MAYO CLINIC LABORATORIES

Test Definition: TB2LN

Susceptibility, Mycobacterium tuberculosis Complex, Second Line, Varies

Overview

Useful For

Determination of *Mycobacterium tuberculosis* complex minimal inhibitory concentrations to second-line antimicrobial agents

Additional Tests

Test Id	Reporting Name	Available Separately	Always Performed
STV2	Susceptibility, Mtb Cx, 2nd Line	No, (Bill Only)	Yes

Testing Algorithm

When this test is ordered, the additional test will always be performed at an additional charge.

Special Instructions

- Infectious Specimen Shipping Guidelines

Method Name

Minimum Inhibitory Concentration (MIC) by Microtiter Broth Dilution Method

NY State Available

Yes

Specimen

Specimen Type

Varies

Additional Testing Requirements

If organism identification is not provided, CTB / Mycobacteria and *Nocardia* Culture, Varies or CTBID / Culture Referred for Identification, *Mycobacterium* and *Nocardia*, Varies **must also** be ordered and will be charged separately.

Shipping Instructions

1. For shipping information see Infectious Specimen Shipping Guidelines.
2. Place specimen in a large infectious container and label as an etiologic agent/infectious substance.

Necessary Information

Specimen source and suspected organism identification are required.

Specimen Required

Specimen Type: Organism
Supplies: Infectious Container, Large (T146)
Container/Tube: Middlebrook 7H10 agar slant
Specimen Volume: Isolate
Collection Instructions: Organism must be in pure culture, actively growing.

Specimen Minimum Volume

See Specimen Required

Reject Due To

Agar plate	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Varies	Ambient (preferred)		
	Refrigerated		

Clinical & Interpretive

Clinical Information

The Clinical and Laboratory Standards Institute (CLSI) provides a consensus protocol for the methods, antimycobacterial agents, and concentrations of each agent to be tested to permit standardized interpretation of *Mycobacterium tuberculosis* complex susceptibility testing results. CLSI guidelines suggest that additional agents should be tested when an isolate of *M tuberculosis* complex is resistant to rifampin, is monoresistant to the critical concentration of isoniazid and the physician intends to use a fluoroquinolone for therapy or is resistant to any combination of two first-line agents.

This test uses a broth microdilution minimal inhibitory concentration (MIC) method for susceptibility testing of *M tuberculosis* complex against antimycobacterial agents. Agents tested are amikacin, ethionamide, kanamycin, moxifloxacin, ofloxacin, p-aminosalicylic acid, rifabutin, and streptomycin.

Reference Values

Interpretive criteria and reporting guidelines are followed using the Clinical Laboratory Standards Institute (CLSI) M24S document.

Interpretation

Results are reported as minimal inhibitory concentrations in mcg/mL.

This test is used as an alternative to TB1LN / Antimicrobial Susceptibility, *Mycobacterium tuberculosis* Complex, First Line, Varies for ethambutol, isoniazid and rifampin when reagents are not available to perform the TB1LN test. Ethambutol, isoniazid, and rifampin are not routinely reported with this test.

Cautions

Clinical and Laboratory Standards Institute (CLSI) interpretive criteria are used for agents with established criteria. For all other agents, tentative breakpoints were established by Mayo Clinic by comparison to the critical concentration established by CLSI for each drug and are considered tentative until consensus guidelines are established.

Drug susceptibility testing should be performed on pure culture isolates of *Mycobacterium tuberculosis* complex.

Clinical Reference

1. Hall L, Jude KP, Clark SL, et al. Evaluation of the Sensititre MycoTB plate for susceptibility testing of the *Mycobacterium tuberculosis* complex against first- and second-line agents. J Clin Microbiol. 2012;50:3732-3734
2. Nahid P, Mase SR, Migliori GB, et al. Treatment of Drug-Resistant Tuberculosis. An Official ATS/CDC/ERS/IDSA Clinical Practice Guideline [published correction appears in Am J Respir Crit Care Med. 2020 Feb 15;201(4):500-501
3. Clinical and Laboratory Standards Institute (CLSI). Susceptibility Testing of Mycobacteria, Nocardia spp., and Other Aerobic Actinomycetes. 3rd ed. CLSI standard M24. CLSI; 2018
4. Clinical and Laboratory Standards Institute (CLSI). Performance Standards for Susceptibility Testing of Mycobacteria, Nocardia spp., and Other Aerobic Actinomycetes. 2nd ed. CLSI supplement M24S. CLSI; 2023

Performance

Method Description

This test utilizes the Sensititre MycoTB broth microtiter dilution plate (Trek/ThermoFisher). Antimicrobials are tested according to CLSI M24 guidelines.(Thermo Scientific Sensititre MIC Susceptibility Plates for *Mycobacterium tuberculosis*. Product Insert. 011-MYCOTB-CID9502. Revision Date: 09/07/2016; Brown-Elliott, BA, Cirillo DM, Musser KA, Rowlinson M-C. Susceptibility Test Methods: Mycobacteria, Nocardia, and Other Actinomycetes. In: Carroll KC, Pfaller MA, eds. Manual of Clinical Microbiology, 13th Edition. ASM Press, 2023)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available

21 to 30 days

Specimen Retention Time

2 years

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Main Campus

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Fees & Codes

Fees

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

87186-Susceptibility, Mtb Cx, 2nd Line

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
TB2LN	Susceptibility, Mtb Complex, 2 Line	29579-0

Result ID	Test Result Name	Result LOINC® Value
TB2LN	Susceptibility, Mtb Complex, 2 Line	29579-0