SANTA CRUZ BIOTECHNOLOGY, INC.

CD4 (18-46): sc-1176

BACKGROUND

The T cell receptor (TCR) is a heterodimer composed of either α and β or γ and δ chains. CD3 chains and the CD4 or CD8 co-receptors are also required for efficient signal transduction through the TCR. The TCR is expressed on T helper and T cytotoxic cells that can be distinguished by their expression of CD4 and CD8; T helper cells express CD4 proteins and T cytotoxic cells display CD8. CD4 is also expressed on cortical cells, mature medullary thymocytes, microglial cells and dendritic cells. CD4, also designated T4 and Leu 3, is a membrane glycoprotein that contains four extracellular immunoglobin-like domains. The TCR in association with CD4 can bind class II MHC molecules presented by the antigen-presenting cells. The CD4 protein functions by increasing the avidity of the interaction between the TCR and an antigen-class II MHC complex. An additional role of CD4 is to function as a receptor for HIV.

CHROMOSOMAL LOCATION

Genetic locus: CD4 (human) mapping to 12p13.31.

SOURCE

CD4 (18-46) is a mouse monoclonal antibody raised against CD4 of human origin.

PRODUCT

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

CD4 (18-46) is available conjugated to either phycoerythrin (sc-1176 PE) or fluorescein (sc-1176 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

In addition, CD4 (18-46) is available conjugated to either APC (sc-1176 APC) or PerCP-Cy5.5 (sc-1176 PCPC5), 100 tests in 2 ml, for IF, IHC(P) and FCM.

APPLICATIONS

CD4 (18-46) is recommended for detection of CD4 of human origin by immunofluorescence (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 CD4 siRNA (h): sc-29246, CD4 shRNA Plasmid (h): sc-29246-SH and CD4 shRNA (h) Lentiviral Particles: sc-29246-V.

Molecular Weight of CD4: 54 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941or UltraCruz® Hard-set Mounting Medium: sc-359850.

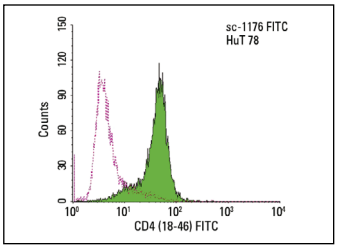
STORAGE

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

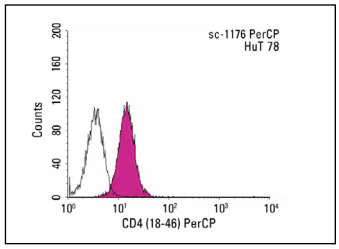
RESEARCH USE

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

DATA



CD4 (18-46) FITC: sc-1176 FITC. FCM analysis of HuT 78 cells. Black line histogram represents the isotype control, normal mouse IgG_{2b}-FITC: sc-2857.



CD4 (18-46) PerCP: sc-1176 PerCP. FCM analysis of HuT 78 cells. Black line histogram represents the isotype control, normal mouse IgG_{2b}-PerCP: sc-45113.

SELECT PRODUCT CITATIONS

1. Manganas, L., et al. 2001. Episodic ataxia type-1 mutations in the Kv1.1 potassium channel display distinct folding and intracellular trafficking properties. J. Biol. Chem. 276: 49427-49434.
2. Wang, H.H., et al. 2003. Patterns of CD4/CD8 T-cell ratio in dialysis effluents predict the long-term outcome of peritonitis in patients undergoing peritoneal dialysis. Nephrol. Dial. Transplant. 18: 1181-1189.
3. Nezlin, R. and Bengtsson, A.A. 2008. Presence of IgG-CD4 complexes in the circulation. Immunol. Invest. 37: 153-162.
4. Majumder, N., et al. 2008. Arabinosylated lipoarabinomannan modulates the impaired cell mediated immune response in *Mycobacterium tuberculosis* H37Rv infected C57BL/6 mice. Microbes Infect. 10: 349-357.
5. Samuels, A.L., et al. 2009. Liar, a novel Lyn-binding nuclear/cytoplasmic shuttling protein that influences erythropoietin-induced differentiation. Blood 113: 3845-3856.
6. Bu, N., et al. 2011. Exosome-loaded dendritic cells elicit tumor-specific $CD8^+$ cytotoxic T cells in patients with glioma. J. Neurooncol. 104: 659-667.
7. Wang, Y., et al. 2018. Detection of Treg/Th17 cells and related cytokines in peripheral blood of chronic hepatitis B patients combined with thrombocytopenia and the clinical significance. Exp. Ther. Med. 16: 1328-1332.
8. Hefting, L.L., et al. 2020. Multiple domains in the Kv7.3 C-terminus can regulate localization to the axon initial segment. Front. Cell. Neurosci. 14: 10.

PROTOCOLS

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

CONJUGATES

See **CD4 (MT310): sc-19641** for CD4 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.