Mycobacterium tuberculosis, Strain CDC1551, Transposon Mutant 3271 (MT0459, Rv0443)

Catalog No. NR-18896

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Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Mycobacteriaceae*, *Mycobacterium*
Species: *Mycobacterium tuberculosis*
Strain: CDC1551 (also referred to as CSU93 or Oshkosh)
Transposon Mutant: 3271 (MT0459, Rv0443)[1,2,3]
TN: NA1095
ID: Tn0459_217
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 3271 was created by disruption of a conserved hypothetical protein (MT0459, Rv0443) 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-18896 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% CO_2)
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 3271 (MT0459, Rv0443), NR-18896."

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: MT0459
2. MycoBrowser: Gene Rv0443
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 Subsaturation 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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