E. coli O157
Enteric (Stool Antigen) ELISA

Foodborne Illnesses: Determination of E. coli O157 antigen

Simple
Microwell Enzyme-based assay (ELISA)
Rapid turnaround
Room temperature incubation

Convenient
Ready to use reagents
Controls provided

ORDERING

Catalog No.	Description
7060	Campylobacter
7063	Cryptosporidium
7066	E. coli O157
7069	Giardia
7072	Verotoxin
7075	C. difficile Toxins A&B
7078	E. histolytica

CE and EN ISO 13485 compliant

BIOMERICA

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email: bmra@biomerica.com www.biomerica.com

INTENDED USE

The Biomerica E. coli O157 ELISA is intended for the qualitative detection of E. coli O157 antigen in human fecal specimens. The assay is designed as a screening tool to allow rapid determination of the presence of E. coli O157 bacteria without prior culturing of the stool specimen. All samples which are positive in the ELISA test should be cultured and serotyped to confirm the presence of O157 and its H antigen type. This assay is intended for *in vitro* diagnostic use only.

BACKGROUND

Escherichia coli are a large and diverse group of gram-negative bacteria found in normal human flora. While most strains are harmless, certain strains produce a toxin known as Shiga toxin, and these strains are called Shiga toxin-producing E. coli, or STEC, for short. The most common STEC is E. coli O157:H7, which has been implicated in a wide spectrum of human diseases, including bloody and non-bloody diarrhea, hemolytic uremic syndrome (HUS), kidney failure, and hemorrhagic colitis (HC). [1,2,3,4]

The symptoms of STEC infections vary considerably from case-to-case, but often include stomach cramps, diarrhea, vomiting, and mild fever. About 5-10% of people diagnosed with STEC infection develop HUS, which is characterized by microangiopathic hemolytic anemia, thrombocytopenia and renal failure, which can cause permanent damage or death. HC typically presents with abdominal cramps and watery diarrhea followed by a hemorrhagic discharge resembling lower gastrointestinal bleeding.[1,3,5,6]

STEC infections start when bacteria are ingested through consumption of contaminated food or water, unpasteurized milk, contact with cattle, or contact with the feces of infected animals or humans.[7,8,9,10,11] People have become infected by swallowing lake water while swimming, eating undercooked beef , touching the environment in petting zoos, or by eating foods prepared by people who did not wash their hands properly after using the toilet. Because there are so many possible causes, most people never learn what the source of the infection was. However, about 20% of cases are associated with a recognized outbreak, and the health department may determine the source.

Typically detection of E. coli O157 has been accomplished by culturing on sorbitol-MacConkey medium or broth amplification, followed by confirmatory testing using typing antiserum or latex assays. However, current latex assays and some typing antisera have shown cross reactions with non-E. coli O157 colonies.[12,13,14] In addition, the culture methods usually take 24-48 hours and require a skilled microbiologist in identifying colonies.

It has been recommended by the Council of State and Territorial Epidemiologists that clinical laboratories screen at least all bloody stools for this pathogen.[11] The American Gastroenterological Association Foundation (AGAF) has also recommended that all stool specimens should be routinely tested for E. coli O157:H7.[15] The Biomerica E. coli O157 ELISA provides a rapid and convenient screening option to identify positive specimens for culture and serotyping.

PERFORMANCE

Study #1 – vs. SMAC
N=174

Sensitivity – 11/12 = 92%
Specificity – 162/162 = 100%

Biomerica	SMAC +	SMAC -
+	11	0
-	1	162

ORDERING

Catalog No.	Description
7066	E. coli O157 ELISA kit - Qualitative (96 tests)

CE and EN ISO 13485:2003 Compliant, Multi-language inserts available

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