

## Mycobacteria – Culture, Sensitivity and PCR

### General information

**Collection container (including preservatives):** Use aseptic technique.

Collect specimens in appropriate CE marked leak proof containers and transport in sealed plastic bags.



**Specimen type:** Sputum, gastric washing, sterile site body fluids (CSF, pleural fluids etc), urine, skin or tissue biopsies, bone marrow, bronchoalveolar washings, blood, post-mortem specimens, bone

**Collection:** If sample volume is insufficient for both, culture is usually preferred to microscopy due to greater sensitivity.

BD Bactec Myco/F Lytic Culture Bottle (1-5ml)

**Specimen transport:** Specimens should be transported and processed as soon as possible. Specimens should be transported and received in the laboratory within one working day of collection and processed as soon as possible. Requirements of individual testing laboratories should be referred to.

If processing is delayed, refrigeration is preferable to storage at ambient temperature (this does not include blood culture bottles must not be refrigerated)

### Blood and Bone Marrow

Request the TB blood culture bottles (as shown above) from the laboratory on 0161 276 4424, and request a porter to collect. These bottles MUST NOT be sent via the pod system.

### Sputum specimens

Sputum specimens should be relatively fresh (less than 1 day old) to minimise contamination. Purulent specimens are best. Three samples of  $\geq 5\text{mL}$  should be collected approximately 8-24 hours apart with at least one from early morning.

Samples taken early morning (ie shortly after patient waking) have the greatest yield. When the cough is dry, physiotherapy, postural drainage or inhalation of nebulised saline ('sputum induction') before expectoration

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may be helpful.

#### Bronchoalveolar lavage/bronchial washings

These may be sent if spontaneous or induced sputum is unavailable or if such specimens are AFB smear negative. Note: Contamination of the bronchoscope with tap water, which may contain environmental Mycobacterium species, should be avoided. Minimum sample size is preferably 5mL.

#### Urine specimens

Whole urine specimens should be collected in the early morning on three consecutive days in a CE marked leak proof container (that does not contain boric acid), and placed in a sealed plastic bag.

#### Sterile site body fluids

Sterile site body fluids (CSF, pleural fluid, etc) will normally not require decontamination, and can be inoculated directly to neutral media. However, sterile site body fluids can be treated with acid if necessary. Collect aseptically as much (eg>6mL in adults) CSF sample as possible into a CE Marked leak proof container in a sealed plastic bag. If only a small volume is available after initial lumbar puncture, and the findings of cell counts and protein suggest TB meningitis, a second procedure should be considered to obtain a larger volume to improve chances of achieving positive cultures.

It should be noted that pleural or pericardial fluids are not very sensitive samples for the detection of M. tuberculosis, and that a concurrent pleural or pericardial biopsy taken with the fluid is more useful. A negative result on these fluids does not rule out the diagnosis.

**Minimum volume of sample:** 1mL of Sputum

5mL of BAL

6mL of CSF

1-5mL of bone marrow or blood for the BD Bactec Myco/F Lytic Culture Bottle

**Special precautions:** For the initial diagnosis of mycobacterial infection all specimens should be fresh and taken, whenever possible, before anti-tubercular treatment is started. 'Other' antimicrobials may also have significant anti-mycobacterial activity, notably the fluoroquinolones such as ciprofloxacin, levofloxacin or moxifloxacin, and the macrolides such as clarithromycin or azithromycin.

Any samples taken where the patient is suspected of having TB MUST be divided within theatre so as to provide sufficient samples for Histology (sent in formalin) and Microbiology (Sent in an empty sterile container).

### Laboratory information

**Measurement units:** Not applicable

**Biological reference units:** Not applicable

**Turnaround time:**

Urgent microscopy available within 2 hours

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Culture 3 weeks (incubation continued for 6 weeks)  
Mycobacterium PCR available within 3 working days

### Clinical information

**Clinical decision points:** Not applicable

**Factors known to significantly affect the results:** EDTA, even in trace amounts, inhibits the growth of some Mycobacterium species.

**(Last updated December 2020)**