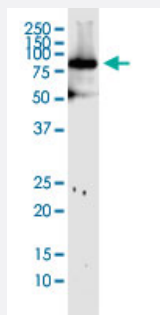


MFN1 monoclonal antibody (M04), clone 3C9

Catalog # H00055669-M04

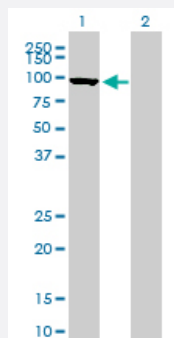
Size 100 ug

Applications



Western Blot (Cell lysate)

MFN1 monoclonal antibody (M04), clone 3C9. Western Blot analysis of MFN1 expression in HepG2.

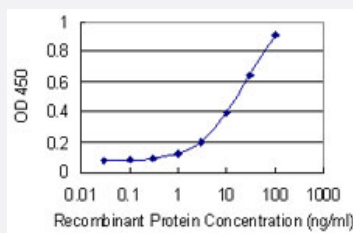


Western Blot (Transfected lysate)

Western Blot analysis of MFN1 expression in transfected 293T cell line by MFN1 monoclonal antibody (M04), clone 3C9.

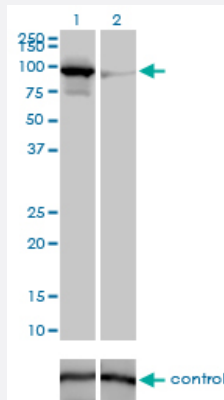
Lane 1: MFN1 transfected lysate(84.2 KDa).

Lane 2: Non-transfected lysate.



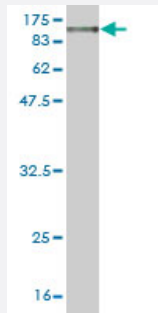
Sandwich ELISA (Recombinant protein)

Detection limit for recombinant GST tagged MFN1 is 0.3 ng/ml as a capture antibody.



RNAi Knockdown (Antibody validated)

Western blot analysis of MFN1 over-expressed 293 cell line, cotransfected with MFN1 Validated Chimera RNAi (Cat # H00055669-R01V) (Lane 2) or non-transfected control (Lane 1). Blot probed with MFN1 monoclonal antibody (M04), clone 3C9 (Cat # H00055669-M04). GAPDH (36.1 kDa) used as specificity and loading control.



Western Blot detection against Immunogen (107.25 KDa) .

Specification

Product Description	Mouse monoclonal antibody raised against a full length recombinant MFN1.
Immunogen	MFN1 (AAH40557, 1 a.a. ~ 741 a.a) full-length recombinant protein with GST tag. MW of the GST tag alone is 26 KDa.
Sequence	MAEPVSPLKHFVLAKKAITAIFDQLLEFVTEGSHFVEATYKNPELDRIATEDDLVEMQGYKDKLSIIG EVLSRRHMKVAFFGRTSSGKSSVINAMLWDKVLPSGIGHITNCFLSVEGTDGDKAYLMTEGSDEK KSVKTVNQLAHALHMDKDLKAGCLVRVFWPKAKCALLRDDLVLDSPGTDVTTTELDSWIDKFCL DADVFLVANSESTLMNTEKHFFHKVNERLSKPNIFILNNRWASASEPEYMEDVRRQHMERCCL HFLVEELKVVNALAEQNRIFVSAKEVLSARKQKAQGMPESGVALAEGFHARLQEFQNFQIFEE CISQSAVKTKFEQHTIRAKQILATVKNIMDSVNLAEDKRHYSVEEREDQIDRLDFIRNQMNLLTLDV KKKIKEVTEEVANKVSCAMTDEICRLSVLVDEFCEFHNPDPVLKIYKSELNKHIEDGMGRNLADR CTDEVNALVLQTQQEIIENLKPLLPAQIQDKLHTLIPCKKFDLSYNLNYHKLCSDFQEDMFRFSLGW SSLVHRFLGPRNAQRVLLGLSEPIFQLPRSLASTPTAPTTPATPDNASQEELMITLVTGLASVTSRT SMGIIIVGGVIWKTIGWKLLSVSLTMYGALYLYERLSWTTAKERAFKQQFVNYATEKLRMVSSTSA NCSHQVKQQAITTFARLCQQVDITQKQLEEEIARLPKEIDQLEKIQNSKLLRNKAVQLENELENFT KQFLPSSNEES
Host	Mouse
Reactivity	Human
Interspecies Antigen Sequence	Mouse (91); Rat (91)

Specificity	This antibody may cross react with MFN2 protein.
Isotype	IgG2a Kappa
Quality Control Testing	Antibody Reactive Against Recombinant Protein. Western Blot detection against Immunogen (107.25 KDa) .
Storage Buffer	In 1x PBS, pH 7.4
Storage Instruction	Store at -20°C or lower. Aliquot to avoid repeated freezing and thawing.

Applications

- Western Blot (Cell lysate)

MFN1 monoclonal antibody (M04), clone 3C9. Western Blot analysis of MFN1 expression in HepG2.

[Protocol Download](#)

- Western Blot (Transfected lysate)

Western Blot analysis of MFN1 expression in transfected 293T cell line by MFN1 monoclonal antibody (M04), clone 3C9.

Lane 1: MFN1 transfected lysate(84.2 KDa).

Lane 2: Non-transfected lysate.

[Protocol Download](#)

- Western Blot (Recombinant protein)

[Protocol Download](#)

- Sandwich ELISA (Recombinant protein)

Detection limit for recombinant GST tagged MFN1 is 0.3 ng/ml as a capture antibody.

[Protocol Download](#)

- ELISA

- RNAi Knockdown (Antibody validated)

Western blot analysis of MFN1 over-expressed 293 cell line, cotransfected with MFN1 Validated Chimera RNAi (Cat # H00055669-R01V) (Lane 2) or non-transfected control (Lane 1). Blot probed with MFN1 monoclonal antibody (M04), clone 3C9 (Cat # H00055669-M04). GAPDH (36.1 kDa) used as specificity and loading control.

[Protocol Download](#)

Gene Info — MFN1

Entrez GeneID [55669](#)

GeneBank Accession# [BC040557](#)

Protein Accession# [AAH40557](#)

Gene Name MFN1

Gene Alias DKFZp762F247, FLJ20693, MGC41806, hfzo1, hfzo2

Gene Description mitofusin 1

Omim ID [608506](#)

Gene Ontology [Hyperlink](#)

Gene Summary The protein encoded by this gene is a mediator of mitochondrial fusion. This protein and mitofusin 2 are homologs of the Drosophila protein fuzzy onion (Fzo). They are mitochondrial membrane proteins that interact with each other to facilitate mitochondrial targeting. [provided by RefSeq]

Other Designations mitochondrial transmembrane GTPase FZO-2|mitochondrial transmembrane GTPase Fzo-1|putative transmembrane GTPase

Publication Reference

- [E4 ubiquitin ligase promotes mitofusin turnover and mitochondrial stress response.](#)

Vincent Anto, Ira Buntenbroich, Tânia Simões, Mariana Joaquim, Leonie Müller, Reinhard Buettner, Margarete Odenthal, Thorsten Hoppe, Mafalda Escobar-Henriques.

Molecular Cell 2023 Aug; 83(16):2976.

Application: WB, Human, HEK293 cells

- [Dietary nitrate preserves mitochondrial bioenergetics and mitochondrial protein synthesis rates during short-term immobilization in mice.](#)

Heather L Petrick, Rachel M Handy, Bayley Vachon, Sara M Frangos, Andrew M Holwerda, Annemarie P Gijzen, Joan M Senden, Luc J C van Loon, Graham P Holloway.

The Journal of Physiology 2023 Jun; [Epub]:0.

Application: WB-Ti, Mouse, Mouse gastrocnemius

- [Small molecule agonist of mitochondrial fusion repairs mitochondrial dysfunction.](#)

Yingjie Guo, Huan Zhang, Chen Yan, Birong Shen, Yue Zhang, Xiangyang Guo, Sha Sun, Fan Yu, Jiayun Yan, Ronghe Liu, Qianping Zhang, Di Zhang, Haiyang Liu, Yang Liu, Yaoyao Zhang, Wenlei Li, Jiangyu Qin, He Lv, Zhaoxia Wang, Yun Yuan, Jie-Feng Yang, Ya-Ting Zhong, Song Gao, Bing Zhou, Lei Liu, Deling Kong, Xiaojiang Hao, Junjie Hu, Quan Chen.

Nature Chemical Biology 2023 Apr; 19(4):468.

Application: WB-Ce, Human, Human induced pluripotent stem cells

- [Temporal Analysis of Protein Ubiquitylation and Phosphorylation During Parkin-Dependent Mitophagy.](#)

Katharina I Zittlau, Anna Lechado-Terradas, Nicolas Nalpas, Sven Geisler, Philipp J Kahle, Boris Macek.

Molecular & Cellular proteomics: MCP 2022 Feb; 21(1):100191.

Application: WB-Ce, Human, HeLa cells

- [Small-molecule suppression of calpastatin degradation reduces neuropathology in models of Huntington's disease.](#)

Di Hu, Xiaoyan Sun, Anniefer Magpusao, Yuriy Fedorov, Matthew Thompson, Benlian Wang, Kathleen Lundberg, Drew J Adams, Xin Qi.

Nature Communications 2021 Sep; 12(1):5305.

Application: WB-Ce, Mouse, HdhQ7, HdhQ111 cells

- [VDAC1 as a target in cisplatin anti-tumor activity through promoting mitochondria fusion.](#)

Lei Luo, Yanyan Xiong, Nan Jiang, Xueqin Zhu, Yurun Wang, Yuan Lv, Ying Xie.

Biochemical and Biophysical Research Communications 2021 Jun; 560:52.

Application: WB-Ce, Human, HeLa cells

- [Homeostatic p62 levels and inclusion body formation in CHCHD2 knockout mice.](#)

Shigeto Sato, Sachiko Noda, Satoru Torii, Taku Amo, Aya Ikeda, Manabu Funayama, Junji Yamaguchi, Takahiro Fukuda, Hiromi Kondo, Norihiro Tada, Satoko Arakawa, Masahiko Watanabe, Yasuo Uchiyama, Shigeomi Shimizu, Nobutaka Hattori.

Human Molecular Genetics 2021 Apr; 30(6):443.

Application: WB-Ti, Mouse, Mouse brain

- [Coenzyme Q biosynthesis inhibition induces HIF-1 \$\alpha\$ stabilization and metabolic switch toward glycolysis.](#)

Irene Liparulo, Christian Bergamini, Marco Bortolus, Natalia Calonghi, Giuseppe Gasparre, Ivana Kurelac, Luca Masin, Nicola Rizzardi, Michela Rugolo, Wenping Wang, Serena J Aleo, Alisar Kiwan, Cristian Torri, Claudia Zanna, Romana Fato.

The FEBS Journal 2021 Mar; 288(6):1956.

Application: WB-Ce, Human, T67 cells

- [Parkin-mediated ubiquitylation redistributes MITOL/March5 from mitochondria to peroxisomes.](#)

Koyano F, Yamano K, Kosako H, Kimura Y, Kimura M, Fujiki Y, Tanaka K, Matsuda N.

EMBO reports 2019 Dec; 20(12):e47728.

Application: ICC, IF, Human, HeLa cells

- [Altered Mitochondrial Network Morphology and Regulatory Proteins in Mitochondrial Quality Control in Myotubes from Severely Obese Humans With or Without Type 2 Diabetes.](#)

Gundersen AE, Kugler BA, McDonald PM, Veraksa A, Houmard JA, Zou K.

Applied Physiology, Nutrition, and Metabolism 2019 Jul; [Epub].

Application: WB-Ce, Human, Human myotubes

- [ATAD3A oligomerization causes neurodegeneration by coupling mitochondrial fragmentation and bioenergetics defects.](#)

Zhao Y, Sun X, Hu D, Prosdocimo DA, Hoppel C, Jain MK, Ramachandran R, Qi X.

Nature Communications 2019 Mar; 10(1):1371.

Application: WB, Mouse, HdhQ7, HdhQ111 cells

- [Inhibiting neddylation modification alters mitochondrial morphology and reprograms energy metabolism in cancer cells.](#)

Zhou Q, Li H, Li Y, Tan M, Fan S, Cao C, Meng F, Zhu L, Zhao L, Guan MX, Jin H, Sun Y.

JCI Insight 2019 Feb; 4(4):121582.

Application: WB, Human, MDA-MB-231 cells

- [A selective inhibitor of mitofusin 1-βIIIPKC association improves heart failure outcome in rats.](#)

Ferreira JCB, Campos JC, Qvit N, Qi X, Bozi LHM, Bechara LRG, Lima VM, Queliconi BB, Disatnik MH, Dourado PMM, Kowaltowski AJ, Mochly-Rosen D.

Nature Communications 2019 Jan; 10(1):329.

Application: WB, Rat, Rat cardiomyocytes

- [Acquired expression of mutant Mitofusin 2 causes progressive neurodegeneration and abnormal behavior.](#)

Ishikawa K, Yamamoto S, Hattori S, Nishimura N, Mito T, Matsumoto H, Miyakawa T, Nakada K.

Journal of Neuroscience 2019 Feb; 39(9):1588.

Application: WB-Ti, Mouse, Mouse brains

- [microRNA-668 represses MTP18 to preserve mitochondrial dynamics in ischemic acute kidney injury.](#)

Wei Q, Sun H, Song S, Liu Y, Liu P, Livingston MJ, Wang J, Liang M, Mi QS, Huo Y, Nahman NS, Mei C, Dong Z.

The Journal of Clinical Investigation 2018 Dec; 128(12):5448.

Application: WB, Rat, Rat proximal tubular cells

- [NDP52 interacts with mitochondrial RNA poly\(A\) polymerase to promote mitophagy.](#)

Furuya N, Kakuta S, Sumiyoshi K, Ando M, Nonaka R, Suzuki A, Kazuno S, Saiki S, Hattori N.

EMBO reports 2018 Oct; e46363.

Application: WB-Tr, Human, HeLa cells

- [Deciphering OPA1 mutations pathogenicity by combined analysis of human, mouse and yeast cell models.](#)

Del Dotto V, Fogazza M, Musiani F, Maresca A, Aleo SJ, Caporali L, La Morgia C, Nolli C, Lodi T, Goffrini P, Chan D, Carelli V, Rugolo M, Baruffini E, Zanna C.

Biochimica et Biophysica Acta. Molecular Basis of Disease 2018 Oct; 1864(10):3496.

Application: WB-Tr, Human, Mouse, Fibroblasts, MEFs

- [Acylglycerol Kinase Mutated in Sengers Syndrome Is a Subunit of the TIM22 Protein Translocase in Mitochondria.](#)

Vukotic M, Nolte H, König T, Saita S, Ananjew M, Krüger M, Tatsuta T, Langer T.

Molecular Cell 2017 Jul; 67(3):471.

Application: WB-Ce, Human, HEK 293 cells

- [Sirtuin 5 protects mitochondria from fragmentation and degradation during starvation.](#)

Guedouari H, Daigle T, Scorrano L, Hebert-Chatelain E.

Biochimica et Biophysica Acta 2016 Nov; 1864(1):169.

Application: WB, Mouse, MEF cells

- [Mitophagy receptor FUNDC1 regulates mitochondrial dynamics and mitophagy.](#)

Chen M, Chen Z, Wang Y, Tan Z, Zhu C, Li Y, Han Z, Chen L, Gao R, Liu L, Chen Q.

Autophagy 2016 Apr; 12(4):689.

Application: WB-Ce, Human, HeLa cells

- [Lysine 63-linked Polyubiquitination Is Dispensable for Parkin-mediated Mitophagy.](#)

Shiba-Fukushima K, Inoshita T, Hattori N, Imai Y.

The Journal of Biological Chemistry 2014 Nov; 289(48):33131.

Application: WB, Mouse, MEFs

- [Phosphatidic Acid \(PA\)-Preferring Phospholipase A1 Regulates Mitochondrial Dynamics.](#)

Baba T, Kashiwagi Y, Arimitsu N, Kogure T, Edo A, Maruyama T, Nakao K, Nakanishi H, Kinoshita M, Frohman MA, Yamamoto A, Tani K.

The Journal of Biological Chemistry 2014 Apr; 289(16):11497.

Application: IF, Human, HeLa cells

- [A small natural molecule promotes mitochondrial fusion through inhibition of the deubiquitinase USP30.](#)

Yue W, Chen Z, Liu H, Yan C, Chen M, Feng D, Yan C, Wu H, Du L, Wang Y, Liu J, Huang X, Xia L, Liu L, Wang X, Jin H, Wang J, Song Z, Hao X, Chen Q.

Cell Research 2014 Apr; 24(4):482.

Application: IP, WB, Mouse, MEF cells

- [Extramitochondrial OPA1 and adrenocortical function.](#)

Fulop L, Rajki A, Katona D, Szanda G, Spat A.

Molecular and Cellular Endocrinology 2013 Dec; 381(1-2):70.

Application: WB-Tr, Human, H259R cells

- [Dynamics of nucleoid structure regulated by mitochondrial fission contributes to cristae reformation and release of cytochrome c.](#)

Ban-Ishihara R, Ishihara T, Sasaki N, Mihara K, Ishihara N.

PNAS 2013 Jul; 110(29):11863.

Application: WB-Tr, Human, HeLa cells

- [Regulation of miRNAs in human skeletal muscle following acute endurance exercise and short term endurance training.](#)

Russell AP, Lamon S, Boon H, Wada S, Guller I, Brown EL, Chibalin AV, Zierath J, Snow RJ, Stepto NK, Wadley GD, Akimoto T.

The Journal of Physiology 2013 Sep; 591(18):4637.

Application: WB-Ti, Human, Skeletal muscle

- [Atad3 Function Is Essential for Early Post-Implantation Development in the Mouse.](#)

Goller T, Seibold UK, Kremmer E, Voos W, Kolanus W.

PLoS One 2013 Jan; 8(1):e54799.

Application: WB, IF, Human, HeLa

- [TRAP1 Controls Mitochondrial Fusion/Fission Balance through Drp1 and Mff Expression.](#)

Takamura H, Koyama Y, Matsuzaki S, Yamada K, Hattori T, Miyata S, Takemoto K, Tohyama M, Katayama T.

PLoS One 2012 Dec; 7(12):e51912.

Application: WB, Human, SH-SY5Y neuroblastoma cells, KNS-42 glioma cells

- [PINK1-mediated phosphorylation of the Parkin ubiquitin-like domain primes mitochondrial translocation of Parkin and regulates mitophagy.](#)

Shiba-Fukushima K, Imai Y, Yoshida S, Ishihama Y, Kanao T, Sato S, Hattori N.

Scientific Reports 2012 Dec; 2:1002.

Application: WB, Mouse, MEF

- [Suppressor of cytokine signaling 6 \(SOCS6\) promotes mitochondrial fission via regulating DRP1 translocation.](#)

Lin HY, Lai RH, Lin ST, Lin RC, Wang MJ, Lin CC, Lee HC, Wang FF, Chen JY.

Cell Death and Differentiation 2012 Sep; 20(1):139.

Application: WB-Tr, Human, HeLa

- [Rab32 modulates apoptosis onset and mitochondria-associated membrane \(MAM\) properties.](#)

Bui M, Gilady SY, Fitzsimmons RE, Benson MD, Lynes EM, Gesson K, Alto NM, Strack S, Scott JD, Simmen T.

The Journal of Biological Chemistry 2010 Oct; 285(41):31590.

Application: WB-Tr, Human, HeLa cells

- [PGC1{alpha} relationship with skeletal muscle palmitate oxidation is not present with obesity, despite maintained ained PGC1{alpha} and PGC1{beta} protein.](#)

Holloway GP, Perry CG, Thrush AB, Heigenhauser GJ, Dyck DJ, Bonen A, Spriet LL.

American Journal of Physiology. Endocrinology and Metabolism 2008 Mar; 294(6):E1060.

Application: WB, Human, Human skeletal muscle

- [OPA1 mutations associated with dominant optic atrophy impair oxidative phosphorylation and mitochondrial fusion.](#)

Zanna C, Ghelli A, Porcelli AM, Karbowski M, Youle RJ, Schimpf S, Wissinger B, Pinti M, Cossarizza A, Vidoni S, Valentino ML, Rugolo M, Carelli V.

Brain 2008 Feb; 131(Pt 2):352.

Application: WB, Human, Fibroblasts from patients with Dominant optic atrophy (DOA)

Disease

- [Genetic Predisposition to Disease](#)
- [Glaucoma](#)