

***Bacillus anthracis* Spore Coat Protein GerQ (Locus Tag: BA\_5641) with N-Terminal Histidine Tag, Recombinant from *Escherichia coli***

**Catalog No. NR-10435**

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**Contributor and Manufacturer:**

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**Product Description:**

NR-10435 is a recombinant form of the *Bacillus anthracis* (*B. anthracis*) spore coat protein GerQ (also YwdL; locus\_tag: [BA\\_5641](#)), a component of the proteinaceous layer surrounding the spore's outer membrane.<sup>1,2</sup> The amino acid sequence includes 1) an N-terminal hexa-histidine tag, 2) a thrombin cleavage site and 3) the complete coding sequence (amino acid residues 1 to 145) of GerQ from the Ames strain (GenPept: AAP29276).<sup>3</sup> The recombinant protein was expressed in *Escherichia coli* and purified by nickel affinity chromatography. NR-10435 has a theoretical molecular weight of approximately 18.5 kilodaltons. The predicted amino acid sequence of NR-10435 is shown below in Table 1.

**Material Provided:**

Each vial contains approximately 10 µg of NR-10435 in PBS. The concentration, expressed as mg per mL, is shown on the Certificate of Analysis.

**Packaging/Storage:**

NR-10435 was packaged aseptically in cryovials. The product is provided frozen on dry ice and should be stored at -80°C or colder immediately upon arrival. Freeze-thaw cycles should be avoided.

**Functional Activity:**<sup>1</sup>

NR-10435 reacts with rabbit polyclonal antibody to *B. anthracis* GerQ (BEI Resources NR-10436) as shown by Western blot analysis.

**Citation:**

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Bacillus anthracis* Spore Coat Protein GerQ (Locus Tag: BA\_5641) with N-Terminal Histidine Tag, Recombinant from *Escherichia coli*, NR-10435."

**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, 2009; see [www.cdc.gov/biosafety/publications/bmbl5/index.htm](http://www.cdc.gov/biosafety/publications/bmbl5/index.htm).

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**References:**

1. Ragkousi, K., et al. "Identification of a New Gene Essential for Germination of *Bacillus subtilis* Spores with Ca<sup>2+</sup>-Dipicolinate." [J. Bacteriol.](#) 185 (2003): 2315-2329. PubMed: 12644503.
2. Cybulski, R. J., et al. "Recombinant *Bacillus anthracis* Spore Proteins Enhance Protection of Mice Primed with Suboptimal Amounts of Protective Antigen." [Vaccine](#) 26 (2008): 4927-4939. PubMed: 18657585.
3. Read, T. D., et al. "The Genome Sequence of *Bacillus anthracis* Ames and Comparison to Closely Related

Bacteria." Nature 423 (2003): 81-86. PubMed: 12721629.

4. Liu, H., et al. "Formation and Composition of the *Bacillus anthracis* Endospore." J. Bacteriol. 186 (2004): 164-178. PubMed: 14679236.

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**Table 1 - Predicted Protein Sequence**

1	<u>MGSSHHHHH</u>	<u>SSGLVPRGSH</u>	MAQQNPYYG	TGFYQPSGTY	VQPQQMTAGQ
51	QQQQAMQQQ	AAQAAQAQYA	ISQGMLPLEQ	SYIENILRLN	KGKQATVVMT
101	YERGSSLGTQ	SYTGII EAAG	RDHIVISEPQ	SGKRYLLMI	YLDYVEFP EE
151	ITYLPSQQAT	YAPRP			

Non-GerQ residues are underlined.