

COX1 (T-20): sc-48143

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., Jarausch, J., Hartmann, R. and Merle, P. 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., Malatesta, F. and Darley-Usmar, V.M. 1983. Structure of cytochrome c oxidase. *Biochim. Biophys. Acta* 726: 135-148.
3. Shoffner, J.M. and Wallace, D.C. 1995. Oxidative phosphorylation diseases. In Scriver, C.R., Beaudet, A.L., Sly, W.S., Valle, D., eds., *The Metabolic and Molecular Basis of Inherited Disease*. New York: McGraw-Hill, 1535-609.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 516030. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Barrientos, A., Barros, M.H., Valnot, I., Rötig, A., Rustin, P. and Tzagoloff, A. 2002. Cytochrome oxidase in health and disease. *Gene* 286: 53-63.
6. LocusLink Report (LocusID: 4512). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

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

SOURCE

COX1 (T-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a mitochondrial intermembrane region 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-48143 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

COX1 (T-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), 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).

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

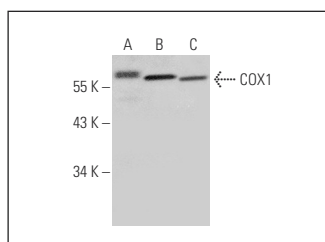
Molecular Weight of COX1: 57 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or HL-60 whole cell lysate: sc-2209.

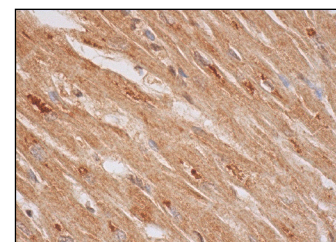
RECOMMENDED SECONDARY REAGENTS

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 Blotting A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use ImmunoCruz[™]: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



COX1 (T-20): sc-48143. Western blot analysis of COX1 expression in HeLa (A), Jurkat (B) and HL-60 (C) whole cell lysates.



COX1 (T-20): sc-48143. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

RESEARCH USE

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

PROTOCOLS

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