

Parameter	Smear Microscopy	Culture Technique	Nucleic Acid Amplification Test (Xpert MTB/ CBNAAT)	Line Probe Assay	MedGenome Whole Genome Sequencing of MTB
Test application	Diagnosis	Diagnosis + Drug Resistance	Diagnosis + Drug Resistance	Diagnosis + Drug Resistance	Diagnosis + Drug Resistance
Strain Typing	No	Yes, but confirmation required	No	No	Yes
Specimen requirement	Direct Sputum	Culture	Direct Sputum	Culture	Direct Sputum
Drugs for which resistance testing can be done	NA	All (to be tested individually for each drug in a separate culture)	Rifampicin[3]	Rifampicin (RIF) Isoniazid (INH) Ofloxacin (OFX) Amikacin (AMK)[4]	All (done in a single sequencing cycle)
Novel drug resistance mutations coverage	NA	NA (doesn't check for markers, but action of the drug on grown TB culture)	No	No	Yes
Turn around time	1-2 hours	4-8 weeks for diagnosis and drug resistance test	2 hours	5 days (once the culture is grown)[4]	15 working days
Sensitivity	55% (among pulmonary tuberculosis)[2]	Less for Conventional Lowenstein Jensen- Solid Media High for Automated MGIT- Liquid Culture	98% in smear positive cases 70% in smear negative cases[3]	95.6% for RIF and INH 74.5% for OFX and AMK[4]	100% (compared to Line Probe Assay as reference standard)
Specificity	98% (among pulmonary tuberculosis)[2]	NA	NA	90.1% for RIF and INH[4] 98.6% for OFX and AMK[4]	98.04% (compared to Line Probe Assay as reference standard)