

neurocan (2Q174): sc-58551

BACKGROUND

The lecticans are a family of chondroitin proteoglycans, including aggrecan, versican, neurocan and brevican, that contain a C-type lectin domain. Neurocan is a glycoprotein synthesized primarily by neurons, and its expression levels are highest during embryonic brain development and during the early postnatal period. Neurocan is a component of the extracellular matrix in the central nervous system that can bind to various other CNS matrix components, such as heparin, Tenascin-R, HB-GAM and NCAM, suggesting that it plays a role in axon guidance and neurite growth. Neurocan is a 1,257 amino acid, precursor protein in embryonic and neonatal rats that is proteolytically processed in the adult CNS into an N-terminal fragment, which localizes to the cytoplasm of glial cells. Neurocan expression (including the re-expression of the neonatal isoform) increases significantly in adults in the glial scar resulting from cortical injury.

REFERENCES

1. Retzler, C., et al. 1996. Structural and electron microscopic analysis of neurocan and recombinant neurocan fragments. *J. Biol. Chem.* 271: 17107-17113.
2. Milev, P., et al. 1998. High affinity binding and overlapping localization of neurocan and phosphacan/protein-tyrosine phosphatase- ζ/β with tenascin-R, amphoterin, and the heparin-binding growth associated molecule. *J. Biol. Chem.* 273: 6998-7005.
3. Milev, P., et al. 1998. Differential regulation of expression of hyaluronan-binding proteoglycans in developing brain: aggrecan, versican, neurocan, and brevican. *Biochem. Biophys. Res. Commun.* 247: 207-212.
4. Matsui, F., et al. 1998. Occurrence of a N-terminal proteolytic fragment of neurocan, not a C-terminal half, in perineuronal net in the adult rat cerebrum. *Brain Res.* 790: 45-51.
5. McKeon, R., et al. 1999. The chondroitin sulfate proteoglycans neurocan and phosphacan are expressed by reactive astrocytes in the chronic CNS glial scar. *J. Neurosci.* 19: 10778-10788.
6. Rauch, U., et al. 2001. Neurocan: a brain chondroitin sulfate proteoglycan. *Cell. Mol. Life Sci.* 58: 1842-1856.

CHROMOSOMAL LOCATION

Genetic locus: NCAN (human) mapping to 19p12; Ncan (mouse) mapping to 8 B3.3.

SOURCE

neurocan (2Q174) is a mouse monoclonal antibody immunized with purified proteoglycan fraction of neonatal rat brain.

PRODUCT

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

RESEARCH USE

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

APPLICATIONS

neurocan (2Q174) is recommended for detection of neurocan of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 neurocan siRNA (h): sc-41901, neurocan siRNA (m): sc-41902, neurocan shRNA Plasmid (h): sc-41901-SH, neurocan shRNA Plasmid (m): sc-41902-SH, neurocan shRNA (h) Lentiviral Particles: sc-41901-V and neurocan shRNA (m) Lentiviral Particles: sc-41902-V.

Molecular Weight of full length neurocan: 220 kDa.

Molecular Weight of proteolytic variant of neurocan: 140 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

STORAGE

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

PROTOCOLS

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