abcam

ab110273

Anti-ATP5A antibody [7H10BD4F9] - Mitochondrial Marker

Anti-ATP5A antibody [7H10BD4F9] (ab110273) is a mouse monoclonal antibody detecting ATP5A in **Western Blot, Flow Cytometry, ICC/IF**. Suitable for **Cow, Human, Mouse, Rat**.

- Over 80 publications

Lab Essentials

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.5 Preservative: 0.02% Sodium azide Constituents: HEPES buffered saline
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	7H10BD4F9
Purity	IgG fraction
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Near homogeneity as judged by SDS-PAGE. ab110273 was produced in vitro using hybridomas grown in serum-free medium, and then purified by biochemical fractionation.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1 µg/mL
Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Expected

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

WB

Tested

Species	Human
Dilution info	1-2 µg/mL
Notes	-

Species	Mouse
Dilution info	1-2 µg/mL
Notes	-

Species	Rat
Dilution info	1-2 µg/mL
Notes	-

Species	Cow
Dilution info	1-2 µg/mL
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Expected

Species	Mouse, Rat, Cow
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	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

What is this antibody validated in?
Anti-ATP5A antibody [7H10BD4F9] (ab110273) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunocytochemistry/immunofluorescence (ICC/IF) in Cow, Human, Mouse, Rat samples.

What is the molecular weight of ATP5A?
Anti-ATP5A [7H10BD4F9] (ab110273) specifically detects a band for ATP5A (UniProt: P25705) at a molecular weight of 60kDa.

Trusted by the scientific community
Anti-ATP5A [7H10BD4F9] (ab110273) was first used in a scientific publication in 2011 and has been cited over 80 times in peer-reviewed journals.

Reviewed by scientists
Anti-ATP5A [7H10BD4F9] (ab110273) has over 5 independent reviews from customers.

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

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

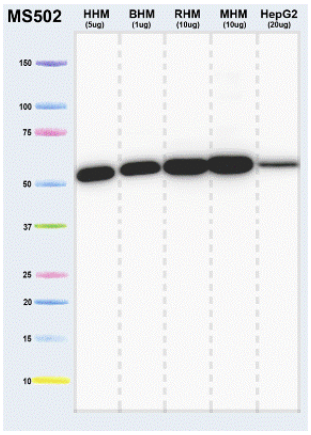
We do not recommend this combination. It is not covered by our product promise.

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.

3 product images



Western blot - Anti-ATP5A antibody [7H10BD4F9] - Mitochondrial Marker (ab110273)

ATP5A Western blot staining using mouse Anti-ATP5A antibody

All lanes:
Western blot - Anti-ATP5A antibody [7H10BD4F9] - Mitochondrial Marker (ab110273) at 1 µg/mL

Lane 1:
Human heart mitochondria at 5 µg

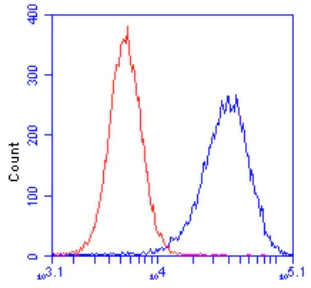
Lane 2:
Bovine heart mitochondria at 1 µg

Lane 3:
Rat heart mitochondria at 10 µg

Lane 4:
Mouse heart mitochondria at 10 µg

Lane 5:
HepG2 mitochondria at 20 µg

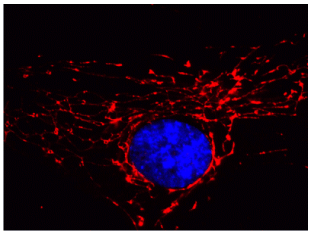
Predicted band size: 60 kDa



Flow Cytometry - Anti-ATP5A antibody [7H10BD4F9] - Mitochondrial Marker (ab110273)

ATP5A Flow Cytometry staining using mouse Anti-ATP5A antibody

HL-60 cells were stained with 1 µg/mL ab110273 (blue) or an equal amount of an isotype control antibody (red) and analyzed by flow cytometry.



Immunocytochemistry/ Immunofluorescence - Anti-ATP5A antibody [7H10BD4F9] - Mitochondrial Marker (ab110273)

ATP5A Immunocytochemistry/ Immunofluorescence staining using mouse Anti-ATP5A antibody

Mitochondrial localization of ATP5A. Cultured Human embryonic lung-derived fibroblasts (strain MRC5) were fixed, permeabilized and then labeled with ab110273 (2 µg/ml) followed by an Alexa Fluor® 594-conjugated-goat-anti-mouse IgG2b isotype specific secondary antibody (2 µg/ml).

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