

CD3- ϵ (LE-CD3): sc-69733

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 (CD3- γ and CD3- ϵ), a heterodimer of δ and ϵ chains (CD3- δ and CD3- ϵ) and a homodimer of two ζ chains (CD3- ζ) or a heterodimer of ζ and η chains (CD3- ζ and CD3- η). CD3- ζ and CD3- η are encoded by the same gene, but differ in their carboxyl-terminal ends due to an alternative splicing event. CD3- γ , CD3- ϵ and CD3- δ each contain a single copy of a conserved immunoreceptor tyrosine-based activation motif (ITAM). In contrast, CD3- ζ 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 CD3- ζ ITAMs has been solved.

REFERENCES

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- Weiss, A., et al. 1991. Signal transduction by the T cell antigen receptor. *Semin. Immunol.* 3: 313-324.
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- 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.
- 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.
- Weiss, A. 1995. Signal transduction. Zapping tandem SH2 domains. *Nature* 377: 17-18.
- 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.
- Yang, H., et al. 1996. Preparation of monoclonal anti-porcine CD3 antibodies and preliminary characterization of porcine T lymphocytes. *Immunology* 88: 577-585.

CHROMOSOMAL LOCATION

Genetic locus: CD3E (human) mapping to 11q23.3.

RESEARCH USE

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

SOURCE

CD3- ϵ (LE-CD3) is a mouse monoclonal antibody raised against the C-terminus of CD3- ϵ of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

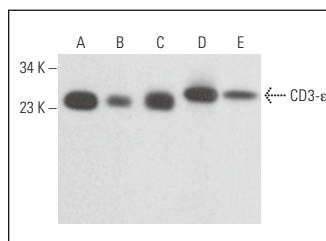
CD3- ϵ (LE-CD3) is recommended for detection of CD3- ϵ of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for CD3- ϵ siRNA (h): sc-29989, CD3- ϵ shRNA Plasmid (h): sc-29989-SH and CD3- ϵ shRNA (h) Lentiviral Particles: sc-29989-V.

Molecular Weight of CD3- ϵ : 23 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MOLT-4 cell lysate: sc-2233 or CCRF-CEM cell lysate: sc-2225.

DATA



CD3- ϵ (LE-CD3): sc-69733. Western blot analysis of CD3- ϵ expression in Jurkat (A), MOLT-4 (B), CCRF-CEM (C) and BYDP (D) whole cell lysates and rat lymph node tissue extract (E).

SELECT PRODUCT CITATIONS

- Zhou, X., et al. 2017. RIP3 attenuates the pancreatic damage induced by deletion of ATG7. *Cell Death Dis.* 8: e2918.

STORAGE

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



See **CD3- ϵ (UCH-T1): sc-1179** for CD3- ϵ antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.