

***Bacillus cereus*, Strain G9241**

Catalog No. NR-9564

For research use only. Not for human use.

Contributor:

A. Hoffmaster, Ph.D., Bacterial Zoonoses Branch, Centers for Disease Control and Prevention, Atlanta, Georgia

Product Description:

Bacteria Classification: *Bacillaceae*, *Bacillus*

Species: *Bacillus cereus*

Strain: G9241

Original Source:¹ Isolated from sputum and blood of a welder with life-threatening pneumonia in Louisiana, 1994

Comments: A draft of the complete genome of *Bacillus cereus*, strain G9241 has been completed (GenBank: AAEK000000).¹

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 cerulide² whereas the late onset (diarrheal) disease is caused by heat-labile enterotoxins.³ Genetic and genomic analyses have revealed that the chromosome of *B. cereus* is very similar to *Bacillus anthracis*.⁴

B. cereus, strain G9241 contains 2 large plasmids known as pBCXO1 and pBC218. pBCXO1 has significant homology to *B. anthracis* pXO1 and harbors the entire anthrax toxin biosynthetic complex.¹ pBC218 contains genes capable of capsule production, however they are not homologous to the *B. anthracis* capsule genes found on pXO2.⁵ *B. cereus*, strain G9241 contains genes that may provide resistance to β -lactam, chloramphenicol, and macrolide antibiotics.¹

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in Tryptic Soy Broth supplemented with 10% glycerol.

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

Packaging/Storage:

NR-9564 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

Tryptic Soy Agar

Incubation:

Temperature: 37°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 37°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 G9241, NR-9564."

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.

Disclaimers:

You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at www.beiresources.org.

While BEI Resources uses reasonable efforts to include accurate and up-to-date information on this product sheet, neither ATCC® nor the U.S. Government make any warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. Neither ATCC® nor the U.S. Government warrants that such information has been confirmed to be accurate.

This product is sent with the condition that you are responsible for its safe storage, handling, use and disposal. ATCC® and the U.S. Government are not liable for any damages or injuries arising from receipt and/or use of this product. While reasonable effort is made to ensure authenticity and reliability of materials on deposit, the U.S. Government, ATCC®, their suppliers and contributors to BEI Resources are not liable for damages arising from the misidentification or misrepresentation of products.

Use Restrictions:

This material is distributed for internal research, non-commercial purposes only. This material, its product or its derivatives may not be distributed to third parties. Except as performed under a U.S. Government contract, individuals contemplating commercial use of the material, its products or its derivatives must contact the contributor to determine if a license is required. U.S. Government contractors may need a license before first commercial sale.

References:

1. Hoffmaster, A. R., et al. "Identification of Anthrax Toxin Genes in a *Bacillus cereus* Associated with an Illness Resembling Inhalation Anthrax." Proc. Natl. Acad. Sci. U. S. A. 101 (2004): 8449-8454. PubMed: 15155910.
2. Agata, N., et al. "A Novel Dodecadepsipeptide, Cereulide, Is an Emetic Toxin of *Bacillus cereus*." FEMS Microbiol. Lett. 129 (1995): 17–20. PubMed: 7781985.
3. Drobniewski, F. A. "*Bacillus cereus* and Related Species." Clin. Microbiol. Rev. 6 (1993): 324–338. PubMed: 8269390.
4. 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.
5. Sue, D., et al. "Capsule Production in *Bacillus cereus* Strains Associated with Severe Pneumonia." J. Clin. Microbiol. 44 (2006): 3426-3428. PubMed: 16954292.
6. Hoffmaster, A. R., et al. "Characterization of *Bacillus cereus* Isolates Associated with Fatal Pneumonias: Strains are Closely Related to *Bacillus anthracis* and Harbor *B. anthracis* Virulence Genes." J. Clin. Microbiol. 44 (2006): 3352-3360. PubMed: 16954272.
7. Leoff, C., et al. "Cell Wall Carbohydrate Compositions of Strains from the *Bacillus cereus* Group of Species Correlate with Phylogenetic Relatedness." J. Bacteriol. 190 (2008): 112-121. PubMed: 17981984.
8. Priest, F. G., et al. "Population Structure and Evolution of the *Bacillus cereus* Group." J. Bacteriol. 186 (2004): 7959–7970. PubMed: 15547268.

ATCC® is a trademark of the American Type Culture Collection.