

Monoclonal Anti-Ricin Toxin A Chain, Clone RAC 18 (produced *in vitro*)

Catalog No. NR-9571

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Antibody Class: IgG2ak

Mouse monoclonal antibody prepared against the A chain¹ of the ricin holotoxin^{2,3} from *Ricinus communis* (*R. communis*) was purified from clone RAC 18 hybridoma supernatant by protein G affinity chromatography. The B cell hybridoma was generated by the fusion of Sp2/0 mouse myeloma cells with splenocytes from BALB/c mice immunized with purified ricin toxin A chain.⁴

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.⁵ The ricin toxin B chain is a galactose-specific lectin that mediates the binding and delivery of the toxin to target cells.^{6,7} The sequence of the *R. communis* gene for the ricin toxin precursor protein has been reported (GenBank: X03179).³

Material Provided:

Each vial of NR-9571 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-9571 was packaged aseptically in screw-capped plastic cryovials and is provided frozen on dry ice. NR-9571 should be stored at -20°C or colder immediately upon arrival. Freeze-thaw cycles should be avoided.

Functional Activity:

The clone RAC 18 antibody is reported to be reactive in ELISA and western blot assays, to inhibit ricin cytotoxicity and enzymatic activity, and to protect mice from challenge with ricin toxin.⁴ The antibody is also functional in immunocytochemistry and immunoprecipitation assays, and can be used to detect ricin holotoxin in an antigen capture ELISA when paired with anti-ricin toxin B chain clone RBC 11.⁸ The RAC 18 monoclonal antibody binds to an epitope that overlaps the enzyme active site of the ricin toxin A chain.⁴

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.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Monoclonal Anti-Ricin Toxin A Chain, Clone RAC 18 (produced *in vitro*), NR-9571."

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References:

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