

## FIT1 siRNA (h): sc-92237

### BACKGROUND

FIT1 (fat storage-inducing transmembrane protein 1) is a 292 amino acid multi-pass membrane protein that belongs to an evolutionarily conserved family of proteins involved in fat storage, the FIT family. The FIT1 protein plays an important role in lipid droplet accumulation. Primarily expressed in heart and skeletal muscle, FIT1 is also expressed in liver, kidney and testis. Existing as two alternatively spliced isoforms, the FIT1 gene is conserved in chimpanzee, canine, bovine, mouse, rat and zebrafish, and maps to human chromosome 14q12. Chromosome 14 contains about 700 genes and 106 million base pairs and makes up about 3.5% of human cellular DNA. 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 located on chromosome 14 and when defective leads to the genetic disorder  $\alpha$ 1-antitrypsin deficiency. This disorder is characterized by severe lung complications and liver dysfunction.

### REFERENCES

1. Heilig, R., Eckenberg, R., Petit, J., Fonknechten, N., Da Silva, C., Cattolico, L., Levy, M., Barbe, V., de Berardinis, V., Ureta-Vidal, A., Pelletier, E., Vico, V., Anthouard, V., Rowen, L., Madan, A., Qin, S., et al. 2003. The DNA sequence and analysis of human chromosome 14. *Nature* 421: 601-607.
2. Stolk, J., Seersholm, N. and Kalsheker, N. 2006.  $\alpha$ 1-antitrypsin deficiency: current perspective on research, diagnosis, and management. *Int. J. Chron. Obstruct. Pulmon. Dis.* 1: 151-160.
3. Vetrivel, K.S., Zhang, Y.W., Xu, H. and Thinakaran, G. 2006. Pathological and physiological functions of presenilins. *Mol. Neurodegener.* 1: 4.
4. Filley, C.M., Rollins, Y.D., Anderson, C.A., Arciniegas, D.B., Howard, K.L., Murrell, J.R., Boyer, P.J., Kleinschmidt-DeMasters, B.K. and Ghetti, B. 2007. The genetics of very early onset Alzheimer disease. *Cogn. Behav. Neurol.* 20: 149-156.
5. Kadereit, B., Kumar, P., Wang, W.J., Miranda, D., Snapp, E.L., Severina, N., Torregroza, I., Evans, T. and Silver, D.L. 2008. Evolutionarily conserved gene family important for fat storage. *Proc. Natl. Acad. Sci. USA* 105: 94-99.
6. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 612028. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

### CHROMOSOMAL LOCATION

Genetic locus: FITM1 (human) mapping to 14q12.

### PRODUCT

FIT1 siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see FIT1 shRNA Plasmid (h): sc-92237-SH and FIT1 shRNA (h) Lentiviral Particles: sc-92237-V as alternate gene silencing products.

### RESEARCH USE

For research use only, not for use in diagnostic procedures.

### 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

### APPLICATIONS

FIT1 siRNA (h) is recommended for the inhibition of FIT1 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  $\mu$ M in 66  $\mu$ 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 FIT1 gene expression knockdown using RT-PCR Primer: FIT1 (h)-PR: sc-92237-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.