

***Mycobacterium tuberculosis*, Strain
CDC1551, Transposon Mutant 245
(MT3409, Rv3310)**

Catalog No. NR-15732

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Contributor:

William R. Bishai, M.D., Ph.D., Co-Director, Center for Tuberculosis Research, Department of Medicine, Division of Infectious Diseases, Johns Hopkins School of Medicine, Baltimore, Maryland, USA and NIH - TB Vaccine Testing and Research Materials Contract

Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Mycobacteriaceae*, *Mycobacterium*

Species: *Mycobacterium tuberculosis*

Strain: CDC1551 (also referred to as CSU93 or Oshkosh)

Transposon Mutant: 245 (MT3409, Rv3310)^{1,2,3}

TN: CQ0916

ID: Tn3409_756

Original Source: *Mycobacterium tuberculosis* (*M. tuberculosis*), strain CDC1551 is a clinical isolate that exhibited high levels of infectivity and virulence during a tuberculosis outbreak that occurred in rural Kentucky and Tennessee from 1994 to 1996.⁴

Comments: In 2002, **TARGET** (Tuberculosis Animal Research and Gene Evaluation Taskforce) was formed to enable the modeling of human tuberculosis in multiple animal species using defined protocols and testing defined mutants of *M. tuberculosis*. In addition to animal modeling activities, a library of intragenic transposon mutants has been created and characterized.⁵ *M. tuberculosis*, transposon mutant 245 was created by disruption of an acid phosphatase (MT3409, Rv3310) of the wild-type strain CDC1551.

M. tuberculosis is a Gram-positive, rod-shaped aerobic bacterium. It is the causative agent of tuberculosis and is responsible for more morbidity in humans than any other bacterial disease.⁶

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-15732 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 tuberculosis*, Strain CDC1551, Transposon Mutant 245 (MT3409, Rv3310), NR-15732."

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.

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. TARGET: [MT3409](#)
2. MycoBrowser: Gene [Rv3310](#)
3. Peterson, J. D., et al. "The Comprehensive Microbial Resource." *Nucleic Acids Res.* 29 (2001): 123-125. PubMed: 11125067.
4. Valway, S. E., et al. "An Outbreak Involving Extensive Transmission of a Virulent Strain of *Mycobacterium tuberculosis*." *N. Engl. J. Med.* 338 (1998): 633-639. PubMed: 9486991.
5. Lamichhane, G., et al. "A Postgenomic Method for Predicting Essential Genes at Subsaturating Levels of Mutagenesis: Application to *Mycobacterium tuberculosis*." *Proc. Natl. Acad. Sci. USA* 100 (2003): 7213-7218. PubMed: 12775759.
6. Ducati, R. G., et al. "The Resumption of Consumption – A Review on Tuberculosis." *Mem. Inst. Oswaldo Cruz* 101 (2006): 697-714. PubMed: 17160276.
7. Cole, S. T., et al. "Deciphering the Biology of *Mycobacterium tuberculosis* from the Complete Genome Sequence." *Nature* 393 (1998): 537-544. PubMed: 9634230. Erratum in: *Nature* 396 (1998): 190-198.
8. de la Paz Santangelo, M., et al. "Mce3R, a TetR-Type Transcriptional Repressor, Controls the Expression of a Regulon Involved in Lipid Metabolism in *Mycobacterium tuberculosis*." *Microbiology* 155 (2009): 2245-2255. PubMed: 19389781.

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