Product Information Sheet for NR-51208

Monoclonal Anti-Shiga Toxin Type 2 Subunit B, Clone 1E8-A6 (produced *in vitro*)

Catalog No. NR-51208

This reagent is the tangible property of the U.S. Government.

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Antibody Class: IgG1κ

Mouse monoclonal antibody to a recombinant form of the B subunit of Shiga-like toxin type 2 (Stx2) was produced in clone 1E8-A6 hybridoma and purified by protein G affinity chromatography. The hybridoma cell line was generated by the fusion of SP2/0 myeloma cells with immunized mouse splenocytes.[1]

The term Shiga toxin (Stx) refers to two families of related toxins: Shiga toxin/Shiga-like toxin 1 and Shiga-like toxin 2.[2] Shiga toxin is produced by *Shigella 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 composed 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 enter the cell via endocytosis.[3] Once inside the cell, the Stx A subunit undergoes proteolytic cleavage and reduction of an internal disulfide bond to generate Stx A_1 and Stx A_2. Stx A_1 is an N-glycosidase that catalytically inactivates the 28S ribosomal RNA subunit to inhibit protein synthesis.[4] The nucleotide sequence of the gene for the Shiga-like toxin 2 B subunit from *E. coli* has been reported (GenBank: EF441622).[5]

Material Provided:

Each vial of NR-51208 contains approximately 100 µL of purified monoclonal antibody in PBS. The concentration, expressed as mg per mL, is shown on the Certificate of Analysis.

Packaging/Storage:

NR-51208 was packaged aseptically in screw-capped plastic cryovials and is provided frozen on dry ice. The item should be stored at -20°C or colder 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: Monoclonal Anti-Shiga Toxin Type 2 Subunit B, Clone 1E8-A6 (produced *in vitro*), NR-51208."

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.

Disclaimers:

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References:

1. Perera, L. P., L. R. M. Marques and A. D. O'Brien. "Isolation and Characterization of Monoclonal Antibodies to Shiga-Like Toxin II of Enterohemorrhagic *Escherichia coli* and Use of the Monoclonal Antibodies in a Colony

Enzyme-Linked Immunosorbent Assay." J. Clin. Microbiol. 26 (1988): 2127-2131. PubMed: 3053764.
2. Sandvig, K. "Shiga Toxins." Toxicon 39 (2001): 1629-1635. PubMed: 11595626.
3. Sandvig, K., et al. "Endocytosis from Coated Pits of Shiga Toxin: A Glycolipid-binding Protein from *Shigella dysenteriae* 1." J. Cell Biol. 108 (1989): 1331-1343. PubMed: 2564398.
4. Skinner, L. M. and M. P. Jackson. "Investigation of Ribosome Binding by the Shiga Toxin A1 Subunit, Using Competition and Site-Directed Mutagenesis." J. Bacteriol. 179 (1997): 1368-1374. PubMed: 9023224.
5. Lee, J. E., et al. "Phylogenetic Analysis of Shiga Toxin 1 and Shiga Toxin 2 Genes Associated with Disease Outbreaks." BMC Microbiol. 7 (2007): 109. Pubmed: 18053224. GenBank: 18053224.

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