

Brilliant Violet 605™ anti-human CD16 Antibody

Catalog# / Size	302039 / 25 tests 302040 / 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 605™ 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 605™ excites at 405 nm and emits at 603 nm. The bandpass filter 610/20 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 605™ is a trademark of Sirigen Group Ltd.

[Learn more about Brilliant Violet™.](#)

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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 FcγRIIb receptors causing neutrophil activation and aggregation¹⁸. 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 sections⁶, immunoprecipitation³, stimulation of NK cell proliferation⁴, blocking of phagocytosis⁵, 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)

- Knapp W, *et al.* Eds. 1989. Leucocyte Typing IV. Oxford University Press. New York.
- Schlossman S, *et al.* Eds. 1995. Leucocyte Typing V. Oxford University Press. New York.
- Edberg J, *et al.* 1997. *J. Immunol.* 159:3849. (IP)
- Hoshino S, *et al.* 1991. *Blood* 78:3232. (Stim)
- Tamm A, *et al.* 1996. *Immunol.* 157:1576. (Block)
- Da Silva DM, *et al.* 2001. *Int. Immunol.* 13:633. (IHC)
- Holl V, *et al.* 2004. *J. Immunol.* 173:6274. (Block)
- Hober D, *et al.* 2002. *J. Gen. Virol.* 83:2169. (Block)
- Brainard DM, *et al.* 2009. *J. Virol.* 83:7305. [PubMed](#)
- Smed-Sørensen A, *et al.* 2008. *Blood* 111:5037. (Block) [PubMed](#)
- Timmerman KL, *et al.* 2008. *J. Leukoc. Biol.* 84:1271. (FC) [PubMed](#)
- Yoshino N, *et al.* 2000. *Exp. Anim. (Tokyo)* 49:97. (FC)
- Rout N, *et al.* 2010. *PLoS One* 5:e9787. (FC)
- Kim WK, *et al.* 2006. *Am. J. Pathol.* 168:822. (FC)
- Boltz A, *et al.* 2011. *J. Biol Chem.* 286:21896. [PubMed](#)
- Wu Z, *et al.* 2013. *J. Virol.* 87:7717. [PubMed](#)
- Peterson VM, *et al.* 2017. *Nat. Biotechnol.* 35:936. (PG)
- Vossebeld PJ, *et al.* 1997. *Biochem J.* 323:87-94 (Stim)

Product Citations

- Tran TM, *et al.* 2020. *Immunity.* 51(4):750-765. [PubMed](#)
- Argüello RJ, *et al.* 2020. *Cell Metab.* 32:1063. [PubMed](#)
- Barry KC, *et al.* 2018. *Nat Med.* 24:1178. [PubMed](#)
- Torres-Ruiz J, *et al.* 2020. *J Transl Med.* 18:125. [PubMed](#)
- AC Belkina, JE Snyder-Cappione 2017. *Cytometry A.* 91:175-179. [PubMed](#)
- Chen M, *et al.* 2021. *Cancers (Basel).* 13: [PubMed](#)
- Andresen V, *et al.* 2016. *Cell Death Dis.* 7:e2497. [PubMed](#)
- Billing F, *et al.* 2021. *ACS Appl Mater Interfaces.* 13:55534. [PubMed](#)
- Zhang B, *et al.* 2022. *J Exp Med.* 219: [PubMed](#)
- Zhang B, *et al.* 2021. *Nat Biomed Eng.* 5:1288. [PubMed](#)
- Cao Y, *et al.* 2021. *Cell Res.* 31:732. [PubMed](#)
- Ramos RN, *et al.* 2022. *Clin Transl Immunology.* 11:e1392. [PubMed](#)
- Fraccarollo D, *et al.* 2021. *eLife.* 0.4166666666666667. [PubMed](#)
- Frei A, *et al.* 2016. *Nat Methods.* 10.1038/nmeth.3742. [PubMed](#)
- De Domenico E, *et al.* 2020. *STAR Protoc.* 1:100233. [PubMed](#)
- Lozano-Ojalvo D, *et al.* 2021. *Cell Rep.* 36:109570. [PubMed](#)
- Combes AJ, *et al.* 2021. *Nature.* 591:124. [PubMed](#)
- Georg P, *et al.* 2022. *Cell.* 185:493. [PubMed](#)
- Dulberger CL *et al.* 2017. *Immunity.* 46(6):1018-1029. [PubMed](#)
- Wimmers F, *et al.* 2021. *Cell.* 184:3915. [PubMed](#)
- Mujal AM, *et al.* 2022. *Cancer Immunol Res.* 10:403. [PubMed](#)
- Fisher BS, *et al.* 2020. *PLoS One.* 15:e0233577. [PubMed](#)
- Fernandez IZ, *et al.* 2019. *J Exp Med.* 216:1255. [PubMed](#)

RRID AB_2561354 (BioLegend Cat. No. 302039)
 AB_2562990 (BioLegend Cat. No. 302040)

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](#)

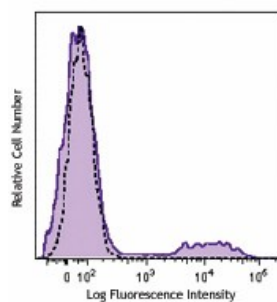
Related Protocols

[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 CD16 (clone 3G8) Brilliant Violet 605™ (filled histogram) or mouse IgG1, κ Brilliant Violet 605™ isotype control (open histogram).

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