

**SM3020P****Monoclonal Antibody to CD4 (N-term) - Purified**

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|--------------------------------------|---|
| <b>Alternate names:</b>              | T-cell surface antigen T4/Leu-3, T-cell surface glycoprotein CD4  |
| <b>Quantity:</b>                     | 0.1 mg  |
| <b>Concentration:</b>                | 1.0 mg/ml   |
| <b>Background:</b>                   | <p>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</p> <p>Intracellular ligands: p56Lck</p> <p>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).</p> |
| <b>Uniprot ID:</b>                   | <a href="#">P01730</a>  |
| <b>NCBI:</b>                         | <a href="#">NP_000607.1</a>   |
| <b>GeneID:</b>                       | <a href="#">920</a>   |
| <b>Host / Isotype:</b>               | Mouse / IgG1  |
| <b>Recommended Isotype Controls:</b> | SM10P (for use in human samples), AM03095PU-N   |
| <b>Clone:</b>                        | MEM-241   |
| <b>Immunogen:</b>                    | 2 N-terminal domains of human CD4 fused to human IgG1 Fc  |
| <b>Format:</b>                       | <b>State:</b> Liquid Ig fraction<br><b>Purification:</b> Protein-A affinity chromatography<br><b>Buffer System:</b> Phosphate buffered saline (PBS) with 15 mM sodium azide, approx. pH 7.4   |
| <b>Applications:</b>                 | <b>Flow Cytometry:</b> 1 µg/ml.<br><i>Positive control:</i> peripheral blood, HPB T cell line.<br>Application note: excellent antibody for FC application.<br><b>Western Blot:</b> 1-2 µg/ml.<br><i>Positive control:</i> peripheral blood, HPB T cell line.<br>Sample preparation: Resuspend approx. 50 mil. cells in 1 ml cold Lysis buffer (1%   |

laurylmaltoside in 20 mM Tris/Cl, 100 mM NaCl pH 8.2, 50 mM NaF including Protease inhibitor Cocktail). Incubate 60 min on ice. Centrifuge to remove cell debris. Mix lysate with non-reducing SDS-PAGE sample buffer. Application note: Non-reducing conditions.

Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

**Specificity:**

The antibody recognizes CD4 antigen, a 55 kDa transmembrane glycoprotein expressed on a subset of T lymphocytes (helper T-cells) and also on monocytes, tissue macrophages and granulocytes.

**Species Reactivity:**

**Tested:** Human

**Storage:**

Store undiluted at 2-8°C.

**DO NOT FREEZE!**

Shelf life: one year from despatch.

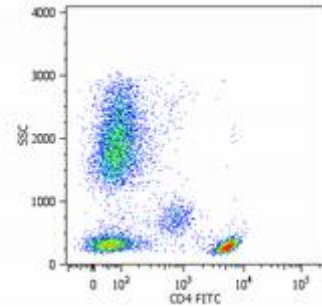
**General Readings:**

1. Millán 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. PubMed PMID: 10082429.
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. PubMed PMID: 11854499.
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4. Zola H, Swart B, Banham A, Barry S, Beare A, Bensussan A, et al. CD molecules 2006--human cell differentiation molecules. *J Immunol Methods*. 2007 Jan 30;319(1-2):1-5. Epub 2006 Dec 4. PubMed PMID: 17174972.
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. doi: 10.1016/j.exphem.2008.04.009. Epub 2008 Jun 11. PubMed PMID: 18550257.
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. Epub 2007 Jan 31. PubMed PMID: 17267593.
7. Anderson AE, Sayers BL, Haniffa MA, Swan DJ, Diboll J, Wang XN, et al. Differential regulation of naïve and memory CD4+ T cells by alternatively activated dendritic cells. *J Leukoc Biol*. 2008 Jul;84(1):124-33. doi: 10.1189/jlb.1107744. Epub 2008 Apr 22. PubMed PMID: 18430785.
8. Hovden AO, Karlsen M, Jonsson R, Aarstad HJ, Appel S. Maturation of monocyte derived dendritic cells with OK432 boosts IL-12p70 secretion and conveys strong T-cell responses. *BMC Immunol*. 2011 Jan 5;12:2. doi: 10.1186/1471-2172-12-2. PubMed PMID: 21208424.
9. Kanderova V, Kuzilkova D, Stuchly J, Vaskova M, Brdicka T, Fiser K, et al. High-resolution Antibody Array Analysis of Childhood Acute Leukemia Cells. *Mol Cell*

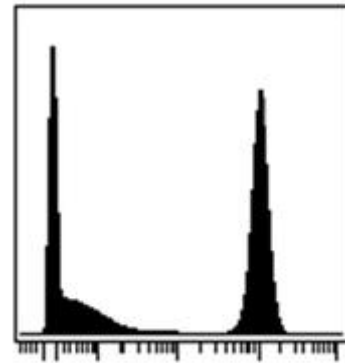
Proteomics. 2016 Apr;15(4):1246-61. doi: 10.1074/mcp.M115.054593. Epub 2016 Jan 19. PubMed PMID: 26785729.

**Pictures:**

Surface staining of human peripheral blood cells with anti-human CD4 (MEM-241) FITC.



Surface staining (mass cytometry) of PBMC after Ficoll-Paque separation with anti-human CD4 (MEM-241) Er166. Gated on singlets.



CD4 Er166

Surface staining of human peripheral blood cells with anti-human CD4 (MEM-241) PE.) PE.

