

Product Information Sheet for NR-49093

***Mycobacterium abscessus*, Strain DJO-44274**

Catalog No. NR-49093

For research use only. Not for use in humans.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Mycobacteriaceae*, *Mycobacterium*

Species: *Mycobacterium abscessus* (also referred to as *Mycobacteroides abscessus*)^{1,2,3} [NR-49093 was deposited to BEI Resources as *Mycobacterium xenopi*; however, whole genome sequencing performed at BEI Resources resulted in reclassification to *Mycobacterium abscessus*.]

Strain: DJO-44274

Original Source: *Mycobacterium abscessus* (*M. abscessus*), strain DJO-44274 was isolated from an unknown source at the University of Texas Health Science Center at Tyler, Tyler, Texas, USA.⁴

M. abscessus is an acid-fast, Gram-positive, non-motile, non-pigmenting, rod-shaped, rapidly growing mycobacterium.^{5,6} It is highly resistant to a number of antimicrobials, as well as commonly used disinfectants, particularly chlorine.^{5,6,7} *M. abscessus* is associated with chronic pneumonia in patients with chronic lung disease and with soft-tissue and post-surgical infections in both community and healthcare settings. This organism has been isolated from human, animal and environmental sources, including soil, bioaerosols and water.⁷ *M. abscessus* is subspeciated into *M. abscessus* subsp. *abscessus*, *M. abscessus* subsp. *bolletii* and *M. abscessus* subsp. *massiliense* based on the functionality of an inducible erythromycin methylase (*erm*) gene, with *M. abscessus* subsp. *massiliense* lacking a functional *erm*.^{8,9}

Reclassification of *M. abscessus* to the novel genera *Mycobacteroides* has been proposed following a comprehensive phylogenomic analysis of the genus *Mycobacterium*, and is currently under debate.^{1,2,3} This analysis identified 51 highly specific molecular signatures, in the form of conserved signature indels and conserved signature proteins, unique to the *Abscessus-Chelonae* clade.¹

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in Middlebrook 7H9 broth with ADC enrichment supplemented with 10% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

Packaging/Storage:

NR-49093 was packaged aseptically in cryovials. The product is provided frozen and should be stored at -60°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:

Media:

Middlebrook 7H9 broth with ADC enrichment or equivalent
Middlebrook 7H10 agar with OADC enrichment or Lowenstein-Jensen agar or equivalent

Incubation:

Temperature: 37°C

Atmosphere: Aerobic with 5% CO₂

Propagation:

1. Keep vial frozen until ready for use; then thaw.
2. Transfer the entire thawed aliquot into a single tube of broth.
3. Use several drops of the suspension to inoculate an agar slant and/or plate.
4. Incubate the tube, slant and/or plate at 37°C for 3 to 7 days.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Mycobacterium abscessus*, Strain DJO-44274, NR-49093."

Biosafety Level: 2

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. [Biosafety in Microbiological and Biomedical Laboratories \(BMBL\)](#). 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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References:

1. Gupta, R. S., B. Lo and J. Son. "Phylogenomics and Comparative Genomic Studies Robustly Support Division of the Genus *Mycobacterium* into an Emended Genus *Mycobacterium* and Four Novel Genera." Front. Microbiol. 9 (2018): 67. PubMed: 29497402.
2. Nouioui, I., et al. "Genome-Based Taxonomic Classification of the Phylum *Actinobacteria*." Front. Microbiol. 9 (2018): 2007. PubMed: 30186281.
3. Gupta, R. S. "Commentary: Genome-Based Taxonomic Classification of the Phylum *Actinobacteria*." 10 (2019): 206. PubMed: 30853945.
4. Ordway, D., Personal Communication.
5. Adékambi, T., et al. "*rpoB* Gene Sequence-Based Characterization of Emerging Non-Tuberculous *Mycobacterium* with Descriptions of *Mycobacterium bolletii* sp. nov., *Mycobacterium phocaicum* sp. nov. and *Mycobacterium aubagnense* sp. nov." Int. J. Syst. Evol. Microbiol. 56 (2006): 133-143. PubMed: 16403878.
6. Adékambi, T. and M. Drancourt. "Dissection of Phylogenetic Relationships Among 19 Rapidly Growing *Mycobacterium* Species by 16S rRNA, *hsp65*, *sodA*, *recA* and *rpoB* Gene Sequencing." Int. J. Syst. Evol. Microbiol. 54 (2004): 2095-2105. PubMed: 15545441.
7. Brown-Elliott, B. A. and R. J. Wallace, Jr. "Clinical and Taxonomic Status of Pathogenic Nonpigmented or Late-Pigmenting Rapidly Growing *Mycobacteria*." Clin. Microbiol. Rev. 15 (2002): 716-746. PubMed: 12364376.
8. Nessar, R., et al. "*Mycobacterium abscessus*: A New Antibiotic Nightmare." J. Antimicrob. Chemother. 67 (2012): 810-818. PubMed: 22290346.
9. Griffith, D. E. "*Mycobacterium abscessus* subsp *abscessus* Lung Disease: 'Trouble Ahead, Trouble Behind...'" F1000Prime Rep. 6 (2014): 107. PubMed: 25580261.

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