

DESCRIPTION

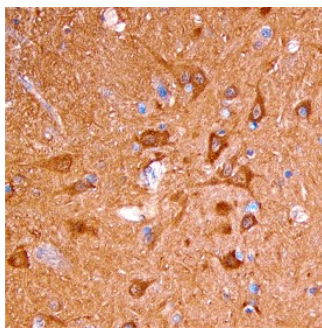
Species Reactivity	Human
Specificity	Detects human Neurocan in direct ELISAs. In direct ELISAs, less than 10% cross-reactivity with recombinant mouse Neurocan is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human Neurocan Glu23-Cys1321 Accession # O14594
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Immunohistochemistry	5-15 µg/mL	See Below

DATA

<p>Immunohistochemistry</p> 	<p>Neurocan in Human Brain. Neurocan was detected in immersion fixed paraffin-embedded sections of human brain using Sheep Anti-Human Neurocan Antigen Affinity-purified Polyclonal Antibody (Catalog # AF6508) at 1.7 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Sheep HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS019) and counter-stained with hematoxylin (blue). Specific staining was localized to the cytoplasm of neurons. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.</p>
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PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.2 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Neurocan, also known as CSPG3 and 1D1, is a secreted chondroitin sulfate proteoglycan that is primarily expressed in the central nervous system (1). Human Neurocan contains one Ig-like V-type domain, two Link domains, two EGF-like domains, one C-type lectin-like domain, and one Sushi domain (2). It is an approximately 300 kDa molecule of which 66 kDa is chondroitin sulfate and 60 kDa is N- and O-linked glycosylation (3). Mature human Neurocan shares 66% aa sequence identity with mature mouse and rat Neurocan. Human Neurocan is predicted to be cleaved following Met635, resulting in N-terminal (Neurocan-130) and C-terminal (Neurocan-C) fragments whose core glycoproteins are 130 kDa and 150 kDa, respectively (4, 5). The full length molecule is expressed in the developing and juvenile brain, while its cleavage products are found throughout adulthood (3, 4). Neurocan and Neurocan-C are produced by astrocytes and accumulate in the matrix surrounding axonal bundles and neuronal cell bodies; Neurocan-130 is found mainly in the glial cell cytoplasm (6-8). Following brain injury, reactive astrocytes deposit increased amounts of Neurocan in the glial scar where it impedes axonal regeneration (6, 9). Neurocan inhibits neuronal adhesion and neurite outgrowth through interactions with a variety of matrix and transmembrane molecules including NCAM-L1, NCAM-1, Syndecan-3, Glypican-1, Tenascin, Contactin-2/TAG1, and HAPLN1 (1, 6, 10-15).

References:

1. Rauch, U. *et al.* (2001) *Cell. Mol. Life Sci.* **58**:1842.
2. Prange, C.K. *et al.* (1998) *Gene* **221**:199.
3. Rauch, U. *et al.* (1991) *J. Biol. Chem.* **266**:14785.
4. Matsui, F. *et al.* (1994) *Neurochem. Int.* **25**:425.
5. Rauch, U. *et al.* (1992) *J. Biol. Chem.* **267**:19536.
6. Asher, R.A. *et al.* (2000) *J. Neurosci.* **20**:2427.
7. Matsui, F. *et al.* (1998) *Brain Res.* **790**:45.
8. Abaskharoun, M. *et al.* (2010) *Brain Res.* **1327**:6.
9. Shen, L.H. *et al.* (2008) *Glia* **56**:1747.
10. Friedlander, D.R. *et al.* (1994) *J. Cell Biol.* **125**:669.
11. Sango, K. *et al.* (2003) *Exp. Neurol.* **182**:1.
12. Akita, K. *et al.* (2004) *Biochem. J.* **383**:129.
13. Grumet, M. *et al.* (1994) *J. Biol. Chem.* **269**:12142.
14. Milev, P. *et al.* (1996) *J. Biol. Chem.* **271**:15716.
15. Rauch, U. *et al.* (2004) *Matrix Biol.* **22**:629.