

TMEM167B siRNA (m): sc-154397

BACKGROUND

TMEM167B, also known as Protein kish-B and C1orf119, is a 74 amino acid single-pass type-I membrane protein that is localized to the Golgi apparatus membrane and functions in the early part of the secretory pathway. The gene encoding TMEM167B maps to human chromosome 1, the largest human chromosome spanning about 260 million base pairs and making up 8% of the human genome. There are about 3,000 genes on chromosome 1, and considering the great number of genes there are also a large number of diseases associated with chromosome 1. Notably, the rare aging disease Hutchinson-Gilford progeria is associated with the LMNA gene which encodes Lamin A. When defective, the LMNA gene product can build up in the nucleus and cause characteristic nuclear blebs. The mechanism of rapidly enhanced aging is unclear and is a topic of continuing exploration. The MUTYH gene is located on chromosome 1 and is partially responsible for familial adenomatous polyposis. Stickler syndrome, Parkinsons, Gaucher disease and Usher syndrome are also associated with chromosome 1.

REFERENCES

1. Hu, R.M., Han, Z.G., Song, H.D., Peng, Y.D., Huang, Q.H., Ren, S.X., Gu, Y.J., Huang, C.H., Li, Y.B., Jiang, C.L., Fu, G., Zhang, Q.H., Gu, B.W., Dai, M., Mao, Y.F., Gao, G.F., Rong, R., Ye, M., Zhou, J., Xu, S.H., et al. 2000. Gene expression profiling in the human hypothalamus-pituitary-adrenal axis and full-length cDNA cloning. *Proc. Natl. Acad. Sci. USA* 97: 9543-9548.
2. Blackwood, D.H., Fordyce, A., Walker, M.T., St Clair, D.M., Porteous, D.J. and Muir, W.J. 2001. Schizophrenia and affective disorders—co-segregation with a translocation at chromosome 1q42 that directly disrupts brain-expressed genes: clinical and P300 findings in a family. *Am. J. Hum. Genet.* 69: 428-433.
3. Weise, A., Starke, H., Mrasek, K., Claussen, U. and Liehr, T. 2005. New insights into the evolution of chromosome 1. *Cytogenet. Genome Res.* 108: 217-222.
4. Marzin, Y., Jamet, D., Douet-Guilbert, N., Morel, F., Le Bris, M.J., Morice, P., Abgrall, J.F., Berthou, C. and De Braekeleer, M. 2006. Chromosome 1 abnormalities in multiple myeloma. *Anticancer Res.* 26: 953-959.
5. Gregory, S.G., Barlow, K.F., McLay, K.E., Kaul, R., Swarbreck, D., Dunham, A., Scott, C.E., Howe, K.L., Woodfine, K., Spencer, C.C., Jones, M.C., Gillson, C., Searle, S., Zhou, Y., et al. 2006. The DNA sequence and biological annotation of human chromosome 1. *Nature* 441: 315-321.
6. Scaffidi, P. and Misteli, T. 2006. Lamin A-dependent nuclear defects in human aging. *Science* 312: 1059-1063.
7. Wendler, F., Gillingham, A.K., Sinka, R., Rosa-Ferreira, C., Gordon, D.E., Franch-Marro, X., Peden, A.A., Vincent, J.P. and Munro, S. 2010. A genome-wide RNA interference screen identifies two novel components of the metazoan secretory pathway. *EMBO J.* 29: 304-314.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Tmem167b (mouse) mapping to 3 F3.

PRODUCT

TMEM167B 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 TMEM167B shRNA Plasmid (m): sc-154397-SH and TMEM167B shRNA (m) Lentiviral Particles: sc-154397-V as alternate gene silencing products.

For independent verification of TMEM167B (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-154397A, sc-154397B and sc-154397C.

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

TMEM167B siRNA (m) is recommended for the inhibition of TMEM167B 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 TMEM167B gene expression knockdown using RT-PCR Primer: TMEM167B (m)-PR: sc-154397-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.