abcam

ab110276

Anti-ATP5O antibody [4C11C10D12]

Key facts

Isotype	IgG1
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	4C11C10D12
Purity	IgG fraction
Specificity	Antigen retrieval is required for ICC. Immediately before the permeabilization step, heat the coverslips for 10 minutes in 100mM Tris, 5% urea, pH 9.5 at 95°C for 10 minutes.
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. ab110276 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	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	African green monkey, Cow
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Species	Mouse
Dilution info	-
Notes	-

WB

Tested

Species	African green monkey
Dilution info	0.5 µg/mL
Notes	-

Species	Human
Dilution info	0.5 µg/mL
Notes	-

Species	Cow
Dilution info	0.5 µg/mL

Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

Species	African green monkey, Cow
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Rat, Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	0.5-1 µg/mL
Notes	Perform heat-induced antigen-retrieval with 100mM Tris, 5% urea, pH 9.5 at 95°C for 10 minutes immediately before permeabilization.

Expected

Species	African green monkey, Cow
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	Perform heat-induced antigen-retrieval with 100mM Tris, 5% urea, pH 9.5 at 95°C for 10 minutes immediately before permeabilization.

Species	Mouse
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 conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

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	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

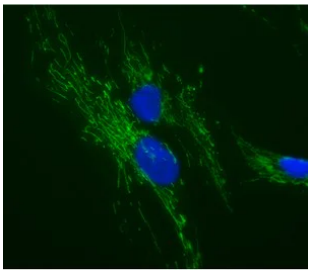
We do not recommend this combination. It is not covered by our product promise.

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.

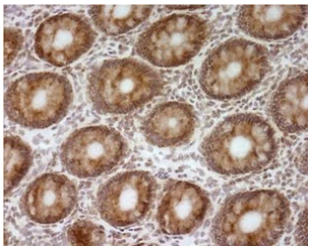
6 product images



Immunocytochemistry/ Immunofluorescence - Anti-ATP5O antibody [4C11C10D12] (ab110276)

ATP5O Immunocytochemistry/ Immunofluorescence staining using mouse Anti-ATP5O antibody

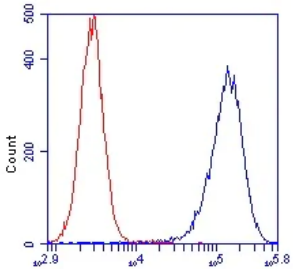
Mitochondrial localization of ATP5O. Cultured Human embryonic lung-derived fibroblasts (strain MRC5) were fixed, treated for heat-induced antigen retrieval, permeabilized and then labeled with ab110276 (0.5 µg/ml) followed by an AlexaFluor® 488-conjugated-goat-anti-mouse IgG1 isotype specific secondary antibody (2 µg/ml).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ATP5O antibody [4C11C10D12] (ab110276)

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

Human colon tissue fixed with 4% PFA and antibody detection with ab110276 using the ABC system. ab110276 diluted 1/500 and incubated for 1 hour. Sections were incubated in peroxidase-conjugated rabbit anti-mouse immunoglobulins (diluted 1/100 in 4% BSA in PBST) for 1 hour at room temp.



Flow Cytometry - Anti-ATP5O antibody [4C11C10D12] (ab110276)

ATP5O Flow Cytometry staining using mouse Anti-ATP5O antibody

HL-60 cells were stained with 1 µg/mL ab110276 (blue) or an equal amount of an isotype control antibody (red) and analyzed by flow cytometry.



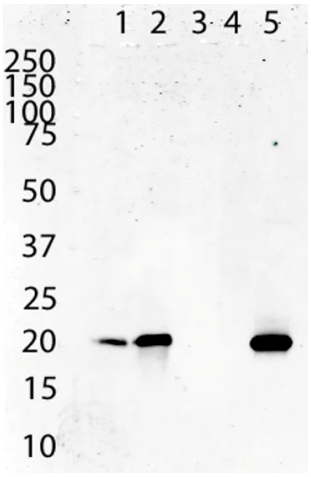
Western blot - Anti-ATP5O antibody [4C11C10D12] (ab110276)

All lanes:
Western blot - Anti-ATP5O antibody [4C11C10D12] (ab110276) at 0.5 µg/mL

Lane 1:
Human heart mitochondria at 5 µg

Lane 2:
Bovine heart mitochondria at 1 µg

Predicted band size: 23 kDa



Western blot - Anti-ATP5O antibody [4C11C10D12] (ab110276)

Secondary antibody: Goat-Anti-Mouse-IR800 1:4000
All lanes:
Western blot - Anti-ATP5O antibody [4C11C10D12] (ab110276) at 1 µg/mL

Lane 1:
HDFn (human) cell lysates at 20 µg

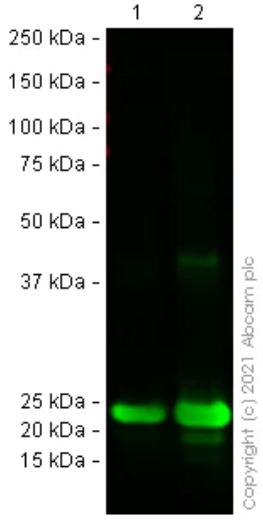
Lane 2:
COS7 (monkey) cell lysates at 20 µg

Lane 3:
H4IIE (rat) cell lysates at 20 µg

Lane 4:
MEF (mouse) cell lysates at 20 µg

Lane 5:
bovine heart mitochondria lysates at 5 µg

Predicted band size: 23 kDa



Western blot - Anti-ATP5O antibody [4C11C10D12] (ab110276)

False colour image of Western blot: Anti-ATP5O antibody [4C11C10D12] staining at 1 ug/ml, shown in green. In Western blot, ab110276 was shown to bind specifically to ATP5O. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4°C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed (ab216772) at 1/20000 dilution.
All lanes:
Western blot - Anti-ATP5O antibody [4C11C10D12] (ab110276) at 1 µg/mL

Lane 1:
Recombinant Human ATP5O protein (ab104549) cell lysate at 0.1 µg

Lane 2:
Recombinant Human ATP5O protein (ab104549) cell lysate at 0.5 µg

Performed under reducing conditions.

Predicted band size: 23 kDa

Observed band size: 24 kDa

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