

COX6b1 (C-3): sc-393233

BACKGROUND

The cytochrome c oxidase (COX) family of proteins function as the final electron donor in the respiratory chain to drive a proton gradient across the inner mitochondrial membrane, ultimately resulting in the production of water. The mammalian COX apoenzyme is a dimer, with each monomer consisting of 13 subunits, some of which are mitochondrial and some of which are nuclear. COX6b1 (cytochrome c oxidase subunit VIb polypeptide 1) is a nuclear encoded subunit. Localizing to the intermatrix side of the inner membrane of the mitochondrion, COX6b1 is responsible for joining the two COX monomers to form the COX dimer. COX6b1 is highly expressed in oocytes and zygotes and appears to be unnecessary for early embryonic development but essential for the blastocyst stage. The loss or silencing of the gene encoding COX6b1 results in mitochondrial dysfunction that ultimately leads to apoptosis of blastocyst-stage embryos.

REFERENCES

1. Taanman, J.W., et al. 1989. Nucleotide sequence of cDNA encoding subunit VIb of human cytochrome c oxidase. *Nucleic Acids Res.* 17: 1766.
2. Carrero-Valenzuela, R.D., et al. 1991. Human cytochrome c oxidase subunit VIb: characterization and mapping of a multigene family. *Gene* 102: 229-236.
3. Taanman, J.W., et al. 1991. Identification of three human pseudogenes for subunit VIb of cytochrome c oxidase: a molecular record of gene evolution. *Gene* 102: 237-244.

CHROMOSOMAL LOCATION

Genetic locus: COX6B1 (human) mapping to 19q13.12; Cox6b1 (mouse) mapping to 7 B1.

SOURCE

COX6b1 (C-3) is a mouse monoclonal antibody raised against amino acids 31-80 mapping within an internal region of COX6b1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

COX6b1 (C-3) is available conjugated to agarose (sc-393233 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393233 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393233 PE), fluorescein (sc-393233 FITC), Alexa Fluor® 488 (sc-393233 AF488), Alexa Fluor® 546 (sc-393233 AF546), Alexa Fluor® 594 (sc-393233 AF594) or Alexa Fluor® 647 (sc-393233 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393233 AF680) or Alexa Fluor® 790 (sc-393233 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

COX6b1 (C-3) is recommended for detection of COX6b1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for COX6b1 siRNA (h): sc-97782, COX6b1 siRNA (m): sc-105237, COX6b1 shRNA Plasmid (h): sc-97782-SH, COX6b1 shRNA Plasmid (m): sc-105237-SH, COX6b1 shRNA (h) Lentiviral Particles: sc-97782-V and COX6b1 shRNA (m) Lentiviral Particles: sc-105237-V.

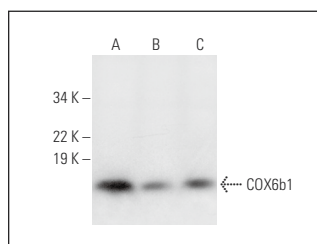
Molecular Weight of COX6b1: 10 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Caco-2 cell lysate: sc-2262 or A549 cell lysate: sc-2413.

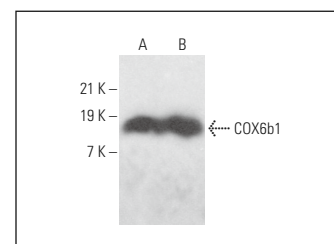
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



COX6b1 (C-3): sc-393233. Western blot analysis of COX6b1 expression in Hep G2 (A), Caco-2 (B) and A549 (C) whole cell lysates.



COX6b1 (C-3): sc-393233. Western blot analysis of COX6b1 expression in A549 (A) and HL-60 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Cheng, C.C., et al. 2020. Sperm-specific COX6b2 enhances oxidative phosphorylation, proliferation, and survival in human lung adenocarcinoma. *Elife* 9: e58108.
2. Herrmann, A.L., et al. 2021. Delineating the switch between senescence and apoptosis in cervical cancer cells under ciclopirox treatment. *Cancers* 13: 4995.

RESEARCH USE

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