

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Neuroglycan C/CSPG5 in direct ELISAs and Western blots. In direct ELISAs, approximately 50% cross-reactivity with recombinant mouse Neuroglycan C is observed.
<b>Source</b>	Polyclonal Sheep IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Chinese hamster ovary cell line CHO-derived recombinant human Neuroglycan C/CSPG5 Val31-Gln420 Accession # AAQ04776
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

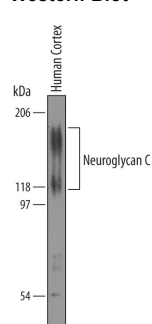
## APPLICATIONS

**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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	1 µg/mL	See Below
<b>Immunohistochemistry</b>	5-15 µg/mL	Perfusion fixed frozen sections of mouse brain (cerebellum)

## DATA

### Western Blot



**Detection of Human Neuroglycan C/CSPG5 by Western Blot.**  
Western blot shows lysates of SH-SY5Y human neuroblastoma cell line. PVDF membrane was probed with 1 µg/mL of Sheep Anti-Human Neuroglycan C/CSPG5 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5685) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). Specific bands were detected for Neuroglycan C/CSPG5 at approximately 120 and 150 kDa (as indicated). This experiment was conducted under reducing conditions and using [Immunoblot Buffer Group 8](#).

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

Neuroglycan C (NGC; also CSPG5 and CALEB) is a 120-150 kDa type I transmembrane glycoprotein and member of the neuregulin family of proteins (1, 2). Depending on its expression profile, NGC may be a glycoprotein of 120 kDa, or a chondroitin sulfate (CS) proteoglycan of 150 kDa (2, 3). Human NGC is synthesized as a 566 amino acid (aa) precursor that contains a 30 aa signal sequence, a 393 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 122 aa cytoplasmic region. The ECD contains one CS attachment domain (aa 34-272), with CS attachment at Ser117, one EGF-like domain (aa 371-413), two potential sites for N-linked glycosylation, and twelve potential sites for O-linked glycosylation (4). Splicing variants produce three isoforms for human NGC. Isoform 1 is the long form. Isoform 2 has a deletion of aa 487-513, while isoform 3 has an alternative start site at Met139 and the same deletion. Phosphorylation likely occurs at Ser249, and proteolysis generates a 75 kDa soluble fragment (5). Over aa 31-420, human NGC shares 84% aa identity with mouse NGC. NGC is expressed in nervous tissue and is found on retinal ganglion cells, cerebellar Purkinje cells and hippocampal neurons (6). NGC may function as a growth and differentiation factor involved in neuritogenesis. One study shows that the recombinant ectodomain of NGC core protein enhances neurite outgrowth from rat neocortical neurons in culture via phosphatidylinositol 3-kinase and protein kinase C signaling pathways (7). Another study states that NGC is a novel component of midkine receptors, a heparin-binding growth factor that promotes cell attachment and process extension in oligodendroglial precursor-like cells (3). NGC also acts as a growth factor by directly binding ERBB3 tyrosine kinase and transactivating ErbB2 (1).

## References:

1. Kinugasa, Y. *et al.* (2004) *Biochem. Biophys. Res. Commun.* **321**:1045.
2. Yasuda, Y. *et al.* (1998) *Neurosci. Res.* **32**:313.
3. Ichihara-Tanaka, K. *et al.* (2006) *J. Biol. Chem.* **281**:30857.
4. Aono, S. *et al.* (2004) *J. Biol. Chem.* **279**:46536.
5. Shuo, T. *et al.* (2007) *J. Neurochem.* **102**:1561.
6. Aono, S. *et al.* (2006) *J. Neurosci. Res.* **83**:110.
7. Nakanishi, K. *et al.* (2006) *J. Biol. Chem.* **281**:24970.