Brilliant Violet 785™ anti-human CD16 Antibody

Catalog# / Size	302045 / 25 tests 302046 / 100 tests
Clone	3G8
Regulatory Status	RUO
Workshop	V NK80
Other Names	FcγRIII, Fc gamma receptor, Fc gamma receptor 3
Isotype	Mouse IgG1, κ
Description	CD16 is known as low affinity IgG receptor III (FcγRIII). It is expressed as two distinct forms (CD16a and CD16b). CD16a (FcγRIIIA) is a 50-65 kD polypeptide-anchored transmembrane protein. It is expressed on the surface of NK cells, activated monocytes, macrophages, and placental trophoblasts in humans. CD16b (FcγRIIIB) is a 48 kD glycosylphosphatidylinositol (GPI)-anchored protein. Its extracellular domain is over 95% homologous to that of CD16a, and it is expressed specifically on neutrophils. CD16 binds aggregated IgG or IgG-antigen complex which functions in NK cell activation, phagocytosis, and antibody-dependent cell-mediated cytotoxicity (ADCC).

Product Details

Verified Reactivity	Human, Cynomolgus, Rhesus
Reported Reactivity	African Green, Baboon, Capuchin Monkey, Chimpanzee, Common Marmoset, Pigtailed Macaque, Sooty Mangabey, Squirrel Monkey
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	Human PMN cells
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 785™ 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	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. Brilliant Violet 785™ excites at 405 nm and emits at 785 nm. The bandpass filter 780/60 nm is recommended for detection, although filter optimization may be required depending on other fluorophores used. **Be sure to verify that your cytometer configuration and software setup are appropriate for detecting this channel.** Refer to your instrument manual or manufacturer for support. Brilliant Violet 785™ is a trademark of Sirigen Group Ltd. Learn more about Brilliant Violet™. 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.

Excitation Laser	Violet Laser (405 nm)
Application Notes	The 3G8 antibody clone blocks neutrophil phagocytosis and stimulates NK cell proliferation. It has been reported that this clone interacts with the FcγRIIa and FcγRIIIb receptors causing neutrophil activation and aggregation[18]. Due to this phenomenon staining in whole blood may cause a reduction in the number of granulocytes or alter their scatter profile. Additional reported applications (for the relevant formats) include: immunohistochemical staining of acetone-fixed frozen tissue sections[6], immunoprecipitation[3], stimulation of NK cell proliferation[4], blocking of phagocytosis[5], and blocking of immunoglobulin binding to FcγRIII[7,8]. The Ultra-LEAF™ purified antibody (Endotoxin < 0.01 EU/µg, Azide-Free, 0.2 µm filtered) is recommended for functional assays (Cat. No. 302049, 302050, 302057, 302058).
Application References **(PubMed link indicates BioLegend citation)**	1. Knapp W, *et al.* Eds. 1989. Leucocyte Typing IV. Oxford University Press. New York. 2. Schlossman S, *et al.* Eds. 1995. Leucocyte Typing V. Oxford University Press. New York. 3. Edberg J, *et al.* 1997. *J. Immunol.* 159:3849. (IP) 4. Hoshino S, *et al.* 1991. *Blood* 78:3232. (Stim) 5. Tamm A, *et al.* 1996. *Immunol.* 157:1576. (Block) 6. Da Silva DM, *et al.* 2001. *Int. Immunol.* 13:633. (IHC) 7. Holl V, *et al.* 2004. *J. Immunol.* 173:6274. (Block) 8. Hober D, *et al.* 2002. *J. Gen. Virol.* 83:2169. (Block) 9. Brainard DM, *et al.* 2009. *J. Virol.* 83:7305. PubMed 10. Smed-Sörensen A, *et al.* 2008. *Blood* 111:5037. (Block) PubMed 11. Timmerman KL, *et al.* 2008. *J. Leukoc. Biol.* 84:1271. (FC) PubMed 12. Yoshino N, *et al.* 2000. *Exp. Anim. (Tokyo)* 49:97. (FC) 13. Rout N, *et al.* 2010. *PLoS One* 5:e9787. (FC) 14. Kim WK, *et al.* 2006. *Am. J. Pathol.* 168:822. (FC) 15. Boltz A, *et al.* 2011. *J. Biol Chem.* 286:21896. PubMed 16. Wu Z, *et al.* 2013. *J. Virol.* 87:7717. PubMed 17. Peterson VM, *et al.* 2017. *Nat. Biotechnol.* 35:936. (PG) 18. Vossebeld PJ, et al. 1997. *Biochem J.* 323:87-94 (Stim)
Product Citations	1. Spitsin S, *et al.* 2020. Mol Ther Methods Clin Dev. 17:1088. PubMed 2. Jung MY, *et al.* 2022. Neurooncol Adv. 4:vdac017. PubMed 3. Martrus G, *et al.* 2017. PLoS One.. 10.1371/journal.pone.0182532. PubMed 4. Vijayakumar B, *et al.* 2022. Immunity. . PubMed 5. Qi S, *et al.* 2021. Biol Sex Differ. 12:66. PubMed 6. Vyborova A, *et al.* 2022. Front Immunol. 13:915366. PubMed 7. Marquardt N, *et al.* 2019. Nat Commun. 10:3841. PubMed 8. Marquardt N, *et al.* 2016. J Immunol. 197: 3069 - 3075. PubMed 9. Thompson EA, *et al.* 2021. Cell Rep. 108863:34. PubMed 10. Xu X, *et al.* 2020. Arthritis Rheumatol. 72:1303. PubMed 11. Grace PS, *et al.* 2021. Front Immunol. 12:679973. PubMed 12. Lee YS, *et al.* 2021. J Immunother Cancer. 9:. PubMed 13. Salzberger W, *et al.* 2015. PLoS One. 10: 0145324. PubMed 14. Körner C *et al.* 2017. Cell host & microbe. 22(1):111-119 . PubMed 15. Zhu YP *et al.* 2018. Cell reports. 24(9):2329-2341 . PubMed 16. Marquardt N, *et al.* 2015. J Immunol. 194:2467. PubMed
RRID	AB_2561367 (BioLegend Cat. No. 302045) AB_2563803 (BioLegend Cat. No. 302046)

Antigen Details

Structure	Ig superfamily, transmembrane form (50-65 kD) or GPI-linked form (48 kD)
Distribution	NK cells, activated monocytes, macrophages, neutrophils
Function	Low affinity IgG Fc receptor, phagocytosis, ADCC
Ligand/Receptor	Aggregated IgG, IgG-antigen complex
Cell Type	Dendritic cells, Macrophages, Monocytes, Neutrophils, NK cells
Biology Area	Immunology, Innate Immunity
Molecular Family	CD Molecules, Fc Receptors
Antigen References	1. Fleit H, *et al.* 1982. *P. Natl. Acad. Sci. USA* 79:3275. 2. Stroncek D, *et al.* 1991. *Blood* 77:1572. 3. Wirthmueller U, *et al.* 1992. *J. Exp. Med.* 175:1381.
Gene ID	2214

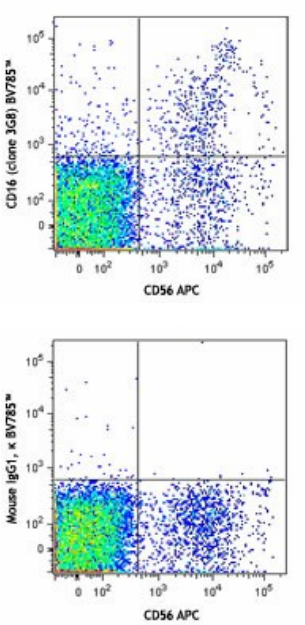
Related Protocols

Cell Surface Flow Cytometry Staining Protocol

Other Formats

APC anti-human CD16, Biotin anti-human CD16, FITC anti-human CD16, Brilliant Violet 711™ anti-human CD16, PE anti-human CD16, PE/Cyanine5 anti-human CD16, Purified anti-human CD16, APC/Cyanine7 anti-human CD16, PE/Cyanine7 anti-human CD16, Alexa Fluor® 488 anti-human CD16, Alexa Fluor® 647 anti-human CD16, Pacific Blue™ anti-human CD16, Alexa Fluor® 700 anti-human CD16, PerCP/Cyanine5.5 anti-human CD16, PerCP anti-human CD16, Brilliant Violet 421™ anti-human CD16, Brilliant Violet 570™ anti-human CD16, Brilliant Violet 605™ anti-human CD16, Brilliant Violet 650™ anti-human CD16, Brilliant Violet 785™ anti-human CD16, Brilliant Violet 510™ anti-human CD16, Ultra-LEAF™ Purified anti-human CD16, Purified anti-human CD16 (Maxpar® Ready), PE/Dazzle™ 594 anti-human CD16, APC/Fire™ 750 anti-human CD16, TotalSeq™-A0083 anti-human CD16, TotalSeq™-B0083 anti-human CD16, TotalSeq™-C0083 anti-human CD16, PE/Fire™ 640 anti-human CD16, Spark YG™ 581 anti-human CD16, TotalSeq™-D0083 anti-human CD16, APC/Fire™ 810 anti-human CD16, GMP APC anti-human CD16, GMP PE/Dazzle™ 594 anti-human CD16, GMP PE anti-human CD16, Spark Red™ 718 anti-human CD16, GMP Pacific Blue™ anti-human CD16, GMP FITC anti-human CD16

Product Data



Human peripheral blood lymphocytes were stained with CD56 APC and CD16 (clone 3G8) Brilliant Violet 785™ (top) or mouse IgG1, κ Brilliant Violet 785™ isotype control (bottom).

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