

# CASPR2 (G-17): sc-11179

## BACKGROUND

Neurexins comprise a family of neuronal cell surface proteins, which include neurexin I (NRXN1), neurexin II (NRXN2), neurexin III (NRXN3) and Caspr (neurexin IV). Neurexins I-III are expressed as  $\alpha$  and  $\beta$  isoforms. The  $\alpha$  isoforms are made of three cassettes, which contain two LNS (Laminin A, Neurexins, Sex hormone-binding)-domains separated by EGF domains, followed by a transmembrane region and a 55 amino acid cytoplasmic C-terminal. The  $\alpha$  isoforms bind to neuroligins at the second LNS site and to the excitatory neurotoxin  $\alpha$ -latrotoxin. The  $\beta$  isoforms have only one LNS-domain, bind to neuroligins, and play a role in the formation and remodeling of synapses. Caspr (for Contactin-Associated Protein 1, also designated Paranodin in mouse), contains an extracellular domain similar to the other three neurexins, and binds to the surface glycoprotein Contactin. Caspr and the closely related Caspr2, a mammalian homolog of *Drosophila* Neurexin IV (Nrx-IV), demarcate distinct subdomains in myelinated axons. Specifically, Caspr exists at the paranodal junctions, while Caspr2 colocalizes with Shaker-like K<sup>+</sup> channels in the juxtaparanodal region. Caspr may play a role in the communication of glial cells and neurons during development.

## REFERENCES

1. Ichtchenko, K., et al. 1996. Structures, alternative splicing, and Neurexin binding of multiple Neuroligins. *J. Biol. Chem.* 271: 2676-2682.
2. Nguyen, T. and Südhof, T.C. 1997. Binding properties of Neuroligin 1, and Neurexin 1b reveal function as heterophilic cell adhesion molecules. *J. Biol. Chem.* 272: 26032-26039.
3. Peles, E., et al. 1997. Identification of a novel contactin-associated transmembrane receptor with multiple domains implicated in protein-protein interactions. *EMBO J.* 16: 978-988.
4. Poliak, S., et al. 1997. Caspr2, a new member of the neurexin superfamily, is localized at the juxtaparanodes of myelinated axons and associates with K<sup>+</sup> channels. *Neuron* 24: 1037-1104.
5. Einheber, S., et al. 1997. The axonal membrane protein Caspr, a homologue of neurexin IV, is a component of the septate-like paranodal junctions that assemble during myelination. *J. Cell Biol.* 139: 1495-1506.
6. Missler, M., et al. 1998. Neuroligin binding to b-Neurexins. *J. Biol. Chem.* 273: 34716-34723.

## CHROMOSOMAL LOCATION

Genetic locus: CNTNAP2 (human) mapping to 7q35; Cntnap2 (mouse) mapping to 6 B2.2.

## SOURCE

CASPR2 (G-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CASPR2 of human origin.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-11179 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

CASPR2 (G-17) is recommended for detection of CASPR2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CASPR2 (G-17) is also recommended for detection of CASPR2 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for CASPR2 siRNA (h): sc-41917, CASPR2 siRNA (m): sc-41918, CASPR2 shRNA Plasmid (h): sc-41917-SH, CASPR2 shRNA Plasmid (m): sc-41918-SH, CASPR2 shRNA (h) Lentiviral Particles: sc-41917-V and CASPR2 shRNA (m) Lentiviral Particles: sc-41918-V.

Molecular Weight of CASPR: 148 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

1. Lieberoth, A., et al. 2009. Lewis x and  $\alpha$ 2,3-sialyl glycans and their receptors TAG-1, Contactin, and L1 mediate CD24-dependent neurite outgrowth. *J. Neurosci.* 29: 6677-6690.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **CASPR2 (H-10): sc-398454**, our highly recommended monoclonal alternative to CASPR2 (G-17).