SANTA CRUZ BIOTECHNOLOGY, INC.

Mitofilin (B-10): sc-390706

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.

REFERENCES

1. Icho, T., et al. 1994. A novel human gene that is preferentially transcribed in heart muscle. Gene 144: 301-306.
2. Odgren, P.R., et al. 1996. Molecular characterization of Mitofilin (HMP), a mitochondria-associated protein with predicted coiled coil and intermembrane space targeting domains. J. Cell Sci. 109: 2253-2264.
3. Gieffers, C., et al. 1997. Mitofilin is a transmembrane protein of the inner mitochondrial membrane expressed as two isoforms. Exp. Cell Res. 232: 395-399.

CHROMOSOMAL LOCATION

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

SOURCE

Mitofilin (B-10) 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_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Mitofilin (B-10) 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) 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.

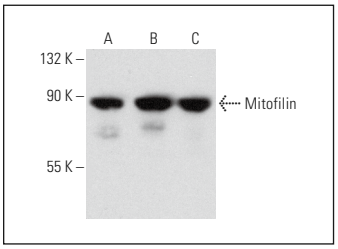
Molecular Weight of Mitofilin isoforms: 88/90 kDa.

Positive Controls: Raji whole cell lysate: sc-364236, Saos-2 cell lysate: sc-2235 or HeLa whole cell lysate: sc-2200.

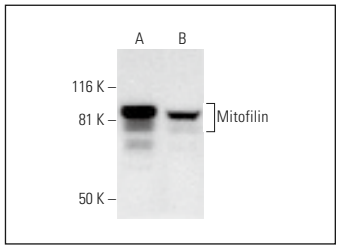
RECOMMENDED SUPPORT REAGENTS

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



Mitofilin (B-10): sc-390706. Western blot analysis of Mitofilin expression in HeLa (**A**), A-673 (**B**) and Saos-2 (**C**) whole cell lysates.



Mitofilin (B-10): sc-390706. Western blot analysis of Mitofilin expression in Raji (**A**) and HeLa (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Brittain, G.C. and Gulnik, S. 2017. A rapid method for quantifying cytoplasmic versus nuclear localization in endogenous peripheral blood leukocytes by conventional flow cytometry. Cytometry A 91: 351-363.
2. Liu, T., et al. 2020. CHCHD10-regulated OPA1-Mitofilin complex mediates TDP-43-induced mitochondrial phenotypes associated with frontotemporal dementia. FASEB J. 34: 8493-8509.
3. Esparza-Moltó, P.B., et al. 2021. Generation of mitochondrial reactive oxygen species is controlled by ATPase inhibitory factor 1 and regulates cognition. PLoS Biol. 19: e3001252.
4. Liu, T., et al. 2022. Modulation of synaptic plasticity, motor unit physiology, and TDP-43 pathology by CHCHD10. Acta Neuropathol. Commun. 10: 95.
5. Liu, T., et al. 2023. Disruption of mitophagy flux through the PARL-PINK1 pathway by CHCHD10 mutations or CHCHD10 depletion. Cells 12: 2781.

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.