SANTA CRUZ BIOTECHNOLOGY, INC.

CD3-δ (N-15): sc-26429

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The Power to Question

BACKGROUND

The T cell antigen receptor (TCR) recognizes foreign antigens and translates such recognition events into intracellular signals that elicit a change in the cell from a dormant to an activated state. Much of this signaling process can be attributed to a multisubunit complex of proteins that associates directly with the TCR. This complex has been designated CD3 (cluster of differentiation 3). It is composed of five invariant polypeptide chains that associate to form three dimers: a heterodimer of γ and ε chains (γε), a heterodimer of δ and ε chains (δε) and a homodimer of two ζ chains (ζζ) or a heterodimer of ζ and η chains (ζη). The ζ and η chains are encoded by the same gene but differ in their carboxylterminal ends due to an alternative splicing event. The γ, ε and δ chains each contain a single copy of a conserved immunoreceptor tyrosine-based activation motif (ITAM). In contrast, the ζ chain contains three consecutive copies of the same motif. Phosphorylated ITAMs act as docking sites for protein kinases such as ZAP-70 and Syk and are also capable of regulating their kinase activity. The crystal structure of ZAP-70's SH2 domains bound to the ζ chain ITAMs has been solved.

REFERENCES

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2. Immunol. 3: 283-297.Weiss, A., et al. 1991. Signal transduction by the T cell antigen receptor. Sem. Immunol. 3: 313-324.
3. Chan, A.C., et al. 1994. The role of protein tyrosine kinases and protein tyrosine phosphatases in cell antigen receptor signal transduction. Sem. Immunol. 12: 555-592.
4. Aoe, T., et al. 1994. Different cytoplasmic structure of the CD3 ζ family dimer modulates the activation signal and function of T cells. Intl. Immunol. 6: 1671-1679.
5. Ohno, H., et al. 1994. Targeted disruption of the CD3 η locus causes high lethality in mice: modulation of Oct-1 transcription on the opposite strand. EMBO J. 13: 1157-1165.
6. Neumeister, E.N., et al. 1995. Binding of ZAP-70 to phosphorylated T-cell receptor ζ and η enhances its autophosphorylation and generates specific binding sites for SH2 domain-containing proteins. Mol. Cell. Biol. 15: 3171-3178.
7. Weiss, A. 1995. Zapping tandem SH2 domains. Nature 377: 17-18.
8. Hatada, M.H., et al. 1995. Molecular basis for interaction of the protein tyrosine kinase ZAP-70 with the T-cell receptor. Nature 377: 32-38.

CHROMOSOMAL LOCATION

Genetic locus: CD3D (human) mapping to 11q23.3.

SOURCE

CD3-δ (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of CD3-δ of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-26429 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CD3-δ (N-15) is recommended for detection of CD3-δ of human 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).

Suitable for use as control antibody for CD3-δ siRNA (h): sc-42749, CD3-δ shRNA Plasmid (h): sc-42749-SH and CD3-δ shRNA (h) Lentiviral Particles: sc-42749-V.

Molecular Weight of CD3-δ: 20 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HUT 78 whole cell lysate: sc-2208 or CCRF-CEM cell lysate: sc-2225.

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) Immunofluores-cence: 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.

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 or our catalog for detailed protocols and support products.