abcam

ab170948

Anti-ATPB antibody [EPR11991] - Mitochondrial Marker

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR11991
Purification technique	Affinity purification Protein A
Concentration	0.115 - 0.122 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

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	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information ATP5F1B

Function

Catalytic subunit beta, of the mitochondrial membrane ATP synthase complex (F(1)F(0) ATP synthase or Complex V) that produces ATP from ADP in the presence of a proton gradient across the membrane which is generated by electron transport complexes of the respiratory chain (Probable) (PubMed:37244256). ATP synthase complex consist of a soluble F(1) head domain - the catalytic core - and a membrane F(1) domain - the membrane proton channel (PubMed:37244256). These two domains are linked by a central stalk rotating inside the F(1) region and a stationary peripheral stalk (PubMed:37244256). During catalysis, ATP synthesis in the catalytic domain of F(1) is coupled via a rotary mechanism of the central stalk subunits to proton translocation (Probable). In vivo, can only synthesize ATP although its ATP hydrolase activity can be activated artificially in vitro (By similarity). With the subunit alpha (ATP5F1A), forms the catalytic core in the F(1) domain (PubMed:37244256).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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.

Supplementary info

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

Activity summary	ATPB also known as ATP synthase subunit beta is an essential protein component of the ATP synthase complex. It has an approximate mass of 52 kDa and is primarily expressed in the mitochondria. The protein's role is to catalyze the production of adenosine triphosphate (ATP) from adenosine diphosphate (ADP) and inorganic phosphate utilizing the proton gradient across the inner mitochondrial membrane. This process is central to the cellular energy production often referred to as oxidative phosphorylation. ATPB is frequently used as a mitochondrial marker in research making it an important target for antibodies such as those conjugated with Alexa Fluor 647 for immunofluorescence applications.
Biological function summary	ATPB functions as part of the mitochondrial ATP synthase complex which is also known as complex V of the electron transport chain. This complex is important for maintaining cellular energy homeostasis through ATP production. ATPB contributes to the catalytic activity necessary for ATP synthesis therefore supporting various cellular processes that require energy input such as muscle contraction and active transport. The protein also plays a role in coupling the proton motive force to ATP synthesis a function critical for mitochondrial efficiency and metabolic health.
Pathways	ATPB involves itself significantly in the oxidative phosphorylation and glycolysis pathways. It partners with other proteins in the ATP synthase complex such as ATP synthase subunit alpha (ATP5A1) to effectuate the conversion of energy. In the broader scope of energy metabolism ATPB integrates with glycolysis where glycolytic end-products feed into oxidative phosphorylation sustaining the cell’s

energy currency. Both pathways are important for cells especially in tissues with high energy demands like the heart and skeletal muscles.

Associated diseases and disorders

ATPB has been implicated in mitochondrial dysfunction-related diseases such as mitochondrial myopathy and Leigh syndrome. These conditions often result from mutations or defects in components of the electron transport chain leading to impaired ATP production. ATPB's close connection to ATP5A1 and other complex V proteins highlights its involvement in these disorders. Understanding ATPB's role and function helps in disease mechanism elucidation and potentially offers targets for therapeutic interventions in mitochondrial-related diseases.

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

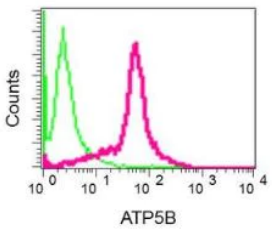
We do not recommend this combination. It is not covered by our product promise.

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.

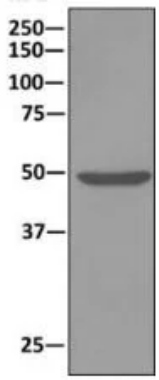
3 product images



Flow Cytometry (Intracellular) - Anti-ATPB antibody [EPR11991] - Mitochondrial Marker (ab170948)

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

Intracellular flow cytometric analysis of permeabilized 293 cells labeling ATP5B using ab170948 at 1/10 dilution (red) or a rabbit IgG negative (green).



Immunoprecipitation - Anti-ATPB antibody [EPR11991] - Mitochondrial Marker (ab170948)

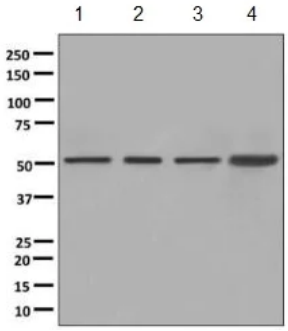
All lanes:
Immunoprecipitation - Anti-ATPB antibody [EPR11991] - Mitochondrial Marker (ab170948) at 1/10 dilution

All lanes:
293 cell lysate at 10 µg

Secondary

All lanes:
HRP-conjugated anti-rabbit IgG preferentially detecting the non-reduced form of rabbit IgG

Predicted band size: 56 kDa



Western blot - Anti-ATPB antibody [EPR11991] - Mitochondrial Marker (ab170948)

ATPB Western blot staining using rabbit Anti-ATPB antibody

All lanes:
Western blot - Anti-ATPB antibody [EPR11991] - Mitochondrial Marker (ab170948) at 1/10000 dilution

Lane 1:
HepG2 cell lysate at 10 µg

Lane 2:
293T (Human embryonic kidney epithelial cell) cell lysate at 10 µg

Lane 3:
HeLa cell lysate at 10 µg

Lane 4:
JAR cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP at 1/2000 dilution

Predicted band size: 56 kDa

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