SANTA CRUZ BIOTECHNOLOGY, INC.

Mfn2 (H-68): sc-50331

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Mitofusin 1 (Mfn1) and mitofusin 2 (Mfn2) are homologs for the *Drosophila* protein fuzzy onion (Fzo). They are mitochondrial membrane proteins and are mediators of mitochondrial fusion. A GTPase domain is required for Mfn protein function but the molecular mechanisms of the GTPase-dependent reaction as well as the functional division of the two Mfn proteins are unknown. They are essential for embryonic development and may play a role in the pathobiology of obesity. Although the Mfn1 and Mfn2 genes are broadly expressed, they show different levels of expression in different tissues. Two Mfn1 transcripts are elevated in heart, while Mfn2 mRNA is abundantly expressed in heart and muscle tissue but present only at low levels in many other tissues. Mfn1 localizes to mitochondria and participates in at least two different high molecular weight protein complexes in a GTP-dependent manner. Purified recombinant Mfn1 exhibited approximately eightfold higher GTPase activity than Mfn2.

CHROMOSOMAL LOCATION

Genetic locus: MFN2 (human) mapping to 1p36.22; Mfn2 (mouse) mapping to 4 E2.

SOURCE

Mfn2 (H-68) is a rabbit polyclonal antibody raised against amino acids 461-528 mapping within a cytoplasmic domain of Mfn2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Mfn2 (H-68) is recommended for detection of Mitofusin-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

Mfn2 (H-68) is also recommended for detection of Mitofusin 2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Mfn2 siRNA (h): sc-43928, Mfn2 siRNA (m): sc-60077, Mfn2 shRNA Plasmid (h): sc-43928-SH, Mfn2 shRNA Plasmid (m): sc-60077-SH, Mfn2 shRNA (h) Lentiviral Particles: sc-43928-V and Mfn2 shRNA (m) Lentiviral Particles: sc-60077-V.

Molecular Weight of Mfn2: 86 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-10 cell lysate: sc-3806 or Hep G2 cell lysate: sc-2227.

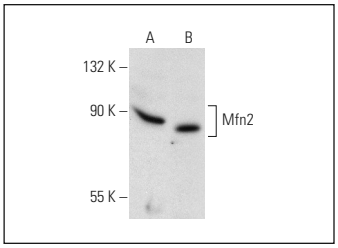
STORAGE

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.

DATA



Mfn2 (H-68): sc-50331. Western blot analysis of Mfn2 expression in A-10 (**A**) and Hep G2 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Cheng, Z., et al. 2009. Foxo1 integrates Insulin signaling with mitochondrial function in the liver. Nat. Med. 15: 1307-1311.
2. Khraiwesh, H., et al. 2014. Mitochondrial ultrastructure and markers of dynamics in hepatocytes from aged, calorie restricted mice fed with different dietary fats. Exp. Gerontol. 56: 77-88.
3. Sun, R., et al. 2014. Dietary supplementation with fish oil alters the expression levels of proteins governing mitochondrial dynamics and prevents high-fat diet-induced endothelial dysfunction. Br. J. Nutr. 112: 145-153.
4. Baldelli, S., et al. 2014. PGC-1α buffers ROS-mediated removal of mitochondria during myogenesis. Cell Death Dis. 5: e1515.
5. Wu, Z.S., et al. 2014. Role of mitofusin-2 in high mobility group box-1 protein-mediated apoptosis of T cells *in vitro*. Cell. Physiol. Biochem. 33: 769-783.
6. Wang, J., et al. 2015. Retinol binding protein 4 induces mitochondrial dysfunction and vascular oxidative damage. Atherosclerosis 240: 335-344.
7. Fan, S., et al. 2015. Mitochondrial fission determines cisplatin sensitivity in tongue squamous cell carcinoma through the BRCA1-miR-593-5p-MFF axis. Oncotarget 6: 14885-12904.
8. Suliman, H.B., et al. 2016. Heme oxygenase-1/carbon monoxide system and embryonic stem cell differentiation and maturation into cardiomyocytes. Antioxid. Redox Signal. 24: 345-360.
9. Morciano, G., et al. 2016. Mcl-1 involvement in mitochondrial dynamics is associated with apoptotic cell death. Mol. Biol. Cell 27: 20-34.