

AIR, Test Code 1016-Legionella Analysis

NIOSH Manual of Analytical Methods (NMAM), Fourth Edition Method 0800 January 15, 1998

Air sampling is not recommended as a stand alone test due to fact that the bacterium has a short lifespan in air. Air samples can demonstrate the presence of *Legionella* in aerosol droplets but can produce false negative results. When air samples are taken a three plate protocol is recommended consisting of Buffered Charcoal Yeast Extract Agar (BCYE), BCYE with antibiotics and Blood Agar.

A quantitative air culture can be obtained by using an impactor type sampler, such as the Surface Air Sampler (SAS). Andersen and rotary vane pump, BioCulture or other studied impactors.. **See Glossary section of website for a Media Sampling Guide chart for unique target organisms.**

1. Calibrate each sampling pump or piece of equipment by following manufacturer's recommendations.
2. Before each run, thoroughly wipe each sampler stage with rubbing alcohol. Allow to dry. Make sure air passages are not blocked.
3. Load and immediately unload one set of sampling media in each sampler to serve as field blanks.
4. Label agar side of plate with identifier. Remove cover from media, load sampling media into sampler, and attach sampler to pump with flexible tubing or if using a SAS sampler screw the top back onto the sampler. Do not touch agar surface.
5. **Sample at known preset flow for an accurately known time.** Rotary vane pump should run at 28.3 lpm. **Run sampler for a total of 425 liters per plate (3 plate protocol) for Legionella.**
6. Replace covers on sampling media. Tape plate or place each plate in separate bag, and pack securely for shipment (plates should be media side up).
7. If plates are going to be shipped back to the laboratory send them for overnight delivery in a cooler with an ice pack. If plates are not shipped that day keep the plates in the refrigerator until they are shipped the next day.

References:

Dillon, H. Kenneth, L. Hung, J. Miller, Field Guide for the Determination of Biological Contaminants in Environmental Samples., 6.2.4.1, 134-135 (2005).

Macher, Janet, Sc.D., M.P.H., Bioaerosols , 8.2.3.1 (1999).

http://www.cti.org/downloads/legion_2000.pdf, Cooling Technology Institute, (2000).

http://www.cdc.gov/legionella/sampling_sites.htm, Centers for Disease Control, (2006).
