abcam

**ab171202**

# Anti-CD16+CD32 antibody [93] - Low endotoxin, Azide free

## Key facts

| | |
|---|---|
| **Isotype** | IgG2a |
| **Host species** | Rat |
| **Storage buffer** | pH: 7.2 Constituents: PBS |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Carrier free** | Yes |
| **Clone number** | 93 |
| **Purification technique** | Affinity purification Protein G |
| **Specificity** | ab171202 reacts with an epitope shared by mouse CD16 and CD32. ab171202 has been reported in blocking of Fc-mediated reactions in functional studies. |
| **Light chain type** | lambda |
| **Concentration** | 1 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## ICC/IF

**Tested**

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 10 µg/mL |

| | |
|---|---|
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 10 µg/mL |
| **Notes** | - |

## Flow Cyt

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 0.5 µg for $10^5$-$10^8$ Cells |
| **Notes** | (in a final volume of 100 µL).<br>ab18450 - Rat monoclonal IgG2a, is suitable for use as an isotype control with this antibody. |

### Expected

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 0.5 µg for $10^5$-$10^8$ Cells |
| **Notes** | (in a final volume of 100 µL).<br>ab18450 - Rat monoclonal IgG2a, is suitable for use as an isotype control with this antibody. |

## Target data

See full target information FCGR3A

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|---|---|
| **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 duration** | 1-2 weeks |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -20°C |
| **Aliquoting information** | Upon delivery aliquot |
| **Storage information** | Avoid freeze / thaw cycle |

## Notes

Endotoxin Level: Less than 0.001 ng/µg antibody, as determined by the LAL assay.

## Supplementary info

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

| | |
|---|---|
| **Activity summary** | CD16 and CD32 also referred to as FCγRIII and FCγRII are proteins expressed on the surface of various immune cells like natural killer cells macrophages and some subsets of T cells. CD16 has a mass ranging between 50-80 kDa while CD32 exhibits variability in size between 32-40 kDa due to different isoforms. These proteins play pivotal roles in immune response by binding to the Fc region of immunoglobulins influencing cell activation and signaling. |
| **Biological function summary** | CD16 and CD32 serve important roles in mediating immune cell interactions. They work as part of immune synapses facilitating antibody-dependent cellular cytotoxicity (ADCC) and phagocytosis processes. Due to their involvement in these complex activities they are included in immunological synapse formation and modulation extending their influence over overall immune regulation and response. These proteins are known to contribute to both innate and adaptive immune mechanisms as receptors for the Fc portion of immunoglobulin G. |
| **Pathways** | CD16 and CD32 interact within signaling pathways like the Fc gamma receptor-mediated phagocytosis pathway and the immune response-regulating signaling pathway. These receptors work in coordination with other immunoglobulin family members to initiate targeted cellular reactions necessary for immune challenge responses. CD32 often partners with CD19 and CD21 within pathways to modulate B cell receptor-mediated signaling. |
| **Associated diseases and disorders** | CD16 and CD32 have connections to autoimmune diseases and infectious diseases. Aberrant expression or dysfunction in these proteins can contribute to the development of conditions such as systemic lupus erythematosus where improper immune complex clearance occurs and chronic inflammation results. CD16's involvement with NK cells can also play a role in viral infection control highlighting their importance in pathogen defense mechanisms. |

## 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**

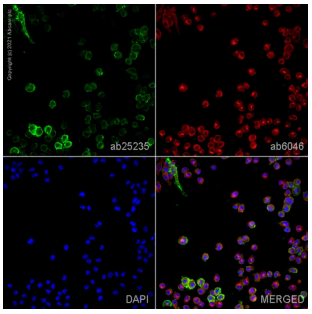
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

## 2 product images

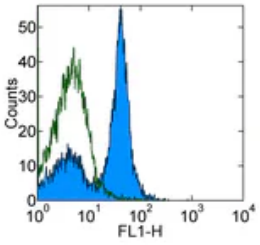



### Immunocytochemistry/ Immunofluorescence - Anti-CD16+CD32 antibody [93] - Low endotoxin, Azide free (ab171202)

CD16+CD32 Immunocytochemistry/ Immunofluorescence staining using rat Anti-CD16+CD32 antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS and sodium azide (ab25235)
ab25235 staining CD16 + CD32 in Raw264.7 cells. The cells were fixed with 4% paraformaldehyde (10 min), permeabilized with 0.1% PBS-Tween for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at 4°C with ab25235 at 10µg/ml and ab6046, Rabbit polyclonal to beta Tubulin - Loading Control. Cells were then incubated with ab150165, Goat polyclonal Secondary Antibody to Rat IgG - H&L (Alexa Fluor® 488), pre-adsorbed at 1/1000 dilution (shown in green) and ab150080, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 594) at 1/1000 dilution (shown in pseudocolour red). Nuclear DNA was labelled with DAPI (shown in blue).

Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown.




### Flow Cytometry - Anti-CD16+CD32 antibody [93] - Low endotoxin, Azide free (ab171202)

CD16+CD32 Flow Cytometry staining using rat Anti-CD16+CD32 antibody

Flow cytometric analysis of BALB/c splenocytes with 0.25 µg Rat IgG2a K Isotype Control (open histogram) or 0.25 µg ab171202 (filled histogram) followed by Anti-Rat IgG FITC. Total viable cells were used for analysis.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.