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CD4 (T-Helper/Inducer Cell Marker) Antibody - With BSA and Azide

Mouse Monoclonal Antibody [Clone EDU-2]
Catalog # AH12609

Product Information

Application	IF, FC
Primary Accession	P01730
Other Accession	920, 631659
Reactivity	Human, Chimpanzee
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG2a, kappa
Clone Names	EDU-2
Calculated MW	51111

Additional Information

Gene ID	920
Other Names	T-cell surface glycoprotein CD4, T-cell surface antigen T4/Leu-3, CD4, CD4
Application Note	IF~~1:50~200 FC~~1:10~50
Storage	Store at 2 to 8°C.Antibody is stable for 24 months.
Precautions	CD4 (T-Helper/Inducer Cell Marker) Antibody - With BSA and Azide 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

Recognizes a protein of 55kDa, identified as CD4. It is a membrane glycoprotein of T lymphocytes that interacts with major histocompatibility complex class II antigens and is also a receptor for the human immunodeficiency virus. This protein is expressed not only in T lymphocytes, but also in B cells, macrophages, and granulocytes. It is also expressed in specific regions of the brain. The protein functions to initiate or augment the early phase of T-cell activation, and may function as an important mediator of indirect neuronal damage in infectious and immune-mediated diseases of the central nervous system. Multiple alternatively spliced transcript variants encoding different isoforms have been identified. This MAb was characterized as human CD4 antibody at II and IV International Workshop on Human Leukocyte Differentiation Antigens.

References

Reinberz EL et al. eds. Leykcocyte Typing II, Springer-Verlag, Berlin, 1985. | Knapp W. et. al. (eds) Leukocyte Typing IV, p314-330, Oxford University Press, Oxford, 1989.Sattentau QJ, et al. The CD4 antigen: physiological ligand and HIV receptor. Cell. 1988, 52(5):631-633. | Gaubin M, et al. Molecular basis of T lymphocyte CD4 antigen functions. Eur J Clin Chem Clin Biochem. 1996, 34(9):723-728.Mazerolles F, et al. Down regulation of T-cell adhesion by CD4. Hum Immunol. 1991, 31(1):40-6