EXBIO Antibodies

PRODUCT DATA SHEET

1A-359-T025

Monoclonal Antibody to CD4 Allophycocyanin (APC) conjugated (25 tests)

Clone: MEM-241

Isotype: Mouse IgG1

Specificity: The antibody MEM-241 recognizes CD4 antigen, a 55 kDa transmebrane glycoprotein expressed on a subset of T lymphocytes (helper T-cells) and also on monocytes, tissue macrophages and granulocytes.
HCDM (former HLDA VIII) Meeting, May 2006, Québec, Canada; WS Code M241

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

Species Reactivity: Human, Other not tested

Preparation: The purified antibody is conjugated with cross-linked Allophycocyanin (APC) under optimum conditions. The conjugate is purified by size-exclusion chromatography and adjusted for direct use. No reconstitution is necessary.

Storage Buffer: The reagent is provided in 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.

Storage / Stability: Store in the dark at 2-8^{o}C. Do not freeze. Avoid prolonged exposure to light.
Do not use after expiration date stamped on vial label.
Short-term exposure to room temperature should not affect the quality of the reagent. However, if reagent is stored under any conditions other than those specified, the conditions must be verified by the user.

Usage: The reagent is designed for Flow Cytometry analysis of human blood cells using 10 µl reagent / 100 µl of whole blood or 10^6 cells in a suspension.
The content of a vial (0.25 ml) is sufficient for 25 tests.

Expiration: See vial label

Lot Number: See vial label

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).

EXBIO Praha | Nad Safinou II 366 | 252 42 Vestec u Prahy | Czech Republic
Tel: +420 261 090 664 | Fax: +420 261 090 660 | orders@exbio.cz | www.exbio.cz

References:

*Millan J, Cerny J, Horejsi V, Alonso MA: CD4 segregates into specific detergent-resistant T-cell membrane microdomains. Tissue Antigens. 1999 Jan;53(1):33-40.
*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.
Clapham PR, McKnight A.: Cell surface receptors, virus entry and tropism of primate lentiviruses. J Gen Virol. 2002 Aug;83(Pt 8):1809-29.
*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.
*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.
*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.
*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.
*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.