MAYO CLINIC LABORATORIES

Test Definition: FGEN

Fungal Culture, Routine

Overview

Useful For

Diagnosing fungal infections from specimens other than blood, skin, hair, nails, and vagina (separate tests are available for these specimen sites)

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
D2F	D2 Fungal Sequencing Identification	No, (Bill Only)	No
FUNA	Fungal Ident Panel A	No, (Bill Only)	No
FUNB	Fungal Ident Panel B	No, (Bill Only)	No
RMALF	Id MALDI-TOF Mass Spec Fungi	No, (Bill Only)	No
TISSR	Tissue Processing	No, (Bill Only)	No
RMALY	Id MALDI-TOF Mass Spec Yeast	No, (Bill Only)	No
ITSF	ITS Fungal Sequencing	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 Meningitis/Encephalitis Panel Algorithm.

Special Instructions

- Meningitis/Encephalitis Panel Algorithm

Method Name

Conventional Agar Culture/Macroscopy/Microscopy/D2 and Internal Transcribed Spacer (ITS) rDNA Gene Sequencing/Matrix-Assisted Laser Desorption/Ionization Time-Of-Flight Mass Spectrometry (MALDI-TOF MS) Dimorphic Pathogen Identification Confirmation: D2 and ITS rDNA Gene Sequencing/MALDI-TOF MS

NY State Available

Yes

Specimen

Specimen Type

Varies

Ordering Guidance

Nocardia and the other aerobic actinomycetes are not fungi, therefore a fungal culture should not be ordered. However, these organisms grow well on mycobacterial medium. When infection with this group of organisms is suspected, order CTB / Mycobacteria and *Nocardia* Culture, Varies.

Shipping Instructions

Specimen should arrive within 24 hours of collection.

Necessary Information

Specimen source (anatomic body site) is required.

Specimen Required

Submit only 1 of the following specimens:

Preferred:

Specimen Type: Body fluid
Container/Tube: Sterile container
Specimen Volume: Entire collection

Specimen Type: Fresh tissue
Container/Tube: Sterile container
Specimen Volume: Pea size
Collection Instructions: Tissue should be placed in small amount of sterile saline or sterile water.

Acceptable:

Specimen Type: Bone marrow
Container/Tube: Sterile container, SPS/Isolator system, or green top (lithium or sodium heparin)
Specimen Volume: Entire collection

Specimen Type: Respiratory specimen
Container/Tube: Sterile container
Specimen Volume: Entire collection

Specimen Type: Urine
Container/Tube: Sterile container
Specimen Volume: 2 mL
Collection Instructions: Collect a random urine specimen.

Fresh tissue or body fluid are preferred over a swab specimen. Recovery of mycobacteria from swabs is generally very low yield. Only submit a swab specimen if tissue biopsy or fluid aspiration is not possible.

Specimen Type: Swab
Supplies: BD E-Swab (T853)
Sources: Dermal, ear, mouth, ocular, throat, or wound

Container/Tube: Sterile, screw-capped tube containing Liquid Amies Medium with flocked swab (eg, E-Swab)
Specimen Volume: 1 mL in swab container with swab
Collection Instructions:
1. Before collecting specimen, wipe away any excessive amount of secretion and discharge, if appropriate.
2. Obtain secretions or fluid from source with sterile flocked swab. **Paranasal sinus collections must use a nasopharyngeal flocked swab.**
3. Place flocked swab in sterile, screw-capped tube containing 1 mL of Liquid Amies Medium.
4. If smear and culture are requested or both a bacterial culture and fungal culture are requested, collect a second swab to maximize test sensitivity. Submit each swab in a separate sterile, screw-capped tube with 1 mL of Liquid Amies Medium.

Forms

If not ordering electronically, complete, print, and send a Microbiology Test Request (T244) with the specimen.

Specimen Minimum Volume

Bone marrow or body fluid: 1 mL; Cerebrospinal fluid: 0.5 mL; Respiratory specimen: 1.5 mL; All other specimen types: See Specimen Required

Reject Due To

Blood or fixed tissue	Reject
Specimen in viral transport medium (including but not limited to M4, M5, BD viral transport media, thioglycolate broth)	Reject
Swab sources of respiratory fluids (eg, sputum) or nasal swab	Reject
Wood shaft or charcoal swab	Reject
Catheter tips	Reject
Petri dish	Reject
Stool	Reject
Blades from scalpels or razors	Reject
Boric acid	Reject

tubes	
Aptima swab	Reject
Culture transport swabs (eg, Culturette)	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Varies	Refrigerated (preferred)	7 days	
	Ambient	7 days	

Clinical & Interpretive

Clinical Information
Many fungi in the environment cause disease in immunocompromised human hosts. Accordingly, the range of potential pathogenic fungi has increased as the number of immunosuppressed individuals (persons with AIDS, patients receiving chemotherapy or transplant rejection therapy, etc) has increased. Isolation and identification of the infecting fungus in the clinical laboratory can help guide patient care.

Reference Values
Negative
If positive, fungus will be identified.

Interpretation
Positive cultures of yeast and filamentous fungi are reported with organism identification.

The clinician must determine whether the presence of an organism is significant or not. A final negative report is issued after 24 days of incubation.

Cautions
For optimal recovery of organisms, sufficient specimen should be transported within 24 hours of collection.

Fungi can be pathogens, colonizers, or contaminants. Correlation of the patient clinical condition with culture results is necessary.

Clinical Reference
Ashbee HR. General approaches for direction detection and identification of fungi. In: Carroll KC, Pfaller MA, Landry ML, et al, eds. Manual of Clinical Microbiology. 12th ed. Vol 1. ASM Press; 2019:2035-2055

Performance

Method Description

Specimens are cultured on selective fungal media (eg, inhibitory mold agar and brain heart infusion blood agar with chloramphenicol and gentamicin). Respiratory sources also are cultured on brain heart infusion agar with chloramphenicol, gentamicin, and cycloheximide. Cultures are incubated for 24 days at 30 degrees C.

Identification of fungi is based on colonial and microscopic morphology, matrix-assisted laser desorption/ionization time-of-flight mass spectrometry and/or D2 and internal transcribed spacer (ITS) ribosomal RNA gene sequencing, as applicable.(Dhiman N, Hall L, Wohlfiel SL, Buckwalter SP, Wengenack NL. Performance and cost analysis of matrix-assisted laser desorption ionization-time of flight mass spectrometry for routine identification of yeast. J Clin Microbiol. 2011;49[4]:1614-1616; Hall L, Wohlfiel S, Roberts GD. Experience with the MicroSeq D2 large-subunit ribosomal DNA sequencing kit for identification of filamentous fungi encountered in the clinical laboratory. J Clin Microbiol. 2004;42[2]:622-626; Theel ES, Schmitt BH, Hall L, et al. Formic acid-based direct, on-plate testing of yeast and Corynebacterium species by Bruker Biotyper matrix-assisted laser desorption ionization-time of flight mass spectrometry. J Clin Microbiol. 2012;50[9]:3093-3095; Theel ES, Hall L, Mandrekar J, Wengenack NL. Dermatophyte identification using matrix-assisted laser desorption ionization-time of flight mass spectrometry. J Clin Microbiol. 2011;49[12]:4067-4071; Fida M, Wengenack NL, Theel ES. Mycology: General approaches for direct and indirect detection and identification of fungi. In: Carroll KC, Pfaller MA, Pritt BS, et al. Manual of Clinical Microbiology. 13th ed. ASM Press; 2023)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available

24 to 35 days

Specimen Retention Time

Raw specimen: 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

87102-Fungal culture, routine
87106-Id MALDI-TOF Mass Spec Yeast (if appropriate)
87107-Id MALDI-TOF Mass Spec Fungi (if appropriate)
87107-Fungal identification panel A (if appropriate)
87107-Fungal identification panel B (if appropriate)
87153-D2 fungal sequencing identification (if appropriate)
87153-ITS Fungal Sequencing (if appropriate)
87176-Tissue processing (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
FGEN	Fungal Culture, Routine	51723-5

Result ID	Test Result Name	Result LOINC® Value
FGEN	Fungal Culture, Routine	51723-5