MAYO CLINIC LABORATORIES

Test Definition: SALMC

Salmonella Culture, Feces

Overview

Useful For

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

Reflexive testing for *Salmonella* species from nucleic acid amplification test-positive feces

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
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, *Salmonella* species, in feces, in a viable state, and provides an isolate for antibacterial susceptibility testing.

Method Name

Conventional Culture

NY State Available

No

Specimen

Specimen Type
Fecal

Ordering Guidance
The recommended test for diagnosis of typhoid or paratyphoid fever is blood culture.

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 *Salmonella* species from feces), it will not be performed, and the ZMMLS order will be canceled at time of report.

Shipping Instructions
Specimen must arrive within 96 hours of collection.

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.
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 Minimum Volume
1 mL

Reject Due To

Unpreserved feces	Reject
ECOFIX preservative	Reject
Formalin or PVA fixative	Reject

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 provider determine the appropriate testing to be performed.

Salmonella species cause disease in 2 broad categories-gastroenteritis, and typhoid (or paratyphoid) fever (eg, *Salmonella enterica* subspecies *enterica* serovar Typhi, *Salmonella enterica* subspecies *enterica* serovar Paratyphi A, *Salmonella enterica* subspecies *enterica* serovar Paratyphi B [tartrate negative], and *Salmonella enterica* subspecies *enterica* serovar Paratyphi C). In the United States, gastroenteritis is most common clinical presentation.

Reference Values

No growth of *Salmonella* species.

Interpretation

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

Cautions

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

Salmonella enterica subspecies *enterica* serovars Paratyphi B and Paratyphi C, which may cause paratyphoid fever, are not specifically tested for at Mayo Clinic Laboratories; they will be reported as *Salmonella* species not serovars Typhi/Paratyphi A.

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.Heymann DL: Salmonellosis. In: Control of Communicable Diseases Manual. 21st ed. APHA Press; 2022
4. Johnson LR, Gould LH, Dunn JR, et al. *Salmonella* infections associated with international travel: A Foodborne Diseases Active Surveillance Network (FoodNet) study. Foodborne Pathog Dis. 2011;8(9):1031-1037

Performance

Method Description

The fecal specimen is inoculated onto hektoen enteric agar, a selective and differential agar designed to recover

Salmonella species, and the enrichment broth, selenite F. After incubation, suspect *Salmonella* colonies are identified using one or a combination of the following techniques: matrix-assisted laser desorption/ionization time of flight mass spectrometry, conventional biochemical tests, carbon source utilization, serologic methods, and/or nucleic acid sequencing of the 16S ribosomal RNA gene. Isolates are reported as *Salmonella* species, not serovars Paratyphi A/Typhi, *Salmonella enterica* subspecies *enterica* serovar Typhi, or *Salmonella enterica* subspecies *enterica* serovar Paratyphi A.(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 3.8.1)

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-Salmonella 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 1-3-Serologic Agglut Method 1 Ident (if appropriate)
87077-Ident by MALDI-TOF mass spec (if appropriate)

LOINC® Information

Test Definition: SALMC

Salmonella Culture, Feces

Test ID	Test Order Name	Order LOINC® Value
SALMC	Salmonella Culture, F	20955-1

Result ID	Test Result Name	Result LOINC® Value
SALMC	Salmonella Culture, F	In Process