

# neurocan (N-15): sc-20832

## 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- $\zeta/\beta$  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 19p13.11; Ncan (mouse) mapping to 8 B3.3.

## SOURCE

neurocan (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of neurocan of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-20832 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

neurocan (N-15) 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), 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).

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

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.

Positive Controls: rat brain extract: sc-2392.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.



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Try **neurocan (650.24): sc-33663** or **neurocan (C-9): sc-515237**, our highly recommended monoclonal alternatives to neurocan (N-15).