

Technical Data Sheet

V500 Rat anti-Mouse CD4

Product Information

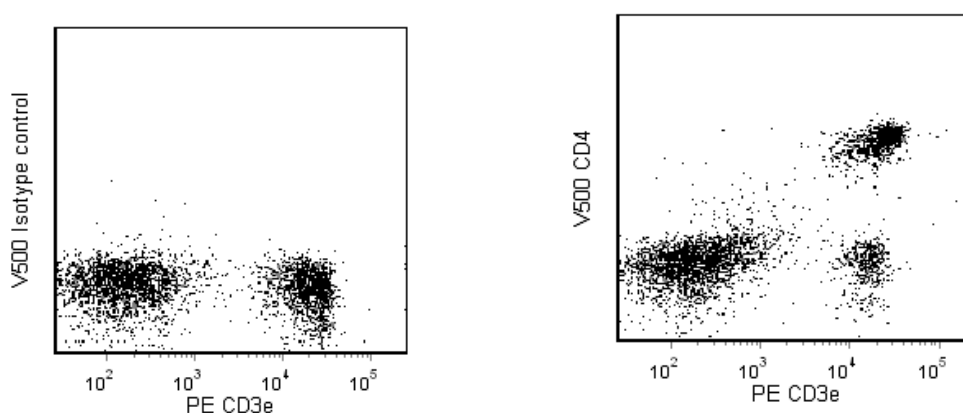
Material Number:	560783
Alternate Name:	CD4; CD4 antigen; L3T4; Ly-4; T-cell surface antigen T4/Leu-3
Size:	25 µg
Concentration:	0.2 mg/ml
Clone:	RM4-5
Immunogen:	Mouse Thymocytes (BALB/c)
Isotype:	Rat (DA) IgG2a, κ
Reactivity:	QC testing: Mouse
Storage Buffer:	Aqueous buffered solution containing protein stabilizer, glycerol and ≤0.09% sodium azide.

Description

The RM4-5 monoclonal antibody specifically binds to the CD4 (L3T4) differentiation antigen expressed on most thymocytes, subpopulations of mature T lymphocytes (i.e., MHC class II-restricted T cells, including most T helper cells and immunosuppressive regulatory T cells), and a subset of NK-T cells. CD4 has also been reported to be detected on pluripotent hematopoietic stem cells, bone marrow myeloid and B-lymphocyte precursors, intrathymic lymphoid precursors, and a subset of splenic dendritic cells. CD4 has been reported to be expressed on the plasma membrane of mouse egg cells and is involved in adhesion of the egg to MHC class II-bearing sperm. CD4 is an antigen coreceptor on the T-cell surface which interacts with MHC class II molecules on antigen-presenting cells. It participates in T-cell activation through its association with the T-cell receptor complex and protein tyrosine kinase lck. Purified RM4-5 mAb has been reported to block the binding of FITC-conjugated anti-mouse CD4 clones GK1.5 and H129.19, but not the RM4-4 clone.

The antibody is conjugated to BD Horizon™ V500, which has been developed for use in multicolor flow cytometry experiments and is available exclusively from BD Biosciences. It is excited by the Violet laser with an Ex max of 415 nm and Em Max at 500 nm. BD Horizon V500 conjugates emit at a similar wavelength to Amcyan yet exhibit reduced spillover into the FITC channel. For more information on BD Horizon V500, visit bdbiosciences.com/colors.

When compensating dyes in this spectral range (such as Horizon™ V500 and AmCyan), the most accurate compensation can be obtained using single stained cellular controls. Due to spectral differences between cells and beads in this channel, using BD CompBeads can result in spillover errors for V500 and AmCyan reagents. Therefore, the use of BD CompBeads or BD CompBeads Plus to determine spillover values for these reagents is not recommended. Different V500 reagents (e.g. CD4 vs. CD45) can have slightly different fluorescence spillover therefore, it may also be necessary to use clone specific compensation controls when using these reagents.



Analysis of CD4 on mouse splenocytes. Splenocytes from BALB/c mice were stained simultaneously with BD Horizon™ V500 Rat anti-Mouse CD4 (right panel) or BD Horizon™ V500 Rat IgG2a, κ Isotype Control (clone R35-95, Cat. No. 560786, left panel), and PE Hamster Anti-Mouse CD3e (clone 145-2C11, Cat. No. 553063/553064). The contour plots were derived from gated events based on light scattering characteristics of splenocytes. Flow cytometry was performed on a BD FACSCanto™ II flow cytometry system.

BD Biosciences

bdbiosciences.com

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	888.268.5430	32.53.720.550	0120.8555.90	65.6861.0633	0800.771.7157

For country-specific contact information, visit bdbiosciences.com/how_to_order/

Conditions: The information disclosed herein is not to be construed as a recommendation to use the above product in violation of any patents. BD Biosciences will not be held responsible for patent infringement or other violations that may occur with the use of our products. Purchase does not include or carry any right to resell or transfer this product either as a stand-alone product or as a component of another product. Any use of this product other than the permitted use without the express written authorization of Becton Dickinson and Company is strictly prohibited.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Not for resale.

BD, BD Logo and all other trademarks are the property of Becton, Dickinson and Company. ©2011 BD



Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with BD Horizon™ V500 under optimum conditions, and unreacted BD Horizon™ V500 was removed.

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

Application Notes

Application

Flow cytometry	Routinely Tested
----------------	------------------

Suggested Companion Products

Catalog Number	Name	Size	Clone
560786	V500 Rat IgG2a, κ Isotype Control	0.1 mg	R35-95
553063	PE Hamster Anti-Mouse CD3e	0.1 mg	145-2C11

Product Notices

1. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
2. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. BD Horizon™ V500 has a maximum absorption of 415 nm and maximum emission of 500 nm. Before staining with this reagent, please confirm that your flow cytometer is capable of exciting the fluorochrome and discriminating the resulting fluorescence.
5. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.

References

Allman D, Li J, Hardy RR. Commitment to the B lymphoid lineage occurs before DH-JH recombination. *J Exp Med*. 1999; 189(4):735-740. (Biology)

Bendelac A. Mouse NK1+ T cells. *Curr Opin Immunol*. 1995; 7(3):367-374. (Biology)

Bierer BE, Sleckman BP, Ratnoffsky SE, Burakoff SJ. The biologic roles of CD2, CD4, and CD8 in T-cell activation. *Annu Rev Immunol*. 1989; 7:579-599. (Biology)

Bosselut R, Zhang W, Ashe JM, Kopacz JL, Samelson LE, Singer A. Association of the adaptor molecule LAT with CD4 and CD8 coreceptors identifies a new coreceptor function in T cell receptor signal transduction. *J Exp Med*. 1999; 190(10):1517-1526. (Biology)

Godfrey DI, Kennedy J, Mombaerts P, Tonegawa S, Zlotnik A. Onset of TCR-β gene rearrangement and role of TCR-β expression during CD3-CD4-CD8-thymocyte differentiation. *J Immunol*. 1994; 152(10):4783-4792. (Biology)

Guo MW, Watanabe T, Mori E, Mori T. Molecular structure and function of CD4 on murine egg plasma membrane. *Zygote*. 1995; 3(1):65-73. (Biology)

Janeway CA Jr. The T cell receptor as a multicomponent signalling machine: CD4/CD8 coreceptors and CD45 in T cell activation. *Annu Rev Immunol*. 1992; 10:645-674. (Biology)

Martin P, del Hoyo GM, Anjuere F, et al. Concept of lymphoid versus myeloid dendritic cell lineages revisited: both CD8α(-) and CD8α(+) dendritic cells are generated from CD4(low) lymphoid-committed precursors. *Blood*. 2000; 96(7):2511-2519. (Biology)

Nakamura T. Personal Communication. . (Immunogen)

Shevach EM. Regulatory T cells in autoimmunity. *Annu Rev Immunol*. 2000; 18:423-449. (Biology)

Wineman JP, Gilmore GL, Gritzmacher C, Torbett BE, Muller-Sieburg CE. CD4 is expressed on murine pluripotent hematopoietic stem cells. *Blood*. 1992; 180(7):1717-1724. (Biology)

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; 174(6):1617-1627. (Biology)

Wu L, Scollay R, Egerton M, Pearse M, Spangrude GJ, Shortman K. CD4 expressed on earliest T-lineage precursor cells in the adult murine thymus. *Nature*. 1991; 349(6304):71-74. (Biology)