abcam

## ab272250

# violetFluor™ 450 Anti-CD16 antibody [3G8]

Anti-CD16 antibody [3G8] conjugated to violetFluor™ 450 - suitable for flow cytometry, and reacts with human samples. Clone [3G8] is a mouse monoclonal antibody and one of the most commonly used clones for flow cytometry.

Design your panel with our interactive flow cytometry panel builder. Click here.

## Key facts

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| **Isotype** | IgG1 |
| **Host species** | Mouse |
| **Conjugation** | violetFluor™ 450 |
| **Excitation/Emission** | Ex: 405nm, Em: 450nm |
| **Storage buffer** | pH: 7.2 Preservative: 0.09% Sodium azide Constituents: 0.87% Sodium chloride, 0.12% Sodium dihydrogen phosphate, 0.1% Gelatin |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Clone number** | 3G8 |
| **Purification technique** | Affinity purification |
| **Light chain type** | kappa |
| **Purification notes** | Purified from tissue culture supernatant. Purified antibody was conjugated under optimal conditions, with unreacted dye removed from the preparation. |

## Reactivity data

## Flow Cyt

**Tested**

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|---|---|
| **Species** | Human |
| **Dilution info** | 5 µL for $10^5$-$10^8$ Cells |
| **Notes** | - |

## Target data

See full target information FCGR3A

**Function**

Receptor for the invariable Fc fragment of immunoglobulin gamma (IgG). Optimally activated upon binding of clustered antigen-IgG complexes displayed on cell surfaces, triggers lysis of antibody-coated cells, a process known as antibody-dependent cellular cytotoxicity (ADCC). Does not bind free monomeric IgG, thus avoiding inappropriate effector cell activation in the absence of antigenic trigger (PubMed:11711607, PubMed:21768335, PubMed:22023369, PubMed:24412922, PubMed:25786175, PubMed:25816339, PubMed:28652325, PubMed:8609432, PubMed:9242542). Mediates IgG effector functions on natural killer (NK) cells. Binds antigen-IgG complexes generated upon infection and triggers NK cell-dependent cytokine production and degranulation to limit viral load and propagation. Involved in the generation of memory-like adaptive NK cells capable to produce high amounts of IFNG and to efficiently eliminate virus-infected cells via ADCC (PubMed:24412922, PubMed:25786175). Regulates NK cell survival and proliferation, in particular by preventing NK cell progenitor apoptosis (PubMed:29967280, PubMed:9916693). Following the engagement of antigen-IgG complexes, triggers phosphorylation of immunoreceptor tyrosine-based activation motif (ITAM)-containing adapters with subsequent activation of phosphatidylinositol 3-kinase signaling and sustained elevation of intracellular calcium that ultimately drive NK cell activation. The ITAM-dependent signaling coupled to receptor phosphorylation by PKC mediates robust intracellular calcium flux that leads to production of pro-inflammatory cytokines, whereas in the absence of receptor phosphorylation it mainly activates phosphatidylinositol 3-kinase signaling leading to cell degranulation (PubMed:1825220, PubMed:23024279, PubMed:2532305). Costimulates NK cells and trigger lysis of target cells independently of IgG binding (PubMed:10318937, PubMed:23006327). Mediates the antitumor activities of therapeutic antibodies. Upon ligation on monocytes triggers TNFA-dependent ADCC of IgG-coated tumor cells (PubMed:27670158). Mediates enhanced opsonisation and ADCC in response to afucosylated IgGs (PubMed:34485821, PubMed:28566370). (Microbial infection) Involved in Dengue virus pathogenesis via antibody-dependent enhancement (ADE) mechanism. Secondary infection with Dengue virus triggers elevated levels of afucosylated non-neutralizing IgG1s with reactivity to viral envelope/E protein. Viral antigen-IgG1 complexes bind with high affinity to FCGR3A, facilitating virus entry in myeloid cells and subsequent viral replication.

## Storage

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| **Shipped at conditions** | Blue Ice |

| | |
|---|---|
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | +4°C |
| **Storage information** | Store in the dark |

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

| | |
|---|---|
| **Activity summary** | CD16 also known as FCGR3A or CD16A protein is a low-affinity receptor for the Fc region of IgG. It weighs approximately 50-70 kDa and exists on the surface of several immune cells such as natural killer (NK) cells some populations of T cells and macrophages. The expression of CD16 mediates various cellular responses including antibody-dependent cellular cytotoxicity (ADCC) where it acts by engaging with immune complexes. Researchers often use anti-CD16 antibodies in flow cytometry to analyze the presence and quantity of CD16-expressing cells. |
| **Biological function summary** | This receptor plays a significant role in immune system regulation by contributing to the activation of immune effector cells. CD16 is not part of a larger complex but it operates in concert with CD3 proteins to trigger intracellular signaling pathways upon engagement with its ligand. Its function is important for the antibody-dependent clearance of infected or malignant cells from the body representing an essential linkage between innate and adaptive immunity. |
| **Pathways** | Signaling involving CD16 is integrated into the immune response mechanisms that include the Fc gamma receptor-mediated phagocytosis pathway. This pathway involves interactions with IgG antibodies and complements the activity of other Fc gamma receptors such as CD32 and CD64. Through these interactions CD16 enhances phagocytic activity and stimulates the secretion of cytokines and chemokines important for orchestrating an effective immune response. |
| **Associated diseases and disorders** | CD16 plays an important role in conditions like autoimmune diseases and certain cancers. Its expression and function are important in the pathophysiology of systemic lupus erythematosus where an imbalance in immune complex clearance leads to tissue damage. In oncology CD16 aids in the immune system's recognition and elimination of tumor cells working alongside proteins such as CD3 in modulating the body's anti-tumor response. Understanding CD16's involvement in these diseases helps in developing therapeutic strategies that harness the immune system's power such as monoclonal antibody therapies targeting CD16. |

## Product promise

**Tested**

We have tested this species and application combination and it works. It is covered by our product promise.

**Expected**

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

**Predicted**

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

**Not recommended**

We do not recommend this combination. It is not covered by our product promise.

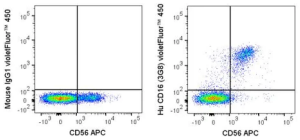
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## 1 product image




### Flow Cytometry - violetFluor™ 450 Anti-CD16 antibody [3G8] (ab272250)

CD16 Flow Cytometry staining using mouse Anti-CD16 antibody

Human peripheral blood lymphocytes were stained with APC Anti-Human CD56 and 5 µL (0.5 µg) ab272250 (right panel) or 0.5 µg violetFluor™ 450 Mouse IgG1 isotype control (left panel).

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