
Lab Dept: Microbiology/Virology

Test Name: **LEGIONELLA CULTURE**

General Information

Lab Order Codes: LEGC

Synonyms: Culture, Legionella pneumophila

CPT Codes: 87081 – Culture, presumptive, pathogenic organisms, screening only
87077 – Aerobic isolate, additional methods required for definitive identification of isolates

Test Includes: Culture for *Legionella pneumophila*.

Logistics

Lab Testing Sections: Microbiology

Referred to: Minnesota Department of Health

Phone Numbers: MIN Lab: 612-813-5866

STP Lab: 651-220-6555

Test Availability: Daily, 24 hours

Turnaround Time: Positive results are usually generated between 2 - 5 days. Negative cultures are final at 14 days.

Special Instructions: **Specimen site** and **date/time of collection** are required for processing.

Specimen

Specimen Type: Bronchoscopy, lung aspirate, lung biopsy, pleural fluid, or sputum

Container: Sterile container

Volume: 1 mL fluid

Collection: **Bronchoscopy:**

1. Specimen obtained by physician through the biopsy channel of the bronchoscope.
2. Transfer specimen into a luki tube.

3. Transport to laboratory within 30 minutes of collection.

Lung Aspirates, Pleural Fluid:

1. Disinfect overlying skin with 2% tincture of iodine.
2. Obtain specimen via percutaneous needle aspiration or surgery.
3. Place in sterile container.
4. Transport to the Microbiology Laboratory immediately at room temperature.

Lung Biopsy:

1. Any visible amount.
2. Submit in sterile container without formalin.
3. Lab Staff: Add a few drops of sterile saline to prevent drying.

Sputum (Expectorate):

1. Collect early morning specimen under the direct supervision of a nurse or a physician.
2. Have patient rinse or gargle with water to remove superficial flora.
3. Instruct patient to cough deeply to produce a lower respiratory specimen.
4. **Do not submit saliva.**

Sputum (Induced):

1. Have patient rinse mouth with water after brushing gums and tongue.
2. With the aid of a nebulizer, have patients inhale ~25 mL of 3 to 10% sterile saline.
3. Collect the induced sputum in a sterile container.

Transport/Storage: Transport to the Microbiology Laboratory immediately at room temperature.

Special Processing: Refrigerate specimens that cannot be processed within 30 min. If processing is delayed more than 24 hours, freeze specimen at -70°C.

Sample Rejection: Throat and nasopharyngeal specimens are not acceptable due to the presence of normal respiratory flora. Specimen with a transit time exceeding 1 hour after collection; specimen not submitted in appropriate transport container; improperly labeled specimen; insufficient volume; external contamination. If an unacceptable specimen is received, the physician or nursing station will be notified and another specimen will be requested before the specimen is discarded.

Interpretive

Reference Range: No *Legionella pneumophila* isolated.

Alert Values: The physician will be notified of positive results.

Limitations:	Sputum (expectorated), tracheal aspirates, and other specimens having normal respiratory flora are subject to bacterial overgrowth and may mask growth of <i>Legionella</i> . Sensitivity of cultures is relatively low (50% to 80%), however, specificity approaches 100%.
Methodology:	Culture
Additional Information:	The family, <i>Legionellaceae</i> , are ubiquitous, gram-negative, motile, fastidious, aerobic bacilli. Disease outbreaks have been associated with exposure of susceptible individuals to water sources in which legionellae have grown. <i>Legionella</i> sp. cause respiratory illness manifested primarily by pneumonia or Pontiac fever, a non-pneumonic, influenza-like illness. During an American Legion Convention in Philadelphia in 1976, an epidemic of pneumonia caused 34 deaths. Sputum characterized by acute inflammatory features, without a classical pattern of bacteria, may represent <i>Legionella</i> , influenza, or respiratory syncytial virus.
References:	<p>Cook, JH, and M Pezzlo (1992). Specimen receipt and accessioning. Section 1. Aerobic bacteriology, 1.2.1-4. In HD Isenberg (ed) Clinical Microbiology Procedures Handbook. American Society for Microbiology, Washington DC</p> <p>Miller, J Michael (1999) A Guide To Specimen Management in Clinical Microbiology, American Society for Microbiology, Washington DC</p> <p>Miller, J Michael, and HT Holmes (1999) Specimen Collection, Transport, and Storage In PR Murray et al, (ed), Manual of Clinical Microbiology, 7th edition, American Society for Microbiology, Washington DC, pp 33-104</p>
Test Updates:	6/2/2014: DFA no longer performed as part of this test.