Technical Data Sheet

# BV421 Mouse Anti-Human CD56

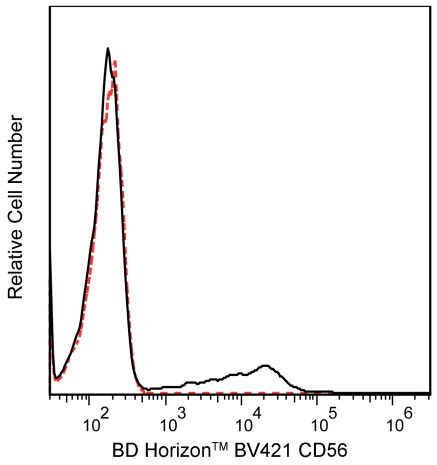
## Product Information

| | |
|---|---|
| **Material Number:** | **562751** |
| **Alternate Name:** | NCAM1; NCAM-1; NCAM; Leu-19; Neural cell adhesion molecule 1; NKH1; MSK39 |
| **Size:** | 100 tests |
| **Vol. per Test:** | 5 µl |
| **Clone:** | NCAM16.2 |
| **Immunogen:** | Immunoaffinity-enriched adult human brain NCAM |
| **Isotype:** | Mouse (BALB/c) IgG2b, κ |
| **Reactivity:** | QC Testing: Human |
| **Workshop:** | V NK60 |
| **Storage Buffer:** | Aqueous buffered solution containing BSA and ≤0.09% sodium azide. |

## Description

The NCAM16.2 monoclonal antibody specifically binds to human CD56. It recognizes an extracellular immunoglobulin-like domain common to 120, 140, and 180 kDa forms of CD56, also known as the neural cell adhesion molecule (NCAM), NKH1 or MSK39. The CD56 antigen is expressed on approximately 10% to 25% of peripheral blood lymphocytes. It is present on essentially all resting and activated CD16+ natural killer (NK) lymphocytes and approximately 5% of CD3+ peripheral blood lymphocytes. CD3+ CD56+ T lymphocytes comprise a unique subset of cytotoxic T lymphocytes that mediates non-major histocompatibility complex (MHC)-restricted cytotoxicity. CD56 antigen density on NK lymphocytes increases upon cellular activation. The CD56 antigen is involved in neuronal homotypic cell adhesion and cell differentiation during embryogenesis. CD16+ CD56+ NK cells demonstrate reciprocal transfer of an activation state with dendritic cells.

The antibody was conjugated to BD Horizon™ BV421 which is part of the BD Horizon™ Brilliant Violet™ family of dyes. With an Ex Max of 407-nm and Em Max at 421-nm, BD Horizon™ BV421 can be excited by the violet laser and detected in the standard Pacific Blue™ filter set (eg, 450/50-nm filter). BD Horizon™ BV421 conjugates are very bright, often exhibiting a 10 fold improvement in brightness compared to Pacific Blue™ conjugates.




***Flow cytometric analysis of CD56 expression on human peripheral blood lymphocytes.*** *Human whole blood was stained with the BD Horizon™ BV421 Mouse Anti-Human CD56 antibody (Cat. No. 562751/ 562752; solid line histogram) or with BD Horizon™ BV421 Mouse IgG2b Isotype Control (Cat. No. 562748; dashed line histogram). The erythrocytes were lysed with BD Pharm Lyse™ Lysing Buffer (Cat. No. 555899). The fluorescence histograms were derived from events with the forward and side light-scatter characteristics of viable lymphocytes. Flow cytometry was performed using a BD FACSCanto™ II Flow Cytometer System.*

## 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 BD Horizon™ BV421 under optimum conditions, and unconjugated antibody and free BD Horizon™ BV421 were removed.

## Application Notes

**Application**

| | |
|---|---|
| Flow cytometry | Routinely Tested |

**BD Biosciences**

*bdbiosciences.com*

| United States | Canada | Europe | Japan | Asia Pacific | Latin America/Caribbean |
|---|---|---|---|---|---|
| 877.232.8995 | 800.979.9408 | 32.53.720.550 | 0120.8555.90 | 65.6861.0633 | 55.11.5185.9995 |

For country contact information, visit **bdbiosciences.com/contact**

## Suggested Companion Products

| Catalog Number | Name | Size | Clone |
|---|---|---|---|
| 562748 | BV421 Mouse IgG2b, κ Isotype Control | 50 µg | 27-35 |
| 554656 | Stain Buffer (FBS) | 500 ml | (none) |
| 555899 | Lysing Buffer | 100 ml | (none) |
| 562752 | BV421 Mouse Anti-Human CD56 | 25 tests | NCAM16.2 |

## Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Brilliant Violet™ 421 is a trademark of Sirigen.
4. Pacific Blue™ is a trademark of Molecular Probes, Inc., Eugene, OR.
5. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
6. 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.
7. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
8. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

## References


Bennett IM, Zatsepina O, Zamai L, Azzoni L, Mikheeva T, Perussia B. Definition of a natural killer NKR-P1A+/CD56-/CD16- functionally immature human NK cell subset that differentiates in vitro in the presence of interleukin 12. *J Exp Med.* 1996; 184(5):1845-1856. (Biology)

Campbell JJ, Qin S, Unutmaz D, Soler D, Murphy KE, Hodge MR, Wu L, Butcher EC. Unique subpopulations of CD56+ NK and NK-T peripheral blood lymphocytes identified by chemokine receptor expression repertoire. *J Immunol.* 2001; 166(11):6477-6482. (Biology)

Cooper MA, Fehniger TA, Caligiuri MA. The biology of human natural killer–cell subsets. *Trends Immunol.* 2001; 22(11):633-640. (Biology)

Cunningham BA, Hemperly JJ, Murray BA, Prediger EA, Brackenbury R, Edelman GM. Neural cell adhesion molecule: structure, immunoglobulin-like domains, cell surface modulation, and alternative RNA splicing. *Science.* 1987; 236(4803):799-806. (Biology)

Edelman GM. Cell adhesion molecules in the regulation of animal form and tissue pattern. *Annu Rev Cell Biol.* 1986; 2:81-116. (Biology)

Galandrini R, Tassi I, Mattia G, Lenti L, Piccoli M, Frati L, Santoni A. SH2-containing inositol phosphatase (SHIP-1) transiently translocates to raft domains and modulates CD16-mediated cytotoxicity in human NK cells. *Blood.* 2001; 100(13):4581-4589. (Biology)

Gerosa F, Baldani-Guerra B, Nisii C, Marchesini V, Carra G, Trinchieri G. Reciprocal activating interaction between natural killer cells and dendritic cells. *J Exp Med.* 2002; 195(3):327-333. (Biology)

Lanier LL, Chang C, Azuma M, Ruitenberg JJ, Hemperly JJ, Phillips JH. Molecular and functional analysis of human natural killer cell-associated neural cell adhesion molecule (N-CAM/CD56). *J Immunol.* 1991; 146(12):4421-4426. (Biology)

Lanier LL, Le AM, Civin CI, Loken MR, Phillips JH. The relationship of CD16 (Leu-11) and Leu-19 (NKH-1) antigen expression on human peripheral blood NK cells and cytotoxic T lymphocytes. *J Immunol.* 1986; 136(12):4480-4486. (Biology)

Lanier LL, Testi R, Bindl J, Phillips JH. Identity of Leu-19 (CD56) leukocyte differentiation antigen and neural cell adhesion molecule. *J Exp Med.* 1989; 169(6):2233-2238. (Biology)

Nitta T, Yagita H, Sato K, Okumura K. Involvement of CD56 (NKH-1/Leu-19 antigen) as an adhesion molecule in natural killer–target cell interaction. *J Exp Med.* 1989; 170(5):1757-1761. (Biology)

Phillips JH, Lanier LL. Dissection of the lymphokine-activated killer phenomenon: relative contribution of peripheral blood natural killer cells and T lymphocytes to cytolysis. *J Exp Med.* 1986; 164(3):814-825. (Biology)

Ritz J, Trinchieri G, Lanier LL. NK-cell Antigens: Section Report. In: Schlossman SF, Boumsell L, Gilks W, ed. *Leucocyte Typing V*. Oxford: Oxford University Press; 1995:1367-1372. (Clone-specific: Flow cytometry)

Schubert W, Zimmermann K, Cramer M, Starzinski-Powitz A. Lymphocyte antigen Leu-19 as a molecular marker of regeneration in human skeletal muscle. *Proc Natl Acad Sci U S A.* 1989; 86(1):307-311. (Biology)



**BD Biosciences**

*bdbiosciences.com*

| United States | Canada | Europe | Japan | Asia Pacific | Latin America/Caribbean |
|---|---|---|---|---|---|
| 877.232.8995 | 800.979.9408 | 32.53.720.550 | 0120.8555.90 | 65.6861.0633 | 55.11.5185.9995 |

For country contact information, visit **bdbiosciences.com/contact**