Coli Surface Protein 3 (CS3) from Enterotoxigenic *Escherichia coli*

Catalog No. NR-49111

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Contributor:

National Institutes of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH)

Manufacturer:

Robert Kaminski, Department Chief, Department of Subunit Enteric Vaccines and Immunology (SEVI), Bacterial Diseases Branch, Walter Reed Army Institute of Research, Silver Spring, Maryland, USA

Product Description:

NR-49111 is a preparation of coli surface protein 3 (CS3) purified from enterotoxigenic *Escherichia coli* (*E. coli*) (ETEC).[1] CS3 is a virulence factor responsible for adhesion of bacterial cells to intestinal epithelial cells.[2]

NR-49111 was obtained from *E. coli*, strain E 9034, grown in DME/F-12 (Dulbecco's Modified Eagle's medium and F-12 serum-free medium) broth in a fermenter under cGMP conditions. The protein was purified from the culture supernatant by ammonium sulfate precipitation and tangential flow filtration. NR-49111 has an approximate molecular weight of 15 kilodaltons.[1]

The ETEC infectious process is initiated by the organism adhering to the host intestinal epithelial cells via interactions between bacterial adhesions, colonization factors [including colonization factor antigens (CFAs), coli surface (CS), and putative colonization factors (PCFs)] and host receptors.[2] ETEC then causes secretory diarrhea by expressing heat-labile enterotoxin and heat-stabile enterotoxin.[3]

Material Provided:

Each vial of NR-49111 contains approximately 1 mg of CS3 in PBS, pH 7.4. The concentration, expressed as mg per mL, is shown on the Certificate of Analysis.

Packaging/Storage:

NR-49111 was packaged aseptically in cryovials. The product is provided frozen on dry ice and should be stored at -80°C ± 10°C immediately upon arrival. Freeze-thaw cycles should be avoided.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Coli Surface Protein 3 (CS3) from Enterotoxigenic *Escherichia coli*, NR-49111."

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.

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References:

1. Kaminski, R., Personal Communication.
2. Beachey, E. H. "Bacterial Adherence: Adhesin-Receptor Interactions Mediating the Attachment of

Bacteria to Mucosal Surface." J. Infect. Dis. 143 (1981): 325-345. PubMed: 7014727.

3. Yamamoto, T. and T. Yokota. "Plasmids of Enterotoxigenic *Escherichia coli* H10407: Evidence for Two Heat-Stable Enterotoxin Genes and a Conjugal Transfer System." J. Bacteriol. 153 (1983): 1352-1360. PubMed: 6298182.

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www.beiresources.org

E-mail: contact@beiresources.org
Tel: 800-359-7370
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