abcam

ab59554

Anti-C3a R antibody [hC3aRZ1]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.09% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human C3AR1. Database link Q16581
Clone number	hC3aRZ1
Purification technique	Affinity purification Protein G
Specificity	This antibody recognizes the receptor for human complement component C3a (C3aR) (55kD)
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from tissue culture supernatant

Reactivity data

Flow Cyt

Expected

Species	Human
Dilution info	1/10 - 1/20

Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody. Use 10µl of the sugested working dilution to label 1x10^6 cells in 100µl.

IHC-Fr

Expected

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

Target data

See full target information C3AR1

Function	Receptor for the chemotactic and inflammatory peptide anaphylatoxin C3a, stimulating chemotaxis, granule enzyme release and superoxide anion production (PubMed:12871936, PubMed:37852260, PubMed:8702752). Ligand binding causes a conformation change that triggers signaling via guanine nucleotide-binding proteins (G proteins) and modulates the activity of downstream effectors, such as adenylate cyclase (PubMed:37852260). C3AR1 is coupled to G(i)/G(o) (GNAI1 or GNAO1) G alpha proteins and mediates inhibition of adenylate cyclase (PubMed:37852260).

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
Aliquoting information	Upon delivery aliquot

Supplementary info

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

Activity summary	The C3a receptor also known as C3aR or C3aR1 is a critical component of the immune system. It functions by binding to the C3a peptide a product of the complement cascade. This binding triggers a variety of immune responses. C3aR is a surface receptor widely expressed on immune cells such as macrophages mast cells and neutrophils. The molecular weight of the C3a receptor is approximately 55 kDa. It can be found principally in tissues involved in immunity like the spleen lungs and liver.
Biological function summary	The C3a receptor plays an important role in the immune response by mediating inflammatory reactions. It is not part of a larger complex like some receptors functioning instead through protein-protein interactions. Upon activation by binding with the C3a peptide the receptor can promote the release of histamine cytokines and other inflammatory mediators. This action helps regulate the body's defense against pathogens and contributes to the elimination of foreign materials from the body.
Pathways	The C3a receptor is involved in the complement pathway and immune response pathways. It interacts with several proteins within these pathways including C3a protein itself and other complement components. By engaging in these pathways C3aR significantly influences cellular responses and activities. For example its activation can lead to the alteration of immune cell behavior enhancing phagocytosis and increasing cell migration to sites of infection or injury.
Associated diseases and disorders	The C3a receptor has been implicated in asthma and rheumatoid arthritis. In asthma C3aR activation can lead to overactive immune responses causing increased bronchoconstriction and airway hyperresponsiveness. Its involvement in rheumatoid arthritis relates to its ability to modulate inflammation exacerbating joint damage and discomfort. The receptor's activity in these conditions can also connect it to other proteins such as specific inflammatory cytokines which contribute to the pathological processes seen in these diseases.

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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