

CD4 (6A17): sc-70659

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 55 kDa 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

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- 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 γ δ 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. *Annu. Rev. Immunol.* 10: 645-674.
- 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.
- Julius, M., et al. 1993. Distinct roles for CD4 and CD8 as coreceptors in antigen receptor signalling. *Immunol. Today* 14: 177-183.

CHROMOSOMAL LOCATION

Genetic locus: CD4 (human) mapping to 12p13.31.

SOURCE

CD4 (6A17) is a mouse monoclonal antibody raised against the extracellular domain of CD4 of human origin.

PRODUCT

Each vial contains 250 μ l culture supernatant containing IgG₁ with < 0.1% sodium azide.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

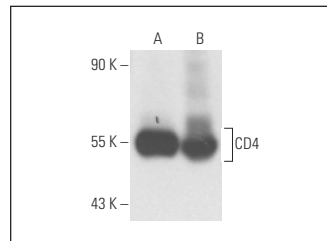
CD4 (6A17) is recommended for detection of CD4 of human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:250), immunoprecipitation [1-2 μ l per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:20-1:40).

Suitable for use as control antibody for CD4 siRNA (h): sc-29246, CD4 shRNA Plasmid (h): sc-29246-SH and CD4 shRNA (h) Lentiviral Particles: sc-29246-V.

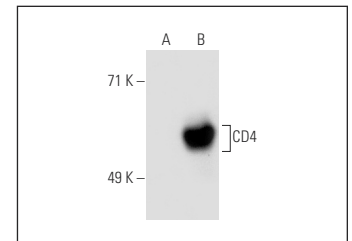
Molecular Weight of CD4: 54 kDa.

Positive Controls: CD4 (h): 293T Lysate: sc-114217, SUP-T1 whole cell lysate: sc-364796 or CCRF-CEM cell lysate: sc-2225.

DATA



CD4 (6A17): sc-70659. Western blot analysis of CD4 expression in SUP-T1 (A) and CCRF-CEM (B) whole cell lysates.



CD4 (6A17): sc-70659. Western blot analysis of CD4 expression in non-transfected: sc-117752 (A) and human CD4 transfected: sc-114217 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Kim, K.C., et al. 2011. The effect of CD4 receptor downregulation and its downstream signaling molecules on HIV-1 latency. *Biochem. Biophys. Res. Commun.* 404: 646-651.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

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



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