Monoclonal Anti-Ricin Toxin B Chain (produced *in vitro*)

Catalog No. NR-842

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

For research use only. Not for human use.

Contributor and Manufacturer:

Alison D. O'Brien, Ph.D., Chairperson, and James F. Sinclair, Ph.D., Laboratory Supervisor, Department of Microbiology and Immunology, Uniformed Services University of the Health Sciences, Bethesda, Maryland, USA

Product Description:

Antibody Class: IgG1

Mouse monoclonal antibody to the B chain[1] of the ricin holotoxin[2,3] from *Ricinus communis (R. communis)* was purified using protein A affinity chromatography from supernatants obtained from the mouse hybridoma clonal cell line TFTB1 (ATCC® CRL-1759™). TFTB1 was generated by the fusion of SP2/5 myeloma cells with immunized mouse splenocytes.

Ricin is a cytotoxic protein isolated from the beans of the castor plant *R. communis*. The ricin holotoxin consists of two polypeptide chains, A and B, linked by a disulfide bond. The A chain catalytically inactivates the eukaryotic 28S ribosomal RNA subunit, resulting in the inhibition of protein synthesis and death of the cell.[4] The ricin toxin B chain is a galactose-specific lectin that mediates the binding and delivery of the toxin to target cells.[5,6] The sequence of the *R. communis* gene for the ricin toxin precursor protein has been reported (GenBank: X03179).[3]

Material Provided:

Each vial contains approximately 50 µg of NR-842. Sodium azide (0.05%) was added to the preparation of purified monoclonal antibody as a preservative. The concentration, expressed as mg per mL, is shown on the Certificate of Analysis.

Packaging/Storage:

NR-842 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:

Monoclonal antibody produced from ATCC® CRL-1759™ is specific to the B chain of ricin toxin and does not cross react with the A chain. Applications: ELISA, Western blot.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: Monoclonal Anti-Ricin Toxin B Chain (produced *in vitro*), NR-842."

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:

You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at www.beiresources.org.

While BEI Resources uses reasonable efforts to include accurate and up-to-date information on this product sheet, neither ATCC® nor the U.S. Government makes any warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. Neither ATCC® nor the U.S. Government warrants that such information has been confirmed to be accurate.

This product is sent with the condition that you are responsible for its safe storage, handling, use and disposal. ATCC® and the U.S. Government are not liable for any damages or injuries arising from receipt and/or use of this product. While reasonable effort is made to ensure authenticity and reliability of materials on deposit, the U.S. Government, ATCC®, their suppliers and contributors to BEI Resources are not liable for damages arising from the misidentification or misrepresentation of products.

Use Restrictions:

This material is distributed for internal research, non-commercial purposes only. This material, its product or its derivatives may not be distributed to third parties. Except as performed under a U.S. Government contract, individuals contemplating commercial use of the material, its products or its derivatives must contact the contributor to determine if a license is required. U.S. Government contractors may need a license before first commercial sale.

Biodefense and Emerging Infections Research Resources Repository
P.O. Box 4137
Manassas, VA 20108-4137 USA
www.beiresources.org

800-359-7370
Fax: 703-365-2898
E-mail: contact@beiresources.org

References:

1. Fulton, R. J., et al. "Purification of Ricin A1, A2, and B Chains and Characterization of Their Toxicity." J. Biol. Chem. 261 (1986): 5314–5319. PubMed: 3957927.
2. Doan, L. G. "Ricin: Mechanism of Toxicity, Clinical Manifestations, and Vaccine Development. A Review." J. Toxicol. Clin. Toxicol. 42 (2004): 201–208. PubMed: 15214627.
3. Halling, K. C., et al. "Genomic Cloning and Characterization of a Ricin Gene from *Ricinus communis*." Nucleic Acids Res. 13 (1985): 8019–8033. PubMed: 2999712. GenBank: X03179.
4. Endo, Y. and K. Tsurugi. "RNA *N*-Glycosidase Activity of Ricin A-Chain. Mechanism of Action of the Toxic Lectin Ricin on Eukaryotic Ribosomes." J. Biol. Chem. 262 (1987): 8128–8130. PubMed: 3036799.
5. Chang, M.-S., D. W. Russell, J. W. Uhr, and E. S. Vitetta. "Cloning and Expression of Recombinant, Functional Ricin B Chain." Proc. Natl. Acad. Sci. U.S.A. 84 (1987): 5640–5644. PubMed: 3112772.
6. Olsnes, S., E. Saltvedt, and A. Pihl. "Isolation and Comparison of Galactose-binding Lectins from *Abrus precatorius* and *Ricinus communis*." J. Biol. Chem. 249 (1974): 803–810. PubMed: 4811904.

Support Provided by NIAID

Biodefense and Emerging Infections Research Resources Repository
P.O. Box 4137
Manassas, VA 20108-4137 USA
www.beiresources.org

800-359-7370
Fax: 703-365-2898
E-mail: contact@beiresources.org