

***Mycobacterium canettii*, Strain 563**

Catalog No. NR-49066

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Mycobacteriaceae*, *Mycobacterium*

Species: *Mycobacterium canettii*

Strain: 563

Original Source: *Mycobacterium canettii* (*M. canettii*), strain 563 is of unknown origin.¹

M. canettii is an acid-fast, Gram-positive, non-motile, rod-shaped aerobic bacterium characterized as a smooth-variant subspecies of *Mycobacterium tuberculosis* (*M. tuberculosis*).^{2,3,4,5} The smooth phenotype is associated with increased lipooligosaccharides present in the cell wall, and has been shown to switch irreversibly to the rough colony type, with a loss in cell wall lipooligosaccharide composition.^{4,5} *M. canettii* has been effectively published, though not validly published, as its own species within the *M. tuberculosis* complex, consisting of *M. tuberculosis*, *M. africanum*, *M. bovis*, *M. caprae*, *M. microti* and *M. pinnipedii*, in which *M. canettii* is considered the most phenotypically distinct.⁴ *M. canettii* is a human pathogen causing pulmonary and extra-pulmonary tuberculosis, and is typically isolated from patients associated with the Republic of Djibouti and neighboring countries in the Horn of Africa region.^{6,7,8,9,10} Transmission of *M. canettii* is thought to occur through aerosols from environmental sources, including water and soil, rather than by human-to-human exposure, though a definitive reservoir is not yet defined.^{7,8,9,10}

Material Provided:

Each vial contains approximately 0.7 mL of bacterial culture in Middlebrook 7H9 broth with ADC enrichment with 10% glycerol.

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

Packaging/Storage:

NR-49066 was packaged aseptically in screw-capped plastic 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 equivalent

Incubation:

Temperature: 37°C

Atmosphere: Aerobic (with or without 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 2 to 6 weeks.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Mycobacterium canettii*, Strain 563, NR-49066."

Biosafety Level: 3

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. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see www.cdc.gov/biosafety/publications/bmb15/index.htm.

This publication recommends that practices with this agent include the use of respiratory protection and the implementation of specific procedures and use of specialized equipment to prevent and contain aerosols.

Disclaimers:

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References:

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4. Redding, K., et al. "Novel Multiplex Real-Time PCR Diagnostic Assay for Identification and Differentiation of *Mycobacterium tuberculosis*, *Mycobacterium canettii*, and *Mycobacterium tuberculosis* Complex Strains." J. Clin. Microbiol. 49 (2011): 651-657. PubMed: 21123525.
5. Goh, K. S., et al. "Rapid Differentiation of '*Mycobacterium canettii*' from Other *Mycobacterium tuberculosis* Complex Organisms by PCR-Restriction Analysis of the *hsp65* Gene." J. Clin. Microbiol. 39 (2001): 3705-3708. PubMed: 11574597.
6. Miltgen, J., et al. "Two Cases of Pulmonary Tuberculosis caused by *Mycobacterium tuberculosis* subsp. *canettii*." Emerg. Infect. Dis. 8 (2002): 1350-1352. PubMed: 12453369.
7. Blouin, Y., et al. "Progenitor '*Mycobacterium canettii*' Clone Responsible for Lymph Node Tuberculosis Epidemic, Djibouti." Emerg. Infect. Dis. 20 (2014): 21-28. PubMed: 24520560.
8. Koeck, J. L., et al. "Clinical Characteristics of the Smooth Tubercle Bacilli '*Mycobacterium canettii*' Infection Suggest the Existence of an Environmental Reservoir." Clin. Microbiol. Infect. 17 (2011): 1013-1019. PubMed: 20831613.
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