# Test Definition: LEGI

Legionella Culture

## Overview

### Useful For

Diagnosis of Legionnaires disease

### Reflex Tests

| Test ID | Reporting Name | Available Separately | Always Performed |
|---|---|---|---|
| RMALD | Ident by MALDI-TOF mass spec | No, (Bill Only) | No |
| ISAE | Aerobe Ident by Sequencing | No, (Bill Only) | No |
| TISSR | Tissue Processing | No, (Bill Only) | No |

### Testing Algorithm

When this test is ordered, the reflex tests may be performed and charged.

### Method Name

Conventional Culture Technique

### NY State Available

Yes

## Specimen

### Specimen Type

Varies

### Additional Testing Requirements

Because examination by rapid polymerase-chain reaction (PCR) increases sensitivity and provides faster results, it is strongly recommended to also order LEGRP / *Legionella* species, Molecular Detection, PCR, Varies.

### Necessary Information

**Specimen source is required.**

### Specimen Required

**Specimen Type:** Lower respiratory

**Sources:** Bronchoalveolar lavage, bronchial aspirate/brushing/lavage/washing, tracheal/endotracheal secretions/aspirate, sputum

**Container/Tube:** Sterile container

**Specimen Volume:** Entire collection

**Specimen type:** Fresh tissue or biopsy

**Sources:** Lung, pleura, heart valve, pericardium

**Container/Tube:** Sterile container

**Specimen Volume:** 5 mm(3)

**Collection Instructions:** Aseptically collect a 1 to 2 cm(3) piece of tissue whenever possible

**Specimen type:** Fluid

**Sources:** Pericardial, pleural, chest, chest tube drainage, thoracentesis, empyema

**Container/Tube:** Sterile container

**Specimen Volume:** 2 mL

### Forms

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

### Specimen Minimum Volume

See Specimen Required

### Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

### Specimen Stability Information

| Specimen Type | Temperature | Time |
|---|---|---|
| Varies | Refrigerated | 48 hours |

## Clinical and Interpretive

### Clinical Information

The Legionellaceae are ubiquitous in natural freshwater habitats, allowing them to colonize man-made water supplies, which may then serve as the source for human infections.

*Legionella pneumophila* and the related species, *Legionella bozemanii*, *Legionella dumoffii, Legionella gormanii, Legionella micdadei, Legionella longbeachae,* and *Legionella jordanis* have been isolated from patients with pneumonia (Legionnaires disease). The organism has been isolated from lung tissue, bronchoalveolar lavage, pleural fluid, and sputum. The signs, symptoms, and radiographic findings of Legionnaires disease are generally nonspecific.

### Reference Values

No growth

Identification of *Legionella* species.

### Interpretation

Identification of *Legionella* species from respiratory specimens provides a definitive diagnosis of Legionnaires disease.

Organisms isolated are identified as *Legionella* species via matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) and/or 16S rRNA gene sequencing.

### Cautions

Although a semi-selective media is utilized, recovery of *Legionella* in specimens heavily contaminated with indigenous flora (ie, sputum) may be difficult.

### Clinical Reference

1. Edelstein PH: *Legionella* In: Carroll KC, Pfaller MA, eds. Manual of Clinical Microbiology. 12th ed. ASM Press; 2019:905-920

2. Clinical and Laboratory Standards Institute: Interpretive Criteria for Identification of Bacteria and Fungi by Targeted DNA Sequencing. 2nd ed. CLSI Guideline MM18. CLSI; 2018

3. Rucinski SL, Murphy MP, Kies KD, Cunningham SA, Schuetz AN, Patel R: Eight years of clinical Legionella PCR testing illustrates a seasonal pattern. J Infect Dis. 2018 Jul 13;218(4):669-670. doi: 10.1093/infdis/jiy201

## Performance

### Method Description

Specimens are cultured on buffered charcoal-yeast extract-based media (BCYE). Colonies may appear within a few days; however, cultures are incubated for 7 days before issuing a negative report. Positive specimens will be identified via matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) and/or 16S rRNA gene sequencing.(Edelstein PH: Improved semi-selective medium for isolation of *Legionella pneumophila* from contaminated clinical and environmental specimens. J Clin Microbiol. 1981;14:298-303; CLSI. Interpretive Criteria for Identification of Bacteria and Fungi by Targeted DNA Sequencing. 2nd ed. CLSI Guideline MM18. Clinical and Laboratory Standards Institute; 2018)

### PDF Report

No

### Day(s) Performed

Monday through Sunday

### Report Available

7 to 10 days

### Specimen Retention Time

2 days

### Performing Laboratory Location

Rochester

## Fees and 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 Regional Manager. 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

87081-*Legionella* culture

87077-Ident by MALDI-TOF mass spec (if appropriate)

87153-Aerobe ident by sequencing (if appropriate)

87176-Tissue processing (if appropriate)

## LOINC® Information

| Test ID | Test Order Name | Order LOINC Value |
|---|---|---|
| LEGI | Legionella Culture | 593-4 |

| Result ID | Test Result Name | Result LOINC Value |
|---|---|---|
| LEGI | Legionella Culture | 593-4 |