

Technical Data Sheet

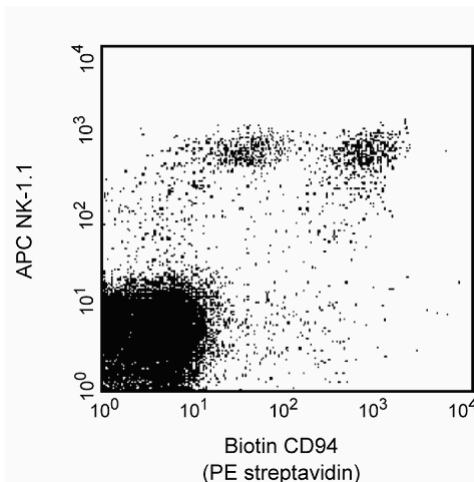
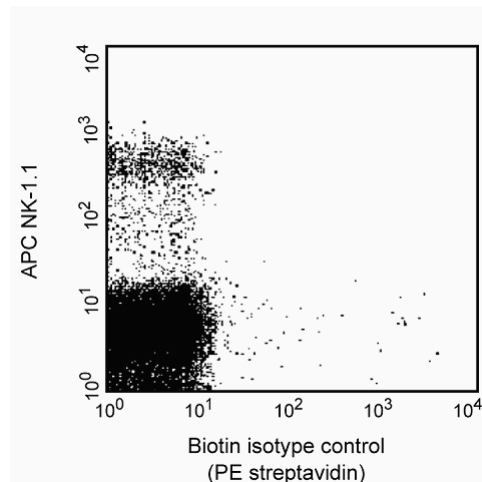
Biotin Rat Anti-Mouse CD94

Product Information

Material Number:	550773
Size:	0.1 mg
Concentration:	0.5 mg/ml
Clone:	18d3
Immunogen:	Transfected cell line
Isotype:	Rat (LEW) IgG2a, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing $\leq 0.09\%$ sodium azide.

Description

The 18d3 antibody reacts with CD94 on all NK cells, NK1.1- or DX5-positive T lymphocytes (NK-T cells), and a subset of CD8-positive T lymphocytes in most strains tested (eg, A/J, AKR/J, BALB/c, C3H/He, C57BL/6, CBA/J, DBA/1, FVB/N, 129/Sv, NOD, SWR, and most DBA/2 substrains, but not DBA/2J). DBA/2J mice do not express CD94.3 CD94 is also expressed on CD8+ T lymphocytes activated in vivo. CD94 is a type-II transmembrane protein with an extracellular lectin-like domain and a short cytoplasmic tail which is not believed to have any signalling function. Heterodimers of CD94 with NKG2A, NKG2C, or NKG2E recognize Qa-1 (a non-classical MHC class I antigen) presenting the Qdm peptide. Studies on CD94/NKG2 heterodimers on human NK cells have demonstrated that the NKG2 components mediate signal transduction for the receptor, NKG2A being inhibitory and NKG2C being stimulatory. Similarly, the mouse NKG2A molecule contains two intracytoplasmic sequences which resemble the ITIM (*Immunoreceptor Tyrosine-based Inhibitory Motif*) consensus sequence. CD94/NKG2 receptors appear on fetal NK cells before the Ly-49 MHC class I receptors, suggesting that CD94/NKG2 receptors and their ligand, Qa-1, may play a role in maintenance of self-tolerance in developing NK cells.



Expression of CD94 on mouse splenic NK cells. C57BL/6 splenocytes were preincubated with Mouse BD Fc Block™ purified anti-mouse CD16/CD32 mAb 2.4G2 (Cat. no. 553141/553142), then simultaneously stained with biotinconjugated rat IgG2a isotype control mAb R35-95 (Cat. no. 553928, Left panel) or biotinylated mAb 18d3 (Right panel) and APC-conjugated anti-mouse NK-1.1 mAb PK136 (Cat. no. 550627), followed by Streptavidin-PE (Cat. no. 554061). The CD94[dim] and CD94[bright] subpopulations of NK cells are observed in all strains tested, although the relative proportions of the two subsets may vary. Flow cytometry was performed on a BD FACSCalibur™ 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 biotin under optimum conditions, and unreacted biotin was removed.

Store undiluted at 4° C and protected from prolonged exposure to light. Do not freeze.

Application Notes

Application

Flow cytometry	Routinely Tested
Immunohistochemistry-frozen	Not Recommended

Recommended Assay Procedure:

We have found that the use of Mouse BD Fc Block, purified anti-mouse CD16/CD32 mAb 2.4G2 (Cat. no. 553141/553142) reduces the non-specific staining of non-NK cells by this biotin conjugate. This antibody is not useful for immunohistochemical staining of frozen sections.

BD Biosciences

www.bdbiosciences.com

United States 877.232.8995 Canada 888.259.0187 Europe 32.53.720.550 Japan 0120.8555.90 Asia Pacific 65.6861.0633 Latin America/Caribbean 55.11.5185.9995

For country-specific contact information, visit www.bdbiosciences.com/how_to_order/

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.

BD, BD Logo and all other trademarks are the property of Becton, Dickinson and Company. ©2007 BD



Suggested Companion Products

Catalog Number	Name	Size	Clone
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.1 mg	2.4G2
553928	Biotin Rat IgG2a κ Isotype Control	0.25 mg	R35-95
550627	APC Mouse Anti-Mouse NK-1.1	0.1 mg	PK136
554061	PE Streptavidin	0.5 mg	(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.

References

Ho EL, Heusel JW, Brown MG. Murine Nkg2d and Cd94 are clustered within the natural killer complex and are expressed independently in natural killer cells. *Proc Natl Acad Sci U S A*. 1998; 95(11):6320-6325.(Biology)

McMahon CW, Zajac AJ, Jamieson AM. Viral and bacterial infections induce expression of multiple NK cell receptors in responding CD8(+) T cells. *J Immunol*. 2002; 169(3):1444-1452.(Biology)

Sivakumar PV, Gunturi A, Salcedo M, et al. Cutting edge: expression of functional CD94/NKG2A inhibitory receptors on fetal NK1.1+Ly-49- cells: a possible mechanism of tolerance during NK cell development. *J Immunol*. 1999; 162(12):6976-6980.(Biology)

Toomey JA, Salcedo M, Cotterill LA. Stochastic acquisition of Qa1 receptors during the development of fetal NK cells in vitro accounts in part but not in whole for the ability of these cells to distinguish between class I-sufficient and class I-deficient targets. *J Immunol*. 1999; 163(6):3176-3184.(Biology)

Vance RE, Jamieson AM, Cado D, Raulet DH. Implications of CD94 deficiency and monoallelic NKG2A expression for natural killer cell development and repertoire formation. *Proc Natl Acad Sci U S A*. 2002; 99(2):868-873.(Biology)

Vance RE, Jamieson AM, Raulet DH. Recognition of the class Ib molecule Qa-1(b) by putative activating receptors CD94/NKG2C and CD94/NKG2E on mouse natural killer cells. *J Exp Med*. 1999; 190(12):1801-1812.(Immunogen)

Vance RE, Kraft JR, Altman JD, Jensen PE, Raulet DH. Mouse CD94/NKG2A is a natural killer cell receptor for the nonclassical major histocompatibility complex (MHC) class I molecule Qa-1(b). *J Exp Med*. 1998; 188(10):1841-1848.(Biology)

Yokoyama WM. Natural killer cell receptors. *Curr Opin Immunol*. 1998; 10:298-305.(Biology)