

Product Information

Anti-Mitofilin antibody, Mouse monoclonal

Clone BNP-28, purified from hybridoma cell culture

Product Number **SAB4200856** REH **FRO97415**

Product Description

Monoclonal Anti-Mitofilin antibody (mouse IgG2a isotype) is derived from the BNP-28 hybridoma, produced by the fusion of mouse myeloma cells and splenocytes from a mouse immunized with synthetic peptide corresponding to the internal region of human Mitofilin (GeneID: 10989), conjugated to KLH as immunogen. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents (Sigma ISO-2). The antibody is purified from culture supernatant of hybridoma cells.

Monoclonal Anti-Mitofilin antibody specifically recognizes human and hamster Mitofilin. The antibody may be used in various immunochemical techniques including Immunoblotting (~85 kDa) and Immunofluorescence. Detection of the Mitofilin band by Immunoblotting is specifically inhibited by the immunogen.

Mitochondria are essential organelles whose function is critical to homeostasis, energy generation, and cell fate. Their dysfunction leads to various human diseases. Mitochondria membrane is composed of the outer membrane (OMM) and the inner membrane (IMM) where the electron transport chain machinery takes place and the cristae folds of the mitochondria are formed.¹ Mitofilin, a transmembrane IMM protein, is a critical core component of the mitochondrial contact site and cristae organizing system (MICOS). It is also known as Mic60, heart muscle protein (HMP), mitochondrial inner membrane protein, IMMT, Aim28, MINOS2, Fmp13, or Fcj1 (in yeast).¹

Mitofilin has an N-terminal mitochondrial targeting sequence followed by a transmembrane region and a large domain exposed to the intermembrane space. The intermembrane space domain is composed of at least two subdomains: an extended putative coiled-coil region and a short C-terminal mitofilin signature domain.² Mitofilin is expressed preferentially in the heart³ but also in the brain⁴, liver⁵, kidneys⁶ and eyes⁷. It is abundantly found at mitochondrial cristae junctions and is also present within cristae.^{8,9}

Mitofilin has critical roles in cristae organization, MICOS formation, ATP generation, protein transport, mitochondrial DNA transcription and apoptosis.¹

Mitofilin downregulation or misexpression has been associated with various human diseases such as, diabetes, Parkinson's and Alzheimer's diseases, heart failure, hepatic carcinoma, gastric cancer and Glaucoma.¹

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8°C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 2-4 µg/mL is recommended using whole extracts of human liver cancer cell line HePG2.

Immunofluorescence: a working concentration of 5-10 µg/mL is recommended using human liver cancer cell line HePG2.

Note: In order to obtain best results in different techniques and preparations it is recommended to determine optimal working concentration by titration test.

Product Information

References

1. Feng Y., et al., *J Cell Physiol.*, **234**, 3383-93 (2019).
2. Zerbes R. M., et al., *Biol Chem.*, **393**, 1247-61 (2012).
3. Baseler W. A., et al., *Am J Physiol Regul Integr Comp Physiol.*, **300**, 186-200 (2011).
4. Yang X., et al., *Biophys Rep.*, **4**, 104–113 (2018).
5. Guo Y., et al., *Mol Cell Proteomics.*, **12**, 3744-58 (2013).
6. Yang R. F., et al., *Sci Rep.*, **5**, 7990 (2015).
7. Nordgaard CL., et al., *Invest Ophthalmol Vis Sci.*, **49**, 2848-55 (2008).
8. Sastri M., et al., *J Cell Sci.*, **130**, 3248-60 (2017).
9. Jans D. C., et al., *PNAS.*, **110**, 8936–41 (2013).

VS,DR_AGA 07/20-1