



TB Drug Susceptibility Testing

The Wisconsin State Laboratory of Hygiene (WSLH) offers in-house first-line drug susceptibility testing for *M. tuberculosis* complex (MTBC). Culture-based drug susceptibility testing for MTBC second- and third-line agents is available at the Centers for Disease Control and Prevention (CDC) in Atlanta, GA and National Jewish Advanced Diagnostic Laboratories (“National Jewish”) in Denver, CO, Table 1. Molecular detection of drug resistance is automatically performed for all new Wisconsin tuberculosis (TB) patients, Table 2.

Table 1. *M. tuberculosis* complex: Culture-based Drug Susceptibility Testing

Description	Specimen	WSLH Test Code	Provider and Method	Antibiotics Tested, Critical Concentration µg/ml	Price and CPT Code
MTBC first-line drug susceptibility testing (culture-based)	Culture containing MTBC	MM00204	WSLH BACTEC MGIT 960 broth system	isoniazid (INH) 0.2 & 1.0, rifampin (RIF) 1.0, ethambutol (EMB) 5.0, pyrazinamide (PZA) 100.	\$232.00 87188 X 5
MTBC second-line drug susceptibility testing (culture-based)	Culture containing MTBC from patients with demonstrated resistance or intolerance to first-line drugs or risk factors for drug resistance	MM02858	CDC 12-drug agar proportion panel (BACTEC MGIT 960 broth system for PZA)	INH 0.2, 1.0 & 5.0, RIF 1.0, EMB 5.0, streptomycin (STR) 2.0 & 10.0, rifabutin (RBN) 2.0, ciprofloxacin (CIP) 2.0, kanamycin (KAN) 5.0, ethionamide (ETH) 10.0, capreomycin (CAP) 10.0, para-amino salicylic acid (PAS) 2.0, ofloxacin (OFX) 2.0, amikacin (AMK) 4.0, Bedaquiline (MIC).	fee exempt
MTBC drug susceptibility testing (culture-based)	Culture containing MTBC	MM02879	National Jewish 10-drug agar proportion panel or single drug broth microdilution MIC	INH, RIF, EMB, ETH, STR, CAP, KAN, AMK, cycloserine (CS), PAS, moxifloxacin (MXF), levofloxacin (LVX), linezolid (LZD), OFX, clofazimine (CLF).	\$90 WSLH Handling fee plus National Jewish test fee www.njlabs.org National Jewish will report results and bill submitter directly.



Table 2. *M. tuberculosis* complex: Referral for Molecular Detection of Drug Resistance

Description	Specimen	WSLH Test Code	Provider and Method	Genes Tested (Drug Prediction)	Price
MTBC molecular detection of drug resistance by sequencing	Initial cultures positive for MTBC or smear-positive specimens containing MTBC from patients with risk factors for drug resistance	MM02858	CDC Pyrosequencing and Sanger Sequencing	<i>rpoB</i> (rifampin), <i>inhA</i> (isoniazid), <i>katG</i> (isoniazid) If mutations detected then additional loci tested: <i>embB</i> (ethambutol), <i>pncA</i> (pyrazinamide), <i>gyrA</i> (fluoroquinolones), <i>rrs/eis/tlyA</i> (amikacin, kanamycin, capreomycin)	fee exempt
MTBC molecular detection of drug resistance by GeneXpert	Initial cultures positive for MTBC or smear-positive specimens containing MTBC	MM02858	Milwaukee City Health Department Laboratory Cepheid GeneXpert MTB/RIF	<i>rpoB</i> (rifampin)	fee exempt