

Genomic DNA from *Bacillus anthracis*, Strain Sterne Δ *cyaA*

Catalog No. NR-10311

This reagent is the tangible property of the U.S. Government.

For research use only. Not for human use.

Contributor:

Philip Hanna, Associate Professor, Department of Microbiology and Immunology, University of Michigan Medical School, Ann Arbor, Michigan

Product Description:

Genomic DNA was isolated from a preparation of *Bacillus anthracis* (*B. anthracis*), strain Sterne Δ *cyaA*.

B. anthracis, strain Sterne Δ *cyaA* is a markerless, nonpolar, deletion mutant of the toxigenic acapsulate original Sterne strain (34F2).^{1,2} The mutant allele replaces the entire open reading frame except for the initial ATG codon and terminal stop codon and includes the recognition site for the restriction endonuclease *MfeI*. Additional information is available at the [Resource Center for Biodefense Proteomics Research \(BPRC\)](http://www.bprc.org).

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.³ The Sterne strain of *B. anthracis* is known to contain pXO1 and lack pXO2.

NR-10311 has been qualified for PCR applications by amplification of approximately 1500 bp of the 16S ribosomal RNA gene. The presence of plasmid pXO1 and absence of plasmid pXO2 have been confirmed by PCR amplification of plasmid-specific sequences from extracted DNA.

Material Provided:

Each vial contains 4 to 6 μ g of bacterial genomic DNA in TE buffer (10 mM Tris-HCl and 1 mM EDTA, pH ~ 7.4). The concentration is shown on the Certificate of Analysis. The vial should be centrifuged prior to opening.

Packaging/Storage:

NR-10311 was packaged aseptically in screw-capped plastic cryovials. The product is provided frozen on dry ice and should be stored at -20°C or colder immediately upon arrival. Freeze-thaw cycles should be minimized.

Citation:

Acknowledgment for publications should read "The following reagent was contributed by P. Hanna, University of Michigan

for distribution through BEI Resources, NIAID, NIH: Genomic DNA from *Bacillus anthracis*, Strain Sterne Δ *cyaA*, NR-10311."

Biosafety Level: 1

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/bmbl5/bmbl5toc.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. http://pir.georgetown.edu/cgi-bin/textsearch_cat_ra.pl?datatype=bacteria&search=1&fld0=ID&query0=NR-10007
2. Sterne, M. "The Immunization of Laboratory Animals against Anthrax." [Onderstepoort J. Vet. Sci. Anim. Ind.](#) 13 (1939): 313-317.

3. Oncü, S., S. Oncü, and S. Sakarya. "Anthrax-An Overview." Med. Sci. Monit. 9 (2003): RA276-RA283. PubMed: 14586293.
4. Janes, B. K. and S. Stibitz. "Routine Markerless Gene Replacement in *Bacillus anthracis*." Infect. Immun. 74 (2006): 1949-1953. PubMed: 16495572.
5. Passalacqua, K. D., et al. "Comparative Transcriptional Profiling of *Bacillus cereus* Sensu Lato Strains during Growth in CO₂-Bicarbonate and Aerobic Atmospheres." PLoS One 4 (2009): e4904. PubMed: 19295911.
6. Spencer, R. C. "*Bacillus anthracis*." J. Clin. Pathol. 56 (2003): 182-187. PubMed: 12610093.

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

