SANTA CRUZ BIOTECHNOLOGY, INC.

MBNL2 (3B4): sc-136167

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Pre-mRNA splicing is a critical step in the post-transcriptional regulation of gene expression. Several protein complexes are involved in proper mRNA splicing and transport. The muscleblind proteins, MBNL1, MBNL2 and MBNL3, promote inclusion or exclusion of specific exons on different pre-mRNAs by antagonizing the activity of CUG-BP and ETR-3-like factors bound to distinct intronic sites. MBNL1 and MBNL2, associate with expanded CUG repeats *in vitro* and localize to the nuclear foci in both DM1 and DM2 (myotonic dystrophy types 1 and 2), suggesting that the nuclear accumulation of mutant RNA is pathogenic in DM1, therefore implicating muscleblind proteins MBNL1 and MBNL2 in the pathogenesis of both disorders. MBNL2, a 367 amino acid protein, participates in recruitment of Intergrin α3 to focal adhesions in a RNA-dependent protein localization mechanism.

CHROMOSOMAL LOCATION

Genetic locus: MBNL2 (human) mapping to 13q32.1; Mbnl2 (mouse) mapping to 14 E4.

SOURCE

MBNL2 (3B4) is a mouse monoclonal antibody raised against recombinant MBNL2 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.

MBNL2 (3B4) is available conjugated to agarose (sc-136167 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-136167 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-136167 PE), fluorescein (sc-136167 FITC), Alexa Fluor® 488 (sc-136167 AF488), Alexa Fluor® 546 (sc-136167 AF546), Alexa Fluor® 594 (sc-136167 AF594) or Alexa Fluor® 647 (sc-136167 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-136167 AF680) or Alexa Fluor® 790 (sc-136167 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MBNL2 (3B4) is recommended for detection of MBNL2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for MBNL2 siRNA (h): sc-60990, MBNL2 siRNA (m): sc-60991, MBNL2 shRNA Plasmid (h): sc-60990-SH, MBNL2 shRNA Plasmid (m): sc-60991-SH, MBNL2 shRNA (h) Lentiviral Particles: sc-60990-V and MBNL2 shRNA (m) Lentiviral Particles: sc-60991-V.

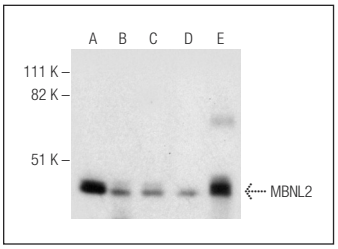
Molecular Weight of MBNL2: 41 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, Caki-1 cell lysate: sc-2224 or HeLa whole cell lysate: sc-2200.

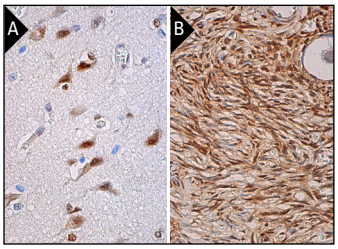
STORAGE

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

DATA



MBNL2 (3B4): sc-136167. Western blot analysis of MBNL2 expression in Caki-1 (**A**), SK-N-SH (**B**), HeLa (**C**) and U-87 MG (**D**) whole cell lysates and mouse brain tissue extract (**E**).



MBNL2 (3B4): sc-136167. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing nuclear staining of neuronal cells and subset of glial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing nuclear and cytoplasmic staining of ovarian stroma cells (**B**).

SELECT PRODUCT CITATIONS

1. Lee, K.Y., et al. 2013. Compound loss of muscleblind-like function in myotonic dystrophy. EMBO Mol. Med. 5: 1887-1900.
2. Goodwin, M., et al. 2015. MBNL sequestration by toxic RNAs and RNA misprocessing in the myotonic dystrophy brain. Cell Rep. 12: 1159-1168.
3. Blech-Hermoni, Y., et al. 2016. Identification of targets of CUG-BP, Elav-like family member 1 (CELF1) regulation in embryonic heart muscle. PLoS ONE 11: e0149061.
4. Brinegar, A.E., et al. 2017. Extensive alternative splicing transitions during postnatal skeletal muscle development are required for calcium handling functions. Elife 6 pii: e27192.
5. Zappulo, A., et al. 2017. RNA localization is a key determinant of neurite-enriched proteome. Nat. Commun. 8: 583.
6. Furuta, M., et al. 2018. Macroscopic and microscopic diversity of missplicing in the central nervous system of patients with myotonic dystrophy type 1. Neuroreport 29: 235-240.
7. Wu, D.R., et al. 2018. Opposing roles of miR-294 and MBNL1/2 in shaping the gene regulatory network of embryonic stem cells. EMBO Rep. 19 pii: e45657.
8. Li, J., et al. 2018. An alternative splicing switch in FLNB promotes the mesenchymal cell state in human breast cancer. Elife 7 pii: e37184.
9. Wang, Y., et al. 2019. Abnormal nuclear aggregation and myotube degeneration in myotonic dystrophy type 1. Neurol. Sci. 40: 1255-1265.
10. Idris, M., et al. 2019. The MBNL/CELF splicing factors regulate cytosolic sulfotransferase 4A1 protein expression during cell differentiation. Drug Metab. Dispos. 47: 314-319.

RESEARCH USE

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