Product Manual

Rapid Qualitative *E. coli* O157:H7 Test Kit

Catalog Number
AKR-301  20 assays

FOR RESEARCH USE ONLY
Not for use in diagnostic procedures
**Introduction**
Most foods harbor microorganisms in different concentrations. *E. coli* O157:H7 species are one of the major causes of foodborne illness worldwide. There are hundreds of *E. coli* serotypes (species). Many serotypes are capable of causing enteric diseases in humans; many of the hemorrhagic serotypes cause severe intestinal disorders and even kidney failure. The O157:H7 serotype is associated with severe foodborne illness and has been implicated in most foodborne outbreaks. Symptoms appear between 8-42 hours after ingestion of *E. coli*-contaminated food. Symptoms include diarrhea, vomiting, chills, fever, nausea, abdominal cramps, and prostration.

In order to detect low levels of O157:H7 in foods, a pre-enrichment culturing step is needed. The method includes pre-enrichment on selective or differential media for 16 to 24 hours to increase the levels of *E. coli* O157:H7 organisms.

Cell Biolabs’ Rapid Qualitative *E. coli* O157:H7 Test Kit provides a quick method for detection of O157:H7 in food samples prepared in enriched media. This test is designed as an aid in the detection of *E. coli* O157:H7 and should be used as an adjunct to culture.

**Assay Principle**
The Rapid Qualitative *E. coli* O157:H7 Test Kit is designed to detect O157:H7 antigens in contaminated food samples. The test is a rapid qualitative test that is based on the use of *E. coli* O157:H7-specific antibodies. The reaction between the enriched positive sample and the colored particle-conjugated antibody will form a complex that migrates along the membrane. An immobilized capture antibody will form a colored line at the test area upon reacting with the colored complex. An internal control line is built in to assure that the test has been carried out correctly. Test results appear in the center section of the test strip (see Figure 1).

**Related Products**
1. AKR-302: Rapid Qualitative *Salmonella* Test Kit

**Kit Components**
1. *E. coli* O157:H7 Test Strips (Part No. 230103): One tube containing 20 test strips
2. Sample Diluent Buffer (Part No. 230104): One 10 mL bottle

**Materials Not Supplied**
1. Enrichment media (EC medium recommended)
2. Microcentrifuge tubes

**Storage**
Store kit components at room temperature until their expiration dates.
Preparation of Samples

- This kit is designed for use with food samples. Food samples that will not be tested within 48 hours of collection should be stored at 4°C. Allow refrigerated samples to reach room temperature before testing.
- Samples suspected to contain very high concentrations of E. coli O157:H7 may be serially diluted in distilled H2O prior to running the assay. High concentrations of O157:H7 antigens may result in a weak or faint control line which may call into question the accuracy of the test.
- Samples containing large amounts of food matter may migrate slowly up the test strip. It is important to add the right ratio of media according to step 1 of the Assay Protocol. Do not allow incubation with the test strip for more than 20 minutes.

Assay Protocol

1. Dilute test sample 1:10 in enrichment medium such as EC medium. For solid food samples, add 1 g sample to every 9 mL of media. For liquid samples, add 1 mL sample to every 9 mL of media. Incubate the sample / media mixture at 37°C for 16-24 hrs.

2. Aliquot 150 µL of Sample Diluent Buffer into a microcentrifuge tube.

3. Add 150 µL of the enriched sample from step 1 to the Sample Diluent Buffer. Shake well to mix.

4. Insert the test strip ensuring the arrows point down. Incubate for 10-15 minutes. For a test to be considered valid, a colored line must appear in the control-line section of the strip (Figure 1). If no line appears in the control section, add an additional 50 µL of diluted sample to the tube and insert the test strip back into the tube. Incubate for an additional 4 minutes. Read results no later than 20 minutes after insertion of the test strip.

Interpretation of Results

The test is negative if only one colored line appears in the control section. If even a faint color appears in the test area of the strip, the test should be considered positive. It is not important whether the test line is darker or lighter than the control line.

Figure 1. Illustration of Positive and Negative Test Results with the Rapid Qualitative E. coli O157:H7 Test Kit.
Warranty
These products are warranted to perform as described in their labeling and in Cell Biolabs literature when used in accordance with their instructions. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THIS EXPRESSED WARRANTY AND CELL BIOLABS DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR PARTICULAR PURPOSE. CELL BIOLABS’s sole obligation and purchaser’s exclusive remedy for breach of this warranty shall be, at the option of CELL BIOLABS, to repair or replace the products. In no event shall CELL BIOLABS be liable for any proximate, incidental or consequential damages in connection with the products.

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