OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850
UNITED STATES
Phone: +1-888-267-4436
Fax: +1-301-340-8606
techsupport@origene.com

OriGene Technologies GmbH
Schillerstr. 5
32052 Herford
GERMANY
Phone: +49-5221-34606-0
Fax: +49-5221-34606-11
info-de@origene.com

AM26029LE-N Monoclonal Antibody to CD4 - Low Endotoxin

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

Quantity: 0.1 mg

Concentration: 1.0 mg/ml

Background: CD4 is a single chain transmembrane glycoprotein of immunoglobulin supergene family. In its extracellular region there are 4 immunoglobulin-like domains (1 Ig-like V-type and 3 Ig-like C2-type). The intracellular region of CD4 associates with p56Lck, a Src-like protein tyrosine kinase. It was described that CD4 segregates into specific detergent-resistant T-cell membrane microdomains. CD4 binds to MHC class II molecules (by CDR2-like region in CD4 domain 1), HIV envelope protein gp120 (by CDR2-like region in CD4 domain 1) and other ligands, such as IL-16 (by to CD4 domain 3) or L-selectin. CD4 is a co-receptor involved in immune response (co-receptor activity in binding to MHC class II molecules) and HIV infection. 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: P06332

NCBI: NP_038516.1

GeneID: 12504

Host / Isotype: Rat / IgG2b

Clone: GK1.5

Immunogen: Mouse CTL clone V4 cells

Format:
State: Liquid Ig fraction
Purification: Protein-G affinity chromatography
Buffer System: Azide free phosphate buffered saline (PBS), approx. pH 7.4; 0.2 µm filter sterilized
Endotoxin Level: Less than 0.01 EU/µg of the protein, as determined by the LAL test

Applications:
Flow cytometry: 1 µg/million cells.
Immunoprecipitation: 1-2 µg/100-500 µg of protein in 1 ml lysate.
Immunohistochemistry (frozen sections).
Immunocytochemistry: 1-4 µg/ml.
Functional application: Isolation and depletion of CD4+ T cells, blocking of ligand binding to CD4.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: This antibody reacts with an extracellular epitope of mouse CD4 transmembrane glycoprotein (55 kDa).

Species Reactivity: **Tested:** Mouse

For research and in vitro use only. Not for diagnostic or therapeutic work.
Material Safety Datasheets are available at www.acris-antibodies.com or on request.

Storage:

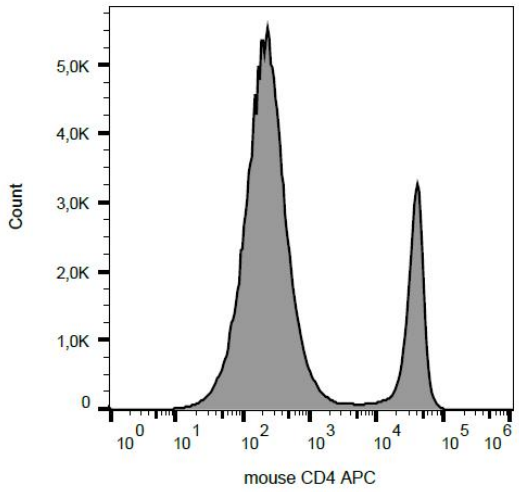
Store undiluted at 2-8°C.
DO NOT FREEZE!
Shelf life: one year from despatch.

General Readings:

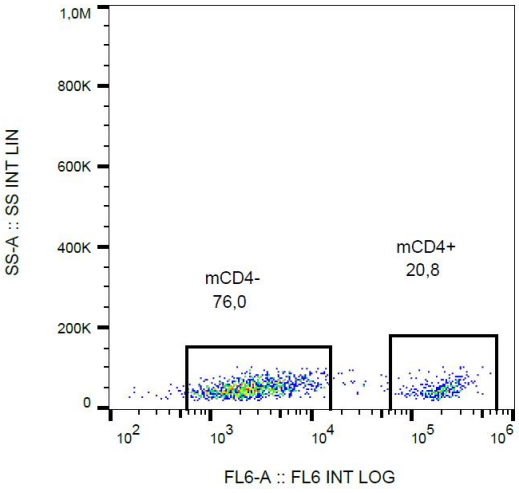
1. Dialynas DP, Wilde DB, Marrack P, Pierres A, Wall KA, Havran W, et al. Characterization of the murine antigenic determinant, designated L3T4a, recognized by monoclonal antibody GK1.5: expression of L3T4a by functional T cell clones appears to correlate primarily with class II MHC antigen-reactivity. Immunol Rev. 1983;74:29-56. PubMed PMID: 6195085.
2. Dialynas DP, Quan ZS, Wall KA, Pierres A, Quintáns J, Loken MR, et al. Characterization of the murine T cell surface molecule, designated L3T4, identified by monoclonal antibody GK1.5: similarity of L3T4 to the human Leu-3/T4 molecule. J Immunol. 1983 Nov;131(5):2445-51. PubMed PMID: 6415170.
3. Wilde DB, Marrack P, Kappler J, Dialynas DP, Fitch FW. Evidence implicating L3T4 in class II MHC antigen reactivity; monoclonal antibody GK1.5 (anti-L3T4a) blocks class II MHC antigen-specific proliferation, release of lymphokines, and binding by cloned murine helper T lymphocyte lines. J Immunol. 1983 Nov;131(5):2178-83. PubMed PMID: 6195255.
4. Wu L, Antica M, Johnson GR, Scollay R, Shortman K. Developmental potential of the earliest precursor cells from the adult mouse thymus. J Exp Med. 1991 Dec 1;174(6):1617-27. PubMed PMID: 1683894.
5. Godfrey DI, Kennedy J, Gately MK, Hakimi J, Hubbard BR, Zlotnik A. IL-12 influences intrathymic T cell development. J Immunol. 1994 Mar 15;152(6):2729-35. PubMed PMID: 7511624.
6. Gavett SH, Chen X, Finkelman F, Wills-Karp M. Depletion of murine CD4+ T lymphocytes prevents antigen-induced airway hyperreactivity and pulmonary eosinophilia. Am J Respir Cell Mol Biol. 1994 Jun;10(6):587-93. PubMed PMID: 8003337.
7. Zheng B, Han S, Kelsoe G. T helper cells in murine germinal centers are antigen-specific emigrants that downregulate Thy-1. J Exp Med. 1996 Sep 1;184(3):1083-91. PubMed PMID: 9064325.
8. Felix NJ, Donermeyer DL, Horvath S, Walters JJ, Gross ML, Suri A, et al. Alloreactive T cells respond specifically to multiple distinct peptide-MHC complexes. Nat Immunol. 2007 Apr;8(4):388-97. Epub 2007 Feb 25. PubMed PMID: 17322886.
9. Hu M, Watson D, Zhang GY, Graf N, Wang YM, Sartor M, et al. Long-term cardiac allograft survival across an MHC mismatch after "pruning" of alloreactive CD4 T cells. J Immunol. 2008 May 15;180(10):6593-603. PubMed PMID: 18453578.
10. Yi H, Zhen Y, Zeng C, Zhang L, Zhao Y. Depleting anti-CD4 monoclonal antibody (GK1.5) treatment: influence on regulatory CD4+CD25+Foxp3+ T cells in mice. Transplantation. 2008 Apr 27;85(8):1167-74. doi: 10.1097/TP.0b013e31816a1242. PubMed PMID: 18431238.

Pictures:

Surface staining of CD4 in murine splenocytes with anti-CD4 (GK1.5) APC.



Surface staining of CD4 in murine splenocytes with anti-CD4 (GK1.5) azide free, DAR/APC.



Surface staining of CD4 in murine splenocytes with anti-CD4 (GK1.5) PE.