abcam

ab93086

Anti-CCR6/CD196 antibody [MM0066-3L1]

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing CCR6 protein. The exact immunogen used to generate this antibody is proprietary information. Database link P51684
Clone number	MM0066-3L1
Purification technique	Affinity purification Protein G
Specificity	This antibody detects CCR6, but not other CCRs.
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	The IgG fraction of culture supernatant was purified by Protein G affinity chromatography and 0.2 µm filtered.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/100 - 1/800

Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information CCR6/CD196

Function	Receptor for the C-C type chemokine CCL20 (PubMed:9169459). Binds to CCL20 and subsequently transduces a signal by increasing the intracellular calcium ion levels (PubMed:20068036). Although CCL20 is its major ligand it can also act as a receptor for non-chemokine ligands such as beta-defensins (PubMed:25585877). Binds to defensin DEFB1 leading to increase in intracellular calcium ions and cAMP levels. Its binding to DEFB1 is essential for the function of DEFB1 in regulating sperm motility and bactericidal activity (PubMed:25122636). Binds to defensins DEFB4 and DEFB4A/B and mediates their chemotactic effects (PubMed:20068036). The ligand-receptor pair CCL20-CCR6 is responsible for the chemotaxis of dendritic cells (DC), effector/ memory T-cells and B-cells and plays an important role at skin and mucosal surfaces under homeostatic and inflammatory conditions, as well as in pathology, including cancer and various autoimmune diseases. CCR6-mediated signals are essential for immune responses to microbes in the intestinal mucosa and in the modulation of inflammatory responses initiated by tissue insult and trauma (PubMed:21376174). CCR6 is essential for the recruitment of both the pro-inflammatory IL17 producing helper T-cells (Th17) and the regulatory T-cells (Treg) to sites of inflammation. Required for the normal migration of Th17 cells in Peyers-patches and other related tissue sites of the intestine and plays a role in regulating effector T-cell balance and distribution in inflamed intestine. Plays an important role in the coordination of early thymocyte precursor migration events important for normal subsequent thymocyte precursor development, but is not required for the formation of normal thymic natural regulatory T-cells (nTregs). Required for optimal differentiation of DN2 and DN3 thymocyte precursors. Essential for B-cell localization in the subepithelial dome of Peyers-patches and for efficient B-cell isotype switching to IgA in the Peyers-patches. Essential for appropriate anatomical distribution of memory B-cells in the spleen and for the secondary recall response of memory B-cells (By similarity). Positively regulates sperm motility and chemotaxis via its binding to CCL20 (PubMed:23765988).

Storage

Shipped at conditions	Blue Ice
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

Supplementary info

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

Activity summary	CCR6 also known as CD196 is a chemokine receptor with a molecular mass of approximately 44 kDa. This protein is primarily expressed on the surface of various immune cells including T cells B cells and dendritic cells. Through its interaction with its only known ligand CCL20 also known as MIP-3α CCR6 mediates chemotaxis which guides the targeted migration of cells to sites of inflammation or injury. In murine models (mouse) CCR6 expression helps researchers examine immune responses in vivo and its presence is detected using recombinant proteins or antibodies specific for CCR6 such as 'CCR6 antibodies' with techniques including flow cytometry utilizing labels like CCR6-APC or CCR6-fluorochrome.
Biological function summary	CCR6 plays an essential role in the regulation of immune responses and maintaining mucosal immunity. It is involved in the recruitment of Th17 cells and dendritic cells to inflamed tissues which plays a critical role in initiating and sustaining immune responses. While CCR6 operates primarily as a standalone receptor its engagement influences diverse cellular functions linked to immune surveillance and tolerance. This receptor's expression on lymphoid tissue inducer cells indicates its relevance in the formation of secondary lymphoid organs and in dynamic interactions within the immune system.
Pathways	CCR6 is a significant component in pathways related to immune cell trafficking and inflammatory responses particularly the MAPK/ERK pathway and the JAK/STAT pathway. In these pathways CCR6 often interacts with related proteins such as CCL20 and other chemokine receptors facilitating cellular migration and activation processes. These interactions underpin the migration of regulatory T cells and B cells which modulate inflammation and affect pathogen clearance ensuring a controlled immune response.
Associated diseases and disorders	CCR6 has links to conditions such as autoimmune diseases with rheumatoid arthritis and inflammatory bowel disease being notable examples. In rheumatoid arthritis the dysregulated expression of CCR6 attracts Th17 cells into synovial tissues promoting inflammation. Meanwhile inflammatory bowel disease shows a similar pattern of CCR6-mediated chemotaxis that encourages Th17 cell recruitment. In these contexts CCR6 cooperates with other immune mediators like CCL20 to perpetuate disease-related inflammatory processes highlighting its potential as a therapeutic target in immune modulation.

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

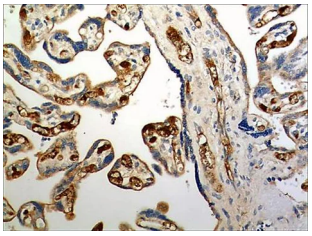
We do not recommend this combination. It is not covered by our product promise.

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.

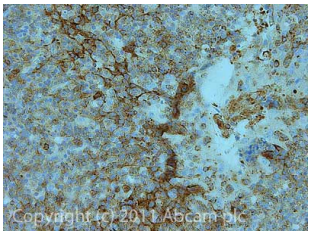
3 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CCR6/CD196 antibody [MM0066-3L1] (ab93086)

CCR6/CD196 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-CCR6/CD196 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human placental tissue section (4µm) labelling CCR6 with ab93086. Tissue was treated with 15µg/ml Protenase for antigen retrieval and fixed with 4% PFA. A HRP-conjugated anti-mouse IgG was used as the secondary antibody (30 minutes at room temperature) followed by DAB color development.



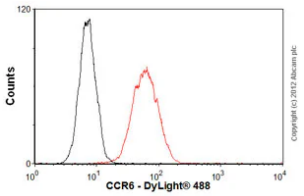
Immunohistochemistry paraffin embedded sections - Anti-CCR6/CD196 antibody [MM0066-3L1] (ab93086)

CCR6/CD196 Immunohistochemistry paraffin embedded sections staining using mouse Anti-CCR6/CD196 antibody

IHC image of ab93086 staining in Human Tonsil formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1)

for 20 mins. The section was then incubated with ab93086, 1µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Flow Cytometry - Anti-CCR6/CD196 antibody [MM0066-3L1] (ab93086)

CCR6/CD196 Flow Cytometry staining using mouse Anti-CCR6/CD196 antibody

Overlay histogram showing Jurkat cells stained with ab93086 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab93086, 2µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (ab91366, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in Jurkat cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.

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