abcam

ab231852

Anti-CD14 antibody [EPR21847] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR21847
Purification technique	Affinity purification Protein A
Concentration	1.014 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	-

Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	-
Notes	-

WB

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	-
Notes	-

Target data

See full target information Cd14

Function	Coreceptor for bacterial lipopolysaccharide. In concert with LBP, binds to monomeric lipopolysaccharide and delivers it to the LY96/TLR4 complex, thereby mediating the innate immune response to bacterial lipopolysaccharide (LPS) (PubMed:16148141). Acts via MyD88, TIRAP and TRAF6, leading to NF-kappa-B activation, cytokine secretion and the inflammatory response (PubMed:15895089, PubMed:8612135). Acts as a coreceptor for TLR2:TLR6 heterodimer in response to diacylated lipopeptides and for TLR2:TLR1 heterodimer in response to triacylated lipopeptides, these clusters trigger signaling from the cell surface and subsequently are targeted to the Golgi in a lipid-raft dependent pathway (By similarity). Acts as an accessory receptor for M.tuberculosis lipoproteins LprA, LprG and LpqH, in conjunction with coreceptors TLR2 and TLR1. The lipoproteins act as agonists to modulate antigen presenting cell functions in response to the pathogen (PubMed:19362712). Binds electronegative LDL (LDL(-)) and mediates the cytokine release induced by LDL(-) (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab231852 is the carrier-free version of ab221678.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	CD14 also known as cluster of differentiation 14 is a glycoprotein with a molecular mass of approximately 55 kDa. This protein is expressed mainly on the surface of macrophages monocytes and to a lesser extent on neutrophils. CD14 exists in two forms: membrane-bound (mCD14) and soluble (sCD14). It functions as a co-receptor along with TLR4 (Toll-like receptor 4) and MD-2 for the detection of bacterial lipopolysaccharide (LPS) which is an important component of the outer membrane of Gram-negative bacteria.
Biological function summary	This glycoprotein plays a significant role in the innate immune system by recognizing pathogen-associated molecular patterns (PAMPs). It is part of a receptor complex where CD14 acts alongside LPS binding protein (LPS-R) TLR4 and MD-2 to facilitate pro-inflammatory signaling in response to microbial invasion. By binding to LPS CD14 initiates and amplifies the immune response leading to the production of cytokines and the recruitment of other immune cells to the site of infection.
Pathways	CD14 interacts with the toll-like receptor signaling pathway notably involving TLR4. Upon LPS detection CD14 assists in the activation of TLR4 triggering downstream signaling cascades such as NF-κB and MAPK pathways. These pathways result in the transcription of inflammatory cytokines and are essential for the host defense mechanism. The protein complex involving CD14 further interacts with adaptor proteins like MyD88 and TRIF facilitating signal propagation and the immune system's ability to respond to pathogens.
Associated diseases and disorders	Researchers have linked CD14 to sepsis and atherosclerosis. High levels of soluble CD14 (sCD14) are often observed in patients with sepsis indicating its participation in excessive systemic inflammation. In atherosclerosis CD14's role in recognizing LPS contributes to chronic inflammation and the development of plaques in arteries. Through these diseases CD14 connects with TLR4 emphasizing its impact on inflammatory responses and its potential as a therapeutic target.

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.

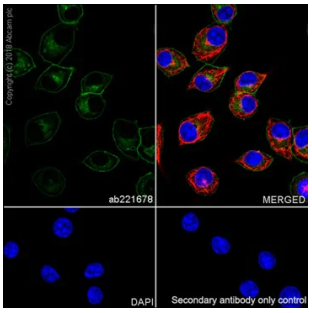
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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6 product images



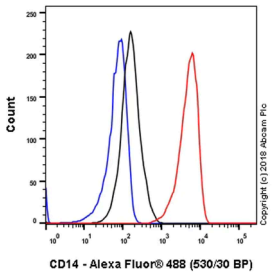
Immunocytochemistry/ Immunofluorescence - Anti-CD14 antibody [EPR21847] - BSA and Azide free (ab231852)

CD14 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD14 antibody

Immunofluorescent analysis of 100% methanol-fixed J774A.1 (mouse reticulum cell sarcoma monocyte macrophage) cells labeling CD14 with ab221678 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing membranous and cytoplasmic staining on J774A.1 cell line. 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 at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab221678).

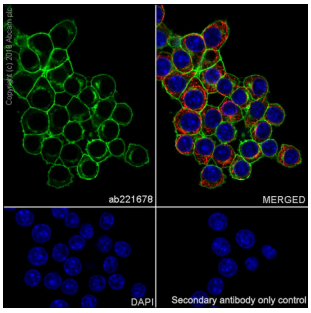


Flow Cytometry - Anti-CD14 antibody [EPR21847] - BSA and Azide free (ab231852)

CD14 Flow Cytometry staining using rabbit Anti-CD14 antibody

Flow cytometric analysis of RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) cell line labeling CD14 with ab221678 at 1/500 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabelled control (cells incubated with secondary antibody only) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.
Gated on viable cells.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab221678).



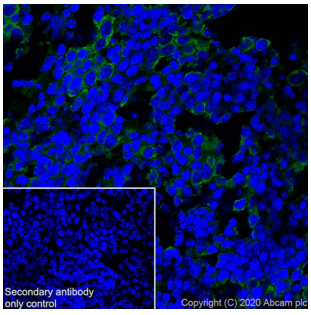
Immunocytochemistry/ Immunofluorescence - Anti-CD14 antibody [EPR21847] - BSA and Azide free (ab231852)

CD14 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CD14 antibody

Immunofluorescent analysis of 100% methanol-fixed RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) cells labeling CD14 with ab221678 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488)(ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing membranous and cytoplasmic staining on RAW 264.7 cell line. 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 (re

Secondary antibody only control: Used PBS instead of primary antibody, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488)(ab150077) secondary at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab221678).



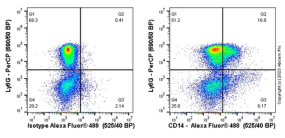
Immunohistochemistry (Frozen sections) - Anti-CD14 antibody [EPR21847] - BSA and Azide free (ab231852)

CD14 Immunohistochemistry (Frozen sections) staining using rabbit Anti-CD14 antibody

This data was developed using ab221678 ,the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse spleen tissue labeling CD14 with ab221678 at 1/50 (10.62 ug/ml) dilution followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor ® 488) at 1/1000 dilution (Green). Positive staining on mouse spleen. is observed. The nuclear counterstain was DAPI (Blue).

Secondary antibody control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor ®; 488) at 1000 dilution.

Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20).



Flow Cytometry - Anti-CD14 antibody [EPR21847] - BSA and Azide free (ab231852)

CD14 Flow Cytometry staining using rabbit Anti-CD14 antibody

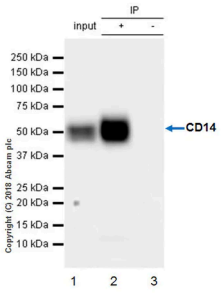
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab221678).

Flow cytometry staining of C57 BL/6 mouse bone marrow cells with ab221678 (right) or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (left). Cells were incubated for 30 min on ice in 1x PBS containing 10µg/ml anti CD16/CD32 and 10% normal goat serum to block FC

receptors and non-specific protein-protein interaction followed by the antibody ab221678 or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (1x 106 in 100 µl at 10.0 µg/ml (1/215)) for 30min on ice. The cells were simultaneously stained with Ly6G.

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 for 30min on ice

Acquisition of >30000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter. Events were gated on viable cells.



Immunoprecipitation - Anti-CD14 antibody [EPR21847] - BSA and Azide free (ab231852)

CD14 was immunoprecipitated from 0.35 mg RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate with ab221678 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab221678 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5000 dilution.
Lane 1: RAW 264.7 (Mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate 10 µg (Input).
Lane 2: ab221678 IP in RAW 264.7 whole cell lysate(+).
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab221678 in RAW 264.7 whole cell lysate (-).

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 8 seconds

The molecular mass observed is consistent with the literature (PMID: 9502426; PMID:7513013)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab221678).

All lanes:
Immunoprecipitation - Anti-CD14 antibody [EPR21847] (ab221678)

Developed using the ECL technique.

Predicted band size: 40 kDa

Observed band size: 50-55 kDa

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