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Mfn1 (h2): 293T Lysate: sc-177545

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.

REFERENCES

1. Santel, A., et al. 2001. Control of mitochondrial morphology by a human mitofusin. *J. Cell Sci.* 114: 867-874.
2. Rojo, M., et al. 2002. Membrane topology and mitochondrial targeting of mitofusins, ubiquitous mammalian homologs of the transmembrane GTPase Fzo. *J. Cell Sci.* 115: 1663-1674.
3. Chen, H., et al. 2003. Mitofusins Mfn1 and Mfn2 coordinately regulate mitochondrial fusion and are essential for embryonic development. *J. Cell Biol.* 160: 189-200.
4. Bach, D., et al. 2003. Mitofusin-2 determines mitochondrial network architecture and mitochondrial metabolism. A novel regulatory mechanism altered in obesity. *J. Biol. Chem.* 278: 17190-17197.
5. Santel, A., et al. 2003. Mitofusin-1 protein is a generally expressed mediator of mitochondrial fusion in mammalian cells. *J. Cell Sci.* 116: 2763-2774.
6. Ishihara, N., et al. 2004. Mitofusin 1 and 2 play distinct roles in mitochondrial fusion reactions via GTPase activity. *J. Cell Sci.* 117: 6535-6546.

CHROMOSOMAL LOCATION

Genetic locus: MFN1 (human) mapping to 3q26.33.

PRODUCT

Mfn1 (h2): 293T Lysate represents a lysate of human Mfn1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Mfn1 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive Mfn1 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.