

What You Need To Know About Testing Sputum Samples:

Culture Media Inoculation Edition

I. What is culture media inoculation?

- Culture media inoculation occurs when a laboratory scientist injects the specimen on solid media and liquid-based media to see if it grows.

II. Why do we do this step?

- We need to grow the organism before we can identify specific mycobacteria. Culture identification is the gold standard for a TB diagnosis.
- If we do not culture a specimen, we might treat patients infected with nontuberculous mycobacteria (NTM). NTM present with TB-like symptoms but can't spread to others.
 - Common NTM: *M. avium* complex, *M. kansasii*, *M. chelonae-abscessus* complex

III. How does the laboratory do this step?

Solid Media

Lowenstein-Jensen (LJ) slant

1. Inject specimen on LJ slant.
2. Place LJ slant in the carbon dioxide incubator.
3. Check the slant once weekly for growth for six weeks.

Liquid-based Media

MGIT 960 tube

1. Inject specimen into the MGIT 960 tube.
2. Place tube in the first two drawers of the MGIT 960 machine.
3. The MGIT 960 will check the tube once an hour for growth for six weeks.

Two different mediums are used to increase the chances that something pure will grow.



Solid Media
Lowenstein-Jensen (LJ) slant

IV. Results: What to Expect

- Results are reported as:
 - Contamination: If a medium is overgrown with non-acid fast organisms, it is thrown away.
 - Growth: If a medium displays growth within 6 weeks, the laboratory scientist will pull the specimen for further testing.
 - No growth: If a medium does not display growth within 6 weeks, it is reported as negative for acid fast bacilli.
- Average growth time on LJ slant: 21 days
- Average growth time in MGIT 960 tube: 13 days

V. Next steps

Something grew—does it look like TB? See [Growth Detection on Culture Media Edition](#) for more information.

Laboratory scientist performing media inoculation under a safety cabinet.



Liquid-based Media
MGIT 960 tube
(Middlebrook 7H9 broth)