

# Product Data Sheet

## Alexa Fluor® 647 anti-human CD16

**Catalog # / Size:** 302023 / 25 tests  
302020 / 100 tests

**Clone:** 3G8

**Isotype:** Mouse IgG1,  $\kappa$

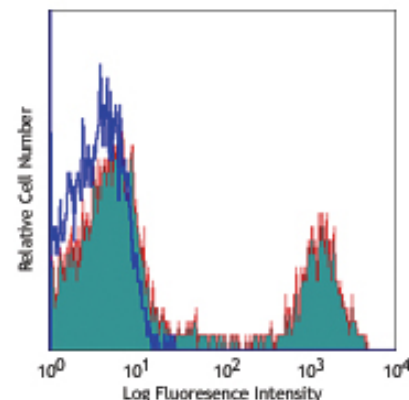
**Workshop Number:** V NK80

**Reactivity:** Human, **Cross-Reactivity:** Chimpanzee, Baboon, Cynomolgus, Rhesus, Pigtailed Macaque, Capuchin Monkey, Squirrel Monkey, Sooty Mangabey, Cotton-topped Tamarin, Marmoset

**Preparation:** The antibody was purified by affinity chromatography, and conjugated with Alexa Fluor® 647 under optimal conditions. The solution is free of unconjugated Alexa Fluor® 647.

**Formulation:** Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA (origin USA).

**Storage:** The antibody solution should be stored undiluted at 4°C and protected from prolonged exposure to light. **Do not freeze.**



Human peripheral blood lymphocytes stained with 3G8 Alexa Fluor® 647

## Applications:

**Applications:** FC - Quality tested

**Recommended Usage:** Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis. For immunofluorescent staining, the suggested use of this reagent is 5  $\mu$ l per million cells or 5  $\mu$ l per 100  $\mu$ l of whole blood. It is recommended that the reagent be titrated for optimal performance for each application.

\* Alexa Fluor® 647 has a maximum emission of 668 nm when it is excited at 633nm / 635nm.

\*\* Alexa Fluor® is a registered trademark of Molecular Probes, Inc. Alexa Fluor® dye antibody conjugates are sold under license from Molecular Probes, Inc. for research use only, except for use in combination with microarrays and high content screening, and are covered by pending and issued patents.

**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<sup>6</sup>, immunoprecipitation<sup>3</sup>, stimulation of NK cell proliferation<sup>4</sup>, blocking of phagocytosis<sup>5</sup>, and blocking of immunoglobulin binding to Fc $\gamma$ RIII<sup>7,8</sup>. The LEAF™ purified antibody (Endotoxin <0.1 EU/ $\mu$ g, Azide-Free, 0.2  $\mu$ m 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/ $\mu$ g).

- 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-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

**Description:** CD16 is known as low affinity IgG receptor III (Fc $\gamma$ RIII). It is expressed as two distinct forms (CD16a and CD16b). CD16a (Fc $\gamma$ RIIIa) 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 (Fc $\gamma$ RIIIb) 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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Related Products:Product	Clone	Application
Cell Staining Buffer		FC, ICC, ICFC
RBC Lysis Buffer (10X)		FC, ICFC
Alexa Fluor® 647 Mouse IgG1, κ Isotype Ctrl (FC)	MOPC-21	FC, IF
Human TruStain FcX™ (Fc Receptor Blocking Solution)		FC, ICC, ICFC



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