abcam

ab110267

Anti-Cytochrome C Oxidase subunit VIc/COX6C antibody [3G5F7G3]

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	3G5F7G3
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. ab110267 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	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Expected

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

WB

Tested

Species	Cow
Dilution info	2 µg/mL
Notes	-

Species	Rat
Dilution info	2 µg/mL
Notes	-

Species	Human
Dilution info	2 µg/mL
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Expected

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

Notes	-

Target data

See full target information COX6C

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	Cytochrome C Oxidase subunit VIc also known as COX6C or cytochrome c oxidase subunit 1 is a component of the enzyme cytochrome c oxidase also referred to as complex IV in the mitochondrial electron transport chain. This subunit contributes significantly to the mechanical activity by aiding the catalytic conversion of molecular oxygen to water. COX6C is relatively lightweight compared to other subunits with an approximate mass of 7.5 kDa. The expression of COX6C predominantly occurs in tissues with high metabolic activity such as the heart muscle and brain where energetic demands are substantial.
Biological function summary	Cytochrome C Oxidase subunit VIc is part of the larger cytochrome c oxidase complex facilitating efficient electron transfer from cytochrome c to oxygen therefore promoting the process of oxidative phosphorylation. This activity is critical for sustaining the mitochondrial membrane potential and ATP production. COX6C's integration within the complex is necessary for its structural integrity and optimal performance. This subunit impacts mitochondrial functionality playing a pivotal role in cellular energy metabolism.
Pathways	Cytochrome C Oxidase subunit VIc contributes to the oxidative phosphorylation pathway and impacts the electron transport chain's efficiency. Its function within this pathway is interconnected with cytochrome c and other cytochrome oxidase complexes. During this process ATP synthase takes advantage of the proton gradient established by the electron flow managed by complex IV. COX6C's role within these pathways ensures effective energy conversion maintaining cellular respiration and energy output in aerobically respiring cells.
Associated diseases and disorders	Abnormalities in cytochrome C Oxidase subunit VIc expression or function often lead to mitochondrial diseases such as Leigh syndrome and cytochrome c oxidase deficiency. These conditions are linked with defects in cellular respiration causing a wide array of symptoms including neurological and muscular impairments. The subunit's relationship with cytochrome c integral to both electron transfer and apoptosis pathways highlights its influence in these mitochondrial disorders. Understanding COX6C's role offers insights into potential therapeutic targets to mitigate these conditions.

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

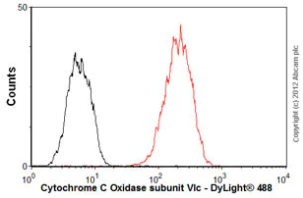
We do not recommend this combination. It is not covered by our product promise.

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.

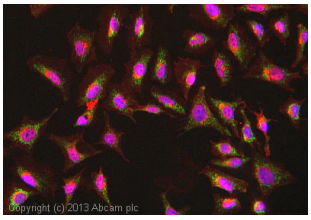
3 product images



Flow Cytometry - Anti-Cytochrome C Oxidase subunit VIc/COX6C antibody [3G5F7G3] (ab110267)

Cytochrome C Oxidase subunit VIc/COX6C Flow Cytometry staining using mouse Anti-Cytochrome C Oxidase subunit VIc/COX6C antibody

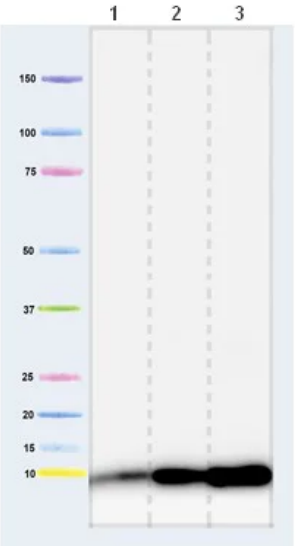
Overlay histogram showing HepG2 cells stained with ab110267 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab110267, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (ab91366, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. 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.



Immunocytochemistry/ Immunofluorescence - Anti-Cytochrome C Oxidase subunit VIc/COX6C antibody [3G5F7G3] (ab110267)

Cytochrome C Oxidase subunit VIc/COX6C Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Cytochrome C Oxidase subunit VIc/COX6C antibody

ICC/IF image of ab110267 stained HeLa cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab110267, 5µg/ml) overnight at +4°C. The secondary antibody (green) was ab96879, DyLight® 488 goat anti-mouse IgG (H+L) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.



Western blot - Anti-Cytochrome C Oxidase subunit VIc/COX6C antibody [3G5F7G3] (ab110267)

All lanes:
Western blot - Anti-Cytochrome C Oxidase subunit VIc/COX6C antibody [3G5F7G3] (ab110267) at 2 µg/mL

Lane 1:
Isolated mitochondria from Human heart at 50 µg

Lane 2:
Isolated mitochondria from Bovine heart at 1 µg

Lane 3:
Isolated mitochondria from Rat heart at 10 µg

Predicted band size: 9 kDa

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