

NEEP21 (H-9): sc-390654

BACKGROUND

NEEP21 (neuron-enriched endosomal 21 kDa protein), also known as brain neuron cytoplasmic protein 1, NSG1 (neuron-specific proteins family member 1), P21 or D4S234E, is a single pass type II membrane protein belonging to the NSG family. It is highly expressed during neuronal maturation but its expression is downregulated in adult tissues. NEEP21 predominantly localizes to Rab 4-positive early endosomes in the somatodendritic neuronal compartment and is essential for proper receptor sorting and recycling in neurons. It associates with GRIP1 and GluR-2 and mediates the surface expression of GluR-2. When this interaction is interrupted, GluR-2 accumulates in early endosomes and leads to changes in evoked synaptic current properties. In addition, NEEP21 forms a complex with the SNARE protein, Syntaxin 13 (also known as Syntaxin 12), and participates in the recycling of transferrin receptors (TFRs) and NTR2 (neurotensin receptor 2).

REFERENCES

- Carlock, L., et al. 1996. Variable subcellular localization of a neuron-specific protein during Ntera 2 differentiation into post-mitotic human neurons. *Brain Res. Mol. Brain Res.* 42: 202-212.
- Steiner, P., et al. 2002. Modulation of receptor cycling by neuron-enriched endosomal protein of 21 kD. *J. Cell Biol.* 157: 1197-1209.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607645. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: NSG1 (human) mapping to 4p16.3; Nsg1 (mouse) mapping to 5 B3.

SOURCE

NEEP21 (H-9) is a mouse monoclonal antibody raised against amino acids 1-68 mapping at the N-terminus of NEEP21 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NEEP21 (H-9) is available conjugated to agarose (sc-390654 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390654 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390654 PE), fluorescein (sc-390654 FITC), Alexa Fluor® 488 (sc-390654 AF488), Alexa Fluor® 546 (sc-390654 AF546), Alexa Fluor® 594 (sc-390654 AF594) or Alexa Fluor® 647 (sc-390654 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390654 AF680) or Alexa Fluor® 790 (sc-390654 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

NEEP21 (H-9) is recommended for detection of NEEP21 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for NEEP21 siRNA (h): sc-62671, NEEP21 siRNA (m): sc-62672, NEEP21 shRNA Plasmid (h): sc-62671-SH, NEEP21 shRNA Plasmid (m): sc-62672-SH, NEEP21 shRNA (h) Lentiviral Particles: sc-62671-V and NEEP21 shRNA (m) Lentiviral Particles: sc-62672-V.

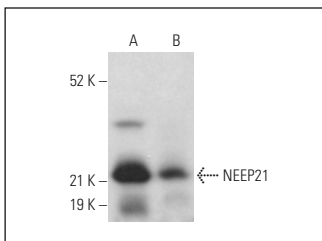
Molecular Weight of NEEP21: 21 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, SH-SY5Y cell lysate: sc-3812 or Neuro-2A whole cell lysate: sc-364185.

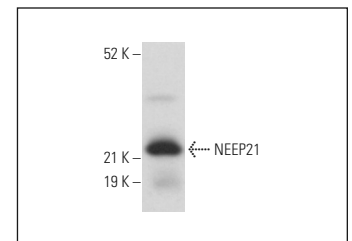
RECOMMENDED SUPPORT REAGENTS

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



NEEP21 (H-9): sc-390654. Western blot analysis of NEEP21 expression in SH-SY5Y (A) and Neuro-2A (B) whole cell lysates.



NEEP21 (H-9): sc-390654. Western blot analysis of NEEP21 expression in IMR-32 whole cell lysate.

SELECT PRODUCT CITATIONS

- Austin, R., et al. 2022. Global loss of neuron-specific gene 1 causes alterations in motor coordination, increased anxiety, and diurnal hyperactivity in male mice. *Genes Brain Behav.* 21: e12816.
- Qi, L., et al. 2022. Phosphatidylinositol (3,5)-bisphosphate machinery regulates neurite thickness through neuron-specific endosomal protein NSG1/NEEP21. *J. Biol. Chem.* E-published.

RESEARCH USE

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