SANTA CRUZ BIOTECHNOLOGY, INC.

NF-L (N-14): sc-12966

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Neurofilament-L (for neurofilament light polypeptide, or NF-L), 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. 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.

CHROMOSOMAL LOCATION

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

SOURCE

NF-L (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of NF-L 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-12966 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NF-L (N-14) is recommended for detection of NF-L 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-L (N-14) is also recommended for detection of NF-L in additional species, including equine, canine, bovine and porcine.

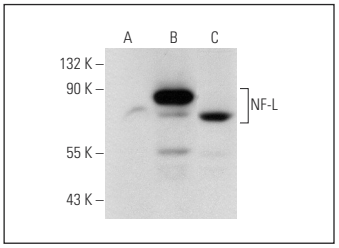
Suitable for use as control antibody for NF-L siRNA (h): sc-36048, NF-L siRNA (m): sc-36049, NF-L shRNA Plasmid (h): sc-36048-SH, NF-L shRNA Plasmid (m): sc-36049-SH, NF-L shRNA (h) Lentiviral Particles: sc-36048-V and NF-L shRNA (m) Lentiviral Particles: sc-36049-V.

Molecular Weight of NF-L: 68 kDa.

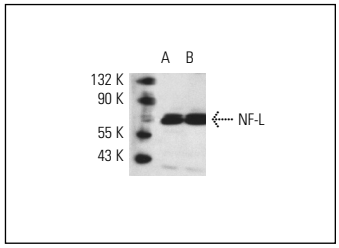
STORAGE

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

DATA



NF-L (N-14): sc-12966. Western blot analysis of NF-L expression in non-transfected 293T: sc-117752 (**A**), human NF-L transfected 293T: sc-159429 (**B**) and SH-SY5Y (**C**) whole cell lysates.



NF-L (N-14): sc-12966. Western blot analysis of NF-L expression in rat cerebellum (**A**) and mouse brain extract (**B**).

SELECT PRODUCT CITATIONS

1. Di Giaimo, R., et al. 2002. New insights into the molecular basis of progressive myoclonus epilepsy: a multiprotein complex with cystatin B. Hum. Mol. Genet. 11: 2941-2950.
2. Cavaliere, F., et al. 2003. Up-regulation of P2X2, P2X4 receptor and ischemic cell death: prevention by P2 antagonists. Neuroscience 120: 85-98.
3. Sparaco, M., et al. 2005. Protein glutathionylation in human central nervous system: potential role in redox regulation of neuronal defense against free radicals. J. Neurosci. Res. 83: 256-263.
4. Raoul, C., et al. 2005. Lentiviral-mediated silencing of SOD-1 through RNA interference retards disease onset and progression in a mouse model of ALS. Nat. Med. 11: 423-428.
5. Amadio, S., et al. 2006. Oligodendrocytes express P2Y12 metabotropic receptor in adult rat brain. Neuroscience 141: 1171-1180.
6. Goddard, M., et al. 2008. Synaptic protein expression in the medial temporal lobe and frontal cortex following chronic bilateral vestibular loss. Hippocampus 18: 440-444.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.