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Anti-CCR2 Antibody Picoband™ (monoclonal, 8C4)

Catalog # ABO14938

Product Information

Application	WB, IHC, IF, ICC, FC
Primary Accession	P41597
Host	Mouse
Isotype	Mouse IgG2b
Reactivity	Human
Clonality	Monoclonal
Format	Lyophilized
Description	Anti-CCR2 Antibody Picoband™ (monoclonal, 8C4) . Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	729230
Other Names	C-C chemokine receptor type 2, C-C CKR-2, CC-CKR-2, CCR-2, CCR2, Monocyte chemoattractant protein 1 receptor, MCP-1-R, CD192, CCR2, CMKBR2
Calculated MW	41915
Application Details	Western blot, 0.1-0.5 □g/ml, Human Immunohistochemistry (Paraffin-embedded Section), 0.5-1 □g/ml, Human Immunocytochemistry/Immunofluorescence, 2 □g/ml, Human Flow Cytometry, 1-3 □g/1x10^6 cells, Human
Subcellular Localization	Cell membrane. Multi-pass membrane protein.
Tissue Specificity	Expressed by monocytes and IL2-activated NK cells.
Source	Eukaryota
Contents	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na_2HPO_4, 0.05mg NaN_3.
Clone Names	Clone: 8C4
Immunogen	E.coli-derived human CCR2 recombinant protein (Position: M1-F125).
Purification	Immunogen affinity purified.
Cross Reactivity	No cross-reactivity with other proteins.
Storage	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six

months. Avoid repeated freeze-thaw cycles.

Protein Information

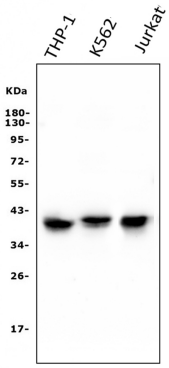
Name	CCR2
Synonyms	CMKBR2
Function	Key functional receptor for CCL2 but can also bind CCL7, and CCL12 (PubMed:23408426, PubMed:38157855, PubMed:8048929, PubMed:8146186). Also transduces signaling mediated by CCL13 (PubMed:38157855). Its binding with CCL2 on monocytes and macrophages mediates chemotaxis 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).
Cellular Location	Cell membrane; Multi-pass membrane protein. Note=The chemoattractant receptors are distributed throughout the cell surface; after stimulation with a ligand, such as CCL2, they are rapidly recruited into microdomain clusters at the cell membrane.
Tissue Location	Expressed by monocytes and IL2-activated NK cells (PubMed:9058802). Abundantly expressed on CD14+/CD16- monocytes and weakly on CD14+/CD16+ monocytes, type 2 dendritic cells (DCs) and plasmacytoid DCs (at protein level) (PubMed:38157855)

Background

C-C chemokine receptor type 2 (CCR2 or CD192 (cluster of differentiation 192) is a protein that in humans is encoded by the CCR2 gene. It is mapped to 3p21.31. The protein encoded by this gene is a receptor for monocyte chemoattractant protein-1, a chemokine which specifically mediates monocyte chemotaxis. Monocyte chemoattractant protein-1 is involved in monocyte infiltration in inflammatory diseases such as rheumatoid arthritis as well as in the inflammatory response against tumors. The encoded protein mediates agonist-dependent calcium mobilization and inhibition of adenylyl cyclase. This protein can also be a coreceptor with CD4 for HIV-1 infection.

Images

Figure 1. Western blot analysis of CCR2 using anti-CCR2 antibody (M00158-1).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours.
The sample well of each lane was loaded with 50ug of



sample under reducing conditions.
Lane 1: human THP-1 whole cell lysates;
Lane 2: human K562 whole cell lysates;
Lane 3: human Jurkat whole cell lysates.
After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-CCR2 antigen affinity purified monoclonal antibody (Catalog # M00158-1) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for CCR2 at approximately 42KD. The expected band size for CCR2 is at 42KD.

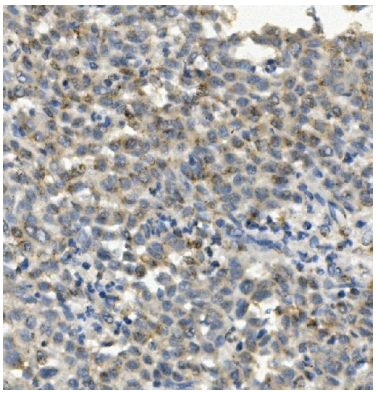


Figure 2. IHC analysis of CCR2 using anti-CCR2 antibody (M00158-1).
CCR2 was detected in paraffin-embedded section of human liver cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-CCR2 Antibody (M00158-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

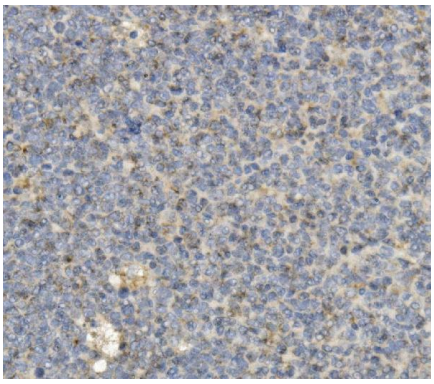


Figure 3. IHC analysis of CCR2 using anti-CCR2 antibody (M00158-1).
CCR2 was detected in paraffin-embedded section of human tonsil tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-CCR2 Antibody (M00158-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

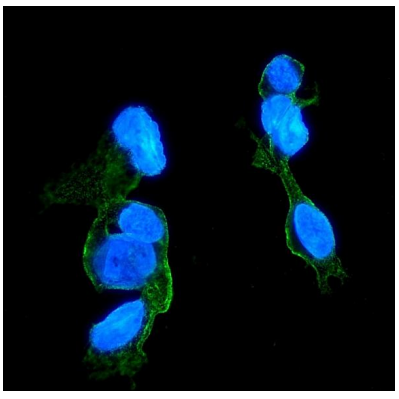


Figure 4. IF analysis of CCR2 using anti-CCR2 antibody (M00158-1).
CCR2 was detected in immunocytochemical section of HepG2 cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 2 µg/mL mouse anti-CCR2 Antibody (M00158-1) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter

sets appropriate for the label used.

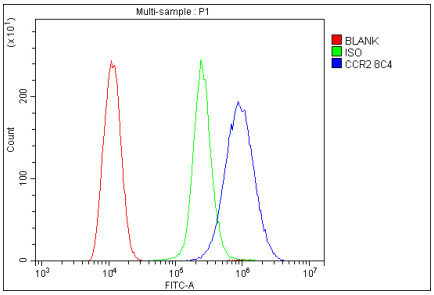


Figure 5. Flow Cytometry analysis of THP-1 cells using anti-CCR2 antibody (M00158-1).
Overlay histogram showing THP-1 cells stained with M00158-1 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-CCR2 Antibody (M00158-1, 1 µg/1x10^6 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10^6 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10^6) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

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