

COX17 (A-8): sc-393617



The Power to Question

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 17 (COX17) is a nuclear gene encoding a mitochondrial copper chaperone protein necessary for proper COX apoenzyme-dependent mitochondrial respiration. COX17 is a highly conserved protein and influences the recruitment of copper ions to the mitochondria for delivery and incorporation into the COX apoenzyme.

REFERENCES

1. Amaravadi, R., et al. 1997. Isolation of a cDNA encoding the human homolog of COX17, a yeast gene essential for mitochondrial copper recruitment. *Hum. Genet.* 99: 329-333.
2. Horvath, R., et al. 2000. Characterization of human SCO1 and COX17 genes in mitochondrial cytochrome c oxidase deficiency. *Biochem. Biophys. Res. Commun.* 276: 530-533.
3. Punter, F.A., et al. 2000. Characterization and localization of human COX17, a gene involved in mitochondrial copper transport. *Hum. Genet.* 107: 69-74.
4. Suzuki, C., et al. 2003. Identification of COX17 as a therapeutic target for non-small cell lung cancer. *Cancer Res.* 63: 7038-7041.
5. Palumaa, P., et al. 2004. Metal-binding mechanism of COX17, a copper chaperone for cytochrome c oxidase. *Biochem. J.* 382: 307-314.
6. Maxfield, A.B., et al. 2004. COX17 is functional when tethered to the mitochondrial inner membrane. *J. Biol. Chem.* 279: 5072-5080.
7. Voronova, A., et al. 2007. Oxidative switches in functioning of mammalian copper chaperone COX17. *Biochem. J.* 408: 139-148.

CHROMOSOMAL LOCATION

Genetic locus: COX17 (human) mapping to 3q13.33.

SOURCE

COX17 (A-8) is a mouse monoclonal antibody raised against amino acids 1-63 representing full length COX17 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.

COX17 (A-8) is available conjugated to agarose (sc-393617 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393617 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393617 PE), fluorescein (sc-393617 FITC), Alexa Fluor® 488 (sc-393617 AF488), Alexa Fluor® 546 (sc-393617 AF546), Alexa Fluor® 594 (sc-393617 AF594) or Alexa Fluor® 647 (sc-393617 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393617 AF680) or Alexa Fluor® 790 (sc-393617 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

COX17 (A-8) is recommended for detection of COX17 of 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 COX17 siRNA (h): sc-105234, COX17 shRNA Plasmid (h): sc-105234-SH and COX17 shRNA (h) Lentiviral Particles: sc-105234-V.

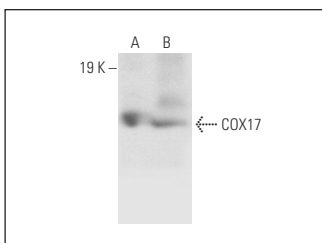
Molecular Weight of COX17: 8 kDa.

Positive Controls: LNCaP cell lysate: sc-2231 or human heart extract: sc-363763.

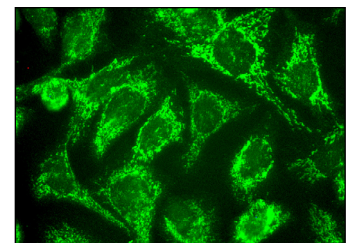
RECOMMENDED SUPPORT REAGENTS

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



COX17 (A-8): sc-393617. Western blot analysis of COX17 expression in LNCaP whole cell lysate (A) and human heart tissue extract (B).



COX17 (A-8): sc-393617. Immunofluorescence staining of formalin-fixed A-431 cells showing mitochondrial localization.

SELECT PRODUCT CITATIONS

1. Tasic, D., et al. 2022. Effects of fructose and stress on rat renal copper metabolism and antioxidant enzymes function. *Int. J. Mol. Sci.* 23: 9023.

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.

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