

COQ7 (B-12): sc-514029

BACKGROUND

COQ7, a timing protein CLK-1 homolog, is a 217 amino acid protein encoded by the mouse gene *Coq7*. It is believed that COQ7/CLK-1 is required for the biosynthesis of Coenzyme Q (COQ), an essential co-factor in mitochondrial respiration. In yeast, mutation of the COQ7 gene results in the absence of UQ biosynthesis and demonstrates a role for this gene in the step leading to the hydroxylation of 5-demethoxyubiquinone. COQ7 may also be responsible for maintenance of mitochondrial integrity and neurogenesis. COQ7 is highly expressed in tissues with high energy demand such as heart, muscle, liver, and kidney. After transcription, COQ7 is targeted to the mitochondria where it is processed to its mature form. The protein similarities and the conservation of function of the CLK-1/*clk-1*/COQ7 gene products suggest a potential link between the production of ubiquinone and aging.

REFERENCES

1. Vajo, Z., et al. 2000. Conservation of the *Caenorhabditis elegans* timing gene *clk-1* from yeast to human: a gene required for ubiquinone biosynthesis with potential implications for aging. *Mamm. Genome* 10: 1000-1004.
2. Stenmark, P., et al. 2001. A new member of the family of di-iron carboxylate proteins. *Coq7* (*clk-1*), a membrane-bound hydroxylase involved in ubiquinone biosynthesis. *J. Biol. Chem.* 276: 33297-33300.
3. Takahashi, M., et al. 2001. Mouse *coq7/clk-1* orthologue rescued slowed rhythmic behavior and extended life span of *clk-1* longevity mutant in *Caenorhabditis elegans*. *Biochem. Biophys. Res. Commun.* 286: 534-540.
4. Levavasseur, F., et al. 2001. Ubiquinone is necessary for mouse embryonic development but is not essential for mitochondrial respiration. *J. Biol. Chem.* 276: 46160-46164.
5. Nakai, D., et al. 2001. Mouse homologue of *coq7/clk-1*, longevity gene in *Caenorhabditis elegans*, is essential for coenzyme Q synthesis, maintenance of mitochondrial integrity, and neurogenesis. *Biochem. Biophys. Res. Commun.* 289: 463-471.

CHROMOSOMAL LOCATION

Genetic locus: COQ7 (human) mapping to 16p12.3; *Coq7* (mouse) mapping to 7 F2.

SOURCE

COQ7 (B-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 152-175 within an internal region of COQ7 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514029 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

COQ7 (B-12) is recommended for detection of COQ7 of mouse, rat and 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 COQ7 siRNA (h): sc-62146, COQ7 siRNA (m): sc-62147, COQ7 shRNA Plasmid (h): sc-62146-SH, COQ7 shRNA Plasmid (m): sc-62147-SH, COQ7 shRNA (h) Lentiviral Particles: sc-62146-V and COQ7 shRNA (m) Lentiviral Particles: sc-62147-V.

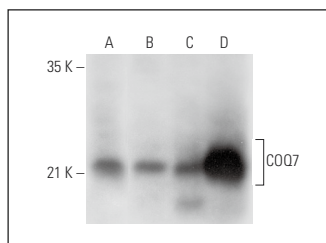
Molecular Weight of COQ7: 24 kDa.

Positive Controls: THP-1 cell lysate: sc-2238, mouse heart extract: sc-2254 or HEK293 whole cell lysate: sc-45136.

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



COQ7 (B-12): sc-514029. Western blot analysis of COQ7 expression in THP-1 (A) and HEK293 (B) whole cell lysates and human heart (C) and mouse heart (D) tissue extracts.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.