

anti-human CD4 PE/Dy647 -conjugated

PE/Dy647 -conjugated monoclonal antibody MEM-241 to human CD4

Cat-No: **21270047**

500 µl

Clone: MEM-241

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

Isotype subclass: Mouse IgG1

Form: The purified antibody is conjugated with PE-Dyomics 647 (PE-Dy647) under optimum conditions. The conjugate is adjusted for direct use. No reconstitution is necessary.

Expiration date: The reagent is stable until the expiry date stated on the vial label.

Physical state: Liquid

Buffer/Additives/Preservative: PBS containing BSA (0.2%) and 15 mM sodium azide (pH 7.2).

Storage conditions: Store at 4 °C. Do not freeze. Avoid prolonged exposure to light.

Application: The reagent is designed for flow cytometry analysis of human blood cells.

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 differentiation, 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).

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, Rasmussen 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.

Warning: Sodium azide is harmful if swallowed (R22). Keep out of reach of children (S2). Keep away from food, drink and animal feeding stuff (S13). Wear suitable protective clothing (S36). If swallowed, seek medical advice immediately and show this container or label (S46). Contact with acids liberates very toxic gas (R32). Azide compounds should be flushed with large volumes of water during disposal to avoid deposits in lead or copper plumbing where explosive conditions can develop.

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