

SLITRK4 siRNA (m): sc-153597

BACKGROUND

SLITRK family proteins are integral membrane proteins that have a C-terminal domain that is partially similar to TRK neurotrophin receptor proteins and two leucine-rich repeat (LRR) domains that are similar to those of SLIT proteins. SLITRK4 (SLIT and NTRK-like protein 4) is a 837 amino acid single-pass type I membrane protein that contains 18 LRR (leucine-rich repeats) and is expressed in neural tissues, specifically in the thalamus, hypothalamus, subventricular zone, CA3 region of the hippocampus and cortical plate. SLITRK4 may be upregulated in some astrocytic brain tumors such as glioblastomas, astrocytomas and primitive neuroectodermal tumors. As compared with its family member SLITRK2, SLITRK4 only weakly suppresses neurite outgrowth. A study using genome-wide transcriptional profiling suggested that the gene encoding SLITRK4, as well as the ARL5B and PLA2G7 genes, may be involved in the pathogenesis of preeclampsia.

REFERENCES

1. Aruga, J., Yokota, N. and Mikoshiba, K. 2003. Human SLITRK family genes: genomic organization and expression profiling in normal brain and brain tumor tissue. *Gene* 315: 87-94.
2. Aruga, J. and Mikoshiba, K. 2003. Identification and characterization of Slitrk, a novel neuronal transmembrane protein family controlling neurite outgrowth. *Mol. Cell. Neurosci.* 24: 117-129.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 300562. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Milde, T., Shmelkov, S.V., Jensen, K.K., Zlotchenko, G., Petit, I. and Rafii, S. 2007. A novel family of slitrk genes is expressed on hematopoietic stem cells and leukemias. *Leukemia* 21: 824-827.
5. Beaubien, F. and Cloutier, J.F. 2009. Differential expression of Slitrk family members in the mouse nervous system. *Dev. Dyn.* 238: 3285-3296.
6. Stillman, A.A., Krsnik, Z., Sun, J., Rasin, M.R., State, M.W., Sestan, N. and Louvi, A. 2009. Developmentally regulated and evolutionarily conserved expression of SLITRK1 in brain circuits implicated in Tourette syndrome. *J. Comp. Neurol.* 513: 21-37.
7. Løset, M., Mundal, S.B., Johnson, M.P., Fenstad, M.H., Freed, K.A., Lian, I.A., Eide, I.P., Bjørge, L., Blangero, J., Moses, E.K. and Austgulen, R. 2010. A transcriptional profile of the decidua in preeclampsia. *Am. J. Obstet. Gynecol.* 204: 84.e1-84.e27.
8. Katayama, K., Yamada, K., Ornthanalai, V.G., Inoue, T., Ota, M., Murphy, N.P. and Aruga, J. 2010. Slitrk1-deficient mice display elevated anxiety-like behavior and noradrenergic abnormalities. *Mol. Psychiatry* 15: 177-184.

CHROMOSOMAL LOCATION

Genetic locus: Slitrk4 (mouse) mapping to X A7.1.

PROTOCOLS

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

PRODUCT

SLITRK4 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SLITRK4 shRNA Plasmid (m): sc-153597-SH and SLITRK4 shRNA (m) Lentiviral Particles: sc-153597-V as alternate gene silencing products.

For independent verification of SLITRK4 (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-153597A, sc-153597B and sc-153597C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SLITRK4 siRNA (m) is recommended for the inhibition of SLITRK4 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 μ M in 66 μ l. 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 SLITRK4 gene expression knockdown using RT-PCR Primer: SLITRK4 (m)-PR: sc-153597-PR (20 μ l). 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.