NF-M (G-20): sc-16143

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BIOTECHNOLOGY
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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 ob-served 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.

3. Sihag, R.K., et al. 1989. *In vivo* phosphorylation of distinct domains of the 70 kilodalton neurofilament subunit involves different protein kinases. J. Biol. Chem. 264: 457 -464.

4. Hisanaga, S., et al. 1990. Effects of phosphorylation of the neurofilament L protein on filamentous structures. Cell Regul. 1: 237-248.

5. 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.

CHROMOSOMAL LOCATION

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

SOURCE

NF-M (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of NF-M of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16143 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

NF-M (G-20) 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).

NF-M (G-20) is also recommended for detection of NF-M in additional species, including equine, canine, bovine and porcine.

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA
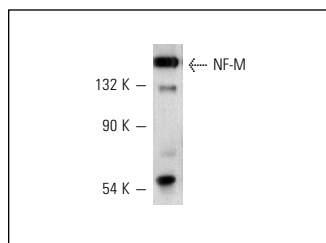
NF-M (G-20): sc-16143. Western blot analysis of NF-M expression in mouse brain.

SELECT PRODUCT CITATIONS

1. Freire, M.A., et al. 2011. Comprehensive analysis of tissue preservation and recording quality from chronic multielectrode implants. PLoS ONE 6: e27554.

2. Darabid, H., et al. 2013. Glial cells decipher synaptic competition at the mammalian neuromuscular junction. J. Neurosci. 33: 1297-1313.