abcam

ab254375

Anti-CCR2/CD192 antibody [EPR23494-47]

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	EPR23494-47
Purification technique	Affinity purification Protein A
Concentration	0.607 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/11000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Rat, Human, Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information CCR2/CD192

Function	Key functional receptor for CCL2 but can also bind CCL7, and CCL12 (PubMed:23408426, PubMed:38157855, PubMed:8048929, PubMed:8146186). Also transduces signaling mediated by CCL13 (PubMed:38157855). Its binding with CCL2 on monocytes and macrophages mediates chemotaxis and migration induction through the activation of the PI3K cascade, the small G protein Rac and lamellipodium protrusion (PubMed:38157855). Also acts as a receptor for the beta-defensin DEFB106A/DEFB106B (PubMed:23938203). Regulates the expression of T-cell inflammatory cytokines and T-cell differentiation, promoting the differentiation of T-cells into T-helper 17 cells (Th17) during inflammation (By similarity). Facilitates the export of mature thymocytes by enhancing directional movement of thymocytes to sphingosine-1-phosphate stimulation and up-regulation of S1P1R expression; signals through the JAK-STAT pathway to regulate FOXO1 activity leading to an increased expression of S1P1R (By similarity). Plays an important role in mediating peripheral nerve injury-induced neuropathic pain (By similarity). Increases NMDA-mediated synaptic transmission in both dopamine D1 and D2 receptor-containing neurons, which may be caused by MAPK/ERK-dependent phosphorylation of GRIN2B/NMDAR2B (By similarity). Mediates the recruitment of macrophages and monocytes to the injury site following brain injury (By similarity). (Microbial infection) Alternative coreceptor with CD4 for HIV-1 infection.

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

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.

Supplementary info

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

Activity summary	CCR2 also known as C-C chemokine receptor type 2 is a protein involved in immune cell trafficking. It is a member of the G-protein-coupled receptor family and has a molecular mass of approximately 43 kDa. CCR2 is primarily expressed on monocytes dendritic cells and certain subsets of T cells. It functions as a receptor for monocyte chemoattractant proteins (MCPs) with MCP-1 (CCL2) being the most well-known ligand. The interaction between CCR2 and its ligands directs the movement of these immune cells to sites of inflammation or tissue injury.
Biological function summary	CCR2 plays an important role in mediating leukocyte migration. It acts in the immune system to guide monocytes from the bloodstream into tissues contributing to immune surveillance and response. CCR2 operates not as part of a larger receptor complex but it does interact closely with other chemokine receptors which may influence its signaling. The receptor's activity has critical implications for inflammatory processes and lies at the heart of many immune responses.
Pathways	CCR2 is integrally involved in the chemokine signaling pathway and the inflammatory response pathway. Its function in these pathways highlights its role in modulating immune cell infiltration during immune challenges. The receptor also interfaces with other important signaling proteins such as CCR5 which like CCR2 is another chemokine receptor involved in mediating immune cell movement. These interactions overlap and complement each other offering nuanced regulation of immune cell dynamics.
Associated diseases and disorders	CCR2 has connections to conditions such as atherosclerosis and rheumatoid arthritis. In atherosclerosis the receptor's involvement in monocyte recruitment to the arterial wall is an important step in plaque formation. Its role in rheumatoid arthritis centers on the promotion of leukocyte infiltration into the joint tissues contributing to inflammation and joint damage. CCR2's connection to such disorders often aligns with a similar role played by other chemokine receptors like CCR5 highlighting its relevance in inflammation-related pathologies.

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

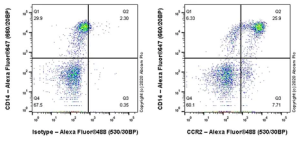
We do not recommend this combination. It is not covered by our product promise.

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.

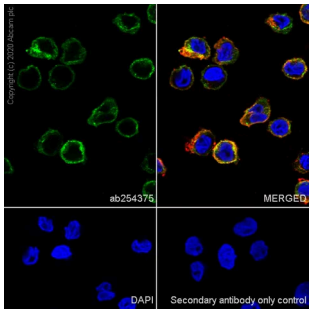
5 product images



Flow Cytometry - Anti-CCR2/CD192 antibody [EPR23494-47] (ab254375)

CCR2/CD192 Flow Cytometry staining using rabbit Anti-CCR2/CD192 antibody

Flow cytometric analysis of Human peripheral blood mononuclear cell (PBMC) cells labelling CCR2 with ab254375 at 1/600 dilution (0.1ug) (Right) compared with a Rabbit monoclonal IgG (ab172730) isotype control (Left). Cells were stained with rabbit IgG (Left) or ab254375 (Right). Then stained with anti-CD14 conjugated to Alexa Fluor 647.
Gated on viable cells.

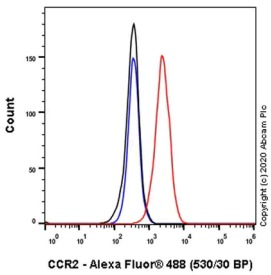


Immunocytochemistry/ Immunofluorescence - Anti-CCR2/CD192 antibody [EPR23494-47] (ab254375)

CCR2/CD192 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CCR2/CD192 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized THP-1 cells labelling CCR2 with ab254375 at 1/1000 dilution, followed by ab150077 Goat Anti-Rabbit IgG

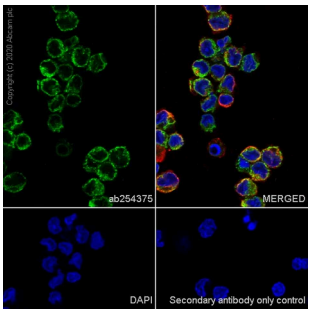
H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing membranous and cytoplasmic staining in THP-1 cell line. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5 dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution.



Flow Cytometry - Anti-CCR2/CD192 antibody [EPR23494-47] (ab254375)

CCR2/CD192 Flow Cytometry staining using rabbit Anti-CCR2/CD192 antibody

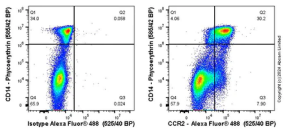
Flow cytometric analysis of THP-1 (Human monocytic leukemia monocyte) cells labelling CCR2 with ab254375 at 1/600 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.
Gated on viable cells.



Immunocytochemistry/ Immunofluorescence - Anti-CCR2/CD192 antibody [EPR23494-47] (ab254375)

CCR2/CD192 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CCR2/CD192 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Human PBMC cells labelling CCR2 with ab254375 at 1/1000 dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing membranous and cytoplasmic staining in Human PBMC cells. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).
Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution.



Flow Cytometry - Anti-CCR2/CD192 antibody [EPR23494-47] (ab254375)

CCR2/CD192 Flow Cytometry staining of human peripheral blood mononuclear cells (PBMCs) using rabbit Anti-CCR2/CD192 antibody

Flow cytometry staining of human peripheral blood mononuclear cells (PBMCs) with ab254375 (right) or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (left). PBMCs were incubated for 30 mins on ice in 1x PBS containing 10 µg/ml human IgG and 10 % normal goat serum to block FC receptors and non-specific protein-protein interaction followed by the antibody ab254375 or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (1x 10^6 in 100 µl at 0.2 µg/ml (1/11000 dilution)) for 30 mins on ice. The cells were simultaneously stained with CD14.

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

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

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