

# CD4 (OX38): sc-53041

## BACKGROUND

The T cell receptor (TCR) is a heterodimer composed of either  $\alpha$  and  $\beta$  or  $\gamma$  and  $\delta$  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<sup>+</sup> cells from virus binding. *J. Exp. Med.* 172: 1233-1242.
4. Allison, J.P. and Havran, W.L. 1991. The immunobiology of T cells with invariant  $\gamma$   $\delta$  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 coreceptors and CD45 in T cell activation. *Annu. Rev. Immunol.* 10: 645-674.
6. Ehrlich, 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

CD4 (OX38) is a mouse monoclonal antibody raised against MLR generated T cells of rat origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD4 (OX38) is available conjugated to either phycoerythrin (sc-53041 PE) or fluorescein (sc-53041 FITC), 200  $\mu$ g/ml, for WB (RGB), 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 (OX38) is recommended for detection of CD4 cell surface antigen 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  $\mu$ g per 1 x 10<sup>6</sup> cells).

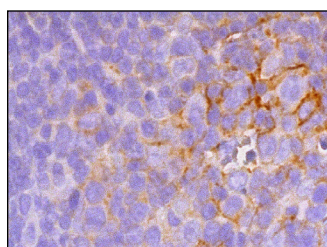
Suitable for use as control antibody for CD4 siRNA (m): sc-29997, CD4 shRNA Plasmid (m): sc-29997-SH and CD4 shRNA (m) Lentiviral Particles: sc-29997-V.

Molecular Weight of CD4: 54 kDa.

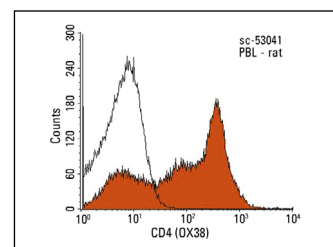
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 2) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



CD4 (OX38): sc-53041. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat spleen tissue showing membrane and cytoplasmic staining of cells in white pulp.



CD4 (OX38): sc-53041. Indirect FCM analysis of rat peripheral blood leukocytes stained with CD4 (OX38), followed by PE-conjugated goat anti-mouse IgG: sc-3738. Black line histogram represents the isotype control, normal mouse IgG<sub>2a</sub>: sc-3878.

## SELECT PRODUCT CITATIONS

1. Fang, T., et al. 2020. Chemo-photothermal combination cancer therapy with ROS scavenging, extracellular matrix depletion and tumor immune activation by telmisartan and diselenide-paclitaxel prodrug loaded nanoparticles. *ACS Appl. Mater. Interfaces* 12: 31292-31308.
2. Zuo, T., et al. 2021. pH-sensitive molecular-switch-containing polymer nanoparticle for breast cancer therapy with ferritinophagy-cascade ferroptosis and tumor immune activation. *Adv. Healthc. Mater.* 10: e2100683.

## 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<sup>®</sup> 488, 546, 594, 647, 680 and 790.