

Brilliant Violet 421™ anti-human CD314 (NKG2D) Antibody

Catalog# / Size	320821 / 25 tests 320822 / 100 tests
Clone	1D11
Regulatory Status	RUO
Other Names	NKG2D
Isotype	Mouse IgG1, κ
Description	CD314 is a homodimeric C-type lectin-like protein also known as NKG2D. It is expressed on NK cells, CD8 ⁺ T cells, γ/δ T cells, and <i>in vitro</i> induced LAK cells. Several molecules have been identified as the ligands for NKG2D, including MHC class-I chain-related protein A (MICA), MICB, and UL16-binding proteins (ULBPs). NKG2D has no intrinsic signaling capacity, but attains this by non-covalent association with DAP10 or DAP12 adaptors. In addition to being a primary activation receptor on NK cells, NKG2D is also a costimulatory receptor for TCR-mediated T cell proliferation and cytokine production. The interaction of NKG2D with its ligands plays a role in the immune surveillance against pathogen and tumor cells, and in the pathogenesis of autoimmune diseases.

Product Details

Verified Reactivity	Human
Reported Reactivity	African Green, Baboon, Cynomolgus, Rhesus
Antibody Type	Monoclonal
Host Species	Mouse
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA).
Preparation	The antibody was purified by affinity chromatography and conjugated with Brilliant Violet 421™ under optimal conditions.
Concentration	Lot-specific (to obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.)
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Application	FC - Quality tested
Recommended Usage	<p>Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis. For flow cytometric staining, the suggested use of this reagent is 5 μl per million cells in 100 μl staining volume or 5 μl per 100 μl of whole blood.</p> <p>Brilliant Violet 421™ excites at 405 nm and emits at 421 nm. The standard bandpass filter 450/50 nm is recommended for detection. Brilliant Violet 421™ is a trademark of Sirigen Group Ltd.</p> <p>Learn more about Brilliant Violet™.</p> <p>This product is subject to proprietary rights of Sirigen Inc. and is made and sold under license from Sirigen Inc. The purchase of this product conveys to the buyer a non-transferable right to use the purchased product for research purposes only. This product may not be resold or incorporated in any manner into another product for resale. Any use for therapeutics or diagnostics is strictly prohibited. This product is covered by U.S. Patent(s), pending patent applications and foreign equivalents.</p>
Excitation Laser	Violet Laser (405 nm)
Application Notes	The 1D11 antibody blocks MICA binding to T cells, induces redirected lysis, and costimulates T cells activation and proliferation. Additional reported (for the relevant formats) applications include: immunoprecipitation ^{1,2} , blocking of ligand binding, induction of redirected cell lysis, and costimulation of T cells proliferation ²⁻⁷ . For highly sensitive assays, we recommend Ultra-LEAF™

purified antibody (Cat. No. 320814) with endotoxin < 0.01 EU/μg, Azide-Free, 0.2 μm filtered.

Application References

(PubMed link indicates BioLegend citation)

1. Wu J, *et al.* 1999. *Science* 285:730.
2. Wu J, *et al.* 2000. *J. Exp. Med.* 192:1059.
3. Groh V, *et al.* 2001. *Nature Immunol.* 2:255.
4. Wu J, *et al.* 2002. *J. Immunol.* 169:1236.
5. Roberts A, *et al.* 2001. *J. Immunol.* 167:5527.
6. Groh V, *et al.* 2003. *Proc. Natl. Acad. Sci. USA* 100:9452.
7. Kraetzel K *et al.* 2008. *Eur. Respir. J.* 32:563. [PubMed](#)
8. Correia DV, *et al.* 2011. *Blood* 118:992. (FC) [PubMed](#)
9. Watanabe M, *et al.* 2014. *Int Immunol.* [PubMed](#)

Product Citations

1. Huang RS, *et al.* 2021. *Curr Protoc.* 1:e246. [PubMed](#)
2. Alonso R, *et al.* 2022. *Blood Adv.* .: [PubMed](#)
3. Chmielewski M and Abken H 2017. *Cell Rep.* 10.1016/j.celrep.2017.11.063. [PubMed](#)
4. Nahi H, *et al.* 2022. *Cell Rep Med.* 3:100508. [PubMed](#)
5. Harris LD, *et al.* 2020. *Front Cell Infect Microbiol.* 10:120. [PubMed](#)

RRID

AB_2566510 (BioLegend Cat. No. 320821)
AB_2566511 (BioLegend Cat. No. 320822)

Antigen Details

Structure	C-type lectin
Distribution	NK cells, γδ T cells, CD8 ⁺ T cells
Function	Cytolytic killing of target cells expressing NKG2D ligands, costimulation of NK cells and T cells
Ligand/Receptor	MICA, MICB, UL16-binding proteins (ULBPs)
Cell Type	NK cells, T cells
Biology Area	Costimulatory Molecules, Immunology
Molecular Family	CD Molecules
Antigen References	<ol style="list-style-type: none">1. Vance RE, <i>et al.</i> 1999. <i>J. Exp. Med.</i> 190:1801.2. Raulet DH. 2003. <i>Nat. Rev. Immunol.</i> 3:781.3. Lohwasser S, <i>et al.</i> 1999. <i>Eur. J. Immunol.</i> 29:755.4. Jamieson AM, <i>et al.</i> 2002. <i>Immunity</i> 17:19.5. Gilfillan S, <i>et al.</i> 2002. <i>Nat. Immunol.</i> 3:1150.6. Ho EL, <i>et al.</i> 2002. <i>J. Immunol.</i> 169:3667.7. Maasho K, <i>et al.</i> 2005. <i>J. Immunol.</i> 174:4480.8. Groh V, <i>et al.</i> 2003. <i>Proc. Natl. Acad. Sci. USA</i> 100:9452.
Gene ID	22914

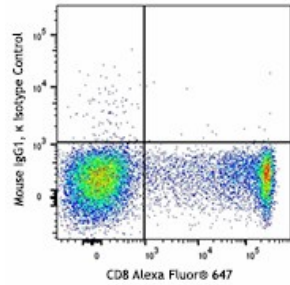
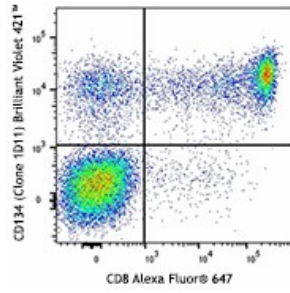
Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

Other Formats

Purified anti-human CD314 (NKG2D), Biotin anti-human CD314 (NKG2D), PE anti-human CD314 (NKG2D), APC anti-human CD314 (NKG2D), PE/Cyanine7 anti-human CD314 (NKG2D), Ultra-LEAF™ Purified anti-human CD314 (NKG2D), Brilliant Violet 510™ anti-human CD314 (NKG2D), PerCP/Cyanine5.5 anti-human CD314 (NKG2D), FITC anti-human CD314 (NKG2D), Brilliant Violet 421™ anti-human CD314 (NKG2D), APC/Cyanine7 anti-human CD314 (NKG2D), Alexa Fluor® 647 anti-human CD314 (NKG2D), PE/Dazzle™ 594 anti-human CD314 (NKG2D), Brilliant Violet 785™ anti-human CD314 (NKG2D), Brilliant Violet 605™ anti-human CD314 (NKG2D), APC/Fire™ 750 anti-human CD314 (NKG2D), TotalSeq™-A0165 anti-human CD314 (NKG2D), TotalSeq™-C0165 anti-human CD314 (NKG2D), TotalSeq™-B0165 anti-human CD314 (NKG2D), Alexa Fluor® 660 anti-human CD314 (NKG2D) Antibody, PE/Cyanine5 anti-human CD314 (NKG2D)

Product Data



Human peripheral blood lymphocytes were stained with CD8 Alexa Fluor® 647 and CD134 (clone 1D11) Brilliant Violet 421™ (top) or mouse IgG1, κ Brilliant Violet 421™ isotype control (bottom).

For research use only. Not for diagnostic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, www.biolegend.com/ordering#license). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to manufacture commercial products, reverse engineer functionally similar materials, or to provide a service to third parties without written approval of BioLegend. By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
 Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587