

CD3-ε (UCH-T1): sc-1179

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.

SOURCE

CD3-ε (UCH-T1) is a mouse monoclonal antibody raised against human infant thymocytes and lymphocytes from a patient with Sezary Syndrome.

PRODUCT

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

CD3-ε (UCH-T1) is available conjugated to agarose (sc-1179 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-1179 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-1179 PE), fluorescein (sc-1179 FITC), Alexa Fluor[®] 488 (sc-1179 AF488), Alexa Fluor[®] 546 (sc-1179 AF546), Alexa Fluor[®] 594 (sc-1179 AF594) or Alexa Fluor[®] 647 (sc-1179 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-1179 AF680) or Alexa Fluor[®] 790 (sc-1179 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, CD3-ε (UCH-T1) is available conjugated to Alexa Fluor[®] 405 (sc-1179 AF405, 200 μ g/ml), 100 tests in 2 ml, for IF, IHC(P) and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

PROTOCOLS

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

APPLICATIONS

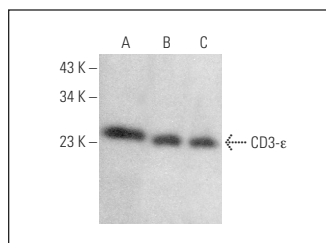
CD3-ε (UCH-T1) is recommended for detection of CD3-ε of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

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.

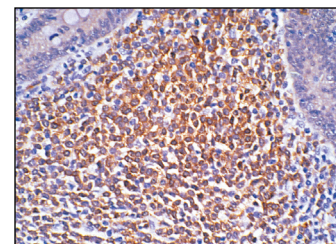
Molecular Weight of CD3-ε: 23 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, SUP-T1 whole cell lysate: sc-364796 or CCRF-HSB-2 cell lysate: sc-2265.

DATA



CD3-ε (UCH-T1): sc-1179. Western blot analysis of CD3-ε expression in Jurkat (A), SUP-T1 (B) and CCRF-HSB-2 (C) whole cell lysates.



CD3-ε (UCH-T1): sc-1179. Immunoperoxidase staining of formalin-fixed, paraffin-embedded normal human tonsil showing membrane staining.

SELECT PRODUCT CITATIONS

- Call, M.E., et al. 2002. The organizing principle in the formation of the T cell receptor-CD3 complex. *Cell* 111: 967-979.
- Muhammad, A., et al. 2009. Sequential cooperation of CD2 and CD48 in the buildup of the early TCR signalosome. *J. Immunol.* 182: 7672-7680.
- Chichili, G.R., et al. 2010. T cell signal regulation by the Actin cytoskeleton. *J. Biol. Chem.* 285: 14737-14746.
- Mosenden, R., et al. 2011. Effects of type I protein kinase A modulation on the T cell distal pole complex. *Scand. J. Immunol.* 74: 568-573.
- Ersek, B., et al. 2012. CD3 ζ -chain expression of human T lymphocytes is regulated by TNF via Src-like adaptor protein-dependent proteasomal degradation. *J. Immunol.* 189: 1602-1610.
- Garcia-Castro, B., et al. 2013. Restoration of WNT4 inhibits cell growth in leukemia-derived cell lines. *BMC Cancer* 13: 557.
- Herranz, G., et al. 2019. Protein kinase C δ regulates the depletion of Actin at the immunological synapse required for polarized exosome secretion by T cells. *Front. Immunol.* 10: 851.

RESEARCH USE

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