Product Information Sheet for NR-13649

Mycobacterium tuberculosis, Strain CDC1551

Catalog No. NR-13649

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Contributor:

NIH - TB Vaccine Testing and Research Materials Contract

Manufacturer:

BEI Resources or NIH - TB Vaccine Testing and Research Materials Contract

Product Description:

Bacteria Classification: *Mycobacteriaceae, Mycobacterium*
Species: *Mycobacterium tuberculosis*
Strain: CDC1551 (also referred to as CSU93 or Oshkosh)
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.[1]
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,* strain CDC1551. In addition to animal modeling activities, a library of intragenic transposon mutants has been created and characterized.[2] The complete genome of *M. tuberculosis*, strain CDC1551 has been sequenced (GenBank: AE000516.2).

M. tuberculosis is an acid-fast, Gram-positive, non-motile, rod-shaped aerobic bacterium. It is the causative agent of tuberculosis (TB) 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 bacilli the unusual propensity to shut down its metabolism in the face of adverse conditions and enter a latent phase in which it displays phenotypic resistance to antibiotic therapy. Therefore, persons infected with *M. tuberculosis* can develop active disease within months of infection or can remain latently infected and develop disease later in life. The primary focus of infection is the lungs, with TB being spread by infectious aerosols produced by coughing. The spread of multidrug-resistant and extensively drug-resistant TB is a major medical and public health concern for the world.[3-8]

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in 0.5X Middlebrook 7H9 broth with Middlebrook ADC enrichment supplemented with 10% glycerol. Each vial of lot 09.CSU93.4.21.4.WS contains approximately 1 mL of bacterial culture in glycerol-alanine-salts medium with 20% glycerol.

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

Packaging/Storage:

NR-13649 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:
Lowenstein-Jensen Agar slants
Middlebrook 7H9 Broth with Middlebrook ADC Enrichment
Middlebrook 7H10 Agar with Middlebrook OADC Enrichment
Incubation:
Temperature: 37°C
Atmosphere: Aerobic
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 4 weeks.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Mycobacterium tuberculosis*, Strain CDC1551, NR-13649."

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.

Disclaimers:

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References:

1. 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.
2. Lamichhane, G., et al. "A Postgenomic Method for Predicting Essential Genes at Subsaturation Levels of Mutagenesis: Application to *Mycobacterium tuberculosis*." Proc. Natl. Acad. Sci. U. S. A. 100 (2003): 7213-7218. PubMed: 12775759.
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. Grandjean, L. and D. A. J. Moore. "Tuberculosis in the Developing World: Recent Advances in Diagnosis with Special Consideration of Extensively Drug-Resistant Tuberculosis." Curr. Opin. Infect. Dis. 21 (2008): 454-461. PubMed: 18725793.
7. Murphy, D. J. and J. R. Brown. "Novel Drug Target Strategies against *Mycobacterium tuberculosis*." Curr. Opin. Microbiol. 11 (2008): 422-427. PubMed: 18801459.
8. Hoft, D. F. "Tuberculosis Vaccine Development: Goals, Immunological Design, and Evaluation." Lancet 372 (2008): 164-175. PubMed: 18620952.

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