Technical Data Sheet

PE-CF594 Mouse Anti-Human CD244

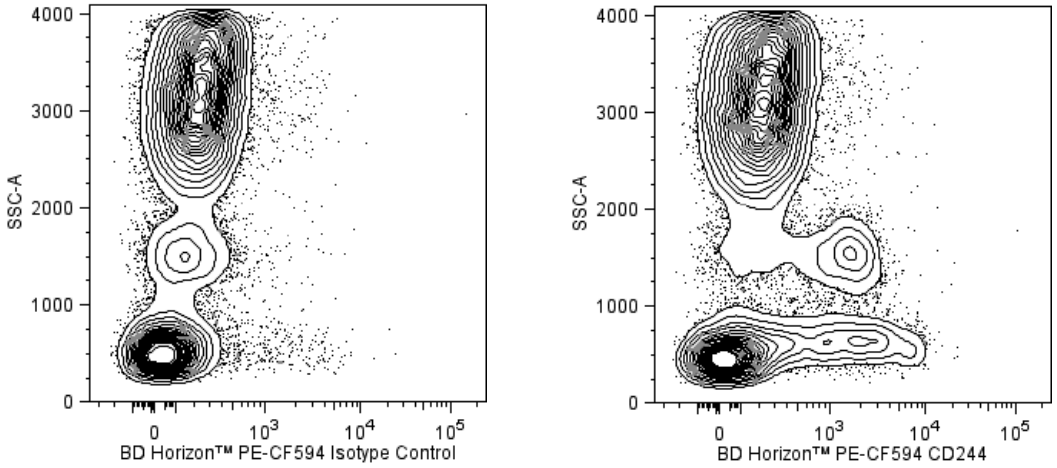
Product Information

Material Number:	**564881**
Alternate Name:	2B4; SLAMF4; NAIL; NK cell activation inducing ligand ; NKR2B4; Nmrk
Size:	100 Tests
Vol. per Test:	5 µl
Clone:	2-69
Immunogen:	Human NK Cells
Isotype:	Mouse (BALB/c) IgG2a, κ
Reactivity:	QC Testing: Human
Workshop:	VII
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The 2-69 monoclonal antibody specifically binds to 2B4 which is also known as CD244. CD244 is an approximately 63-70 kDa type I transmembrane glycoprotein. It is a SLAM submember (SLAMF4) and CD2 family member of the immunoglobulin superfamily. CD244 was originally identified in the mouse as a non-MHC-restricted cytotoxicity mediator present on NK cells and CD8+ T cells. In humans, CD244 is expressed on NK cells, γδ T cells, subsets of effector and memory CD8+ T cells, monocytes, eosinophils and basophils. This expression pattern suggests a broad role for CD244 in the regulation of leukocyte activation. CD244 binds CD48 with high affinity. CD244 may serve both stimulatory and inhibitory functions depending on a number of factors. These include the intensity and duration of CD244 interactions with its ligands as well as the presence of other signals generated through different receptor-ligand interactions. 2B4 was clustered as CD244 in the VIIth HLDA workshop.

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).



Multiparameter flow cytometric analysis of CD244 expression on human peripheral blood leucocytes. *Human whole blood was stained with either BD Horizon™ PE-CF594 Isotype Control (Cat. No. 562306; Left Plot) or BD Horizon PE-CF594 Mouse Anti-Human CD244 antibody (Cat. No. 564881; Right Plot). Erythrocytes were lysed with BD FACS Lysing Solution (Cat. No. 349202). Two-parameter flow cytometric contour plots showing the correlated expression of CD244 (or Ig Isotype control staining) versus side light-scatter (SSC-A) signals were derived from gated events with the forward and side light-scatter characteristics of intact leucocyte populations. Flow cytometric analysis 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
562306	PE-CF594 Mouse IgG2a, κ Isotype Control	0.1 mg	G155-178
554656	Stain Buffer (FBS)	500 mL	(none)
554657	Stain Buffer (BSA)	500 mL	(none)
349202	BD FACS™ Lysing Solution	100 mL	(none)
555899	Lysing Buffer	100 mL	(none)

Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Texas Red is a registered trademark of Molecular Probes, Inc., Eugene, OR.
4. When excited by the yellow-green (561-nm) laser, the fluorescence may be brighter than when excited by the blue (488-nm) laser.
5. 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.
6. CF™ is a trademark of Biotium, Inc.
7. This product is provided under an Agreement between BIOTIUM and BD Biosciences. The manufacture, use, sale, offer for sale, or import of this product is subject to one or more patents or pending applications owned or licensed by Biotium, Inc. This product, and only in the amount purchased by buyer, may be used solely for buyer's own internal research, in a manner consistent with the accompanying product literature. No other right to use, sell or otherwise transfer (a) this product, or (b) its components is hereby granted expressly, by implication or by estoppel. This product is for research use only. Diagnostic uses require a separate license from Biotium, Inc. For information on purchasing a license to this product including for purposes other than research, contact Biotium, Inc., 3159 Corporate Place, Hayward, CA 94545, Tel: (510) 265-1027. Fax: (510) 265-1352. Email: btinfo@biotium.com.
8. 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.
9. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
10. 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.
11. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
12. An isotype control should be used at the same concentration as the antibody of interest.

References

Boles KS, Nakajima H, Colonna M, et al. Molecular characterization of a novel human natural killer cell receptor homologous to mouse 2B4. *Tissue Antigens.* 1999; 54(1):27-34. (Biology)

Brown MH, Boles K, van der Merwe PA, Kumar V, Mathew PA, Barclay AN. 2B4, the natural killer and T cell immunoglobulin superfamily surface protein, is a ligand for CD48. *J Exp Med.* 1998; 188(11):2083-2090. (Biology)

Colonna M, Nakajima H, Cella M. Inhibitory and activating receptors involved in immune surveillance by human NK and myeloid cells. *J Leukoc Biol.* 1999; 66(5):718-722. (Biology)

Latchman Y, McKay PF, Reiser H. Identification of the 2B4 molecule as a counter-receptor for CD48. *J Immunol.* 1998; 161(11):5809-5812. (Biology)

Nakajima H, Cella M, Bouchon A, et al. Patients with X-linked lymphoproliferative disease have a defect in 2B4 receptor-mediated NK cell cytotoxicity. *Eur J Immunol.* 2000; 30(11):3309-3318. (Immunogen: Flow cytometry, Functional assay, Immunoprecipitation, Stimulation, Western blot)

Nakajima H, Cella M, Langen H, Friedlein A, Colonna M. Activating interactions in human NK cell recognition: the role of 2B4-CD48. *Eur J Immunol.* 1999; 29(5):1676-1683. (Biology)

Tassi I, Colonna M. The cytotoxicity receptor CRACC (CS-1) recruits EAT-2 and activates the PI3K and phospholipase Cgamma signaling pathways in human NK cells. *J Immunol.* 2005; 175(12):7996-8002. (Clone-specific: Immunoprecipitation)

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