

CD4 (RM4-5): sc-19643

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.

CHROMOSOMAL LOCATION

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

SOURCE

CD4 (RM4-5) is a rat monoclonal antibody raised against BALB/c mouse thymocytes.

PRODUCT

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

CD4 (RM4-5) is available conjugated to either phycoerythrin (sc-19643 PE) or fluorescein (sc-19643 FITC), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

CD4 (RM4-5) is recommended for detection of CD4 of mouse 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) 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.

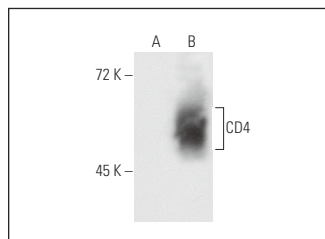
Molecular Weight of CD4: 54 kDa.

Positive Controls: CD4 (m): 293T Lysate: sc-119107, mouse thymus extract: sc-2406 or WEHI-231 whole cell lysate: sc-2213.

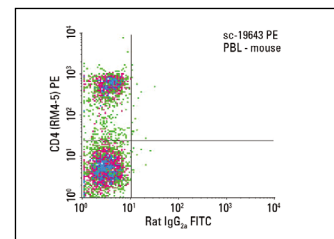
STORAGE

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

DATA



CD4 (RM4-5): sc-19643. Western blot analysis of CD4 expression in non-transfected: sc-117752 (A) and mouse CD4 transfected: sc-119107 (B) 293T whole cell lysates.



CD4 (RM4-5) PE: sc-19643 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

- Thumbikat, P., et al. 2006. Antigen-specific responses accelerate bacterial clearance in the bladder. *J. Immunol.* 176: 3080-3086.
- Tsunemi, Y., et al. 2006. CCL17 transgenic mice show an enhanced Th2-type response to both allergic and non-allergic stimuli. *Eur. J. Immunol.* 36: 2116-2127.
- Tonelli, R.R., et al. 2010. *In vivo* infection by *Trypanosoma cruzi*: the conserved FLY domain of the gp85/*trans*-sialidase family potentiates host infection. *Parasitology* 138: 481-492.
- Zhang, M., et al. 2010. p300-mediated acetylation stabilizes the Th-inducing POK factor. *J. Immunol.* 185: 3960-3969.
- Qiu, T., et al. 2012. Over-expressing transporters associated with antigen processing increases antitumor immunity response in prostate cancer. *Cell. Immunol.* 279: 167-173.
- Larimer, B.M., et al. 2017. Granzyme B PET imaging as a predictive biomarker of immunotherapy response. *Cancer Res.* 77: 2318-2327.
- Larimer, B.M., et al. 2019. The effectiveness of checkpoint inhibitor combinations and administration timing can be measured by granzyme B PET imaging. *Clin. Cancer Res.* 25: 1196-1205.

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.



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