

DESCRIPTION

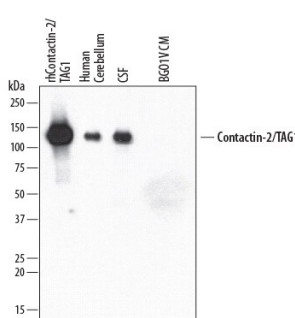
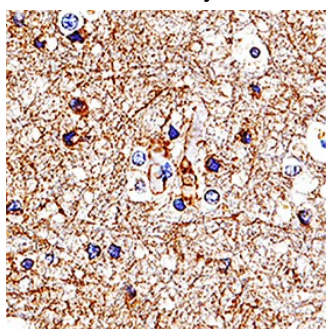
Species Reactivity	Human
Specificity	Detects human Contactin-2/TAG1 in direct ELISAs and Western blots. In direct ELISAs, approximately 50% cross-reactivity with recombinant mouse TAG1 is observed, and less than 5% cross-reactivity with recombinant human (rh) Contactin-3, rhContactin-4, rhContactin-5 and rhContactin-6 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Contactin-2/TAG1 Leu29-Asn1012 Accession # Q02246
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

<p>Western Blot</p> 	<p>Detection of Human Contactin-2/TAG1 by Western Blot. Western blot shows human cerebellum tissue lysate and cerebrospinal fluid (CSF). Recombinant Human (rh) Contactin-2/TAG1 (Catalog # 1714-CN) and conditioned media from BG01V human embryonic stem cells were loaded as positive and negative controls, respectively. PVDF membrane was probed with 1 µg/mL of Goat Anti-Human Contactin-2/TAG1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1714) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). A specific band was detected for Contactin-2/TAG1 at approximately 135 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.</p>	<p>Immunohistochemistry</p> 	<p>Contactin-2/TAG1 in Human Brain. Contactin-2/TAG1 was detected in immersion fixed paraffin-embedded sections of human brain (cortex) using Goat Anti-Human Contactin-2/TAG1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1714) 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). Specific staining was localized to neuronal processes. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.</p>
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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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <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

Contactin-2 (CNTN2), also called TAG-1 (transient axonal glycoprotein), TAX1 (transiently-expressed axonal glycoprotein), or axonin-1, is a 135 kDa glycosyl-phosphatidylinositol (GPI)- anchored cell adhesion molecule that belongs to the contactin subfamily within the immunoglobulin (Ig) protein superfamily (1-3). Human Contactin-2 cDNA encodes a 28 amino acid (aa) signal peptide, a 984 aa mature secreted protein with six Ig-like domains followed by four fibronectin type III-like repeats, and a 28 aa C-terminal GPI anchor pro-sequence. GPI-specific phospholipase activity can release soluble, active Contactin-2 from the membrane (2). Mature human Contactin-2 shares approximately 93%, 93% and 75% aa sequence identity with human, rat and chicken Contactin-2, respectively. During development, Contactin-2 is expressed by a subset of neuronal populations in the central nervous system (CNS) and peripheral nervous system (PNS), particularly during initial phases of axon outgrowth (3-5). Both the 135 kDa form and a 90 kDa form are also upregulated in response to CNS injury in the adult (6). Data support a role for Contactin-2 in axon pathfinding, neurite outgrowth and adhesion, especially in the CNS (3-6). In mature myelinated fibers, Contactin-2 is expressed by oligodendrocytes and Schwann cells, which are myelinating glial cells of the CNS and PNS, respectively (7, 8). It is enriched in the juxtaparanodal regions, where it recruits caspr2 (Contactin-associated protein 2), a transmembrane neuroligin involved in cell adhesion and intercellular communication (7-10). The axonal Contactin-2 interacts in cis with caspr2, and in trans with another Contactin-2 on the glial membrane (8). This ternary complex is required for the accumulation and organization of K⁺ channels in the juxtaparanodes (9).

References:

1. Wolfer, D. & R. J. Giger (1994) Swissprot Accession # Q61330.
2. Hasler, T.H. *et al.* (1993) *Eur. J. Biochem.* **211**:329.
3. Karagogeos, D. (2003) *Front. Biosci.* **8**:s1304.
4. Liu, Y. & M.C. Halloran (2005) *J. Neurosci.* **25**:10556.
5. Denaxa, M. *et al.* (2005) *Dev. Biol.* **288**:87.
6. Soares, S. *et al.* (2005) *Eur. J. Neurosci.* **21**:1169.
7. Traka, M. *et al.* (2002) *J. Neurosci.* **22**:3016.
8. Poliak, S. and E. Peles (2003) *Nature Reviews Neurosci.* **4**:968.
9. Traka, M. *et al.* (2003) *J. Cell Biol.* **162**:1161.
10. Poliak, S. *et al.* (2003) *J. Cell Biol.* **162**:1149.