



Ricin A (RA999): sc-52190

BACKGROUND

Ricin, a type II ribosomal inactivating protein, inhibits protein biosynthesis by its RNA N-glycosidase activity. Ricin toxin, derived from the castor bean *Ricinus communis*, is a prototypic A-B toxin in which the B chain binds to the target cell, and the A chain (RTA) mediates the toxic activity. Ricin B chain (RTB) is a lectin that is responsible for cell agglutination and binds to β -D-galactopyranoside moieties found at the cell surface (e.g., on glycoproteins), allowing the A chain to enter the cell. In turn, the A chain functions enzymatically as an RNA N-glycosidase that depurinates adenine 4324 in the 28S rRNA of the 60S ribosomal subunit. The crystal structure of ricin has been defined.

REFERENCES

1. Smith, D.C., Salio, M., Lord, J.M., Roberts, L.M. and Cerundolo, V. 2004. Lack of dendritic cell maturation by the plant toxin Ricin. *Eur. J. Immunol.* 34: 2149-2157.
2. Spooner, R.A, Watson, P.D., Marsden, C.J., Smith, D.C., Moore, K.A., Cook, J.P., Lord, J.M. and Roberts, L.M. 2004. Protein disulphide-isomerase reduces Ricin to its A and B chains in the endoplasmic reticulum. *Biochem. J.* 383: 285-293.
3. Moisenovich, M., Tonevitsky, A., Maljuchenko, N., Kozlovskaya, N., Agapov, I., Volkmandt, W. and Bereiter-Hahn, J. 2004. Endosomal Ricin transport: involvement of Rab4- and Rab5-positive compartments. *Histochem. Cell Biol.* 121: 429-439.
4. Mantis, N.J., Farrant, S.A. and Mehta, S. 2004. Oligosaccharide side chains on human secretory IgA serve as receptors for Ricin. *J. Immunol.* 172: 6838-6845.
5. Maddaloni, M., Cooke, C., Wilkinson, R., Stout, A.V., Eng, L. and Pincus, S.H. 2004. Immunological characteristics associated with the protective efficacy of antibodies to Ricin. *J. Immunol.* 172: 6221-6228.
6. Amukele, T.K. and Schramm, V.L. 2004. Ricin A chain substrate specificity in RNA, DNA, and hybrid stem-loop structures. *Biochemistry* 43: 4913-4922.
7. Bellisola, G., Fracasso, G., Ippoliti, R., Menestrina, G., Rosen, A., Solda, S., Udali, S., Tomazzolli, R., Tridente, G. and Colombatti, M. 2004. Reductive activation of Ricin and Ricin A chain immunotoxins by protein disulfide isomerase and thioredoxin reductase. *Biochem. Pharmacol.* 67: 1721-1731.
8. Wu, Y.H., Shih, S.F. and Lin, J.Y. 2004. Ricin triggers apoptotic morphological changes through caspase-3 cleavage of BAT3. *J. Biol. Chem.* 279: 19264-19275.

SOURCE

Ricin A (RA999) is a mouse monoclonal antibody raised against full-length agglutinin of *Ricinus communis* origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Ricin A (RA999) is recommended for detection of RCA120 and the A chain of RCA60 of *Ricinus communis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of Ricin A: 32 kDa.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.