

CD4 (MT310): sc-19641



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

- 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.

CHROMOSOMAL LOCATION

Genetic locus: CD4 (human) mapping to 12p13.31; Cd4 (mouse) mapping to 6 F2.

SOURCE

CD4 (MT310) is a mouse monoclonal antibody raised against CD4 of human origin.

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 (MT310) is available conjugated to agarose (sc-19641 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-19641 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-19641 PE), fluorescein (sc-19641 FITC), Alexa Fluor[®] 488 (sc-19641 AF488), Alexa Fluor[®] 546 (sc-19641 AF546), Alexa Fluor[®] 594 (sc-19641 AF594) or Alexa Fluor[®] 647 (sc-19641 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-19641 AF680) or Alexa Fluor[®] 790 (sc-19641 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, CD4 (MT310) is available conjugated to either APC-Cy7 (sc-19641 APCC7), PE-Cy7 (sc-19641 PEC7), PerCP (sc-19641 PerCP), PerCP-Cy5.5 (sc-19641 PCPC5) or Alexa Fluor[®] 405 (sc-19641 AF405), 100 tests in 2 ml, for IF, IHC(P) and FCM.

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STORAGE

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

APPLICATIONS

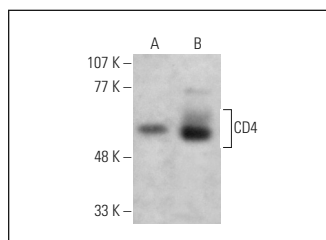
CD4 (MT310) is recommended for detection of CD4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 (h): sc-29246, CD4 siRNA (m): sc-29997, CD4 shRNA Plasmid (h): sc-29246-SH, CD4 shRNA Plasmid (m): sc-29997-SH, CD4 shRNA (h) Lentiviral Particles: sc-29246-V and CD4 shRNA (m) Lentiviral Particles: sc-29997-V.

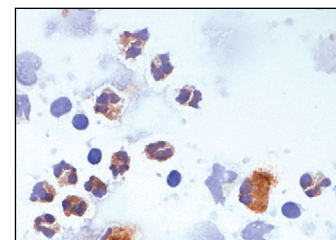
Molecular Weight of CD4: 54 kDa.

Positive Controls: SUP-T1 whole cell lysate: sc-364796, HL-60 whole cell lysate: sc-2209 or CCRF-CEM cell lysate: sc-2225.

DATA



CD4 (MT310) HRP: sc-19641 HRP. Direct western blot analysis of CD4 expression in SUP-T1 (A) and HL-60 (B) whole cell lysates.



CD4 (MT310): sc-19641. Immunoperoxidase staining of formalin-fixed, human peripheral blood lymphocytes showing membrane staining.

SELECT PRODUCT CITATIONS

- Akkoyunlu, G., et al. 2004. Distribution patterns of leucocyte subpopulations expressing different cell markers in the cumulus-oocyte complexes of pregnant and pseudopregnant mice. *Reprod. Fertil. Dev.* 15: 389-395.
- Feng, Y., et al. 2017. Infiltration and persistence of lymphocytes during late-stage cerebral ischemia in middle cerebral artery occlusion and photothrombotic stroke models. *J. Neuroinflammation* 14: 248.
- Nakamori, M., et al. 2017. Aberrant myokine signaling in congenital myotonic dystrophy. *Cell Rep.* 21: 1240-1252.
- Carrasco, E., et al. 2017. Human CD6 down-modulation following T-cell activation compromises lymphocyte survival and proliferative responses. *Front. Immunol.* 8: 769.
- Yang, X., et al. 2018. Depletion of microglia augments the dopaminergic neurotoxicity of MPTP. *FASEB J.* 32: 3336-3345.
- Chen, T., et al. 2018. TOX expression decreases with progression of colorectal cancers and is associated with CD4 T-cell density and *Fusobacterium nucleatum* infection. *Hum. Pathol.* 79: 93-101.

RESEARCH USE

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