abcam

ab256312

Anti-GRP94 antibody [EPR22847-50] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR22847-50
Purification technique	Affinity purification Protein A
Concentration	0.989 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-

Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information HSP90B1

Function	ATP-dependent chaperone involved in the processing of proteins in the endoplasmic reticulum, regulating their transport (PubMed:23572575, PubMed:39509507). Together with MESD, acts as a modulator of the Wnt pathway by promoting the folding of LRP6, a coreceptor of the canonical Wnt pathway (PubMed:23572575, PubMed:39509507). When associated with CNPY3, required for proper folding of Toll-like receptors (PubMed:11584270). Promotes folding and trafficking of TLR4 to the cell surface (PubMed:11584270). May participate in the unfolding of cytosolic leaderless cargos (lacking the secretion signal sequence) such as the interleukin 1/IL-1 to facilitate their translocation into the ERGIC (endoplasmic reticulum-Golgi intermediate compartment) and secretion; the translocation process is mediated by the cargo receptor TMED10 (PubMed:32272059).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab256312 is the carrier-free version of ab238126.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	GRP94 also known as HSP90b1 is a glycoprotein that belongs to the heat shock protein 90 family. It has a molecular mass of approximately 94 kDa. GRP94 is expressed mainly in the endoplasmic reticulum and appears in high levels in cells undergoing stress. This protein acts as a chaperone assisting in the proper folding and assembly of other proteins playing an essential role in protein homeostasis. GRP94 ensures the quality control of proteins by preventing misfolding and aggregation.
Biological function summary	GRP94 influences the stability of many secretory and cell-surface proteins. It forms part of a multi-protein complex that stabilizes client proteins and assists their proper folding. GRP94 is essential for the maturation of proteins involved in the immune response including immunoglobulins and integrins. Overexpression of GRP94 has been noted in various cancers where it supports the folding of proteins required for tumor growth and survival.
Pathways	GRP94 is an important element of the protein folding quality control mechanism within the endoplasmic reticulum. It functions in coordination with other chaperones like BiP and calnexin within the unfolded protein response (UPR)

	pathway. The UPR pathway is essential during stress conditions where increased protein synthesis occurs. GRP94 also contributes to calcium homeostasis and directly interacts with proteins like integrins affecting cell adhesion and motility.
Associated diseases and disorders	GRP94 has been implicated in the progression of cancer and neurodegenerative diseases. Overexpression of GRP94 is often linked to cancer where it stabilizes oncogenic proteins necessary for cancer cell survival. In neurodegenerative disorders GRP94 shows altered expression levels which may influence the pathogenesis of diseases like Alzheimer's. The interaction between GRP94 and other proteins such as tau protein in Alzheimer's highlights its potential role in disease mechanisms.

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

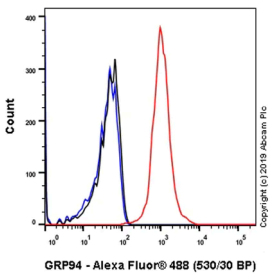
We do not recommend this combination. It is not covered by our product promise.

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.

8 product images

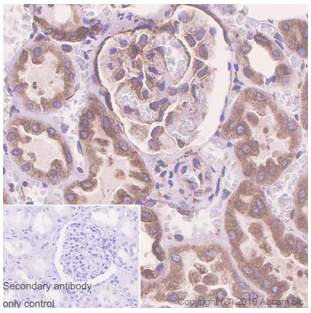


Flow Cytometry (Intracellular) - Anti-GRP94 antibody [EPR22847-50] - BSA and Azide free (ab256312)

GRP94 Flow Cytometry (Intracellular) staining using rabbit Anti-GRP94 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized HeLa (human epithelial cell line from cervix adenocarcinoma) cells labeling GRP94 with ab238126 at 1/600 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue).
Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077), at 1/2000 dilution was used as the secondary antibody.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab238126).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GRP94 antibody [EPR22847-50] - BSA and Azide free (ab256312)

GRP94 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GRP94 antibody

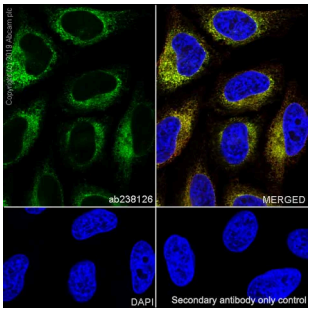
Immunohistochemical analysis of paraffin-embedded human kidney tissue labeling GRP94 with ab238126 at 1/5000 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Cytoplasmic staining on human kidney (PMID: 20520781) is observed. Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.

The section was incubated with ab238126 for 15 mins at RT.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab238126).



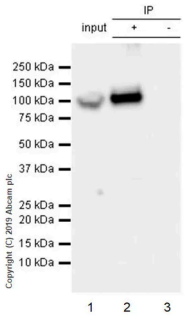
Immunocytochemistry/ Immunofluorescence - Anti-GRP94 antibody [EPR22847-50] - BSA and Azide free (ab256312)

GRP94 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-GRP94 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (human epithelial cell line from cervix adenocarcinoma) cells labeling GRP94 with ab238126 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing endoplasmic reticulum staining in HeLa cell line. The nuclear counterstain is DAPI (blue). The endoplasmic reticulum is stained with Anti-KDEL antibody [10C3] (ab12223), followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed (ab150120) secondary antibody (red).

Secondary antibody only control: Used PBS instead of primary antibody, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab238126).



Immunoprecipitation - Anti-GRP94 antibody [EPR22847-50] - BSA and Azide free (ab256312)

GRP94 was immunoprecipitated from 0.35 mg of HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab238126 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab238126 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used at 1/5000 dilution.
Lane 1: HeLa whole cell lysate 10 µg (Input).
Lane 2: ab238126 IP in HeLa whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab238126 in HeLa whole cell lysate.

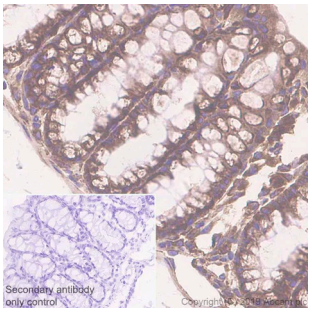
Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 3 seconds.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab238126).

All lanes:
Immunoprecipitation - Anti-GRP94 antibody [EPR22847-50] (ab238126)

Predicted band size: 92 kDa

Observed band size: 94 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GRP94 antibody [EPR22847-50] - BSA and Azide free (ab256312)

GRP94 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GRP94 antibody

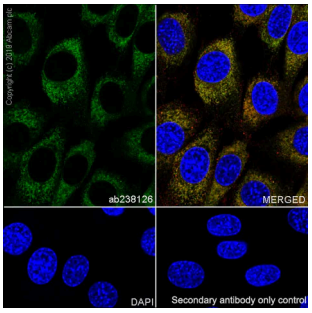
Immunohistochemical analysis of paraffin-embedded mouse colon tissue labeling GRP94 with ab238126 at 1/5000 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Cytoplasmic staining on mouse colon (PMID: 23572575) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.

The section was incubated with ab238126 for 15 mins at RT.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab238126).

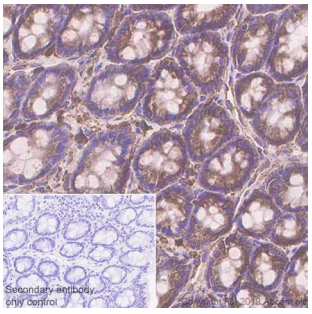


Immunocytochemistry/ Immunofluorescence - Anti-GRP94 antibody [EPR22847-50] - BSA and Azide free (ab256312)

GRP94 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-GRP94 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (mouse embryo fibroblast cell line) cells labeling GRP94 with ab238126 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing endoplasmic reticulum staining in NIH/3T3 cell line. The nuclear counterstain is DAPI (blue). The endoplasmic reticulum is stained with Anti-KDEL antibody [10C3] (ab12223), followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed (ab150120) secondary antibody (red).
Secondary antibody only control: Used PBS instead of primary antibody, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab238126).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GRP94 antibody [EPR22847-50] - BSA and Azide free (ab256312)

GRP94 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GRP94 antibody

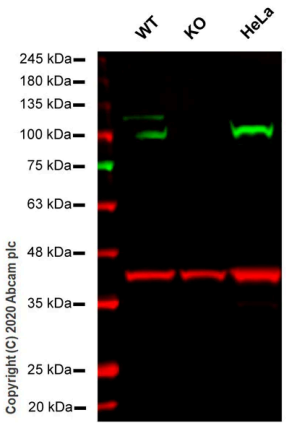
Immunohistochemical analysis of paraffin-embedded rat colon tissue labeling GRP94 with ab238126 at 1/5000 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Cytoplasmic staining on rat colon (PMID: 23572575) is observed. Counterstained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.

The section was incubated with ab238126 for 15 mins at RT.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab238126).



Western blot - Anti-GRP94 antibody [EPR22847-50] - BSA and Azide free (ab256312)

GRP94 Western blot staining using rabbit Anti-GRP94 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab238126).
Lanes 1-3: Merged signal (red and green). Green - ab238126 observed at 94 kDa. Red - loading control, ab8245 observed at 37 kDa.

ab238126 Anti-GRP94 antibody [EPR22847-50] was shown to specifically react with GRP94 in wild-type HEK293T cells. Loss of signal was observed when knockout cell line ab266313 (knockout cell lysate ab257254) was used. Wild-type and GRP94 knockout samples were subjected to SDS-PAGE.

ab238126 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 10000 dilution for 1 hour at room temperature before imaging.
All lanes:
Western blot - Anti-GRP94 antibody [EPR22847-50] (ab238126) at 1/1000 dilution

Lane 1:
Wild-type HEK293T cell lysate at 20 µg

Lane 2:
HSP90B1 knockout HEK293T cell lysate at 20 µg

Lane 3:
HeLa cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 92 kDa

Observed band size: 94 kDa

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