Technical Data Sheet

FITC Rat Anti-Mouse CD49b

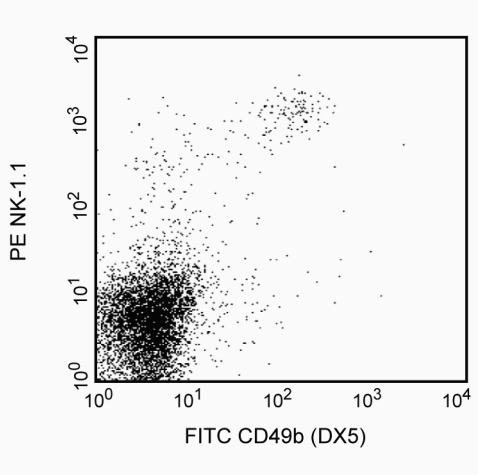
Product Information

Material Number:	**561067**
Alternate Name:	itga2; Integrin alpha-2; DX5; Pan NK cell marker; VLAA2; VLA-2 alpha chain
Size:	25 µg
Concentration:	0.5 mg/ml
Clone:	DX5
Immunogen:	Mouse (C57BL/6) NK1.1+ cells propagated with rIL-2
Isotype:	Rat (LEW) IgM, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The rat anti-mouse CD49b monoclonal antibody (clone DX5) specifically binds to the integrin α2 chain (CD49b). CD49b is a 150 kDa transmembrane glycoprotein that non-covalently associates with CD29 (integrin β1) to form the integrin α2β1 complex known as VLA-2. The rat anti-mouse CD49b antibody (clone DX5) has been reported to identify the majority of NK cells and a small T-cell subpopulation in most mouse strains (e.g., A/J, AKR, BALB/c, C3H/HeJ, C57BL/6, C57BL/10, C57BR, C58, CBA/Ca, DBA/1, DBA/2, SJL, SWR, 129/J, but not NOD). The DX5 antibody also recognizes platelets that express high levels of CD49b. Multiparameter flow cytometric analysis has demonstrated that most lymphocytes which express NK-1.1 (NKR-P1B and NKR-P1C), as detectable by mouse anti-mouse NK-1.1 antibody (clone PK136), also express the DX5 antigen. Small DX5+ NK-1.1- and DX5- NK-1.1+ cell subsets are found, especially among the CD3-positive cell population. Some CD49b+ NK cells have been reported to gradually lose reactivity with the rat anti-mouse CD49b antibody (clone DX5) when cultured in the presence of recombinant human IL-2. The resulting DX5-negative cells have weakened cytotoxic activity when compared to the remaining DX5+ cells. This indicates that the DX5 antibody distinguishes functional subsets of NK cells. No activation or blocking activity of the rat anti-mouse antibody (clone DX5) has been observed. Staining of splenic NK cells with this antibody reportedly can be blocked by hamster anti-mouse CD49b antibody (clone HMα2).

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.



Detection of NK cells with monoclonal antibodies. *Freshly isolated splenocytes from a C57BL/6 mouse were simultaneously incubated with PE mouse anti-mouse NK-1.1 antibody (NKR-P1B and NKR-P1C) (clone PK136) (MN 557391), and FITC rat anti-mouse CD49b (clone DX5). Flow cytometry was performed on a BD FACScan™ instrument (BD Biosciences, San Jose, CA).*

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
557391	PE Mouse Anti-Mouse NK-1.1	0.1 mg	PK136
553942	FITC Rat IgM, κ Isotype Control	0.25 mg	R4-22

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. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.
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.

References

Abrams J. Personal Communication. . (Immunogen: Activation, Blocking)

Arase H, Saito T, Phillips JH, Lanier LL. Cutting edge: the mouse NK cell-associated antigen recognized by DX5 monoclonal antibody is CD49b (alpha 2 integrin, very late antigen-2). *J Immunol.* 2001; 167(3):1141-1144. (Clone-specific: Blocking, Cytotoxicity, Flow cytometry)

Moore TA, von Freeden-Jeffry U, Murray R, Zlotnik A. Inhibition of gamma delta T cell development and early thymocyte maturation in IL-7 -/- mice. *J Immunol.* 1996; 157(6):2366-2373. (Biology)

Ortaldo JR, Winkler-Pickett R, Mason AT, Mason LH. The Ly-49 family: regulation of cytotoxicity and cytokine production in murine CD3+ cells. *J Immunol.* 1998; 160(1):1158-1165. (Biology)