

# MFF (B-2): sc-398617

## BACKGROUND

MFF (mitochondrial fission factor), also known as GL004, AD030 or AD033, is a 342 amino acid single-pass type IV membrane protein of the mitochondrial outer membrane that belongs to the tango11 family. Involved in mitochondrial and peroxisomal fission, MFF is abundantly expressed in stomach, heart, muscle, liver, brain and kidney. MFF exists as five alternatively spliced isoforms that are encoded by a gene that maps to human chromosome 2q36.3. As the second largest human chromosome, chromosome 2 consists of 237 million bases, encodes over 1,400 genes and makes up approximately 8% of the human genome. A number of genetic diseases are linked to genes on chromosome 2. Harlequin ichthyosis, a rare and morbid skin deformity, is associated with mutations in the ABCA12 gene. The lipid metabolic disorder sitosterolemia is associated with ABCG5 and ABCG8. An extremely rare recessive genetic disorder, Alström syndrome, is due to mutations in the ALMS1 gene.

## CHROMOSOMAL LOCATION

Genetic locus: MFF (human) mapping to 2q36.3; Mff (mouse) mapping to 1 C5.

## SOURCE

MFF (B-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 91-117 within a cytoplasmic domain of MFF of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>3</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398617 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

MFF (B-2) is recommended for detection of MFF 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 MFF siRNA (h): sc-94736, MFF siRNA (m): sc-149404, MFF shRNA Plasmid (h): sc-94736-SH, MFF shRNA Plasmid (m): sc-149404-SH, MFF shRNA (h) Lentiviral Particles: sc-94736-V and MFF shRNA (m) Lentiviral Particles: sc-149404-V.

Molecular Weight of MFF isoforms: 38/33/28/25/27 kDa.

Positive Controls: MFF (m): 293T Lysate: sc-121620, HeLa whole cell lysate: sc-2200 or mouse brain extract: sc-2253.

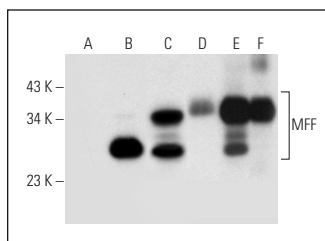
## STORAGE

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

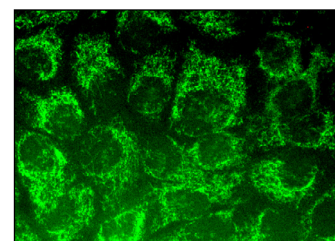
## RESEARCH USE

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

## DATA



MFF (B-2): sc-398617. Western blot analysis of MFF expression in non-transfected 293T: sc-117752 (A), mouse MFF transfected 293T: sc-121620 (B) and HeLa (C) whole cell lysates and human brain (D), mouse brain (E) and rat brain (F) tissue extracts.



MFF (B-2): sc-398617. Immunofluorescence staining of formalin-fixed A-431 cells showing mitochondrial localization.

## SELECT PRODUCT CITATIONS

- Wang, Q., et al. 2017. Deletion of PRKAA triggers mitochondrial fission by inhibiting the autophagy-dependent degradation of DNM1L. *Autophagy* 13: 404-422.
- Tang, Q., et al. 2018. Dynamin-related protein 1-mediated mitochondrial fission contributes to IR-783-induced apoptosis in human breast cancer cells. *J. Cell. Mol. Med.* 22: 4474-4485.
- Li, P., et al. 2019. IR-783 inhibits breast cancer cell proliferation and migration by inducing mitochondrial fission. *Int. J. Oncol.* 55: 415-424.
- Hu, J., et al. 2020. ROCK1 activation-mediated mitochondrial translocation of Drp1 and Cofilin are required for arnidol-induced mitochondrial fission and apoptosis. *J. Exp. Clin. Cancer Res.* 39: 37.
- Aksu-Menges, E., et al. 2021. Reduced mitochondrial fission and impaired energy metabolism in human primary skeletal muscle cells of Megaconial Congenital Muscular Dystrophy. *Sci. Rep.* 11: 18161.
- Hsu, C.C., et al. 2021. Inositol serves as a natural inhibitor of mitochondrial fission by directly targeting AMPK. *Mol. Cell* 81: 3803-3819.e7.
- Peng, G., et al. 2021. Intranasal administration of DHED protects against exhaustive exercise-induced brain injury in rats. *Brain Res.* 1772: 147665.
- Shen, L.W., et al. 2022. Cepharanthine sensitizes human triple negative breast cancer cells to chemotherapeutic agent epirubicin via inducing cofilin oxidation-mediated mitochondrial fission and apoptosis. *Acta Pharmacol. Sin.* 43: 177-193.
- Goldsmith, J., et al. 2022. Brain-derived autophagosome profiling reveals the engulfment of nucleoid-enriched mitochondrial fragments by basal autophagy in neurons. *Neuron* 110: 967-976.e8.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.