

Polyclonal Anti-Shiga Toxin 2 Subunit B (IgG, Rabbit)

Catalog No. NR-9352

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For research use only. Not for human use.

Contributor and Manufacturer:

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Product Description:

Antibody Class: IgG

Polyclonal antibodies to the recombinant B subunit of Shiga toxin 2 from *Escherichia coli* (*E. coli*) were produced in rabbit and purified by caprylic acid fractionation (Lot 57845852) or protein G affinity chromatography (Lot 59776208).

The term Shiga toxin (Stx) refers to two families of related toxins: Shiga toxin/Shiga-like toxin 1 and Shiga-like toxin 2.^{1,2} Shiga toxin is produced by *Shigella dysenteriae* (*S. dysenteriae*), while Shiga-like toxin 1 and Shiga-like toxin 2 are both produced by enterohemorrhagic strains of *E. coli*. Stx are multimeric molecules that are comprised of two polypeptide subunits, A and B. The Stx B subunit is a pentamer that binds the toxin to glycolipids on host cell membranes and the entire Stx molecule can then enter the cell via endocytosis.³ Once inside the cell, the Stx A subunit undergoes proteolytic cleavage and the reduction of an internal disulfide bond to generate Stx A₁ and Stx A₂. Stx A₁ is an N-glycosidase that catalytically inactivates the 28S ribosomal RNA subunit to inhibit protein synthesis.⁴ The nucleotide sequences of the genes for the Shiga-like toxin 1 B subunit from *E. coli* (GenBank: AB035142)⁵ and the Stx B subunit from *S. dysenteriae* (GenBank: M24352)⁶ and have been reported.

Material Provided:

Each vial contains approximately 100 µg of NR-9352 in PBS. The concentration, expressed as mg per mL, is shown on the Certificate of Analysis.

Packaging/Storage:

NR-9352 was packaged aseptically in cryovials. The product is provided frozen on dry ice and should be stored at -20°C or colder immediately upon arrival. Once thawed, the unused material may be stored at 4°C. Freeze-thaw cycles should be avoided.

Functional Activity:¹

NR-9352 is specific to the B subunit of Shiga toxin 2 from *E. coli* by standard Western blot analysis and ELISA. NR-

9352 neutralizes the cytotoxicity of purified *E. coli* Shiga toxin 2. **Applications:** ELISA, Western blot, cytotoxicity neutralization assay.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Polyclonal Anti-Shiga Toxin 2 Subunit B (IgG, Rabbit), NR-9352."

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/bmb15/index.htm.

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References:

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6. Kozlov, Yu. V., A. A. Kabishev, E. V. Lukyanov, and A. A. Bayev. "The Primary Structure of the Operons Coding for *Shigella dysenteriae* Toxin and Temperature Phage H30 Shiga-like Toxin." Gene 67 (1988): 213–221. PubMed: 3049254. GenBank: M24352.
7. Smith, M. J. et al. "The 13C4 Monoclonal Antibody that Neutralizes Shiga Toxin Type 1 (Stx1) Recognizes Three Regions on the Stx1 B Subunit and Prevents Stx1 from Binding to Its Eukaryotic Receptor Globotriaosylceramide." Infect. Immun. 74 (2006): 6992–6998. PubMed: 17030576.

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