abcam

ab110252

Anti-Ubiquinol-Cytochrome C Reductase Core Protein I antibody [16D10AD9AH5]

Key facts

Isotype	IgG1
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	16D10AD9AH5
Purity	IgG fraction
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab110252 is 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	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

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

WB

Tested

Species	Cow
Dilution info	0.5 µg/mL
Notes	-

Species	Rat
Dilution info	0.5 µg/mL
Notes	-

Species	Mouse
Dilution info	0.5 µg/mL
Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	1/50

Notes	-

Expected

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

Target data

See full target information UQCRC1

Function	Component of the ubiquinol-cytochrome c oxidoreductase, a multisubunit transmembrane complex that is part of 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. The cytochrome b-c1 complex catalyzes electron transfer from ubiquinol to cytochrome c, linking this redox reaction to translocation of protons across the mitochondrial inner membrane, with protons being carried across the membrane as hydrogens on the quinol. In the process called Q cycle, 2 protons are consumed from the matrix, 4 protons are released into the intermembrane space and 2 electrons are passed to cytochrome c (By similarity). The 2 core subunits UQCRC1/QCR1 and UQCRC2/QCR2 are homologous to the 2 mitochondrial-processing peptidase (MPP) subunits beta-MPP and alpha-MPP respectively, and they seem to have preserved their MPP processing properties (By similarity). May be involved in the in situ processing of UQCRFS1 into the mature Rieske protein and its mitochondrial targeting sequence (MTS)/subunit 9 when incorporated into complex III (Probable). Seems to play an important role in the maintenance of proper mitochondrial function in nigral dopaminergic neurons (PubMed:33141179).

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	Ubiquinol-Cytochrome C Reductase Core Protein I also known as Core Protein I of the cytochrome c reductase complex functions as part of the mitochondrial electron transport chain. It has a molecular weight of around 52 kDa. The protein plays an integral role within the inner mitochondrial membrane primarily performing mechanical roles in electron transfer. Ubiquinol-Cytochrome C Reductase Core Protein I also goes by its abbreviated symbol UQCRC1 and is expressed broadly across tissues with high energy demands.
Biological function summary	UQCRC1 acts as a core component of Complex III also referred to as Cytochrome bc1 complex. This complex sits centrally within the mitochondrial respiratory chain catalyzing the transfer of electrons from ubiquinol to cytochrome c. By facilitating this electron transfer UQCRC1 aids in generating a proton gradient across the inner mitochondrial membrane essential for ATP synthesis during oxidative phosphorylation.
Pathways	UQCRC1 finds itself prominently embedded in the oxidative phosphorylation and electron transport chain pathways. It directly interacts with other proteins such as cytochrome c and cytochrome reductase emphasizing its cooperative function in maintaining cellular energy balance. The seamless integration of UQCRC1 into these pathways highlights its importance in sustaining efficient mitochondrial operation a critical element for cellular respiration.
Associated diseases and disorders	UQCRC1 shows connections to conditions involving mitochondrial dysfunction such as Leigh syndrome and mitochondrial myopathy. These disorders sometimes exhibit impaired electron transport impacting ATP production. Proteins like cytochrome c and other cytochrome reductase components often participate in these disorder pathways indicating potential targets for therapeutic interventions that aim to restore or augment mitochondrial function.

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.

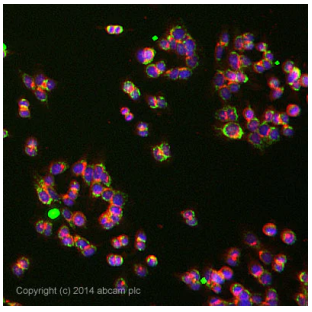
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

---

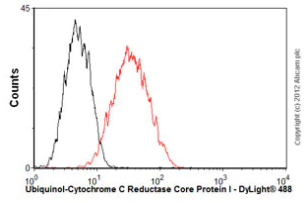
3 product images



Immunocytochemistry/ Immunofluorescence - Anti-Ubiquinol-Cytochrome C Reductase Core Protein I antibody [16D10AD9AH5] (ab110252)

Ubiquinol-Cytochrome C Reductase Core Protein I Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Ubiquinol-Cytochrome C Reductase Core Protein I antibody

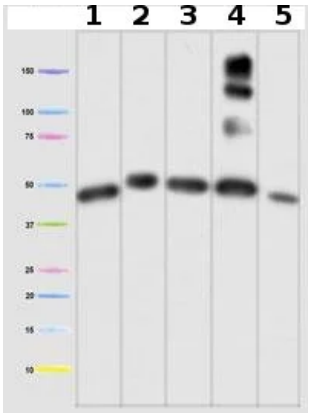
ab110252 stained HCT116 cells. The cells were 100% methanol fixed for 5 minutes at room temperature and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1hour at room temperature to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab110252 at 1/50 dilution) overnight at +4°C. The secondary antibody (pseudo-colored green) was ab150117 used at a 1/1000 dilution for 1hour at room temperature. Alexa Fluor® 594 WGA was used to label plasma membranes (pseudo-colored red) at a 1/200 dilution for 1hour at room temperature. DAPI was used to stain the cell nuclei (pseudo-colored blue) at a concentration of 1.43µM for 1hour at room temperature.



Flow Cytometry - Anti-Ubiquinol-Cytochrome C Reductase Core Protein I antibody [16D10AD9AH5] (ab110252)

Ubiquinol-Cytochrome C Reductase Core Protein I Flow Cytometry staining using mouse Anti-Ubiquinol-Cytochrome C Reductase Core Protein I antibody

Overlay histogram showing HepG2 cells stained with ab110252 (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 (ab110252, 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 IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.



Western blot - Anti-Ubiquinol-Cytochrome C Reductase Core Protein I antibody [16D10AD9AH5] (ab110252)

Ubiquinol-Cytochrome C Reductase Core Protein I Western blot staining using mouse Anti-Ubiquinol-Cytochrome C Reductase Core Protein I antibody

Extra bands in the Mouse sample (lane 4) are due to the reaction of the IgG-specific goat anti-mouse secondary antibody with residual mouse blood in the heart tissue, as it is very difficult to entirely remove the blood from these small organs.
All lanes:
Western blot - Anti-Ubiquinol-Cytochrome C Reductase Core Protein I antibody [16D10AD9AH5] (ab110252) at 0.5 µg/mL

Lane 1:
Human heart mitochondrial lysate

Lane 2:
Cow heart mitochondrial lysate

Lane 3:
Rat heart mitochondrial lysate

Lane 4:
Mouse heart mitochondrial lysate

Lane 5:
HepG2 mitochondrial lysate

Predicted band size: 53 kDa

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