abcam

ab238984

Anti-COX5B antibody [EPR14439(B)] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR14439(B)
Purification technique	Affinity purification Protein A
Concentration	1.028 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Expected

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

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information Cytochrome c oxidase subunit 5B, mitochondrial

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

ab238984 is the carrier-free version of ab180136.

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.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	The target COX5B also known as cytochrome c oxidase subunit 5B is a subunit of the cytochrome c oxidase (complex IV) in mitochondria. This protein has a mass of approximately 13.2 kDa and plays an essential role in the electron transport chain. COX5B aids in the terminal step of the mitochondrial respiratory chain by facilitating electron transfer from reduced cytochrome c to oxygen. This process occurs mainly in mitochondria-rich tissues such as muscles neurons and cardiac muscle where high energy demand exists.
Biological function summary	COX5B acts within the larger cytochrome c oxidase complex which consists of multiple subunits that work together to promote efficient oxidative phosphorylation. This subunit contributes to the enzymatic activity that pumps protons across the inner mitochondrial membrane a critical step for ATP synthesis. The operation of COX5B is important for cellular respiration and energy production impacting metabolic functions across various cell types. It maintains cellular energy homeostasis by regulating how efficiently cells convert nutrients into energy.
Pathways	COX5B plays an important role in the oxidative phosphorylation pathway and is a part of the electron transport chain (ETC). It interacts with other ETC proteins such as COX2 and COX3 to ensure the proper function of the chain. Furthermore COX5B's involvement in oxidative phosphorylation links it to pathways like ATP synthesis where it indirectly influences essential cellular processes such as apoptosis and cellular metabolism due to its role in energy production.
Associated diseases and disorders	COX5B has associations with conditions involving mitochondrial dysfunction such as mitochondrial myopathy and mitochondrial encephalomyopathy. Alterations in COX5B expression or function might disrupt the electron transport chain compromising ATP production. These conditions often coexist with mutations or dysregulation in other mitochondrial proteins such as COX6A1 which indicate a broader spectrum of mitochondrial disorders. Understanding COX5B's role in such diseases could lead to insights into potential therapeutic targets for mitochondrial-related disorders.

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.

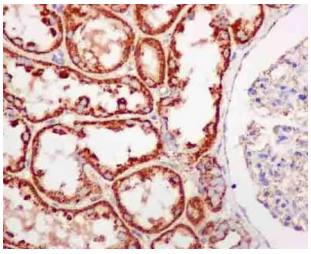
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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4 product images

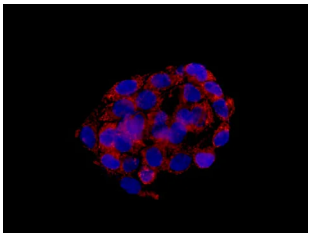


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-COX5B antibody [EPR14439(B)] - BSA and Azide free (ab238984)

COX5B Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-COX5B antibody

Immunohistochemical analysis of paraffin-embedded human kidney tissue labeling COX5B using ab180136 at 1/500 dilution. A Goat anti rabbit IgG (HRP) prediluted was used as secondary. Counterstain: Hematoxylin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab180136).

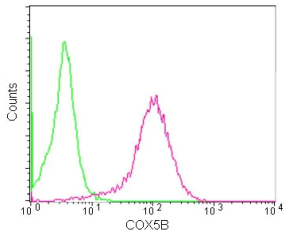
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-COX5B antibody [EPR14439(B)] - BSA and Azide free (ab238984)

COX5B Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-COX5B antibody

Immunofluorescence analysis of HepG2 cells labeling COX5B using ab180136 at 1/1000 dilution. A Goat anti rabbit IgG (Dylight 555) at 1/250 dilution was used as secondary antibody. Cells were fixed with 4% paraformaldehyde. Counterstain: DAPI.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab180136).

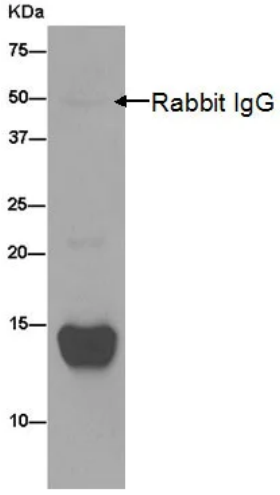


Flow Cytometry (Intracellular) - Anti-COX5B antibody [EPR14439(B)] - BSA and Azide free (ab238984)

COX5B Flow Cytometry (Intracellular) staining using rabbit Anti-COX5B antibody

Intracellular Flow Cytometry analysis of HeLa cells labeling COX5B using ab180136 at 1/10 dilution. A Goat anti rabbit IgG (FITC) at 1/75 dilution was used as secondary antibody. Cells were fixed with 2% paraformaldehyde. Isotype control: Rabbit IgG.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab180136).



Immunoprecipitation - Anti-COX5B antibody [EPR14439(B)] - BSA and Azide free (ab238984)

Immunoprecipitation analysis of Human fetal heart lysate labeling COX5B using ab180136 at 1/70 dilution. A Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 was used as secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab180136).

All lanes:
Immunoprecipitation - Anti-COX5B antibody [EPR14439(B)] (ab180136)

Predicted band size: 14 kDa, 481 kDa

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