

Ultra-LEAF™ Purified anti-human CD16 Antibody

Catalog# / Size	302058 / 25 mg 302049 / 100 µg 302050 / 1 mg 302057 / 5 mg
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	0.2 µm filtered in phosphate-buffered solution, pH 7.2, containing no preservative. Endotoxin level is <0.01 EU/µg of the protein (<0.001 ng/µg of the protein) as determined by the LAL test.
Preparation	The Ultra-LEAF™ (Low Endotoxin, Azide-Free) antibody was purified by affinity chromatography.
Concentration	The antibody is bottled at the concentration indicated on the vial, typically between 2 mg/mL and 3 mg/mL. Older lots may have also been bottled at 1 mg/mL. 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. This Ultra-LEAF™ solution contains no preservative; handle under aseptic conditions.
Application	FC - Quality tested CyTOF® - Verified Block, IHC-F, IP, PG, 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 or 100 µl of whole blood. 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 FcγRIIa and FcγRIIb 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 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)

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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. Waight JD, *et al.* 2018. *Cancer Cell.* 33:1033. [PubMed](#)
2. Thulin NK, *et al.* 2020. *Cell Reports.* 31(6):107642. [PubMed](#)
3. Zhu C, *et al.* 2020. *Front Immunol.* 1.688194444. [PubMed](#)

RRID

AB_2572006 (BioLegend Cat. No. 302058)
AB_2783156 (BioLegend Cat. No. 302049)
AB_2561481 (BioLegend Cat. No. 302050)
AB_2572005 (BioLegend Cat. No. 302057)

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	<ol style="list-style-type: none">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

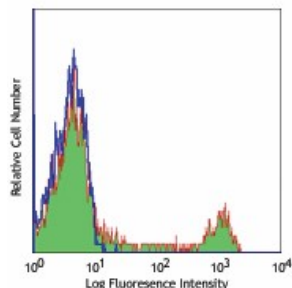
[Cell Surface Flow Cytometry Staining Protocol](#)

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

Product Data



Human peripheral blood lymphocytes stained with Ultra-LEAF™ purified CD16 (clone 3G8), followed by anti-mouse IgG FITC.

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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