abcam

ab110261

Anti-COX4 + COX4L2 antibody [10G8D12C12] - Mitochondrial Marker

Key facts

Isotype	IgG2a
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	10G8D12C12
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	ab110261 was produced in vitro using hybridomas grown in serum-free medium, and then purified by biochemical fractionation. ab110261 was judged as near homogeneity by SDS PAGE.

Reactivity data

WB

Tested

Species	Cow

Dilution info	1 µg/mL
Notes	-

Species	Human
Dilution info	1 µg/mL
Notes	-

Predicted

Species	Zebrafish
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1 µg/mL
Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Expected

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

Predicted

Species	Zebrafish
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	5 µg/mL
Notes	(heat-induced antigen-retrieval improves signal)

Expected

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

Predicted

Species	Zebrafish
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Human
Dilution info	1/800
Notes	-

Expected

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

Predicted

Species	Zebrafish
Dilution info	-
Notes	-

Target data

See full target information COX4I1

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 using 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

The COX4 protein also known as Cytochrome c oxidase subunit 4 along with its isoform COX4L2 forms part of the electron transport chain in mitochondria. COX4 has a molecular mass of approximately 20.8 kDa and is found in various tissues especially in high-energy-demand organs like the heart and liver. Both COX4 and

	COX4L2 belong to the inner mitochondrial membrane and play a role in the enzyme complex Cytochrome c oxidase essential for efficient cellular respiration.
Biological function summary	COX4 and COX4L2 contribute to the terminal stage of the mitochondrial electron transport chain. They form core components of the Cytochrome c oxidase complex also called complex IV which facilitates the transfer of electrons from reduced cytochrome c to oxygen. This process not only aids in the production of water but also helps create the proton gradient used by ATP synthase to generate ATP the primary energy currency in cells.
Pathways	Both COX4 and COX4L2 integrate into key metabolic pathways such as oxidative phosphorylation and the respiratory chain. Their role in the electron transport chain connects them to other mitochondrial proteins like cytochrome c and ATP synthase. This collaboration is important for the efficient conversion of nutrients into usable cellular energy supporting essential metabolic functions.
Associated diseases and disorders	Disruptions in the function of COX4 and COX4L2 relate to conditions such as mitochondrial myopathy and Leigh syndrome. Mutations or deficiencies in these proteins can impair electron transport and reduce ATP generation leading to muscle weakness or neurodegenerative symptoms. Cytochrome c and other components of the electron transport chain often exhibit related dysfunctions in these mitochondrial diseases.

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

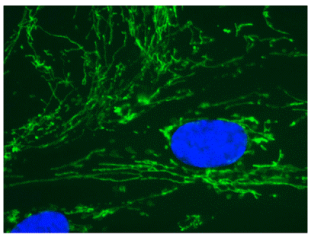
We do not recommend this combination. It is not covered by our product promise.

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.

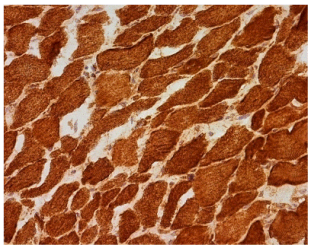
5 product images



Immunocytochemistry/ Immunofluorescence - Anti-COX4 + COX4L2 antibody [10G8D12C12] - Mitochondrial Marker (ab110261)

COX4 + COX4L2 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-COX4 + COX4L2 antibody

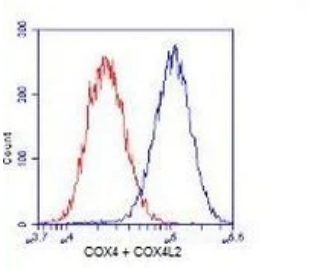
ab110261, at 10 µg/ml, staining COX4 + COX4L2 in cultured Human embryonic lung derived fibroblasts by Immunofluorescence. The cells (strain MRC5) were fixed, permeabilized and then labeled with ab110261 followed by an AlexaFluor® 488 conjugated Goat anti-mouse IgG2a isotype specific secondary antibody at 1 µg/ml.



Immunohistochemistry (Frozen sections) - Anti-COX4 + COX4L2 antibody [10G8D12C12] - Mitochondrial Marker (ab110261)

COX4 + COX4L2 Immunohistochemistry (Frozen sections) staining using mouse Anti-COX4 + COX4L2 antibody

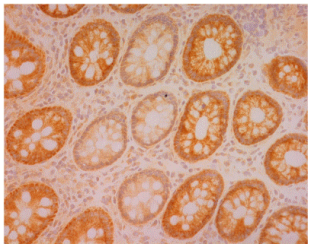
ab110261, at 1/800, staining COX4 + COX4L2 in skeletal muscle tissue sections from a patient with a single large deletion of the mtDNA by Immunohistochemistry. The tissue was snap frozen and fixed in 4% PFA. Image kindly provided by Dr. J. Murphy and D. Turnbull, Mitochondrial Research Group, Newcastle University.



Flow Cytometry - Anti-COX4 + COX4L2 antibody [10G8D12C12] - Mitochondrial Marker (ab110261)

COX4 + COX4L2 Flow Cytometry staining using mouse Anti-COX4 + COX4L2 antibody

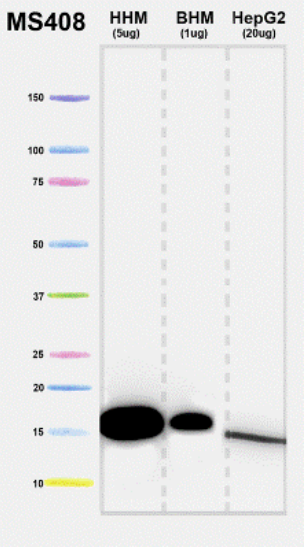
ab110261, at 1 µg/mL, staining COX4 + COX4L2 in HeLa cells by Immunohistochemistry (blue) and an isotype control antibody, at 1 µg/mL, staining of HeLa cells (red).



Immunohistochemistry (Frozen sections) - Anti-COX4 + COX4L2 antibody [10G8D12C12] - Mitochondrial Marker (ab110261)

COX4 + COX4L2 Immunohistochemistry (Frozen sections) staining using mouse Anti-COX4 + COX4L2 antibody

ab110261, at 1/200, showing COX4 + COX4L2 negative crypts in colon tissue sections from a normal ageing patient by Immunohistochemistry. The tissue was snap frozen and fixed in 4% PFA. Image kindly provided by Dr. J. Murphy and D. Turnbull, Mitochondrial Research Group, Newcastle University.



Western blot - Anti-COX4 + COX4L2 antibody [10G8D12C12] - Mitochondrial Marker (ab110261)

COX4 + COX4L2 Western blot staining using mouse Anti-COX4 + COX4L2 antibody

All lanes:
Western blot - Anti-COX4 + COX4L2 antibody [10G8D12C12] - Mitochondrial Marker (ab110261) at 1 µg/mL

Lane 1:
Isolated mitochondria from Human heart at 5 µg

Lane 2:
Isolated mitochondria from Bovine heart at 1 µg

Lane 3:
Isolated mitochondria from HepG2 at 20 µg

Predicted band size: 20 kDa

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