

## Anti-MTCO1/MT-CO1 Antibody

Catalog Number: PA1317-1

### About MT-CO1

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 MTCO1 of animal COX may affect the function of the enzyme.

### Overview

Product Name	Anti-MTCO1/MT-CO1 Antibody
Reactive Species	Human
Description	Boster Bio Anti-MTCO1/MT-CO1 Antibody catalog # PA1317-1. Tested in IHC, ICC, WB applications. This antibody reacts with Human.
Application	IHC, ICC, WB
Clonality	Polyclonal
Formulation	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.
Storage Instructions	Store at -20°C for one year from date of receipt. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	P00395

### Technical Details

Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human MTCO1.
Predicted Reactive Species	Hamster
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P) and ICC.
Cross Reactivity	No cross-reactivity with other proteins
Isotype	Rabbit IgG

Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	<p>Dilute the sample so that the expected range of concentrations fall within the detection range of this kit.</p> <p>If the expected range of concentration is unknown, a pilot test should be conducted to decide the optimal dilution ratio for your samples.</p> <p>Some PubMed article(s) citing the expression level of this target are as follows:</p> <p>Boster Bio's internal QC testing used:</p> <p>Immunocytochemistry , 0.5-1ug/ml, Human, -</p> <p>Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml, Human, By Heat</p> <p>Western blot, 0.1-0.5ug/ml, Human</p>

## Anti-MTCO1/MT-CO1 Antibody (PA1317-1) Images

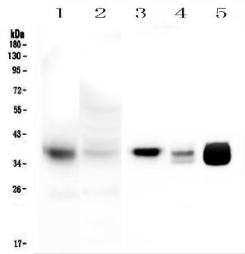


Figure 1. Western blot analysis of MTCO1 using anti-MTCO1 antibody (PA1317-1).

Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The samples were loaded under reducing conditions.

Lane 1: human HeLa mitochondria lysates at 20ug,

Lane 2: human HeLa whole cell lysates at 20ug,

Lane 3: human Caco-2 whole cell lysates at 50ug,

Lane 4: rat heart tissue lysates at 50ug.

Lane 5: mouse heart tissue lysates at 50ug.

After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 60 minutes. Blocked the membrane with 5% Non-fat Milk in TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-MTCO1 antigen affinity purified polyclonal antibody (Catalog # PA1317-1) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for MTCO1 at approximately 37KD. The expected band size for MTCO1 is at 57KD.

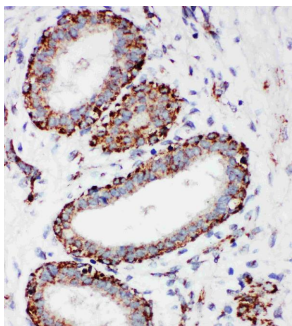


Figure 2. IHC analysis of MTCO1 using anti-MTCO1 antibody (PA1317-1).

MTCO1 was detected in paraffin-embedded section of human mammary cancer tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-MTCO1 Antibody (PA1317-1) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.

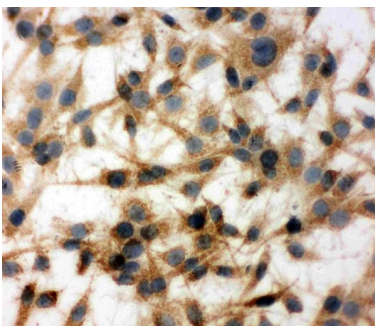


Figure 3. IHC analysis of MTCO1 using anti-MTCO1 antibody (PA1317-1).

MTCO1 was detected in immunocytochemical section of C6 Cell. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 1ug/ml rabbit anti-MTCO1 Antibody (PA1317-1) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The section was developed using Streptavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.

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