

p-NF-M (RNF406): sc-32727

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

- 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.
- 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.
- Sihag, R.K., et al. 1989. *In vivo* phosphorylation of distinct domains of the 70 kDa neurofilament subunit involves different protein kinases. *J. Biol. Chem.* 264: 457-464.
- Hisanaga, S., et al. 1990. Effects of phosphorylation of the neurofilament L protein on filamentous structures. *Cell Regul.* 1: 237-248.
- Gonda, Y., et al. 1990. Involvement of protein kinase C in the regulation of assembly-disassembly of neurofilaments *in vitro*. *Biochem. Biophys. Res. Commun.* 167: 1316-1325.
- Nakamura, Y., et al. 1997. Abnormal distribution of neurofilament L in neurons with Alzheimer's disease. *Neurosci. Lett.* 225: 201-204.

CHROMOSOMAL LOCATION

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

SOURCE

p-NF-M (RNF406) is a mouse monoclonal antibody raised against a neurofilament NF-M protein isolated from a cytoskeletal preparation from brain tissue homogenate of calf origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-NF-M (RNF406) is available conjugated to fluorescein (sc-32727 FITC), 200 μ g/ml, for IF, IHC(P) and FCM.

STORAGE

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

APPLICATIONS

p-NF-M (RNF406) is recommended for detection of phosphorylated NF-M of mouse, rat, human, *Xenopus* and bovine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 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.

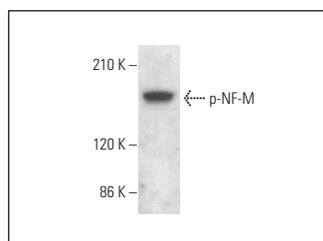
Molecular Weight of p-NF-M: 160 kDa.

Positive Controls: rat brain extract: sc-2392, IMR-32 cell lysate: sc-2409 or human brain tissue extract.

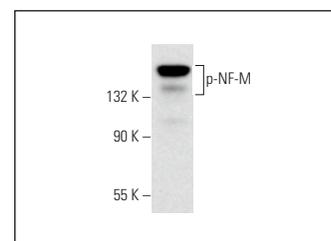
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



p-NF-M (RNF406): sc-32727. Western blot analysis of NF-M phosphorylation in IMR-32 whole cell lysate.



p-NF-M (RNF406): sc-32727. Western blot analysis of NF-M phosphorylation in human brain tissue extract.

SELECT PRODUCT CITATIONS

- Misawa, T., et al. 2008. Close association of water channel AQP1 with amyloid- β deposition in Alzheimer disease brains. *Acta Neuropathol.* 116: 247-260.

RESEARCH USE

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