

Anti-MTCO1 Antibody
Catalog # ABO10643**Specification****Anti-MTCO1 Antibody - Product Information**

Application	WB, IHC, ICC
Primary Accession	P00397
Host	Rabbit
Reactivity	Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Cytochrome c oxidase subunit 1(MT-CO1) detection. Tested with WB, IHC-P, ICC in Mouse;Rat.

Reconstitution

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-MTCO1 Antibody - Additional Information

Gene ID 17708

Other Names

Cytochrome c oxidase subunit 1, 1.9.3.1, Cytochrome c oxidase polypeptide I, Mtco1, COI, mt-Co1

Calculated MW

56910 MW KDa

Application Details

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Mouse, Rat, By Heat

Immunocytochemistry , 0.5-1 µg/ml, Mouse, Rat
Western blot, 0.1-0.5 µg/ml, Mouse, Rat

Subcellular Localization

Mitochondrion inner membrane; Multi-pass membrane protein.

Protein Name

Cytochrome c oxidase subunit 1

Contents

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg Thimerosal, 0.05mg NaN₃.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of mouse MTCO1(501-514aa PYHTFEEPTYVKVK), different from the related rat sequence by one amino acid.

Purification

Immunogen affinity purified.

Cross Reactivity

No cross reactivity with other proteins

Storage

At -20°C for one year. After r°Constitution, at 4°C for one month. It°Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.

Anti-MTCO1 Antibody - Protein Information

Name Mtco1

Synonyms COI, 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.

Cellular Location

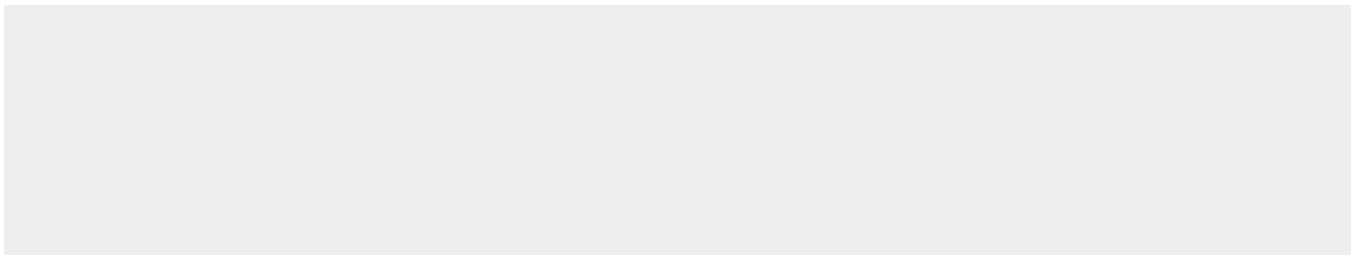
Mitochondrion inner membrane {ECO:0000250|UniProtKB:P00396}; Multi-pass membrane protein {ECO:0000250|UniProtKB:P00396}

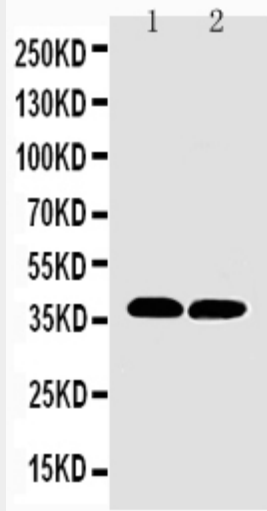
Anti-MTCO1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

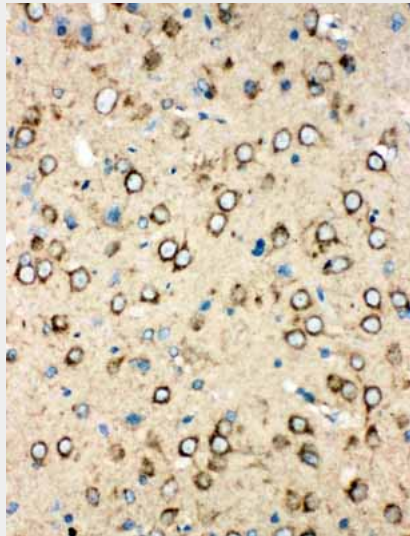
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Anti-MTCO1 Antibody - Images

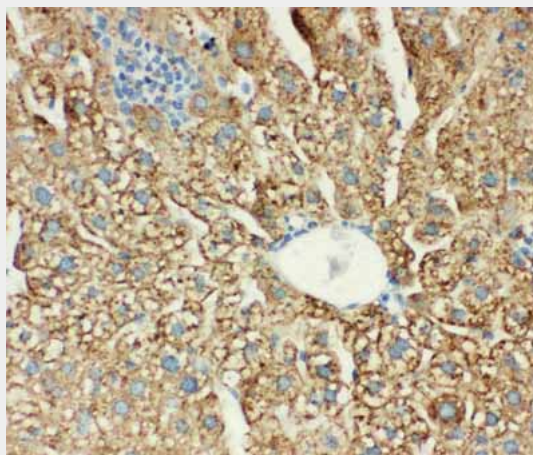




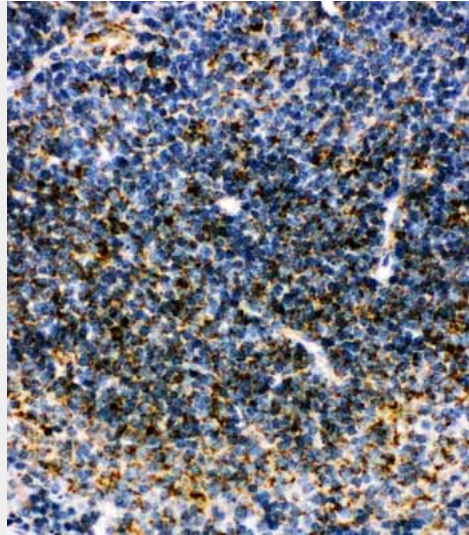
Anti-MTCO1 antibody, ABO10643, Western blotting Lane 1: Rat Heart Tissue Lysate Lane 2: Mouse Heart Tissue Lysate



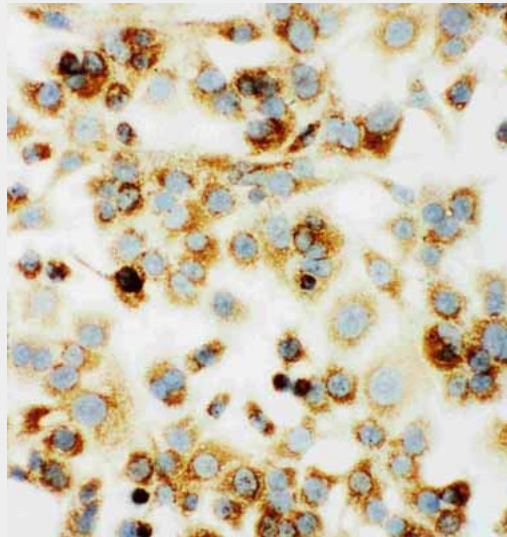
Anti-MTCO1 antibody, ABO10643, IHC(P) IHC(P): Rat Brain Tissue



Anti-MTCO1 antibody, ABO10643, IHC(P) IHC(P): Mouse Liver Tissue



Anti-MTCO1 antibody, ABO10643, IHC(P)IHC(P): Mouse Spleen Tissue



Anti-MTCO1 antibody, ABO10643, ICCICC: HEPA Cell

Anti-MTCO1 Antibody - Background

Cytochrome c oxidase subunit I (CO1 or MTCO1) is 1 of 3 mitochondrial DNA (mtDNA) encoded subunits (MTCO1, MTCO2, MTCO3) of respiratory Complex IV. Complex IV is located within the mitochondrial inner membrane and is the third and final enzyme of the electron transport chain of mitochondrial oxidative phosphorylation. It is composed of 13 polypeptides. Subunits I, II, and III (MTCO1, MTCO2, MTCO3) are encoded by mtDNA while subunits IV, Va, Vb, VIa, VIb, VIc, VIIa, VIIb, VIIc, and VIII are nuclear encoded. The cytochrome c oxidase family of enzymes have 4 redox centers, 2 hemes and 2 copper centers. In mitochondrial Complex IV, the 2 hemes are a and a₃ and the 2 coppers are Cu_A and Cu_B. The 2 hemes and Cu_B are bound to subunit I. Acin-Perez et al. (2003) identified a cell line containing single and double missense mutations in the cytochrome c oxidase (COX) subunit I gene of mouse mitochondrial DNA. And they hypothesized that deleterious mutations can arise and become predominant; cultured cells can maintain several mtDNA haplotypes at stable frequencies; the respiratory chain has little spare COX capacity; and that the size of a cavity in the vicinity of val421 in MTCO1I of animal COX may affect the function of the enzyme.