abcam

ab246330

Anti-GRSF1 antibody [EPR16678] - BSA and Azide free

Recombinant | RabMAb

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	EPR16678
Purification technique	Affinity purification Protein A
Concentration	1.036 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	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, 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	-

Target data

See full target information G-rich sequence factor 1

Function	Regulator of post-transcriptional mitochondrial gene expression, required for assembly of the mitochondrial ribosome and for recruitment of mRNA and lncRNA. Binds RNAs containing the 14 base G-rich element. Preferentially binds RNAs transcribed from three contiguous genes on the light strand of mtDNA, the ND6 mRNA, and the long non-coding RNAs for MT-CYB and MT-ND5, each of which contains multiple consensus binding sequences (PubMed:23473033, PubMed:23473034, PubMed:29967381). Involved in the degradosome-mediated decay of non-coding mitochondrial transcripts (MT-ncRNA) and tRNA-like molecules (PubMed:29967381). Acts by unwinding G-quadruplex RNA structures in MT-ncRNA, thus facilitating their degradation by the degradosome (PubMed:29967381). G-quadruplexes (G4) are non-canonical 4 stranded structures formed by transcripts from the light strand of mtDNA (PubMed:29967381).

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

ab246330 is the carrier-free version of ab205531.

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	The G-rich RNA sequence binding factor 1 known as GRSF1 is a protein involved in RNA processing activities. Alternate names include MGC60760 and GAR1. This protein weighs approximately 48 kDa and demonstrates a wide expression pattern across different tissues with a marked presence in mitochondria. GRSF1 binds specifically to G-rich elements in RNA playing a mechanical role in stabilizing complex RNA structures and facilitating efficient RNA processing.
Biological function summary	The GRSF1 operates as an important player in mitochondrial RNA metabolism. It is known to interact within ribonucleoprotein complexes facilitating the regulation of mitochondrial gene expression. GRSF1 contributes to the maturation and processing of mitochondrial RNA impacting the proper synthesis of components essential for mitochondrial function. It ensures that mitochondrial encoded proteins are synthesized accurately aiding overall cellular energy production.
Pathways	GRSF1 engagement with organellar RNA processing integrates into mitochondrial biogenesis and maintenance pathways. This protein significantly influences the electron transport chain by ensuring the precise maturation of mitochondrial RNAs required for encoding electron transport chain components. It connects with proteins like LRPPRC as part of RNA granules coordinating gene expression regulation to support cellular respiration and energy conversion pathways.
Associated diseases and disorders	GRSF1 links closely to conditions involving mitochondrial dysfunctions such as mitochondrial myopathy. Alterations in GRSF1 function can result in impaired energy production leading to muscle weakness and other systemic symptoms associated with myopathy. It may also intersect with neurodegenerative disorders where mitochondrial impairment represents a common pathological feature. GRSF1's association with proteins like Twinkle helicase in such diseases emphasizes its broader implications in maintaining mitochondrial integrity and cellular health.

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.

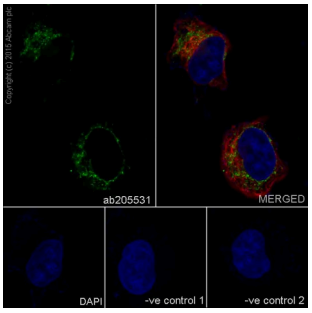
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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



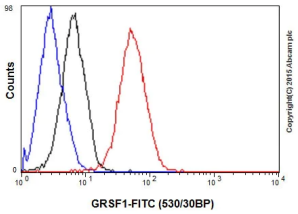
Immunocytochemistry/ Immunofluorescence - Anti-GRSF1 antibody [EPR16678] - BSA and Azide free (ab246330)

GRSF1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-GRSF1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling GRSF1 with ab205531 at 1/250 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on HeLa cell line.
The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution, followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary antibody at 1/1000 dilution (red).

The negative controls are as follows:
-ve control 1: ab205531 at 1/250 dilution, followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary antibody at 1/1000 dilution.
-ve control 2: Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

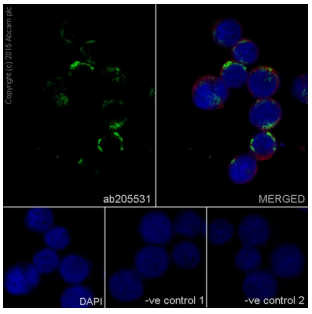
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab205531).



Flow Cytometry (Intracellular) - Anti-GRSF1 antibody [EPR16678] - BSA and Azide free (ab246330)

GRSF1 Flow Cytometry (Intracellular) staining using rabbit Anti-GRSF1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling GRSF1 with ab205531 at 1/150 dilution (red) compared with a rabbit monoclonal IgG isotype control (ab172730; black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (FITC)at 1/500 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 (ab205531).



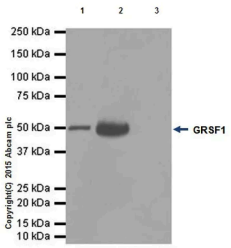
Immunocytochemistry/ Immunofluorescence - Anti-GRSF1 antibody [EPR16678] - BSA and Azide free (ab246330)

GRSF1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-GRSF1 antibody

Immunofluorescent analysis of 100% Methanol-fixed, 0.1% Triton X-100 permeabilized Jurkat (Human T cell leukemia cell line from peripheral blood) cells labeling GRSF1 with ab205531 at 1/250 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on Jurkat cell line.
The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution, followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary antibody at 1/1000 dilution (red).

The negative controls are as follows:
-ve control 1: ab205531 at 1/250 dilution, followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary antibody at 1/1000 dilution.
-ve control 2: Anti-alpha Tubulin mouse MAb (ab7291) at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibodyat 1/1000 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab205531).



Immunoprecipitation - Anti-GRSF1 antibody [EPR16678] - BSA and Azide free (ab246330)

GRSF1 was immunoprecipitated from 1mg of HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab205531 at 1/50 dilution. Western blot was performed from the immunoprecipitate using ab205531 at 1/5000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.
Lane 1: HeLa whole cell lysate 10µg (Input).

Lane 2: ab205531 IP in HeLa whole cell lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab205531 in HeLa whole cell lysate.

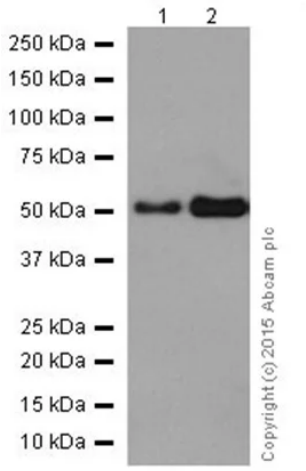
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 5 seconds.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab205531).

All lanes:
Immunoprecipitation - Anti-GRSF1 antibody [EPR16678] (ab205531)

Predicted band size: 53 kDa



Western blot - Anti-GRSF1 antibody [EPR16678] - BSA and Azide free (ab246330)

GRSF1 Western blot staining using rabbit Anti-GRSF1 antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab205531).
Blocking/Dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-GRSF1 antibody [EPR16678] (ab205531) at 1/1000 dilution

Lane 1:
Human fetal brain lysate at 10 µg

Lane 2:
Human fetal heart lysate at 10 µg

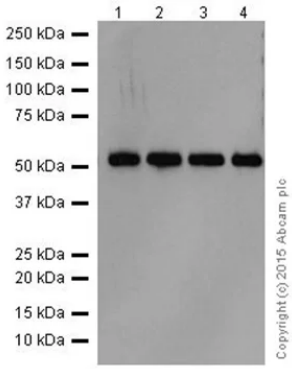
Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/10000 dilution

Predicted band size: 53 kDa

Observed band size: 53 kDa

Exposure time: 30s



Western blot - Anti-GRSF1 antibody [EPR16678] - BSA and Azide free (ab246330)

GRSF1 Western blot staining using rabbit Anti-GRSF1 antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab205531).
Blocking/Dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-GRSF1 antibody [EPR16678] (ab205531) at 1/1000 dilution

Lane 1:
HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 2:
HEK-293 (Human epithelial cell line from embryonic kidney) whole cell lysate at 20 µg

Lane 3:
HepG2 (Human liver hepatocellular carcinoma cell line) whole cell lysate at 20 µg

Lane 4:
Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate at 20 µg

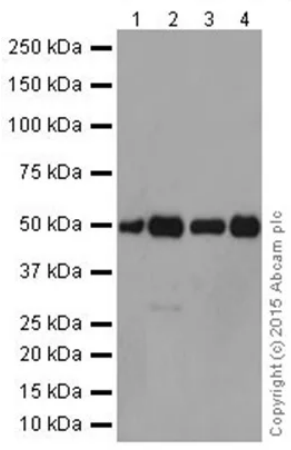
Secondary

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

Predicted band size: 53 kDa

Observed band size: 53 kDa

Exposure time: 2s



Western blot - Anti-GRSF1 antibody [EPR16678] - BSA and Azide free (ab246330)

GRSF1 Western blot staining using rabbit Anti-GRSF1 antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab205531).
Blocking/Dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-GRSF1 antibody [EPR16678] (ab205531) at 1/1000 dilution

Lane 1:
Mouse brain lysate at 10 µg

Lane 2:
Mouse kidney lysate at 10 µg

Lane 3:
Rat brain lysate at 10 µg

Lane 4:
Rat heart lysate at 10 µg

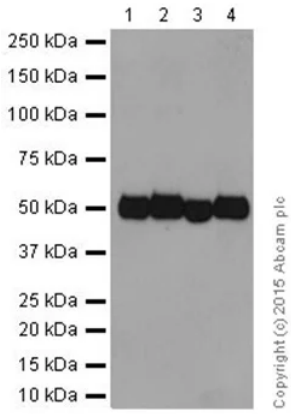
Secondary

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

Predicted band size: 53 kDa

Observed band size: 53 kDa

Exposure time: 30s



Western blot - Anti-GRSF1 antibody [EPR16678] - BSA and Azide free (ab246330)

GRSF1 Western blot staining using rabbit Anti-GRSF1 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab205531).

All lanes:
Western blot - Anti-GRSF1 antibody [EPR16678] (ab205531) at 1/1000 dilution

Lane 1:
C6 (Rat glial tumor cell line) whole cell lysate at 10 µg

Lane 2:
RAW 264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

Lane 3:
PC-12 (Rat adrenal gland pheochromocytoma cell line) whole cell lysate at 10 µg

Lane 4:
NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate at 10 µg

Secondary

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

Predicted band size: 53 kDa

Observed band size: 53 kDa

Exposure time: 30s

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