abcam

# ab251190

# Anti-GRSF1 antibody [EPR16679] - 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** | EPR16679 |
| **Purification technique** | Affinity purification Protein A |

## Reactivity data

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

## WB

**Tested**

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

## Flow Cyt (Intra)

**Tested**

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

## IHC-P

**Tested**

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **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

ab251190 is the carrier-free version of ab194358.

**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.

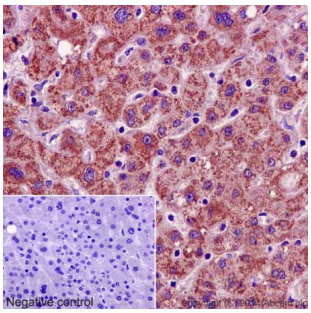
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We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

## 4 product images

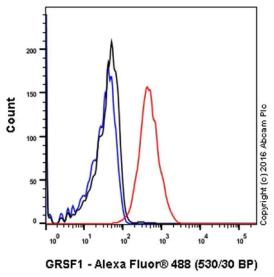



### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GRSF1 antibody [EPR16679] - BSA and Azide free (ab251190)

GRSF1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-GRSF1 antibody

This data was developed using ab194358, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling GRSF1 with ab194358 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Counter stained with Hematoxylin.

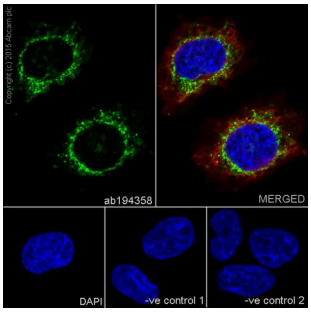
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.




### Flow Cytometry (Intracellular) - Anti-GRSF1 antibody [EPR16679] - BSA and Azide free (ab251190)

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

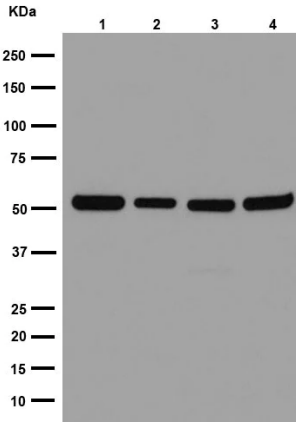
This data was developed using ab194358, the same antibody clone in a different buffer formulation.
Intracellular Flow Cytometry analysis of HeLa cells labelling GRSF1 (red) with purified ab194358 at dilution of 1/250. The secondary antibody used was Alexa Fluor® 488 goat-anti-rabbit IgG (1/2000). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. Isotype control antibody was Rabbit monoclonal IgG (black). The blue line shows cells without incubation with primary antibody and secondary antibody.




### Immunocytochemistry/ Immunofluorescence - Anti-GRSF1 antibody [EPR16679] - BSA and Azide free (ab251190)

GRSF1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-GRSF1 antibody

This data was developed using ab194358, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa cells labeling GRSF1 with ab194358 at 1/100 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/400 dilution. The nuclear counter stain is DAPI (blue).




# Western blot - Anti-GRSF1 antibody [EPR16679] - BSA and Azide free (ab251190)

This data was developed using ab194358, the same antibody clone in a different buffer formulation.
**Blocking and dilution buffer:** 5% NFDM/TBST.

All lanes:
Western blot - Anti-GRSF1 antibody [EPR16679] (ab194358) at 1/10000 dilution

Lane 1:
HeLa cell lysate at 20 µg

Lane 2:
293 cell lysate at 20 µg

Lane 3:
HepG2 cell lysate at 20 µg

Lane 4:
Jurkat cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 53 kDa

Observed band size: 53 kDa

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