

Epsilon Toxin from *Clostridium perfringens* with N-Terminal Histidine Tag, Recombinant from *Escherichia coli*

Catalog No. NR-855

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Contributor:

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Product Description:

Epsilon toxin is produced by strains of *Clostridium perfringens* that inhabit the intestinal tract of sheep and lambs. Intoxication results in enterotoxemia and neurological disorders and is usually fatal in certain livestock. The sequence of the gene for the epsilon toxin precursor protein has been reported (GenBank: M95206).^{1,2} The structure of epsilon prototoxin has been solved (PDB: 1UYJ).³

NR-855 is a recombinant form of epsilon toxin from *Clostridium perfringens*. The amino acid sequence includes an N-terminal histidine tag (MRGSHHHHHHG), amino acid residues 40 to 324 of the epsilon toxin precursor protein, and five plasmid-encoded amino acids at the C-terminus. A QIAGEN pQE30 vector was used to express the recombinant protein in *Escherichia coli*. The protein was purified by nickel affinity chromatography. NR-855 has a theoretical molecular weight of approximately 33,271 daltons. The predicted amino acid sequence of NR-855 is shown below in Table 1.

Material Provided:

Each vial of NR-855 contains approximately 1 mg of recombinant epsilon toxin suspended in 10 mM sodium phosphate buffer (pH 7.4). The concentration, expressed as mg per mL, is shown on the Certificate of Analysis.

Packaging/Storage:

NR-855 was packaged aseptically in plastic cryovials. The product is provided frozen on dry ice and should be stored at -20°C or colder immediately upon arrival. Repeated freeze-thaw cycles should be avoided.

Functional Activity:

NR-855 reacts with polyclonal IgG antibody produced by immunization of rabbits with peptides that correspond to distinct internal regions of the full-length epsilon toxin (BEI Resources NR-865).

Citation:

Acknowledgment for publications should read "The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: Epsilon Toxin from *Clostridium perfringens* with N-Terminal Histidine Tag, Recombinant from *Escherichia coli*, NR-855."

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/bmbl5/bmbl5toc.htm.

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Table 1 – Predicted Protein Sequence^a

1	<u>MRGSHHHHHH</u>	<u>GSNEMSKKAS</u>	<u>YDNVDTLIEK</u>	<u>GRYNTKYNYL</u>	<u>KRMEKYYPNA</u>
51	<u>MAYFDKVTIN</u>	<u>PQGNDFYINN</u>	<u>PKVELDGEPS</u>	<u>MNYLEDVYVG</u>	<u>KALLTNDTQQ</u>
101	<u>EQKLKSQSFT</u>	<u>CKNTDVTAT</u>	<u>TTHTVGTSIQ</u>	<u>ATAKFTVPFN</u>	<u>ETGVSLTTSY</u>
151	<u>SFANTNTNTN</u>	<u>SKEITHNVPS</u>	<u>QDILVPANTT</u>	<u>VEVIAYLKKV</u>	<u>NVKGNVCLVG</u>
201	<u>QVSGSEWGEI</u>	<u>PSYLAFPRDG</u>	<u>YKFLSDTVN</u>	<u>KSDLNEDGTI</u>	<u>NINGKGNVSA</u>
251	<u>VMGDELIVKV</u>	<u>RNLNTNNVQE</u>	<u>YVIPVDKKEK</u>	<u>SNDSNIVKYR</u>	<u>SLYIKAAAKL</u>
301	<u>N</u>				

^aNon-toxin amino acids are underlined.