MAYO CLINIC LABORATORIES

Test Definition: FS

Fungal Smear, Varies

Overview

Useful For
Detection of fungi in clinical specimens

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
TISSR	Tissue Processing	No, (Bill Only)	No

Testing Algorithm
For information, see Meningitis/Encephalitis Panel Algorithm.

Special Instructions
- Meningitis/Encephalitis Panel Algorithm

Method Name
Calcofluor/KOH Stain

NY State Available
Yes

Specimen

Specimen Type
Varies

Shipping Instructions
Specimen should arrive within 24 hours of collection.

Necessary Information
Specimen source 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
Sources: Dermal, ear, mouth, ocular, throat, or wound
Supplies: BD E-swab (T853)
Container/Tube: Sterile, screw-capped tube containing Liquid Amies Medium with flocked swab (eg, E-Swab)
Specimen Volume: Flocked swab in 1 mL of Liquid Amies Medium
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.
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, body fluid, or respiratory specimen: 0.2 mL; Any other specimen type: See Specimen Required

Reject Due To

Blood or fixed	Reject

tissue Specimen in viral transport (including but not limited to M4, M5, BD viral transport media, thioglycolate broth) Nasal swab Wood shaft or charcoal swab Catheter tips Prepared slide, glass slide, microscope slide Stool Boric acid tube Aptima swab Culture transport swab (eg, Culturette)	

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 severely compromised 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.

Few fungal diseases can be diagnosed clinically; most are diagnosed by isolating and identifying the infecting fungus in the clinical laboratory.

Reference Values

Negative

Interpretation

Positive slides are reported as one or more of the following: fungal elements seen, yeast, yeast and psuedohyphae, hyphae, organism resembling *Blastomyces* species complex, organism resembling *Coccidioides* species, hyphae resembling Mucorales, or organism resembling *Malassezia* species.

Cautions

No significant cautionary statements.

Clinical Reference

1. Schelenz S, Barnes RA, Barton RC, et al. British Society for Medical Mycology best practice recommendations for the diagnosis of serious fungal diseases. Lancet Infect Dis. 2015;15(4):461-474. doi:10.1016/S1473-3099(15)70006-X
2. Hoenigl M, Salmanton-García J, Walsh TJ, et al. Global guideline for the diagnosis and management of rare mould infections: an initiative of the European Confederation of Medical Mycology in cooperation with the International Society for Human and Animal Mycology and the American Society for Microbiology [published correction appears in Lancet Infect Dis. 2021 Apr;21(4):e81]. Lancet Infect Dis. 2021;21(8):e246-e257. doi:10.1016/S1473-3099(20)30784-2

Performance

Method Description

Calcofluor white, a fluorescent textile brightener, nonspecifically binds with chitin in the cell wall of fungi. Examination of stained specimens using fluorescent microscopy allows for the detection of fungi due to the fluorescence of calcofluor white present on the fungal cell wall. Potassium hydroxide is added to hasten clearing of viscous specimens, and Evans blue is added to prevent nonspecific fluorescence.(Lindsley M. Reagents, stains, and media: Mycology. 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

1 to 2 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

87206
87176-Tissue processing (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
FS	Fungal Smear	658-5

Result ID	Test Result Name	Result LOINC® Value
FS	Fungal Smear	658-5