Technical Data Sheet

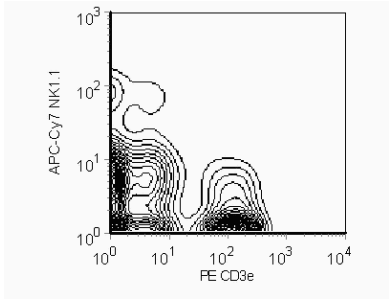
APC-Cy™7 Mouse Anti-Mouse NK-1.1

Product Information

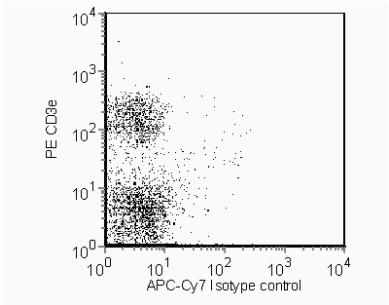
Material Number:	**560618**
Alternate Name:	NKR-P1B and NKR-P1C
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	PK136
Immunogen:	Mouse NK-1+ Spleen and Bone Marrow Cells
Isotype:	Mouse (C3H x BALB/c) IgG2a, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing protein stabilizer and ≤0.09% sodium azide.

Description

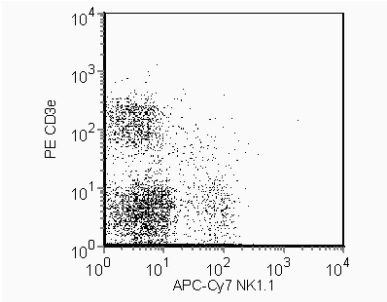
In the mouse, at least three members of the *Klrb* (*K*iller cell *l*ectin-like *r*eceptor, subfamily *b*; formerly *NKR-P1*) gene family have been identified (*Klrb1a/NKR-P1A, Klrb1b/NKR-P1B,* and *Klrb1c/NKR-P1C*); but in the human gene family, a single homologue has been designated *KLRB1, NKR-P1A, 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 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 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 on mouse splenocytes. *Splenocytes from C57BL/6 mice were stained with the APC-Cy™7 Mouse Anti-Mouse NK1.1 antibody in conjunction with a PE Hamster Anti-Mouse CD3e antibody. Contour plots were derived from gated events based on light scattering characteristics for splenocytes. Flow cytometry was performed on a BD LSR™ II flow cytometry system.*



Flow cytometric analysis of NK1.1 on mouse splenocytes. *Splenocytes from C57BL/6 mice were stained with a APC-Cy™7 Mouse IgG2a, κ isotype control in conjunction with a PE Hamster Anti-Mouse CD3e antibody. Dot plots were derived from gated events based on light scattering characteristics for splenocytes. Flow cytometry was performed on a BD LSR™ II flow cytometry system.*



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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 APC-Cy7 under optimum conditions, and unconjugated antibody and free APC-Cy7 were removed.

Application Notes

Application

Flow cytometry	Routinely Tested

BD Biosciences

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Suggested Companion Products

Catalog Number	Name	Size	Clone
557751	APC-Cy™7 Mouse IgG2a, κ Isotype Control	100 tests	G155-178
553063	PE 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

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. Warning: Some APC-Cy7 and PE-Cy7 conjugates show changes in their emission spectrum with prolonged exposure to formaldehyde. If you are unable to analyze fixed samples within four hours, we recommend that you use BD™ Stabilizing Fixative (Cat. No. 338036).
4. 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.
5. This conjugated product is sold under license to the following patent: US Patent No. 5,714,386.
6. Cy is a trademark of Amersham Biosciences Limited. This conjugated product is sold under license to the following patents: US Patent Nos. 5,486,616; 5,569,587; 5,569,766; 5,627,027.
7. This product is subject to proprietary rights of Amersham Biosciences Corp. and Carnegie Mellon University and made and sold under license from Amersham Biosciences Corp. This product is licensed for sale only for research. It is not licensed for any other use. If you require a commercial license to use this product and do not have one return this material, unopened to BD Biosciences, 10975 Torreyana Rd, San Diego, CA 92121 and any money paid for the material will be refunded.
8. APC-Cy7 tandem fluorochrome emission is collected in a detector for fluorescence wavelengths of 750 nm and higher.
9. APC-Cy7 is a tandem fluorochrome composed of Allophycocyanin (APC), which is excited by laser lines between 595 and 647 nm and serves as an energy donor, coupled to the cyanine dye Cy7™, which acts as an energy acceptor and fluoresces at 780 nm. BD Biosciences Pharmingen has maximized the fluorochrome energy transfer in APC-Cy7, thus maximizing its fluorescence emission intensity, minimizing residual emission from APC, and minimizing required electronic compensation in multilaser-laser flow cytometry systems. Note: Although every effort is made to minimize the lot-to-lot variation in residual emission from APC, it is strongly recommended that every lot be tested for differences in the amount of compensation required and that individual compensation controls are run for each APC-Cy7 conjugate.
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. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.
12. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

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