

LRRC16B siRNA (m): sc-149055

BACKGROUND

LRRC16B (leucine-rich repeat-containing protein 16B) is a 1,372 amino acid protein that belongs to the CARMIL family. LRRC16B contains ten LRR (leucine-rich repeats) and exists as three alternatively spliced isoforms. The gene that encodes LRRC16B consists of approximately 17,732 bases and maps to human chromosome 14q11.2. Housing over 700 genes, chromosome 14 comprises nearly 3.5% of the human genome. Chromosome 14 encodes the Presenilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease. The SERPINA1 gene is also located on chromosome 14 and, when defective, leads to the genetic disorder α 1-antitrypsin deficiency, which is characterized by severe lung complications and liver dysfunction. An inversion of the long arm of chromosome 14 is thought to be involved in T-cell chronic lymphocytic leukemia (CLL), a cancer that affects T lymphocytes.

REFERENCES

1. Zech, L., Gahrton, G., Hammarström, L., Juliusson, G., Mellstedt, H., Robèrt, K.H. and Smith, C.I. 1984. Inversion of chromosome 14 marks human T-cell chronic lymphocytic leukaemia. *Nature* 308: 858-860.
2. Aisenberg, A.C., Krontiris, T.G., Mak, T.W. and Wilkes, B.M. 1985. Rearrangement of the gene for the β chain of the T-cell receptor in T-cell chronic lymphocytic leukemia and related disorders. *N. Engl. J. Med.* 313: 529-533.
3. Schellenberg, G.D., Bird, T.D., Wijsman, E.M., Orr, H.T., Anderson, L., Nemens, E., White, J.A., Bonnycastle, L., Weber, J.L. and Alonso, M.E. 1992. Genetic linkage evidence for a familial Alzheimer's disease locus on chromosome 14. *Science* 258: 668-671.
4. Avramopoulos, D., Fallin, M.D. and Bassett, S.S. 2005. Linkage to chromosome 14q in Alzheimer's disease (AD) patients without psychotic symptoms. *Am. J. Med. Genet. B Neuropsychiatr. Genet.* 132B: 9-13.
5. Lerner, A.J. and Doran, M. 2009. Genotype-phenotype relationships of presenilin-1 mutations in Alzheimer's disease: an update. *J. Alzheimers Dis.* 17: 259-265.
6. Liang, Y., Niederstrasser, H., Edwards, M., Jackson, C.E. and Cooper, J.A. 2009. Distinct roles for CARMIL isoforms in cell migration. *Mol. Biol. Cell* 20: 5290-5305.
7. Topic, A., Alempijevic, T., Milutinovic, A.S. and Kovacevic, N. 2009. α 1-antitrypsin phenotypes in adult liver disease patients. *Ups. J. Med. Sci.* 114: 228-234.
8. Hsu, C.C., Chiang, C.W., Cheng, H.C., Chang, W.T., Chou, C.Y., Tsai, H.W., Lee, C.T., Wu, Z.H., Lee, T.Y., Chao, A., Chow, N.H. and Ho, C.L. 2011. Identifying LRRC16B as an oncofetal gene with transforming enhancing capability using a combined bioinformatics and experimental approach. *Oncogene* 30: 654-667.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: *Lrrc16b* (mouse) mapping to 14 C3.

PRODUCT

LRRC16B 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 LRRC16B shRNA Plasmid (m): sc-149055-SH and LRRC16B shRNA (m) Lentiviral Particles: sc-149055-V as alternate gene silencing products.

For independent verification of LRRC16B (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-149055A, sc-149055B and sc-149055C.

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

LRRC16B siRNA (m) is recommended for the inhibition of LRRC16B 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 LRRC16B gene expression knockdown using RT-PCR Primer: LRRC16B (m)-PR: sc-149055-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.