DuPont Qualicon BAX® System

REAL-TIME PCR ASSAYS – STEC SUITE

PRODUCT DESCRIPTION

Due to increasing regulation and outbreaks of foodborne illness that can be traced to pathogenic strains, shiga toxin-producing *E. coli* (STEC) are a rising concern for food companies worldwide. *E. coli* O26, O45, O103, O111, O121, and O145 have been identified as the non-O157 STEC most frequently associated with human illness in the U.S. The U.S. Department of Agriculture Food Safety & Inspection Service (USDA FSIS) recently announced that these six STEC serogroups are now considered adulterants in beef, with zero-tolerance enforcement to begin in March 2012.

The BAX® System STEC suite, which uses real-time PCR technology to quickly and accurately detect the top six pathogenic STEC, can help food companies test for these pathogens and make product release decisions with confidence. The Screening assay for *stx* and *eae* clears negative samples fast; while two multiplex panel assays detect and differentiate the top six STEC serogroups.

BAX® System Real-Time PCR Assays

STEC Screening (*stx* and *eae*)

Order code: QB2964C (D14642964)

- 96 tests per kit
- PCR tubes with tablets, optical caps, protease, lysis buffer
- Store at 2-8°C

STEC Panel 1 (O26, O111, O121)

Order code: QB2970P (D14642970)

- 48 tests per kit
- PCR tubes with tablets, optical caps, protease, lysis buffer
- Store at 2-8°C

STEC Panel 2 (O45, O103, O145)

Order code: QB2987P (D14642987)

- 48 tests per kit
- PCR tubes with tablets, optical caps, protease, lysis buffer
- Store at 2-8°C

Features of the Real-Time PCR Assays for STEC

- Screening assay detects combination of STEC virulence genes (*stx* and *eae*) to quickly clear negatives
- Two panel assays identify which of the top six STEC serogroups, if any, are present
- Optional program available for detecting "*stx* only"
- Single-stage enrichment in as little as 9 hours for some food types
- All three assays use the same sample lysate – no need for additional sample prep between tests
- Real-time processing delivers results in just 55 minutes
- Identical sample prep and real-time cycling conditions let you detect STEC and *E. coli* O157:H7 in the same batch
- Developed in collaboration with the USDA ARS and aligned with the USDA FSIS testing method for beef trim

Benefits of the BAX® System

- Speedy, accurate, reliable results help you make confident product decisions
- Simplified DNA extraction - no separate cell concentration steps
- Easy operation of automated instrument does not require advanced skills
- PCR tablets are conveniently packaged in individual PCR tubes to provide consistency, stability, and reduced chance of operator error
- Closed-tube system avoids amplicon contamination in the lab
- LIMS-compatible electronic data allows for easy storage, sharing and retrieval
- All of the quality, technical support, and ease of use you've come to expect from DuPont Qualicon -- the original provider of PCR testing to the food industry

DUPONT®

The miracles of science™

Sample preparation

Prepare samples.

Enrich with dextrose (glucose)-containing Tryptone Soya Broth (Oxoid order code: CM0129)

Ground beef (25g or 65g) – Homogenize sample 1:10 with pre-warmed (44°C) TSB. Incubate at 41°C for 9-24 hours.

Ground beef (325g or 375g) – Homogenize sample with 1.5 L pre-warmed (46°C) TSB with 2mg/L novobiocin. Incubate at 41°C for 12-24 hours.

Beef trim (375g) – Massage sample with 1.5 litres of pre-warmed (46°C) TSB. Incubate at 41°C for 10-24 hours.

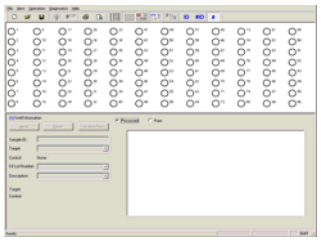
Enrich with BAX® System MP media* (Oxoid order code: CM1076)

Beef trim (375g) – Massage sample with 1.5 L pre-warmed (46°C) MP media. Incubate at 41°C for 10-24 hours.

** Enrich in BAX® System MP media to test for STEC and E. coli O157:H7 from a single enrichment.*

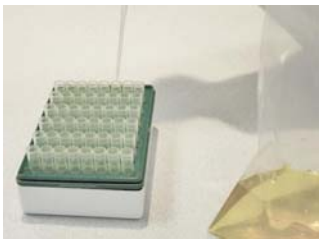
BAX® System protocol

10:00 Create rack file and warm up cycler.



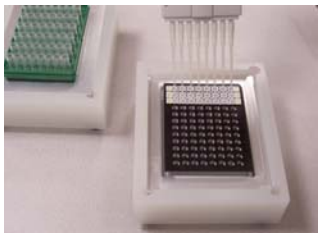
10:10 Mix protease with lysis buffer and transfer 200µL of lysis reagent to cluster tubes.

10:15 Transfer 20µL samples to cluster tubes.

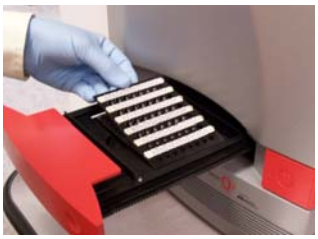


10:25 Heat cluster tubes for 20 minutes at 37°C, then 10 minutes at 95°C.

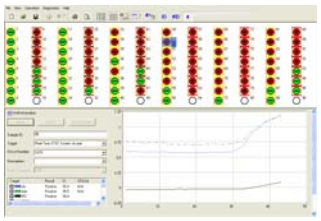
10:55 Cool cluster tubes for 5 minutes in cooling block, then transfer 30µL to PCR tubes in cooling block.



11:10 Place sealed PCR tubes in cycler and run program.



12:05 Review results.



For further information contact your local supplier of Oxoid products:
Tel: +44 (0) 1256 841144
Fax: +44 (0) 1256 814626
Email: oxoid.info@thermofisher.com

OXOID
DEDICATED TO MICROBIOLOGY

DUPONT
The miracles of science™

Folio No. 1475/11/11