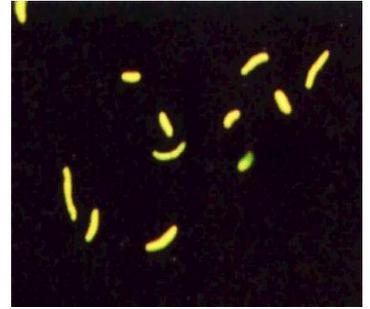


What You Need To Know About Testing Sputum Samples:

Acid Fast Bacilli (AFB) Direct Smear Edition

I. What is an Acid Fast Bacilli (AFB) Direct Smear?

- Acid-fast bacilli (AFB) direct smear is the initial test performed on patient specimens.
- AFB direct smear uses fluorescence to detect mycobacteria in a TB suspect/case specimen.



Acid Fast Bacilli
(Fluorescent Stain)

II. Why do we run an AFB Direct Smear?

- We use this test as a preliminary measure of infectiousness.
 - A patient who is smear positive (AFB+) is more likely to be infectious than someone who is smear negative (AFB-).

III. How does the laboratory run this test?

1. The lab staff uses a centrifuge to create a concentrated lump of the client's sputum called sediment.
2. The sediment is smeared onto a microscope slide.
3. The slide is first stained with Auramine O/Rhodamine B. Then, it is flooded with acid-alcohol before a counterstain is applied.
4. The gold/apple green rods seen by the lab scientist under the microscope will be counted. These rods are the bacilli that hold on to their color after the acid wash, which is why they are called acid-fast bacilli. *Mycobacterium tuberculosis* (MTB) is a common AFB.



Centrifuge with a close-up of the sputum container holder.



Fluorescence Microscope

IV. Results: What to Expect

- Results are reported to TB Control within 24 hrs. They can be reported as:
 - Positive: <1, 1-10, or >10 acid bacilli seen on direct smear
 - Negative: No acid fast bacilli seen on direct smear
- A positive or negative AFB smear does not confirm TB diagnosis. You must culture the sample.

V. Next steps

1. Try to grow something! See [Culture Media Inoculation Edition](#) for more information.
2. High suspicion of TB? Run a NAAT! See [Nucleic Acid Amplification Test Edition](#) for more information.

CAP	ATS	Infectiousness of patient
<1 per field	1+	probably infectious
	2+	probably infectious
1-10 per field	3+	probably very infectious
	4+	probably very infectious
>10 per field		

Two reporting scales are used for AFB smears. We use the College of American Pathology (CAP) scale instead of the American Thoracic Society (ATS) scale.