

NEEP21 (K-20): sc-54534

BACKGROUND

NEEP21 (neuron-enriched endosomal 21kDa 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 kDa. *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/>
- Debaigt, C., et al. 2004. Crucial role of neuron-enriched endosomal protein of 21 kDa in sorting between degradation and recycling of internalized G protein-coupled receptors. *J. Biol. Chem.* 279: 35687-35691.
- Steiner, P., et al. 2005. Interactions between NEEP21, GRIP1 and GluR-2 regulate sorting and recycling of the glutamate receptor subunit GluR-2. *EMBO J.* 24: 2873-2884.
- Alberi, S., et al. 2005. The endosomal protein NEEP21 regulates AMPA receptor-mediated synaptic transmission and plasticity in the hippocampus. *Mol. Cell. Neurosci.* 29: 313-319.
- Wang, Y. and Tang, B.L. 2006. SNAREs in neurons-beyond synaptic vesicle exocytosis (Review). *Mol. Membr. Biol.* 23: 377-384.
- Kulangara, K., et al. 2007. Phosphorylation of glutamate receptor interacting protein 1 regulates surface expression of glutamate receptors. *J. Biol. Chem.* 282: 2395-2404.
- Yap, C.C., et al. 2008. The somatodendritic endosomal regulator NEEP21 facilitates axonal targeting of L1/NgCAM. *J. Cell Biol.* 180: 827-842.

CHROMOSOMAL LOCATION

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

SOURCE

NEEP21 (K-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NEEP21 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-54534 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NEEP21 (F-15) is recommended for detection of NEEP21 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).

NEEP21 (F-15) is also recommended for detection of NEEP21 in additional species, including equine, canine, bovine and porcine.

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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.


 MONOS
Satisfaction
Guaranteed

Try **NEEP21 (H-9): sc-390654** or **NEEP21 (364.1): sc-100329**, our highly recommended monoclonal alternatives to NEEP21 (K-20).