety demand heightened focus on the quality and safety – from raw materials to finished goods.

To meet the demand for safe products in this market, new and innovative microbiological testing technologies are required. Many of the rapid microbial testing products on the market are not robust enough to provide accurate results in challenging matrices.

| Target                                  | Time to Results | Matrices   | Validation Equivalency               | Approvals   |
|---|-----------------|--|--------------------------------------|---|
| Veriflow® <i>Salmonella</i> species     | 18 hours        | Environmental surfaces (including stainless steel, sealed concrete, plastic and ceramic tile) milk, hot dogs, deli meats, fish, nut butters, confectionary products, spices, whey protein powder, poultry carcass rinsates | FDA BAM Ch. 5 and USDA/FSIS MLG 4.06 |  |
| Veriflow® <i>Listeria monocytogenes</i> | 24 hours        | Environmental surfaces (including stainless steel, sealed concrete, plastic and ceramic tile) milk, hot dogs, deli meats, fish, confectionary products   | USDA/FSIS MLG 8.08                   |  |
| Veriflow® <i>Listeria</i> species       | 24 hours        | Environmental surfaces (including stainless steel, sealed concrete, plastic and ceramic tile) milk, hot dogs, deli meats, candies  | USDA/FSIS MLG 8.08                   |  |
| Veriflow® <i>STEC</i>                   | 18 hours        | Raw meat, whey protein powder, spinach   | USDA/FSIS MLG 5.09                   | AOAC application in review  |

# THE MOST ROBUST MICROBIAL INDUSTRY



## THE SOLUTION

Invisible Sentinel's Veriflow game-changing technology combines proven diagnostic principles for microbial detection and innovative, first-in class scientific approaches. The result is a robust platform that performs at the highest level of accuracy in even the most challenging matrices.

Veriflow detection tools are widely used to monitor quality in the food and beverages industry. Specifically, Veriflow is used to analyze common raw materials and probiotics supplements utilized in the production of Nutraceuticals.

AOAC approval, along with comprehensive validation, even in some of the food industry's most challenging matrices is demonstrative proof of Veriflow's robust performance. The Veriflow pathogen detection product portfolio is one of the only rapid methods currently validated and approved for whey protein powder by the AOAC.

## THE BENEFITS

Invisible Sentinel's Veriflow portfolio of on-site detection tools offers unmatched specificity, single step enrichments, unrivaled sensitivity and unsurpassed ease of use with rapid time to results.

The technology is easily deployed on-site allowing you to find issues early, take corrective action, and prevent large-scale contamination. This technology enables early action at critical control points to increase your confidence in product quality and brand integrity.

- ▶ Unsurpassed reliability across a wide spectrum of microbes
- ▶ Robust detection in both simple and complex matrices
- ▶ Sensitive and accurate to ensure confidence in your raw materials and end products
- ▶ Reduces hold times and eliminates the need to ship at risk

## CHALLENGING MATRICES

Veriflow has been validated on over 70 different foods, raw materials and surfaces including the most challenging and complex matrices.



SPICES



NUTRACEUTICALS



CONFECTIONARY



CIDERS AND JUICES



NUT BUTTERS



CARCASS RINSATES



SEAFOOD

Veriflow has also been validated in many Nutraceuticals ingredients.

- ▶ Chia
- ▶ Cocoa
- ▶ Fructose
- ▶ Pea fiber
- ▶ Pea protein
- ▶ Rice protein
- ▶ Whey protein powder
- ▶ Vitamin mineral pre-mix
- ▶ Vegan chocolate protein powder

# A suite of detection tools for your quality management program

- ▶ Unmatched specificity
- ▶ Unrivalled sensitivity
- ▶ Unsurpassed ease of use



## FOOD SAFETY PORTFOLIO

- Salmonella* species
- Listeria monocytogenes*
- Listeria* species
- Campylobacter*
- Campylobacter* Q
- E.coli* O157:H7
- Listeria* confectionary
- Salmonella* peanut butter
- STEC
- Salmonella* spice
- Salmonella* Q (coming soon)
- Staphylococcus aureus* (coming soon)

## FOOD QUALITY PORTFOLIO

- Alicyclobacillus* (ACB)
- Campylobacter* Q
- Salmonella* Q (coming soon)
- Dekkera*

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

## STANDARD TEST PROTOCOL

### ENRICH

After 18-24 hours enrichment, transfer 500 µl sample to provided 1.5 ml tube. Heat sample for 10 minutes, then allow to cool to room temperature.

#### START



### AMPLIFY

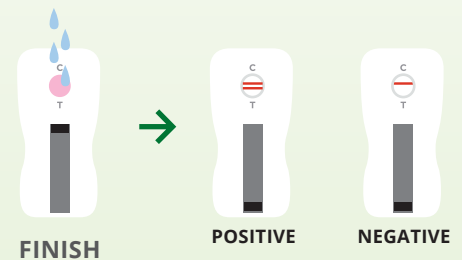
Transfer 5 µl of heat inactivated sample into provided reagent tube. Place tube into thermocycler and run program.

#### 90 MINUTE AMPLIFICATION



### DETECT

Remove reagent tube from thermocycler. Dispense reagent tube contents onto test cassette window. Wait 3 minutes and retract test cassette to reveal test results. One line indicates a negative result, two lines indicate a positive result.



| ITEM #  | DESCRIPTION   | SIZE  |                   |
|---------|---|---|-------------------|
|         | <i>Salmonella</i> species - IS1005<br><i>Listeria</i> species - IS1004<br><i>Listeria monocytogenes</i> - IS1002<br>STEC - IS1007 |  Veriflow Complete Test System<br>Includes: Mastermix Reagents, Cassettes, 1.5 ml Sample Tubes, Media | 1 Kit<br>24 Tests |
| ISTC002 |  Veriflow Thermocycler                        | 1 Unit  |                   |
| IS0904  |  Veriflow Loading Tray                        | 1 Unit  |                   |

Invisible Sentinel, a global molecular solutions company, is dedicated to providing first-in-class microbial detection tools. The company's core technology, Veriflow, is a patented, game-changing platform that integrates molecular diagnostics, antibody design, and immunoassays. Veriflow has been applied across multiple industries including food safety and beverage quality.

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