SANTA CRUZ BIOTECHNOLOGY, INC.

COQ7 (F-9): sc-376484

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

COQ7 (F-9) is a mouse monoclonal antibody raised against amino acids 1-217 representing full length COQ7 of human origin.

PRODUCT

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

COQ7 (F-9) is available conjugated to agarose (sc-376484 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376484 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376484 PE), fluorescein (sc-376484 FITC), Alexa Fluor® 488 (sc-376484 AF488), Alexa Fluor® 546 (sc-376484 AF546), Alexa Fluor® 594 (sc-376484 AF594) or Alexa Fluor® 647 (sc-376484 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376484 AF680) or Alexa Fluor® 790 (sc-376484 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

COQ7 (F-9) 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), 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 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.

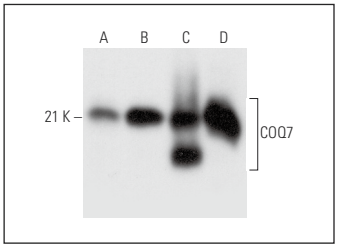
Molecular Weight of COQ7: 24 kDa.

Positive Controls: MDA-MB-435S whole cell lysate: sc-364184, HEK293 whole cell lysate: sc-45136 or human heart extract: sc-363763.

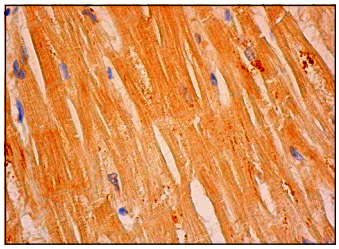
RECOMMENDED SUPPORT REAGENTS

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. 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



COQ7 (F-9): sc-376484. Western blot analysis of COQ7 expression in MDA-MB-435S (**A**) and HEK293 (**B**) whole cell lysates and human heart (**C**) and mouse heart (**D**) tissue extracts.



COQ7 (F-9): sc-376484. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. Tsuganezawa, K., et al. 2020. Identification of small molecule inhibitors of human COQ7. Bioorg. Med. Chem. 28: 115182.
2. Yen, H.C., et al. 2020. Characterization of human mitochondrial PDSS and COQ proteins and their roles in maintaining coenzyme Q_{10} levels and each other's stability. Biochim. Biophys. Acta Bioenerg. 1861: 148192.
3. Nara, T., et al. 2021. The ubiquinone synthesis pathway is a promising drug target for Chagas disease. PLoS ONE 16: e0243855.
4. Pettenuzzo, I., et al. 2024. COQ7 defect causes prenatal onset of mitochondrial CoQ_{10} deficiency with cardiomyopathy and gastrointestinal obstruction. Eur. J. Hum. Genet. 32: 938-946.
5. Yen, H.C., et al. 2024. Alterations in coenzyme Q_{10} status in a cybrid line harboring the 3243A>G mutation of mitochondrial DNA is associated with abnormal mitochondrial bioenergetics and dysregulated mitochondrial biogenesis. Biochim. Biophys. Acta Bioenerg. 1865: 149492.

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.