Anti-COX2 Antibody [A3F7]

EM1902-12

Product Type:	Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human, Rat
Applications:	WB, IHC-P, FC
Molecular Wt:	Predicted band size: 69 kDa
Clone number:	A3F7

Description: Cytochrome c oxidase subunit 2, also known as cytochrome c oxidase polypeptide II, is a protein that in humans is encoded by the MT-CO2 gene. Cytochrome c oxidase subunit II, abbreviated COXII, COX2, COII, or MT-CO2, is the second subunit of cytochrome c oxidase. It is also one of the three mitochondrial DNA (mtDNA) encoded subunits (MT-CO1, MT-CO2, MT-CO3) of respiratory complex IV. The MT-CO2 gene is located on the p arm of mitochondrial DNA at position 12 and it spans 683 base pairs.[5] The MT-CO2 gene produces a 25.6 kDa protein composed of 227 amino acids.MT-CO2 is a subunit of the enzyme Cytochrome c oxidase (EC 1.9.3.1) (Complex IV), an oligomeric enzymatic complex of the mitochondrial respiratory chain involved in the transfer of electrons from cytochrome c to oxygen. In eukaryotes this enzyme complex is located in the mitochondrial inner membrane; in aerobic prokaryotes it is found in the plasma membrane. The enzyme complex consists of 3-4 subunits (prokaryotes) to up to 13 polypeptides (mammals). The N-terminal domain of cytochrome C oxidase contains two transmembrane alpha-helices. The structure of MT-CO2 is known to contain one redox center and a binuclear copper A center (CuA). The CuA is located in a conserved cysteine loop at 196 and 200 amino acid positions and conserved histidine at 204. Several bacterial MT-CO2 have a C-terminal extension that contains a covalently bound haem c.

Immunogen: Synthetic peptide within C-terminal of human COX2.

Positive control: A549 cell lysates, Hela cell lysates, rat spinal cord tissue lysates ,rat bladder tissue, human lung carcinoma tissue, human womb tissue, A549.

Subcellular location: Microsome membrane, endoplasmic reticulum membrane.

Database links: SwissProt: P35354 Human | P35355 Rat

Recommended Dilutions:

WB	1:500
IHC-P	1:50-1:200
FC	1:50-1:100

Storage Buffer: 1*PBS (pH7.4), 0.2% BSA, 50% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Protein G affinity purified.

Images

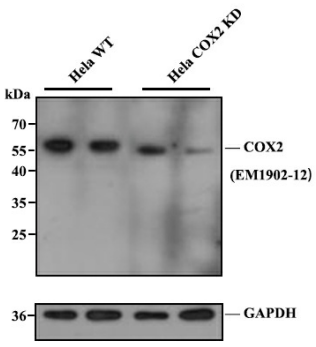

Fig1: All lanes: Western blot analysis of COX2 with anti-COX2 antibody [A3F7] (EM1902-12) at 1:1,000 dilution.
Lane 1/2: Wild-type Hela whole cell lysate (20 µg).
Lane 3/4: COX2 knockdown Hela whole cell lysate (20 µg).

EM1902-12 was shown to specifically react with COX2 in wild-type Hela cells. Weakened bands were observed when COX2 knockdown samples were tested. Wild-type and COX2 knockdown samples were subjected to SDS-PAGE. Proteins were transferred to a PVDF membrane and blocked with 5% NFDM in TBST for 1 hour at room temperature. The primary antibody (EM1902-12, 1/1,000) and Loading control antibody (Rabbit anti-GAPDH, ET1601-4, 1/10,000) were used in 5% BSA at room temperature for 2 hours. Goat Anti-Mouse IgG-HRP Secondary Antibody (HA1006) at 1:20,000 dilution was used for 1 hour at room temperature.

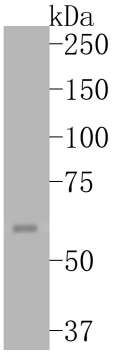

Fig2: Western blot analysis of COX2 on A549 cell lysates. Proteins were transferred to a PVDF membrane and blocked with 5% BSA in PBS for 1 hour at room temperature. The primary antibody (EM1902-12, 1/500) was used in 5% BSA at room temperature for 2 hours. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1:5,000 dilution was used for 1 hour at room temperature.

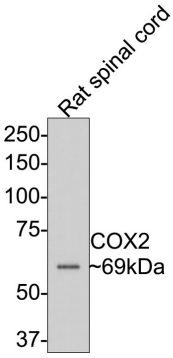

Fig3: Western blot analysis of COX2 on rat spinal cord tissue lysates with Mouse anti-COX2 antibody (EM1902-12) at 1/500 dilution.

Lysates/proteins at 20 µg/Lane.

Predicted band size: 69 kDa
Observed band size: 69 kDa

Exposure time: 2 minutes;

8% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (EM1902-12) at 1/500 dilution was used in 5% NFDM/TBST at room temperature for 2 hours. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1:100,000 dilution was used for 1 hour at room temperature.

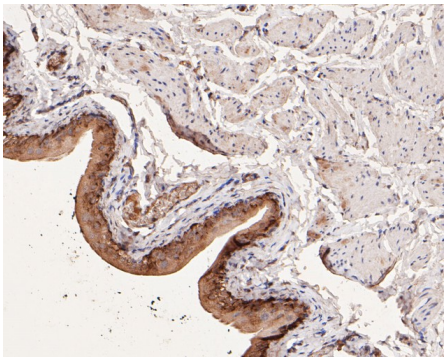

Fig4: Immunohistochemical analysis of paraffin-embedded rat bladder tissue using anti-COX2 antibody. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) (high pressure) for 2 minutes. The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1902-12, 1/100) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

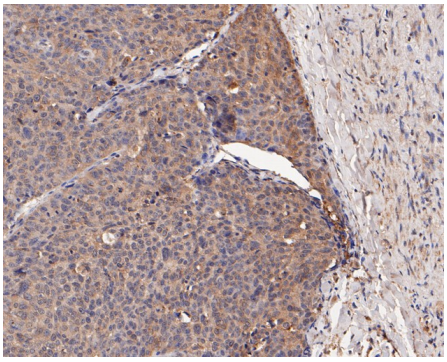

Fig5: Immunohistochemical analysis of paraffin-embedded human lung carcinoma tissue using anti-COX2 antibody. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) (high pressure) for 2 minutes. The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1902-12, 1/100) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

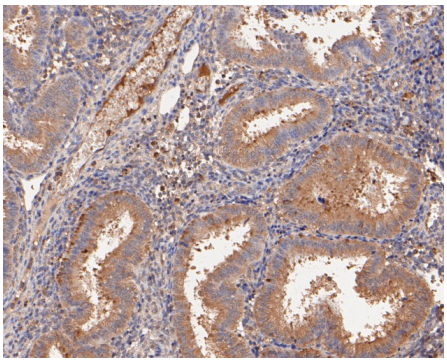

Fig6: Immunohistochemical analysis of paraffin-embedded human womb tissue using anti-COX2 antibody. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) (high pressure) for 2 minutes. The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1902-12, 1/100) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

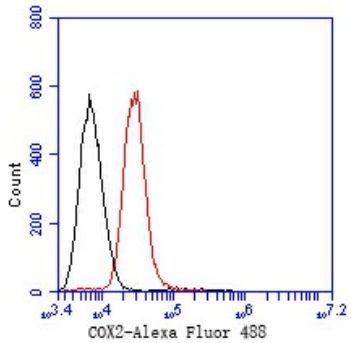

Fig7: Flow cytometric analysis of COX2 was done on A549 cells. The cells were fixed, permeabilized and stained with the primary antibody (EM1902-12, 1/50) (red). After incubation of the primary antibody at room temperature for an hour, the cells were stained with a Alexa Fluor 488-conjugated Goat anti-Mouse IgG Secondary antibody at 1/1000 dilution for 30 minutes.Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

Background References

1. Kunzmann AT. et. al. PTGS2 (Cyclooxygenase-2) expression and survival among colorectal cancer patients: a systematic review. Cancer Epidemiol Biomarkers Prev. 2013 Sep.
2. Ruan Z. et. al. LncRNA MALAT1 aggravates inflammation response through regulating PTGS2 by targeting miR-26b in myocardial ischemia-reperfusion injury. Int J Cardiol. 2019 Aug.