

CD3 (17A2): sc-18843

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 ($\gamma\epsilon$), a heterodimer of δ and ϵ chains ($\delta\epsilon$) and a homodimer of two ζ chains ($\zeta\zeta$) or a heterodimer of ζ and η chains ($\zeta\eta$). 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 SH2 domains bound to the ζ chain 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: Cd3d (mouse) mapping to 9 A5.2.

SOURCE

CD3 (17A2) is a rat monoclonal antibody raised against $\gamma\delta$ TCR-positive T-T hybridoma D11 cells of mouse origin.

PRODUCT

Each vial contains 200 μg IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD3 (17A2) is available conjugated to fluorescein (sc-18843 FITC), 200 $\mu\text{g}/\text{ml}$, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

CD3 (17A2) is recommended for detection of CD3 of mouse origin by 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 flow cytometry (1 μg per 1 x 10⁶ cells).

Suitable for use as control antibody for CD3 siRNA (m): sc-29988, CD3 shRNA Plasmid (m): sc-29988-SH and CD3 shRNA (m) Lentiviral Particles: sc-29988-V.

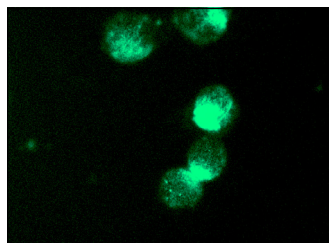
Molecular Weight of CD3: 25 kDa.

Positive Controls: TK-1 whole cell lysate: sc-364798 or CTLL-2 cell lysate: sc-2242.

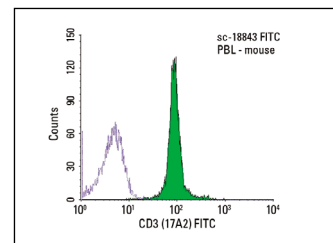
STORAGE

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

DATA



CD3 (17A2): sc-18843. Immunofluorescence staining of methanol-fixed CTLL-2 cells showing membrane staining.



CD3 (17A2) FITC: sc-18843 FITC. FCM analysis of mouse peripheral blood leukocytes. Black line histogram represents the isotype control, normal rat IgG_{2b}-PE: sc-2873.

SELECT PRODUCT CITATIONS

1. Syn, W.K., et al. 2009. Role for hedgehog pathway in regulating growth and function of invariant NKT cells. *Eur. J. Immunol.* 39: 1879-1892.
2. Ghadge, G.D., et al. 2011. The L-coding region of the DA strain of Theiler's murine encephalomyelitis virus causes dysfunction and death of myelin-synthesizing cells. *J. Virol.* 85: 9377-9384.
3. He, C., et al. 2013. Measles virus-derived peptide/food antigen adducts facilitate the establishment of antigen specific oral tolerance. *J. Physiol. Pharmacol.* 64: 95-102.
4. Traka, M., et al. 2016. Oligodendrocyte death results in immune-mediated CNS demyelination. *Nat. Neurosci.* 19: 65-74.
5. Dai, X., et al. 2017. Ablation of neuropilin 1 in myeloid cells exacerbates high-fat diet-induced Insulin resistance through Nlrp3 inflammasome *in vivo*. *Diabetes* 66: 2424-2435.
6. Stone, S., et al. 2019. Neuron-specific PERK inactivation exacerbates neurodegeneration during experimental autoimmune encephalomyelitis. *JCI Insight* 4: e124232.
7. Yu, X., et al. 2021. Gut microbiota dysbiosis induced by intracerebral hemorrhage aggravates neuroinflammation in mice. *Front. Microbiol.* 12: 647304.
8. Liu, P., et al. 2023. Differential effects of SARM1 inhibition in traumatic glaucoma and EAE optic neuropathies. *Mol. Ther. Nucleic Acids* 32: 13-27.

RESEARCH USE

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



See **CD3 (PC3/188A): sc-20047** for CD3 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.