SANTA CRUZ BIOTECHNOLOGY, INC.

COX2 (D-5): sc-514489

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cytochrome c oxidase subunit II (COX2), also designated COII, MTCO2 or oxidative phosphorylation (OxPhos) complex IV, subunit II, is one of three mitochondrial DNA (mtDNA) encoded subunits (MTCO1-3) of respiratory complex IV. Cytochrome c oxidase is a hetero-oligomeric enzyme composed of 13 subunits localized to the mitochondrial inner membrane and is the terminal enzyme complex of the electron transport chain. Complex IV catalyzes the reduction of molecular oxygen to water. The energy released is used to transport protons across the mitochondrial inner membrane. The resulting electrochemical gradient is necessary for the synthesis of ATP. Complex IV contains 13 polypeptides; COX1, COX2 and COX3 (MTCO1-3) make up the catalytic core and are encoded by mtDNA while subunits IV, Va, Vb, VIa, VIb, VIc, VIIa, VIIb, VIIc and VIII are nuclear-encoded. Defects in COX2 are associated with tumor formation.

CHROMOSOMAL LOCATION

Genetic locus: COX2 (human) mapping to MT; Cox20 (mouse) mapping to 1 H4.

SOURCE

COX2 (D-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 169-192 within an internal region of COX2 of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514489 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

COX2 (D-5) is recommended for detection of COX2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for COX20 siRNA (h): sc-88765, COX20 siRNA (m): sc-108651, COX20 shRNA Plasmid (h): sc-88765-SH, COX20 shRNA Plasmid (m): sc-108651-SH, COX20 shRNA (h) Lentiviral Particles: sc-88765-V and COX20 shRNA (m) Lentiviral Particles: sc-108651-V.

Molecular Weight of COX2: 21 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or Jurkat whole cell lysate: sc-2204.

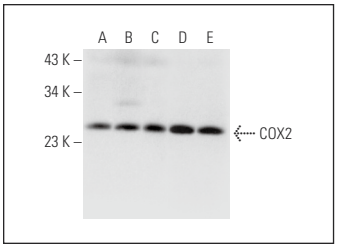
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

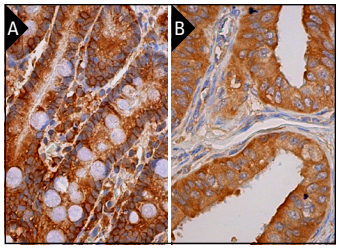
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



COX2 (D-5): sc-514489. Western blot analysis of COX2 expression in HeLa (**A**), THP-1 (**B**), MCF7 (**C**), K-562 (**D**) and Jurkat (**E**) whole cell lysates.



COX2 (D-5): sc-514489. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue (**A**) and human fallopian tube tissue (**B**) showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Suzuki, K., et al. 2013. Celecoxib enhances radiosensitivity of hypoxic glioblastoma cells through endoplasmic reticulum stress. Neuro Oncol. 15: 1186-1199.
2. Du, C., et al. 2014. Downregulation of cystathionine β-synthase/hydrogen sulfide contributes to rotenone-induced microglia polarization toward M1 type. Biochem. Biophys. Res. Commun. 451: 239-245.
3. Zhao, Y.P., et al. 2016. Progranulin suppresses titanium particle induced inflammatory osteolysis by targeting TNFα signaling. Sci. Rep. 6: 20909.
4. Deng, M., et al. 2017. Combination of celecoxib and PD184161 exerts synergistic inhibitory effects on gallbladder cancer cell proliferation. Oncol. Lett. 13: 3850-3858.
5. Jeong, J.W., et al. 2017. Mori folium water extract alleviates articular cartilage damages and inflammatory responses in monosodium iodoacetate-induced osteoarthritis rats. Mol. Med. Rep. 16: 3841-3848.
6. Ramírez-Camacho, I., et al. 2018. Cardioprotective strategies preserve the stability of respiratory chain supercomplexes and reduce oxidative stress in reperfused ischemic hearts. Free Radic. Biol. Med. 129: 407-417.
7. Yang, Z., et al. 2019. Platycodigenin as potential drug candidate for Alzheimer's disease via modulating microglial polarization and neurite regeneration. Molecules 24 pii: E3207.
8. Zhao, X., et al. 2019. JS-K induces reactive oxygen species-dependent anti-cancer effects by targeting mitochondria respiratory chain complexes in gastric cancer. J. Cell. Mol. Med. 23: 2489-2504.
9. Picca, A., et al. 2019. Mitochondrial-derived vesicles as candidate biomarkers in Parkinson's disease: rationale, design and methods of the EXosomes in PArkiNson Disease (EXPAND) study. Int. J. Mol. Sci. 20: 2373.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.