

# COX10 (H-300): sc-134792

## BACKGROUND

Cytochrome c oxidase (COX) localizes to the mitochondrial inner membrane and is the terminal enzyme in the electron transfer chain, functioning as a transmembrane proton pump that builds an electrochemical gradient with chemical energy from the reduction of O<sub>2</sub>. The COX subunit 10 or COX10 (also known as heme A: farnesyltransferase or Heme O synthase) is a multi-pass transmembrane protein encoded by a nuclear gene. COX10 was originally identified in yeast and its structure is conserved from *E. coli* to human. COX10 is responsible for catalyzing the first step in the biosynthesis of heme A: the conversion of protoheme (heme B) to heme O by the addition of a farnesyl group. As a result, COX10 is necessary for the expression of a functional COX. A mutation in the gene encoding COX10 may result in COX deficiency in humans.

## REFERENCES

- Glerum, D.M. and Tzagoloff, A. 1994. Isolation of a human cDNA for heme A: farnesyltransferase by functional complementation of a yeast Cox10 mutant. *Proc. Natl. Acad. Sci. USA* 91: 8452-8456.
- Murakami, T., et al. 1997. Genomic structure and expression of the human heme A: farnesyltransferase (COX10) gene. *Genomics* 42: 161-164.
- Valnot, I., et al. 2000. A mutation in the human heme A: farnesyltransferase gene (COX10) causes cytochrome c oxidase deficiency. *Hum. Mol. Genet.* 9: 1245-1249.
- Antonicka, H., et al. 2003. Mutations in COX10 result in a defect in mitochondrial heme A biosynthesis and account for multiple, early-onset clinical phenotypes associated with isolated COX deficiency. *Hum. Mol. Genet.* 12: 2693-2702.
- Coenen, M.J., et al. 2004. Cytochrome c oxidase biogenesis in a patient with a mutation in COX10 gene. *Ann. Neurol.* 56: 560-564.
- Diaz, F., et al. 2005. Mice lacking COX10 in skeletal muscle recapitulate the phenotype of progressive mitochondrial myopathies associated with cytochrome c oxidase deficiency. *Hum. Mol. Genet.* 14: 2737-2748.

## CHROMOSOMAL LOCATION

Genetic locus: COX10 (human) mapping to 17p12; Cox10 (mouse) mapping to 11 B3.

## SOURCE

COX10 (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of COX10 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.

## STORAGE

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

## APPLICATIONS

COX10 (H-300) is recommended for detection of COX10 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).

COX10 (H-300) is also recommended for detection of COX10 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for COX10 siRNA (h): sc-72303, COX10 siRNA (m): sc-72304, COX10 shRNA Plasmid (h): sc-72303-SH, COX10 shRNA Plasmid (m): sc-72304-SH, COX10 shRNA (h) Lentiviral Particles: sc-72303-V and COX10 shRNA (m) Lentiviral Particles: sc-72304-V.

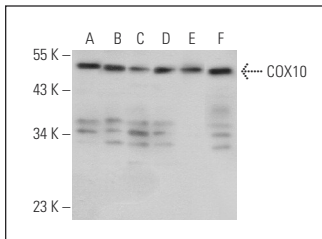
Molecular Weight of COX10: 51 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HuT 78 whole cell lysate: sc-2208 or HeLa whole cell lysate: sc-2200.

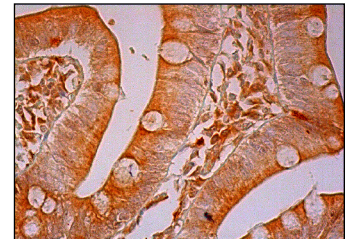
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



COX10 (H-300): sc-134792. Western blot analysis of COX10 expression in Jurkat (A), HUT 78 (B), CCRF-CEM (C), HeLa (D), IMR-32 (E) and HEK293 (F) whole cell lysates.



COX10 (H-300): sc-134792. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells.

## RESEARCH USE

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