10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-MTCO1 Antibody
Catalog # ABO10642

Specification

Anti-MTCO1 Antibody - Product Information

Application	**WB, IHC, ICC**
Primary Accession	P00395
Host	**Rabbit**
Reactivity	**Human, 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 Human.

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

Anti-MTCO1 Antibody - Additional Information

Gene ID 4512

Other Names
Cytochrome c oxidase subunit 1, 1.9.3.1, Cytochrome c oxidase polypeptide I, MT-CO1, COI, COXI, MTCO1

Calculated MW
57041 MW KDa

Application Details
Immunocytochemistry , 0.5-1 µg/ml, Human, -
Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, By Heat
Western blot, 0.1-0.5 µg/ml, Human

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 human MTCO1(501-514aa PYHTFEEPVYMKS).

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 MT-CO1

Synonyms COI, COXI, MTCO1

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; Multi-pass membrane protein

Anti-MTCO1 Antibody - Protocols

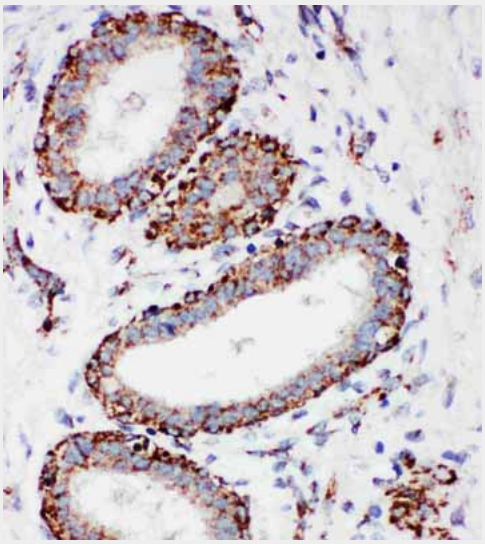
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

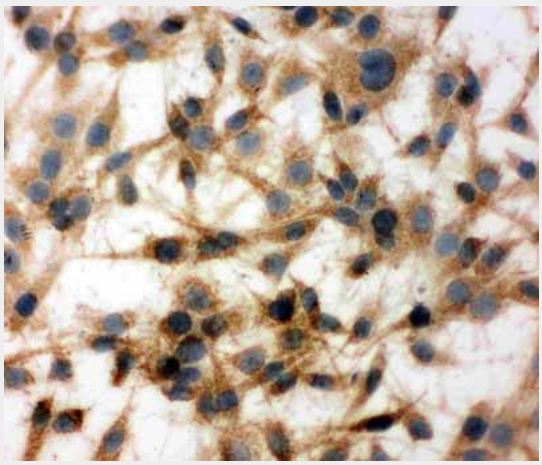
Anti-MTCO1 Antibody - Images

10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-MTCO1 antibody, ABO10642, Western blottingLane 1: SMMC Cell LysateLane 2: MCF-7 Cell LysateLane 3: RAJI Cell LysateLane 4: SW620 Cell Lysate



Anti-MTCO1 antibody, ABO10642, IHC(P)IHC(P): Human Mammary Cancer Tissue



Anti-MTCO1 antibody, ABO10642, ICCICC: C6 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 CuA and CuB. The 2 hemes and CuB 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.