SANTA CRUZ BIOTECHNOLOGY, INC.

CD3-θ (M-20): sc-1131

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 gamma and epsilon chains (γε), a heterodimer of delta and epsilon chains (δε) and a homodimer of two zeta chains (ζζ) or a heterodimer of zeta and eta chains (ζη). The zeta and eta chains are encoded by the same gene but differ in their carboxyl-terminal ends due to an alternative splicing event. The gamma, epsilon and delta chains each contain a single copy of a conserved immunoreceptor tyrosine-based activation motif (ITAM). In contrast, the zeta 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 zeta chain ITAMs has been solved.

REFERENCES

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3. Aoe, T., Goto, S., Ohno, H., and Saito, T. 1994. Different cytoplasmic structure of the CD3 zeta family dimer modulates the activation signal and function of T cells. Intl. Immunol. 6: 1671-1679.
4. Chan, A.C., Desai, D.M., and Weiss, A. 1994. The role of protein tyrosine kinases and protein tyrosine phosphatases in cell antigen receptor signal transduction. Sem. Immunol. 12: 555-592.
5. Ohno, H., Goto, S., Takai, S., Shirasawa, T., Nakano, H., Miyatake, S., Aoe, T., Ishida, Y., Maeda, H., Shirai, T., et al. 1994. Targeted disruption of the CD3 eta locus causes high lethality in mice: modulation of Oct-1 transcription on the opposite strand. EMBO J. 13: 1157-1165.
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CHROMOSOMAL LOCATION

Genetic locus: CD3Z (human) mapping to 1q22-q23; Cd3z (mouse) mapping to 1 G-H.

SOURCE

CD3-θ (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CD3-θ of mouse origin.

APPLICATIONS

CD3-θ (M-20) is recommended for detection of CD3-θ of mouse and rat 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).

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.

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-1131 P, (100 µg 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.

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.