Test Definition: SHIGC

Shigella Culture, Feces

Overview

Useful For

Determining whether *Shigella* species may be the cause of diarrhea

Reflexive testing for *Shigella* species from nucleic acid amplification test-positive stool

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
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.

For more information see Laboratory Testing for Infectious Causes of Diarrhea

Special Instructions

- Laboratory Testing for Infectious Causes of Diarrhea

Highlights

This test provides evidence of the presence of the bacterium, *Shigella* species, in feces, in a viable state, and provides an isolate for antibacterial susceptibility testing and, if needed, submission to a health department.

Minnesota healthcare professionals are required to report all confirmed or suspected cases of shigellosis to the Minnesota Department of Health. Mayo Clinic Laboratories clients should refer to their local health departments regarding public health submission of *Shigella* isolates.

Method Name

Conventional Culture

NY State Available

No

Specimen

Specimen Type
Fecal

Additional Testing Requirements
If susceptibility testing is needed, also order ZMMLS / Antimicrobial Susceptibility, Aerobic Bacteria, Varies. If susceptibility testing is not needed (eg, due to lack of recovery of *Shigella* species from feces), it will not be performed and the ZMMLS order will be canceled at time of report.

In some cases, local public health requirements may impact Mayo Clinic Laboratories clients, requiring, for example, submission of isolates to public health laboratories. Clients should familiarize themselves with local requirements and are responsible for submitting isolates to appropriate public health laboratories. Clients can obtain isolates of *Shigella* species recovered from specimens submitted to Mayo Clinic Laboratories by calling 800-533-1710 as soon as possible after reporting (to ensure viability of the bacterium).

Shipping Instructions
Specimen must arrive within 96 hours of collection.

Necessary Information
Specimen source is required.

Specimen Required
Patient Preparation: The patient should **not** use antacids, barium, bismuth, antidiarrheal medication, or oily laxatives before specimen collection.
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. Place feces in preservative within 2 hours of collection.
3. Place vial in a sealed plastic bag.

Specimen Minimum Volume
1 mL

Reject Due To

Unpreserved feces	Reject

ECOFIX preservative Formalin or PVA fixative	

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Fecal	Ambient (preferred)	4 days	
	Refrigerated	4 days	

Clinical & Interpretive

Clinical Information

Diarrhea may be caused by a number of agents, including bacteria, viruses, parasites, and chemicals; these agents may result in similar symptoms. A thorough patient history covering symptoms, severity and 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 determine the appropriate testing to be performed.

Shigella species are common causative agents of bacterial diarrheal disease worldwide. The infectious dose is low; *Shigella* transmission can occur via contaminated food and water or from direct person-to-person contact.

Reference Values

No growth of *Shigella* species.

Interpretation

The growth of *Shigella* species identifies a potential cause of diarrhea.

Cautions

The yield of *Shigella* species is reduced when specimens are delayed in transit to the laboratory (>2 hours from collection for unpreserved specimens).

Check local public health requirements, which may require submission of isolates to a public health laboratory.

Clinical Reference

1. Pillai DR, Griener T. Culture for *Campylobacter* and related organisms. In: Leber AL, Church DL, eds. Clinical Microbiology Procedures Handbook. 4th ed. ASM Press; 2016:Section 3.8.2
2. DuPont HL. Persistent diarrhea: A clinical review. JAMA. 2016;315(24):2712-2723. doi:10.1001/jama.2016.7833
3. DuPont HL, Levine MM, Hornick RB, Formal SB. Inoculum size in shigellosis and implications for expected mode of transmission. J Infect Dis. 1989;159(6):1126-1128
4. Maurelli AT, Lampel KA. *Shigella*. In: Hui YH, Gorham JR, Murrell KD, Cliver DO, eds. Foodborne Disease Handbook. Marcel Dekker;1994:321
5. CDC Health Alert Network. CDC Recommendations for diagnosing and managing *Shigella* Strains with possible reduced susceptibility to ciprofloxacin. April 18, 2017. Accessed September 22, 2023. Available at

https://emergency.cdc.gov/han/han00401.asp

Performance

Method Description

The fecal specimen is inoculated onto hektoen enteric agar, a selective and differential agar designed to recover *Shigella* species. After incubation, suspect colonies are identified using one or a combination of the following techniques: Matrix-assisted laser desorption/ionization time of flight (MALDI-TOF) mass spectrometry, conventional biochemical tests, carbon source utilization, serologic methods, or nucleic acid sequencing of the 16S ribosomal RNA gene. Isolates are reported as *Shigella boydii*; *Shigella dysenteriae*; *Shigella flexneri*; or *Shigella sonnei*.(Pillai DR. Fecal culture for aerobic pathogens of gastroenteritis. In: Leber AL, Church DL, eds. Clinical Microbiology Procedures Handbook. 4th ed. ASM Press. 2016:Section 3.8.2)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available

3 to 5 days

Specimen Retention Time

7 days

Performing Laboratory Location

Mayo Clinic Jacksonville Clinical Lab

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

87046-Shigella Culture, Stool-with isolation and preliminary examination

87077-Bacteria Identification (if appropriate)
87153-Aerobe Ident by Sequencing (if appropriate)
87077-Additional Identification Procedure (if appropriate)
87147 x 4-Serologic Agglut Method 3 Ident (if appropriate)
87077-Ident by MALDI-TOF mass spec (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
SHIGC	Shigella Culture, F	17576-0

Result ID	Test Result Name	Result LOINC® Value
SHIGC	Shigella Culture, F	88586-3