Technical Data Sheet

FITC Mouse Anti-Mouse NK-1.1

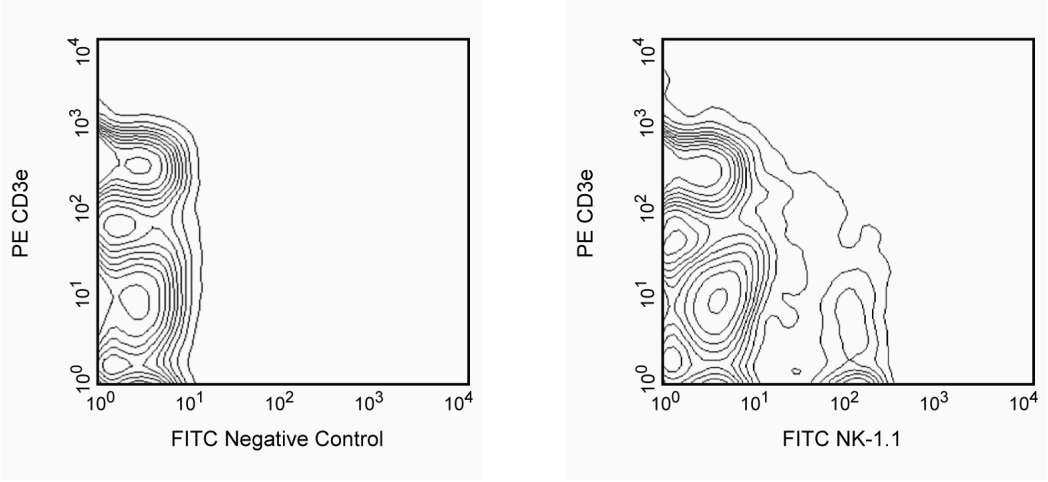
Product Information

Material Number:	**553164**
Alternate Name:	NKR-P1B and NKR-P1C
Size:	0.5 mg
Concentration:	0.5 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 ≤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.

This antibody is routinely tested by flow cytometric analysis. Other applications were tested at BD Biosciences Pharmingen during antibody development only or reported in the literature.



Two-color analysis ok NK-1.1 expression on splenocytes. *C57BL/6NHsd splenocytes were incubated simultaneously with PE-conjugated anti-mouse CD3e mAb 145-2C11 (Cat. No. 553063/553064) and FITC-conjugated mAb PK136 (right panel). NK-1.1+ CD3e- NK cells and NK-1.1[dim] CD3e+ NK-T cells are detected. Flow cytometry was performed on a BD FACScan™ flow cytometry system.*

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
The antibody was conjugated with FITC under optimum conditions, and unreacted FITC was removed.
Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

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Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
553063	PE Hamster Anti-Mouse CD3e	0.1 mg	145-2C11
553456	FITC Mouse IgG2a, κ Isotype Control	0.25 mg	G155-178

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
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.

References

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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. (Clone-specific: 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)

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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. (Clone-specific: 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. (Clone-specific: Induction)

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. (Clone-specific: 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)

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