

**Genomic DNA from *Bacillus anthracis*, Strain Sterne ΔGBAA1975-76**

**Catalog No. NR-10308**

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**Contributor:**

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**Product Description:**

Genomic DNA was isolated from a preparation of *Bacillus anthracis* (*B. anthracis*), strain Sterne ΔGBAA1975-76.

*B. anthracis*, strain Sterne ΔGBAA1975-76 is a markerless, nonpolar, double deletion mutant of the response regulator/histidine kinase genes from the toxigenic acapsulate original Sterne strain (34F2).<sup>1,2</sup> The mutant retains the wild type sequence for the first six codons of GBAA1975, including the start codon, and the last six codons of GBAA1976. The restriction endonuclease recognition site for *Sma*I was inserted between GBAA1975 and GBAA1976.<sup>1</sup> Additional information is available at the [Resource Center for Biodefense Proteomics Research \(BPRC\)](http://www.beiresources.org/ResourceCenter/BiodefenseProteomicsResearch).

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

NR-10308 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 µg 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-10308 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 ΔGBAA1975-76, NR-10308."

**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/bmb15/bmb15toc.htm](http://www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm).

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**References:**

1. [http://pir.georgetown.edu/cgi-bin/textsearch\\_cat\\_ra.pl?datatype=bacteria&search=1&eld0=ID&query0=NR-10004](http://pir.georgetown.edu/cgi-bin/textsearch_cat_ra.pl?datatype=bacteria&search=1&eld0=ID&query0=NR-10004)

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. Spencer, R. C. "*Bacillus anthracis*." J. Clin. Pathol. 56 (2003): 182-187. PubMed: 12610093.
5. Passalacqua, K. D., et al. "The Global Transcriptional Responses of *Bacillus anthracis* Sterne (34F2) and a  $\Delta$ sodA1 Mutant to Paraquat Reveal Metal Ion Homeostasis Imbalances during Endogenous Superoxide Stress." J. Bacteriol. 189 (2007): 3996-4013. PubMed: 17384197.

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