Salmonella enterica PCR Detection Kit

Norgen’s Salmonella enterica PCR Detection Kit constituents a complete, ready-to-use system for the isolation and the detection of S. enterica using end-point PCR. The kit first allows for the enrichment and isolation of bacterial DNA from meat or other food samples using a convenient spin-column. The DNA is isolated free from PCR inhibitors, and can then be used as the template in a PCR reaction for S. enterica detection using the provided S. enterica Master Mix. The S. enterica Master Mix contains reagents and enzymes for the specific amplification of a 336 bp region of the S. enterica genome. In addition, Norgen’s Salmonella enterica PCR Detection Kit contains a second Mastermix, the PCR Control Master Mix, which can be used to identify possible PCR inhibition and/or inadequate isolation via a separate PCR reaction with the use of the provided PCR control (PCRC) or Isolation Control (IsoC), respectively. The kit is designed to allow for the testing of 24 samples and is ideal for use in food surveillance and monitoring, and surveys.

Salmonella enterica have emerged as significant foodborne pathogens that pose a serious public health problem. The symptoms of salmonellosis may include diarrhea, fever, vomiting, and abdominal cramps with elderly, new-born, and immunocompromised individuals the most susceptible. S. enterica is a facultatively anaerobic Gram-negative bacterium that could survive low temperatures and freezing. The majority of the 1.3 billion annual cases of Salmonella-caused human gastroenteritis result from ingestion of contaminated food products, such as raw or undercooked meat, seafood, and eggs, as well as raw unpasteurized milk and dairy products. Salmonella infections are also contracted following consumption of fresh fruits or vegetables that have been contaminated by infected fertilizer.

### Salmonella enterica PCR Detection Kit Benefits

<table>
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<th>Benefit</th>
<th>Description</th>
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<td>A complete optimized kit for isolation and detection</td>
<td>The Salmonella enterica PCR Detection Kit is a complete kit that contains: 1) all the required components to allow for optimized isolation of bacterial DNA from meat and other food samples, and 2) S. enterica Master Mix to allow for the optimized amplification and detection of the bacterial DNA and 3) PCR Control Master Mix to control for possible PCR inhibition and/or inadequate isolations.</td>
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<td>High Sensitivity and Specificity</td>
<td>The limit of detection is 1000 cfu/mL of enriched samples.</td>
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<td>Isolate high quality, inhibitor-free DNA</td>
<td>Removal of highly concentrated salts, metabolic wastes and proteins provides high quality, concentrated DNA.</td>
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<td>Rapid Procedure</td>
<td>Isolate, amplify and detect S. enterica in under 3 hours after sample enrichment</td>
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<td>Includes controls to identify PCR inhibition and problems with DNA isolation</td>
<td>Kit contains a second Mastermix, the PCR Control Master Mix, which can be used to identify possible PCR inhibition and/or inadequate isolation via a separate PCR reaction with the use of the provided PCR control and Isolation Control respectively.</td>
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<td>Ideal for use in a number of different applications</td>
<td>Ideal for use in food surveillance and monitoring, and surveys.</td>
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Salmonella enterica PCR Detection Kit

Contents:
1. S. enterica Enrichment Media
2. Lysis Solution
3. Binding Solution I
4. Wash Solution I
5. Wash Solution II
6. Elution Buffer
7. Proteinase K
8. Mini Filter Spin Columns
9. Collection Tubes
10. Elution tubes (1.7 mL)
11. S. enterica PCR Master Mix
12. 2X PCR Control Master Mix
13. S. enterica Isolation Control (IsoC)
14. S. enterica Positive Control (PosC)
15. Nuclease-Free Water
16. Norgen's DNA Marker
17. Product Insert

Storage Conditions
All buffers should be kept tightly sealed and stored at room temperature (15-25°C) for up to 1 year without showing any reduction in performance. The Proteinase K should be stored at -20°C upon arrival and after reconstitution. These reagents should remain stable for at least 1 year when stored at these conditions. The S. enterica 2x PCR Master Mix, the 2X PCR Control Master Mix, the S. enterica Isolation Control (IsoC), the S. enterica Positive Control (PosC) should be kept tightly sealed and stored at -20°C for up to 1 year without showing any reduction in performance. Repeated thawing and freezing (>2x) should be avoided, as this may reduce the sensitivity. If the reagents are to be used only intermittently, they should be frozen in aliquots.

Figure 1. Sensitivity of Detection using the S. enterica PCR Detection Kit. A representative 1X TAE 1.7% agarose gel showing the amplification of S. enterica (S. enterica Target) using the 2X S. enterica Detection PCR Mastermix. The size of the S. enterica target amplicon corresponds to 336 bp as represented by the provided DNA Marker (M). NC = Negative Control.

Figure 2. Amplification of Isolation Control and PCR Control under different conditions using the 2X PCR Control Mastermix. The size of the Isolation Control amplicon and PCR Control amplicon correspond to 499 bp and 150 bp, respectively, as represented by the provided DNA Marker (M). Lanes 1 to 5 showed detection of both Isolation Control and PCR Control, suggesting that the DNA isolation as well as the PCR reaction was successful. Lane 6 only showed the detection of PCR Control suggesting that while the PCR was successful, the isolation failed to recover even the spiked-in Isolation control. NC = Negative Control.

Cat # | Description | Quantity
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32100 | Salmonella enterica PCR Detection Kit | 24 tests