SANTA CRUZ BIOTECHNOLOGY, INC.

# COX17 (F14): sc-100521

SANTA CRUZ BIOTECHNOLOGY

*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. Punter, F.A., et al. 2000. Characterization and localization of human COX17, a gene involved in mitochondrial copper transport. Hum. Genet. 107: 69-74.


## CHROMOSOMAL LOCATION

Genetic locus: COX17 (human) mapping to 3q13.33; Cox17 (mouse) mapping to 16 B3.

## SOURCE

COX17 (F14) is a mouse monoclonal antibody raised against recombinant COX17 of human origin.

## PRODUCT

Each vial contains 100 µg $IgG_{2b}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

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

## APPLICATIONS

COX17 (F14) is recommended for detection of COX17 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).

Suitable for use as control antibody for COX17 siRNA (h): sc-105234, COX17 siRNA (m): sc-77380, COX17 shRNA Plasmid (h): sc-105234-SH, COX17 shRNA Plasmid (m): sc-77380-SH, COX17 shRNA (h) Lentiviral Particles: sc-105234-V and COX17 shRNA (m) Lentiviral Particles: sc-77380-V.

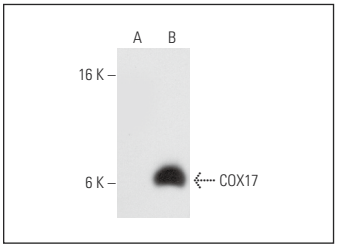
Molecular Weight of COX17: 8 kDa.

Positive Controls: COX17 (h): 293T Lysate: sc-111714 or IMR-32 cell lysate: sc-2409.

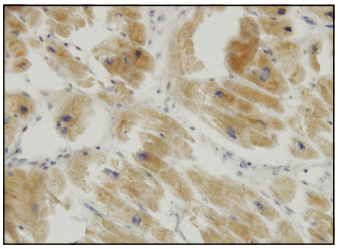
## RECOMMENDED SUPPORT REAGENTS

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




COX17 (F14): sc-100521. Western blot analysis of COX17 expression in non-transfected: sc-117752 (**A**) and human COX17 transfected: sc-111714 (**B**) 293T whole cell lysates.



COX17 (F14): sc-100521. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human heart tissue showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS


1. Yin, W., et al. 2018. The involvement of cytochrome c oxidase in mitochondrial fusion in primary cultures of neonatal rat cardiomyocytes. Cardiovasc. Toxicol. 18: 365-373.
2. Fu, H., et al. 2019. Profiling of nuclear copper-binding proteins under hypoxic condition. Biometals 32: 329-341.
3. Oleinik, N., et al. 2019. Mitochondrial protein import is regulated by p17/PERMIT to mediate lipid metabolism and cellular stress. Sci. Adv. 5: eaax1978.
4. Santini, S.J., et al. 2022. Copper-catalyzed dicarbonyl stress in NAFLD mice: protective effects of Oleuropein treatment on liver damage. Nutr. Metab. 19: 9.
5. Oleinik, N., et al. 2023. Alterations of lipid-mediated mitophagy result in aging-dependent sensorimotor defects. Aging Cell 22: e13954.
6. Wang, X., et al. 2023. Copper and cuproptosis-related genes in hepatocellular carcinoma: therapeutic biomarkers targeting tumor immune microenvironment and immune checkpoints. Front. Immunol. 14: 1123231.
7. Zhu, S.Y., et al. 2023. COX17 restricts renal fibrosis development by maintaining mitochondrial copper homeostasis and restoring complex IV activity. Acta Pharmacol. Sin. 44: 2091-2102.


## STORAGE

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