

neurexin I α (17): sc-136001

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 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

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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. 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. Neuroligin 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, KV β 2, and CASPR. *J. Neurocytol.* 28: 333-347.

CHROMOSOMAL LOCATION

Genetic locus: NRXN1 (human) mapping to 2p16.3; Nrxn1 (mouse) mapping to 17 E5.

SOURCE

neurexin I α (17) is a mouse monoclonal antibody raised against amino acids 1063-1184 of neurexin I α of rat origin.

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

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

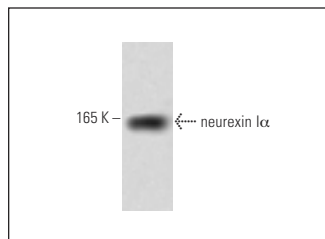
neurexin I α (17) is also recommended for detection of neurexin I α in additional species, including canine.

Suitable for use as control antibody for neurexin I α siRNA (h): sc-42050, neurexin I α siRNA (m): sc-42051, neurexin I α shRNA Plasmid (h): sc-42050-SH, neurexin I α shRNA Plasmid (m): sc-42051-SH, neurexin I α shRNA (h) Lentiviral Particles: sc-42050-V and neurexin I α shRNA (m) Lentiviral Particles: sc-42051-V.

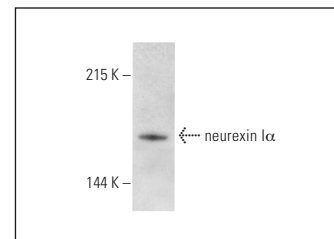
Molecular Weight of neurexin I α : 165 kDa.

Positive Controls: P19 cell lysate: sc-24760.

DATA



neurexin I α (17): sc-136001. Western blot analysis of neurexin I α expression in P19 whole cell lysate.



neurexin I α (17): sc-136001. Western blot analysis of neurexin I α expression in P19 whole cell lysate. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

1. Alexander, G.M., et al. 2017. Vagal nerve stimulation modifies neuronal activity and the proteome of excitatory synapses of amygdala/piriform cortex. *J. Neurochem.* 140: 629-644.
2. Yotsumoto, T., et al. 2020. NRXN1 as a novel potential target of antibody-drug conjugates for small cell lung cancer. *Oncotarget* 11: 3590-3600.
3. Wu, D., et al. 2023. NRXN1 depletion in the medial prefrontal cortex induces anxiety-like behaviors and abnormal social phenotypes along with impaired neurite outgrowth in rat. *J. Neurodev. Disord.* 15: 6.

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.