

CD4 (H129.19): sc-19642

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 immunoglobulin-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

- Maddon, P.J., et al. 1987. Structure and expression of human and mouse T4 genes. *Proc. Natl. Acad. Sci. USA* 84: 9155-9159.
- Arthos, J., et al. 1989. Identification of the residues in human CD4 critical for the binding of HIV. *Cell* 57: 469-481.
- 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.
- Allison, J.P., et al. 1991. The immunobiology of T cells with invariant $\gamma\delta$ antigen receptors. *Annu. Rev. Immunol.* 9: 679-705.
- Janeway, C.A., Jr. 1992. The T cell receptor as a multicomponent signalling machine: CD4/CD8 coreceptors and CD45 in T cell activation. *Ann. Rev. Immunol.* 10: 645-674.

CHROMOSOMAL LOCATION

Genetic locus: Cd4 (mouse) mapping to 6 F2.

SOURCE

CD4 (H129.19) is a rat monoclonal antibody raised against A.TH. mouse CTL clone A15.1.17.

PRODUCT

Each vial contains 200 μ g IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for biological studies, sc-19642 L, 200 μ g/0.1 ml.

CD4 (H129.19) is available conjugated to either phycoerythrin (sc-19642 PE) or fluorescein (sc-19642 FITC), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM.

In addition, CD4 (H129.19) is available conjugated to either APC (sc-19642 APC) or APC-Cy7 (sc-19642 APCC7), 100 tests in 2 ml, for IF, IHC(P) and FCM.

STORAGE

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

APPLICATIONS

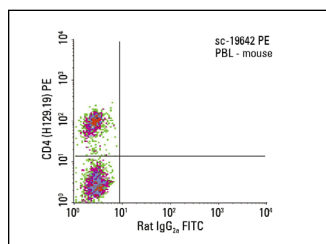
CD4 (H129.19) is recommended for detection of CD4 of mouse origin by immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

Suitable for use as control antibody for CD4 siRNA (m): sc-29997, CD4 shRNA Plasmid (m): sc-29997-SH and CD4 shRNA (m) Lentiviral Particles: sc-29997-V.

Molecular Weight of CD4: 54 kDa.

Positive Controls: mouse thymus extract: sc-2406 or WEHI-231 whole cell lysate: sc-2213.

DATA



CD4 (H129.19) PE: sc-19642 PE. FCM analysis of mouse peripheral blood leukocytes. Quadrant markers were set based on the isotype control, normal rat IgG_{2a}-PE: sc-2872.

SELECT PRODUCT CITATIONS

- Karamitros, D., et al. 2010. Differential geminin requirement for proliferation of thymocytes and mature T cells. *J. Immunol.* 184: 2432-2441.
- Helsby, M.A., et al. 2014. CiteAb: a searchable antibody database that ranks antibodies by the number of times they have been cited. *BMC Cell Biol.* 15: 6.
- Wang, X., et al. 2015. Efficacy of thymosin α 1 and interferon α for the treatment of severe acute pancreatitis in a rat model. *Mol. Med. Rep.* 12: 6775-6781.
- Matsui, K., et al. 2015. Langerhans cell-like dendritic cells stimulated with an adjuvant direct the development of Th1 and Th2 cells *in vivo*. *Clin. Exp. Immunol.* 182: 101-107.

RESEARCH USE

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

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.