Aerobiology Laboratory Associates, Incorporated
Consulting Laboratory

Website: www.aerobiology.net

AIR, Test Code 1067-Mycobacterium Culture

Mycobacterium can be found in soil, house dusts, plants, water, and any environmental source. These organisms cause illness in immune comprised individuals especially AIDS patients. The opportunistic mycobacteria are most commonly associated with pulmonary disease but can be known to cause skin infections at trauma or surgical sites. *Mycobacterium marinum* has been linked to cutaneous skin lesions from lakes and rivers. *Mycobacterium avium* and *intracellulare* also known as M. avium complex (MAC) have been detected in rivers, groundwater, soil, surface water and drinking water. These organisms have been known to cause pulmonary disease in immune compromised individuals. In last two decades it has been recognized that MAC infections are more common nowadays because of AIDS patients. *M. fortuitum* and *M. chelonae* are two rapidly growing species of mycobacterium they take anywhere from three to five days to grow. *M. fortuitum* is known for surgical site infections, cellulites, chronic pulmonary disease and most common species associated with nosocomial outbreaks. *M. chelonae* is known to cause disease in individuals taking steroids or immunosuppressive medications causing multiple draining skin lesions.

**Contact the laboratory if you are sampling for Mycobacterium tuberculosis

An air culture can be obtained by using a Surface Air Sampler (SAS) or by using an Anderson and pump. The media used for a Mycobacterium culture is a Middlebrook Agar plate. Plates are available thru Aerobiology for no additional charge if the media plates are returned to the lab for culture.

1. Calibrate each sampling pump by following manufacturer's recommendations.

2. Before each run, carefully and thoroughly wipe each sampler stage with rubbing alcohol. Allow to dry. Make sure air passages are not blocked.

3. Load sampling media into sampler, remove covers from media, and attach sampler to pump with flexible tubing or if using a SAS sampler just screw the top back onto the sampler.

NOTE: Take special care to prevent contamination of media during loading and unloading. Do not touch agar surface.

4. **Sample at known preset flow for an accurately known time, e.g., 5 min.** (In heavily contaminated areas, a shorter sampling time may be necessary.)

5. Replace covers on sampling media, unload, and pack securely for shipment (plates should be media side up).

6. 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., 5.2.6.6:61, 7.1: 141-143 (2005).

Hurst, Christon, Ronald Crawford, Guy Knudsen, Michael McInerney, Linda Stetzenbach, Manual of Environmental Microbiology., 17: 194 (2002).

Murray, Patrick R., Ellen Baron, Michael Pfaller, Fred Tenover, Robert Yolken, Manual of Clinical Microbiology, 7th Edition., 399-403 (1999).

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