

Technical Data Sheet

PE-CF594 Rat Anti-Mouse CD197 (CCR7)

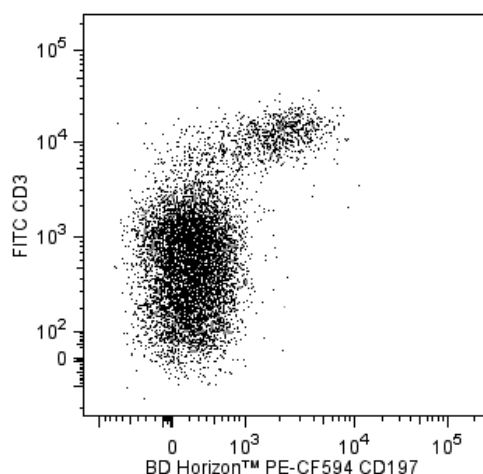
Product Information

Material Number:	563596
Alternate Name:	CD197; C-C chemokine receptor type 7; EBI1; Ebi1h; CMKBR7
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	4B12
Immunogen:	Mouse CCR7 Transfected Cell Line
Isotype:	Rat (LOU) IgG2a
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The monoclonal antibody 4B12/CCR7 reacts with the mouse C-C chemokine receptor type 7 (CCR7). CCR7 is also known as CD197 (previously known as EBI1, Ebi1h and CMKBR7) and plays a central role in mediating homeostatic B and T lymphocyte trafficking to and within secondary lymphoid tissues. CD197 is a seven-transmembrane, G-protein-coupled, 43 kDa glycoprotein receptor that is specific for the CC chemokines, MIP3B/Exodus-3/ELC/CKb11/Scya19/CCL19 and 6Ckine/Exodus-2/SLC/TCA4/CKb9/Scya21/CCL21. The mouse *Ccr7* gene is located on chromosome 11. CD197 (CCR7) is differentially expressed by subsets of thymocytes. Positive CD197 expression appears to be involved in the cortex-to-medulla migration of positively-selected thymocytes wherein they complete functional maturation including the establishment of central tolerance. It is most highly expressed by some mature medullary single-positive thymocytes. CD197 is also expressed by subsets of mature peripheral CD4+ and CD8+ T lymphocytes including naïve and regulatory T cells and central memory T cells. In addition, it is differentially expressed by subsets of B lymphocytes, dendritic cells, and Langerhans cells. CD197 serves as a homing receptor that helps guide these various cell types to and within lymphoid tissues. In this way, CCR7 supports protective immunity while safeguarding self tolerance. Reportedly, the 4B12/CCR7 antibody is not agonistic, is not blocked by CCL21 nor by physiologic levels of CCL19, nor does the antibody block the binding of CCL21 to CCR7. The immunogen used to generate the 4B12 hybridoma was a mouse CCR7-transfected rat cell line.

This antibody is conjugated to BD Horizon™ PE-CF594, which has been developed exclusively by BD Biosciences as a better alternative to PE-Texas Red®. PE-CF594 excites and emits at similar wavelengths to PE-Texas Red® yet exhibits improved brightness and spectral characteristics. Due to PE having maximal absorption peaks at 496 nm and 564 nm, PE-CF594 can be excited by the blue (488-nm), green (532-nm) and yellow-green (561-nm) lasers and can be detected with the same filter set as PE-Texas Red® (eg 610/20-nm filter).



Multicolor flow cytometric analysis of CD197 expression on mouse thymocytes. Mouse thymocytes were preincubated with Purified Rat Anti-Mouse CD16/CD32 antibody (Mouse BD Fc Block™) (Cat. No. 553141/553142). The cells were then stained with FITC Hamster Anti-Mouse CD3 antibody (Cat. No. 553061/553062/561827) and BD Horizon™ PE-CF594 Rat Anti-Mouse CD197 antibody (Cat. No. 563596). The two-color flow cytometric dot plot shows the correlated expression patterns of CD3 versus CD197 for gated events with the forward and side light-scatter characteristics of viable thymocytes. Flow cytometry was performed using a BD™ LSR II Flow Cytometer 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 BD Horizon™ PE-CF594 under optimum conditions, and unconjugated antibody and free PE-CF594 were removed.

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Application Notes

Application

Flow cytometry

Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 ml	(none)
553061	FITC Hamster Anti-Mouse CD3e	0.1 mg	145-2C11
553062	FITC Hamster Anti-Mouse CD3e	0.5 mg	145-2C11
561827	FITC Hamster Anti-Mouse CD3e	25 µg	145-2C11
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.1 mg	2.4G2
553142	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.5 mg	2.4G2

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. An isotype control should be used at the same concentration as the antibody of interest.
4. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
5. 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.
6. 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.
7. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
8. Texas Red is a registered trademark of Molecular Probes, Inc., Eugene, OR.
9. CF™ is a trademark of Biotium, Inc.
10. When excited by the yellow-green (561-nm) laser, the fluorescence may be brighter than when excited by the blue (488-nm) laser.
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12. Because of the broad absorption spectrum of the tandem fluorochrome, extra care must be taken when using multi-laser cytometers, which may directly excite both PE and CF™594.

References

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Forster R, Davalos-Misslitz AC, Rot A. CCR7 and its ligands: balancing immunity and tolerance. *Nat Rev Immunol.* 2008; 8(5):362-371. (Biology)

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Ritter U, Wiede F, Mielenz D, Kiafard Z, Zwirner J, Korner H. Analysis of the CCR7 expression on murine bone marrow-derived and spleen dendritic cells.. *J Leukoc Biol.* 2004; 76(2):472-476. (Immunogen: Flow cytometry, Immunofluorescence, Immunoprecipitation, Neutralization)

Schweickart VL, Raport CJ, Godiska R, et al. Cloning of human and mouse EB1, a lymphoid-specific G-protein-coupled receptor encoded on human chromosome 17q12-q21.2. *Genomics.* 1994; 23(3):643-650. (Biology)

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