SANTA CRUZ BIOTECHNOLOGY, INC.

NLRR4 siRNA (h): sc-75932

BACKGROUND

NLRR4 (neuronal leucine-rich repeat protein 4) is a 740 amino acid single-pass type-I transmembrane protein that contains one fibronectin type-III protein and ten LRR (leucine-rich) repeats. Leucine-rich repeats are 20-30 amino acid stretches that are unusually rich in the hydrophobic amino acid leucine and are frequently involved in the formation of protein-protein interactions. NLRR4 deficient mice show impaired memory retention in hippocampus-dependent tasks, showing that it may be involved in long-term memory. The gene encoding NLRR4 maps to human chromosome 20, which contains nearly 63 million bases that encode over 600 genes, some of which are associated with Creutzfeldt-Jakob disease, amyotrophic lateral sclerosis, spinal muscular atrophy, ring chromosome 20 epilepsy syndrome and Alagille syndrome.

REFERENCES

1. Kobe, B. and Deisenhofer, J. 1994. The leucine-rich repeat: a versatile binding motif. Trends Biochem. Sci. 19: 415-421.
2. Kobe, B. and Kajava, A.V. 2001. The leucine-rich repeat as a protein recognition motif. Curr. Opin. Struct. Biol. 11: 725-732.
3. Deloukas, P., Matthews, L.H., Ashurst, J., Burton, J., Gilbert, J.G., Jones, M., Stavrides, G., Almeida, J.P., Babbage, A.K., Bagguley, C.L., Bailey, J., Barlow, K.F., Bates, K.N., et al. 2001. The DNA sequence and comparative analysis of human chromosome 20. Nature 414: 865-871.
4. Gerhard, D.S., Wagner, L., Feingold, E.A., Shenmen, C.M., Grouse, L.H., Schuler, G., Klein, S.L., Old, S., Rasooly, R., Good, P., Guyer, M., Peck, A.M., Derge, J.G., Lipman, D., et al. 2004. The status, quality, and expansion of the NIH full-length cDNA project: the Mammalian Gene Collection (MGC). Genome Res. 14: 2121-2127.
5. Ota, T., Suzuki, Y., Nishikawa, T., Otsuki, T., Sugiyama, T., Irie, R., Wakamatsu, A., Hayashi, K., Sato, H., Nagai, K., Kimura, K., Makita, H., Sekine, M., Obayashi, M., Nishi, T., et al. 2004. Complete sequencing and characterization of 21,243 full-length human cDNAs. Nat. Genet. 36: 40-45.
6. Enkhbayar, P., Kamiya, M., Osaki, M., Matsumoto, T. and Matsushima, N. 2004. Structural principles of leucine-rich repeat (LRR) proteins. Proteins 54: 394-403.
7. 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.
8. Wei, T., Gong, J., Jamitzky, F., Heckl, W.M., Stark, R.W. and Rössle, S.C. 2008. LRRML: a conformational database and an XML description of leucine-rich repeats (LRRs). BMC Struct. Biol. 8: 47.

CHROMOSOMAL LOCATION

Genetic locus: LRRN4 (human) mapping to 20p12.3.

PROTOCOLS

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

PRODUCT

NLRR4 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 NLRR4 shRNA Plasmid (h): sc-75932-SH and NLRR4 shRNA (h) Lentiviral Particles: sc-75932-V as alternate gene silencing products.

For independent verification of NLRR4 (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-75932A, sc-75932B and sc-75932C.

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

NLRR4 siRNA (h) is recommended for the inhibition of NLRR4 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 NLRR4 gene expression knockdown using RT-PCR Primer: NLRR4 (h)-PR: sc-75932-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.