SANTA CRUZ BIOTECHNOLOGY, INC.

CD3-ε (M-20): sc-1127

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.

CHROMOSOMAL LOCATION

Genetic locus: CD3E (human) mapping to 11q23.3; Cd3e (mouse) mapping to 9 A5.2.

SOURCE

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

Blocking peptide available for competition studies, sc-1127 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CD3-ε (M-20) is recommended for detection of CD3-ε of mouse, rat and human 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CD3-ε (M-20) is also recommended for detection of CD3-ε in additional species, including equine, canine, bovine, porcine and feline.

Suitable for use as control antibody for CD3-ε siRNA (h): sc-29989, CD3-ε siRNA (m): sc-29990, CD3-ε shRNA Plasmid (h): sc-29989-SH, CD3-ε shRNA Plasmid (m): sc-29990-SH, CD3-εshRNA (h) Lentiviral Particles: sc-29989-V and CD3-ε shRNA (m) Lentiviral Particles: sc-29990-V.

Molecular Weight of CD3-ε: 23 kDa.

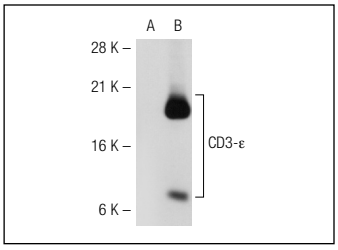
RESEARCH USE

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

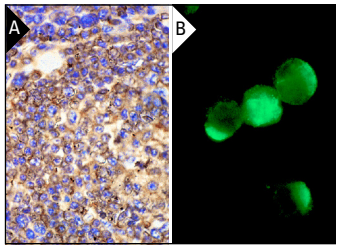
STORAGE

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

DATA



CD3-ε (M-20): sc-1127. Western blot analysis of CD3-ε expression in non-transfected: sc-117752 (**A**) and human CD3-ε transfected: sc-116055 (**B**) 293T whole cell lysates



CD3-ε (M-20): sc-1127. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lymphoma showing membrane staining (**A**). Immunofluorescence staining of methanol-fixed Jurkat cells showing membrane staining of receptor aggregates (**B**).

SELECT PRODUCT CITATIONS

1. Saint-Ruf, C., et al. 2000. Different initiation of pre-TCR and γ/δTCR signalling. Nature 406: 524-527.
2. Myers, M.D., et al. 2006. Src-like adaptor protein regulates TCR expression on thymocytes by linking the ubiquitin ligase c-Cbl to the TCR complex. Nat. Immunol. 7: 57-66.
3. Bartholin, L., et al. 2008. Generation of mice with conditionally activated transforming growth factor β signaling through the TβRI/ALK5 receptor. Genesis 46: 724-731.
4. Ferrera, D., et al. 2008. Recombinase-deficient T cell development by selective accumulation of CD3 into lipid rafts. Eur. J. Immunol. 38: 1148-1156.
5. Nuccitelli, R., et al. 2009. A new pulsed electric field therapy for melanoma disrupts the tumor's blood supply and causes complete remission without recurrence. Int. J. Cancer 125: 438-445.
6. Yu, Y., et al. 2010. Luteinizing hormone receptor deficiency increases the susceptibility to alkylating agent-induced lymphomagenesis in mice. Horm. Cancer 1: 256-264.
7. Liu, G., et al. 2010. The S1P(1)-mTOR axis directs the reciprocal differentiation of T(H)1 and T(reg) cells. Nat. Immunol. 11: 1047-1056.
8. Katoh, H., et al. 2010. COX-2 and prostaglandin EP3/EP4 signaling regulate the tumor stromal proangiogenic microenvironment via CXCL12-CXCR4 chemokine systems. Am. J. Pathol. 176: 1469-1483.