

# Product Information Sheet for NR-49254

***Mycobacterium microti*, Strain  
NLA000015496**

**Catalog No. NR-49254**

**For research use only. Not for human use.**

**Contributor:**

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**Manufacturer:**

BEI Resources

**Product Description:**

Bacteria Classification: *Mycobacteriaceae*, *Mycobacterium*

Species: *Mycobacterium microti*

Strain: NLA000015496

Original Source: *Mycobacterium microti* (*M. microti*), strain NLA000015496 was isolated from a vole in the United Kingdom.<sup>1</sup>

Comments: The complete genome of *M. microti*, strain NLA000015496 is currently being sequenced by BEI Resources.

*M. microti* is an acid-fast, Gram-positive, slow-growing bacterium within the *M. tuberculosis* complex that displays a distinctively curved cellular morphology in primary culture that is typically lost during repeated passages.<sup>2,3</sup> *M. microti* was first discovered as a causative agent of tuberculosis in its known maintenance host the field vole (*Microtus agrestis*), and has been isolated from small mammals, primarily in the United Kingdom and Europe, including bank voles (*Clethrionomys glareolus*), wood mice (*Apodemus sylvaticus*) and shrews (*Sorex araneus*). Isolation in larger mammals has occurred in domestic cats (*Felis catus*), linked to the ingestion of infected prey, and a variety of other wild, domestic and captive mammals.<sup>4</sup> Though rare, infection in both immunocompetent and immunocompromised humans has been reported, with contact with infected rodent fecal matter the suspected route of transmission.<sup>2</sup>

While it shares many biochemical traits with other members of the *M. tuberculosis* complex, genotypic analysis differentiates *M. microti* by a distinct restriction fragment length polymorphism (RFLP) pattern associated with insertion sequence (IS) 6110, unique spoligotyping patterns of the direct repeat region, single nucleotide polymorphisms within the region of difference (RD) 13 locus and the 16S ribosomal RNA gene, and characteristic deletions including RD1<sup>mic</sup>.<sup>2-6</sup> The spoligotype patterns and genotypic diversity of *M. microti* appears to be geographically localized.<sup>2,3</sup>

**Material Provided:**

Each vial contains approximately 0.7 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-49254 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:**

Note: *M. microti*, strain NLA000015496 demonstrated slow growth in broth.

Media:

Middlebrook 7H9 broth with Middlebrook ADC enrichment or equivalent

Middlebrook 7H10 agar with Middlebrook OADC enrichment or equivalent

Incubation:

Temperature: 37°C

Atmosphere: Aerobic (with or without 5% CO<sub>2</sub>)

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 tubes and 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 microti*, Strain NLA000015496, NR-49254."

**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/bmbl5/index.htm](http://www.cdc.gov/biosafety/publications/bmbl5/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.

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#### References:

1. van Soolingen, D., Personal Communication.
2. van Soolingen, D., et al. "Diagnosis of *Mycobacterium microti* Infections Among Humans by Using Novel Genetic Markers." J. Clin. Microbiol. 36 (1998): 1840-1845. PubMed: 9650922.
3. Cavanagh, R. et al. "*Mycobacterium microti* Infection (Vole Tuberculosis) in Wild Rodent Populations." J. Clin. Microbiol. 40 (2002): 3281-3285. PubMed: 12202566.
4. Smith, N. H., et al. "*Mycobacterium microti*: More Diverse than Previously Thought." J. Clin. Microbiol. 47 (2009): 2551-2559. PubMed: 19535520.
5. Huard, R. C., et al. "Novel Genetic Polymorphisms that Further Delineate the Phylogeny of the *Mycobacterium tuberculosis* Complex." J. Bacteriol. 188 (2006): 4271-4287. PubMed: 16740934.
6. Lévy-Frébault, V. V. and F. Portaels. "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.

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