

## Overview

### Useful For

Determination of resistance of slowly growing mycobacteria to antimicrobial agents

### Additional Tests

Test ID	Reporting Name	Available Separately	Always Performed
RSLG	Susceptibility Slow Grower	No, (BILL ONLY)	Yes

## Testing Algorithm

When this test is ordered, Susceptibility Slow Grower will be performed and charged.

Antimicrobials for *Mycobacterium avium* complex: amikacin, clarithromycin, ethambutol, linezolid, moxifloxacin, rifabutin, rifampin, and streptomycin.

Antimicrobials for all other slowly growing *Mycobacterium* species: amikacin, clarithromycin, ciprofloxacin, doxycycline, linezolid, moxifloxacin, rifabutin, rifampin, trimethoprim and sulfamethoxazole.

## 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

### Advisory Information

For *Mycobacterium tuberculosis* complex, see TB1LN / Antimicrobial Susceptibility, *Mycobacterium tuberculosis* Complex, First Line and TBPZA / Susceptibility, *Mycobacterium tuberculosis* Complex, Pyrazinamide.

### Additional Testing Requirements

CTB / Mycobacteria and *Nocardia* Culture, Varies or CTBID / Culture Referred for Identification, *Mycobacterium* and *Nocardia* **must also** be ordered and will be charged separately **unless identification of organism is provided**.

### Shipping Instructions

1. See [Infectious Specimen Shipping Guidelines](#) in Special Instructions.
2. Place specimen in a large infectious container (T146) and label as an etiologic agent/infectious substance.

### Necessary Information

**Specimen source and organism identification are required.**

### Specimen Required

**Specimen Type:** Organism

**Supplies:** Infectious Container, Large (T146)

**Container/Tube:** Middlebrook 7H10 agar slant or other appropriate media

**Specimen Volume:** Isolate

**Collection Instructions:** Organism must be in pure culture, actively growing.

### Forms

If not ordering electronically, complete, print, and send a [Microbiology Test Request](#) (T244) with the specimen.

### Specimen Minimum Volume

See Specimen Required

### Reject Due To

Other	Agar plate
-------	------------

### Specimen Stability Information

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

## Clinical and Interpretive

### Clinical Information

The slowly growing nontuberculous mycobacteria are associated with a variety of infections including pulmonary, extrapulmonary, and disseminated disease.

Â

Slowly growing mycobacteria differ from the rapidly growing mycobacteria and *Mycobacterium tuberculosis* complex by their growth rates, metabolic properties, and antimicrobial susceptibility profiles. The antimicrobial susceptibility profile of an organism within this group varies depending on the species and is performed according to the Clinical and Laboratory Standards Institute (CLSI) guideline for slowly growing mycobacteria.

The antimicrobial agents tested for each species or group are as follows:

*Mycobacterium avium* Complex:

Clarithromycin and amikacin are tested and are the CLSI recommended primary agents. Moxifloxacin and linezolid are tested and are secondary agents with CLSI breakpoints. Other recognized secondary drugs tested and reported

without CLSI interpretive breakpoints are ethambutol, rifampin, rifabutin, and streptomycin. The in vivo effectiveness of moxifloxacin and linezolid for *Mycobacterium avium* complex (MAC) disease is unproven.

*M kansasii*: Clarithromycin and rifampin are tested and are the CLSI recommended primary agents. Amikacin, ciprofloxacin, linezolid, moxifloxacin, rifabutin, and trimethoprim/sulfamethoxazole are tested and are secondary agents with recommended CLSI breakpoints.

Other slowly growing mycobacterial species:

All other slowly growing mycobacterial species will be tested against the *M kansasii* panel of drugs and minimum inhibitory concentration values will be provided using the CLSI interpretative criteria for slowly growing mycobacteria other than *M avium* complex and *M kansasii*. The extremely fastidious slowly growing mycobacteria (*M genavense* and *M haemophilum*) will not be tested. *M malmoense* can be difficult to grow in the test medium so some isolates may not be amenable to testing.

*M gordonae*:

*M gordonae* is frequently encountered in the environment and in clinical laboratories but is almost always considered nonpathogenic; therefore, antimicrobial susceptibility testing for *M gordonae* is performed by specific request only.

## Reference Values

Interpretive Criteria for <i>Mycobacterium avium-intracellulare</i> complex			
Antimicrobial agent	MIC (mcg/mL) for each interpretation		
	S	I	R
Clarithromycin	< or =8	16	> or =32
Linezolid	< or =8	16	> or =32
Moxifloxacin	< or =1	2	> or =4
Amikacin (IV)	< or =16	32	> or =64
Amikacin (liposomal, inhaled)	< or =64	-	> or =128
Ethambutol	No Interpretations available		
Rifabutin	No Interpretations available		
Rifampin	No Interpretations available		
Streptomycin	No Interpretations available		
Interpretative criteria for <i>Mycobacterium kansasii</i> and other slowly growing mycobacteria			
Antimicrobial agent	MIC (mcg/mL) for each interpretation		
	S	I	R
Amikacin	< or =16	32	> or =64
Ciprofloxacin	< or =1	2	> or =4
Clarithromycin	< or =8	16	> or =32
Doxycycline	< or =1	2-4	> or =8
Linezolid	< or =8	16	> or =32
Moxifloxacin	< or =1	2	> or =4
Rifabutin	< or =2	-	> or =4

Rifampin	< or =1	-	> or =2
Trimethoprim/ Sulfamethoxazole	< or =2/38	-	> or =4/76

### Interpretation

Results are reported as the minimum inhibitory concentration in micrograms/mL.

### Cautions

No significant cautionary statements

### Clinical Reference

1. Caulfield AJ, Richter E, Brown-Elliott BA, et al: Mycobacterium: laboratory characteristics of slowly growing mycobacteria other than Mycobacterium tuberculosis. In Manual of Clinical Microbiology. Twelfth edition. Edited by KC Carroll, MA Pfaller, ML Landry, et al. ASM Press, Washington, DC, 2019, pp 595-611
2. Tortoli E: Impact of genotypic studies on mycobacterial taxonomy: the new mycobacteria of the 1990s. Clin Microbiol Rev 2003 Apr;16(2):319-354
3. Griffith DE, Aksamit T, Brown-Elliott BA, et al: An official ATS/IDSA statement: diagnosis, treatment, and prevention of nontuberculous mycobacterial diseases. Am J Respir Crit Care Med 2007 Feb 15;175(4):367-416

### Performance

#### Method Description

The method employed in this assay is microtiter broth dilution using the commercially available SLOMYCO plate from Trek Diagnostics, Inc. Antimicrobials included in the assay are tested according to Clinical and Laboratory Standards Institute (CLSI) guidelines.(CLSI. Susceptibility Testing of Mycobacteria, Nocardia spp., and Other Aerobic Actinomycetes. Third edition. CLSI standard M24. Wayne, PA: Clinical and Laboratory Standards Institute; 2018; CLSI. Performance Standards for Susceptibility Testing of Mycobacteria, Nocardia spp., and Other Aerobic Actinomycetes. First edition. CLSI supplement M62. Wayne, PA: Clinical and Laboratory Standards Institute; 2018)

#### PDF Report

No

#### Day(s) and Time(s) Test Performed

Varies

#### Analytic Time

Varies/12-35 days

#### Maximum Laboratory Time

35 days

#### Specimen Retention Time

1 year

#### Performing Laboratory Location

Rochester

---

**Fees and 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 Regional Manager. 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. This test has not been cleared or approved by the U.S. Food and Drug Administration.

**CPT Code Information**

87186

**LOINC® Information**

Test ID	Test Order Name	Order LOINC Value
MMLSG	Susc, AFB, Slowly Growing	29579-0

Result ID	Test Result Name	Result LOINC Value
MMLSG	Susc, AFB, Slowly Growing	29579-0