

---

**Lab Dept:** Microbiology

**Test Name:** GASTROINTESTINAL PATHOGEN PANEL PCR,  
STOOL

---

***General Information***

**Lab Order Codes:** GI

**Synonyms:** Multiplex PCR, GI Panel

**CPT Codes:** 87507 – GI Pathogen DNA 12-25 Targets  
87045 – Culture, bacterial; feces, with isolation and preliminary examination, Salmonella and Shigella species (if appropriate)  
87046 x2 – Culture, bacterial; stool, additional pathogens, isolation and preliminary examination, each plate (e.g. Campylobacter, E. coli 0157) (if appropriate)  
87899 & 87899-59 – Infectious agent, not otherwise specified (EHEC) (if appropriate)  
87015 – Concentration (any type), for infectious agents (EHEC) (if appropriate)

The following testing may be added if appropriate based on findings for organism identification (multiple additions are possible if more than one organism is identified).

87046 – For each individual additional pathogen (e.g. Yersinia, Vibrio, Aeromonas (if appropriate)

87077 – Aerobic isolate, additional methods required for definitive identification of isolates (if appropriate)

87106 – Culture, fungi definitive identification, each organism; yeast (if appropriate)

87147 – Culture, typing; immunologic method, other than immunofluorescence (e.g., agglutination grouping), per antiserum (if appropriate)

87184 – Susceptibility studies, disk method, per plate (if appropriate)

87186 – Susceptibility studies, microdilution or agar dilution, each multi-antimicrobial, per plate (if appropriate)

**Test Includes:**

- Campylobacter species (Campylobacter jejuni/Campylobacter coli  
Campylobacter upsaliensis)
- Plesiomonas shigelloides
- Salmonella species
- Vibrio species (Vibrio parahaemolyticus, Vibrio vulnificus, Vibrio cholerae)
- Vibrio cholerae
- Yersinia species
- Enteroaggregative Escherichia coli (EAEC)
- Enteropathogenic E coli (EPEC)
- Enterotoxigenic E coli (ETEC)
- Shiga toxin
- E coli O157
- Shigella/Enteroinvasive E coli (EIEC)
- Cryptosporidium species
- Cyclospora cayetanensis
- Entamoeba histolytica
- Giardia
- Adenovirus F 40/41
- Astrovirus
- Norovirus GI/GII
- Rotavirus A
- Sapovirus

Note: If *Shigella* species or *Salmonella typhi* is detected, culture and susceptibility will be performed at an additional charge.

Note: If *Salmonella* species is detected on admitted patients, culture and susceptibility will be performed at an additional charge.

---

## **Logistics**

**Test Indications:** The FilmArray gastrointestinal panel is a multiplex PCR test capable of qualitatively detecting DNA or RNA of 22 pathogens (bacteria, parasites, and viruses) in approximately 1 hour from stool in Cary Blair transport medium.

This test is used to diagnose infection by *Campylobacter* species, *Plesiomonas shigelloides*, *Salmonella* species, *Vibrio* species, *V cholerae*, *Yersinia* species, enteroaggregative *Escherichia coli*, enteropathogenic *E coli*, enterotoxigenic *E coli*, Shiga toxin-producing *E coli*, *E coli* O157, *Shigella/Enteroinvasive E coli*, *Cryptosporidium* species, *Cyclospora cayetanensis*, *Entamoeba histolytica*, *Giardia lamblia*, adenovirus F 40/41, astrovirus, norovirus, rotavirus, and sapovirus.

**Lab Testing Sections:** Microbiology

**Phone Numbers:** MIN Lab: 612-813-6280

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 24 hours

**Special Instructions:** Specimen in Cary Blair must arrive within 96 hours of collection. Fresh stool must arrive within two hours of collection.

---

### ***Specimen***

**Specimen Type:** Stool, fresh  
Stool in Cary Blair  
Stool, fresh including stool ostomy samples if not collected by endoscope or aspirate.

**Container:** Stool collection container

**Draw Volume:** 1 gram or 5mL (Minimum: 1mL) stool

**Processed Volume:** Same as Draw Volume

**Collection:** Random stool collection

**Special Processing:** Lab Staff: Place fresh stool in preservative within 2 hours of collection. Send at ambient temperatures.

**Patient Preparation:** N/A

**Sample Rejection:** **No diapers accepted.** Mislabeled or unlabeled specimens; specimen older than 96 hours, fresh stool >2 hours old; stool aspirates; frozen specimen, commercial transport media other than liquid Cary Blair (eg, ETM, Para-Pak Enteric Plus; Copan FecalSwab/ESwab), Cary Blair gel swabs, products containing formalin, SAF, PVA fixative, EcoFix preservative, rectal swabs, stool swab, gel swabs, endoscopy specimens, unpreserved stool

---

### ***Interpretive***

**Reference Range:** Negative (for all targets)

**Alert Values:** **The following will be called if found to be positive\*:**

Salmonella  
Shigella/Enteroinvasive E. coli (EIEC)  
Shiga-like toxin producing E. coli (STEC) stx1/stx2  
E. coli 0157  
Vibrio  
Vibrio cholera  
Campylobacter species

\*Note: Alert values are not called for ED patients.

**Limitations:** A negative result should not rule-out infection in patients with a high pretest probability for gastrointestinal infection. The assay does not test for all potential infectious agents of diarrheal disease.

Positive results do not distinguish between a viable or replicating organism and the presence of a nonviable organism or nucleic acid, nor do they exclude the potential for coinfection by organisms not contained within the panel.

Results of the panel are intended to aid in the diagnosis of illness and are meant to be used in conjunction with other clinical and epidemiological findings.

**Methodology:** Multiplex Polymerase Chain Reaction (PCR)

**References:** FilmArray Gastrointestinal (GI) Panel Instruction Booklet, RFIT-PRT-0143-03 April 2016. Salt Lake City, UT: BioFire Diagnostics

**Updates:**  
8/20/2019: Previously performed at Mayo, now done in house.  
9/4/2019: Test does not include - Clostridioides (Clostridium) difficile toxin A/B  
11/5/2020: Update rejection criteria (stool aspirates added)  
10/15/2021: Alert value info update.