

LRCH1 siRNA (h): sc-106182

BACKGROUND

Members of the leucine-rich repeat family include LRCH1, LRCH2, LRCH3 and LRCH4. All family members contain one calponin-homology domain and nine leucine-rich repeats. The gene encoding LRCH1, also known as Neuronal protein 81 (NP81), has been suggested to be a possible gene locus for susceptibility to osteoarthritis, especially in women, though studies have shown conflicting results. LRCH1 is a 728 amino acid protein that is expressed at highest levels in cerebellum, with lower levels of expression in spinal cord, ovary, kidney and amygdala. In pigs, the gene encoding LRCH1 is one of 22 genes that is associated with leg and body conformation traits that affect productivity and health. There are two isoforms of LRCH1 that are expressed as a result of alternative splicing events.

REFERENCES

- 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.
- 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.
- Bando, T., Sekine, K., Kobayashi, S., Watabe, A.M., Rump, A., Tanaka, M., Suda, Y., Kato, S., Morikawa, Y., Manabe, T. and Miyajima, A. 2005. Neuronal leucine-rich repeat protein 4 functions in hippocampus-dependent long-lasting memory. *Mol. Cell. Biol.* 25: 4166-4175.
- Spector, T.D., Reneland, R.H., Mah, S., Valdes, A.M., Hart, D.J., Kammerer, S., Langdown, M., Hoyal, C.R., Atienza, J., Doherty, M., Rahman, P., Nelson, M.R. and Braun, A. 2006. Association between a variation in LRCH1 and knee osteoarthritis: a genome-wide single-nucleotide polymorphism association study using DNA pooling. *Arthritis Rheum.* 54: 524-532.
- García-Calero, E., Garda, A.L., Marín, F. and Puelles, L. 2006. Expression of *Lrrn1* marks the prospective site of the zona limitans thalami in the early embryonic chicken diencephalon. *Gene Expr. Patterns* 6: 879-885.
- Ikegawa, S. 2007. New gene associations in osteoarthritis: what do they provide, and where are we going? *Curr. Opin. Rheumatol.* 19: 429-434.
- Snelling, S., Sinsheimer, J.S., Carr, A. and Loughlin, J. 2007. Genetic association analysis of LRCH1 as an osteoarthritis susceptibility locus. *Rheumatology* 46: 250-252.
- Onteru, S.K., Fan, B., Mote, B., Serenius, T., Nikkilä, M., Stalder, K.J. and Rothschild, M.F. 2008. SNP discovery in genes affecting leg health traits in pigs. *Dev. Biol.* 132: 337-342.
- Jiang, Q., Shi, D., Nakajima, M., Dai, J., Wei, J., Malizos, K.N., Qin, J., Miyamoto, Y., Kamatani, N., Liu, B., Tsezou, A., Nakamura, T. and Ikegawa, S. 2008. Lack of association of single nucleotide polymorphism in LRCH1 with knee osteoarthritis susceptibility. *J. Hum. Genet.* 53: 42-47.

CHROMOSOMAL LOCATION

Genetic locus: LRCH1 (human) mapping to 13q14.13.

PRODUCT

LRCH1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LRCH1 shRNA Plasmid (h): sc-106182-SH and LRCH1 shRNA (h) Lentiviral Particles: sc-106182-V as alternate gene silencing products.

For independent verification of LRCH1 (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-106182A, sc-106182B and sc-106182C.

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

LRCH1 siRNA (h) is recommended for the inhibition of LRCH1 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 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 LRCH1 gene expression knockdown using RT-PCR Primer: LRCH1 (h)-PR: sc-106182-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.