abcam

ab176569

Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker

Anti-ATP5A antibody [EPR13030(B)] (ab176569) is a rabbit monoclonal antibody detecting ATP5A in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 30 publications

Lab Essentials | Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	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	EPR13030(B)
Purification technique	Affinity purification Protein A
Concentration	0.102 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/500
Notes	**For unpurified use at 1/50 - 1/100.** The use of an HRP/AP polymerized secondary antibody is recommended. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/500
Notes	**For unpurified use at 1/50 - 1/100.** The use of an HRP/AP polymerized secondary antibody is recommended. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/500
Notes	**For unpurified use at 1/50 - 1/100.** The use of an HRP/AP polymerized secondary antibody is recommended. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10 - 1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information ATP5F1A

Function Subunit alpha, 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). 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 catalytic subunit beta (ATP5F1B), forms the catalytic core in the F(1) domain (PubMed:37244256). Subunit alpha does not bear the catalytic high-affinity ATP-binding sites (Probable). Binds the bacterial siderophore enterobactin and can promote mitochondrial accumulation of enterobactin-derived iron ions (PubMed:30146159).

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

What is this antibody validated in?
Anti-ATP5A antibody [EPR13030(B)] (ab176569) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of ATP5A?
Anti-ATP5A [EPR13030(B)] (ab176569) specifically detects a band for ATP5A (UniProt: P25705) at a molecular weight of 60kDa.

Trusted by the scientific community
Anti-ATP5A [EPR13030(B)] (ab176569) was first used in a scientific publication in 2013 and has been cited over 30 times in peer-reviewed journals.

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	ATP5A also known as ATP synthase F1 subunit alpha is a protein important for cellular energy production. As part of the ATP synthase complex it plays a mechanical role in synthesizing ATP from ADP and inorganic phosphate. The ATP5A protein has a molecular weight of approximately 55 kDa and is widely expressed in the inner mitochondrial membrane across different cell types. Its central function lies in its ability to harness the energy of the proton gradient generated by the electron transport chain to catalyze ATP synthesis.
Biological function summary	ATP5A is essential in cellular respiration serving as a catalytic core of the F1 component of ATP synthase. As part of the multi-subunit enzyme complex ATP synthase is responsible for ATP production the primary energy currency in cells. The ATP5A subunit works in conjunction with other subunits of the enzyme oligomer to facilitate the conversion of energy released during oxidative phosphorylation into a usable form. The protein's efficiency in this biological role underpins its importance in sustaining cellular energy homeostasis.
Pathways	ATP5A plays a pivotal role in oxidative phosphorylation and the electron transport chain integral components of cellular respiration. The oxidative phosphorylation pathway depends on this protein to manage the synthesis of ATP molecules while the electron transport chain creates the proton gradient necessary for ATP production. ATP5A is functionally connected to other proteins in these pathways such as ATP5B and cytochrome c oxidase working in a coordinated manner to ensure efficient energy transfer and maintenance.
Associated diseases and disorders	ATP5A is implicative in mitochondrial disorders and neurodegenerative diseases such as Leigh syndrome and Parkinson's disease. These conditions often arise from deficits in ATP production where ineffective ATP synthase activity can contribute to cellular energy failures. In the context of Parkinson's disease for instance ATP5A interactions with other proteins like Parkin can contribute to mitochondrial dysfunction an important pathological feature of the disorder. Through such associations alterations in ATP5A activity can significantly impact disease progression and symptomatology.

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

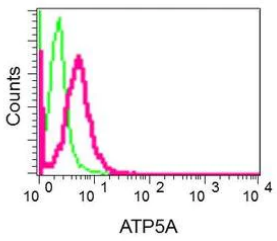
We do not recommend this combination. It is not covered by our product promise.

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.

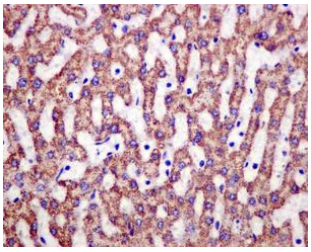
11 product images



Flow Cytometry (Intracellular) - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569)

ATP5A Flow Cytometry (Intracellular) staining using rabbit Anti-ATP5A antibody

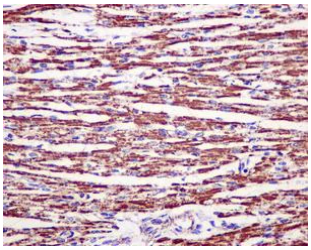
Intracellular flow cytometric analysis of permeabilized HeLa cells labeling ATP5A using ab176569 (unpurified) at a 1/10 dilution (red) or a rabbit IgG negative control (green).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569)

ATP5A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ATP5A antibody

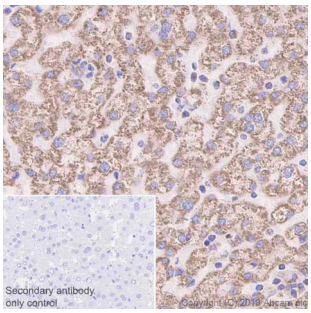
Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling ATP5A using ab176569 (unpurified) at a 1/50 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569)

ATP5A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ATP5A antibody

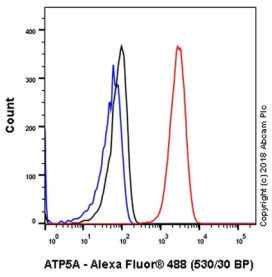
Immunohistochemical analysis of paraffin-embedded Human fetal heart tissue labeling ATP5A using ab176569 (unpurified) at a 1/50 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569)

ATP5A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ATP5A antibody

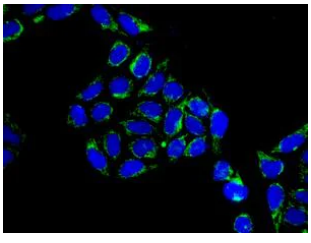
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human liver tissue sections labeling ATP5A with Purified ab176569 at 1:500 dilution (0.21 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use)was used as the secondary antibody.Negative control:PBS instead of the primary antibody.Hematoxylin was used as a counterstain.



Flow Cytometry (Intracellular) - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569)

ATP5A Flow Cytometry (Intracellular) staining using rabbit Anti-ATP5A antibody

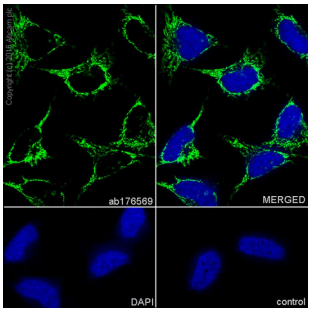
Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling ATP5A with purified ab176569 at 1/60 dilution (10 µg/ml) (red). Cells were fixed with 4% Paraformaldehyde. A Goat anti rabbit IgG (Alexa Fluor® 488) secondary antibody was used at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunocytochemistry/ Immunofluorescence - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569)

ATP5A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ATP5A antibody

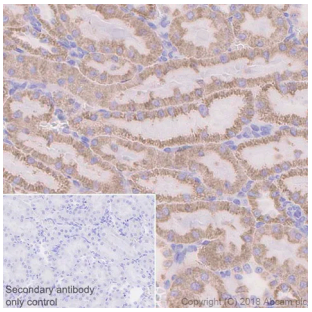
Immunofluorescence analysis of MCF7 cells labeling ATP5A using ab176569 (unpurified) at a 1/100 dilution (green). DAPI nuclear staining (blue).



Immunocytochemistry/ Immunofluorescence - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569)

ATP5A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ATP5A antibody

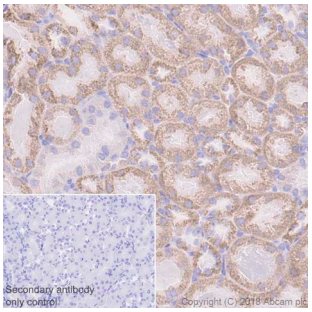
ab176569 (purified) staining ATP5A in HeLa (human cervix adenocarcinoma epithelial cell) by Immunocytochemistry/Immunofluorescence (ICC/IF). Cells were fixed with 4% paraformaldehyde and permeabilized n 0.1% TritonX-100. Samples were incubated with primary antibody at 1/500 dilution (4.2µg/ml). An AlexaFluor®488 Goat anti-Rabbit (ab150077) was used as a secondary antibody at 1/1000 dilution (2µg/ml). DAPI was used as a nuclear counterstain. Confocal image showing cytoplasmic staining in HeLa cells.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569)

ATP5A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ATP5A antibody

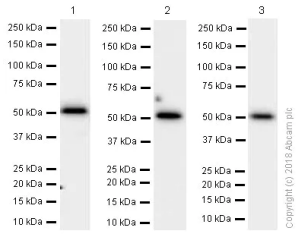
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Rat kidney tissue sections labeling ATP5A with Purified ab176569 at 1:500 dilution (0.21 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use)was used as the secondary antibody.Negative control:PBS instead of the primary antibody.Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569)

ATP5A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ATP5A antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Mouse kidney tissue sections labeling ATP5A with Purified ab176569 at 1:500 dilution (0.21 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use)was used as the secondary antibody.Negative control:PBS instead of the primary antibody.Hematoxylin was used as a counterstain.



Western blot - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569)

ATP5A Western blot staining using rabbit Anti-ATP5A antibody

Blocking and diluting buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569) at 0.01 µg/mL

Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysates at 15 µg

Lane 2:

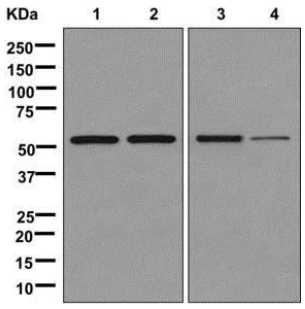
Mouse brain lysates at 15 µg

Lane 3:
Rat brain lysates at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 60 kDa



Western blot - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569)

ATP5A Western blot staining using rabbit Anti-ATP5A antibody

All lanes:
Western blot - Anti-ATP5A antibody [EPR13030(B)] - Mitochondrial Marker (ab176569) at 1/1000 dilution

Lane 1:
HepG2 cell lysate at 10 µg

Lane 2:
HeLa cell lysate at 10 µg

Lane 3:
Human fetal liver lysate at 10 µg

Lane 4:
Human fetal lung lysate at 10 µg

Secondary

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

Developed using the ECL technique.

Predicted band size: 60 kDa

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