

Technical Data Sheet

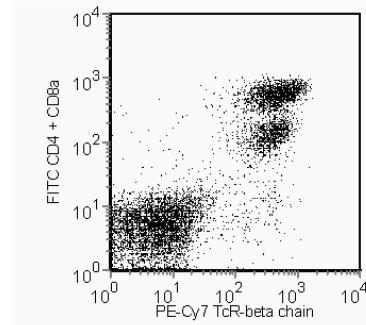
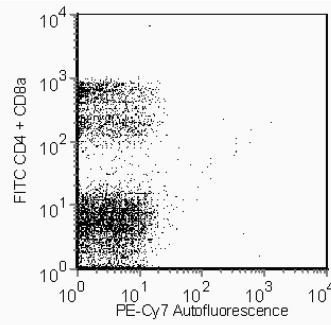
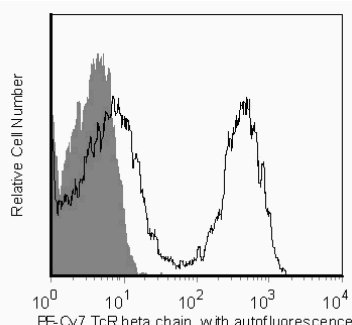
PE-Cy™7 Hamster Anti-Mouse TCR β Chain

Product Information

Material Number:	560729
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	H57-597
Immunogen:	TCR affinity-purified from mouse T-cell hybridoma DO-11.10
Isotype:	Armenian Hamster IgG2, λ1
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The H57-597 antibody reacts with a common epitope of the β chain of the T-cell Receptor (TCR) complex on αβ TCR-expressing thymocytes and peripheral T lymphocytes and NK1.1+ thymocytes and NK-T cells of all mouse strains tested. It does not react with γδ TCR-bearing T cells. In the fetal and adult thymus, the TCR β-chain may form homodimers or pair with the pre-TCR α-chain on the surface of immature thymocytes before expression of the TCR α-chain. Plate-bound or soluble H57-597 antibody activates αβ TCR-bearing T cells, and plate-bound mAb can induce apoptotic death.



Flow cytometric analysis of the T-cell receptor (TCR) β-chain on mouse splenocytes. **Left Panel:** Splenocytes from BALB/c mice were either unstained (shaded) or stained with the PE-Cy™7 Hamster Anti-Mouse TcR β-chain antibody (unshaded). **Middle and Right Panels:** Splenocytes from BALB/c mice were stained with both a FITC Rat Anti-Mouse CD4 antibody (Cat.No. 553047) and a FITC Rat Anti-Mouse CD8a antibody (Cat.No. 553031) in conjunction with either no other staining (autofluorescence) (middle panel) or with the PE-Cy™7 Hamster Anti-Mouse TcR β-chain antibody (right panel). Histograms and dot plots were derived from gated events based on light scattering characteristics for splenocytes. Flow cytometry was performed on a BD™ LSR II flow cytometry system.

Preparation and Storage

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

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

The antibody was conjugated with PE-Cy7 under optimum conditions, and unconjugated antibody and free PE-Cy7 were removed.

Application Notes

Application

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

Suggested Companion Products

Catalog Number	Name	Size	Clone
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.1 mg	2.4G2
553047	FITC Rat Anti-Mouse CD4	0.5 mg	RM4-5
553031	FITC Rat Anti-Mouse CD8a	0.5 mg	53-6.7

Product Notices

- Since applications vary, each investigator should titrate the reagent to obtain optimal results.
- An isotype control should be used at the same concentration as the antibody of interest.
- Warning: Some APC-Cy7 and PE-Cy7 conjugates show changes in their emission spectrum with prolonged exposure to formaldehyde. If you are unable to analyze fixed samples within four hours, we recommend that you use BD™ Stabilizing Fixative (Cat. No. 338036).

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



4. Please observe the following precautions: Absorption of visible light can significantly alter the energy transfer occurring in any tandem fluorochrome conjugate; therefore, we recommend that special precautions be taken (such as wrapping vials, tubes, or racks in aluminum foil) to prevent exposure of conjugated reagents, including cells stained with those reagents, to room illumination.
5. Cy is a trademark of Amersham Biosciences Limited. This conjugated product is sold under license to the following patents: US Patent Nos. 5,486,616; 5,569,587; 5,569,766; 5,627,027.
6. This product is subject to proprietary rights of Amersham Biosciences Corp. and Carnegie Mellon University and made and sold under license from Amersham Biosciences Corp. This product is licensed for sale only for research. It is not licensed for any other use. If you require a commercial license to use this product and do not have one return this material, unopened to BD Biosciences, 10975 Torreyana Rd, San Diego, CA 92121 and any money paid for the material will be refunded.
7. PE-Cy7 is a tandem fluorochrome composed of R-phycoerythrin (PE), which is excited by 488-nm light and serves as an energy donor, coupled to the cyanine dye Cy7, which acts as an energy acceptor and fluoresces maximally at 780 nm. PE-Cy7 tandem fluorochrome emission is collected in a detector for fluorescence wavelengths of 750 nm and higher. Although every effort is made to minimize the lot-to-lot variation in the efficiency of the fluorochrome energy transfer, differences in the residual emission from PE may be observed. Therefore, we recommend that individual compensation controls be performed for every PE-Cy7 conjugate. PE-Cy7 is optimized for use with a single argon ion laser emitting 488-nm light, and there is no significant overlap between PE-Cy7 and FITC emission spectra. When using dual-laser cytometers, which may directly excite both PE and Cy7, we recommend the use of cross-beam compensation during data acquisition or software compensation during data analysis.
8. 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.
9. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.
10. Please refer to www.bdbiosciences.com/pharming/protocols for technical protocols.

References

- Atsuta N, Nishimura H, Nakamura N, Emoto M, Iwatsuki T, Yoshikai Y. Diversity of V gamma gene segments rearranged to the J gamma 4 gene in mice. *J Immunol.* 1995; 154(2):676-684. (Biology)
- Bendelac A, Killeen N, Littman DR, Schwartz RH. A subset of CD4+ thymocytes selected by MHC class I molecules. *Science.* 1994; 263(5154):1774-1778. (Biology)
- Bonneville M, Itoharu S, Krecko EG, et al. Transgenic mice demonstrate that epithelial homing of gamma/delta T cells is determined by cell lineages independent of T cell receptor specificity. *J Exp Med.* 1990; 171(4):1015-1026. (Biology)
- Castro JE, Listman JA, Jacobson BA, et al. Fas modulation of apoptosis during negative selection of thymocytes. *Immunity.* 1996; 5(6):617-627. (Biology)
- Davenport C, Kumar V, Bennett M. Rapid rejection of H2k and H2k/b bone marrow cell grafts by CD8+ T cells and NK cells in irradiated mice. *J Immunol.* 1995; 155(8):3742-3749. (Biology)
- Gascoigne NR. Transport and secretion of truncated T cell receptor beta-chain occurs in the absence of association with CD3. *J Biol Chem.* 1990; 265(16):9296-9301. (Biology)
- Groettrup M, von Boehmer H. T cell receptor beta chain dimers on immature thymocytes from normal mice. *Eur J Immunol.* 1993; 23(6):1393-1396. (Biology)
- Kubo RT, Born W, Kappler JW, Marrack P, Pigeon M. Characterization of a monoclonal antibody which detects all murine alpha beta T cell receptors. *J Immunol.* 1989; 142(8):2736-2742. (Immunogen: Flow cytometry)
- Lefrancois L. Phenotypic complexity of intraepithelial lymphocytes of the small intestine. *J Immunol.* 1991; 147(6):1746-1751. (Biology)
- Ohno H, Ono S, Hirayama N, Shimada S, Saito T. Preferential usage of the Fc receptor gamma chain in the T cell antigen receptor complex by gamma/delta T cells localized in epithelia. *J Exp Med.* 1994; 179(1):365-369. (Biology)
- Saint-Ruf C, Panigada M, Azogui O, Debey P, von Boehmer H, Grassi F. Different initiation of pre-TCR and gammadeltaTCR signalling. *Nature.* 2000; 406(6795):524-527. (Biology)
- Saint-Ruf C, Ungewiss K, Groettrup M, Bruno L, Fehling HJ, von Boehmer H. Analysis and expression of a cloned pre-T cell receptor gene. *Science.* 1994; 266(5188):1208-1212. (Biology)
- Skeen MJ, Ziegler HK. Induction of murine peritoneal gamma/delta T cells and their role in resistance to bacterial infection. *J Exp Med.* 1993; 178(3):971-984. (Biology)
- Takizawa F, Kinet JP, Adamczewski M. Binding of phycoerythrin and its conjugates to murine low affinity receptors for immunoglobulin G. *J Immunol Methods.* 1993; 162(2):269-272. (Biology)
- van der Heyde HC, Elloso MM, Chang WL, Kaplan M, Manning DD, Weidanz WP. Gamma delta T cells function in cell-mediated immunity to acute blood-stage Plasmodium chabaudi adami malaria. *J Immunol.* 1995; 154(8):3985-3990. (Biology)
- Vicari AP, Zlotnik A. Mouse NK1.1+ T cells: a new family of T cells. *Immunol Today.* 1996; 17(2):71-76. (Biology)
- Wagner DH Jr, Hagman J, Linsley PS, Hodsdon W, Freed JH, Newell MK. Rescue of thymocytes from glucocorticoid-induced cell death mediated by CD28/CTLA-4 costimulatory interactions with B7-1/B7-2. *J Exp Med.* 1996; 184(5):1631-1638. (Biology)