

CASPR (P-16): sc-23273

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 α and β isoforms. The α 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 α isoforms bind to neuroligins at the second LNS site, and to the excitatory neurotoxin α -latrotoxin. The β 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 co-localizes with Shaker-like K⁺ 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., et al. 1997. Binding properties of Neuroligin 1, and Neurexin 1 β 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. 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.
5. 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⁺ channels. *Neuron* 24: 1037-1104.
6. Missler, M., et al. 1998. Neurexophilin binding to β -Neurexins. *J. Biol. Chem.* 273: 34716-34723.
7. Missler, M., et al. 1998. The making of neurexins. *J. Neurochem.* 71: 1339-1347.

CHROMOSOMAL LOCATION

Genetic locus: CNTNAP1 (human) mapping to 17q21.2; Cntnap1 (mouse) mapping to 11 D.

SOURCE

CASPR (P-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of CASPR of human origin.

RESEARCH USE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-23273 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CASPR (P-16) is recommended for detection of CASPR 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).

CASPR (P-16) is also recommended for detection of CASPR in additional species, including equine, canine and bovine.

Suitable for use as control antibody for CASPR siRNA (h): sc-41915, CASPR siRNA (m): sc-41916, CASPR shRNA Plasmid (h): sc-41915-SH, CASPR shRNA Plasmid (m): sc-41916-SH, CASPR shRNA (h) Lentiviral Particles: sc-41915-V and CASPR shRNA (m) Lentiviral Particles: sc-41916-V.

Molecular Weight of CASPR: 165 kDa.

Positive Controls: mouse brain extract: sc-2253.

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. Sun, Y.T., et al. 2010. Deficiency of electroneutral K⁺-Cl⁻ cotransporter 3 causes a disruption in impulse propagation along peripheral nerves. *Glia* 58: 1544-1552.

STORAGE

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

MONOS
Satisfaction
Guaranteed

Try **CASPR (A-3): sc-374489** or **CASPR (E-8): sc-373777**, our highly recommended monoclonal alternatives to CASPR (P-16).