

### ***Bacillus cereus*, Strain NRRL B-569**

#### **Catalog No. NR-2492**

(Derived from ATCC® 10876™)

#### **For research use only. Not for human use.**

#### **Contributor:**

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#### **Product Description:**

Bacteria Classification: *Bacillaceae*, *Bacillus*

Species: *Bacillus cereus*

Strain:<sup>1</sup> NRRL B-569

Original Source: Isolated in 1944 from a contaminated flask by Dr. Kenneth B. Raper

Comments: *Bacillus cereus*, strain NRRL B-569 was deposited at ATCC® in 1963 by Dr. William C. Haynes, USDA, Agricultural Research Service, Peoria, Illinois. This strain reportedly has enterotoxin activity<sup>2</sup> and contains a 650 kb plasmid.<sup>3</sup>

*Bacillus cereus* (*B. cereus*) is a Gram-positive, spore-forming, facultative aerobe. This organism is a ubiquitous opportunistic pathogen that can cause food poisoning in infected individuals. There are two forms of food poisoning that occur. The early onset (emetic) disease is caused by a small, stable dodecadepsipeptide cerulide<sup>4</sup> whereas the late onset (diarrheal) disease is caused by heat-labile enterotoxins.<sup>5</sup> Genetic and genomic analyses have revealed that the chromosome of *B. cereus* is very similar to *Bacillus anthracis*.<sup>6</sup> Most *B. cereus* strains produce  $\beta$ -lactamases and are resistant to  $\beta$ -lactam antimicrobial agents.<sup>7</sup>

#### **Material Provided:**

Each vial contains approximately 0.5 mL of bacterial culture in Nutrient Broth supplemented with 20% glycerol.

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

#### **Packaging/Storage:**

NR-2492 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:

Nutrient Broth

Nutrient Agar

##### Incubation:

Temperature: 30°C

Atmosphere: Aerobic

##### Propagation:

1. Keep vial frozen until ready for use; thaw slowly.
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 30°C for 24 hours.

#### **Citation:**

Acknowledgment for publications should read "The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: *Bacillus cereus*, Strain NRRL B-569, NR-2492."

#### **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, 2007; see [www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm](http://www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm).

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### References:

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2. Carlson, C. R., et al. "Genotypic Diversity among *Bacillus cereus* and *Bacillus thuringiensis* Strains." Appl. Environ. Microbiol. 60 (1994): 1719–1725. PubMed: 16349267.
3. Carlson, C. R., et al. "Physical Maps of the Genomes of Three *Bacillus cereus* Strains." J. Bacteriol. 174 (1992): 3750–3756. PubMed: 1594268.
4. Agata, N., et al. "A Novel Dodecadepsipeptide, Cereulide, Is an Emetic Toxin of *Bacillus cereus*." FEMS Microbiol. Lett. 129 (1995): 17–20. PubMed: 7781985.
5. Drobniowski, F. A. "*Bacillus cereus* and Related Species." Clin. Microbiol. Rev. 6 (1993): 324–338. PubMed: 8269390.
6. Ash, C., et al. "Comparative Analysis of *Bacillus anthracis*, *Bacillus cereus*, and Related Species on the Basis of Reverse Transcriptase Sequencing of 16S rRNA." Int. J. Syst. Bacteriol. 41 (1991): 343–346. PubMed: 1715736.
7. Fabiane, S. M., et al. "Crystal Structure of the Zinc-Dependent  $\beta$ -Lactamase from *Bacillus cereus* at 1.9 Å Resolution: Binuclear Active Site with Features of a Mononuclear Enzyme." Biochemistry 37 (1998): 12404–12411. PubMed: 9730812. PDB: 1BC2.
8. Priest, F. G., et al. "Population Structure and Evolution of the *Bacillus cereus* Group." J. Bacteriol. 186 (2004): 7959–7970. PubMed: 15547268.

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