

NF-L (DA2): sc-58559

BACKGROUND

Neurofilament-L (NF-L), for neurofilament light 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

- 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-kilodalton 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.
- Hirokawa, N., et al. 1998. Gene targeting studies begin to reveal the function of neurofilament proteins. *J. Cell Biol.* 143: 1-4.
- Nakamura, Y., et al. 1999. Casein kinase II is responsible for phosphorylation of NF-L at Ser 473. *FEBS Lett.* 455: 83-86.
- Strong, M.J., et al. 1999. Neurofilament metabolism in sporadic amyotrophic lateral sclerosis. *J. Neurol. Sci.* 169: 170-177.

CHROMOSOMAL LOCATION

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

SOURCE

NF-L (DA2) is a mouse monoclonal antibody raised against a preparation of enzymatically dephosphorylated neurofilaments of porcine origin.

PRODUCT

Each vial contains 250 μ l culture supernatant containing IgG₁ with < 0.1% sodium azide.

RESEARCH USE

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

APPLICATIONS

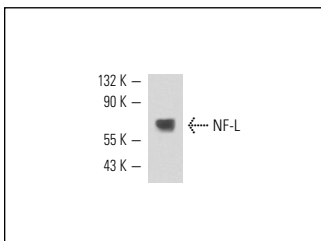
NF-L (DA2) is recommended for detection of NF-L of mouse, rat, human, bovine and porcine origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:1000-1:5000), immunoprecipitation [1-2 μ l per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200).

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.

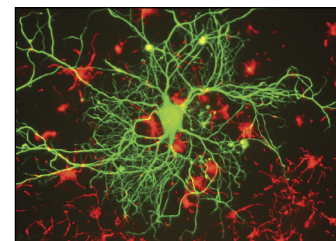
Molecular Weight of NF-L: 68 kDa.

Positive Controls: rat brain extract: sc-2392, SK-N-SH cell lysate: sc-2410 or IMR-32 cell lysate: sc-2409.

DATA



NF-L (DA2): sc-58559. Western blot analysis of NF-L expression in rat brain tissue extract.



NF-L (DA2): sc-58559. Immunofluorescence staining of methanol-fixed adult rat brain cells showing neuronal localization (green).

SELECT PRODUCT CITATIONS

- Baucum, A.J., et al. 2010. Identification and validation of novel spinophilin-associated proteins in rodent striatum using an enhanced *ex vivo* shotgun proteomics approach. *Mol. Cell. Proteomics* 9: 1243-1259.
- Johnson, J.R., et al. 2012. Caspase-activated cell-penetrating peptides reveal temporal coupling between endosomal release and apoptosis in an RGC-5 cell model. *Bioconjug. Chem.* 23: 1783-1793.
- Amer, D.A., et al. 2012. Effect of 17 β -estradiol and flavonoids on the regulation of expression of newly identified oestrogen responsive genes in a rat raphe nuclei-derived cell line. *J. Cell. Physiol.* 227: 3434-3445.
- Sanna, M.D., et al. 2016. Increase of neurofilament-H protein in sensory neurons in antiretroviral neuropathy: evidence for a neuroprotective response mediated by the RNA-binding protein HuD. *Pharmacol. Res.* 111: 23-33.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.