

CD3- γ (C-20): sc-1125

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 ($\gamma\epsilon$), a heterodimer of delta and epsilon chains ($\delta\epsilon$) and a homodimer of two zeta chains ($\zeta\zeta$) or a heterodimer of zeta and eta chains ($\zeta\eta$). 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. *Sem. Immunol.* 3: 283-297.
2. 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.

CHROMOSOMAL LOCATION

Genetic locus: CD3G (human) mapping to 11q23; Cd3g (mouse) mapping to 9 A5.2.

SOURCE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-1125 P, (100 μ 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

CD3- γ (C-20) is recommended for detection of CD3- γ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

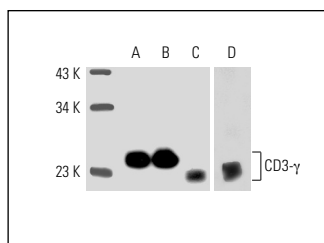
CD3- γ (C-20) is also recommended for detection of CD3- γ in additional species, including porcine.

Suitable for use as control antibody for CD3- γ siRNA (h): sc-42751, CD3- γ siRNA (m): sc-42752, CD3- γ shRNA Plasmid (h): sc-42751-SH, CD3- γ shRNA Plasmid (m): sc-42752-SH, CD3- γ shRNA (h) Lentiviral Particles: sc-42751-V and CD3- γ shRNA (m) Lentiviral Particles: sc-42752-V.

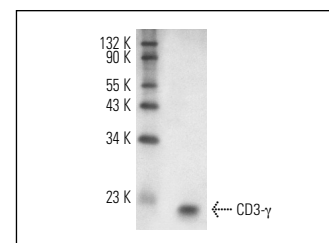
Molecular Weight of CD3- γ : 18-28 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MOLT-4 cell lysate: sc-2233 or rat thymus extract: sc-2401.

DATA



Western blot analysis of CD3- γ expression in Jurkat (A) and MOLT-4 (B) and CTL-2 (D) whole cell lysates, and in rat thymus tissue extract (C). Antibodies tested include CD3- γ (C-20): sc-1125 (A-C) and CD3- γ (W-12): sc-26438 (D).



CD3- γ (C-20): sc-1125. Western blot analysis of CD3- γ expression in TK-1 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Liu, Z.X., et al. 1999. A cell surface ADP-ribosyltransferase modulates T cell receptor association and signaling. *J. Biol. Chem.* 274: 17399-17401.
2. Tsuzaka, K., et al. 2003. TCR ζ mRNA with an alternatively spliced 3'-untranslated region detected in systemic lupus erythematosus patients leads to the down-regulation of TCR ζ and TCR/CD3 complex. *J. Immunol.* 171: 2496-2503.
3. Dadi, H.K., et al. 2003. Effect of CD3- δ deficiency on maturation of α/β and γ/δ T cell lineages in severe combined immunodeficiency. *N. Eng. J. Med.* 349: 1821-1828.
4. Chan, K.L., et al. 2009. Replication stress induces sister-chromatid bridging at fragile site loci in mitosis. *Nat. Cell Biol.* 11: 753-760.
5. Geissinger, E., et al. 2010. Disturbed expression of the T cell receptor/CD3 complex and associated signaling molecules in CD30+ T cell lymphoproliferations. *Haematologica* 95: 1697-1704.

RESEARCH USE

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