

Air Sampling Instructions for *Mycobacterium tuberculosis* PCR Test

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 bacteria particles 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 Order Nr. 87M0011(bacterial PCR cassette): \$10.00 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. NOISH [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