SANTA CRUZ BIOTECHNOLOGY, INC.

Mitofilin (D-3): sc-390707

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cristae are highly folded inner mitochondrial membrane compartments that are studded with cytochromes and ATP synthase proteins and function to provide a large surface area upon which cellular respiration can occur. Mitofilin, also known as IMMT, HMP, PIG4 or P87/89, is a 758 amino acid inner mitochondrial membrane protein that is preferentially expressed in heart tissue. Existing as three alternatively spliced isoforms, Mitofilin functions to control mitochondrial cristae morphology, including the formation and organization of cristae junctions and normal tubular cristae. Due to its role in mediating cristae structure and function, Mitofilin is essential for normal mitochondrial function and is, thus, critical to overall cell survival.

CHROMOSOMAL LOCATION

Genetic locus: IMMT (human) mapping to 2p11.2; Immt (mouse) mapping to 6 C1.

SOURCE

Mitofilin (D-3) is a mouse monoclonal antibody raised against amino acids 364-657 mapping within an internal region of Mitofilin of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Mitofilin (D-3) is available conjugated to agarose (sc-390707 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390707 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390707 PE), fluorescein (sc-390707 FITC), Alexa Fluor® 488 (sc-390707 AF488), Alexa Fluor® 546 (sc-390707 AF546), Alexa Fluor® 594 (sc-390707 AF594) or Alexa Fluor® 647 (sc-390707 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390707 AF680) or Alexa Fluor® 790 (sc-390707 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Mitofilin (D-3) is recommended for detection of Mitofilin 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 Mitofilin siRNA (h): sc-75791, Mitofilin siRNA (m): sc-75792, Mitofilin shRNA Plasmid (h): sc-75791-SH, Mitofilin shRNA Plasmid (m): sc-75792-SH, Mitofilin shRNA (h) Lentiviral Particles: sc-75791-V and Mitofilin shRNA (m) Lentiviral Particles: sc-75792-V.

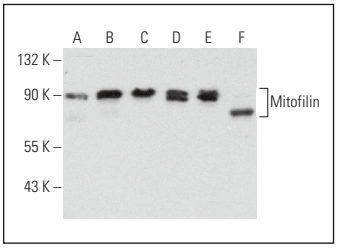
Molecular Weight of Mitofilin isoforms: 88/90 kDa.

Positive Controls: A-673 cell lysate: sc-2414, 3T3-L1 cell lysate: sc-2243 or HeLa whole cell lysate: sc-2200.

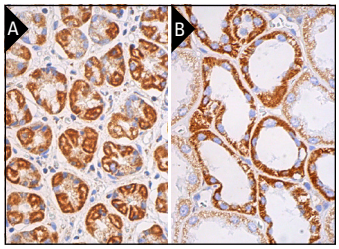
STORAGE

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

DATA



Mitofilin (D-3): sc-390707. Western blot analysis of Mitofilin expression in HeLa (**A**), A-673 (**B**), Saos-2 (**C**), 3T3-L1 (**D**), Sol8 (**E**) and A-10 (**F**) whole cell lysates.



Mitofilin (D-3): sc-390707. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lower stomach tissue showing cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (**B**).

SELECT PRODUCT CITATIONS

1. Blomme, A., et al. 2017. Myoferlin regulates cellular lipid metabolism and promotes metastases in triple-negative breast cancer. Oncogene 36: 2116-2130.
2. Rademaker, G., et al. 2018. Myoferlin controls mitochondrial structure and activity in pancreatic ductal adenocarcinoma, and affects tumor aggressiveness. Oncogene 37: 4398-4412.
3. Fielden, L.F., et al. 2021. Proteomic identification of *Coxiella burnetii* effector proteins targeted to the host cell mitochondria during infection. Mol. Cell. Proteomics 20: 100005.
4. Shi, P., et al. 2022. Mechanical instability generated by Myosin 19 contributes to mitochondria cristae architecture and OXPHOS. Nat. Commun. 13: 2673.
5. Kee, T.R., et al. 2022. Pathological characterization of a novel mouse model expressing the PD-linked CHCHD2-T61I mutation. Hum. Mol. Genet. 31: 3987-4005.
6. Baixauli, F., et al. 2022. An LKB1-mitochondria axis controls TH17 effector function. Nature 610: 555-561.
7. Lin, C.Y., et al. 2023. Carnosic acid attenuated cytochrome c release through the mitochondrial structural protein Mic60 by PINK1 in SH-SY5Y cells. Food Chem. Toxicol. 173: 113636.
8. Schöne, N., et al. 2024. PD-L1 on large extracellular vesicles is a predictive biomarker for therapy response in tissue PD-L1-low and -negative patients with non-small cell lung cancer. J. Extracell. Vesicles 13: e12418.

RESEARCH USE

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