## Technical Data Sheet

# BV605 Mouse Anti-Human CD56

#### **Product Information**

Material Number:	562779
Alternate Name:	NCAM1; NCAM-1; NCAM; Leu-19; Neural cell adhesion molecule 1; NKH1; MSK39
Size:	25 Tests
Vol. per Test:	5 µl
Clone:	NCAM16.2 (also known as NCAM 16)
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.

This antibody is conjugated to BD Horizon BV605 which is part of the BD Horizon Brilliant™ Violet family of dyes. With an Ex Max of 407-nm and Em Max of 602-nm, BD Horizon BV605 can be excited by a violet laser and detected with a standard 610/20-nm filter set. BD Horizon BV605 is a tandem fluorochrome of BD Horizon BV421 and an acceptor dye with an Em max at 605-nm. Due to the excitation of the acceptor dye by the green (532 nm) and yellow-green (561 nm) lasers, there will be significant spillover into the PE and BD Horizon PE-CF594 detectors off the green or yellow-green lasers. BD Horizon BV605 conjugates are very bright, often exhibiting brightness equivalent to PE conjugates and can be used as a third color off of the violet laser.

For optimal and reproducible results, BD Horizon Brilliant Stain Buffer should be used anytime two or more BD Horizon Brilliant dyes are used in the same experiment. Fluorescent dye interactions may cause staining artifacts which may affect data interpretation. The BD Horizon Brilliant Stain Buffer was designed to minimize these interactions. More information can be found in the Technical Data Sheet of the BD Horizon Brilliant Stain Buffer (Cat. No. 563794).



Flow cytometric analysis of CD56 expression on human peripheral blood lymphocytes. Human whole blood was stained with the BD Horizon™BV605 Mouse Anti-Human CD56 antibody (Cat. No. 562779/ 562780; solid line histogram) or unstained (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™ LSR II Flow Cytometer System.

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### 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<sup>TM</sup> BV605 under optimum conditions, and unconjugated antibody and free BD Horizon<sup>TM</sup>

#### BV605 were removed. **Application Notes**

Flow cytometry Routinely Tested					
Suggested Companion Products					
Catalog Number	Name		Size	Clone	
554656	Stain Buffer (FBS)		500 mL	(none)	
555899	Lysing Buffer		100 mL	(none)	
562780	BV605 Mouse Anti-Human CD56		100 Tests	NCAM16.2	
563794	Brilliant Stain Buffer		5 mL	(none)	

#### **Product Notices**

- 1. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
- This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use  $1 \times 10^{6}$  cells in a 100-µl experimental 2. sample (a test).
- Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols. 3.
- Please observe the following precautions: Absorption of visible light can significantly alter the energy transfer occurring in any tandem 4. fluorochrome conjugate; therefore, we recommend that special precautions be taken (such as wrapping vials, tubes, or racks in aluminum foil) to prevent exposure of conjugated reagents, including cells stained with those reagents, to room illumination.
- Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before 5. discarding to avoid accumulation of potentially explosive deposits in plumbing.
- 6. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
- 7. Although every effort is made to minimize the lot-to-lot variation in the efficiency of the fluorochrome energy transfer, differences in the residual emission from BD Horizon<sup>™</sup> BV421 may be observed. Therefore, we recommend that individual compensation controls be performed for every BD Horizon<sup>™</sup> BV605 conjugate.
- CF<sup>™</sup> is a trademark of Biotium, Inc. 8.

#### 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, Bournsell 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)

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