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Monoclonal Antibody to CD4 - PE

Alternate names: T-cell surface antigen T4/Leu-3, T-cell surface glycoprotein CD4

Catalog No.: SM3020R

Quantity: 100 Tests

Background: CD4 is a single chain transmembrane glycoprotein and belongs to immunoglobulin supergene family. In extracellular region there are 4 immunoglobulin-like domains (1 Ig-like V-type and 3 Ig-like C2-type). Transmembrane region forms 25 aa, cytoplasmic tail consists of 38 aa. Domains 1,2 and 4 are stabilized by disulfide bonds. The intracellular domain of CD4 is associated with p56Lck, a Src-like protein tyrosine kinase. It was described that CD4 segregates into specific detergent-resistant T-cell membrane microdomains. Extracellular ligands: MHC class II molecules (binds to CDR2-like region in CD4 domain 1); HIV envelope protein gp120 (binds to CDR2-like region in CD4 domain 1); IL-16 (binds to CD4 domain 3), Human seminal plasma glycoprotein gp17 (binds to CD4 domain 1), L-selectin.
Intracellular ligands: p56Lck.
CD4 is a co-receptor involved in immune response (co-receptor activity in binding to MHC class II molecules) and HIV infection (human immunodeficiency virus; CD4 is primary receptor for HIV-1 surface glycoprotein gp120). CD4 regulates T-cell activation, T/B-cell adhesion, T-cell diferentiation, T-cell selection and signal transduction. Defects in antigen presentation (MHC class II) cause dysfunction of CD4+ T-cells and their almost complete absence in patients blood, tissue and organs (SCID immunodeficiency).

Uniprot ID: P01730

NCBI: NP_000607.1

GeneID: 920

Host / Isotype: Mouse / IgG1

Clone: MEM-241

Immunogen: 2 N-terminal domains of human CD4 fused to human IgG1 Fc

Format: **State:** Liquid purified Ig fraction
Buffer System: Phosphate buffered saline (PBS) containing 15 mM sodium azide and 0.2% (w/v) high-grade protease free Bovine Serum Albumin (BSA) as a stabilizing agent.
Label: PE – Conjugated with R-Phycoerythrin under optimum conditions. The conjugate is purified by size-exclusion chromatography and adjusted for direct use

Applications: Flow Cytometry analysis of human blood cells using 20 µl reagent / 100 µl whole blood. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: The antibody reacts with CD4 antigen, a transmembrane glycoprotein (59 kDa) of the immunoglobulin supergene family present on subset of T lymphocytes ("helper/inducer" T cells) and also expressed at a lower level on monocytes and granulocytes.
Species: Human.
Other species not tested.

Storage: Store the antibody at 2 - 8 °C. DO NOT FREEZE! This product is photosensitive and should be protected from light.
Shelf life: one year from despatch.

General References:

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2. Foti M, Phelouzat MA, Holm A, Rasmusson BJ, Carpentier JL.: p56Lck anchors CD4 to distinct microdomains on microvilli. Proc Natl Acad Sci U S A. 2002 Feb 19;99(4):2008-13.
3. Brdickova N. et al.: LIME: a new membrane Raft-associated adaptor protein involved in CD4 and CD8 coreceptor signaling. J Exp Med. 2003 Nov 17;198(10):1453-62.
4. Zola H, Swart B, Banham A, Barry S, Beare A, Bensussan A, Boumsell L, D Buckley C, Buhring HJ, Clark G, Engel P, Fox D, Jin BQ, Macardle PJ, Malavasi F, Mason D, Stockinger H, Yang X.: CD molecules 2006--human cell differentiation molecules. J Immunol Methods. 2007 Jan 30;319(1-2):1-5.
5. Karlsson KR, Cowley S, Martinez FO, Shaw M, Minger SL, James W: Homogeneous monocytes and macrophages from human embryonic stem cells following coculture-free differentiation in M-CSF and IL-3. Exp Hematol. 2008 Sep;36(9):1167-75.
6. Manasa J, Musabaike H, Masimirembwa C, Burke E, Luthy R, Mudzori J: Evaluation of the Partec flow cytometer against the BD FACSCalibur system for monitoring immune responses of human immunodeficiency virus-infected patients in Zimbabwe. Clin Vaccine Immunol. 2007 Mar;14(3):293-8.
7. Anderson AE, Sayers BL, Haniffa MA, Swan DJ, Diboll J, Wang XN, Isaacs JD, Hilkens CM: Differential regulation of naïve and memory CD4+ T cells by alternatively activated dendritic cells. J Leukoc Biol. 2008 Jul;84(1):124-33.