

# COX7a1 (S-16): sc-131462

## 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 and ATP. 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. COX7a1 (cytochrome c oxidase subunit VIIa polypeptide 1) is an 79 amino acid protein that localizes to the inner mitochondrial membrane and exists as a component of the COX complex, playing an important role in electron transport. Expression of COX7a1 is specific to heart and skeletal muscle. The gene encoding COX7a1 lies within the FXD5-COX7A1 region of human chromosome 19, which is used as a model to study DNA methylation.

## REFERENCES

1. Fabrizi, G.M., et al. 1989. Sequence of a cDNA specifying subunit VIIa of human cytochrome c oxidase. *Nucleic Acids Res.* 17: 7107.
2. Arnaudo, E., et al. 1992. Tissue-specific expression and chromosome assignment of genes specifying two isoforms of subunit VIIa of human cytochrome c oxidase. *Gene* 119: 299-305.
3. Taanman, J.W., et al. 1993. Tissue distribution of cytochrome c oxidase isoforms in mammals. Characterization with monoclonal and polyclonal antibodies. *Biochim. Biophys. Acta* 1225: 95-100.
4. Merante, F., et al. 1997. Chromosomal localization of the human liver form cytochrome c oxidase subunit VIIa gene. *Genome* 40: 318-324.
5. Lenka, N., et al. 1998. Structural organization and transcription regulation of nuclear genes encoding the mammalian cytochrome c oxidase complex. *Prog. Nucleic Acid Res. Mol. Biol.* 61: 309-344.
6. Drögemüller, C., et al. 2001. Molecular characterization and chromosome assignment of the porcine gene COX7A1 coding for the muscle specific cytochrome c oxidase subunit VIIa-M. *Cytogenet. Cell Genet.* 94: 190-193.
7. Didych, D.A., et al. 2009. Identification and mapping of ten new potential insulators in the FXD5-COX7A1 region of human chromosome 19q13.12. *Biochemistry Mosc.* 74: 728-733.
8. Skvortsova, Y.V., et al. 2009. Studies on functional role of DNA methylation within the FXD5-COX7A1 region of human chromosome 19. *Biochemistry Mosc.* 74: 874-881.

## CHROMOSOMAL LOCATION

Genetic locus: COX7A1 (human) mapping to 19q13.12.

## SOURCE

COX7a1 (S-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of COX7a1 of human origin.

## STORAGE

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

## 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-131462 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

COX7a1 (S-16) is recommended for detection of COX7a1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 COX7 family members.

Suitable for use as control antibody for COX7a1 siRNA (h): sc-97690, COX7a1 shRNA Plasmid (h): sc-97690-SH and COX7a1 shRNA (h) Lentiviral Particles: sc-97690-V.

Molecular Weight of COX7a1: 9 kDa.

## 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) 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.