SANTA CRUZ BIOTECHNOLOGY, INC.

neurexin III (C-17): sc-14339

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 a isoforms bind to neurexophilins 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 synapes. 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^+ 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 1β 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^+ 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. 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.
8. Arroyo, E.J., et al. 1999. Myelinating Schwann cells determine the internodal localization of Kv1.1, Kv1.2, Kvβ2, and Caspr. J. Neurocytol. 28: 333-347.

CHROMOSOMAL LOCATION

Genetic locus: NRXN3 (human) mapping to 14q24.3; Nrxn3 (mouse) mapping to 12 D3.

SOURCE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-14339 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

neurexin III (C-17) is recommended for detection of neurexin IIIα and of neurexin IIIβ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

neurexin III (C-17) is also recommended for detection of neurexin IIIα and of neurexin IIIβ in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for neurexin III siRNA (h): sc-42058, neurexin III siRNA (m): sc-42059, neurexin III shRNA Plasmid (h): sc-42058-SH, neurexin III shRNA Plasmid (m): sc-42059-SH, neurexin III shRNA (h) Lentiviral Particles: sc-42058-V and neurexin III shRNA (m) Lentiviral Particles: sc-42059-V.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. Taylor, A.M., et al. 2009. Axonal mRNA in uninjured and regenerating cortical mammalian axons. J. Neurosci. 29: 4697-4707.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.