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 Legionella. Sensitivity of cultures is relatively low (50% to 80%), however, specificity approaches 100%.

**Methodology:**
Culture

**Additional Information:**
The family, *Legionellaceae*, 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. *Legionella* 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 *Legionella*, influenza, or respiratory syncytial virus.

**References:**


**Test Updates:**
6/2/2014: DFA no longer performed as part of this test.