SANTA CRUZ BIOTECHNOLOGY, INC.

NF-M (1A2): sc-20013

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Neurofilament-M (NF-M), for neurofilament medium polypeptide, a member of the intermediate filament family, is a major component of neuronal cytoskeletons. Neurofilaments are dynamic structures; they contain phosphorylation sites for a large number of protein kinases, including protein kinase A, protein kinase C, cyclin-dependent kinase 5, extracellular signal regulated kinase, glycogen synthase kinase-3, and stress-activated protein kinase γ. In addition to their role in the control of axon caliber, neurofilaments may affect other cytoskeletal elements, such as microtubules and Actin filaments. Changes in neurofilament phosphorylation or metabolism are frequently observed in neurodegenerative diseases, including amyotrophic lateral sclerosis (ALS), Parkinson's disease, and Alzheimer's disease.

REFERENCES

1. Levy, E., et al. 1987. Structure and evolutionary origin of the gene encoding NF-M, the middle-molecular-mass neurofilament protein. Eur. J. Biochem. 166: 71-77.
2. Angelides, K.J., et al. 1989. Assembly and exchange of intermediate filament proteins of neurons: neurofilaments are dynamic structures. J. Cell Biol. 108: 1495-1506.

CHROMOSOMAL LOCATION

Genetic locus: NEFM (human) mapping to 8p21.2; Nefm (mouse) mapping to 14 D1.

SOURCE

NF-M (1A2) is a mouse monoclonal antibody raised against neurofilament purified from human brain.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

NF-M (1A2) is recommended for detection of NF-M 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NF-M siRNA (h): sc-36050, NF-M siRNA (m): sc-36051, NF-M shRNA Plasmid (h): sc-36050-SH, NF-M shRNA Plasmid (m): sc-36051-SH, NF-M shRNA (h) Lentiviral Particles: sc-36050-V and NF-M shRNA (m) Lentiviral Particles: sc-36051-V.

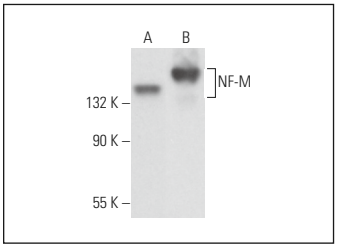
Molecular Weight of NF-M: 160 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

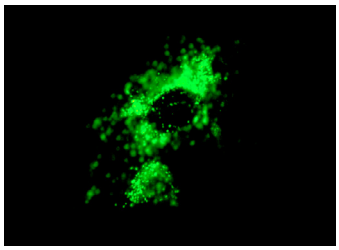
STORAGE

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

DATA



NF-M (1A2): sc-20013. Western blot analysis of NF-M expression in mouse brain (**A**) and rat brain (**B**) tissue extracts.



NF-M (1A2): sc-20013. Immunofluorescence staining of methanol-fixed SH-SY5Y cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Businaro, R., et al. 2006. S100B protects LAN-5 neuroblastoma cells against Aβ amyloid-induced neurotoxicity via RAGE engagement at low doses but increases Aβ amyloid neurotoxicity at high doses. J. Neurosci. Res. 83: 897-906.
2. Hahn, C.K., et al. 2008. Expression-based screening identifies the combination of histone deacetylase inhibitors and retinoids for neuroblastoma differentiation. Proc. Natl. Acad. Sci. USA 105: 9751-9756.
3. Tanemura, K., et al. 2009. Intrauterine environment-genome interaction and children's development: brain structure impairment and behavioral disturbance induced in male mice offspring by a single intraperitoneal administration of domoic acid (DA) to their dams. J. Toxicol. Sci. 34: SP279-SP286.
4. Elamin, M.H., et al. 2010. Curcumin inhibits the Sonic hedgehog signaling pathway and triggers apoptosis in medulloblastoma cells. Mol. Carcinog. 49: 302-314.
5. Shinwari, Z., et al. 2011. Response of medulloblastoma cells to vincristine and lomustine: role of TRKC, CTNNB1 and STK15. Anticancer Res. 31: 1721-1733.
6. Frumm, S.M., et al. 2013. Selective HDAC1/HDAC2 inhibitors induce neuroblastoma differentiation. Chem. Biol. 20: 713-725.
7. Pal, A. and Das, S. 2015. Morphine causes persistent induction of nitrated neurofilaments in cortex and subcortex even during abstinence. Neuroscience 291: 177-188.
8. Taslı, P.N., et al. 2016. Myogenic and neurogenic differentiation of human tooth germ stem cells (hTGSCs) are regulated by pluronic block copolymers. Cytotechnology 68: 319-329.
9. Vuong, T.A., et al. 2019. SGTb regulates a surface localization of a guidance receptor BOC to promote neurite outgrowth. Cell. Signal. 55: 100-108.

RESEARCH USE

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