Overview

Useful For

Determining whether a bacterial enteric pathogen is the cause of diarrhea

May be helpful in identifying the source of the infectious agent (eg, dairy products, poultry, water, or meat)

This test is generally **not useful for** patients hospitalized more than 3 days because the yield from specimens from these patients is very low, as is the likelihood of identifying a pathogen that has not been detected previously.

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
GID	Bacteria Identification	No, (Bill Only)	No
ISAE	Aerobe Ident by Sequencing	No, (Bill Only)	No
REFID	Additional Identification Procedure	No, (Bill Only)	No
SALS	Serologic Agglut Method 1 Ident	No, (Bill Only)	No
SHIG	Serologic Agglut Method 3 Ident	No, (Bill Only)	No
RMALD	Ident by MALDI-TOF mass spec	No, (Bill Only)	No

Testing Algorithm

When this test is ordered, the reflex tests may be performed at an additional charge. Reportable pathogens include *Aeromonas*, *Campylobacter*, *Salmonella*, *Shigella*, and *Yersinia*.

Note: This test does not include culture for *Escherichia coli* O157:H7. All bacterial isolates worked up, to rule in or out as a pathogen, will be billed for work performed and resources consumed.

For more information see Laboratory Testing for Infectious Causes of Diarrhea.

Special Instructions

- Laboratory Testing for Infectious Causes of Diarrhea

Method Name

Conventional Culture

NY State Available

Yes

Specimen

Specimen Type
Fecal

Ordering Guidance
1. If Vibrio is suspected, order VIBC / *Vibrio* Culture, Feces.
2. If susceptibility testing is needed; also order ZMMLS / Antimicrobial Susceptibility, Aerobic Bacteria, Varies. Pathogens for which susceptibility testing would be pursued are: *Shigella* species, *Yersinia* species, *Campylobacter* species, *Arcobacter* species, and *Vibrio* species. If susceptibilities are not appropriate, they will not be performed and ZMMLS will be canceled at report time.
3. *Clostridioides* (*Clostridium) difficile*, a major cause of nosocomial diarrhea, is not detected by this test. Order CDPCR / *Clostridioides difficile* Toxin, PCR, Feces.
4. *Escherichia coli* O157:H7 is not detected by this test. Order STFRP / Shiga Toxin, Molecular Detection, PCR, Feces.

Additional Testing Requirements
In some cases, local public health requirements may impact Mayo Clinic Laboratories (MCL) clients and require submission of isolates to a public health laboratory. Clients should familiarize themselves with local requirements and will be responsible for submitting isolates to the appropriate public health laboratory. Clients can obtain isolates of *Vibrio* species by calling 800-533-1710 as soon as possible to ensure viability of the organism.

Shipping Instructions
Specimens must arrive within 72 hours of collection if using fecal swabs or within 4 days of collection if using Culture and Sensitivity stool transport vial.

Necessary Information
Specimen source is required.

Specimen Required
Patient Preparation: Patient **should not** use barium or bismuth for 7 to 10 days before specimen collection.

Submit only 1 of the following specimens:

Preferred:
Specimen Type: Fecal Swab
Supplies: Copan Fecal Swab (T995)
Container/Tube: Culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium)
Specimen Volume: Representative portion of fecal specimen
Collection Instructions:
1. Remove swab from packaging.
2. Collect a small amount of stool by inserting all the tip of the flocked swab into the stool sample and rotate.
3. Within 2 hours of collection transfer swab into the tube with preservative medium and visually check to ensure MAX fill line is not exceeded.

4. Mix stool specimen against side of tube to evenly disperse.
5. Break swab off into the tube.
6. Place screw cap in tube and tighten.
7. Shake vial until sample homogenous.
8. Place vial in a sealed plastic bag.

Specimen Stability Information: Refrigerated 3 days (preferred)/Ambient 2 days

Acceptable:
Specimen Type: Preserved Feces
Supplies: Culture and Sensitivity Stool Transport Vial (T058)
Container/Tube: Commercially available transport system specific for recovery of enteric pathogens from fecal specimens (15 mL of non-nutritive transport medium containing phenol red as a pH indicator, either Cary-Blair or Para-Pak C and S)
Specimen Volume: Representative portion of fecal specimen
Collection Instructions:
1. Collect fresh feces and submit 1 gram or 5 mL in container with transport medium.
2. Within 2 hours of collection place feces in preservative.
3. Place vial in a sealed plastic bag.

Specimen Stability Information: Ambient 4 days (preferred)/Refrigerated 4 days

Forms

If not ordering electronically, complete, print, and send a Gastroenterology and Hepatology Test Request (T728) with the specimen.

Specimen Minimum Volume

1 mL

Reject Due To

Unpreserved stool	Reject
Specimen in ECOFIX preservative	Reject
Specimen in formalin	Reject
Specimen in PVA fixative	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Fecal	Varies		
	Ambient		
	Refrigerated		

Clinical & Interpretive

Clinical Information

Diarrhea may be caused by a number of agents (eg, bacteria, viruses, parasites, and chemicals) and these agents may result in similar symptoms. A thorough patient history covering symptoms, severity, duration of illness, age, travel history, food consumption, history of recent antibiotic use, and illnesses in the family or other contacts will help the healthcare professional categorize the disease and ensure that any special requests are communicated to the laboratory.

Reference Values

No growth of pathogens

Interpretation

The growth of an enteric pathogen identifies the cause of diarrhea.

Cautions

No significant cautionary statements

Clinical Reference

1. York MK, Rodrigues-Wong P, Church L: Fecal culture for aerobic pathogens of gastroenteritis. In: Clinical Microbiology Procedures Handbook. 3rd ed. ASM Press; 2010:Section 3.8.1
2. Jerris RC, Fields PI, Nicholson MA: Fecal culture for *Campylobacter* and related organisms. In: Clinical Microbiology Procedures Handbook. 3rd ed. ASM Press; 2010:Section 3.8.2
3. DuPont HL. Persistent diarrhea: A clinical review. JAMA. 2016;315(24):2712-2723. doi:10.1001/jama.2016.7833

Performance

Method Description

The fecal specimen is inoculated onto selective media designed to inhibit growth of normal bowel microbiota while allowing growth of the enteric pathogens. The following media are used: sheep blood agar, Hektoen enteric (HE) agar, eosin-methylene blue (EMB) agar, *Campylobacter* agar, cefsulodin-irgasan-novobiocin (CIN) agar, and the enrichment broth, selenite F. After incubation, suspect colonies are identified using 1 or a combination of the following techniques: matrix-assisted laser desorption/ionization time of flight mass spectrometry (MALDI-TOF), conventional biochemical tests, carbon source utilization, serologic methods, or nucleic acid sequencing of the 16S ribosomal RNA gene.(Procop GW, Church DL, Hall GS, et al, eds. Koneman's Color Atlas and Textbook of Diagnostic Microbiology. 7th ed. Lippincott Williams and Wilkins; 2017)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available
3 to 8 days

Specimen Retention Time
7 days

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information
87045-Enteric Pathogens Culture, Stool-with isolation and preliminary examination
87046 x 3-Stool Culture Aerobic Bacteria, each
87077-Ident by MALDI-TOF mass spec (if appropriate)
87077-Bacteria Identification (if appropriate)
87153-Aerobe Ident by Sequencing (if appropriate)
87077-Additional Identification Procedure (if appropriate)
87147 x 3-Serologic Agglut Method 1 Ident (if appropriate)
87147 x 4-Serologic Agglut Method 3 Ident (if appropriate)
87150 Carbapenem resistance genes (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
STL	Enteric Pathogens Culture, Stool	625-4

Result ID	Test Result Name	Result LOINC® Value
STL	Enteric Pathogens Culture, Stool	In Process