

## Ricin A (rcG-20): sc-27460

### 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  $\beta$ -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 and the molecular weights of the Ricin toxin A-chain and B-chain are 32 and 34 kDa, respectively.

### REFERENCES

1. Smith, D.C., et al. 2004. Lack of dendritic cell maturation by the plant toxin ricin. *Eur J Immunol* 34: 2149-2157.
2. Spooner, R.A., et al. 2004. Protein disulphide-isomerase reduces ricin to its A and B chains in the endoplasmic reticulum. *Biochem J* 383: 285-293.
3. Moisenovich, M., et al. 2004. Endosomal ricin transport: involvement of Rab4- and Rab5-positive compartments. *Histochem Cell Biol* 121: 429-439.
4. Mantis, N.J., et al. 2004. Oligosaccharide side chains on human secretory IgA serve as receptors for ricin. *J Immunol* 172: 6838-6845.
5. Maddaloni, M., et al. 2004. Immunological characteristics associated with the protective efficacy of antibodies to ricin. *J Immunol* 172: 6221-6228.
6. Amukele, T.K., et al. 2004. Ricin A-chain substrate specificity in RNA, DNA, and hybrid stem-loop structures. *Biochemistry* 43: 4913-4922.
7. Bellisola, G., et al. 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., et al. 2004. Ricin triggers apoptotic morphological changes through caspase-3 cleavage of BAT3. *J Biol Chem* 279: 19264-19275.

### SOURCE

Ricin A (rcG-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of the Ricin precursor of *Ricinus communis* origin.

### PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-27460 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### STORAGE

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

### APPLICATIONS

Ricin A (rcG-20) is recommended for detection of Ricin A chain of *Ricinus communis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of Ricin A: 32 kDa.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### RESEARCH USE

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

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **Ricin A (RA999): sc-52190**, our highly recommended monoclonal alternative to Ricin A (rcG-20).