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Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
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Anti-Ricin [A9] Bulk Size Ab03296-1.159-BT

Isotype and Format: Mouse IgG1-Fc fusion

Clone Number: A9

Alternative Name(s) of Target: rRNA N-glycosidase; Ricin A chain (EC:3.2.2.22); Ricin B chain

UniProt Accession Number of Target Protein: P02879

Published Application(s): crystallography, neutralizing, ELISA

Published Species Reactivity: Ricinus communis

Immunogen: The original antibody was generated by immunizing two alpacas with a ricin toxoid. A VHH phage-displayed library was constructed and the antibody was identified in a panning directly on plate bound RTA.

Specificity: The antibody recognizes an epitope on RTA that straddles clusters I and III. In particular, the antibody contacts the core secondary structural elements of cluster I, namely β -strand h, α -helix B and α -helix D, as well as a core element of cluster III, namely α -helix C. Ricin is a member of the type II ribosome-inactivating protein (RIP) family of plant toxins. It is a 65 kDa glycoprotein consisting of two subunits, RTA and RTB, joined by a single disulfide bond.

Application Notes: The VHH antibody was specific for RTA as confirmed by competition ELISA. The crystal structure of ricin catalytic subunit in complex with the VHH antibody was determined. The antibody had relatively weak toxin-neutralizing activity (IC₅₀ ~750 nM), as shown by Vero cell cytotoxicity assays. The antibody binding affinity (KD) for ricin holotoxin (0.08 nM). The binding affinity, and, toxin-neutralizing activity of the antibody was mediated by CDR2 containing five consecutive Gly residues that interact with α -helix B. In order to prove this, a variant of the antibody lacking Gly AC151residue 59 (A9 Δ 59) was generated. Binding studies and toxinneutralizing assays confirmed that the removal of a single glycine residue from A9's CDR2 significantly reduced binding affinity for RTA (~10-fold weaker; 1.76 nM versus 0.102 nM) and eliminated toxin-neutralizing activity (Rudolph et al., 2018; PMID: 30265352).

Antibody First Published in: Rudolph et al. Contribution of an unusual CDR2 element of a single domain antibody in ricin toxin binding affinity and neutralizing activity. Protein Eng Des Sel. 2018 Jul 1;31(7-8):277-287. [PMID:30265352](#)

Note on publication: The paper describes the generation and characterization of the antibody. The structure of the antibody in complex with the ricin toxin's enzymatic subunit (RTA) is reported.

Product Form

Size:

500 µg Purified antibody in bulk size.

Purification: Protein A affinity purified

Supplied In: PBS only.

Storage Recommendation: Store at 4°C for up to 3 months. Note, this antibody is provided without added preservatives, it is therefore recommended this antibody be handled under sterile conditions. For longer storage, aliquot and store at -20°C.

Concentration: 1 mg/ml.

Important note - This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.