abcam

ab317632

Anti-C3a R antibody [hC3aRZ8]

Recombinant

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	hC3aRZ8
Purification technique	Affinity purification Protein A
Concentration	0.969 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Transfected cell line - Human
Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Transfected cell line - Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Transfected cell line - Human, Rat
Dilution info	-
Notes	-

WB

Not recommended

Species	Mouse, Rat, Human, Transfected cell line - Human
Dilution info	-
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
Storage information	Avoid freeze / thaw cycle

Notes

This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com.

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.

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

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.

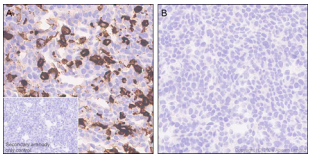
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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6 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-C3a R antibody [hC3aRZ8] (ab317632)

C3a R Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-C3a R antibody

Immunohistochemical analysis of paraffin-embedded (A) HEK-293T cells transfected with a C3AR1 expression vector containing a his tag. (B) HEK-293T cells transfected with empty vector containing a his tag. tissue labeling C3a R with ab317632 at 1/1000 (0.969 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used.

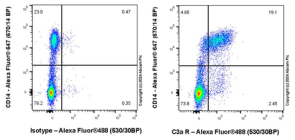
Positive staining on (A) HEK-293T cells transfected with a C3AR1 expression vector containing a his tag. No staining on (B) HEK-293T cells transfected with empty vector containing a his tag.
The section was incubated with ab317632 for 30 mins at room temperature, followed by anti-mouse IgG2b antibody (ab190482) for 8 mins during the LeicaDS9800 kit staining procedure.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used.

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins

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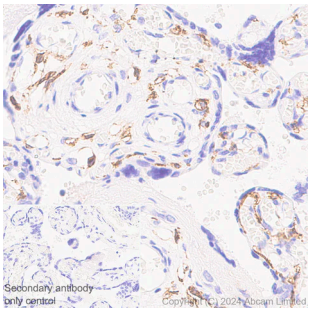
Flow Cytometry - Anti-C3a R antibody [hC3aRZ8] (ab317632)

C3a R Flow Cytometry staining of Human PBMC (human peripheral blood mononuclear cell) using mouse Anti-C3a R antibody

Flow cytometric analysis of Human PBMC (human peripheral blood mononuclear cell) cells labelling C3a R with ab317632 at 1/500 dilution (0.1 ug)/Right compared with a Mouse monoclonal IgG / Left isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody).

Goat anti-Mouse IgG (Alexa Fluor® 488, ab150113) at 1/5000 dilution was used as the secondary antibody.

Cells are co-stained with CD14 conjugated to Alexa Fluor®647.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-C3a R antibody [hC3aRZ8] (ab317632)

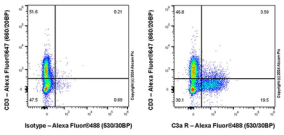
Immunohistochemical analysis of paraffin-embedded Human placenta tissue labeling C3a R with ab317632 at 1/1000 (0.969 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used.

Positive staining on human placenta.
The section was incubated with ab317632 for 30 mins at room temperature, followed by anti-mouse IgG2b antibody (ab190482) for 8 mins during the LeicaDS9800 kit staining procedure.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used.

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



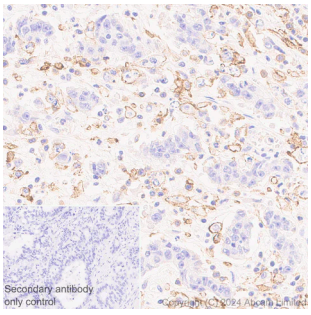
Flow Cytometry - Anti-C3a R antibody [hC3aRZ8] (ab317632)

C3a R Flow Cytometry staining of Human PBMC (human peripheral blood mononuclear cell) using mouse Anti-C3a R antibody

Flow cytometric analysis of Human PBMC (human peripheral blood mononuclear cell) cells labelling C3a R with ab317632 at 1/500 dilution (0.1 ug)/Right compared with a Mouse monoclonal IgG / Left isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody).

Goat anti-Mouse IgG (Alexa Fluor® 488, ab150113) at 1/5000 dilution was used as the secondary antibody.

Cells are co-stained with CD3 conjugated to Alexa Fluor®647. The staining result showed a distinct CD3 positive population with no cross signal on C3a R positive cells.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-C3a R antibody [hC3aRZ8] (ab317632)

Immunohistochemical analysis of paraffin-embedded Human gastric cancer tissue labeling C3a R with ab317632 at 1/1000 (0.969 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used.

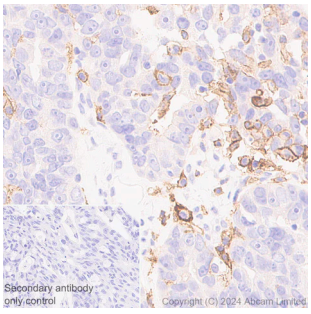
Positive staining on human gastric cancer.
The section was incubated with ab317632 for 30 mins at room temperature, followed by anti-mouse IgG2b antibody (ab190482) for 8 mins during the LeicaDS9800 kit staining procedure.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used.

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-C3a R antibody [hC3aRZ8] (ab317632)

Immunohistochemical analysis of paraffin-embedded Human ovarian cancer tissue labeling C3a R with ab317632 at 1/1000 (0.969 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used.

Positive staining on human ovarian cancer.
The section was incubated with ab317632 for 30 mins at room temperature, followed by anti-mouse IgG2b antibody (ab190482) for 8 mins during the LeicaDS9800 kit staining procedure.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used.

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins

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