

# COX4I2 (RR3): sc-100522

## 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. 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. Two isoforms exist for COX4, namely COX4I1 and COX4I2, and they are encoded by two different genes. COX4I2 (cytochrome c oxidase subunit 4 isoform 2), also known as COX4B, COX4-2, COX4L2 or COXIV-2, is the less common isoform and is incorporated into the COX apoenzyme under hypoxic conditions to optimize COX activity.

## REFERENCES

1. Zeviani, M., et al. 1987. Isolation of a cDNA clone encoding subunit IV of human cytochrome c oxidase. *Gene* 55: 205-217.
2. 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.
3. 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.
4. Bachman, N.J., et al. 1999. The 5' region of the COX4 gene contains a novel overlapping gene, NOC4. *Mamm. Genome* 10: 506-512.
5. Hüttemann, M., et al. 2001. Mammalian subunit IV isoforms of cytochrome c oxidase. *Gene* 267: 111-123.
6. 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.
7. 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: COX4I2 (human) mapping to 20q11.21.

## SOURCE

COX4I2 (RR3) is a mouse monoclonal antibody raised against recombinant COX4I2 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

COX4I2 (RR3) is recommended for detection of COX4I2 of 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).

Suitable for use as control antibody for COX4I2 siRNA (h): sc-72981, COX4I2 shRNA Plasmid (h): sc-72981-SH and COX4I2 shRNA (h) Lentiviral Particles: sc-72981-V.

Molecular Weight of COX4I2: 20 kDa.

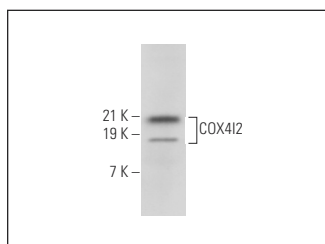
Positive Controls: SH-SY5Y cell lysate: sc-3812.

## RECOMMENDED SUPPORT REAGENTS

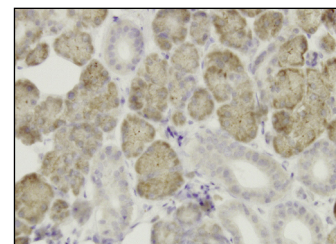
To ensure optimal results, the following support reagents are recommended:

- 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.
- 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



COX4I2 (RR3): sc-100522. Western blot analysis of COX4I2 expression in SH-SY5Y whole cell lysate.



COX4I2 (RR3): sc-100522. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human salivary gland tissue showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Mou, Z.D., et al. 2017. "Half-sandwich" Schiff-base Ir(III) complexes as anticancer agents. *Eur. J. Med. Chem.* 138: 72-82.
2. Mahadev Bhat, S., et al. 2021. Organic dust exposure induces stress response and mitochondrial dysfunction in monocytic cells. *Histochem. Cell Biol.* 155: 699-718.

## RESEARCH USE

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