

Anti Neurocan peptides

BACKGROUND

Neurocan is a nervous tissue-unique, secretory proteoglycan that carries predominantly chondroitin sulfate side chains. Its expression gradually decreases with the nervous tissue development. In the immature brain, neurocan exists in a full-length form with a 240 kDa-core glycoprotein, whereas it exists totally in proteolytic fragments of the NH₂-terminal half (neurocan-N) with a 130 kDa-core glycopeptide and the COOH-terminal half (neurocan-C) with a 150 kDa-core glycopeptide. Neurocan is implicated in the neural network formation, and is a susceptibility factor for bipolar disorder. This proteoglycan is upregulated in the lesion site of the central nervous system, and is a major component of the glial scar. In addition, neurocan-N, not neurocan-C, is detectable in the perineuronal nets of some neurons. This antibody recognizes effectively neurocan-N as well as the full-length neurocan.

Product type	Primary antibody
Immunogen	A synthetic peptide, KGLNGRHFQQGPEDQ, corresponding to the portion of amino acids 483-498 that is contained in the NH ₂ -terminal half of the rat neurocan core protein
Rased in	-
Myeloma	-
Clone number	-
Isotype	-
Host	Rabbit
Source	Whole Serum (Liquid)
Purification	-
Buffer	PBS containing 0.1% NaN ₃ as a preservative
Concentration	-
Volume	200 ul
Label	Unlabeled
Specificity	Neurocan core protein
Cross reactivity	Rat, Mouse
Storage	Shipped at 4°C. Upon arrival aliquot and store at -20°C or below. Aliquot to avoid cycles of freeze/thaw.
Other	Data Link : UniProtKB/Swiss-Prot P55067

Application notes	• Western blotting: 1 / 200
Recommended dilutions	• Immunohistochemistry: 1 / 200 (Paraffin)

Other applications have not been tested.
Optimal dilutions/concentrations should be determined by the end user.

References	1) Oohira, A., Matsui, F., Tokita, Y., Yamauchi, S., & Aono, S., Molecular interactions of neural chondroitin sulfate proteoglycans in the brain development, (2000) <i>Arch.Biochem.Biophys.</i>, 374, 24-34. 2) Fumiko Matsui, Masako Nishizuka, Yoko Yasuda, Sachiko Aono, Eiji Watanabe, Atsuhiko Oohira ., Occurrence of a N-terminal proteolytic fragment of neurocan, not a C-terminal half, in a perineuronal net in the adult rat cerebrum, (1998) <i>Brain Res.</i>, 790, 45-51 3) Matsui, F., Watanabe, E., & Oohira, A., Immunological identification of two proteoglycan fragments derived from neurocan, a brain-specific chondroitin sulfate proteoglycan, (1994) <i>Neurochem. Int.</i>, 25, 425-431.
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ANTIBODY CHARACTERIZATION

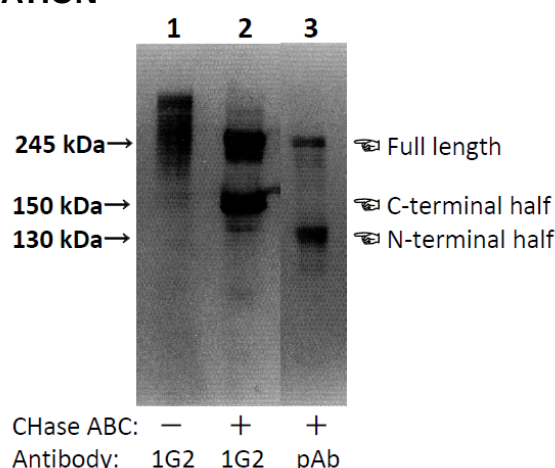


Fig.1 Characterization of Neurocan peptides pAb and Neurocan peptides mAb (clone 1G2) with samples obtained from 10-day-old rat brain.

The PBS-soluble brain CSPG mixture of 10-day-old rats (**lane 1**) and the brain PBS-extract digested with chondroitinase ABC (**lanes 2 and 3**) were separated by SDS-PAGE. Neurocan peptides pAb recognized a very diffuse band with the same mobility as that recognized by Neurocan peptides mAb (clone 1G2). Monoclonal antibody (clone 1G2) recognized both 220 and 150 kDa core glycoproteins in the chondroitinase-digested sample. Polyclonal antibody recognized not only the 220 kDa core glycoprotein but also that with a molecular weight of 130 kDa in both. (Ref.3)

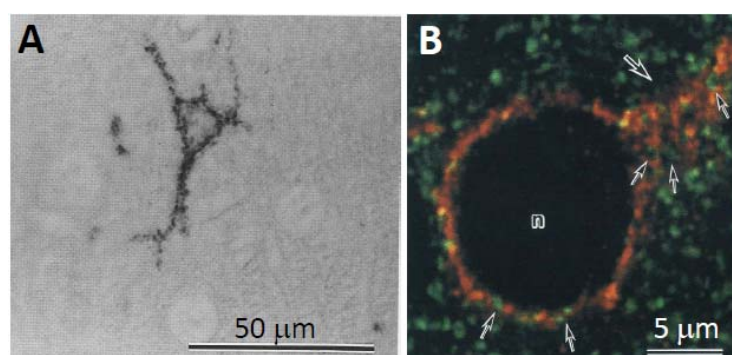


Fig.2 Distribution of neurocan in the adult rat cerebral cortex

- A. The cell surfaces of some neurons were immunoreactive for anti-neurocan polyclonal antibody
- B. Confocal image of the cerebral cortex of an adult rat double-labeled for neurocan-130 (red) and synaptophysin (green). Note neurocan-130 immunoreactivity surrounding a neuronal cell body (n) and a proximal dendrite (large arrow). Neurocan-130 is absent in the axon terminals recognized by anti-synaptophysin (small arrows). (Ref.2)

RELATED PRODUCTS:

Product Name	Maker	Cat#
Anti Chondroitin Sulfate A (2H6) Monoclonal Antibody	CAC	NU-07-001
Anti Neurocan (1G2) Monoclonal Antibody	CAC	NU-07-002
Anti Neuroglycan C (C1) Monoclonal Antibody	CAC	NU-07-003
Anti N-syndecan Polyclonal Antibody	CAC	NU-07-004
Anti Neurocan peptides Polyclonal Antibody	CAC	NU-07-005

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