SANTA CRUZ BIOTECHNOLOGY, INC.

MIB1 (D-6): sc-393551

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The LIN-12/Notch family of transmembrane receptors is believed to play a central role in development by regulating cell fate decisions. MIB1 (E3 ubiquitin-protein ligase MIB1), also known as Mind bomb homolog 1 and DAPK-interacting protein 1, is a 1,006 amino acid E3 ubiquitin ligase that activates the Notch ligand, Delta. MIB1 ubiquinates Delta by binding to its intracellular domain, leading to the endocytosis and eventual degradation of the Delta receptor, which, paradoxically, results in the up-regulation of receptor activity and enhances Notch signaling. MIB1 also interacts with DAPK, a protein that plays an important role in the regulation of apoptosis. Ubiquination of DAPK leads to inhibition of caspase-dependent apoptosis, therefore it is likely that overexpression of MIB1 can lead to tumor growth. Although it seems to be widely expressed at low levels, MIB1 is expressed at highest concentrations in the CNS and ovary. Both DAPK and MIB1 are overexpressed in epileptic brain tissue, suggesting that they probably cooperate as regulators of neuronal death in epilepsy.

REFERENCES

1. Jin, Y., et al. 2002. A death-associated protein kinase (DAPK)-interacting protein, DIP-1, is an E3 ubiquitin ligase that promotes tumor necrosis factor-induced apoptosis and regulates the cellular levels of DAPK. J. Biol. Chem. 277: 46980-46986.
2. Le Borgne, R. and Schweisguth, F. 2003. Notch signaling: endocytosis makes δ signal better. Curr. Biol. 13: R273-R275.
3. Itoh, M., et al. 2003. Mind bomb is a ubiquitin ligase that is essential for efficient activation of Notch signaling by Delta. Dev. Cell 4: 67-82.

CHROMOSOMAL LOCATION

Genetic locus: MIB1 (human) mapping to 18q11.2; Mib1 (mouse) mapping to 18 A1.

SOURCE

MIB1 (D-6) is a mouse monoclonal antibody raised against amino acids 356-566 mapping within an internal region of MIB1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MIB1 (D-6) is available conjugated to agarose (sc-393551 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393551 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393551 PE), fluorescein (sc-393551 FITC), Alexa Fluor® 488 (sc-393551 AF488), Alexa Fluor® 546 (sc-393551 AF546), Alexa Fluor® 594 (sc-393551 AF594) or Alexa Fluor® 647 (sc-393551 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393551 AF680) or Alexa Fluor® 790 (sc-393551 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

MIB1 (D-6) is recommended for detection of MIB1 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).

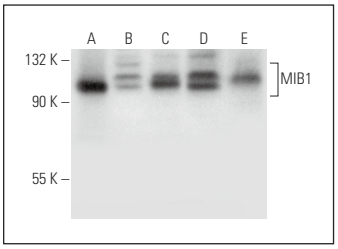
MIB1 (D-6) is also recommended for detection of MIB1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for MIB1 siRNA (h): sc-75781, MIB1 siRNA (m): sc-149419, MIB1 shRNA Plasmid (h): sc-75781-SH, MIB1 shRNA Plasmid (m): sc-149419-SH, MIB1 shRNA (h) Lentiviral Particles: sc-75781-V and MIB1 shRNA (m) Lentiviral Particles: sc-149419-V.

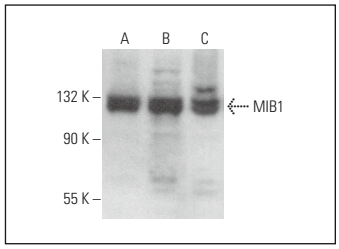
Molecular Weight of MIB1: 110 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, F9 cell lysate: sc-2245 or HeLa whole cell lysate: sc-2200.

DATA



MIB1 (D-6): sc-393551. Western blot analysis of MIB1 expression in NIH/3T3 (**A**), F9 (**B**), HeLa (**C**), K-562 (**D**) and Caco-2 (**E**) whole cell lysates.



MIB1 (D-6): sc-393551. Western blot analysis of MIB1 expression in WI-38 (**A**), JAR (**B**) and Neuro-2A (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Campos, R.K., et al. 2020. Ribosomal stalk proteins RPLP1 and RPLP2 promote biogenesis of flaviviral and cellular multi-pass transmembrane proteins. Nucleic Acids Res. 48: 9872-9885.
2. Seo, J.Y., et al. 2021. Maintenance of type 2 glycolytic myofibers with age by MIB1-Actn3 axis. Nat. Commun. 12: 1294.
3. Zhang, B., et al. 2021. MIB1 upregulates IQGAP1 and promotes pancreatic cancer progression by inducing ST7 degradation. Mol. Oncol. 15: 3062-3075.
4. Xu, G., et al. 2023. CEMIP, acting as a scaffold protein for bridging GRAF1 and MIB1, promotes colorectal cancer metastasis via activating CDC42/MAPK pathway. Cell Death Dis. 14: 167.
5. Park, J., et al. 2023. INHAT subunit SET/TAF-Iβ regulates PRC1-independent H2AK119 mono-ubiquitination via E3 ligase MIB1 in colon cancer. NAR Cancer 5: zcad050.

STORAGE

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