abcam

ab250994

Anti-AFG2 antibody [EPR14038] - 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	EPR14038
Purification technique	Affinity purification Protein A
Concentration	1.042 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	-

Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information AFG2A

Function

ATP-dependent chaperone part of the 55LCC heterohexameric ATPase complex which is chromatin-associated and promotes replisome proteostasis to maintain replication fork progression and genome stability. Required for replication fork progression, sister chromatid cohesion, and chromosome stability. The ATPase activity is specifically enhanced by replication fork DNA and is coupled to cysteine protease-dependent cleavage of replisome substrates in response to replication fork damage. Uses ATPase activity to process replisome substrates in S-phase, facilitating their proteolytic turnover from chromatin to ensure DNA replication and mitotic fidelity (PubMed:38554706). Plays an essential role in the cytoplasmic maturation steps of pre-60S ribosomal particles by promoting the release of shuttling protein RSL24D1/RLP24 from the pre-ribosomal particles (PubMed:35354024, PubMed:38554706). May be involved in morphological and functional mitochondrial transformations during spermatogenesis (By similarity).

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

ab250994 is the carrier-free version of ab189519.

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	AFG2 also known as ATP-dependent metalloprotease FtsH2 is an essential protein involved in protein quality control within mitochondria. This protein acts mechanically as a protease enabling the degradation of misfolded or damaged proteins preventing accumulation within the mitochondrial matrix. AFG2 has a molecular mass of approximately 80 kDa. It is expressed across various tissues predominantly in those with high-energy demands such as cardiac and skeletal muscles.
Biological function summary	FtsH2 forms part of the m-AAA protease complex. This complex consists of other subunits that work together to maintain mitochondrial function. AFG2 contributes to mitochondrial protein homeostasis by degrading unassembled or faulty proteins. It also plays a significant role in the processing of mitochondrial ribosomal proteins ensuring efficient ribosome function and mitochondrial protein synthesis.
Pathways	AFG2 contributes significantly to mitochondrial biogenesis and the oxidative phosphorylation system. It interacts with other proteins such as paraplegin to regulate mitochondrial function and network maintenance. AFG2 ensures proteostasis within the mitochondria directly impacting cellular energy production. Its involvement in pathways ensures the balance of mitochondrial dynamics influencing cellular metabolism and energy distribution.

Associated diseases and disorders	Alterations in AFG2 activity often associate with neurodegenerative diseases such as hereditary spastic paraplegia and spinocerebellar ataxia. Mutations or dysregulation of AFG2 can disrupt mitochondrial proteostasis and function leading to these conditions. Additionally the protein is linked to paraplegin whose mutations may result in similar mitochondrial dysfunction emphasizing the interconnectedness of mitochondrial proteases in maintaining neurological 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

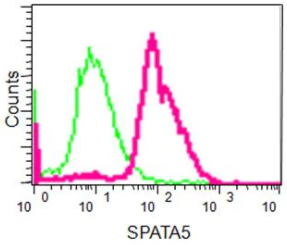
We do not recommend this combination. It is not covered by our product promise.

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.

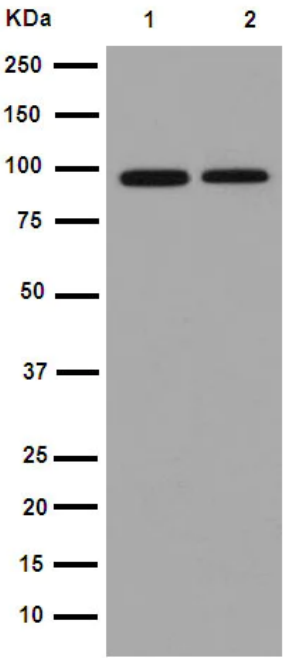
3 product images



Flow Cytometry (Intracellular) - Anti-AFG2 antibody [EPR14038] - BSA and Azide free (ab250994)

AFG2 Flow Cytometry (Intracellular) staining using rabbit Anti-AFG2 antibody

This data was developed using ab189519, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed Jurkat cells labeling AFG2 with ab189519 at 1/80 dilution (red), compared to a Rabbit monoclonal IgG isotype control (green), followed by Goat anti-rabbit IgG (FITC) secondary antibody at 1/150 dilution.



Western blot - Anti-AFG2 antibody [EPR14038] - BSA and Azide free (ab250994)

AFG2 Western blot staining using rabbit Anti-AFG2 antibody

This data was developed using ab189519, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-AFG2 antibody [EPR14038] (ab189519) at 1/10000 dilution

Lane 1:
293 cell lysate at 10 µg

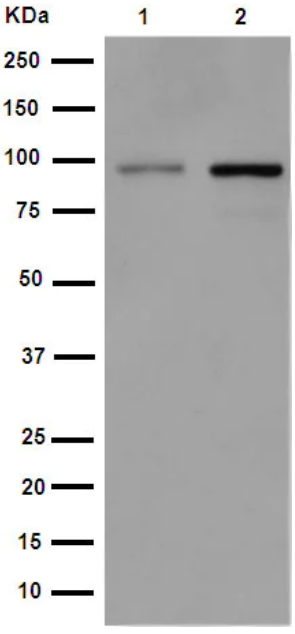
Lane 2:
Jurkat cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit IgG, (H+L), peroxidase conjugate at 1/1000 dilution

Predicted band size: 98 kDa

Observed band size: 98 kDa



Western blot - Anti-AFG2 antibody [EPR14038] - BSA and Azide free (ab250994)

AFG2 Western blot staining using rabbit Anti-AFG2 antibody

This data was developed using ab189519, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-AFG2 antibody [EPR14038] (ab189519) at 1/10000 dilution

Lane 1:
A431 cell lysate at 20 µg

Lane 2:
Human testis lysate at 20 µg

Secondary

All lanes:
Goat anti-rabbit IgG, (H+L), peroxidase conjugate at 1/1000 dilution

Predicted band size: 98 kDa

Observed band size: 98 kDa

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