SANTA CRUZ BIOTECHNOLOGY, INC.

COX1 (C-20): sc-23982

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cytochrome c oxidase subunit I, COX1 (also designated COI, MTCO2 or oxidative phosphorylation (OxPhos) Complex IV, subunit I) 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.

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: COX1 (human) mapping to MT; Cox1 (mouse) mapping to MT.

SOURCE

COX1 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of COX1 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-23982 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

COX1 (C-20) is recommended for detection of cytochrome c oxidase I of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

COX1 (C-20) is also recommended for detection of cytochrome c oxidase I in additional species, including equine, canine, bovine and porcine.

Molecular Weight of COX1: 57 kDa.

Positive Controls: mouse heart extract: sc-2254, mouse brain extract: sc-2253 or human heart extract: sc-363763.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Jobin, C., et al. 1998. Specific NFκB blockade selectively inhibits tumour necrosis factor-α-induced COX-2 but not constitutive COX-1 gene expression in HT-29 cells. Immunology 95: 537-543.
2. Yip-Schneider, M.T., et al. 2000. Cyclooxygenase-2 expression in human pancreatic adenocarcinomas. Carcinogenesis 21: 139-146.
3. Smith, M.L., et al. 2000. The effect of non-steroidal anti-inflammatory drugs on human colorectal cancer cells: evidence of different mechanisms of action. Eur. J. Cancer 36: 664-674.
4. Kömhoff, M., et al. 2000. Cyclooxygenase-2-selective inhibitors impair glomerulogenesis and renal cortical development. Kidney Int. 57: 414-422.
5. Schmidt, C.M., et al. 2003. Novel combination of cyclooxygenase-2 and MEK inhibitors in human hepatocellular carcinoma provides a synergistic increase in apoptosis. J. Gastrointest. Surg. 7: 1024-1033.
6. Díaz-Vera, J., et al. 2010. Chromogranin B gene ablation reduces the catecholamine cargo and decelerates exocytosis in chromaffin secretory vesicles. J. Neurosci. 30: 950-957.
7. Fernández-Martínez, A.B., et al. 2012. Retinoic acid increases hypoxia-inducible factor-1α through intracrine prostaglandin E2 signaling in human renal proximal tubular cells HK-2. Biochim. Biophys. Acta 1821: 672-683.
8. Morimoto, N., et al. 2012. Effect of mitochondrial transcription factor a overexpression on motor neurons in amyotrophic lateral sclerosis model mice. J. Neurosci. Res. 90: 1200-1208.
9. Fidalgo, C., et al. 2012. A role for dorsal and ventral hippocampus in response learning. Neurosci. Res. 73: 218-223.
10. 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.

STORAGE

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

PROTOCOLS

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