

CD4 (W3/25): sc-20079



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 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

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.

CHROMOSOMAL LOCATION

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

SOURCE

CD4 (W3/25) is a mouse monoclonal antibody raised against rat thymocyte membrane.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD4 (W3/25) is available conjugated to either phycoerythrin (sc-20079 PE) or fluorescein (sc-20079 FITC), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

CD4 (W3/25) is recommended for detection of CD4 of mouse and rat origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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.

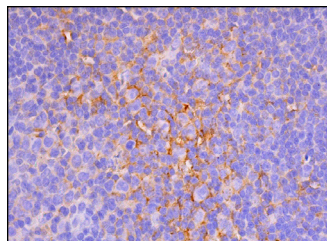
STORAGE

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

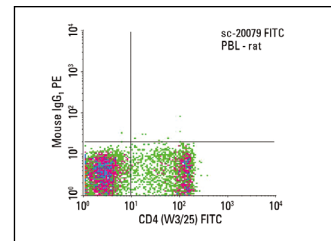
RESEARCH USE

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

DATA



CD4 (W3/25): sc-20079. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat spleen tissue showing membrane and cytoplasmic staining of cells in white pulp.



CD4 (W3/25) FITC: sc-20079 FITC. FCM analysis of rat peripheral blood leukocytes. Quadrant markers were set based on the isotype control, normal mouse IgG1-FITC: sc-2855.

SELECT PRODUCT CITATIONS

1. Singh, A.K., et al. 2003. Lipopolysaccharide (LPS) induced activation of the immune system in control rats and rats chronically exposed to a low level of the organothiophosphate insecticide, acephate. *Toxicol. Ind. Health* 19: 93-108.
2. Guan, Q., et al. 2013. Reduction of chronic rejection of renal allografts by anti-transforming growth factor- β antibody therapy in a rat model. *Am. J. Physiol. Renal Physiol.* 305: F199-F207.
3. Zhao, X., et al. 2019. Saikosaponin A inhibits breast cancer by regulating Th1/Th2 balance. *Front. Pharmacol.* 10: 624.
4. Zhang, S., et al. 2021. Knockdown of miR-205-5p alleviates the inflammatory response in allergic rhinitis by targeting B-cell lymphoma 6. *Mol. Med. Rep.* 24: 818.
5. Chen, C., et al. 2022. Imbalanced T-cell subsets may facilitate the occurrence of osteonecrosis of the femoral head. *J. Inflamm. Res.* 15: 4159-4169.
6. Shao, S., et al. 2023. Primary head and neck cancer cell cultures are susceptible to proliferation of Epstein-Barr virus infected lymphocytes. *BMC Cancer* 23: 47.
7. Zhang, Y., et al. 2023. Macrophage-mediated immune response aggravates hearing dysfunction caused by the disorder of mitochondrial dynamics in cochlear hair cells. *Hum. Mol. Genet.* 32: 1137-1151.
8. Zhang, J., et al. 2024. PAK4 is involved in the stabilization of PD-L1 and the resistance to doxorubicin in osteosarcoma and predicts the survival of diagnosed patients. *Cells* 13: 1444.



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