abcam

ab270033

Anti-GC1q R antibody [EPR23238-6]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
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	EPR23238-6
Purification technique	Affinity purification Protein A
Concentration	0.637 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/600
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information C1QBP

Function

Multifunctional and multicompartmental protein involved in inflammation and infection processes, ribosome biogenesis, protein synthesis in mitochondria, regulation of apoptosis, transcriptional regulation and pre-mRNA splicing (PubMed:10022843, PubMed:10479529, PubMed:10722602, PubMed:11086025, PubMed:11859136, PubMed:15243141, PubMed:16140380, PubMed:16177118, PubMed:17881511, PubMed:18676636, PubMed:19004836, PubMed:19164550, PubMed:20810993, PubMed:21536856, PubMed:21544310, PubMed:22700724, PubMed:28942965, PubMed:8662673, PubMed:8710908, PubMed:9461517). At the cell surface is thought to act as an endothelial receptor for plasma proteins of the complement and kallikrein-kinin cascades (PubMed:10479529, PubMed:11859136, PubMed:8662673, PubMed:8710908). Putative receptor for C1q; specifically binds to the globular 'heads' of C1q thus inhibiting C1; may perform the receptor function through a complex with C1qR/CD93 (PubMed:20810993, PubMed:8195709). In complex with cytokeratin-1/KRT1 is a high affinity receptor for kininogen-1/HMWK (PubMed:21544310). Can also bind other plasma proteins, such as coagulation factor XII leading to its autoactivation. May function to bind initially fluid kininogen-1 to the cell membrane. The secreted form may enhance both extrinsic and intrinsic coagulation pathways. It is postulated that the cell surface form requires docking with transmembrane proteins for downstream signaling which might be specific for a cell-type or response. By acting as C1q receptor is involved in chemotaxis of immature dendritic cells and neutrophils and

is proposed to signal through CD209/DC-SIGN on immature dendritic cells, through integrin alpha-4/beta-1 during trophoblast invasion of the decidua, and through integrin beta-1 during endothelial cell adhesion and spreading (PubMed:16140380, PubMed:22700724, PubMed:9461517). Signaling involved in inhibition of innate immune response is implicating the PI3K-AKT/PKB pathway (PubMed:16177118). Required for protein synthesis in mitochondria (PubMed:28942965). In mitochondrial translation may be involved in formation of functional 55S mitoribosomes; the function seems to involve its RNA-binding activity (By similarity). Acts as a RNA modification reader, which specifically recognizes and binds mitochondrial RNAs modified by C5-methylcytosine (m5C) in response to stress, and promotes recruitment of the mitochondrial degradosome complex, leading to their degradation (PubMed:39019044). May be involved in the nucleolar ribosome maturation process; the function may involve the exchange of FBL for RRP1 in the association with pre-ribosome particles (By similarity). Involved in regulation of RNA splicing by inhibiting the RNA-binding capacity of SRSF1 and its phosphorylation (PubMed:10022843, PubMed:21536856). Is required for the nuclear translocation of splicing factor U2AF1L4 (By similarity). Involved in regulation of CDKN2A- and HRK-mediated apoptosis. Stabilizes mitochondrial CDKN2A isoform smARF (PubMed:17486078). May be involved in regulation of FOXC1 transcriptional activity and NFY/CCAAT-binding factor complex-mediated transcription (PubMed:15243141, PubMed:18676636). May play a role in antibacterial defense as it can bind to cell surface hyaluronan and inhibit Streptococcus pneumoniae hyaluronate lyase (PubMed:19004836). May be involved in modulation of the immune response; ligation by HCV core protein is resulting in suppression of interleukin-12 production in monocyte-derived dendritic cells (PubMed:11086025, PubMed:17881511). Involved in regulation of antiviral response by inhibiting RIGI- and IFIH1-mediated signaling pathways probably involving its association with MAVS after viral infection (PubMed:19164550). Acts as a regulator of DNA repair via homologous recombination by inhibiting the activity of MRE11: interacts with unphosphorylated MRE11 and RAD50 in absence of DNA damage, preventing formation and activity of the MRN complex. Following DNA damage, dissociates from phosphorylated MRE11, allowing formation of the MRN complex (PubMed:31353207). (Microbial infection) Involved in HIV-1 replication, presumably by contributing to splicing of viral RNA. (Microbial infection) In infection processes acts as an attachment site for microbial proteins, including Listeria monocytogenes internalin B (InlB) and Staphylococcus aureus protein A. (Microbial infection) Involved in replication of Rubella virus.

Storage

Shipped at conditions	Conditional Ambient
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

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

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.

Supplementary info

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

Activity summary	The gC1qR also known as gC1q-binding protein or C1qbp is a multifunctional protein involved in various cellular processes. It has an approximate mass of 33 kDa and is widely expressed on the cell surface mitochondria and in the cytoplasm of different cell types. gC1qR interacts with several ligands including C1q involved in the classical complement pathway. Its versatility in binding interactions allows it to influence several cellular environments and functions.
Biological function summary	GC1qR takes part in complement activation and immune surveillance by interacting with the complement C1 complex and various plasma proteins. As a component of high-molecular-weight complexes it modulates important cellular processes like inflammation apoptosis and infection regulation. Its presence on the mitochondrial membrane suggests a role in maintaining mitochondrial dynamics and function under stress conditions. By engaging in these arenas gC1qR serves as an intermediary in cellular signaling and immune response.
Pathways	GC1qR is significant in the classical complement pathway and apoptotic signaling pathways. It interacts with proteins like C1q and thrombomodulin influencing complement activation and coagulation pathways. It contributes to the propagation of immune responses by enhancing the interface between innate and adaptive immunity. Its interactions within these pathways highlight its role in maintaining cellular homeostasis and responding to environmental challenges.
Associated diseases and disorders	GC1qR associates closely with systemic lupus erythematosus and cancer. Dysregulation in its expression or function can lead to aberrant immune responses and contribute to autoimmune diseases. In the context of cancer gC1qR may interact with proteins such as HMGB1 and annexin A2 affecting tumor progression

and metastasis. Understanding its role in these disorders aids in exploring potential therapeutic strategies targeting gC1qR interactions.

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

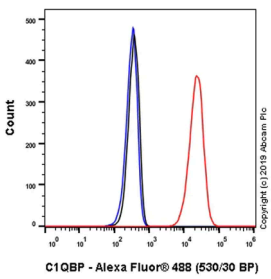
We do not recommend this combination. It is not covered by our product promise.

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.

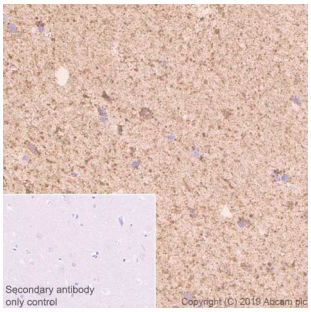
6 product images



Flow Cytometry (Intracellular) - Anti-GC1q R antibody [EPR23238-6] (ab270033)

GC1q R Flow Cytometry (Intracellular) staining using rabbit Anti-GC1q R antibody

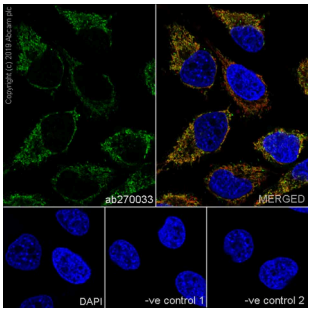
Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling GC1q R with ab270033 at 1/600 dilution (0.1µg) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GC1q R antibody [EPR23238-6] (ab270033)

GC1q R Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GC1q R antibody

Immunohistochemical analysis of paraffin-embedded human cerebral cortex tissue labeling GC1q R with ab270033 at 1/500 (1.27 µg/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on human cerebral cortex is observed (PMID: 23924515). The section was incubated with ab270033 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with hematoxylin. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

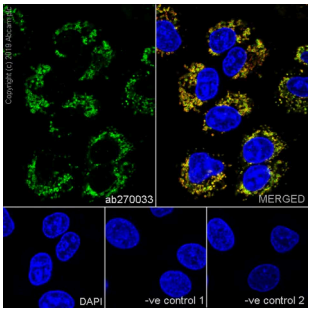


Immunocytochemistry/ Immunofluorescence - Anti-GC1q R antibody [EPR23238-6] (ab270033)

GC1q R Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-GC1q R antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa cells labeling GC1q R with ab270033 at 1/500 dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing mitochondrial staining in HeLa cell line. ab33985 Anti-COX IV antibody (human) was used to counterstain tubulin at 1/1000 dilution (Red). The nuclear counterstain was DAPI (Blue).
-ve control 1: Stained with ab270033 at 1/500 followed by ab150120 Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) at a 1/1000 diliution.

-ve control 2: Stained with ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution followed by ab33985 Anti-COX IV antibody (human) at 1/1000 dilution.

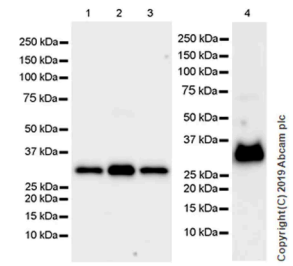


Immunocytochemistry/ Immunofluorescence - Anti-GC1q R antibody [EPR23238-6] (ab270033)

GC1q R Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-GC1q R antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized A549 cells labeling GC1q R with ab270033 at 1/500 dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing mitochondrial staining in A549 cell line. ab33985 Anti-COX IV antibody (human) was used to counterstain tubulin at 1/1000 dilution (Red). The nuclear counterstain was DAPI (Blue).
-ve control 1: Stained with ab270033 at 1/500 followed by ab150120 Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) at a 1/1000 dilution.

-ve control 2: Stained with ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution followed by ab33985 Anti-COX IV antibody (human) at 1/1000 dilution.



Western blot - Anti-GC1q R antibody [EPR23238-6] (ab270033)

GC1q R Western blot staining using rabbit Anti-GC1q R antibody

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: 20100866).
Blocking/diluting buffer and concentration: 5% NFDM/TBST.

Exposure time: Lanes 1-3: 15 secs; Lane 4: 3 secs.

All lanes:
Western blot - Anti-GC1q R antibody [EPR23238-6] (ab270033) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
A549 (human lung carcinoma epithelial cell) whole cell lysate at 20 µg

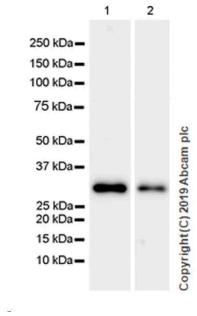
Lane 3:
MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 4:
WI-38 (human fetal lung fibroblast) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 31 kDa



Western blot - Anti-GC1q R antibody [EPR23238-6] (ab270033)

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: 20100866).
Blocking/diluting buffer and concentration: 5% NFDM/TBST.

Exposure time: 15 secs.

All lanes:
Western blot - Anti-GC1q R antibody [EPR23238-6] (ab270033) at 1/1000 dilution

Lane 1:
Human lung cancer tissue lysate at 20 µg

Lane 2:
Human spleen tissue lysate at 20 µg

Secondary

All lanes:
Western blot - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/1000 dilution

Predicted band size: 31 kDa

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