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CD4 Antibody [9H5A8]

Catalog # ASC12005

Product Information

Application	WB, E
Primary Accession	P01730
Other Accession	NP_000607, 10835167
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Clone Names	9H5A8
Calculated MW	51111
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	CD4 antibody can be used for detection of CD4 by Western blot at 0.5 - 1 □g/mL.

Additional Information

Gene ID	920
Other Names	T-cell surface glycoprotein CD4, T-cell surface antigen T4/Leu-3, CD4, CD4
Target/Specificity	CD4;
Reconstitution & Storage	CD4 monoclonal antibody can be stored at -20℃, stable for one year.
Precautions	CD4 Antibody [9H5A8] is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CD4
Function	Integral membrane glycoprotein that plays an essential role in the immune response and serves multiple functions in responses against both external and internal offenses. In T-cells, functions primarily as a coreceptor for MHC class II molecule:peptide complex. The antigens presented by class II peptides are derived from extracellular proteins while class I peptides are derived from cytosolic proteins. Interacts simultaneously with the T-cell receptor (TCR) and the MHC class II presented by antigen presenting cells (APCs). In turn, recruits the Src kinase LCK to the vicinity of the TCR-CD3 complex. LCK then initiates different intracellular signaling pathways by phosphorylating various substrates ultimately leading to lymphokine production, motility, adhesion and activation of T-helper cells. In other cells such as macrophages or NK cells, plays a role in differentiation/activation, cytokine expression and cell migration in a TCR/LCK-independent pathway.

	Participates in the development of T- helper cells in the thymus and triggers the differentiation of monocytes into functional mature macrophages.
Cellular Location	Cell membrane; Single-pass type I membrane protein. Note=Localizes to lipid rafts (PubMed:12517957, PubMed:9168119). Removed from plasma membrane by HIV- 1 Nef protein that increases clathrin-dependent endocytosis of this antigen to target it to lysosomal degradation. Cell surface expression is also down-modulated by HIV-1 Envelope polyprotein gp160 that interacts with, and sequesters CD4 in the endoplasmic reticulum
Tissue Location	Highly expressed in T-helper cells. The presence of CD4 is a hallmark of T-helper cells which are specialized in the activation and growth of cytotoxic T-cells, regulation of B cells, or activation of phagocytes. CD4 is also present in other immune cells such as macrophages, dendritic cells or NK cells

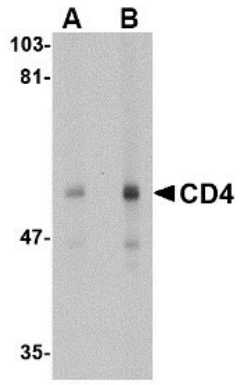
Background

CD4 Monoclonal Antibody: CD4 is a member of the immunoglobulin superfamily and is implicated as associative recognition element in MHC (Major Histocompatibility Complex) class II-restricted immune response. On T-lymphocytes, it defines the helper/inducer subset. The mature 55 kd CD4 protein consists of a 372 amino acid extracellular segment composed of four tandem immunoglobulin-like VJ regions. The CD4 molecule is a major receptor for human immunodeficiency virus (HIV), binding directly to the envelope glycoprotein gp120 on HIV, with the co-receptors being CCR5 or CXCR4. It has been shown that the V-like domains are critical for binding with HIV envelope gp120.

References

Bowers K, Pitcher C, and Marsh M. CD4 : a co-receptor in the immune response and HIV infection. Int. J. Biochem. Cell Biol. 1997; 29 :871-5.
Arthos J, Deen KC, Chaikin MA, et al. Identification of the residues in human CD4 critical for the binding of HIV. Cell 1989; 57:469-81.

Images



Western blot analysis of CD4 in human thymus tissue lysate with CD4 antibody at (A) 0.5 and (B) 1 µg/mL.