

Overview

Useful For

Diagnosis of Legionnaires disease

Testing Algorithm

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

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

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.

Reject Due To

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

Specimen Minimum Volume

See Specimen Required

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Varies	Refrigerated (preferred)		

Clinical & 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

Specimen Retention Time

2 days

Performing Laboratory Location

Rochester

Fees & Codes**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 Information87081-*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	Reporting Name	LOINC®
LEGI	Legionella Culture	593-4