

LRRN2 siRNA (m): sc-149117

BACKGROUND

Leucine-rich repeats (LRRs) are 20-30 amino acid motifs that mediate protein-protein interactions. The primary function of these motifs is to provide a versatile structural framework for the formation of these protein-protein interactions. LRRs are present in a variety of proteins with diverse structure and function, including innate immunity and nervous system development. Several human diseases are associated with mutations in the genes encoding LRR-containing proteins. LRRN2 (leucine-rich repeat neuronal protein 2), also known as GAC1 (glioma amplified on chromosome 1 protein) and LRRN5 (leucine-rich repeat neuronal protein 5), is a 713 amino acid single-pass membrane protein that contains one Ig-like C2-type (immunoglobulin-like) domain and eleven LRR (leucine-rich repeats). The gene encoding GAC1 is amplified and overexpressed in malignant gliomas.

REFERENCES

1. Taguchi, A., Wanaka, A., Mori, T., Matsumoto, K., Imai, Y., Tagaki, T. and Tohyama, M. 1996. Molecular cloning of novel leucine-rich repeat proteins and their expression in the developing mouse nervous system. *Brain Res.* 35: 31-40.
2. Almeida, A., Zhu, X.X., Vogt, N., Tyagi, R., Muleris, M., Dutrillaux, A.M., Dutrillaux, B., Ross, D., Malfoy, B. and Hanash, S. 1998. GAC1, a new member of the leucine-rich repeat superfamily on chromosome band 1q32.1, is amplified and overexpressed in malignant gliomas. *Oncogene* 16: 2997-3002.
3. Kobe, B. and Kajava, A.V. 2001. The leucine-rich repeat as a protein recognition motif. *Curr. Opin. Struct. Biol.* 11: 725-732.
4. Ohira, M., Morohashi, A., Nakamura, Y., Isogai, E., Furuya, K., Hamano, S., Machida, T., Aoyama, M., Fukumura, M., Miyazaki, K., Suzuki, Y., Sugano, S., Hirato, J. and Nakagawara, A. 2003. Neuroblastoma oligo-capping cDNA project: toward the understanding of the genesis and biology of neuroblastoma. *Cancer Lett.* 197: 63-68.
5. Hamano, S., Ohira, M., Isogai, E., Nakada, K. and Nakagawara, A. 2004. Identification of novel human neuronal leucine-rich repeat (hNLRR) family genes and inverse association of expression of Nbla10449/hNLRR-1 and Nbla10677/hNLRR-3 with the prognosis of primary neuroblastomas. *Int. J. Oncol.* 24: 1457-1466.
6. Haines, B.P., Gupta, R., Jones, C.M., Summerbell, D. and Rigby, P.W. 2005. The NLRR gene family and mouse development: modified differential display PCR identifies NLRR-1 as a gene expressed in early somitic myoblasts. *Dev. Biol.* 281: 145-159.
7. Ko, J. and Kim, E. 2007. Leucine-rich repeat proteins of synapses. *J. Neurosci. Res.* 85: 2824-2832.
8. Andrae, L.C., Lumsden, A. and Gilthorpe, J.D. 2009. Chick LRRN2, a novel downstream effector of Hoxb1 and Shh, functions in the selective targeting of rhombomere 4 motor neurons. *Neural Dev.* 4: 27.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: *Lrrn2* (mouse) mapping to 1 E4.

PRODUCT

LRRN2 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 LRRN2 shRNA Plasmid (m): sc-149117-SH and LRRN2 shRNA (m) Lentiviral Particles: sc-149117-V as alternate gene silencing products.

For independent verification of LRRN2 (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-149117A, sc-149117B and sc-149117C.

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

LRRN2 siRNA (m) is recommended for the inhibition of LRRN2 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 LRRN2 gene expression knockdown using RT-PCR Primer: LRRN2 (m)-PR: sc-149117-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.