abcam

ab110262

Anti-COX5A antibody [6E9B12D5]

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	6E9B12D5
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab110262 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/mL
Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Expected

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

WB

Tested

Species	Mouse
Dilution info	1 µg/mL
Notes	-

Species	Human
Dilution info	1 µg/mL
Notes	-

Species	Rat
Dilution info	1 µg/mL
Notes	-

Species	Cow
Dilution info	1 µg/mL
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	5 µg/mL
Notes	-

Expected

Species	Mouse, Rat, Cow

Dilution info	Use at an assay dependent concentration.
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

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	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

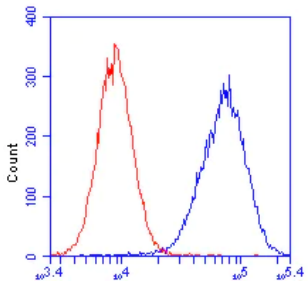
We do not recommend this combination. It is not covered by our product promise.

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.

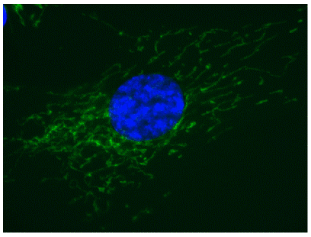
3 product images



Flow Cytometry - Anti-COX5A antibody [6E9B12D5] (ab110262)

COX5A Flow Cytometry staining using mouse Anti-COX5A antibody

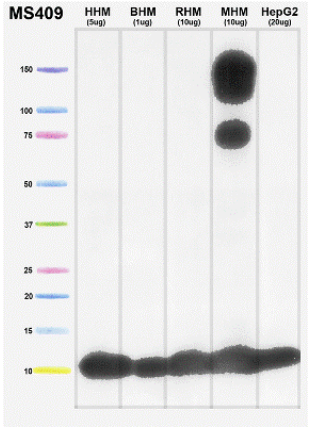
HeLa cells were stained with 1 µg/mL ab110262 (blue) or an equal amount of an isotype control antibody (red) and analyzed by flow cytometry.



Immunocytochemistry/ Immunofluorescence - Anti-COX5A antibody [6E9B12D5] (ab110262)

COX5A Immunocytochemistry/ Immunofluorescence staining using mouse Anti-COX5A antibody

Mitochondrial localization of COX5A. Cultured Human embryonic lung-derived fibroblasts (strain MRC5) were fixed, treated for heat-induced antigen retrieval, permeabilized and then labeled with ab110262 (10 µg/ml) followed by an AlexaFluor® 488-conjugated-goat-anti-mouse IgG2a isotype specific secondary antibody (1 µg/ml).



Western blot - Anti-COX5A antibody [6E9B12D5] (ab110262)

All lanes:
Western blot - Anti-COX5A antibody [6E9B12D5] (ab110262) at 1 µg/mL

Lane 1:
Human heart mitochondria at 5 µg

Lane 2:
Bovine heart mitochondria at 1 µg

Lane 3:
Rat heart mitochondria at 10 µg

Lane 4:
Mouse heart mitochondria at 10 µg

Lane 5:
HepG2 mitochondria at 20 µg

Predicted band size: 17 kDa

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