abcam

ab230325

Anti-ATP5O antibody

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.4 Preservative: 0.09% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human ATP5PO aa 1-100. The exact immunogen used to generate this antibody is proprietary information. Database link P48047
Purification technique	Affinity purification Protein A

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	5 µg/mL
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Predicted

Species	Cow, Pig, Orangutan
Dilution info	-

Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Predicted

Species	Cow, Pig, Orangutan
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Cow, Pig, Orangutan
Dilution info	-
Notes	-

Target data

See full target information ATP5PO

Function	Subunit OSCP, 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 (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). Part of the complex F(0) domain (PubMed:37244256). Part of the complex F(0) domain and the peripheric stalk, which acts as a stator to hold the catalytic alpha(3)beta(3) subcomplex and subunit a/ATP6 static relative to the rotary elements (By similarity).

Storage

Shipped at conditions	Blue Ice
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

Supplementary info

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

Activity summary	ATP5O also known as OLIGOMYCIN SENSITIVITY CONFERRING PROTEIN (OSCP) plays an important role mechanically in the function of mitochondria. It is a component of the F1F0 ATP synthase complex responsible for the generation of ATP from ADP using the proton gradient across the mitochondrial membrane. ATP5O assists in the stabilization of the enzyme structure. The target protein has a molecular mass of approximately 23 kDa. Expression of ATP5O occurs in various tissues especially in muscles and organs with high energy demands such as the heart and liver.
Biological function summary	ATP5O assists in the energy production process by associating with the mitochondrial ATP synthase complex. It interacts closely with other subunits to form the stator stalk which is vital in the maintenance of the enzyme's structural integrity during ATP synthesis. The proper function of ATP5O ensures effective conversion of the chemiosmotic energy into chemical energy within the mitochondria making metabolism efficient and supporting cellular energy requirements. This makes its role in energy homeostasis invaluable.

Pathways	ATP5O integrates into oxidative phosphorylation a pathway critical for cellular respiration and energy production. It collaborates with other ATP synthase subunits as well as cytochrome c to complete the electron transport chain culminating the release of ATP for cellular function. ATP5O's activity impacts cellular energy homeostasis and interacts with proteins like ATP5A and ATP5B which are also part of the ATP synthase complex. Its involvement ensures effective energy transfer and metabolic adaptation to cellular demands.
Associated diseases and disorders	ATP5O disruptions have links to mitochondrial disorders and neurodegenerative diseases. Mutations affecting ATP5O function can lead to compromised ATP production resulting in conditions like mitochondrial encephalomyopathy. Additionally dysfunctions in ATP5O may contribute to Alzheimer's disease due to impaired energy metabolism. The link through disease pathways is often closely associated with proteins in the ATP synthase complex highlighting ATP5O's significance in maintaining mitochondrial and neuronal 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

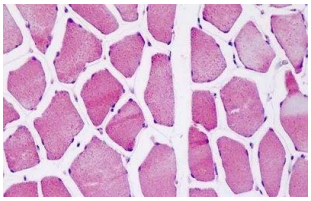
We do not recommend this combination. It is not covered by our product promise.

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.

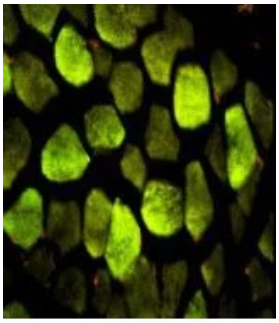
5 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ATP5O antibody (ab230325)

ATP5O Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ATP5O antibody

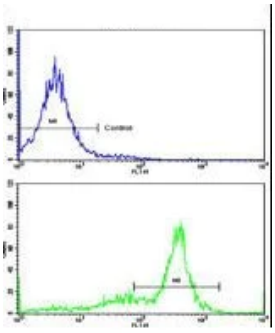
Formalin-fixed, paraffin-embedded human skeletal muscle tissue stained for ATP50 using ab230325 (5 µg/ml) in immunohistochemical analysis.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ATP5O antibody (ab230325)

ATP5O Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ATP5O antibody

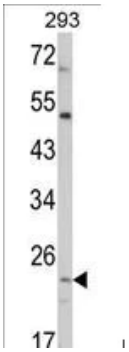
Paraffin-embedded human skeletal muscle stained for ATP5O (green) using ab230325 (0.05 mg/ml) in immunohistochemical analysis.
FITC-conjugated goat anti-rabbit lgG was used as the secondary antibody. Counterstained with Propidium Iodide (red).



Flow Cytometry (Intracellular) - Anti-ATP5O antibody (ab230325)

ATP5O Flow Cytometry (Intracellular) staining using rabbit Anti-ATP5O antibody

Intracellular flow cytometric analysis ofHEK-293 (human epithelial cell line from embryonic kidney) cells labeling ATP50 with ab230325 at 1/10 dilution (green) compared with a negative control (blue).
FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

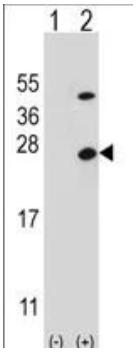


Western blot - Anti-ATP5O antibody (ab230325)

All lanes:
Western blot - Anti-ATP5O antibody (ab230325) at 1/1000 dilution

All lanes:
HEK-293 (human epithelial cell line from embryonic kidney) whole cell lysate at 35 µg

Predicted band size: 23 kDa



Western blot - Anti-ATP5O antibody (ab230325)

All lanes:
Western blot - Anti-ATP5O antibody (ab230325) at 1/1000 dilution

Lane 1:
Non-transfected HEK-293 (human epithelial cell line from embryonic kidney) whole cell lysate at 2 µg

Lane 2:

ATP50-transfected HEK-293 (human epithelial cell line from embryonic kidney) whole cell lysate at 2 µg

Predicted band size: 23 kDa

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