

Mycobacterium kansasii, Strain 662

Catalog No. NR-44268

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Product Description:

Mycobacterium kansasii (*M. kansasii*), strain 662 was isolated in 2013 from human bronchial lavage at the University of Texas Health Science Center at Tyler, Tyler, Texas, USA. NR-44268 was produced by inoculation of deposited material into Middlebrook 7H9 broth with ADC enrichment and grown for 8 days at 37°C in an aerobic atmosphere with 5% CO₂. Broth inoculum was added to Middlebrook 7H10 agar with OADC enrichment kolles, which were grown for 6 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: 62009755

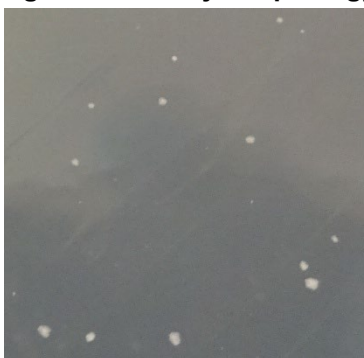
Manufacturing Date: 30SEP2013

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TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis¹ Cellular morphology 12 days at 37°C in an aerobic atmosphere with 5% CO ₂ on Middlebrook 7H10 agar with OADC enrichment Colony morphology 12 days at 37°C in an aerobic atmosphere with 5% CO ₂ on Middlebrook 7H10 agar with OADC enrichment Motility (wet mount) Growth on Brain Heart Infusion agar Growth rate Growth at 37°C Growth at 26°C Growth at 45°C Growth at 55°C Acid-fast stain Biochemical tests: ^{2,3} Catalase Catalase (semiquantitative) Catalase (68°C) Iron uptake Pyrazinamidase Tween 80 hydrolysis Urease Growth in the presence of 5% sodium chloride	Gram-positive rods Report results Report results Report results ≥ 7 days Positive Positive Report results Report results Positive (red colonies)	Gram-positive rods Punctiform, rough and cream (Figure 1) Non-motile Growth > 7 days Positive Positive Positive Negative Positive (red colonies)
Genotypic Analysis Digital DNA-DNA hybridization (dDDH) ⁵	≥ 70% for species identification	<i>M. kansasii</i> (96.2%) ⁶
Purity (post-freeze) Middlebrook 7H10 agar with OADC enrichment ⁷ 12 days at 37°C in an aerobic atmosphere with 5% CO ₂ Tryptic Soy agar 12 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 12 days at 37°C in an aerobic atmosphere with 5% CO ₂ on Middlebrook 7H10 agar with OADC enrichment	Growth	Growth

- ¹Information on *Mycobacterium* testing is available from Ribón, W. "Biochemical Isolation and Identification of Mycobacteria." Biochemical Testing. (2012) Jose C. Jimenez-Lopez (Ed.), InTech, Available from: [Biochemical Isolation and Identification of Mycobacteria](#), Lévy-Frébault, V. V. and F. Portals. "Proposed Minimal Standards for the Genus *Mycobacterium* and for Description of New Slowly Growing *Mycobacterium* Species." Int. J. Syst. Bacteriol. 42 (1992): 315-323. PubMed: 1581193; Magee, J. G. and A. C. Ward. "Family III. *Mycoacteriaceae* Chester 1897, 63^{AL}." Bergey's® Manual of Systematic Bacteriology, Volume 5. (2012) Goodfellow, M., et al. (Ed.), Springer; and Murray, P. R., et al. (Eds.), Manual of Clinical Microbiology (7th ed.) Washington, D.C: ASM Press, p. 7.6.1.4.
- ²Specifications for these tests were obtained from Lévy-Frébault, V. V. and F. Portals. "Proposed Minimal Standards for the Genus *Mycobacterium* and for Description of New Slowly Growing *Mycobacterium* Species." Int. J. Syst. Bacteriol. 42 (1992): 315-323. PubMed: 1581193, which indicates that most strains of *M. avium* are negative for this test; however up to 15% of strains may be positive.
- ³Most negative tests are observed for > 7 days.
- ⁴Species-level identification and characterization of *Mycobacterium* spp. through biochemical testing has been shown to produce inconsistent or nonreproducible results. The use of whole genome sequencing and digital DNA-DNA hybridization (dDDH) provides quantitative species-level identification that is accurate, precise, and reproducible. BEI Resources will be discontinuing the use of biochemical testing to identify *Mycobacterium* spp. in favor of WGS/dDDH. For more information, refer to Forbes, B. A., et al. "Practical Guidance for Clinical Microbiology Laboratories: Mycobacteria." Clin. Microbiol. Rev. 31 (2018): e00038-17. PubMed: 29386234.
- ⁵Relatedness between bacterial strains has traditionally been determined using DDH. For additional information, refer to Auch, A. F., et al. "Digital DNA-DNA Hybridization for Microbial Species Delineation by Means of Genome-to-Genome Sequence Comparison." Stand. Genomic Sci. 2 (2010): 117-134. PubMed: 21304684.
- ⁶The whole genome of *Mycobacterium kansasii*, strain 662 (contig total length approximately 6.4 megabase pairs) was sequenced using the Illumina® MiSeq® system and was analyzed with CLC Genomics Workbench Version 7.0.2.
- ⁷Middlebrook 7H10 agar with OADC enrichment contains malachite green, which may inhibit growth of contaminating microorganisms.

Figure 1: Colony Morphology



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