

COX2 (N-20): sc-23983

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.

REFERENCES

1. Kadenbach, B., et al. 1983. Separation of mammalian cytochrome c oxidase into 13 polypeptides by a sodium dodecyl sulfate-gel electrophoretic procedure. *Anal. Biochem.* 129: 517-521.
2. Capaldi, R.A., et al. 1983. Structure of cytochrome c oxidase. *Biochim. Biophys. Acta* 726: 135-148.

CHROMOSOMAL LOCATION

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

SOURCE

COX2 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of COX2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23983 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

COX2 (N-20) is recommended for detection of cytochrome c oxidase II of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

Molecular Weight of COX2: 21 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, THP-1 cell lysate: sc-2238 or human heart extract: sc-363763.

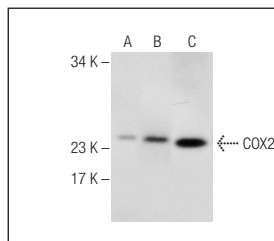
STORAGE

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

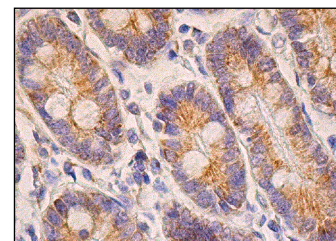
RESEARCH USE

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

DATA



COX2 (N-20): sc-23983. Western blot analysis of COX2 expression in MCF7 (A) and THP-1 (B) whole cell lysates and human heart tissue extract (C).



COX2 (N-20): sc-23983. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Ishaque, A., et al. 2003. Cyclooxygenase-2 inhibits tumor necrosis factor α -mediated apoptosis in renal glomerular mesangial cells. *J. Biol. Chem.* 278: 10629-10640.
2. Bermejo, P., et al. 2008. Differences of peripheral inflammatory markers between mild cognitive impairment and Alzheimer's disease. *Immunol. Lett.* 117: 198-202.
3. Galati, D., et al. 2009. Role of nuclear-encoded subunit Vb in the assembly and stability of cytochrome c oxidase complex: implications in mitochondrial dysfunction and ROS production. *Biochem. J.* 420: 439-449.
4. Younis, T., et al. 2009. Survivin and COX-2 expression in male breast carcinoma. *Breast* 18: 228-232.
5. Fernández-Martínez, A.B., et al. 2012. Retinoic acid increases hypoxia-inducible factor-1 α through intracrine prostaglandin E2 signaling in human renal proximal tubular cells HK-2. *Biochim. Biophys. Acta* 1821: 672-683.
6. Long, J., et al. 2012. New evidence of mitochondria dysfunction in the female Alzheimer's disease brain: deficiency of estrogen receptor- β . *J. Alzheimers Dis.* 30: 545-558.
7. Ravera, S., et al. 2013. Oxidative phosphorylation in sciatic nerve myelin and its impairment in a model of dysmyelinating peripheral neuropathy. *J. Neurochem.* 126: 82-92.
8. Zhang, H., et al. 2013. Protective effect of demethylation treatment on cigarette smoke extract-induced mouse emphysema model. *J. Pharmacol.* 123: 159-166.


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