



Thermo Scientific
SureTect™ Escherichia coli O157:H7 PCR Assay



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be sure

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SureTect Escherichia coli 0157:H7 PCR Assay – A fast, simple procedure

Go molecular with the food safety experts

The SureTect Escherichia coli 0157:H7 PCR Assay is a multiplex real-time assay that incorporates unique primer and probe components for highly-specific detection of the *fliC* and *gnd* genes, specific to and found only in *Escherichia coli* 0157:H7. The assay also includes primer and probe components, for simultaneous detection of an internal amplification control (IAC), for confirmation of successful PCR and increased confidence in results.

The SureTect Escherichia coli 0157:H7 PCR Assay has been extensively tested on a wide range of food matrices and samples from food manufacturing environments including raw meats and produce. Specific samples tested during independent external validation include food types most commonly associated with contamination by E. coli 0157:H7 and also those food types known to be particularly challenging to PCR detection, for example, minced beef, beef trim, lettuce and spinach.

Benefits of the SureTect System

- **Shorter growth step** – optimized for key food matrices minimizing time to results, enabling faster release of held products, reducing storage costs
- **Single enrichment step** – no secondary enrichment or regrowth required, for faster, simpler testing
- **Fast, simple lysis** – straightforward handling in less than 20 minutes
- **Pre-filled lysis tubes** – for maximum convenience and reliable, consistent cell lysis
- **Tableted PCR reagents** – eliminates PCR reagent pipetting, to enhance reproducibility and minimize hands-on time
- **Streamlined protocol** – facilitates processing of multiple assays in the same run, for maximum efficiency
- **Superior PCR technology** – probe-based real-time assays for unparalleled sensitivity and specificity
- **Maximum confidence** – SureTect Software automatically compares target amplification to an internal amplification control (IAC) for confirmation of results
- **Maximum throughput flexibility** – between one and five 24-well Thermo Scientific SureTect PikoReal Systems can be run from the same PC
- **Small instrument footprint** – fits easily into laboratory environments where bench space is at a premium
- **Simple, intuitive software** – for straightforward training, quick set-up, and simple tracking of results
- **Automatic data interpretation** – reliably reports test results as positive or negative
- **Excellent quality of support** – including fast turnaround times and access to our world-class team of microbiologists
- **Convenient storage conditions** – SureTect PCR assay components do not require freezing and can be stored under standard refrigeration conditions
- **Plug-and-play system** – arrives pre-calibrated, minimizing on-site installation and training time
- **Expanding test menu** – includes assays for *Salmonella* species, *Listeria* species, *Listeria monocytogenes* and *Escherichia coli* 0157:H7

Sample Preparation

- Prepare the test sample in accordance with the appropriate validated protocol. To prepare the initial suspension, add 1 part sample to 9 parts Modified Tryptone Soya Broth (mTSB) including 20mg/l novobiocin. Homogenize thoroughly for 30–60 seconds. Incubate at $41.5^{\circ}\text{C} \pm 1^{\circ}\text{C}$ for 18–24 hours.



Lysis

- Add 10µl of Proteinase K to each SureTect Lysis Reagent 1 Tube. Next, add 10µl of enriched sample to each lysis tube.
- Seal the tubes and incubate in the heating block at 37°C for 10 minutes. Immediately transfer the tubes to the heating block at 95°C and incubate for another 5 minutes.



PCR Setup

- Create the plate set-up for the SureTect PikoReal Instrument on the SureTect Software, while allowing the tubes containing lysate to cool to room temperature.
- Allow the SureTect Escherichia coli 0157:H7 PCR Tubes to reach room temperature and then transfer 20µl of lysate into the opened PCR tube to rehydrate the SureTect PCR pellet and seal the tubes.



PCR Run

- Open the drawer of the SureTect PikoReal Instrument. Load the PCR tubes according to the plate set-up created. Close the drawer and start the PCR run.



Results

- Read the results interpreted by the SureTect Software.



Following processing, the PCR tubes must not be opened and must be disposed of with other microbiological waste.

The above enrichment procedure is provided as a general guide. Please contact your SureTect System supplier for further information on matrix-specific, validated protocols.

Unmatched service & support

Thermo Fisher Scientific experts have been offering invaluable advice to the global microbiology community since the 1950s. Our service and support teams are comprised of highly-experienced scientists who are devoted to offering best-in-class technical support.

Uniquely, the Thermo Scientific portfolio of food safety products is especially broad, and includes enrichment media, consumables, testing kits and instrumentation for all your workflow needs. Our focus on providing quality products, on-time delivery and superior support is

matched by our commitment to provide complete solutions that meet your microbiological testing needs. Furthermore, the novel SureTect service and support package has been developed to offer improved confidence in the continuity of your testing process.

If you would like to learn more about the SureTect System, we would be delighted to hear from you. Our technical support professionals can be reached over the phone, or via our website.

Ordering Information

Catalog Number	Product	Description
SureTect System		
PT0400A	SureTect Escherichia coli O157:H7 PCR Assay	SureTect Lysis Reagent 1 Tubes, SureTect Lysis Tube Caps, SureTect Proteinase K, SureTect E. coli O157:H7 PCR Tubes, SureTect PCR Caps, instructions for use
PT0500	PikoReal 24 Real-Time PCR System	PikoReal System, calibrated for use with SureTect Software and SureTect PCR Assays
PT0600	SureTect Starter Pack	Sample pipette (adjustable, single-channel 1-10ml), Extra long filtered pipette tips (1-10ml), Sample tubes (1.5ml), Sample tube rack, CapEase™ tool, Lysis/PCR tube racks, Single-channel pipette (adjustable 5-50µl), Multi-channel pipette (adjustable 5-50µl), Filtered pipette tips (200µl), 2 Digital dry-bath incubators, 2 block inserts for incubators and blank PCR strips
PT0700	Dell Desktop Computer	
PT0800	Dell Laptop Computer	
PT0500W	SureTect Software	
Enrichment Step		
CM0989B	Modified Tryptone Soya Broth, 500g	
SR0181E	Novobiocin, 10 vials	
Results Confirmation		
CM0813B	Sorbitol MacConkey Agar, 500g	
SR0172E	Cefixime-Tellurite Supplement, 10 vials	
R30959601	Wellcolex™ E. coli O157:H7 Kit, 50 tests	
DR0620M	E. coli O157 Latex Test, 100 tests	

Please note, the complete system requires a dedicated personal computer with the following minimum specification: operating systems Microsoft Windows® 7, dual-core processor, 4 GB of RAM, network connection, ethernet connection for instrument, CD-ROM drive, monitor resolution 1280 x 960. Either the desktop (PT0700) or laptop (PT0800) shown above should be used for sole operation of the SureTect System.

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For more information, please contact your local Thermo Scientific representative by visiting www.thermoscientific.com/SureTect.

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