abcam

ab110265

Anti-COX6A1 antibody [14A3AD2BH4]

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	14A3AD2BH4
Specificity	ab110265 recognises the Liver isoform in human, rat, mouse.
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab110265 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 for 10^6 Cells

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

Expected

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

Predicted

Species	Rabbit, Cow, Dog
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Species	Rat
Dilution info	5 µg/mL
Notes	-

Species	Mouse
Dilution info	5 µg/mL
Notes	-

Predicted

Species	Rabbit, Cow, Dog
Dilution info	-
Notes	-

Target data

See full target information COX6A1

Function	Component of the cytochrome c oxidase, the last enzyme in the mitochondrial electron transport chain which drives oxidative phosphorylation. The respiratory chain contains 3 multisubunit complexes succinate dehydrogenase (complex II, CII), ubiquinol-cytochrome c oxidoreductase (cytochrome b-c1 complex, complex III, CIII) and cytochrome c oxidase (complex IV, CIV), that cooperate to transfer electrons derived from NADH and succinate to molecular oxygen, creating an electrochemical gradient over the inner membrane that drives transmembrane transport and the ATP synthase. Cytochrome c oxidase is the component of the respiratory chain that catalyzes the reduction of oxygen to water. Electrons originating from reduced cytochrome c in the intermembrane space (IMS) are transferred via the dinuclear copper A center (CU(A)) of subunit 2 and heme A of subunit 1 to the active site in subunit 1, a binuclear center (BNC) formed by heme A3 and copper B (CU(B)). The BNC reduces molecular oxygen to 2 water molecules unsing 4 electrons from cytochrome c in the IMS and 4 protons from the mitochondrial matrix.

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	COX6A1 also known as Cytochrome c oxidase subunit 6A1 plays an important role in the electron transport chain by being part of the cytochrome c oxidase (complex IV) in mitochondria. This subunit has a mass of approximately 14 kDa. COX6A1 expresses in various human tissues but shows higher expression in tissues with

	significant energy demands such as the heart and skeletal muscle. This evidence suggests its critical involvement in cellular energy production.
Biological function summary	COX6A1 contributes to the formation of the cytochrome c oxidase complex which is the terminal enzyme in the mitochondrial respiratory chain. This complex facilitates the transfer of electrons from cytochrome c to oxygen leading to ATP production through oxidative phosphorylation. COX6A1 is an integral component of this complex which exists as part of the inner mitochondrial membrane. It interacts with other subunits to ensure efficient electron transfer and energy conversion.
Pathways	COX6A1 heavily influences the mitochondrial respiratory pathway particularly in oxidative phosphorylation. This pathway includes important components like NADH: ubiquinone oxidoreductase and cytochrome c. COX6A1 bridges interactions within the complex IV with proteins such as COX1 enabling proper electron transport and proton pumping necessary for ATP synthesis. Dysfunction in these interactions may affect overall cellular respiration efficiency.
Associated diseases and disorders	Mutations and dysregulation of COX6A1 relate to various mitochondrial disorders and neurodegenerative conditions such as Leigh syndrome. Its interactions with other mitochondrial proteins like COX2 and COX3 are vital for maintaining mitochondrial function. Deficiencies in COX6A1 can disrupt proper electron transport leading to decreased ATP production and contributing to pathology in energy-demanding tissues like the brain and muscles.

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

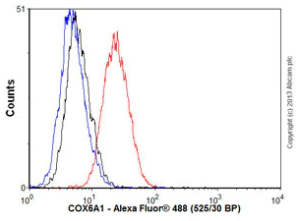
We do not recommend this combination. It is not covered by our product promise.

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:

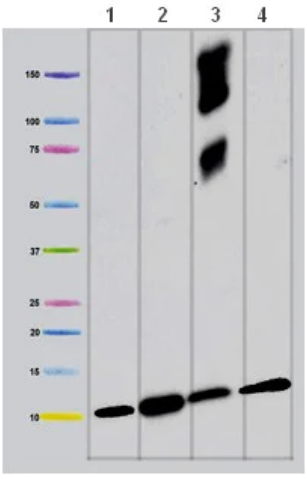
2 product images



Flow Cytometry - Anti-COX6A1 antibody [14A3AD2BH4] (ab110265)

COX6A1 Flow Cytometry staining using mouse Anti-COX6A1 antibody

Overlay histogram showing HepG2 cells stained with ab110265 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab110265, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-mouse IgG (H&L) (ab150113) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in HepG2 cells fixed with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



Western blot - Anti-COX6A1 antibody [14A3AD2BH4] (ab110265)

COX6A1 Western blot staining using mouse Anti-COX6A1 antibody

Extra bands in the mouse sample (lane 3) are due to the reaction of the IgG-specific goat anti-mouse secondary antibody with residual mouse blood in the heart tissue, as it is very difficult to entirely remove the blood from these small organs.
All lanes:
Western blot - Anti-COX6A1 antibody [14A3AD2BH4] (ab110265) at 5 µg/mL

Lane 1:
Human Heart Lysate

Lane 2:
Rat Heart Lysate

Lane 3:
Mouse Heart Lysate

Lane 4:
HepG2 cell lysate

Predicted band size: 12 kDa

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