abcam

ab24733

Anti-GC1q R antibody [60.11]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 6.97% L-Arginine
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	60.11
Purification technique	Affinity purification
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	5 µg/mL
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	0.5 µg for 10^6 Cells
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Predicted

Species	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	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

Notes

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 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

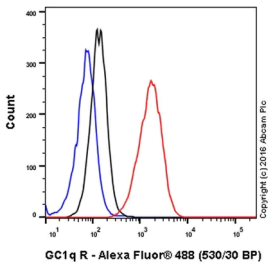
We do not recommend this combination. It is not covered by our product promise.

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



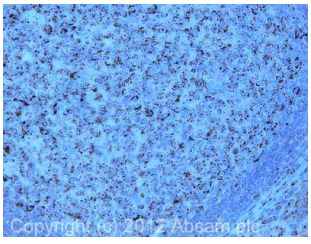
Flow Cytometry (Intracellular) - Anti-GC1q R antibody [60.11] (ab24733)

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

Overlay histogram showing HeLa cells stained with ab24733 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (ab24733, 0.5µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-mouse IgG (H&L) (ab150117) at 1/4000 dilution for 30 min at 22°C.
Isotype control antibody (black line) was mouse IgG1 [15-6E10A7] (ab170190, 0.5µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5,000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter.

This antibody gave a positive signal in HeLa cells fixed with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Triton X-100 for 15 min used under the same conditions.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GC1q R antibody [60.11] (ab24733)

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

IHC image of ab24733 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 ab24733, 10µg/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.

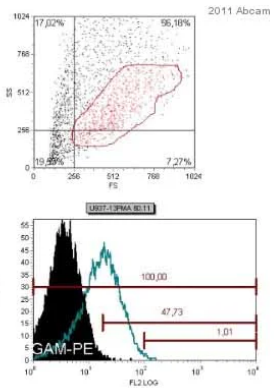


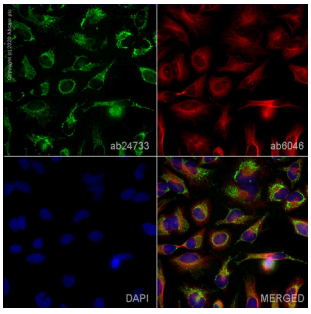
Image courtesy of David Sanchez Martin by customer review.

Flow Cytometry (Intracellular) - Anti-GC1q R antibody [60.11] (ab24733)

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

ab24733 used in Flow Cytometry.

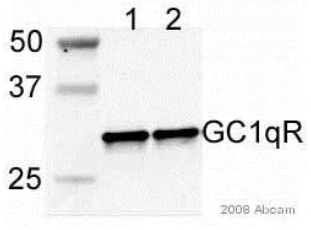
U937 cells were cultured in RPMI 10% FCS, treated with PMA (5nM) and, 6-12 hours later, cells were harvested, spinned and resuspended to 200,000 cells in 100µl. ab24733 used at 10µg/ml for 30 minutes at 4°C. A phycoerythrin conjugated goat anti-mouse polyclonal was used as the secondary antibody at a 1/100 dilution.



Immunocytochemistry/ Immunofluorescence - Anti-GC1q R antibody [60.11] (ab24733)

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

ab24733 staining GC1q R in HeLa cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% PBS-Tween for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at 4°C with ab24733 at 5µg/ml and ab6046, Rabbit polyclonal to beta Tubulin - Loading Control. Cells were then incubated with ab150117, Goat polyclonal Secondary Antibody to Mouse IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (shown in green) and ab150080, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 594) at 1/1000 dilution (shown in pseudocolour red). Nuclear DNA was labelled with DAPI (shown in blue).



This image is courtesy of an anonymous customer review

Western blot - Anti-GC1q R antibody [60.11] (ab24733)

The blot was blocked with 5% milk for 1 hour at 25°C prior to incubating with the primary antibody for 13 hours at 4°C.
Lane 1:
Mw standards

Lanes 2 - 3:
Western blot - Anti-GC1q R antibody [60.11] (ab24733) at 1/2000 dilution

Lane 2:
293T whole cell lysate at 20 µg

Lane 3:
Hela whole cell lysate at 20 µg

Secondary

All lanes:
Alexa Fluor® 680 conjugated goat anti-mouse

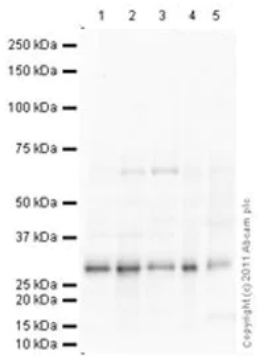
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 31 kDa

Observed band size: 32 kDa

Exposure time: 10s



Western blot - Anti-GC1q R antibody [60.11] (ab24733)

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

All lanes:
Western blot - Anti-GC1q R antibody [60.11] (ab24733) at 5 µg/mL

Lane 1:
HEK293 (Human embryonic kidney cell line) Whole Cell Lysate at 20 µg

Lane 2:
HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate at 20 µg

Lane 3:
HepG2 (Human hepatocellular liver carcinoma cell line) Whole Cell Lysate at 20 µg

Lane 4:
Raji (Human Burkitt's lymphoma cell line) Whole Cell Lysate at 20 µg

Lane 5:
Human liver tissue lysate - total protein (ab29889) at 20 µg

Secondary

Lanes 1 - 5:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/5000 dilution

Lanes 1 - 5:
Western blot - Goat Anti-Mouse IgG H&L (HRP) preadsorbed (ab97040) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 31 kDa

Observed band size: 30 kDa, 68 kDa

Exposure time: 3min

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