

Clinical Specimens Testing

Legionella is a gram-negative rod that requires specialized growth conditions making specimen collection and rapid transport essential to growing the bacteria in the laboratory. Collecting lower respiratory specimens prior to antibiotic treatment is important to increase the recovery of *Legionella* in culture and enable detection of all species and serogroups of *Legionella*. Both culture and many molecular tests can detect *Legionella* species and serogroups that the urinary antigen test (UAT) doesn't. UAT typically only detects *L. pneumophila* serogroup 1.

"Culture allows for comparison of clinical and environmental isolates during an outbreak investigation." (CDC Laboratory Testing for Legionella June 2025)

Bacteriology Test Request Form

The Bacteriology Test Request Form can be downloaded [here](#). Please complete all sections of the form electronically (i.e., patient information, provider, sample and test information). Select **Legionella Culture Panel (includes DFA)** and **Legionella Multiplex PCR**, print and ship with specimens. The same two patient identifiers are required on the Bacteriology Test Request Form and the specimen. Preferred identifiers are patient name (first and last) and date of birth.

Table 1. Acceptable Clinical Specimen Types

Sample Type ¹	Sample Source	Minimum Sample Volume	Sample Storage	Shipping Requirements
Clinical Specimens ²	Sputum Bronchial alveolar lavage Other lower respiratory tract specimens	3 mL	2-8° C	Ship overnight to ensure arrival at SHL within 24 hours of collection ³ . Ship with frozen ice packs.
	Tissue specimens	Pea-sized or larger	(-70°C see note ³)	(ship -70°C frozen specimens on dry ice)

¹Unacceptable specimen/isolate types include leaking specimens, insufficient quantity of specimen and specimens sent at the wrong temperature.

²For consultation on specimen types not listed here, or any other questions, call 319-335-4335.

³Samples received after 24 hours of collection will still be accepted, however, the final report will indicate that samples were received outside of acceptable limits. If a sample will not arrive at the State Hygienic Laboratory within 24 hours, it should be frozen at -70°C and shipped on dry ice.

Collection Instructions

PCR is a very sensitive test, and precautions should be taken to not cross-contaminate specimens (i.e., don fresh gloves before collecting specimen. Avoid contact with environmental surfaces). All specimens should be collected using sterile containers.

- **Sputum:** Patient should rinse their mouth with water prior to collection. Instruct the patient not to spit out saliva or postnasal discharge into container. Collect specimen resulting from deep cough (expectorate) in sterile screw-cap container. Satisfactory quality implies the presence of mucoid or mucopurulent material and is of greater significance than volume. Ideally, a sputum specimen should have a volume of 3–5 mL, although smaller quantities are acceptable.
- **Bronchoalveolar lavage (BAL):** Collect fluid into a sterile container. Minimum volume of 3 mL.
- **Tracheal aspirates:** Minimum volume of 3 mL.
- **Bronchoscopy specimens:** Minimum volume of 3 mL.
- **Tissue specimens (e.g., Lung Biopsy):** Transfer a pea-size fragment of the lung into the container and add a small amount of sterile, non-bacteriostatic distilled water to prevent desiccation. DO NOT ADD SALINE, as it may be inhibitory.

Shipping conditions:

Wrap specimen container in absorbent material and place inside a biohazard bag.

Ship overnight (avoid Fridays, weekends, and holidays) within 24 hours of collection. If a sample will not arrive at the State Hygienic Laboratory within 24 hours, it should be frozen at -70°C and shipped on dry ice to:

State Hygienic Laboratory at the University of Iowa
U of I Research Park
2490 Crosspark Road,
Coralville, IA 52241-4721
Phone: 319-335-4500