SANTA CRUZ BIOTECHNOLOGY, INC.

CD4 (EDU-2): sc-51544

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

REFERENCES

1. Maddon, P.J., et al. 1987. Structure and expression of human and mouse T4 genes. Proc. Natl. Acad. Sci. USA 84: 9155-9159.
2. Arthos, J., et al. 1989. Identification of the residues in human CD4 critical for the binding of HIV. Cell 57: 469-481.
3. Healey, D., et al. 1990. Novel anti-CD4 monoclonal antibodies separate human immunodeficiency virus infection and fusion of $CD4^+$ cells from virus binding. J. Exp. Med. 172: 1233-1242.
4. Allison, J.P., et al. 1991. The immunobiology of T cells with invariant γ δ antigen receptors. Annu. Rev. Immunol. 9: 679-705.
5. Janeway, C.A., Jr. 1992. The T cell receptor as a multicomponent signaling machine: CD4/CD8 co-receptors and CD45 in T cell activation. Annu. Rev. Immunol. 10: 645-674.
6. Ehrich, E.W., et al. 1993. T cell receptor interaction with peptide/major histocompatibility complex (MHC) and superantigen/MHC ligands is dominated by antigen. J. Exp. Med. 178: 713-722.
7. Julius, M., et al. 1993. Distinct roles for CD4 and CD8 as coreceptors in antigen receptor signalling. Immunol. Today 14: 177-183.
8. Vignali, D.A. 1994. The interaction between CD4 and MHC class II molecules and its effect on T cell function. Behring Institute Mitteilungen 94: 133-147.
9. Liden, M., et al. 2005. The C-terminal region of *cis*-retinol/androgen dehydrogenase 1 (CRAD1) confers ER localization and *in vivo* enzymatic function. Exp. Cell Res. 311: 205-217.

CHROMOSOMAL LOCATION

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

SOURCE

CD4 (EDU-2) is a mouse monoclonal antibody raised against T-lymphocytes of human origin.

PRODUCT

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

CD4 (EDU-2) is available conjugated to either phycoerythrin (sc-51544 PE) or fluorescein (sc-51544 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

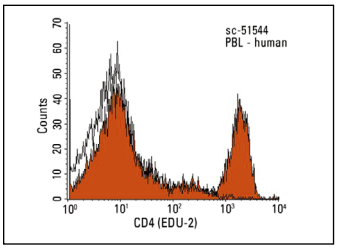
APPLICATIONS

CD4 (EDU-2) is recommended for detection of CD4 of human origin by flow cytometry (1 µg per 1 x 10^6 cells).

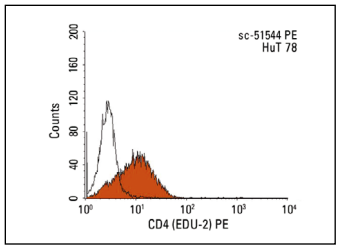
Suitable for use as control antibody for CD4 siRNA (h): sc-29246, CD4 shRNA Plasmid (h): sc-29246-SH and CD4 shRNA (h) Lentiviral Particles: sc-29246-V.

Molecular Weight of CD4: 54 kDa.

DATA



CD4 (EDU-2): sc-51544. Indirect FCM analysis of human peripheral blood leukocytes stained with CD4 (EDU-2), followed by PE-conjugated goat anti-mouse IgG_{2a}: sc-3765. Black line histogram represents the isotype control, normal mouse IgG_{2a}: sc-3878.



CD4 (EDU-2) PE: sc-51544 PE. FCM analysis of HuT 78 cells. Black line histogram represents the isotype control, normal mouse IgG_{2a}-PE: sc-2867.

SELECT PRODUCT CITATIONS

1. Helling, B., et al. 2015. A specific CD4 epitope bound by tregalizumab mediates activation of regulatory T cells by a unique signaling pathway. Immunol. Cell Biol. 93: 396-405.

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.

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.