

Technical Data Sheet

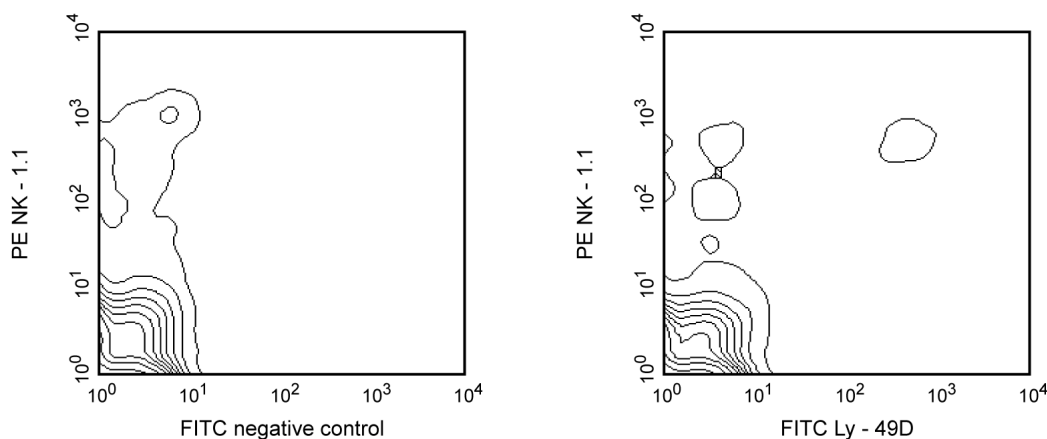
FITC Rat Anti-Mouse Ly-49D

Product Information

Material Number:	562056
Size:	50 µg
Concentration:	0.5 mg/ml
Clone:	4E5
Immunogen:	Not Reported
Isotype:	Rat (F344) IgG2a, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The 4E5 antibody reacts with Ly-49D, which is expressed on subsets of natural killer (NK) cells in C57BL/6, C3H/He (at a very low frequency), and SJL, but not DBA/2, AKR, CBA/J, or BALB/c mice. Unlike Ly-49D antigen has not been detected on NK-1.1+ (or DX5+) T cells. In 129/J mice, the 4E5 antibody cross-reacts with Ly-49O, Ly-49R, and Ly-49V. The Ly-49 family of NK-cell receptors, members of the C-type lectin superfamily, are disulfide-linked type-II transmembrane protein homodimers with extracellular carbohydrate-recognition domains, which bind to MHC class I alloantigens. The Ly-49 family members are expressed independently, such that an individual NK or T cell may display more than one class of Ly-49 receptor homodimers. Ly-49D weakly binds to MHC class I antigens of the k haplotype, and Ly-49D+ IL-2-activated NK cells lyse target cells expressing H-2[a], H-2[b], H-2[d], H-2[k], H-2[p], H-2[q], and H-2[s] and the CHO (Chinese hamster ovary) cell line. Ly-49D+ cells mediate allogeneic resistance to H-2d bone marrow transplantation. *In vitro* studies suggest that the Ly-49D receptor mediates activation of NK-cell cytolytic activity via tyrosine phosphorylation of their ITIMs (Immunoreceptor Tyrosine-based Inhibitory Motifs). Molecular differences between the Ly-49D stimulatory receptor and the inhibitory members of the Ly-49 family include the absence of an ITIM in Ly-49D, the lack of phosphorylation of Ly-49D in activated NK cells, and the association of a novel tyrosine-phosphorylated protein (pp16) with Ly-49D in activated NK cells. Ly-49O and Ly-49V are closely related to Ly-49A[B6] and, like Ly-49A, have ITIM domains. Ly-49O- and Ly-49V-transfected 293T (human kidney epithelial) cells bind tetramers of H-2D[b], D[b], D[k], and L[d]. In addition, the Ly-49V-transfected cells also bind K[b], K[d], and K[k]. Ly-49R is closely related to Ly-49D[B6] and is putative activating receptor due to its lack of an ITIM domain. Ly-49R-transfected 293T cells bind soluble tetramers of H-2D[b], D[d], D[k], and L[d].



Two color analysis of Ly-49D expression on splenic NK cells. C57BL/6 splenocytes were simultaneously stained with PE Mouse anti-Mouse NK-1.1 (Cat. No. 557391, both panels) and FITC Rat anti-Mouse Ly-49D (right panel). Flow cytometry was performed on a FACScan™ (BDIS, San Jose, CA).

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 FITC under optimum conditions, and unreacted FITC was removed.

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Application Notes

Application

Flow cytometry

Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
557391	PE Mouse Anti-Mouse NK-1.1	0.1 mg	PK136
553929	FITC Rat IgG2a, κ Isotype Control	0.25 mg	R35-95
554656	Stain Buffer (FBS)	500 ml	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharming/en/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.
4. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.
5. An isotype control should be used at the same concentration as the antibody of interest.

References

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