abcam

ab309362

Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free

Recombinant

Key facts

Isotype	IgG2a
Host species	Mouse
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	1D6E1A8
Purification technique	Affinity purification Protein A
Concentration	1.009 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC

Tested

Species	Human, Mouse, Rat
Dilution info	-

Notes	-

Predicted

Species	Goat, Pig, Caenorhabditis elegans, Zebrafish, Quail, Rhesus monkey, Chinese hamster, Common marmoset, Sheep, Cat, Dog
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Predicted

Species	Goat, Pig, Caenorhabditis elegans, Zebrafish, Quail, Rhesus monkey, Chinese hamster, Common marmoset, Sheep, Cat, Dog
Dilution info	-
Notes	-

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Predicted

Species	Goat, Pig, Caenorhabditis elegans, Zebrafish, Quail, Rhesus monkey, Chinese hamster, Common marmoset, Sheep, Cat, Dog
Dilution info	-

Notes	-

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Predicted

Species	Goat, Pig, Caenorhabditis elegans, Zebrafish, Quail, Rhesus monkey, Chinese hamster, Common marmoset, Sheep, Cat, Dog
Dilution info	-
Notes	-

Target data

See full target information MT-CO1

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

Notes

ab309362 is the carrier-free version of ab14705

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.

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.

12 product images

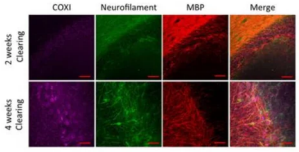


Image from Phillips J et al., Sci Rep. 2016 May 16;6:26013. Fig 3b doi: 10.1038/srep26013. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/.

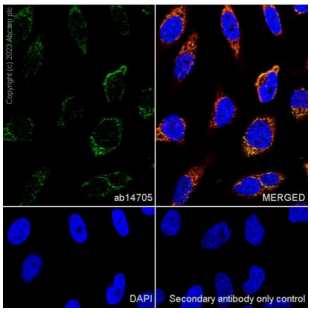
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free (ab309362)

MTCO1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-MTCO1 antibody

This data was developed using ab14705, the same antibody clone in a different buffer formulation.

This image was generated using a previous batch manufactured using hybridoma production method.
250 µm human cerebellar sections from control individuals and a patient with mitochondrial disease underwent passive clearing at 37 °C for 2 or 4 weeks.

The quality of immunofluorescent staining is determined by duration of passive clearing; 2 weeks of passive clearing produced minimal labelling of the white matter in the granule cell layer (NF-H; green; 488 nm and MBP; red, 546 nm) with an absence of labelling of mitochondria (MTCO1 (COXI) (ab14705, 1/100); purple; 647 nm; Extending passive clearing to 4 weeks improved the quality of stain with identifiable Purkinje cells and their axons (NF-H, green; 488 nm) and their myelin sheaths (MBP; red, 546 nm) and mitochondria (MTCO1 (COXI) (ab14705, 1/100); purple; 647 nm.

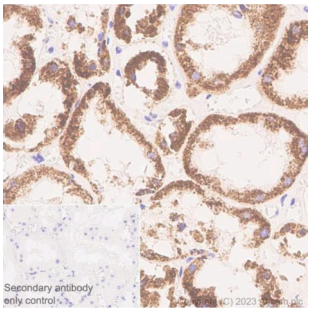


Immunocytochemistry/ Immunofluorescence - Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free (ab309362)

MTCO1 Immunocytochemistry/ Immunofluorescence staining of Human cervical adenocarcinoma epithelial cells using mouse Anti-MTCO1 antibody

This data was developed using ab14705, the same antibody clone in a different buffer formulation.

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Human cervical adenocarcinoma epithelial cells labeling MTCO1 with ab14705 at 1/100 dilution, followed by ab150113 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution. Confocal image showing cytoplasmic and membranous staining in subsets of Human cervical adenocarcinoma epithelial cells. ab186735 Anti-TOMM20 antibody [EPR15581-54] - Mitochondrial Marker was used to counterstain tubulin at 1/400 dilution. The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) preadsorbed at 1/1000 dilution.

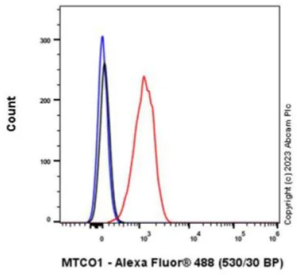


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free (ab309362)

MTCO1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human kidney tissue using mouse Anti-MTCO1 antibody

This data was developed using ab14705, the same antibody clone in a different buffer formulation.

Immunohistochemical analysis of paraffin-embedded Human kidney tissue labelling MTCO1 with ab14705 at 1/5000 dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on Human kidney. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, epitope retrieval Solution2) for 20 mins. Counterstained with hematoxylin.

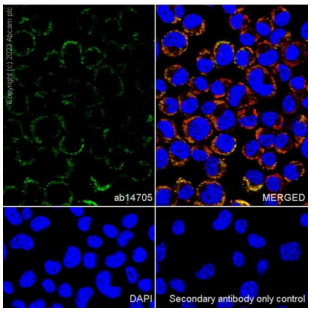


Flow Cytometry - Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free (ab309362)

MTCO1 Flow Cytometry staining using mouse Anti-MTCO1 antibody

This data was developed using ab14705, the same antibody clone in a different buffer formulation.

Flow cytometric analysis of Human HeLa cells labelling MTCO1 with ab14705 at 1/500 dilution (Right) compared with an isotype control (Left). Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at was used as the secondary antibody. Gated on viable cells.

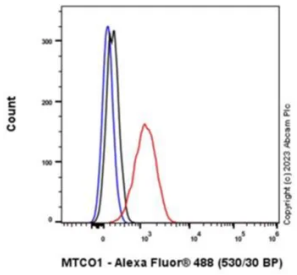


Immunocytochemistry/ Immunofluorescence - Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free (ab309362)

MTCO1 Immunocytochemistry/ Immunofluorescence staining of Mouse neuroblastoma neuroblast cells using mouse Anti-MTCO1 antibody

This data was developed using ab14705, the same antibody clone in a different buffer formulation.

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Mouse neuroblastoma neuroblast cells labeling MTCO1 with ab14705 at 1/100 dilution, followed by ab150113 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution. Confocal image showing cytoplasmic and membranous staining in subsets of Mouse neuroblastoma neuroblast cells. ab186735 Anti-TOMM20 antibody [EPR15581-54] - Mitochondrial Marker was used to counterstain tubulin at 1/400 dilution. The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) preadsorbed at 1/1000 dilution.



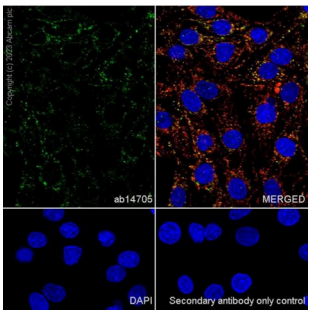
Flow Cytometry - Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free (ab309362)

MTCO1 Flow Cytometry staining using mouse Anti-MTCO1 antibody

This data was developed using ab14705, the same antibody clone in a different buffer formulation.

Flow cytometric analysis of Neuro-2a cells labelling MTCO1 with ab14705 at 1/500 dilution (Right) compared with an isotype control (Left). Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at was

used as the secondary antibody. Gated on viable cells.

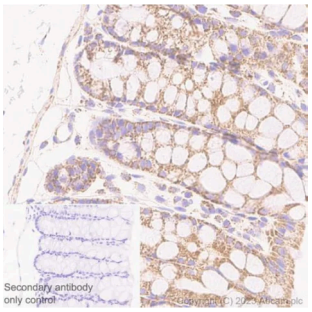


Immunocytochemistry/ Immunofluorescence - Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free (ab309362)

MTCO1 Immunocytochemistry/ Immunofluorescence staining of Rat glial tumor cells using mouse Anti-MTCO1 antibody

This data was developed using ab14705, the same antibody clone in a different buffer formulation.

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Rat glial tumor cells labeling MTCO1 with ab14705 at 1/100 dilution, followed by ab150113 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution. Confocal image showing cytoplasmic and membranous staining in subsets of Rat glial tumor cells. ab186735 Anti-TOMM20 antibody [EPR15581-54] - Mitochondrial Marker was used to counterstain tubulin at 1/400 dilution. The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) preadsorbed at 1/1000 dilution.

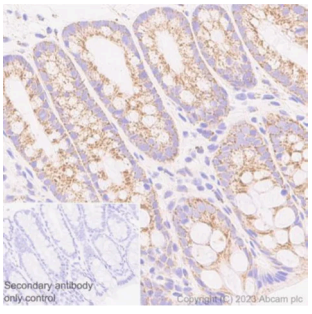


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free (ab309362)

MTCO1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse colon tissue using mouse Anti-MTCO1 antibody

This data was developed using ab14705, the same antibody clone in a different buffer formulation.

Immunohistochemical analysis of paraffin-embedded Mouse colon tissue labelling MTCO1 with ab14705 at 1/5000 dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on Mouse colon. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, epitope retrieval Solution2) for 20 mins. Counterstained with hematoxylin.

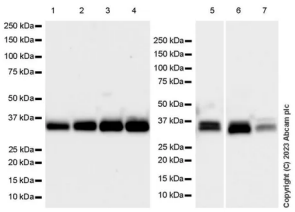


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free (ab309362)

MTCO1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat colon tissue using mouse Anti-MTCO1 antibody

This data was developed using ab14705, the same antibody clone in a different buffer formulation.

Immunohistochemical analysis of paraffin-embedded Rat colon tissue labelling MTCO1 with ab14705 at 1/5000 dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on Rat colon. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, epitope retrieval Solution2) for 20 mins. Counterstained with hematoxylin.



Western blot - Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free (ab309362)

MTCO1 Western blot staining using mouse Anti-MTCO1 antibody

This data was developed using ab14705, the same antibody clone in a different buffer formulation. Blocking and diluting buffer: 5% NFDM/TBST.

Samples are non-boiled as boiling may cause protein aggregation.

All lanes:
Western blot - Anti-MTCO1 antibody [1D6E1A8] (ab14705) at 1/1000 dilution

Lane 1:
C6 (rat glial tumor glial cell) whole cell lysate at 20 µg

Lane 2:
PC-12 (rat adrenal gland pheochromocytoma cell) whole cell lysate at 20 µg

Lane 3:
Neuro-2a (mouse neuroblastoma neuroblast) whole cell lysate at 20 µg

Lane 4:
RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

Lane 5:
Human skeletal muscle tissue lysate at 20 µg

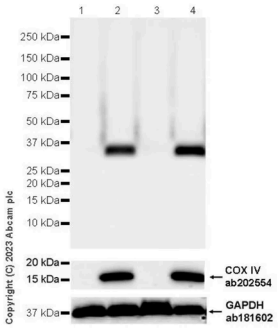
Lane 6:
Rat heart tissue lysate at 20 µg

Lane 7:
Rat liver tissue lysate at 20 µg

Secondary

All lanes:
Peroxidase-Conjugated Goat anti-Mouse IgG (H+L) at 1/10000 dilution

Observed band size: 35 kDa



Western blot - Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free (ab309362)

MTCO1 Western blot staining using mouse Anti-MTCO1 antibody

This data was developed using ab14705, the same antibody clone in a different buffer formulation. Blocking and diluting buffer: 5% NFDM/TBST.

In Western blot, anti-GAPDH antibody (ab181602) loading control staining at 1/200000 dilution. Anti-COX IV antibody [EPR9442(ABC)] - Mitochondrial Loading Control (ab202554) staining at 1/1000 dilution.

Samples are non-boiled as boiling may cause protein aggregation.

All lanes:
Western blot - Anti-MTCO1 antibody [1D6E1A8] (ab14705) at 1/1000 dilution

Lane 1:

HeLa (human cervical adenocarcinoma epithelial cell) non-mitochondrial fraction at 20 µg

Lane 2:
HeLa mitochondrial fraction at 20 µg

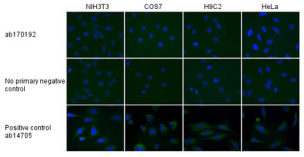
Lane 3:
MCF7 (human breast adenocarcinoma epithelial cell) non-mitochondrial fraction at 20 µg

Lane 4:
MCF7 mitochondrial fraction at 20 µg

Secondary

All lanes:
Peroxidase-Conjugated Goat anti-Mouse IgG (H+L) at 1/10000 dilution

Observed band size: 35 kDa



Immunocytochemistry/ Immunofluorescence - Anti-MTCO1 antibody [1D6E1A8] - BSA and Azide free (ab309362)

MTCO1 Immunocytochemistry/ Immunofluorescence staining of Positive Control using mouse Anti-MTCO1 antibody

This data was developed using ab14705, the same antibody clone in a different buffer formulation. Immunofluorscent analysis of NIH 3T3, COS7, H9C2 and HeLa cells using ab170192 at 1µg/ml (top); no primary antibody negative control (middle), and ab14705 as a positive control (bottom). An Alexa Fluor® 488 conjugate with isotype specificity to the mouse antibody was used as a secondary antibody. The isotype control at 1 ug/mL shows no higher signal than the no primary negative control.

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