Technical Data Sheet

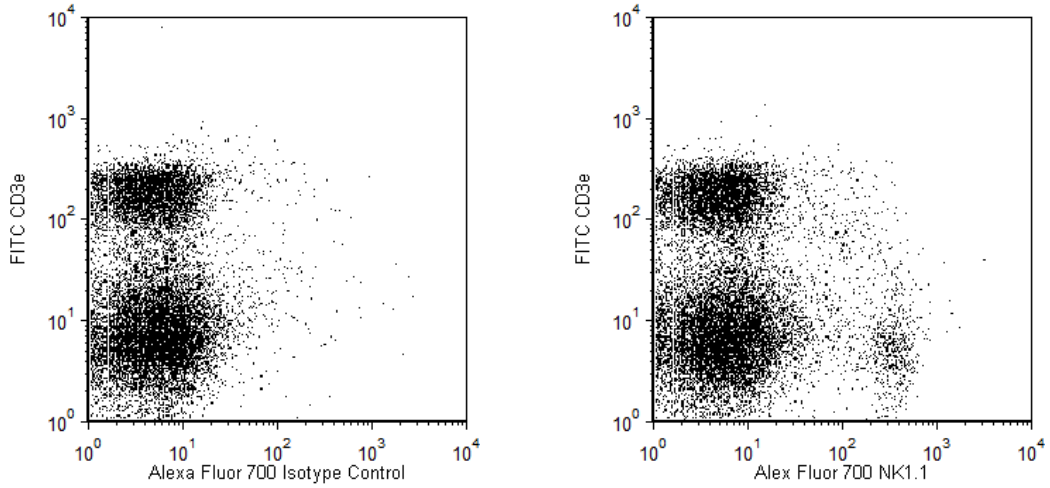
Alexa Fluor® 700 Mouse Anti-Mouse NK1.1

Product Information

Material Number:	**560515**
Alternate Name:	Klrb1b, CD161b, Nkrp1b; Klrb1c, CD161c, NK1.1, Nkrp1c
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	PK136
Immunogen:	Mouse NK-1+ Spleen and Bone Marrow Cells
Isotype:	Mouse (C3H x BALB/c) IgG2a, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing protein stabilizer and ≤0.09% sodium azide.

Description

In the mouse, at least three members of the *Klrb* (*K*iller cell *l*ectin-like *r*eceptor, subfamily *b*; formerly *NKR-P1*) gene family have been identified (*Klrb1a/NKR-P1A, Klrb1b/NKR-P1B,* and *Klrb1c/NKR-P1C*); but in the human gene family, a single homologue has been designated *KLRB1, NKR-P1A, or CD161*. The KLRB1/NKR-P1 family of proteins are type-II-transmembrane C-type lectin receptors. KLRB1C/NKR-P1C activates NK-cell cytotoxicity, while KLRB1B/NKR-P1B functions as an inhibitory receptor. KLRB1B/NKR-P1B protein has intracellular *I*mmunoreceptor *T*yrosine-based Inhibitory *M*otif (ITIM), while KLRB1C/NKR-P1C lacks ITIM and activates via association with Fc Receptor γ chain. Strikingly, KLRB1B/NKR-P1B and KLRB1C/NKR-P1C share 96% amino acid sequence identity in their extracellular C-type lectin domains. The PK136 antibody reacts with the NK-1.1 surface antigen (CD161c) encoded by the *Klrb1c/NKR-P1C* gene expressed on natural killer (NK) cells in selected strains of mice (eg, C57BL, FVB/N, NZB, but not A, AKR, BALB/c, CBA/J, C3H, C57BR, C58, DBA/1, DBA/2, NOD, SJL, 129) and the CD161b antigen encoded by the *Klrb1b/NKR-P1B* gene expressed only on Swiss NIH and SJL mice, but not on C57BL/6. Expression of KLRB1C/NKR-P1C protein is correlated with the ability to lyse tumor cells in vitro and to mediate rejection of bone marrow allografts. The NK-1.1 marker is useful in defining NK cells; however, the antigen is also expressed on a rare, specialized population of T lymphocytes (NK-T cells) and some cultured monocytes. Plate-bound PK136 mAb, in combination with low concentrations of IL-2, induces proliferation of a subset of NK cells.



Flow cytometric analysis of NK1.1 expression on mouse splenocytes. *Splenocytes from C57BL/6 mice were stained with FITC Hamster Anti-Mouse CD3e antibody (Cat. No. 553061) and either Alexa Fluor® 700 Mouse IgG2a, κ isotype control (Cat. No. 557880; left panel) or Alexa Fluor® 700 Mouse Anti-Mouse NK1.1 (Cat. No. 560515; right panel). Two-color dot plots were derived from gated events based on the forward and side light-scattering characteristics of viable splenocytes. Flow cytometry was performed on a BD FACSCanto™ 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 to Alexa Fluor® 700 under optimum conditions, and unreacted Alexa Fluor® 700 was removed.

BD Biosciences

bdbiosciences.com

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	866.979.9408	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.

© 2017 BD. BD, the BD Logo and all other trademarks are property of Becton, Dickinson and Company.

Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
557880	Alexa Fluor® 700 Mouse IgG2a, κ Isotype Control	0.1 mg	G155-178
553061	FITC Hamster Anti-Mouse CD3e	0.1 mg	145-2C11
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.1 mg	2.4G2
554656	Stain Buffer (FBS)	500 mL	(none)
553142	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.5 mg	2.4G2
554657	Stain Buffer (BSA)	500 mL	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. An isotype control should be used at the same concentration as the antibody of interest.
3. 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.
4. Alexa Fluor® 700 has an adsorption maximum of ~700nm and a peak fluorescence emission of ~720nm. Before staining cells with this reagent, please confirm that your flow cytometer is capable of exciting the fluorochrome and discriminating the resulting fluorescence.
5. Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.
6. The Alexa Fluor®, Pacific Blue™, and Cascade Blue® dye antibody conjugates in this product are sold under license from Molecular Probes, Inc. for research use only, excluding use in combination with microarrays, or as analyte specific reagents. The Alexa Fluor® dyes (except for Alexa Fluor® 430), Pacific Blue™ dye, and Cascade Blue® dye are covered by pending and issued patents.
7. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
8. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Arase N, Arase H, Park SY, Ohno H, Ra C, Saito T. Association with FcRgamma is essential for activation signal through NKR-P1 (CD161) in natural killer (NK) cells and NK1.1+ T cells. *J Exp Med.* 1997; 186(12):1957-1963. (Biology)

Carlyle JR, Martin A, Mehra A, Attisano L, Tsui FW, Zuniga-Pflucker JC. Mouse NKR-P1B, a novel NK1.1 antigen with inhibitory function. *J Immunol.* 1999; 162(10):5917-5923. (Biology: Immunoprecipitation)

Giorda R, Trucco M. Mouse NKR-P1. A family of genes selectively coexpressed in adherent lymphokine-activated killer cells. *J Immunol.* 1991; 147(5):1701-1708. (Biology)

Greimers R, Trebak M, Moutschen M, Jacobs N, Boniver J. Improved four-color flow cytometry method using fluo-3 and triple immunofluorescence for analysis of intracellular calcium ion ([Ca2+]i) fluxes among mouse lymph node B- and T-lymphocyte subsets. *Cytometry.* 1996; 23(3):205-217. (Biology)

Karlhofer FM, Yokoyama WM. Stimulation of murine natural killer (NK) cells by a monoclonal antibody specific for the NK1.1 antigen. IL-2-activated NK cells possess additional specific stimulation pathways. *J Immunol.* 1991; 146(10):3662-3673. (Biology)

Koo GC, Dumont FJ, Tutt M, Hackett J Jr, Kumar V. The NK-1.1(-) mouse: a model to study differentiation of murine NK cells. *J Immunol.* 1986; 137(12):3742-3747. (Biology)

Koo GC, Peppard JR. Establishment of monoclonal anti-Nk-1.1 antibody. *Hybridoma.* 1984; 3(3):301-303. (Immunogen)

Kung SK, Su RC, Shannon J, Miller RG. The NKR-P1B gene product is an inhibitory receptor on SJL/J NK cells. *J Immunol.* 1999; 162(10):5876-5887. (Biology: Blocking)

Lanier LL. Natural killer cells: from no receptors to too many. *Immunity.* 1997; 6(4):371-378. (Biology)

Reichlin A, Yokoyama WM. Natural killer cell proliferation induced by anti-NK1.1 and IL-2. *Immunol Cell Biol.* 1998; 76(2):143-152. (Biology: (Co)-stimulation)

Roederer M, Kantor AB, Parks DR, Herzenberg LA. Cy7PE and Cy7APC: bright new probes for immunofluorescence. *Cytometry.* 1996; 24(3):191-197. (Biology)

Sentman CL, Hackett J Jr, Moore TA, Tutt MM, Bennett M, Kumar V. Pan natural killer cell monoclonal antibodies and their relationship to the NK1.1 antigen. *Hybridoma.* 1989; 8(6):605-614. (Biology)

Sentman CL, Kumar V, Koo G, Bennett M. Effector cell expression of NK1.1, a murine natural killer cell-specific molecule, and ability of mice to reject bone marrow allografts. *J Immunol.* 1989; 142(6):1847-1853. (Biology: Depletion)

Vicari AP, Zlotnik A. Mouse NK1.1+ T cells: a new family of T cells. *Immunol Today.* 1996; 17(2):71-76. (Biology)

Yokoyama WM, Seaman WE. The Ly-49 and NKR-P1 gene families encoding lectin-like receptors on natural killer cells: the NK gene complex. *Annu Rev Immunol.* 1993; 11:613-635. (Biology)

Yu YY, Kumar V, Bennett M. Murine natural killer cells and marrow graft rejection. *Annu Rev Immunol.* 1992; 10:189-213. (Biology)