



TECHNICAL NOTICE

SOUTH BEND MEDICAL FOUNDATION

June 2009

Shiga Toxin-Producing *Escherichia coli* Antigen, by EIA, Feces

Effective Date: June 1, 2009 **Performing Department:** Microbiology **Method:** • Enzyme immunoassay (EIA)

Use: Screening stool specimens for Shiga toxin-producing *Escherichia coli* (STEC), formerly known as enterohemorrhagic *E. coli* or enterotoxigenic *E. coli*

Clinical Significance:

Shiga toxin-producing *Escherichia coli* (STEC) causes gastrointestinal disease, particularly among children and elderly persons. This agent should be suspected in patients with:

- Bloody diarrhea
- Right-side abdominal pain with bloody or non-bloody diarrhea
- Suspected postdiarrheal hemolytic uremic syndrome (HUS)

The stool sample is inoculated into a selective broth and incubated for 24 hours, followed the next day by EIA. Positive results are considered a reportable disease and the specimen is then sent to the Indiana State Department of Health (ISDH) for serotype confirmation.

In routine feces cultures, 0157 STEC is detected by incorporation of selective culture media, Sorbitol MacConkey agar. However, non-0157 STEC serotypes are indistinguishable from other *E. coli* and cannot be differentiated by this selective culture media. In order to detect all STEC infections, enzyme immunoassay must be ordered.

Reference Range: Negative for Shiga toxin *E. coli* antigen, by EIA

Specimen Requirements and Collection:

Patient Preparation:

- Caution the patient against the use of antacids, barium, bismuth, etc. prior to collection of specimen
- Fecal specimens should be collected early in the course of the diagnosis process or in the acute phase of diarrheal illness, before antimicrobial therapy has been initiated

Preferred Specimen: Feces Culture Transport Medium, filled to the indicated line with feces

Collection:

- Random Feces Specimen:
 1. Collect in sterile bedpan not contaminated with urine, residual soap, or disinfectants)
 2. Transfer portions of feces, particularly those containing pus, blood, or mucus to "Feces Culture Transport Media" container
 3. Do not fill container beyond designated "fill line"
- Rectal Swab Specimen:
 1. Swabs of rectal wall or sigmoid colon lesions collected during proctoscopy or sigmoidoscopy – or – swab passed beyond anal sphincter, carefully rotated, and withdrawn
 2. Place swab in container of "Feces Culture Transport Media" and break off sufficient portion of swab shaft to allow tightening of container lid
- Duodenal Sigmoid Aspirate Specimens: Collected by physician and placed in "Feces Culture Transport Media"

Storage/Transport: Room temperature; transport within 24 hours of collection time

Causes For Rejection:

- Transport container filled beyond indicated line
- Dry swab
- Not received in transport medium
- Specimen refrigerated or frozen
- Contains interfering substances

Testing Schedule: • Performed Sunday–Saturday (daily)

Order:

- **Shiga Toxin *E. coli* Antigen, by EIA, Feces**..... Test #: **21902** CPT: • 87427 – or –
- **Culture, Feces, Routine, with *Campylobacter* and Shiga Toxin Antigens, by EIA**.... Test #: **21002**...
CPT: • 87045 • 87427 • 87449

Please direct comments regarding this notice to C. Kurtis Kim, M.D., Mary G. Stepney, Microbiology Specialist, or Nan Boston, Microbiology Manager, South Bend Medical Foundation, (574) 234-4176 or (800) 544-0925.

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