

Technical Data Sheet

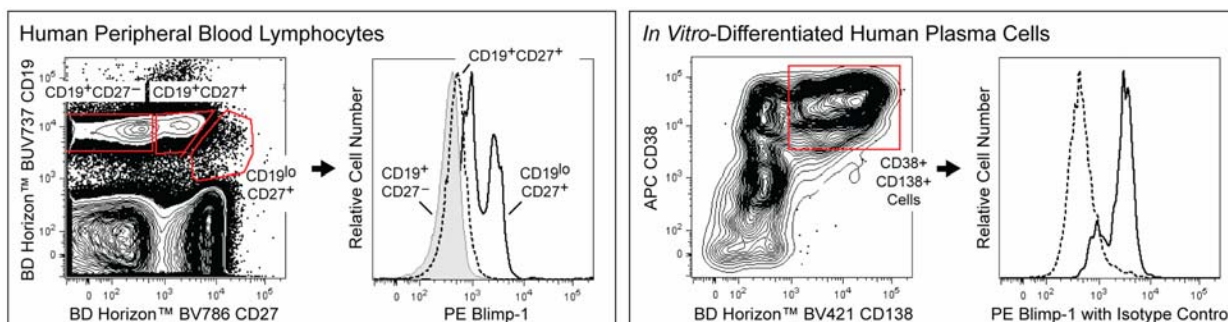
PE Rat Anti-Blimp-1

Product Information

Material Number:	564702
Alternate Name:	BLIMP-1; PRDM1; PR domain containing 1, with ZNF domain; PRDI-BF1
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	6D3
Immunogen:	Mouse Blimp-1 Recombinant Protein
Isotype:	Rat IgG2a, κ
Reactivity:	QC Testing: Human Tested in Development: Mouse
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The 6D3 monoclonal antibody specifically binds to mouse B lymphocyte-induced maturation protein 1 (Blimp-1) and crossreacts with human BLIMP-1. Blimp-1 is a 98 kDa zinc finger-containing protein that is encoded by the *Prdm1* gene. Blimp-1 was first discovered as a transcriptional repressor of the IFN-β promoter. Blimp-1 is critical for primordial germ cells specification in the early embryo and induction of terminal cell differentiation in multiple somatic cell types. It is largely known as a master regulator of antibody-secreting plasma cells due to its function in the repression of *PAX5*, *CIITA* and *cMYC* genes. Blimp-1 also controls T cell homeostasis and effector differentiation through different mechanisms, including repression of IL-17 producing cells. Blimp-1 also plays roles in the maturation and activity of dendritic cells and natural killer cells.



Flow Cytometric Analysis of Blimp-1 Expression

Left Panel - Human Peripheral Blood Lymphocytes. Human PBMCs were stained in BD Horizon™ Brilliant Stain Buffer (Cat. No. 563794) with BV786 Mouse Anti-Human CD27 (Cat. No. 563327) and BUV737 Mouse Anti-Human CD19 (Cat. No. 564303) antibodies and fixed and permeabilized with the BD Pharmingen™ Transcription Factor Buffer Set (Cat. No. 562574/562725). Fixed cells were stained with PE Rat Anti-Blimp-1 antibody (Cat. No. 564702).

The two-color contour plot shows the coexpression of CD19 vs CD27 for gated events with the forward and side light-scatter characteristics of live lymphocytes. Histograms showing Blimp-1 expression for B cell subsets were derived from gated events as indicated. Flow cytometric analysis was performed with a BD LSRFortessa™ X-20 Flow Cytometer System.

Right Panel - In Vitro-Differentiated Human Plasma Cells. CD19+CD27+ cells were sorted from PBMCs using the BD IMag™ Human B Lymphocyte Enrichment Set (Cat. No. 558007) followed by FACS sorting with a BD FACSAria™ III. Sorted cells were cultured (10 days) per Jourdan M, et al (2009) for differentiation of plasma cells. Cells were initially stained with BD Horizon™ Fixable Viability Stain 510 (FVS 510, Cat. No. 564406) for dead cell exclusion. Cells were surface stained with APC Anti-Human CD38 (Cat. No. 555462) and BV421 Anti-Human CD138 (Cat. No. 562935) antibodies. Cells were then fixed and permeabilized with the Transcription Factor Buffer Set and stained with either PE Rat IgG2a, κ Isotype Control (Cat. No. 554689) or PE Rat Anti-Blimp-1 antibody.

The two-color contour plot shows the coexpression of CD38 vs CD138 by live cells identified as FVS 510 negative. Plasma cells were identified as CD38+CD138+ cells and gated for the generation of the histograms showing Blimp-1 expression (solid line) versus Isotype Control staining (dashed line). Flow cytometric analysis was performed with a BD FACSCanto™ II Flow Cytometer System.

BD Biosciences

bdbiosciences.com

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	800.268.5430	32.2.400.98.95	0120.8555.90	65.6861.0633	55.11.5185.9995

For country contact information, visit bdbiosciences.com/contact

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.

Unless otherwise noted, BD, BD Logo and all other trademarks are property of Becton, Dickinson and Company. © 2014 BD



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 R-PE under optimum conditions, and unconjugated antibody and free PE were removed.

Application Notes

Application

Intracellular staining (flow cytometry)

Routinely Tested

Recommended Assay Procedure:

Clone 6D3 crossreacts with human and mouse Blimp-1. Customers could also consider fluorescent conjugates of clone 5E7 (Rat Anti-Mouse Blimp-1) for the staining and flow cytometric analysis of mouse cells that express Blimp-1.

Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 ml	(none)
554657	Stain Buffer (BSA)	500 ml	(none)
554689	PE Rat IgG2a, κ Isotype Control	0.1 mg	R35-95
562574	Transcription Factor Buffer Set	100 tests	(none)
562725	Transcription Factor Buffer Set	25 tests	(none)
564406	Fixable Viability Stain 510	100 μ g	(none)
558007	Human B Lymphocyte Enrichment Set - DM	5.0 ml	(none)
563327	BV786 Mouse Anti-Human CD27	100 tests	L128
564303	BUV737 Mouse Anti-Human CD19	100 tests	SJ25C1
555462	APC Mouse Anti-Human CD38	100 tests	HIT2
562935	BV421 Mouse Anti-Human CD138	50 tests	MI15
563794	Brilliant Stain Buffer	5.0 ml	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to wwwbdbiosciences.com/pharming/en/protocols for technical protocols.
3. An isotype control should be used at the same concentration as the antibody of interest.
4. 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.
5. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at wwwbdbiosciences.com/colors.

References

- Chan YH, Chiang MF, Tsai YC, Su ST, Chen MH, Hou MS, Lin KI. Absence of the transcriptional repressor Blimp-1 in hematopoietic lineages reveals its role in dendritic cell homeostatic development and function. *J Immunol.* 2009; 183(11):7039-7046. (Biology)
- Crotty S, Johnston RJ, Schoenberger SP. Effectors and memories: Bcl-6 and Blimp-1 in T and B lymphocyte differentiation. *Nat Immunol.* 2010; 11(2):114-120. (Biology)
- Huang S. Blimp-1 is the murine homolog of the human transcriptional repressor PRDI-BF1. *Cell.* 1994; 78(1):9. (Biology)
- Johnston RJ, Poholek AC, DiToro D, et al. Bcl6 and Blimp-1 are reciprocal and antagonistic regulators of T follicular helper cell differentiation. *Science.* 2010; 325(5943):1006-1010. (Biology)
- Jourdan M, Caraux A, De Vos J, Fiol G, Larroque M, Cognot C, Bret C, Duperray C, Hoes D, Klein B. An in vitro model of differentiation of memory B cells into plasmablasts and plasma cells including detailed phenotypic and molecular characterization. *Blood.* 2009; 114(25):5173-5181. (Methodology: Cell differentiation)
- Kallies A, Carotta S, Huntington ND, et al. A role for Blimp1 in the transcriptional network controlling natural killer cell maturation. *Blood.* 2011; 117(6):1869-1879. (Biology)
- Kallies A, Hasbold J, Tarlinton DM, et al. Plasma cell ontogeny defined by quantitative changes in blimp-1 expression. *J Exp Med.* 2004; 200(8):967-977. (Immunogen: Western blot)
- Kallies A, Hawkins ED, Belz GT, et al. Transcriptional repressor Blimp-1 is essential for T cell homeostasis and self-tolerance. *Nat Immunol.* 2006; 7(5):466-474. (Biology)
- Keller AD, Maniatis T. Identification and characterization of a novel repressor of beta-interferon gene expression. *Genes Dev.* 1991; 5(5):868-879. (Biology)
- Kim SJ, Gregersen PK, Diamond B. Regulation of dendritic cell activation by microRNA let-7c and BLIMP1. *J Clin Invest.* 2013; 123(2):823-833. (Biology)
- Martins GA, Cimmino L, Liao J, Magnusdottir E, Calame K. Blimp-1 directly represses Il2 and the Il2 activator Fos, attenuating T cell proliferation and survival. *J Exp Med.* 2008; 205(9):1959-1965. (Biology)
- Ohinata Y, Payer B, O'Carroll D, et al. Blimp1 is a critical determinant of the germ cell lineage in mice. *Nature.* 2005; 436(7048):207-213. (Biology)
- Salehi S, Bankoti R, Benevides L, Willen J, Couse M, Silva JS, Dhall D, Meffre E, Targan S, Martins GA. B lymphocyte-induced maturation protein-1 contributes to intestinal mucosa homeostasis by limiting the number of IL-17-producing CD4+ T cells. *J Immunol.* 2012; 189(12):5682-5693. (Biology)
- Shaffer AL, Lin KI, Kuo TC, Yu X, Hurt EM, Rosenwald A, Giltnane JM, Yang L, Zhao H, Calame K, Staudt LM. Blimp-1 orchestrates plasma cell differentiation by extinguishing the mature B cell gene expression program. *Immunity.* 2002; 17(1):51-62. (Biology)
- Smith MA, Maurin M, Cho HI, Becknell B, Freud AG, Yu J, Wei S, Djou J, Celis E, Caligiuri MA, Wright KL. PRDM1/Blimp-1 controls effector cytokine production in human NK cells. *J Immunol.* 2010; 185(10):6058-6067. (Biology)
- Turner CA Jr, Mack DH, Davis MM. Blimp-1, a novel zinc finger-containing protein that can drive the maturation of B lymphocytes into immunoglobulin-secreting cells. *Cell.* 1994; 77(2):297-306. (Biology)

BD Biosciences

bdbiosciences.com

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	800.268.5430	32.2.400.98.95	0120.8555.90	65.6861.0633	55.11.5185.9995

For country contact information, visit bdbiosciences.com/contact

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.

Unless otherwise noted, BD, BD Logo and all other trademarks are property of Becton, Dickinson and Company. © 2014 BD

