abcam

ab246222

Anti-CD16 antibody [EPR22409-124]

Anti-CD16 antibody [EPR22409-124] (ab246222) is a rabbit monoclonal antibody detecting CD16 in **Western Blot, Flow Cytometry, IP, IHC-P, ICC/IF**. Suitable for **Human**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 10 publications

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR22409-124
Purification technique	Affinity purification Protein A
Concentration	0.569 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human

Dilution info	1/30
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/600
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information FCGR3B

Function	Receptor for the Fc region of immunoglobulins gamma. Low affinity receptor. Binds complexed or aggregated IgG and also monomeric IgG. Contrary to III-A, is not capable to mediate antibody-dependent cytotoxicity and phagocytosis. May serve as a trap for immune complexes in the peripheral circulation which does not activate neutrophils.

Storage

Shipped at conditions	Conditional Ambient
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

What is this antibody validated in?
Anti-CD16 antibody [EPR22409-124] (ab246222) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

What is the molecular weight of CD16?
Anti-CD16 [EPR22409-124] (ab246222) specifically detects a band for CD16 (UniProt: O75015) at a molecular weight of 29kDa.

Trusted by the scientific community
Anti-CD16 [EPR22409-124] (ab246222) was first used in a scientific publication in 2019 and has been cited over 10 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [EPR22409-124] also available for your convenience: ab246222, Carrier free - ab252908, Alexa Fluor® 488 - ab270139, Alexa Fluor® 647 - ab270140

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

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

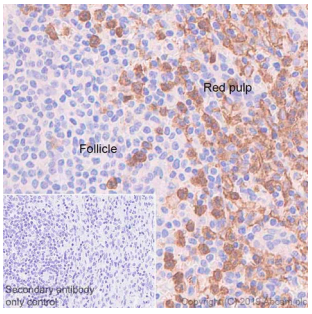
We do not recommend this combination. It is not covered by our product promise.

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.

6 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD16 antibody [EPR22409-124] (ab246222)

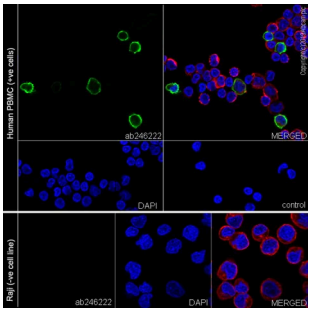
CD16 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD16 antibody

Immunohistochemical analysis of paraffin-embedded human spleen tissue labeling CD16 with ab252905 at 1/500 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on red pulp of human spleen (PMID: 26512139; 29692344). Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 minutes.

The section was incubated with ab252905 for 10 minutes at 37°C. The immunostaining staining was performed on a Leica Biosystems BOND® RX instrument.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab187039).

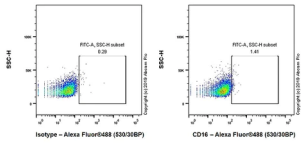


Immunocytochemistry/ Immunofluorescence - Anti-CD16 antibody [EPR22409-124] (ab246222)

CD16 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD16 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized human PBMCs (human peripheral blood mononuclear cells) or Raji (human Burkitt's lymphoma cell line) cell line labeling CD16 with ab246222 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing membranous staining in subsets of human PBMC cells is observed. The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) at 1/200 dilution (red).
Secondary antibody only control: Used PBS instead of primary antibody, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

Negative control: Raji (PMID:11207281).

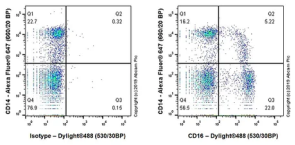


Flow Cytometry - Anti-CD16 antibody [EPR22409-124] (ab246222)

CD16 Flow Cytometry staining of Raji (human Burkitt's lymphoma cell line) using rabbit Anti-CD16 antibody

Negative control: Raji. (PMID:11207281).
Raji (human Burkitt's lymphoma cell line) were stained with Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730)(Left) or ab252905 (Right) followed by a Goat anti rabbit IgG (Dylight ® 488) at 1/2000 dilution.

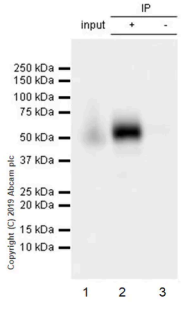
Gated on viable cells.



Flow Cytometry - Anti-CD16 antibody [EPR22409-124] (ab246222)

CD16 Flow Cytometry staining using rabbit Anti-CD16 antibody

Human PBMCs (human peripheral blood mononuclear cells) were stained with Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (Left) or ab246222 (Right) followed by a Goat anti rabbit IgG (Dylight ® 488) at 1/2000 dilution. They were then stained with Alexa Fluor® 647-conjugated anti-CD14. The expression pattern is consistent with that described in the literature. (PMID: 21738687)
Gated on viable cells.



Immunoprecipitation - Anti-CD16 antibody [EPR22409-124] (ab246222)

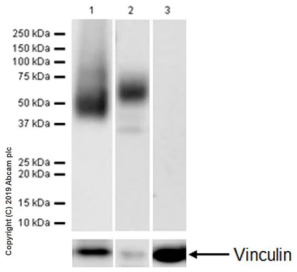
CD16 was immunoprecipitated from 0.35 mg of human spleen lysate with ab252905 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab252905 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used as secondary antibody at 1/5000 dilution.
Lane 1: Human spleen lysate 10 µg (Input).
Lane 2: ab252905 IP in human spleen lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab252905 in human spleen lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 5 seconds.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab246222).
All lanes:
Immunoprecipitation - Anti-CD16 antibody [EPR22409-124] (ab246222)

Predicted band size: 29 kDa

Observed band size: 50-70 kDa



Western blot - Anti-CD16 antibody [EPR22409-124] (ab246222)

CD16 Western blot staining using rabbit Anti-CD16 antibody

Blocking and dilution buffer: 5% NFDM/TBST.
Exposure times.

Lane 1: 92 seconds.

Lanes 2 & 3: 3 minutes.

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: 2526846).

Negative control: Raji (PMID:11207281).

All lanes:
Western blot - Anti-CD16 antibody [EPR22409-124] (ab246222) at 1/1000 dilution

Lane 1:
Human spleen lysate at 20 µg

Lane 2:
Human colon cancer lysate at 20 µg

Lane 3:
Raji (human Burkitt's lymphoma cell line) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/100000 dilution

Predicted band size: 29 kDa

Observed band size: 50-70 kDa

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