

CD3- δ (M-20): sc-1129

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 ($\gamma\epsilon$), a heterodimer of δ and ϵ chains ($\delta\epsilon$) and a homodimer of two ζ chains ($\zeta\zeta$) or a heterodimer of ζ and η 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 the ZAP-70 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. *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: CD3D (human) mapping to 11q23; Cd3d (mouse) mapping to 9 A5.2.

SOURCE

CD3- δ (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CD3- δ of mouse 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-1129 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

CD3- δ (M-20) is recommended for detection of CD3- δ of mouse, rat and, to a lesser extent, 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).

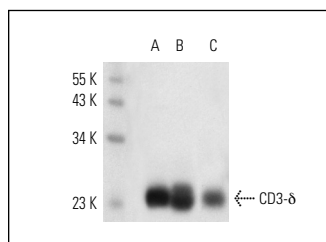
Molecular Weight of CD3- δ : 20 kDa.

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

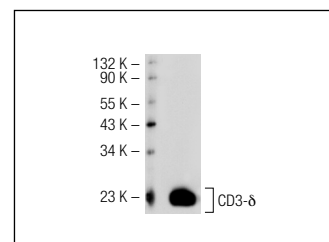
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



CD3- δ (M-20): sc-1129. Western blot analysis of CD3- δ expression in CCRF-CEM (A), Jurkat (B) and HuT 78 (C) whole cell lysates.



CD3- δ (M-20): sc-1129. Western blot analysis of CD3- δ expression in CCRF-CEM 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. Immunology* 171: 2496-2503.
3. Kuhns, M.S. and Davis, M.M. 2007. Disruption of extracellular interactions impairs T cell receptor-CD3 complex stability and signaling. *Immunity* 26: 357-369.

STORAGE

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