

***Bacillus anthracis*, Strain Sterne 7702, Derivative BDT101**

Catalog No. NR-13673

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Bacillaceae*, *Bacillus*

Species: *Bacillus anthracis*

Strain: Sterne 7702, derivative BDT101

Original Source: *Bacillus anthracis* (*B. anthracis*), strain Sterne 7702, derivative BDT101, was deposited as an anthrolysin O (ALO) deletion mutant where the *aloA* gene was replaced with a kanamycin resistance (Km^r) cassette.¹⁻³

Comments: ALO is a pore-forming cytolysin and a member of a group of pore-forming toxins thought to be relevant to pathogenicity in *B. anthracis*.

B. anthracis is an aerobic, Gram-positive, spore-forming, rod-shaped bacillus that causes the acute infectious disease anthrax. Herbivores are the natural hosts and become infected by consuming soil. Humans are incidentally infected by coming into contact with infected animals or their products. *B. anthracis* virulence is dependent on the possession of two large plasmids, pXO1 and pXO2, which are responsible for the expression of an extracellular toxin and a polysaccharide capsule, respectively. The extracellular toxin is composed of three proteins: lethal factor, edema factor, and protective antigen.⁴

The presence of pXO1 and the absence of pXO2 in NR-13673 have been confirmed by PCR amplification of plasmid-specific sequences from extracted DNA.

Material Provided:

Each vial contains approximately 0.7 mL of bacterial culture in Tryptic Soy broth supplemented with 10% glycerol.

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

Packaging/Storage:

NR-13673 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:

Tryptic Soy broth or Nutrient broth or equivalent
Tryptic Soy agar or Tryptic Soy agar with 5% defibrinated sheep blood or Nutrient agar or equivalent

Incubation:

Temperature: 28°C to 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 for 24 to 48 hours.

Citation:

Acknowledgment for publications should read "The following reagent was contributed by P. Hanna, University of Michigan for distribution by BEI Resources, NIAID, NIH: *Bacillus anthracis*, Strain Sterne 7702, Derivative BDT101, NR-13673."

Biosafety Level: 2

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 all persons working in or entering laboratory or animal care areas where frequent activities with clinical specimens or diagnostic cultures of *B. anthracis* are being conducted should have documented evidence of satisfactory vaccination.

Disclaimers:

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References:

1. Heffernan, J. J., et al. "*Bacillus anthracis* Anthrolysin O and Three Phospholipases C Are Functionally Redundant in a Murine Model of Inhalation Anthrax." FEMS Microbiol. Lett. 271 (2007): 98-105. PubMed: 17419764.
2. Popova, T. G., et al. "Anthrolysin O and Fermentation Products Mediate the Toxicity of *Bacillus anthracis* to Lung Epithelial Cells Under Microaerobic Conditions." FEMS Immunol. Med. Microbiol. 61 (2011): 15-27. PubMed: 20946354.
3. Heffernan, B. J., et al. "*Bacillus anthracis* Phospholipases C Facilitate Macrophage-Associated Growth and Contribute to Virulence in a Murine Model of Inhalation Anthrax." Infect. Immun. 74 (2006): 3756-3764. PubMed: 16790747.
4. Rasko, D. A., et al. "Genomics of the *Bacillus cereus* Group of Organisms." FEMS Microbiol. Rev. 29 (2005): 303-329. PubMed: 15808746.
5. Oncü, S., S. Oncü and S. Sakarya. "Anthrax-An Overview." Med. Sci. Monit. 9 (2003): RA276-RA283. PubMed: 14586293.

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