



Neuroplastin (R-20): sc-102034

BACKGROUND

Neuroplastin, also known as NPTN, GP55, GP65, SDR1 (stromal cell-derived receptor), np55 or SDFR1, is a single pass type I membrane protein that is predominantly expressed in brain and localizes to the cell membrane. Existing as a member of the Immunoglobulin (Ig) superfamily, Neuroplastin contains at least one Ig-like C2-type domain and at least one Ig-like V-type domain. Neuroplastin functions as a cell adhesion molecule and participates in cell-substrate or cell-cell interactions. Neuroplastin is believed to play a key role in mediating long-term changes in synaptic activity. In addition, Neuroplastin is overexpressed in breast cancers, suggesting a possible role in tumorigenesis. Due to alternative splicing events, Neuroplastin exists in at least two isoforms, namely np55 and np65. The np55 isoform is ubiquitously expressed, whereas the np65 isoform is exclusively expressed in brain.

REFERENCES

1. Smalla, K.H., et al. 2000. The synaptic glycoprotein neuroplastin is involved in long-term potentiation at hippocampal CA1 synapses. *Proc. Natl. Acad. Sci. USA* 97: 4327-4332.
2. Kreuzt, M.R., et al. 2001. Distribution of transcript and protein isoforms of the synaptic glycoprotein neuroplastin in rat retina. *Invest. Ophthalmol. Vis. Sci.* 42: 1907-1914.
3. Muramatsu, T., et al. 2003. Basigin (CD147): a multifunctional transmembrane protein involved in reproduction, neural function, inflammation and tumor invasion. *Histol. Histopathol.* 18: 981-987.
4. Marzban, H., et al. 2003. Expression of the immunoglobulin superfamily neuroplastin adhesion molecules in adult and developing mouse cerebellum and their localisation to parasagittal stripes. *J. Comp. Neurol.* 462: 286-301.
5. Buckby, L.E., et al. 2004. Comparison of neuroplastin and synaptic marker protein expression in acute and cultured organotypic hippocampal slices from rat. *Brain Res. Dev. Brain Res.* 150: 1-7.
6. Empson, R.M., et al. 2006. The cell adhesion molecule neuroplastin-65 inhibits hippocampal long-term potentiation via a mitogen-activated protein kinase p38-dependent reduction in surface expression of GluR1-containing glutamate receptors. *J. Neurochem.* 99: 850-860.
7. Bernstein, H.G., et al. 2007. The immunolocalization of the synaptic glycoprotein neuroplastin differs substantially between the human and the rodent brain. *Brain Res.* 1134: 107-112.
8. Saito, A., et al. 2007. Association study of putative promoter polymorphisms in the Neuroplastin gene and schizophrenia. *Neurosci. Lett.* 411: 168-173.
9. Rodriguez-Pinto, D., et al. 2008. Identification of novel tumor antigens with patient-derived immune-selected antibodies. *Cancer Immunol. Immunother.* E-published ahead of print.

CHROMOSOMAL LOCATION

Genetic locus: NPTN (human) mapping to 15q24.1; Nptn (mouse) mapping to 9 B.

SOURCE

Neuroplastin (R-20) is a Protein A purified rabbit polyclonal antibody raised against Neuroplastin of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-102034 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Neuroplastin (R-20) is recommended for detection of Neuroplastin of mouse, rat, human and dog 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), immunohistochemistry (including paraffin-embedded sections) (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 Neuroplastin siRNA (h): sc-90193 and Neuroplastin siRNA (m): sc-149938; and as shRNA Plasmid control antibody for Neuroplastin shRNA Plasmid (h): sc-90193-SH and Neuroplastin shRNA Plasmid (m): sc-149938-SH.

Molecular Weight of Neuroplastin isoforms: 55/65 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

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.