abcam

ab249854

Anti-TUFM antibody [EPR12796(B)] - 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	EPR12796(B)
Purification technique	Affinity purification
Concentration	1.013 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-

Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information TUFM

Function	GTP hydrolase that promotes the GTP-dependent binding of aminoacyl-tRNA to the A-site of ribosomes during protein biosynthesis. Participates in mitochondrial translation (By similarity). Also plays a role in the regulation of autophagy and innate immunity (PubMed:22749352, PubMed:28407488). Recruits ATG5-ATG12 and NLRX1 at mitochondria and serves as a checkpoint of the RIGI-MAVS pathway (PubMed:28407488). In turn, inhibits RLR-mediated type I interferon while promoting autophagy (PubMed:22749352).

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

ab249854 is the carrier-free version of ab175199.

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	TUFM also known as elongation factor Tu mitochondrial (EF-Tu) is a protein involved in the protein synthesis process within mitochondria. It has a molecular mass of approximately 50 kDa. TUFM plays an essential role in the translation step of protein synthesis by binding aminoacyl-tRNA and positioning it on the ribosome. Researchers have identified the protein as highly expressed in tissues with high energy demand such as the heart brain and skeletal muscle.
Biological function summary	TUFM assists in mitochondrial protein synthesis which is necessary for the proper function and maintenance of the respiratory chain complexes. It forms part of the mitochondrial ribosome complex operating alongside other elongation factors like EF-G. TUFM's activity is essential for the production of proteins encoded by

	mitochondrial DNA which are they key components of oxidative phosphorylation machinery.
Pathways	TUFM integrates into the mitochondrial translation pathway which supports the production of proteins critical for the electron transport chain. This pathway is important for ATP production through oxidative phosphorylation. TUFM interacts with other components such as MRPS18 and MRPL3 to mediate the elongation cycle during mitochondrial protein synthesis. These relationships are essential for coordinating mitochondrial function and bioenergetics.
Associated diseases and disorders	TUFM mutations or disruptions have connections to mitochondrial disorders such as MELAS syndrome (Mitochondrial Encephalomyopathy Lactic Acidosis and Stroke-like episodes) which affects energy production. The protein's dysfunction can also relate to Parkinson's Disease where impaired mitochondrial activity plays a role. TUFM's interaction with other mitochondrial proteins like NDUFS1 part of complex I of the electron transport chain underlines its potential impact in these disorders.

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

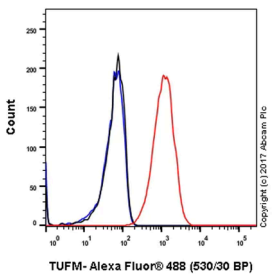
We do not recommend this combination. It is not covered by our product promise.

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.

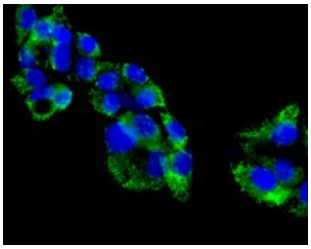
5 product images



Flow Cytometry (Intracellular) - Anti-TUFM antibody [EPR12796(B)] - BSA and Azide free (ab249854)

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

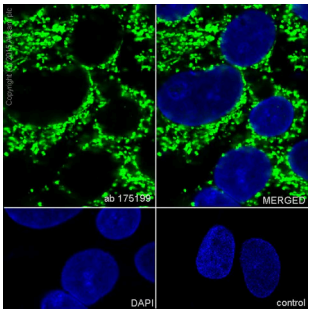
This data was developed using ab175199, the same antibody clone in a different buffer formulation.
Intracellular Flow Cytometry analysis of HepG2 (Human hepatocellular carcinoma epithelial cell) cells labeling TUFM (red) with purified ab175199 at a 1/2500 dilution (1ug/mL). Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. A goat anti rabbit IgG (Alexa Fluor®488) (ab150077) was used as the secondary antibody at a 1/2000 dilution. Black - Rabbit monoclonal IgG (Black) (ab172730). Blue (unlabeled control) - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunocytochemistry/ Immunofluorescence - Anti-TUFM antibody [EPR12796(B)] - BSA and Azide free (ab249854)

TUFM Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TUFM antibody

This data was developed using ab175199, the same antibody clone in a different buffer formulation.
Immunofluorescence analysis of HepG2 cells labeling TUFM with ab175199 at a 1/50 dilution (green). DAPI nuclear staining (blue).

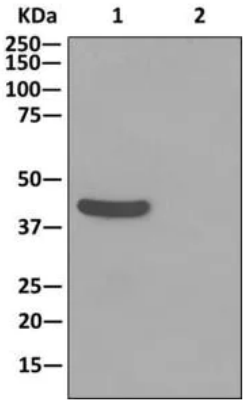


Immunocytochemistry/ Immunofluorescence - Anti-TUFM antibody [EPR12796(B)] - BSA and Azide free (ab249854)

TUFM Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TUFM antibody

This data was developed using ab175199, the same antibody clone in a different buffer formulation.
Immunocytochemistry/Immunofluorescence analysis of HepG2 (human hepatocellular carcinoma) cells labelling TUFM with purified ab175199 at 1/500. Cells were fixed with 100% methanol. An Alexa Fluor® 488-conjugated goat anti-rabbit IgG (ab150077) at 1/1000 dilution was used as the secondary antibody. Nuclei couterstained with DAPI (blue).

Secondary Only Control: PBS was used instead of the primary antibody as the negative control.

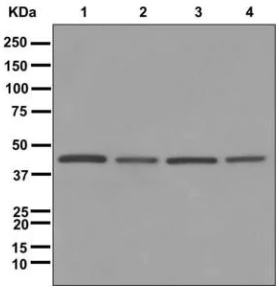


Immunoprecipitation - Anti-TUFM antibody [EPR12796(B)] - BSA and Azide free (ab249854)

This data was developed using ab175199, the same antibody clone in a different buffer formulation.
Western blot analysis on immunoprecipitation pellet from (Lane 1) HepG2 cells lysate or (Lane 2) 1X PBS (negative control) using ab175199 at a 1/10 dilution and HRP-conjugated anti-Rabbit IgG preferentially detecting the non-reduced form of rabbit IgG.

All lanes:
Immunoprecipitation - Anti-TUFM antibody [EPR12796(B)] (ab175199)

Predicted band size: 50 kDa



Western blot - Anti-TUFM antibody [EPR12796(B)] - BSA and Azide free (ab249854)

This data was developed using ab175199, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-TUFM antibody [EPR12796(B)] (ab175199) at 1/10000 dilution

Lane 1:
HepG2 cell lysate at 10 µg

Lane 2:
A431 cell lysate at 10 µg

Lane 3:
HeLa cell lysate at 10 µg

Lane 4:
Jurkat cell lysate at 10 µg

Predicted band size: 50 kDa

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