

***Mycobacterium abscessus*, Strain Clinical Isolate 38**
Catalog No. NR-59674
Product Description:

Mycobacterium abscessus (*M. abscessus*), strain Clinical Isolate 38 was isolated in March 2016 from sputum from a human in Boston, Massachusetts, USA, following the treatment involving different therapeutics that may have resulted in resistance mutations. Strain Clinical Isolate 38 was deposited to BEI Resources as sensitive to amikacin, cefoxitin, clarithromycin, linezolid, tobramycin and trimethoprim/sulfamethoxazole, intermediately resistant to imipenem and resistant to ciprofloxacin, meropenem and moxifloxacin. NR-59674 was produced by inoculation of the deposited material into Middlebrook 7H9 broth with ADC enrichment and grown for 3 days at 37°C in an aerobic atmosphere with 5% CO₂. Broth inoculum was added to Middlebrook 7H10 (M7H10) agar with OADC enrichment kolles, which were grown for 3 days at 37°C in an aerobic atmosphere with 5% CO₂ to produce this lot. Quality control testing was completed under propagation conditions unless otherwise noted.

Lot: 70071582
Manufacturing Date: 10OCT2024

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TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis Cellular morphology Colony morphology Motility (wet mount) Growth rate Acid-fast stain VITEK® MS (MALDI-TOF)	Gram-positive rods Report results Non-motile ≤ 7 days Positive (red colonies) <i>M. abscessus</i>	Gram-positive rods Punctiform and cream (Figure 1) Non-motile 3 days Positive (red colonies) <i>M. abscessus</i> (99.9%)
Antibiotic Susceptibility Profile¹ Sensititre™ System ² Amikacin Cefoxitin Ciprofloxacin Clarithromycin Clofazimine Doxycycline Imipenem Linezolid Moxifloxacin Tigecycline Etest® antibiotic test strips 3 days at 37°C in an aerobic atmosphere on Mueller Hinton agar Meropenem Tobramycin Trimethoprim/sulfamethoxazole	Sensitive Sensitive Resistant Sensitive Report results Report results Intermediate Sensitive Resistant Report results Resistant Sensitive Sensitive	Sensitive (8 µg/mL) Intermediate (32 µg/mL) ³ Resistant (> 4 µg/mL) Sensitive (≤ 0.06 µg/mL) 0.25 to 0.5 µg/mL ⁴ Resistant (> 8 µg/mL) Intermediate (16 µg/mL) Sensitive (8 µg/mL) Resistant (> 4 µg/mL) 0.25 to 1 µg/mL ⁴ Resistant (> 32 µg/mL) Intermediate (3 µg/mL) ³ Resistant (> 32 µg/mL) ⁵
Genotypic Analysis Digital DNA-DNA hybridization (dDDH) ^{6,7}	≥ 70% for species identification	<i>M. abscessus</i> subsp. <i>massiliense</i> CIP 108297 (90.7%) <i>M. abscessus</i> subsp. <i>massiliense</i> JCM 15300 (90.6%) <i>M. abscessus</i> subsp. <i>massiliense</i> CCUG 48898 (90.5%)

Certificate of Analysis for NR-59674

TEST	SPECIFICATIONS	RESULTS
		<i>M. abscessus</i> ATCC 19977 (78.5%) <i>M. abscessus</i> NCTC 13031 (78.5%) <i>M. abscessus</i> subsp. <i>bolletii</i> CIP 108541 (75.1%) <i>M. abscessus</i> subsp. <i>bolletii</i> CCUG 50184 (74.9%) <i>M. abscessus</i> subsp. <i>bolletii</i> BD (74.8%)
Purity (post-freeze) M7H10 agar with OADC enrichment ⁸ 7 days at 37°C in an aerobic atmosphere with 5% CO ₂ Tryptic Soy agar 7 days at 37°C in an aerobic atmosphere with 5% CO ₂	Growth consistent with expected colony morphology Report results	Growth consistent with expected colony morphology Growth consistent with expected colony morphology
Viability (post-freeze)	Growth	Growth

¹Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M24S-ED2:2023

²Sensititre™ System *Mycobacterium tuberculosis* MIC Plate, Thermo Scientific™, catalog number MYCOTB

³The susceptibility result for this antibiotic is within one doubling dilution of specification, which is considered an equivalent result.

⁴MIC interpretive standards for this antibiotic with *M. abscessus* are not available.

⁵*M. abscessus*, strain Clinical Isolate 38 was deposited as sensitive to trimethoprim/sulfamethoxazole, but showed a MIC of > 32 µg/mL (interpreted as resistant) during QC testing. Testing was performed in duplicate.

⁶The whole genome of *M. abscessus*, Clinical Isolate 38 (~ 4.9 megabase pairs) was sequenced using the Illumina® MiSeq® system and was assembled and analyzed using Kraken version 2.1.3 and Unicycler v0.5.0.

⁷Relatedness between bacterial strains has traditionally been determined using DDH. For additional information refer to Auch, A.F., et al. "Digital DNADNA Hybridization for Microbial Species Delineation by Means of Genome-to-Genome Sequence Comparison." *Stand. Genomic Sci.* 2 (2010): 117-134. PubMed: 21304684.

⁸M7H10 agar with OADC enrichment contains malachite green, which may inhibit growth of contaminating microorganisms

Figure 1: Colony Morphology



/Sonia Bjorum Brower/
Sonia Bjorum Brower

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Technical Manager or designee, ATCC Federal Solutions

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