



COX4 (4D11-B3-E8): sc-517553

BACKGROUND

Cytochrome c oxidase (COX) functions as the terminal oxidase of the respiratory chain that uses cytochrome c as an electron donor to drive a proton gradient across the inner mitochondrial membrane. The mammalian COX apoenzyme is a heteromer consisting of three mitochondrial encoded catalytic subunits and several nuclear gene encoded structural subunits. COX contains two iron-coordination sites and two copper-coordination sites. Cytochrome c oxidase IV (COX4) is a nuclear-encoded subunit of COX that may play a role in regulating COX activity. COX4 is expressed ubiquitously in adult human tissue with the strongest levels of expression in the pancreas and moderate expression levels in heart, skeletal muscle and placenta.

REFERENCES

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3. Zeviani, M., et al. 1987. Isolation of a cDNA clone encoding subunit IV of human cytochrome c oxidase. Gene 55: 205-217.
4. Lomax, M.I., et al. 1992. Rapid evolution of the human gene for cytochrome c oxidase subunit IV. Proc. Natl. Acad. Sci. USA 89: 5266-5270.
5. Makris, G.J., et al. 1997. The gene encoding subunit IV of cytochrome c oxidase maps to mouse chromosome 8. Mamm. Genome 7: 789-790.
6. Bachman, N.J., et al. 1999. The 5' region of the COX4 gene contains a novel overlapping gene, NOC4. Mamm. Genome 10: 506-512.
7. Hüttemann, M., et al. 2001. Mammalian subunit IV isoforms of cytochrome c oxidase. Gene 267: 111-123.
8. Vizirianakis, I.S., et al. 2002. Differentiation-dependent repression of c-Myc, B22, COX II and COX IV genes in murine erythroleukemia (MEL) cells. Biochem. Pharmacol. 63: 1009-1017.
9. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 123864. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: COX4I1 (human) mapping to 16q24.1; Cox4i1 (mouse) mapping to 8 E1.

SOURCE

COX4 (4D11-B3-E8) is a mouse monoclonal antibody raised against COX4 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 1% glycerol and < 0.1% stabilizer protein.

APPLICATIONS

COX4 (4D11-B3-E8) is recommended for detection of COX4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

COX4 (4D11-B3-E8) is also recommended for detection of COX4 in additional species, including hamster, goat and monkey.

Suitable for use as control antibody for COX4 siRNA (h): sc-72074, COX4 siRNA (m): sc-72075, COX4 shRNA Plasmid (h): sc-72074-SH, COX4 shRNA Plasmid (m): sc-72075-SH, COX4 shRNA (h) Lentiviral Particles: sc-72074-V and COX4 shRNA (m) Lentiviral Particles: sc-72075-V.

Molecular Weight of COX4: 17 kDa.

SELECT PRODUCT CITATIONS

1. Ding, M., et al. 2021. Treprostinil reduces mitochondrial injury during rat renal ischemia-reperfusion injury. Biomed. Pharmacother. 141: 111912.
2. Hou, J., et al. 2021. Treprostinil alleviates hepatic mitochondrial injury during rat renal ischemia-reperfusion injury. Biomed. Pharmacother. 143: 112172.
3. Karim, L., et al. 2022. Mitochondrial ribosome dysfunction in human alveolar type II cells in emphysema. Biomedicines 10: 1497.
4. Shiraki, A., et al. 2022. Empagliflozin improves cardiac mitochondrial function and survival through energy regulation in a murine model of heart failure. Eur. J. Pharmacol. 931: 175194.
5. Zhang, X., et al. 2022. EGFR tyrosine kinase activity and Rab GTPases coordinate EGFR trafficking to regulate macrophage activation in sepsis. Cell Death Dis. 13: 934.
6. Ogawa, T., et al. 2023. Downregulation of extramitochondrial BCKDH and its uncoupling from AMP deaminase in type 2 diabetic OLETF rat hearts. Physiol. Rep. 11: e15608.
7. Yuan, W., et al. 2024. The male reproductive toxicity after 5-Fluorouracil exposure: DNA damage, oxidative stress, and mitochondrial dysfunction *in vitro* and *in vivo*. Ecotoxicol. Environ. Saf. 278: 116465.

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.

PROTOCOLS

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