abcam

ab210675

Alexa Fluor® 555 Anti-COX IV antibody [EPR9442(ABC)] - Mitochondrial Marker

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 555
Excitation/Emission	Ex: 555nm, Em: 565nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR9442(ABC)
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	This product gave a positive signal in HeLa cells fixed 100% methanol (5 min)

Expected

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

Flow Cyt (Intra)

Expected

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

IHC-P

Expected

Species	Human, Mouse, Rat
Dilution info	Use at an assay dependent concentration.
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 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	Stable for 12 months at -20°C, Store in the dark

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

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Supplementary info

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

Activity summary	Cytochrome c oxidase subunit IV commonly known as COX IV is a component of the enzyme complex located in the inner mitochondrial membrane. COX IV has a molecular weight of approximately 17 kDa and serves as a subunit of the larger cytochrome c oxidase complex which is essential in cellular respiration. As a mitochondrial marker COX IV is expressed in various tissues where it acts as an important player in the electron transport chain. The presence and function of COX IV are critical in facilitating the last step of the mitochondrial respiratory chain.
Biological function summary	COX IV acts as a significant part of the cytochrome c oxidase complex helping catalyze the reduction of oxygen to water. This process is an important step in the overall mechanism of oxidative phosphorylation. COX IV's role in this complex enables the proton gradient generation across the inner mitochondrial membrane which is necessary for ATP synthesis. Its activity regulates the efficiency of cellular respiration impacting energy production and metabolic activities within cells.
Pathways	COX IV functionally interacts within the oxidative phosphorylation and electron transport chain pathways. Its coordination with other proteins like COX I and COX II in the cytochrome c oxidase complex ensures proper electron transfer to oxygen. Additionally COX IV is implicated in the regulation of reactive oxygen species maintaining cellular homeostasis. These pathways interconnect with broader cellular mechanisms that involve energy metabolism and apoptosis.
Associated diseases and disorders	COX IV has been linked to mitochondrial disorders where defects in the oxidative phosphorylation processes can lead to conditions such as mitochondrial encephalomyopathy. Abnormalities in COX IV function and expression can also contribute to neurodegenerative diseases including Parkinson's disease. Here interactions with proteins like superoxide dismutase (SOD) highlight how oxidative stress and mitochondrial dysfunction relate closely to disease progression. These associations underline the importance of COX IV in maintaining cellular and organismal 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

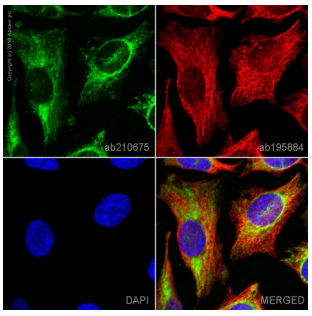
We do not recommend this combination. It is not covered by our product promise.

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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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1 product image



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 555 Anti-COX IV antibody [EPR9442(ABC)] - Mitochondrial Marker (ab210675)

COX IV Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-COX IV antibody

ab210675 staining COX IV in HeLa cells. The cells were fixed with 100% methanol (5min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab210675 at 1/100 dilution (pseudocolored in green) and ab195884, Rat monoclonal to Tubulin (Alexa Fluor® 647), at 1/250 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

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