SANTA CRUZ BIOTECHNOLOGY, INC.

NF-L (3F285): sc-71678

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

CHROMOSOMAL LOCATION

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

SOURCE

NF-L (3F285) is a mouse monoclonal antibody raised against neurofilament purified from human brain.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

NF-L (3F285) 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

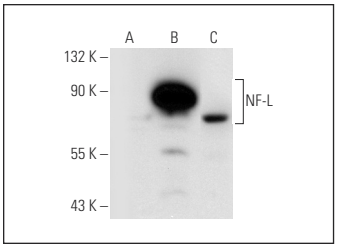
Molecular Weight of NF-L: 68 kDa.

Positive Controls: mouse brain extract: sc-2253, NF-L (h2): 293T Lysate: sc-159429 or SH-SY5Y cell lysate: sc-3812.

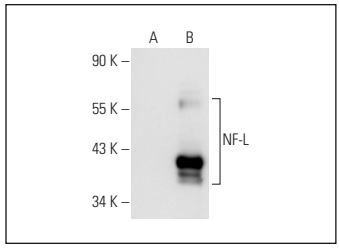
RECOMMENDED SUPPORT REAGENTS

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 (3F285): sc-71678. 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 (3F285): sc-71678. Western blot analysis of NF-L expression in non-transfected: sc-117752 (**A**) and human NF-L transfected: sc-159319 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Chen, J.X., et al. 2013. Induction of autophagy by TOCP in differentiated human neuroblastoma cells lead to degradation of cytoskeletal components and inhibition of neurite outgrowth. Toxicology 310: 92-97.
2. Yang, F.R., et al. 2019. MicroRNA-7a ameliorates neuropathic pain in a rat model of spinal nerve ligation via the NEFL-dependent Stat3 signaling pathway. Mol. Pain 15: 1744806919842464.
3. Radhakrishnan, S., et al. 2019. *In vitro* transdifferentiation of human adipose tissue-derived stem cells to neural lineage cells—a stage-specific incidence. Adipocyte 8: 164-177.
4. Radhakrishnan, S., et al. 2019. Effect of passaging on the stemness of infrapatellar fat pad-derived stem cells and potential role of nucleostemin as a prognostic marker of impaired stemness. Mol. Med. Rep. 20: 813-829.
5. Lu, X., et al. 2022. Pulmonary visceral pleura biomaterial: elastin- and collagen-based extracellular matrix. Front. Bioeng. Biotechnol. 10: 796076.

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.