SANTA CRUZ BIOTECHNOLOGY, INC.

CD3-ζ (C-20): sc-1124

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 (γε), a heterodimer of δ and ε chains (δε) and a homodimer of two ζ chains (ζζ) or a heterodimer of ζ and η chains (ζη). 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.

CHROMOSOMAL LOCATION

Genetic locus: CD247 (human) mapping to 1q24.2; Cd247 (mouse) mapping to 1 H2.3.

SOURCE

CD3-ζ (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CD3-ζ of human 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-1124 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CD3-ζ (C-20) is recommended for detection of CD3-ζ 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CD3-ζ (C-20) is also recommended for detection of CD3-ζ in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for CD3-ζ siRNA (h): sc-29245, CD3-ζ/η siRNA (m): sc-42754, CD3-ζ shRNA Plasmid (h): sc-29245-SH, CD3-ζ/η shRNA Plasmid (m): sc-42754-SH, CD3-ζ shRNA (h) Lentiviral Particles: sc-29245-V and CD3-ζ/η shRNA (m) Lentiviral Particles: sc-42754-V.

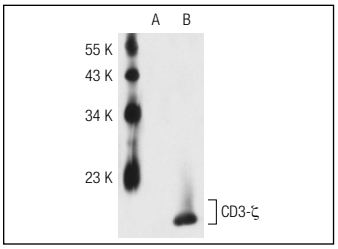
Molecular Weight of CD3-ζ: 22 kDa.

Positive Controls: CD3-ζ (h): 293T Lysate: sc-114150, mouse thymus extract: sc-2406 or MOLT-4 cell lysate: sc-2233.

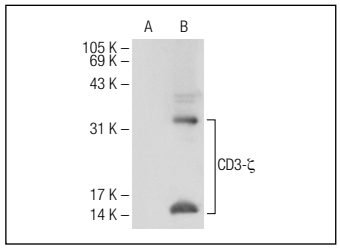
STORAGE

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

DATA



CD3-ζ (C-20): sc-1124. Western blot analysis of CD3-ζ expression in non-transfected: sc-117752 (**A**) and human CD3-ζ transfected: sc-114150 (**B**) 293T whole cell lysates.



CD3-ζ (C-20): sc-1124. Western blot analysis of CD3-ζ expression in non-transfected: sc-117752 (**A**) and human CD3-ζ transfected: sc-173169 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Cruz-Munoz, M.E., et al. 2003. The CD43 coreceptor molecule recruits the ζ-chain as part of its signaling pathway. J. Immunol. 171: 1901-1908.
2. Nambiar, M.P., et al. 2003. Reconstitution of deficient T cell receptor ζ chain restores T cell signaling and augments T cell receptor/CD3-induced interleukin-2 production in patients with systemic lupus erythematosus. Arthritis Rheum. 48: 1948-1955.
3. Choudhuri, K., et al. 2005. T cell receptor triggering is critically dependent on the dimensions of its peptide-MHC ligand. Nature 436: 578-582.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.