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SANTA CRUZ BIOTECHNOLOGY, INC.

neurexin III siRNA (h): sc-42058

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 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.

CHROMOSOMAL LOCATION

Genetic locus: NRXN3 (human) mapping to 14q24.3.

PRODUCT

neurexin III siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see neurexin III shRNA Plasmid (h): sc-42058-SH and neurexin III shRNA (h) Lentiviral Particles: sc-42058-V as alternate gene silencing products.

For independent verification of neurexin III (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-42058A, sc-42058B and sc-42058C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

neurexin III siRNA (h) is recommended for the inhibition of neurexin III expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor neurexin III gene expression knockdown using RT-PCR Primer: neurexin III (h)-PR: sc-42058-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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