abcam

ab250442

Anti-COX5A antibody [EPR14207(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	EPR14207(B)
Purification technique	Affinity purification
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	-

Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information Cytochrome c oxidase subunit 5A, 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

ab250442 is the carrier-free version of ab181226.

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	COX5A also known as Cytochrome c oxidase subunit 5A plays a role in the electron transport chain which is essential in cellular respiration. This protein has a mass of about 17 kDa and is part of the mitochondrial inner membrane. COX5A is expressed in most tissues given its importance in energy production. It is homologous across species indicating evolutionary conservation and a fundamental biological role.
Biological function summary	COX5A functions as a component of the cytochrome c oxidase complex also known as Complex IV in the mitochondrial electron transport chain. This complex catalyzes the reduction of oxygen to water facilitating ATP synthesis by oxidative phosphorylation. The assembly of cytochrome c oxidase involves several subunits and COX5A contributes to the structural integrity and regulation of this complex. It helps maintain efficient electron flow and energy conversion supporting high-energy demand processes within cells.
Pathways	COX5A is an important player in the oxidative phosphorylation pathway. This pathway is critical for ATP production linking electron transfer with proton transport and chemiosmotic coupling. COX5A interacts with proteins like cytochrome c and other subunits of Complex IV to ensure proper function and energy conversion. The protein is also involved in cellular responses to hypoxia where it helps modulate oxygen utilization.
Associated diseases and disorders	COX5A has connections to conditions related to impaired energy metabolism such as mitochondrial disorders like MELAS syndrome. Defects or insufficiencies in COX5A contribute to decreased mitochondrial function impacting tissues with high metabolic rates. The protein also relates to neurodegenerative diseases through its effect on mitochondrial stability and function. Its activity may influence disease progression by interacting with proteins that regulate mitochondrial dynamics such as others in the electron transport chain.

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.

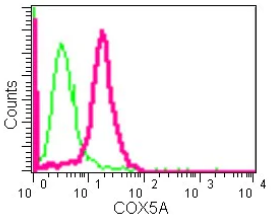
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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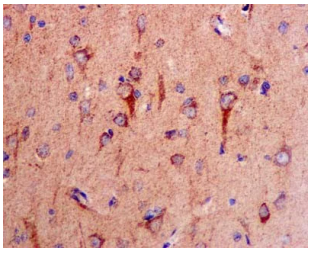
6 product images



Flow Cytometry (Intracellular) - Anti-COX5A antibody [EPR14207(B)] - BSA and Azide free (ab250442)

COX5A Flow Cytometry (Intracellular) staining using rabbit Anti-COX5A antibody

This data was developed using ab181226, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed HeLa cells labeling COX5A with ab181226 at 1/10 dilution (red) compared to a Rabbit monoclonal IgG isotype control (green), followed by Goat anti rabbit IgG (FITC) secondary antibody at 1/150 dilution.

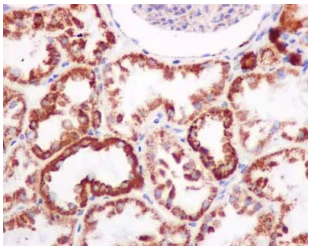


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-COX5A antibody [EPR14207(B)] - BSA and Azide free (ab250442)

COX5A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-COX5A antibody

This data was developed using ab181226, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human brain tissue labeling COX5A with ab181226 at 1/250 dilution followed by prediluted HRP Polymer for Rabbit IgG. Counter stained with Hematoxylin.

Perform heat mediated antigen retrieval with EDTA buffer pH 9 before commencing with IHC staining protocol.

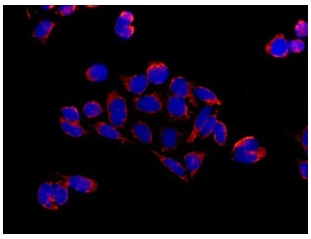


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-COX5A antibody [EPR14207(B)] - BSA and Azide free (ab250442)

COX5A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-COX5A antibody

This data was developed using ab181226, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human kidney tissue labeling COX5A with ab181226 at 1/100 dilution followed by prediluted HRP Polymer for Rabbit IgG. Counter stained with Hematoxylin.

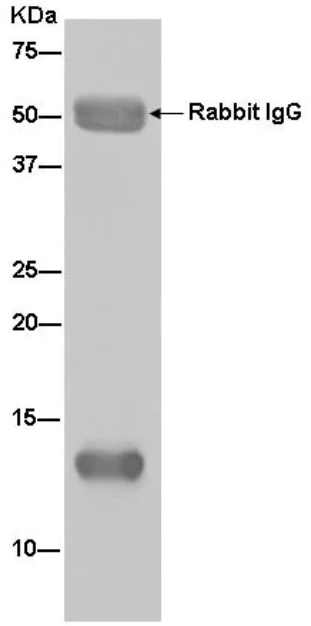
Perform heat mediated antigen retrieval with EDTA buffer pH 9 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-COX5A antibody [EPR14207(B)] - BSA and Azide free (ab250442)

COX5A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-COX5A antibody

This data was developed using ab181226, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of acetone-fixed HeLa cells labeling COX5A with ab181226 at 1/250 dilution, followed by Goat anti rabbit IgG (Alexa Fluor® 555) secondary antibody at 1/200 dilution (red). Counter stained with Dapi (blue).



Immunoprecipitation - Anti-COX5A antibody [EPR14207(B)] - BSA and Azide free (ab250442)

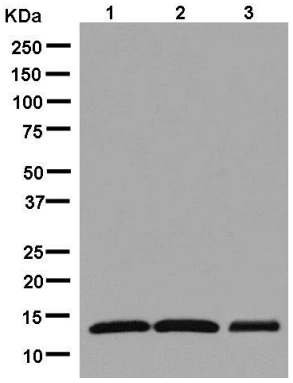
This data was developed using ab181226, the same antibody clone in a different buffer formulation.
Western blot analysis of HeLa cell lysate immunoprecipitated with ab181226 at 1/50 dilution.

Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugate at 1/1000 dilution.

All lanes:
Immunoprecipitation - Anti-COX5A antibody [EPR14207(B)] (ab181226)

Predicted band size: 17 kDa

Observed band size: 13 kDa



Western blot - Anti-COX5A antibody [EPR14207(B)] - BSA and Azide free (ab250442)

COX5A Western blot staining using rabbit Anti-COX5A antibody

This data was developed using ab181226, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-COX5A antibody [EPR14207(B)] (ab181226) at 1/10000 dilution

Lane 1:
HepG2 cell lysate at 20 µg

Lane 2:
HeLa cell lysate at 20 µg

Lane 3:
A431 cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugate at 1/1000 dilution

Predicted band size: 17 kDa

Observed band size: 13 kDa

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