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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

SANTA CRUZ BIOTECHNOLOGY, INC.

netrin G2 siRNA (m): sc-149918

BACKGROUND

Netrin G1 and netrin G2, also referred to as laminet-1 and laminet-2, are membrane bound axon guidance molecules involved in synaptic formation and maintenance. They comprise a subgroup within the UNC-6/netrin family. Both genes have been associated with schizophrenia involving single nucleotide polymorphisms. They are both expressed in the brain but G1 is most predominantly expressed in the thalamus and G2 is most predominantly expressed in the cortex and hippocampus. These two proteins differ from classical netrins by their failure to bind netrin receptors, the presence of a glycosyl phosphatidylinositol membrane anchor, and the generation of multiple isoforms. Netrin G2 contains one laminin N-terminal domain and three laminin EGF-like domains. It selectively interacts with LRRC4 and this association may mediate cell adhesion. In addition, netrin G2 is significantly downregulated in bladder transitional cell carcinoma (TCC) and may be a putative tumor suppressor gene.

REFERENCES

1. Nakashiba, T., et al. 2002. Complementary expression and neurite outgrowth activity of netrin-G subfamily members. Mech. Dev. 111: 47-60.
2. Amira, N., et al. 2004. Expression in bladder transitional cell carcinoma by real-time quantitative reverse transcription polymerase chain reaction array of 65 genes at the tumor suppressor locus 9q34.1-2: identification of 5 candidates tumor suppressor genes. Int. J. Cancer 111: 539-542.
3. Miyashita, T., et al. 2005. Strong expression of netrin G2 in the monkey claustrum. Neuroscience 136: 487-496.
4. Meerabux, J.M., et al. 2005. Human netrin G1 isoforms show evidence of differential expression. Genomics 86: 112-116.
5. Aoki-Suzuki, M., et al. 2005. A family-based association study and gene expression analyses of netrin G1 and G2 genes in schizophrenia. Biol. Psychiatry 57: 382-393.
6. Biederer, T. 2006. Hooking up new synapses. Nat. Neurosci. 9: 1203-1204.
7. Kim, S., et al. 2006. NGL family PSD-95-interacting adhesion molecules regulate excitatory synapse formation. Nat. Neurosci. 9: 1294-1301.

CHROMOSOMAL LOCATION

Genetic locus: Ntng2 (mouse) mapping to 2 B.

PRODUCT

netrin G2 siRNA (m) 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 netrin G2 shRNA Plasmid (m): sc-149918-SH and netrin G2 shRNA (m) Lentiviral Particles: sc-149918-V as alternate gene silencing products.

For independent verification of netrin G2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-149918A, sc-149918B and sc-149918C.

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

netrin G2 siRNA (m) is recommended for the inhibition of netrin G2 expression in mouse 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.

GENE EXPRESSION MONITORING

netrin G2 (Y-18L): sc-100330 is recommended as a control antibody for monitoring of netrin G2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor netrin G2 gene expression knockdown using RT-PCR Primer: netrin G2 (m)-PR: sc-149918-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.