SANTA CRUZ BIOTECHNOLOGY, INC.

ACTL7B siRNA (h): sc-92677

BACKGROUND

ACTL7B (Actin-like 7B) is a member of the ARP family of Actin-related proteins that contain an Actin fold and are involved in spindle orientation, nuclear migration and chromatin remodeling events. Localized to the cytoplasm and expressed in the testis and prostate, ACTL7B is 415 amino acids in length and is encoded by a gene that is oriented in a head-to-head formation with the familial dysautonomia (FD) candidate region on chromosome 9. Although located in a region associated with FD, ACTL7B is not involved in the pathogenesis of the genetic disease. ACTL7B shares high sequence similarity with ACTL7A (Actin-like 7A) and contains one conserved protein kinase C (PKC) site and one conserved cAMP/cGMP-dependent phosphorylation site. The human and mouse proteins share 88% sequence similarity.

REFERENCES

1. Chadwick, B.P., et al. 1999. Cloning, mapping, and expression of two novel Actin genes, Actin-like-7A (ACTL7A) and Actin-like-7B (ACTL7B), from the familial dysautonomia candidate region on 9q31. Genomics 58: 302-309.
2. Schafer, D.A. and Schroer, T.A. 1999. Actin-related proteins. Annu. Rev. Cell Dev. Biol. 15: 341-363.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604304. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Hisano, M., et al. 2003. Methylation of CpG dinucleotides in the open reading frame of a testicular germ cell-specific intronless gene, Tact1/Actl7b, represses its expression in somatic cells. Nucleic Acids Res. 31: 4797-4804.
5. Tanaka, H., et al. 2003. Novel Actin-like proteins T-ACTIN 1 and T-ACTIN 2 are differentially expressed in the cytoplasm and nucleus of mouse haploid germ cells. Biol. Reprod. 69: 475-482.
6. Hisano, M., et al. 2003. Genomic structure and promoter activity of the testis haploid germ cell-specific intronless genes, Tact1 and Tact2. Mol. Reprod. Dev. 65: 148-156.
7. SWISS-PROT/TrEMBL (Q9Y614). World Wide Web URL: http://www.uniprot.org/uniprot/Q9Y614

CHROMOSOMAL LOCATION

Genetic locus: ACTL7B (human) mapping to 9q31.3.

PRODUCT

ACTL7B 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 ACTL7B shRNA Plasmid (h): sc-92677-SH and ACTL7B shRNA (h) Lentiviral Particles: sc-92677-V as alternate gene silencing products.

For independent verification of ACTL7B (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-92677A, sc-92677B and sc-92677C.

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

ACTL7B siRNA (h) is recommended for the inhibition of ACTL7B 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.

GENE EXPRESSION MONITORING

ACTL7B (F-1): sc-398446 is recommended as a control antibody for monitoring of ACTL7B gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ACTL7B gene expression knockdown using RT-PCR Primer: ACTL7B (h)-PR: sc-92677-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.

PROTOCOLS

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