MAYO CLINIC LABORATORIES

Test Definition: LEGI

Legionella Culture, Varies

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 at an additional charge.

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	Special Container
Varies	Refrigerated	48 hours	

Clinical & Interpretive

Clinical Information
The Legionellaceae are ubiquitous in natural freshwater habitats, allowing them to colonize artificial water supplies (eg, reservoirs), 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 of *Legionella* species after 7 days of incubation

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 (MALDI-TOF) mass spectrometry and/or 16S ribosomal RNA (rRNA) gene sequencing.

Cautions

Although semi-selective media is utilized, recovery of *Legionella* in specimens heavily contaminated with indigenous microbiota (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;218(4):669-670. doi:10.1093/infdis/jiy201

Performance

Method Description

Specimens are cultured on buffered charcoal-yeast extract-based media. 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 (MALDI-TOF) mass spectrometry and/or 16S ribosomal RNA (rRNA) gene sequencing.(Edelstein PH. Improved semiselective medium for isolation of *Legionella pneumophila* from contaminated clinical and environmental specimens. J Clin Microbiol. 1981;14[3]: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

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

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	In Process