

Product datasheet

Anti-MTCO1 antibody [EPR19642] ab203917

Recombinant RabMAb

7 Images

Overview

Product name	Anti-MTCO1 antibody [EPR19642]
Description	Rabbit monoclonal [EPR19642] to MTCO1
Host species	Rabbit
Tested applications	Suitable for: WB, IHC-P, ICC/IF, Flow Cyt
Species reactivity	Reacts with: Human
Immunogen	Synthetic peptide (the amino acid sequence is considered to be commercially sensitive) within Human MTCO1 aa 450 to the C-terminus. The exact sequence is proprietary. Database link: P00395
Positive control	WB: HeLa whole cell and mitochondria lysates; Human fetal liver lysate. IHC-P: Human cardiac muscle and liver tissues. ICC/IF: HeLa cells. Flow Cyt: HeLa cells

General notes

Our RabMAb[®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to [RabMAb[®] patents](#).
This product is a [recombinant rabbit monoclonal antibody](#).

Properties

Form	Liquid
Storage instructions	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.
Storage buffer	Preservative: 0.01% Sodium azide Constituents: 59% PBS, 40% Glycerol, 0.05% BSA
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR19642
Isotype	IgG

Applications

Our [Abpromise guarantee](#) covers the use of **ab203917** 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
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		1/1000.
Flow Cyt		1/700.

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.

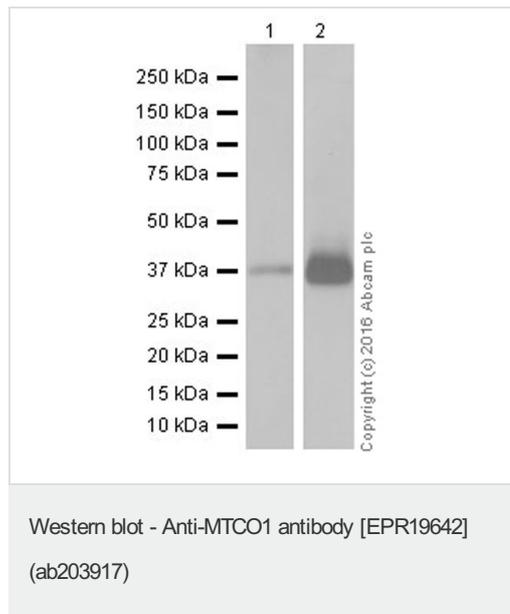
Defects in MT-CO1 are a cause of colorectal cancer (CRC) [MIM:114500].

Sequence similarities

Belongs to the heme-copper respiratory oxidase family.

Cellular localization

Mitochondrion inner membrane.



All lanes : Anti-MTCO1 antibody [EPR19642] (ab203917) at 1/1000 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

Lysates/proteins at 20 µg per lane.

Secondary

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

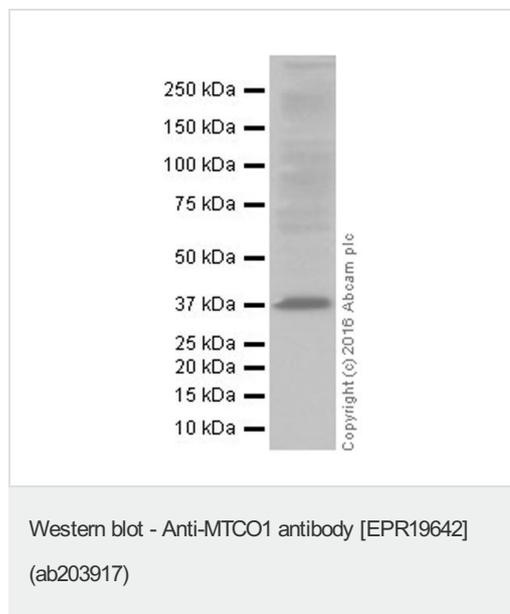
Predicted band size: 57 kDa

Observed band size: 37 kDa

[why is the actual band size different from the predicted?](#)

Blocking/Dilution buffer: 5% NFDm/TBST.

Exposure time: Lane 1: 5 seconds; Lane 2: 1 second.



Anti-MTCO1 antibody [EPR19642] (ab203917) at 1/1000 dilution + Human fetal liver lysate at 10 µg

Secondary

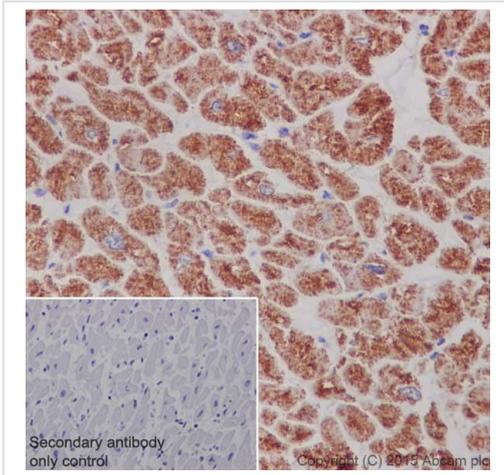
Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/10000 dilution

Predicted band size: 57 kDa

Observed band size: 37 kDa [why is the actual band size different from the predicted?](#)

Exposure time: 15 seconds

Blocking/Dilution buffer: 5% NFDm/TBST.



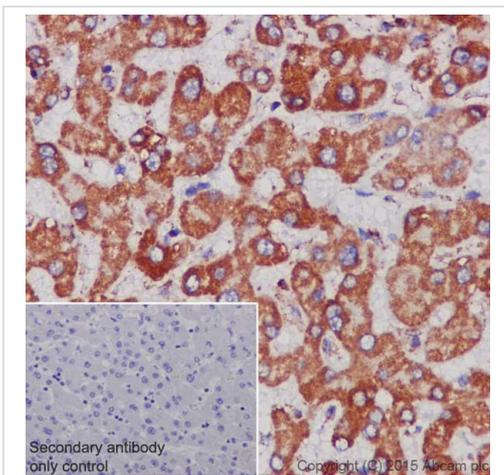
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MTCO1 antibody [EPR19642] (ab203917)

Immunohistochemical analysis of paraffin-embedded Human cardiac muscle tissue labeling MTCO1 with ab203917 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.



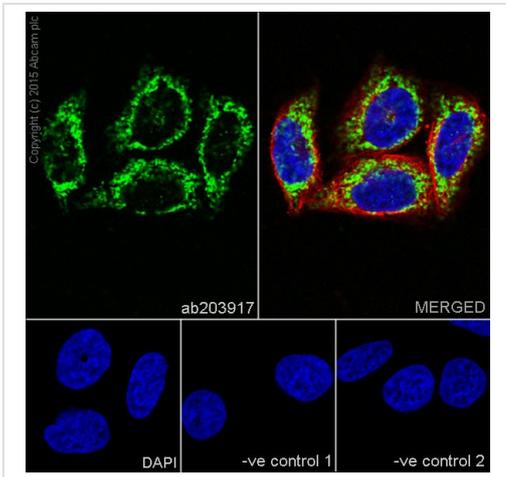
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MTCO1 antibody [EPR19642] (ab203917)

Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling MTCO1 with ab203917 at 1/250 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Cytoplasm staining on hepatocytes of Human liver is observed.

Counter stained with Hematoxylin.

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



Immunocytochemistry/ Immunofluorescence - Anti-MTCO1 antibody [EPR19642] (ab203917)

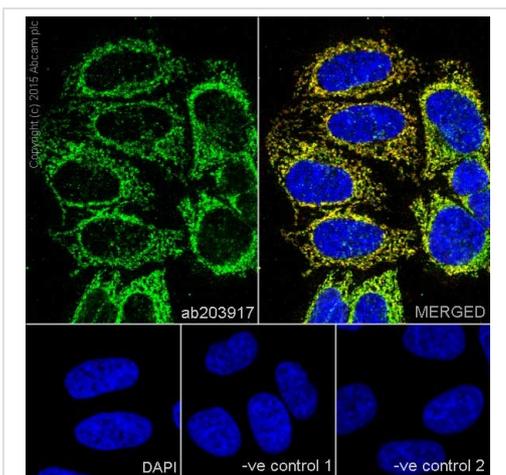
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling MTCO1 with ab203917 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (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: ab203917 at 1/1000 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 [EPR19642] (ab203917)

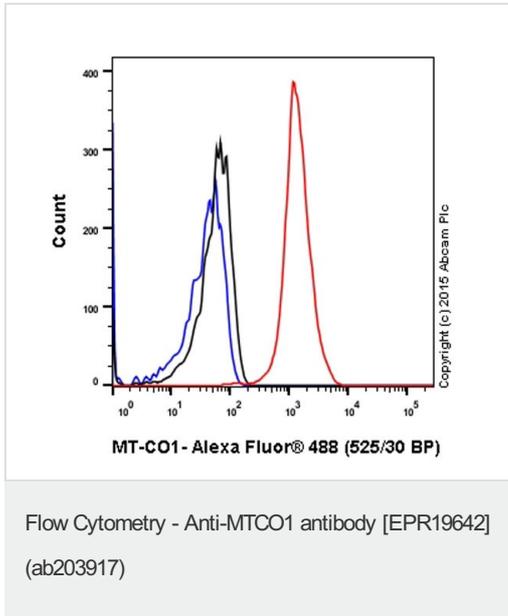
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling MTCO1 with ab203917 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (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 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: ab203917 at 1/1000 dilution followed by ab150120 at 1/1000 dilution.

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



Flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling MTCO1 with ab203917 at 1/700 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.

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