

# COX6b1 (T-12): sc-103438

## 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.
4. Grossman, L.I. and Lomax, M.I. 1997. Nuclear genes for cytochrome c oxidase. *Biochim. Biophys. Acta* 1352: 174-192.
5. Mootha, V.K., et al. 2003. Integrated analysis of protein composition, tissue diversity, and gene regulation in mouse mitochondria. *Cell* 115: 629-640.
6. Da Cruz, S., et al. 2003. Proteomic analysis of the mouse liver mitochondrial inner membrane. *J. Biol. Chem.* 278: 41566-41571.

## CHROMOSOMAL LOCATION

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

## SOURCE

COX6b1 (T-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of COX6b1 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-103438 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

COX6b1 (T-12) is recommended for detection of COX6b1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other COX family members.

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.

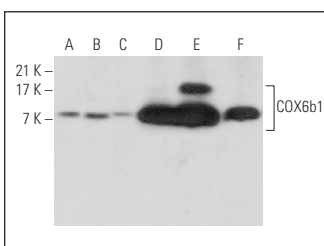
Molecular Weight of COX6b1: 10 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, mouse heart extract: sc-2254 or Hep G2 cell lysate: sc-2227.

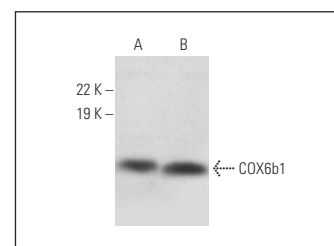
## RECOMMENDED SECONDARY REAGENTS

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) 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.

## DATA



COX6b1 (T-12): sc-103438. Western blot analysis of COX6b1 expression in HL-60 (A), HeLa (B) and U-251-MG (C) whole cell lysates and rat heart (D), mouse heart (E) and mouse liver (F) tissue extracts.



COX6b1 (T-12): sc-103438. Western blot analysis of COX6b1 expression in HL-60 (A) and Hep G2 (B) whole cell lysates.

## RESEARCH USE

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

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Try **COX6b1 (C-3): sc-393233** or **COX6b1 (77.1): sc-100524**, our highly recommended monoclonal alternatives to COX6b1 (T-12).