p-NF-H (RNF405): sc-32730

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

BACKGROUND

Neurofilament-H (for neurofilament heavy polypeptide, or NF-H), 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 amotrophic lateral sclerosis (ALS), Parkinson's disease, and Alzheimer's disease.

CHROMOSOMAL LOCATION

Genetic locus: NEFH (human) mapping to 22q12.2; Nefh (mouse) mapping to 11 A1.

SOURCE

p-NF-H (RNF405) is a mouse monoclonal antibody raised against a neurofilament NF-H protein isolated from a cytoskeletal preparation from brain tissue homogenate of calf origin.

PRODUCT

Each vial contains 200 µg IgG$_{2a}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-NF-H (RNF405) is available conjugated to agarose (sc-32730 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-32730 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32730 PE), fluorescein (sc-32730 FITC), Alexa Fluor® 488 (sc-32730 AF488), Alexa Fluor® 546 (sc-32730 AF546), Alexa Fluor® 594 (sc-32730 AF594) or Alexa Fluor® 647 (sc-32730 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32730 AF680) or Alexa Fluor® 790 (sc-32730 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

p-NF-H (RNF405) is recommended for detection of phosphorylated NF-H of mouse, rat, human, *Xenopus laevis* and bovine 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for NF-H siRNA (h): sc-42068, NF-H siRNA (m): sc-42069, NF-H shRNA Plasmid (h): sc-42068-SH, NF-H shRNA Plasmid (m): sc-42069-SH, NF-H shRNA (h) Lentiviral Particles: sc-42068-V and NF-H shRNA (m) Lentiviral Particles: sc-42069-V.

Molecular Weight of p-NF-H: 200 kDa.

Positive Controls: rat cerebellum extract: sc-2398, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

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, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A 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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA
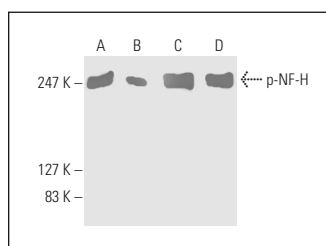
p-NF-H (RNF405): sc-32730. Western blot analysis of NF-H phosphorylation in rat brain (**A**), mouse brain (**B**), rat cerebellum (**C**) and mouse cerebellum (**D**) tissue extracts.
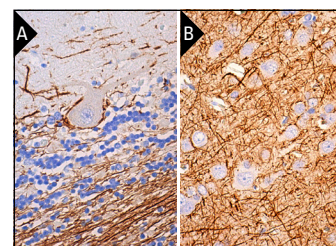
p-NF-H (RNF405): sc-32730. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing membrane staining of Purkinje cells and neuropil staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat brain tissue showing neuropil staining (**B**).

SELECT PRODUCT CITATIONS

1. Nciri, R., et al. 2015. Cytoskeleton involvement in lithium-induced SH-SY5Y neuritogenesis and the role of glycogen synthase kinase 3β. Aging Clin. Exp. Res. 27: 255-263.

2. Mu, J., et al. 2022. Ketogenic diet protects myelin and axons in diffuse axonal injury. Nutr. Neurosci. 25: 1534-1547.

3. Espinoza, K.S., et al. 2023. A novel HSPB1[S139F] mouse model of Charcot-Marie-Tooth disease. Prostaglandins Other Lipid Mediat. 169: 106769.

4. Yu, Q., et al. 2023. C1q is essential for myelination in the central nervous system (CNS). iScience 26: 108518.

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.

PROTOCOLS

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