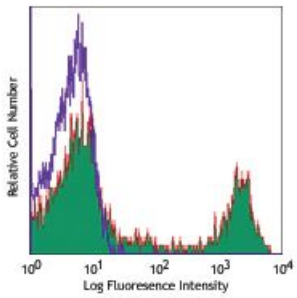
SONY

Product Data Sheet

Alexa Fluor® 488 anti-human CD16

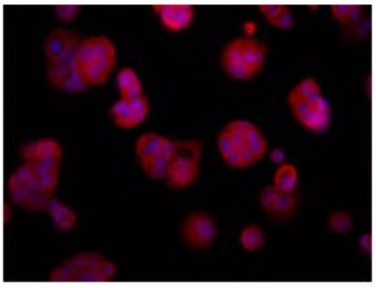
Catalog # / Size:	2110110 / 25 tests 2110095 / 100 tests
Clone:	3G8
Isotype:	Mouse IgG1, κ
Immunogen:	Human PMN cells
Reactivity:	Human, Non-human primate
Preparation:	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 488 under optimal conditions.
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and BSA (origin USA).
Workshop Number:	V NK80
Concentration:	Lot-specific



Human peripheral blood lymphocytes stained with 3G8 APC

Applications:

Applications:	Flow Cytometry
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 or 5 µl per 100 µl of whole blood. It is recommended that the reagent be titrated for optimal performance for each application. * Alexa Fluor® 488 has a maximum emission of 519 nm when it is excited at 488 nm.



MCF7 breast cancer cells were stained with anti-human CD95 (clone DX2) using 1:100 dilution, followed by DyLight™ 649 anti-mouse Ig secondary antibody (red) plus DAPI staining for nuclei (blue). Cells were fixed with 4% PFA, permeabilized with 0.1% Triton X-100, blocked with 10% serum, and incubated O/N at 4°C. Images were taken under 20x (filter set: EX 647/10x, Dichroic 665LP, EM 700/70x) at exposure 4s. Data provided by John Nolan and Er Liu, La Jolla Bioengineering Institute.

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Application Notes: The 3G8 antibody blocks neutrophil phagocytosis and stimulates NK cell proliferation. 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 LEAF™ purified antibody (Endotoxin <0.1 EU/µg, Azide-Free, 0.2 µm filtered) is recommended for functional assays (Cat. No. 302014). For highly sensitive assays, we recommend Ultra-LEAF™ purified antibody (Cat. No. 302050) with a lower endotoxin limit than standard LEAF™ purified antibodies (Endotoxin <0.01 EU/µg).

Application References:

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)

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).

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.

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