

# p-NF-L (Ser 55): sc-12965

## 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  $\gamma$ . 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

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- Sihag, R.K. and Nixon, R.A. 1989. *In vivo* phosphorylation of distinct domains of the 70 kDa neurofilament subunit involves different protein kinases. *J. Biol. Chem.* 264: 457-464.
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- Nakamura, Y., Hasimoto, R., Kashiwagi, Y., Miyamae, Y., Shinosaki, K., Nishikawa, T., Hattori, H., Kudo, T. and Takeda, M. 1997. Abnormal distribution of neurofilament-L in neurons with Alzheimer's disease. *Neurosci. Lett.* 225: 201-204.
- Hirokawa, N. and Takeda, S. 1998. Gene targeting studies begin to reveal the function of neurofilament proteins. *J. Cell Biol.* 143: 1-4.
- Nakamura, Y., Hashimoto, R., Kashiwagi, Y., Wada, Y., Sakoda, S., Miyamae, Y., Kudo, T. and Takeda, M. 1999. Casein kinase II is responsible for phosphorylation of NF-L at Ser 473. *FEBS Lett.* 455: 83-86.
- Strong, M.J. 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

p-NF-L (Ser 55) is available as either goat (sc-12965) or rabbit (sc-12965-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 55 phosphorylated NF-L of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12965 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

p-NF-L (Ser 55) is recommended for detection of Ser 55 phosphorylated NF-L of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

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 p-NF-L: 68 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-12965): use donkey anti-goat IgG-HRP: sc-2020 (range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (range: 1:2000-1:5000), for rabbit primary antibody (sc-12965-R): use goat anti-rabbit IgG-HRP: sc-2004 (range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (range: 1:2000-1:5000); Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: for goat primary antibody (sc-12965): use donkey anti-goat IgG-FITC: sc-2024 (range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (range: 1:100-1:400), for rabbit primary antibody (sc-12965-R): use goat anti-rabbit IgG-FITC: sc-2012 (range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

- Zamoner, A., Heimfarth, L. and Pessoa-Pureur, R. 2008. Congenital hypothyroidism is associated with intermediate filament misregulation, glutamate transporters down-regulation and MAPK activation in developing rat brain. *Neurotoxicology* 29: 1092-1099.

## 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.