Technical Data Sheet

PE-CF594 Mouse Anti-Human B7-H4

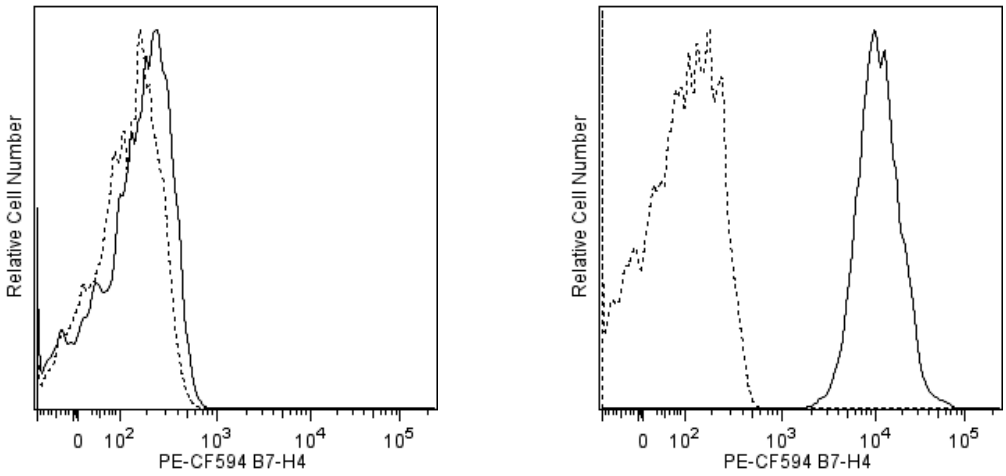
Product Information

Material Number:	**562785**
Alternate Name:	VTCN1; VCTN1; B7 family member, H4; B7H4; B7h.5; B7S1; B7X
Size:	50 tests
Vol. per Test:	5 µl
Clone:	MIH43
Immunogen:	Recombinant Human B7-H4 protein
Isotype:	Mouse IgG1, κ
Reactivity:	QC Testing: Human
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The MIH43 monoclonal antibody specifically binds to human B7-H4 (B7 family member, H4) that is encoded by the VTCN1 (V-set domain containing T cell activation inhibitor 1) gene. B7-H4 is a type I membrane glycoprotein with a calculated molecular weight of 30.89 kDa. It is also known as VCTN1, B7h.5, B7S1 (B7 superfamily member 1) or B7X. B7-H4 is a newly discovered member of the B7 family of costimulatory proteins. B7-H4 is not constitutively expressed on peripheral tissues. Its expression can be induced on macrophages, dendritic cells, B cells and T cells. By binding to its putative receptor, the function of B7-H4 was initially reported to be a negative regulator of T cell activation, proliferation and differentiation related to cytokine production and cytotoxic effector cell functions. B7-H4 is reportedly overexpressed in a variety tumors. B7-H4 expression by tumor macrophages appears to play a role in suppression antigen-specific T cell mediated immunity. Recent studies indicate that B7-H4 can also be a positive regulator of T cell responses. B7-H4 can be involved innate immunity as well, eg, by inhibiting neutrophil expansion.

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).



Flow cytometric analysis of human B7-H4 protein expression on B7-H4-transfected cells. *Non-transfected (Left Panel) and human B7-H4-transfected (Right Panel) mouse P815 mastocytoma cells were stained with either BD Horizon™ PE-CF594 Mouse IgG1, κ Isotype Control (Cat. No. 562292; dashed line histogram) or BD Horizon™ PE-CF594 Mouse anti-Human B7-H4 (Cat. No. 562785; solid line histogram). Flow cytometric fluorescence histograms showing the expression of B7-H4 (or Ig Isotype staining) on non-transfected or transfected cells were derived from gated events with the forward and side light-scatter characteristics of viable cells. 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
562292	PE-CF594 Mouse IgG1, κ Isotype Control	0.1 mg	X40
554656	Stain Buffer (FBS)	500 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. An isotype control should be used at the same concentration as the antibody of interest.
3. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
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

Choi IH, Zhu G, Sica GL, et al. Genomic organization and expression analysis of B7-H4, an immune inhibitory molecule of the B7 family. *J Immunol.* 2003; 171(9):4650-4654. (Biology)

Kryczek I, Zou L, Rodriguez P, et al. B7-H4 expression identifies a novel suppressive macrophage population in human ovarian carcinoma. *J Exp Med.* 2006; 203(4):871-881. (Biology)

Sica GL, Choi IH, Zhu G, et al. B7-H4, a molecule of the B7 family, negatively regulates T cell immunity. *Immunity.* 2003; 18(6):849-861. (Biology)

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