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**Lab Dept:** Microbiology

**Test Name:** **LEGIONELLA CULTURE**

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**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*.

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**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.

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**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.

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**Interpretive**

**Reference Range:**

No *Legionella pneumophila* isolated.

**Alert Values:**

The physician will be notified of positive results.

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| <b>Limitations:</b>            | 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%.  |
| <b>Methodology:</b>            | Culture  |
| <b>Additional Information:</b> | 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. |
| <b>References:</b>             | <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, 7<sup>th</sup> edition, American Society for Microbiology, Washington DC, pp 33-104</p>   |
| <b>Test Updates:</b>           | 6/2/2014: DFA no longer performed as part of this test.  |