Mouse/Rat Neuroglycan C/CSPG5 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF5665

DESCRIPTION

Species Reactivity	Mouse/Rat
Specificity	Detects mouse and rat Neuroglycan C/CSPG5 in direct ELISAs and Western blots. In direct ELISAs, approximately 25% cross-reactivity with recombinant human Neuroglycan C is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant mouse Neuroglycan C/CSPG5 Val31-Gln420 Accession # AAH55736
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.

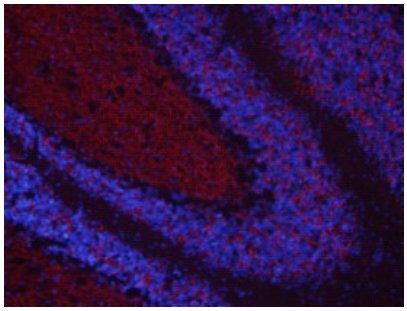
APPLICATIONS

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
Western Blot	1 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below

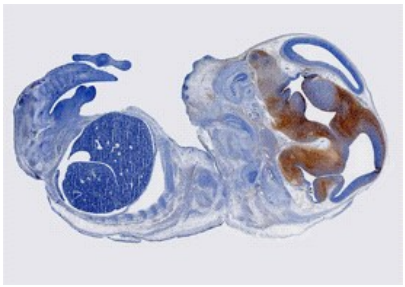
DATA

Immunohistochemistry



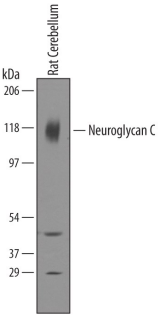
Neuroglycan C/CSPG5 in Mouse Brain. Neuroglycan C/CSPG5 was detected in immersion fixed frozen sections of mouse brain (cerebellum) using 10 µg/mL Goat Anti-Mouse/Rat Neuroglycan C/CSPG5 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5665) overnight at 4 °C. Tissue was stained with the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). View our protocol for Fluorescent IHC Staining of Frozen Tissue Sections.

Immunohistochemistry



Neuroglycan C/CSPG5 in Mouse Embryo. Neuroglycan C/CSPG5 was detected in immersion fixed frozen sections of mouse embryo (15 d.p.c.) using Goat Anti-Mouse/Rat Neuroglycan C/CSPG5 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5665) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Frozen Tissue Sections.

Western Blot



Detection of Mouse/Rat Neuroglycan C/CSPG5 by Western Blot. Western blot shows lysates of rat cerebellum tissue. PVDF membrane was probed with 1 µg/mL of Goat Anti-Mouse/Rat Neuroglycan C/CSPG5 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5665) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF019). A specific band was detected for Neuroglycan C/CSPG5 at approximately 120 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 8.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
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.** ● 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.

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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). Mouse 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 32-273), with CS attachment at Ser117, one EGF-like domain (aa 371-413), three potential sites for N-linked glycosylation, and ten potential sites for O-linked glycosylation (4). Splicing variants produce four isoforms for human NGC. Isoform 1 is the standard form. Isoform 2 has a deletion of aa 487-513, while isoform 3 has an alternative start site at Met82 and the same deletion. Isoform 4 has a 56 aa substitution for aa 514-566. Phosphorylation likely occurs at Ser249, and proteolysis generates a 75 kDa soluble fragment (5). Over aa 31-420, mouse NGC shares 84% aa identity with human 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:

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