abcam

ab233701

Anti-CCR2/CD192 antibody [EPR20844] - 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	EPR20844
Purification technique	Affinity purification Protein A
Concentration	1.005 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Transfected cell line - Mouse, Mouse
Dilution info	-

Notes	-

ICC/IF

Tested

Species	Transfected cell line - Mouse
Dilution info	-
Notes	-

Expected

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

Target data

See full target information CCR2/CD192

Function

Key functional receptor for CCL2 but can also bind CCL7 and CCL12 chemokines (PubMed:8631787, PubMed:8662823, PubMed:8996246). 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 (By similarity). Also acts as a receptor for the beta-defensin DEFB106A/DEFB106B (By similarity). 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 (PubMed:28507030). 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 (PubMed:29930553). Plays an important role in mediating peripheral nerve injury-induced neuropathic pain (PubMed:29993042). 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 (PubMed:29993042). Mediates the recruitment of macrophages and monocytes to the injury site following brain injury (PubMed:24806994, PubMed:29632244).

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

ab233701 is the carrier-free version of ab216863.

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	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

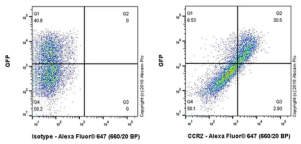
We do not recommend this combination. It is not covered by our product promise.

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.

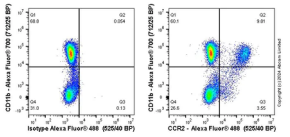
2 product images



Flow Cytometry - Anti-CCR2/CD192 antibody [EPR20844] - BSA and Azide free (ab233701)

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

Flow cytometric analysis of HEK-293T (human embryonic kidney epithelial cell) transfected with GFP-tagged CCR2 expression vector, cell line labelling CCR2 with ab216863 at 1/600 dilution (Right) and an isotype control Rabbit monoclonal IgG (ab172730) (Left). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 was used as the secondary antibody. Gated on viable cells. Only GFP(+) population give a positive signal.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab216863).



Flow Cytometry - Anti-CCR2/CD192 antibody [EPR20844] - BSA and Azide free (ab233701)

CCR2/CD192 Flow Cytometry staining of Mouse bone marrow using rabbit Anti-CCR2/CD192 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab216863).
Flow cytometry staining of C57 BL/6 mouse bone marrow cells with ab216863 (right) or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (left). Cells were incubated for 30 mins 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 ab216863 or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (1x 10^6 in 100 µl at 0.2 µg/ml (1/11250 dilution)) for 30 mins on ice. The cells were simultaneously stained with CD11b.

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'.