



# Air Sampling Instructions for *Mycobacterium tuberculosis* PCR Test

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EMSL Method M159 is a real-time PCR test for *Mycobacterium tuberculosis* in air samples. It is a qualitative method which permits the detection of airborne *M. tuberculosis* particles. It has been proven as a more sensitive method than a FDA-approved PCR test. This method does not indicate how many bacterial cells are detected. The following air sampling instruction is derived from *Mycobacterium tuberculosis*, airborne, Method 0900 published by NIOSH (Ref. 1).

- **Special Precautions:** Entering rooms contaminated with airborne TB is a health risk. Appropriate respiratory protection should be worn (Ref. 2). Filter samples should be opened in a biological safety cabinet.
- **Sample stability:** One week or more at ambient temperature; indefinitely at -20°C
- **Controls:** 2 or more field blanks
- **Air sampling cassette:** EMSL Product Number 87M0011 (bacterial PCR cassette): \$5.00 Polytetrafluoroethylene (PTFE) filter, 37 mm, 1.0 µm pore size with polypropylene support (SKC, P/N 225-17-01) in 3 piece cassette, clear styrene (SKC, P/N 225-3050LF).
- **Sampling pump:** High-flow pump calibrated to 10L/min (EMSL E-lite pump with rotameter, cat # 8706004)

## Sampling procedures:

1. Calibrate each pump with a representative filter cassette in line.
2. Remove the blue cassette plug and connect this to the pump using tubing.
3. Open the red plug to the air.
4. Sample closed-face at a flow of 10 L/min. The sampling time period depends on the suspected TB particle concentration. If the airborne particle concentration is low, sample for 4- 8 hours.
5. Reinsert cassette plugs, place each filter cassette in a sample bag (one cassette per bag), and pack securely for shipment.
6. Ship at ambient temperatures following CDC guidelines for shipment of human pathogens (42 CFR Part 72, Ref. 3).

## References:

1. NIOSH [1998]. *Mycobacterium tuberculosis*, Airborne: Method 0900, Issue 1, dated 15 January 1998, 1-4. DHHS (NIOSH) Publication
2. NIOSH [1996]. Protect yourself against tuberculosis – a respiratory protection guide for health care workers. DHHS (NIOSH) Publication NO. 96-102
3. CDC guidelines: Procession, Use, and Transfer of Select Agents and Toxins; Final Rule. 42 CFR Parts 72, Federal Register, Vol. 70, No. 52/Friday, March 18, 2005