

Purified anti-human CD16 Antibody

Catalog# / Size	302001 / 25 µg 302002 / 100 µg
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.
Preparation	The antibody was purified by affinity chromatography.
Concentration	0.5 mg/mL
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C.
Application	FC - Quality tested CyTOF® - Verified Block, IHC-F, IP, Stim - Reported in the literature, not verified in house
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 ≤ 2.0 µg per million cells in 100 µl volume. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	The 3G8 antibody clone blocks neutrophil phagocytosis and stimulates NK cell proliferation. It has been reported that this clone interacts with the FcγRIIIa 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	1. Knapp W, <i>et al.</i> Eds. 1989. Leucocyte Typing IV. Oxford University Press. New York. 2. Schlossman S, <i>et al.</i> Eds. 1995. Leucocyte Typing V. Oxford University Press. New York.
(PubMed link indicates	

BioLegend citation)

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-Sørensen 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. Dallari S, *et al.* 2017. *Nat Commun.* 8:14830. [PubMed](#)
2. Weinlage T, *et al.* 2020. *J Immunol.* 205:56. [PubMed](#)
3. Miyamoto DT, *et al.* 2018. *Cancer Discov.* 0.533333333. [PubMed](#)
4. Korn MA, *et al.* 2020. *J Immunol.* 205:2595. [PubMed](#)
5. Friedman D, *et al.* 2021. *J Cell Sci.* 134:. [PubMed](#)
6. Wagner J *et al.* 2019. *Cell.* 177(5):1330-1345 . [PubMed](#)
7. Wu Z, *et al.* 2013. *J Virol.* 87:7717. [PubMed](#)
8. Holder KA, *et al.* 2021. *Clin Transl Immunology.* 10:e1348. [PubMed](#)
9. Smed-Sørensen A, *et al.* 2008. *Blood.* 111:5037. [PubMed](#)
10. Cao Q, *et al.* 2018. *Am J Physiol Renal Physiol.* 314:F561. [PubMed](#)
11. Fasbender F, *et al.* 2017. *Front Immunol.* 0.88125. [PubMed](#)
12. Mask E, *et al.* 2022. *Front Cell Infect Microbiol.* 12:880860. [PubMed](#)
13. Santos R, *et al.* 2017. *Nat Commun.* . 10.1038/s41467-017-01760-5. [PubMed](#)
14. Alcántara-Hernández M, *et al.* 2021. *Nat Protoc.* 16:4855. [PubMed](#)
15. Boltz A, *et al.* 2011. *J Biol Chem.* 286:21896. [PubMed](#)
16. Winkler M, *et al.* 2017. *PLoS One.* 10.1371/journal.pone.0182427. [PubMed](#)
17. Mann ER, *et al.* 2020. *Sci Immunol.* :5. [PubMed](#)
18. Li L, *et al.* 2019. *Cell Stem Cell.* 24:271. [PubMed](#)
19. Gainers M, *et al.* 2007. *J Immunol.* 179:8509. [PubMed](#)
20. Sibener LV *et al.* 2018. *Cell.* 174(3):672-687 . [PubMed](#)
21. Syrimi E, *et al.* 2021. *iScience.* 24:103215. [PubMed](#)
22. Urlaub D, *et al.* 2017. *J Immunol.* 198:1944. [PubMed](#)
23. Okubo K, *et al.* 2021. *Cell Reports.* 35(7):109142. [PubMed](#)
24. Jog NR, *et al.* 2018. *Front Immunol.* 9:2198. [PubMed](#)
25. Eldredge LC, *et al.* 2019. *Am J Physiol Lung Cell Mol Physiol.* 317:L49. [PubMed](#)
26. Olin A, *et al.* 2018. *Cell.* 174:1277. [PubMed](#)
27. Farhadian SF, *et al.* 2022. *JCI Insight.* 7:. [PubMed](#)
28. Park YJ, *et al.* 2022. *PLoS Pathog.* 18:e1010468. [PubMed](#)
29. Park JE, *et al.* 2020. *Journal for ImmunoTherapy of Cancer.* 8(2):e000873.. [PubMed](#)
30. Auladell M, *et al.* 2019. *Clin Transl Immunology.* 8:e01090. [PubMed](#)
31. Eccles JD, *et al.* 2020. *Cell Rep.* 30:351. [PubMed](#)
32. Prodjinotho UF, *et al.* 2017. *PLoS Negl Trop Dis.* 11:e0005777. [PubMed](#)
33. Ehinger E, *et al.* 2021. *Cardiovasc Res.* 117:1166. [PubMed](#)
34. Frobel J, *et al.* 2018. *Clin Epigenetics.* 10:67. [PubMed](#)
35. Li J, *et al.* 2021. *Haematologica.* 106:3115. [PubMed](#)
36. Shemesh A, *et al.* 2022. *J Exp Med.* 219:. [PubMed](#)
37. Kato M, *et al.* 2021. *PLoS One.* 16:e0252116. [PubMed](#)
38. Combes AJ, *et al.* 2021. *Nature.* 591:124. [PubMed](#)
39. Mody P, *et al.* 2007. *Blood.* 110:2974. [PubMed](#)
40. Ardain A, *et al.* 2019. *Nature.* 570:528. [PubMed](#)
41. Doni A, *et al.* 2021. *Nat Commun.* 12:3739. [PubMed](#)
42. Steffen U, *et al.* 2020. *Nat Commun.* 0.541666667. [PubMed](#)
43. Boutboul D, *et al.* 2018. *J Clin Invest.* 128:3071. [PubMed](#)
44. Pohl K, *et al.* 2018. *PLoS One.* 13:e0209026. [PubMed](#)
45. Farrington LA, *et al.* 2020. *PLoS Pathog.* 16:e1008997. [PubMed](#)
46. Ravindran A, *et al.* 2018. *Front Immunol.* 9:2193. [PubMed](#)
47. De Maeyer RPH, *et al.* 2020. *Nat Immunol.* 21:615. [PubMed](#)
48. Lakshmi Kanth T, *et al.* 2020. *Cell Reports.* 32(3):107923. [PubMed](#)
49. Edri-Brami M, *et al.* 2012. *PLoS One.* 7:e35772. [PubMed](#)
50. Sung JA, *et al.* 2018. *Mol Ther.* 26:2496. [PubMed](#)
51. Chevrier S, *et al.* 2021. *Cell Reports Medicine.* 2(1):100166. [PubMed](#)
52. Ravell JC, *et al.* 2020. *J Clin Invest.* 130:507. [PubMed](#)
53. Chevrier S, *et al.* 2018. *Cell Syst.* 0.675. [PubMed](#)
54. Zhong Q, *et al.* 2018. *J Immunol.* 200:3913. [PubMed](#)
55. Lavin Y *et al.* 2017. *Cell.* 169(4):750-765 . [PubMed](#)
56. Dutertre CA, *et al.* 2020. *Immunity.* 51(3):573-589.e8.. [PubMed](#)
57. Martin E, *et al.* 2020. *JCI Insight.* :5. [PubMed](#)

RRID

AB_314201 (BioLegend Cat. No. 302001)
AB_314202 (BioLegend Cat. No. 302002)

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, <i>et al.</i> 1982. <i>P. Natl. Acad. Sci. USA</i> 79:3275. 2. Stroncek D, <i>et al.</i> 1991. <i>Blood</i> 77:1572. 3. Wirthmueller U, <i>et al.</i> 1992. <i>J. Exp. Med.</i> 175:1381.
Gene ID	2214

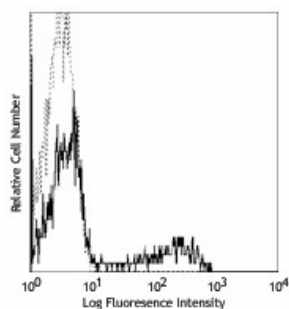
Related Protocols

[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 stained with purified 3G8 and anti-mouse IgGs FITC

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