

NF-L (F-12): sc-390732

BACKGROUND

Neurofilament-L (NF-L), for neurofilament light polypeptide, a member of the intermediate filament family, is a major component of neuronal cyto-skeletons. 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 gamma. 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. 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.
2. 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.
3. Hisanaga, S., et al. 1990. Effects of phosphorylation of the neurofilament L protein on filamentous structures. *Cell Regul.* 1: 237-248.
4. 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.
5. Nakamura, Y., et al. 1997. Abnormal distribution of neurofilament L in neurons with Alzheimer's disease. *Neurosci. Lett.* 225: 201-204.
6. Hirokawa, N., et al. 1998. Gene targeting studies begin to reveal the function of neurofilament proteins. *J. Cell Biol.* 143: 1-4.

CHROMOSOMAL LOCATION

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

SOURCE

NF-L (F-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 6-25 of NF-L of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-390732 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

NF-L (F-12) is recommended for detection of NF-L 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).

NF-L (F-12) is also recommended for detection of NF-L in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for NF-L siRNA (h): sc-36048, NF-L siRNA (m): sc-36049, NF-L shRNA Plasmid (h): sc-36048-SH, NF-L shRNA Plasmid (m): sc-36049-SH, NF-L shRNA (h) Lentiviral Particles: sc-36048-V and NF-L shRNA (m) Lentiviral Particles: sc-36049-V.

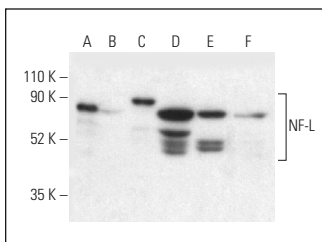
Molecular Weight of NF-L: 68 kDa.

Positive Controls: rat cerebellum extract: sc-2398, NF-L (h2): 293T Lysate: sc-159429 or SK-N-SH cell lysate: sc-2410.

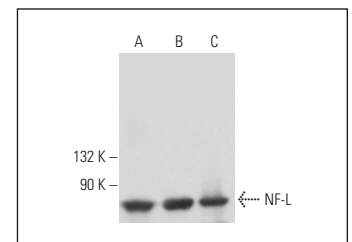
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



NF-L (F-12): sc-390732. Western blot analysis full length human recombinant NF-L (A) and NF-L expression in non-transfected 293T: sc-117752 (B), human NF-L transfected 293T: sc-159429 (C), SK-N-SH (D) and SH-SY5Y (E) whole cell lysates and rat spinal cord tissue extract (F). Detection reagent used: m-IgG₁ BP-HRP: sc-525408.



NF-L (F-12): sc-390732. Western blot analysis of NF-L expression in human cerebellum (A), rat brain (B) and rat cerebellum (C) tissue extracts.

SELECT PRODUCT CITATIONS

1. Sainio, M.T., et al. 2021. Neurofilament light regulates axon caliber, synaptic activity, and organelle trafficking in cultured human motor neurons. *Front. Cell Dev. Biol.* 9: 820105.

RESEARCH USE

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