

Product Information Sheet for NR-49370

***Mycobacterium tuberculosis*, Strain XTB13-176**

Catalog No. NR-49370

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Mycobacteriaceae*, *Mycobacterium*

Species: *Mycobacterium tuberculosis*

Strain: XTB13-176

Original Source: *Mycobacterium tuberculosis* (*M. tuberculosis*), strain XTB13-176 was isolated in 2013 from the sputum of a patient with tuberculosis in the Republic of Belarus.¹

Comments: *M. tuberculosis*, strain XTB13-176 was deposited as an extensively drug-resistant (XDR) strain with resistance to amikacin, capreomycin, cycloserine, ethambutol, ethionamide, isoniazid, kanamycin, ofloxacin, rifampin and streptomycin, and is part of the [Mycobacterium tuberculosis TB Antibiotic Resistance Catalog \(TB-ARC\) Belarus Initiative](#) at the Broad Institute.¹ The complete genome of *M. tuberculosis*, strain XTB13-176 is available (GenBank: [JLJO00000000](#)).

M. tuberculosis is an acid-fast, Gram-positive, non-motile, rod-shaped aerobic bacterium. It is the causative agent of tuberculosis and is responsible for more morbidity in humans than any other bacterial disease. *M. tuberculosis* is a slow-growing pathogen with a thick, lipid-rich cell wall, lending the bacilli an unusual propensity to shut down their metabolism in the face of adverse conditions and enter a latent phase in which they display phenotypic resistance to antibiotic therapy. The primary focus of infection is the lungs, with tuberculosis being spread by infectious aerosols produced by coughing. The spread of multi-drug resistant (MDR) and extensively drug-resistant tuberculosis is a major medical and public health concern.²⁻⁶

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-49370 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 Middlebrook ADC enrichment or equivalent

Middlebrook 7H10 agar with Middlebrook 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 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 tuberculosis*, Strain XTB13-176, NR-49370."

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.

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References:

1. Skrahina, A., Personal Communication.
2. Cole, S. T., et al. "Deciphering the Biology of *Mycobacterium tuberculosis* from the Complete Genome Sequence." Nature 393 (1998): 537-544. PubMed: 9634230.
3. Dye, C. "Doomsday Postponed? Preventing and Reversing Epidemics of Drug-Resistant Tuberculosis." Nat. Rev. Microbiol. 7 (2009): 81-87. PubMed: 19079354.
4. Chan, E. D. and M. D. Iseman. "Multidrug-Resistant and Extensively Drug-Resistant Tuberculosis: A Review." Curr. Opin. Infect. Dis. 21 (2008): 587-595. PubMed: 18978526.
5. Balganesh, T. S., P. M. Alzari and S. T. Cole. "Rising Standards for Tuberculosis Drug Development." Trends Pharmacol. Sci. 29 (2008): 576-581. PubMed: 18799223.
6. Murphy, D. J. and J. R. Brown. "Novel Drug Target Strategies against *Mycobacterium tuberculosis*." Curr. Opin. Microbiol. 11 (2008): 422-427. PubMed: 18801459.

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