

## Product datasheet

# Anti-MTCO1 antibody [EPR19628] ab203912

Recombinant RabMAb

[13 References](#) [14 Images](#)

### Overview

<b>Product name</b>	Anti-MTCO1 antibody [EPR19628]
<b>Description</b>	Rabbit monoclonal [EPR19628] to MTCO1
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> Flow Cyt (Intra), WB, IHC-P, ICC/IF
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human
<b>Immunogen</b>	Recombinant fragment corresponding to Human MTCO1. Database link: <a href="#">P00395</a>
<b>Positive control</b>	WB: HeLa, C6 and RAW 264.7 whole cell lysates; HeLa, Neuro-2a, C6 and SH-SY5Y mitochondria lysates; Mouse liver whole cell lysate; Mouse liver mitochondria lysate; Human fetal liver whole cell lysate. IHC-P: Human cardiac muscle and thyroid cancer tissues; Mouse and rat cardiac muscle tissues. ICC/IF: HeLa and Neuro-2a cells. Flow Cyt (intra): HeLa cells.
<b>General notes</b>	This product is a recombinant monoclonal antibody, which offers several advantages including: <ul style="list-style-type: none"> <li>- High batch-to-batch consistency and reproducibility</li> <li>- Improved sensitivity and specificity</li> <li>- Long-term security of supply</li> <li>- Animal-free production</li> </ul> For more information <a href="#">see here</a> . Our RabMAb <sup>®</sup> technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to <a href="#">RabMAb<sup>®</sup> patents</a> .

### Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
<b>Storage buffer</b>	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: 59% PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
<b>Purity</b>	Protein A purified
<b>Clonality</b>	Monoclonal

**Clone number**                      EPR19628  
**Isotype**                                IgG

**Applications**

**The Abpromise guarantee**        Our **Abpromise guarantee** covers the use of ab203912 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
Flow Cyt (Intra)		1/70.
WB		1/1000. Detects a band of approximately 37 kDa (predicted molecular weight: 57 kDa).
IHC-P		1/250. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
ICC/IF		1/250.

**Target**

**Function**                                Cytochrome c oxidase is the component of the respiratory chain that catalyzes the reduction of oxygen to water. Subunits 1-3 form the functional core of the enzyme complex. CO I is the catalytic subunit of the enzyme. Electrons originating in cytochrome c are transferred via the copper A center of subunit 2 and heme A of subunit 1 to the bimetallic center formed by heme A3 and copper B.

**Pathway**                                 Energy metabolism; oxidative phosphorylation.

**Involvement in disease**            Defects in MT-CO1 are a cause of Leber hereditary optic neuropathy (LHON) [MIM:535000]. LHON is a maternally inherited disease resulting in acute or subacute loss of central vision, due to optic nerve dysfunction. Cardiac conduction defects and neurological defects have also been described in some patients. LHON results from primary mitochondrial DNA mutations affecting the respiratory chain complexes.

Defects in MT-CO1 are a cause of anemia sideroblastic acquired idiopathic (AISA) [MIM:516030]; a disease characterized by inadequate formation of heme and excessive accumulation of iron in mitochondria.

Defects in MT-CO1 are a cause of mitochondrial complex IV deficiency (MT-C4D) [MIM:220110]; also known as cytochrome c oxidase deficiency. A disorder of the mitochondrial respiratory chain with heterogeneous clinical manifestations, ranging from isolated myopathy to severe multisystem disease affecting several tissues and organs. Features include hypertrophic cardiomyopathy, hepatomegaly and liver dysfunction, hypotonia, muscle weakness, exercise intolerance, developmental delay, delayed motor development and mental retardation. A subset of patients manifest Leigh syndrome.

Defects in MT-CO1 are associated with recurrent myoglobinuria mitochondrial (RM-MT) [MIM:550500]. Recurrent myoglobinuria is characterized by recurrent attacks of rhabdomyolysis (necrosis or disintegration of skeletal muscle) associated with muscle pain and weakness, and followed by excretion of myoglobin in the urine.

Defects in MT-CO1 are a cause of deafness sensorineural mitochondrial (DFNM) [MIM:500008]. DFNM is a form of non-syndromic deafness with maternal inheritance. Affected individuals

manifest progressive, postlingual, sensorineural hearing loss involving high frequencies. Defects in MT-CO1 are a cause of colorectal cancer (CRC) [MIM:114500].

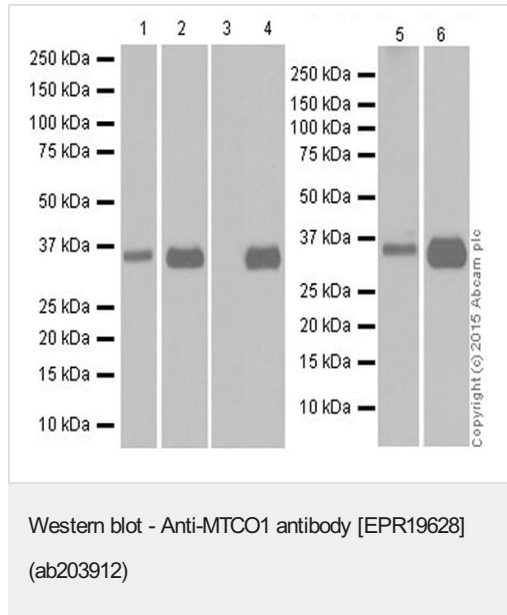
### Sequence similarities

Belongs to the heme-copper respiratory oxidase family.

### Cellular localization

Mitochondrion inner membrane.

## Images



**All lanes** : Anti-MT-CO1 antibody [EPR19628] (ab203912) at 1/2000 dilution

**Lane 1** : HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate

**Lane 2** : HeLa (Human epithelial cell line from cervix adenocarcinoma) mitochondria lysate

**Lane 3** : Neuro-2a (Mouse neuroblastoma cell line) whole cell lysate

**Lane 4** : Neuro-2a (Mouse neuroblastoma cell line) mitochondria lysate

**Lane 5** : Mouse liver whole cell lysate

**Lane 6** : Mouse liver mitochondria lysate

Lysates/proteins at 20 µg per lane.

### Secondary

**All lanes** : Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/100000 dilution

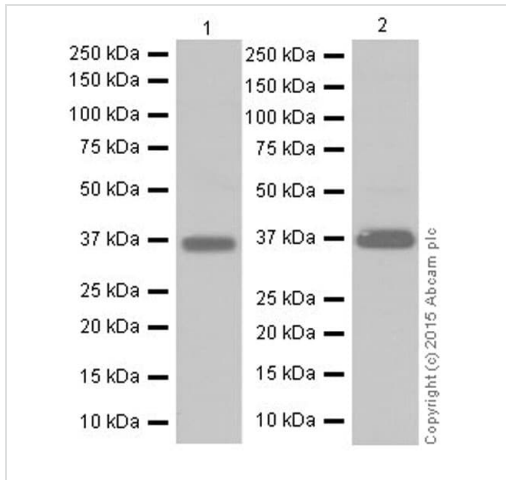
**Predicted band size:** 57 kDa

**Observed band size:** 37 kDa

Blocking/Dilution buffer: 5% NFD/MTBST.

Exposure time: Lane 1: 3 minutes; Lane 2: 30seconds; Lane 3 and 4: 10seconds; Lane 5: 3 minutes; Lane 6: 1 minute.

The molecular weight observed is consistent with what has been described in the literature (PMID: 23125210 & 22426402).



Western blot - Anti-MTCO1 antibody [EPR19628] (ab203912)

**All lanes :** Anti-MTCO1 antibody [EPR19628] (ab203912) at 1/1000 dilution

**Lane 1 :** C6 (Rat glioma tumor cell line) mitochondria lysate

**Lane 2 :** SH-SY5Y (Human neuroblastoma cell line from bone marrow) mitochondria lysate

Lysates/proteins at 10 µg per lane.

**Secondary**

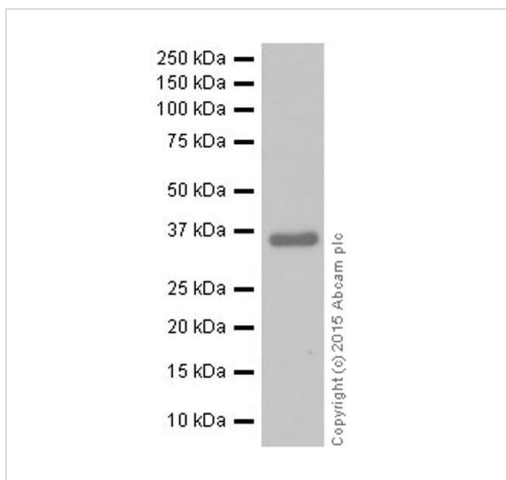
**All lanes :** Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/100000 dilution

**Predicted band size:** 57 kDa

**Observed band size:** 37 kDa

**Exposure time:** 15 seconds

Blocking/Dilution buffer: 5% NFDm/TBST.



Western blot - Anti-MTCO1 antibody [EPR19628] (ab203912)

Anti-MTCO1 antibody [EPR19628] (ab203912) at 1/1000 dilution + Human fetal liver whole cell lysate at 10 µg

**Secondary**

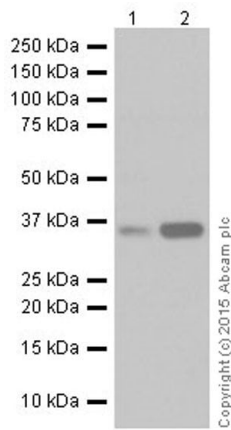
Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/100000 dilution

**Predicted band size:** 57 kDa

**Observed band size:** 37 kDa

**Exposure time:** 1 minute

Blocking/Dilution buffer: 5% NFDm/TBST.



Western blot - Anti-MTCO1 antibody [EPR19628] (ab203912)

**All lanes :** Anti-MTCO1 antibody [EPR19628] (ab203912) at 1/1000 dilution

**Lane 1 :** C6 (Rat glial tumor cell line) whole cell lysate

**Lane 2 :** RAW 264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate

Lysates/proteins at 10 µg per lane.

**Secondary**

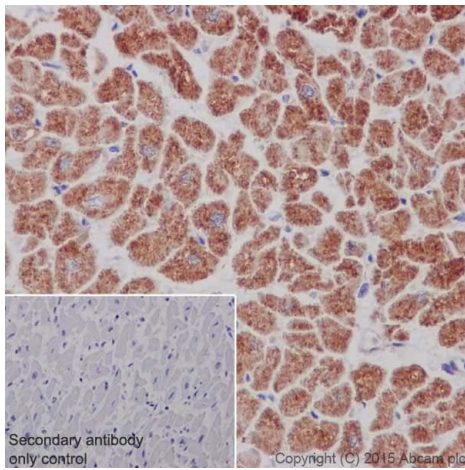
**All lanes :** Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/100000 dilution

**Predicted band size:** 57 kDa

**Observed band size:** 37 kDa

**Exposure time:** 3 minutes

Blocking/Dilution buffer: 5% NFDm/TBST.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MTCO1 antibody [EPR19628] (ab203912)

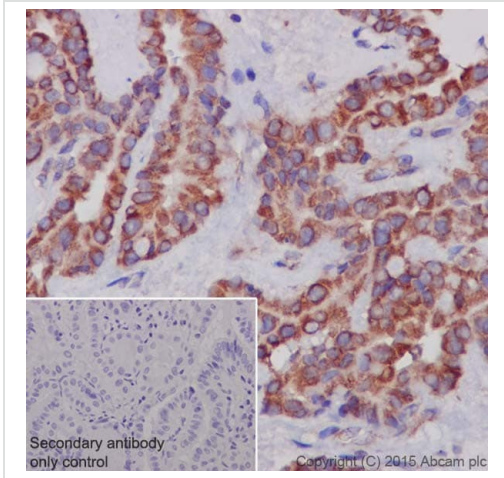
Immunohistochemical analysis of paraffin-embedded Human cardiac muscle tissue labeling MTCO1 with ab203912 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution.

Cytoplasm staining on Human cardiac muscle is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is **ab97051** at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MTCO1 antibody [EPR19628] (ab203912)

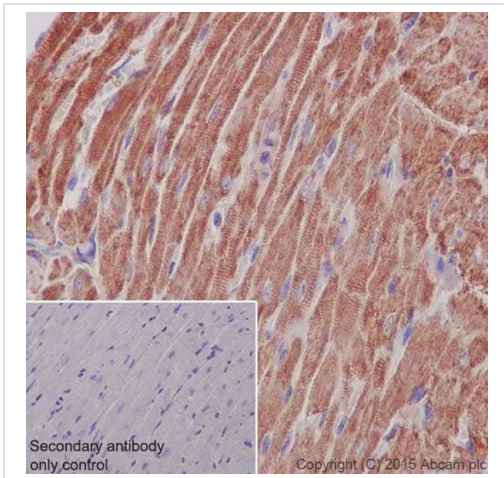
Immunohistochemical analysis of paraffin-embedded Human thyroid cancer tissue labeling MTCO1 with ab203912 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/500 dilution.

Cytoplasm staining on Human thyroid cancer is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is [ab97051](#) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MTCO1 antibody [EPR19628] (ab203912)

Immunohistochemical analysis of paraffin-embedded Mouse cardiac muscle tissue labeling MTCO1 with ab203912 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/500 dilution.

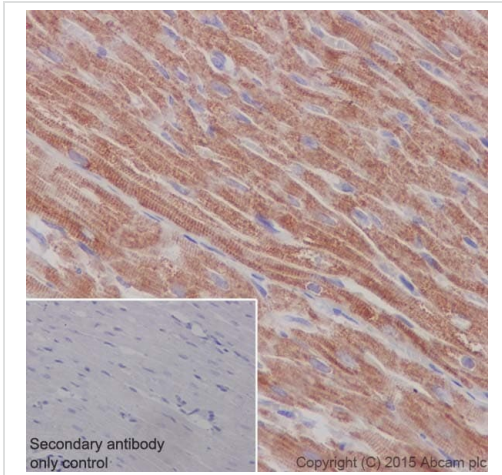
Cytoplasm staining on mouse cardiac muscle is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is [ab97051](#) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.





Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MTCO1 antibody [EPR19628] (ab203912)

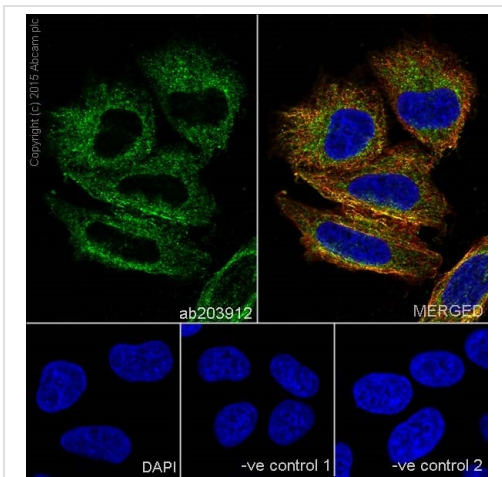
Immunohistochemical analysis of paraffin-embedded Rat cardiac muscle tissue labeling MTCO1 with ab203912 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/500 dilution.

Cytoplasm staining on rat cardiac muscle is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is [ab97051](#) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-MTCO1 antibody [EPR19628] (ab203912)

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling MTCO1 with ab203912 at 1/250 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) ([ab150077](#)) secondary antibody at 1/1000 dilution (green).

Confocal image showing cytoplasmic staining on HeLa cell line.

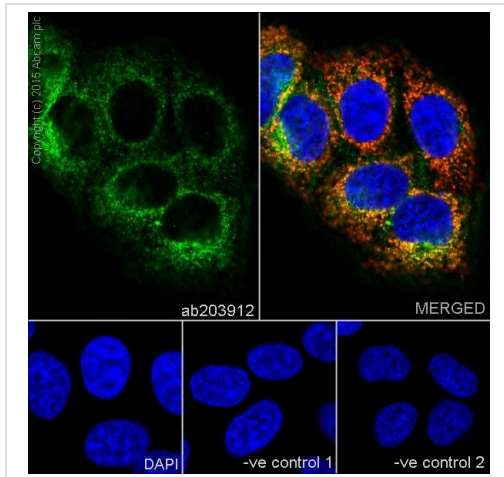
The nuclear counterstain is DAPI (blue).

Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Loading Control ([ab7291](#)) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed ([ab150120](#)) at 1/1000 dilution (red).

The negative controls are as follows:-

-ve control 1: ab203912 at 1/250 dilution followed by [ab150120](#) at 1/1000 dilution.

-ve control 2: [ab7291](#) at 1/1000 dilution followed by [ab150077](#) at 1/1000 dilution.



Immunocytochemistry/ Immunofluorescence - Anti-MTCO1 antibody [EPR19628] (ab203912)

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling MTCO1 with ab203912 at 1/250 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (**ab150077**) secondary antibody at 1/1000 dilution (green).

Confocal image showing cytoplasmic staining on HeLa cell line.

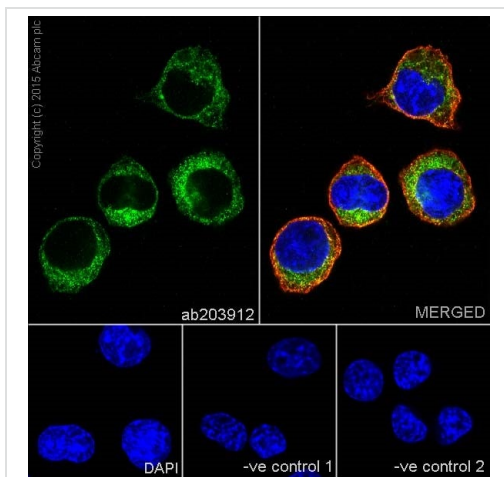
The nuclear counterstain is DAPI (blue).

COX IV is detected with **ab33985** (anti-COX IV mouse mAb) at 1/1000 dilution and **ab150120** (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 dilution (red).

The negative controls are as follows:-

-ve control 1: ab203912 at 1/250 dilution followed by **ab150120** at 1/1000 dilution.

-ve control 2: **ab33985** at 1/1000 dilution followed by **ab150077** at 1/1000 dilution.



Immunocytochemistry/ Immunofluorescence - Anti-MTCO1 antibody [EPR19628] (ab203912)

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized Neuro-2a (Mouse neuroblastoma cell line) cells labeling MTCO1 with ab203912 at 1/250 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (**ab150077**) secondary antibody at 1/1000 dilution (green).

Confocal image showing cytoplasmic staining on Neuro-2a cell line.

The nuclear counterstain is DAPI (blue).

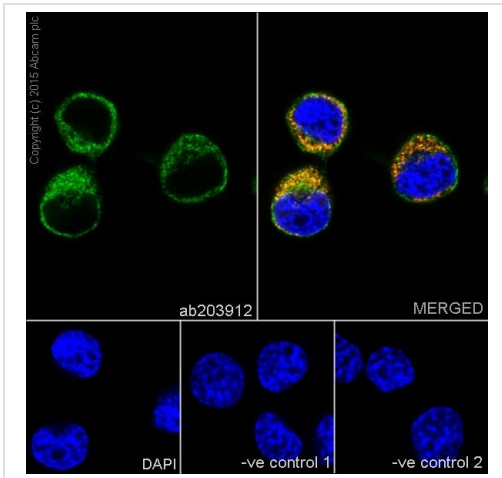
Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Loading Control (**ab7291**) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed (**ab150120**) at 1/1000 dilution (red).

The negative controls are as follows:-

-ve control 1: ab203912 at 1/250 dilution followed by **ab150120** at 1/1000 dilution.

-ve control 2: **ab7291** at 1/1000 dilution followed by **ab150077** at 1/1000 dilution.





Immunocytochemistry/ Immunofluorescence - Anti-MTCO1 antibody [EPR19628] (ab203912)

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized Neuro-2a (Mouse neuroblastoma cell line) cells labeling MTCO1 with ab203912 at 1/250 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (**ab150077**) secondary antibody at 1/1000 dilution (green).

Confocal image showing cytoplasmic staining on Neuro-2a cell line.

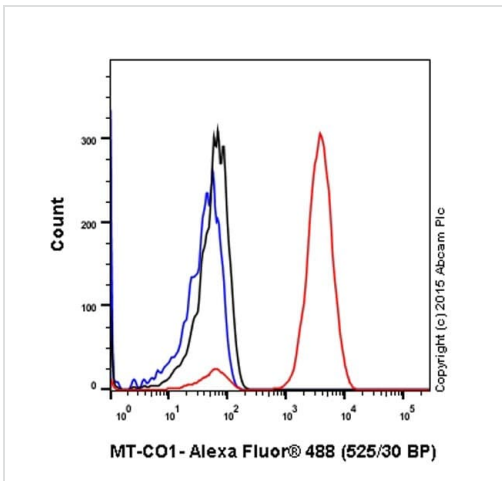
The nuclear counterstain is DAPI (blue).

COX IV is detected with **ab33985** (anti-COX IV mouse mAb) at 1/1000 dilution and **ab150120** (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 dilution (red).

The negative controls are as follows:-

-ve control 1: ab203912 at 1/250 dilution followed by **ab150120** at 1/1000 dilution.

-ve control 2: **ab33985** at 1/1000 dilution followed by **ab150077** at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-MTCO1 antibody [EPR19628] (ab203912)

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling MTCO1 with ab203912 at 1/70 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (**ab172730**) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti Rabbit IgG (Alexa Fluor® 488) at 1/500 dilution was used as the secondary antibody.

Cells were permeabilised with 90% methanol (diluted with 1X PBS).

Why choose a recombinant antibody?

**Research with confidence**  
Consistent and reproducible results

**Long-term and scalable supply**  
Recombinant technology

**Success from the first experiment**  
Confirmed specificity

**Ethical standards compliant**  
Animal-free production

Anti-MTCO1 antibody [EPR19628] (ab203912)

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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