# 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 |