abcam

ab95620

Biotin Anti-CX3CR1 antibody [2A9-1]

Anti-CX3CR1 antibody [2A9-1] conjugated to Biotin - suitable for flow cytometry, and reacts with human samples. Clone [2A9-1] is a rat monoclonal antibody cited in 89 publications.

Key facts

Isotype	IgG2b
Host species	Rat
Conjugation	Biotin
Storage buffer	pH: 7.2 Preservative: 0.09% Sodium azide
Form	Liquid
Clonality	Monoclonal
Immunogen	Fusion protein corresponding to CX3CR1, fused to EGFP. The exact immunogen used to generate this antibody is proprietary information. Database link P49238
Clone number	2A9-1
Purification technique	Affinity purification Protein G
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	0.25 µL for 10^5-10^8 Cells
Notes	Use a final volume of 100µl.

ab18542 - Rat monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Target data

See full target information CX3CR1

Function

Receptor for the C-X3-C chemokine fractalkine (CX3CL1) present on many early leukocyte cells; CX3CR1-CX3CL1 signaling exerts distinct functions in different tissue compartments, such as immune response, inflammation, cell adhesion and chemotaxis (PubMed:12055230, PubMed:23125415, PubMed:9390561, PubMed:9782118). CX3CR1-CX3CL1 signaling mediates cell migratory functions (By similarity). Responsible for the recruitment of natural killer (NK) cells to inflamed tissues (By similarity). Acts as a regulator of inflammation process leading to atherogenesis by mediating macrophage and monocyte recruitment to inflamed atherosclerotic plaques, promoting cell survival (By similarity). Involved in airway inflammation by promoting interleukin 2-producing T helper (Th2) cell survival in inflamed lung (By similarity). Involved in the migration of circulating monocytes to non-inflamed tissues, where they differentiate into macrophages and dendritic cells (By similarity). Acts as a negative regulator of angiogenesis, probably by promoting macrophage chemotaxis (PubMed:14581400, PubMed:18971423). Plays a key role in brain microglia by regulating inflammatory response in the central nervous system (CNS) and regulating synapse maturation (By similarity). Required to restrain the microglial inflammatory response in the CNS and the resulting parenchymal damage in response to pathological stimuli (By similarity). Involved in brain development by participating in synaptic pruning, a natural process during which brain microglia eliminates extra synapses during postnatal development (By similarity). Synaptic pruning by microglia is required to promote the maturation of circuit connectivity during brain development (By similarity). Acts as an important regulator of the gut microbiota by controlling immunity to intestinal bacteria and fungi (By similarity). Expressed in lamina propria dendritic cells in the small intestine, which form transepithelial dendrites capable of taking up bacteria in order to provide defense against pathogenic bacteria (By similarity). Required to initiate innate and adaptive immune responses against dissemination of commensal fungi (mycobiota) component of the gut: expressed in mononuclear phagocytes (MNPs) and acts by promoting induction of antifungal IgG antibodies response to confer protection against disseminated C.albicans or C.auris infection (PubMed:29326275). Also acts as a receptor for C-C motif chemokine CCL26, inducing cell chemotaxis (PubMed:20974991). Isoform 1. (Microbial infection) Acts as a coreceptor with CD4 for HIV-1 virus envelope protein. Isoform 2. (Microbial infection) Acts as a coreceptor with CD4 for HIV-1 virus envelope protein (PubMed:14607932). May have more potent HIV-1 coreceptothr activity than isoform 1 (PubMed:14607932). Isoform 3. (Microbial infection) Acts as a coreceptor with CD4 for HIV-1 virus envelope protein (PubMed:14607932). May have more potent HIV-1 coreceptor activity than isoform 1 (PubMed:14607932).

Storage

Shipped at conditions

Blue Ice

Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Avoid freeze / thaw cycle

Supplementary info

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

Activity summary	CX3CR1 also known as fractalkine receptor is a seven-transmembrane G protein-coupled receptor. It has a molecular weight of about 40 kDa. This receptor is expressed in various tissues particularly on immune cells like monocytes natural killer cells T cells and microglia. CX3CR1 binds to its ligand CX3CL1 or fractalkine which is a chemokine involved in directing cell movement. The receptor-ligand interaction is critical for the adhesion and migration of leukocytes to inflammatory sites.
Biological function summary	CX3CR1 plays a significant role in immune regulation and cellular migration. It is not part of a larger protein complex but interacts directly with monocyte and microglia cells influencing their activity. CX3CR1 is recognized as a marker for microglia in flow cytometry applications assisting in the identification of these brain-resident immune cells. The receptor is frequently studied using monoclonal antibodies like anti-CX3CR1 and is subject to inhibition by CX3CR1 antagonists such as 8e10 affecting its function in immune responses.
Pathways	CX3CR1 involves itself heavily in the chemokine signaling pathway and the inflammatory response pathway. Its interaction with CX3CL1 influences the PI3K-Akt signaling pathway modulating cell survival and proliferation. The receptor works in conjunction with CCR2 in monocyte navigation impacting the inflammatory cascade during immune response. Their coordinated action is important for cellular trafficking to sites requiring immune intervention.
Associated diseases and disorders	CX3CR1 has associations with neurodegenerative diseases such as Alzheimer's disease as well as with atherosclerosis. Changes in its expression and function can exacerbate these conditions. In Alzheimer's disease microglial CX3CR1 may mediate neuroinflammatory processes affecting plaque buildup. In atherosclerosis the receptor is involved in monocyte recruitment to plaques influenced by the related protein fractalkine. Understanding these relationships provides insights into potential therapeutic targets for modulating disease progression.

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

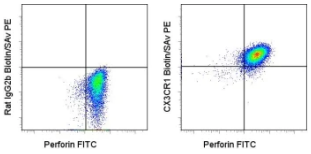
We do not recommend this combination. It is not covered by our product promise.

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1 product image



Flow Cytometry - Biotin Anti-CX3CR1 antibody [2A9-1] (ab95620)

CX3CR1 Flow Cytometry staining using rat Anti-CX3CR1 antibody

Staining of normal Human peripheral blood cells with 0.125µg/100µl rat IgG1 isotype control Biotin (left) or 0.125µg/100µl ab95620 (right), followed by Streptavidin PE.

Samples were subsequently stained intracellularly with an anti Human Perforin FITC. Cells were gated on CD16+CD56+ using anti-CD16 eFluor 450 and anti-CD56 APC antibodies.

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