SANTA CRUZ BIOTECHNOLOGY, INC.

CD3-γ (M-110): sc-28812

SANTA CRUZ BIOTECHNOLOGY

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 carboxyl-terminal 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

1. Exley, M., et al. 1991. Structure, assembly and intracellular transport of the T cell receptor for antigen. Semin. Immunol. 3: 283-297.
2. Weiss, A., et al. 1991. Signal transduction by the T cell antigen receptor. Semin. 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. Semin. 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. Int. 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.

CHROMOSOMAL LOCATION

Genetic locus: Cd3g (mouse) mapping to 9 A5.2.

SOURCE

CD3-γ (M-110) is a rabbit polyclonal antibody raised against amino acids 21-130 mapping within an extracellular domain of CD3-γ of mouse origin.

PRODUCT

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

STORAGE

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

APPLICATIONS

CD3-γ (M-110) is recommended for detection of precursor and mature forms of CD3-γ of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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-γ siRNA (m): sc-42752, CD3-γ shRNA Plasmid (m): sc-42752-SH and CD3-γ shRNA (m) Lentiviral Particles: sc-42752-V.

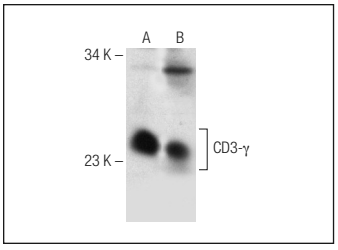
Molecular Weight of CD3-γ: 18-28 kDa.

Positive Controls: TK-1 whole cell lysate: sc-364798 or CTLL-2 cell lysate: sc-2242.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



CD3-γ (M-110): sc-28812. Western blot analysis of CD3-γ expression in TK-1 (**A**) and CTLL-2 (**B**) whole cell lysates.

RESEARCH USE

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