SANTA CRUZ BIOTECHNOLOGY, INC.

CD3-ε (145-2C11): sc-18871

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 (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

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.

CHROMOSOMAL LOCATION

Genetic locus: Cd3e (mouse) mapping to 9 A5.2.

SOURCE

CD3-ε (145-2C11) is a Armenian hamster monoclonal antibody raised against BM10-37 cytotoxic T lymphocyte 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. Also available azide-free for blocking, sc-18871 L, 200 µg/0.1 ml.

CD3-ε (145-2C11) is available conjugated to agarose (sc-18871 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-18871 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-18871 PE), fluorescein (sc-18871 FITC), Alexa Fluor® 488 (sc-18871 AF488), Alexa Fluor® 546 (sc-18871 AF546), Alexa Fluor® 594 (sc-18871 AF594) or Alexa Fluor® 647 (sc-18871 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-18871 AF680) or Alexa Fluor® 790 (sc-18871 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, CD3-ε (145-2C11) is available conjugated to biotin (sc-18871 B), 200 µg/ml, for WB, IHC(P) and ELISA.

STORAGE

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

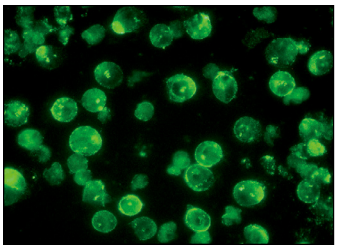
APPLICATIONS

CD3-ε (145-2C11) is recommended for detection of CD3-ε of mouse 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

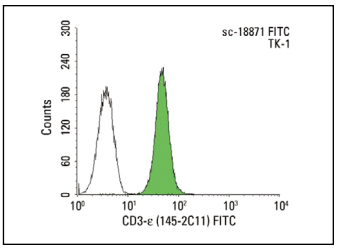
Suitable for use as control antibody for CD3-ε siRNA (m): sc-29990, CD3-ε shRNA Plasmid (m): sc-29990-SH and CD3-ε shRNA (m) Lentiviral Particles: sc-29990-V.

Molecular Weight of CD3-ε: 23 kDa.

DATA



CD3-ε (145-2C11): sc-18871. Immunofluorescence staining of methanol-fixed TK-1 cells showing membrane localization.



CD3-ε (145-2C11) FITC: sc-18871 FITC. FCM analysis of TK-1 cells. Black line histogram represents the isotype control, normal Armenian hamster IgG-FITC: sc-2864.

SELECT PRODUCT CITATIONS

1. Lou, Q., et al. 2014. The C-type lectin OCILRP2 costimulates EL4 T cell activation via the DAP12-Raf-MAP kinase pathway. PLoS ONE 9: e113218.
2. Uchio, R., et al. 2015. High dietary intake of vitamin C suppresses age-related thymic atrophy and contributes to the maintenance of immune cells in vitamin C-deficient senescence marker protein-30 knockout mice. Br. J. Nutr. 113: 603-609.
3. Ma, X., et al. 2017. Th1/Th2 PB balance and CD200 expression of patients with active severe alopecia areata. Exp. Ther. Med. 13: 2883-2887.
4. Fukuhara, D., et al. 2018. Impact of commensal flora on periodontal immune response to lipopolysaccharide. J. Periodontol. 89: 1213-1220.
5. Progatzky, F., et al. 2021. Regulation of intestinal immunity and tissue repair by enteric glia. Nature 599: 125-130.
6. Zhang, H., et al. 2022. RNF186/EPHB2 axis is essential in regulating TNF signaling for colorectal tumorigenesis in colorectal epithelial cells. J. Immunol. 209: 1796-1805.
7. Xu, X., et al. 2022. Thymosin β15 alters the spatial development of thymic epithelial cells. Cells 11: 3679.

RESEARCH USE

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