

CD4 (26-396): sc-4367 WB

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

1. Maddon, P.J., Molineaux, S.M., Maddon, D.E., Zimmerman, K.A., Godfrey, M., Alt, F.W., Chess, L. and Axel, R. 1987. Structure and expression of human and mouse T4 genes. *Proc. Natl. Acad. Sci. USA* 84: 9155-9159.
2. Arthos, J., Deen, K.C., Chaikin, M.A., Fornwald, J.A., Sathe, G., Sattentau, Q.J., Clapham, P.R., Weiss, R.A., McDougal, J.S. and Pietropaolo, C. 1989. Identification of the residues in human CD4 critical for the binding of HIV. *Cell* 57: 469-481.
3. Healey, D., Dianda, L., Moore, J.P., McDougal, J.S., Moore, M.J., Estess, P., Buck, D., Kwong, P.D., Beverley, P.C. and Sattentau, Q.J. 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.
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 signalling machine: CD4/CD8 coreceptors and CD45 in T cell activation. *Annu. Rev. Immunol.* 10: 645-674.
6. Ehrlich, E.W., Devaux, B., Rock, E.P., Jorgensen, J.L., Davis, M.N. and Chien, Y.H. 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.
7. Julius, M., Maroun, C.R. and Haughn, L. 1993. Distinct roles for CD4 and CD8 as co-receptors in antigen receptor signalling. *Immunol. Today* 14: 177-183.
8. Vignali, D.A. 1994. The interaction between CD4 and MHC class II molecules and its effect on T cell function. *Behring Institute Mitteilungen* 94: 133-147.

CHROMOSOMAL LOCATION

Genetic locus: CD4 (human) mapping to 12p12; Cd4 (mouse) mapping to 6 F2.

RESEARCH USE

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

SOURCE

CD4 (26-396) is expressed in *E. coli* as a 68 kDa tagged fusion protein corresponding to amino acids 26-396 of CD4 of human origin.

PRODUCT

CD4 (26-396) is purified from bacterial lysates (>98%; supplied as 10 μ g protein in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

CD4 (26-396) is suitable as a Western blotting control for sc-7219.

STORAGE

Store at -20° C. 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.