SANTA CRUZ BIOTECHNOLOGY, INC.

ANKRD16 siRNA (h): sc-90379

BACKGROUND

Ankyrins are membrane adaptor molecules that play important roles in coupling integral membrane proteins to the spectrin-based cytoskeleton network. Mutations of ankyrin genes lead to severe genetic diseases, such as fatal cardiac arrhythmias and hereditary spherocytosis. ANKRD16 (ankyrin repeat domain 16) is a 361 amino acid protein that contains nine ANK repeats. Encoded by a gene that maps to human chromosome 10p15.1, ANKRD16 is conserved in chimpanzee, bovine, mouse, rat, chicken and zebrafish. Down-regulation of ANKRD16, an HRT1 and HES target gene, in Hutchinson-Gilford Progeria Syndrome (HGPS) cells confirms activation of the Notch signaling pathway, thereby playing a vital role in the premature-aging disease, physiological aging, adult stem cell dysfunction and progressive deterioration of tissue functions. The ANK repeats of ANKRD16 are also directly affected by alternative splicing in breast and ovarian cancer, supporting the theory that splicing likely aids malignant growth.

REFERENCES

1. Deloukas, P., et al. 2004. The DNA sequence and comparative analysis of human chromosome 10. Nature 429: 375-381.
2. Scaffidi, P. and Misteli, T. 2008. Lamin A-dependent misregulation of adult stem cells associated with accelerated ageing. Nat. Cell Biol. 10: 452-459.
3. Johnson, C., et al. 2009. Convergent genome wide association results for bipolar disorder and substance dependence. Am. J. Med. Genet. B Neuropsychiatr. Genet. 150B: 182-190.
4. Venables, J.P., et al. 2009. Cancer-associated regulation of alternative splicing. Nat. Struct. Mol. Biol. 16: 670-676.
5. Kumar, C.G., et al. 2010. Functional annotation of novel lineage-specific genes using co-expression and promoter analysis. BMC Genomics 11: 161.
6. Turnbull, C., et al. 2010. Genome-wide association study identifies five new breast cancer susceptibility loci. Nat. Genet. 42: 504-507.
7. SWISS-PROT/TrEMBL (Q6P6B7). World Wide Web URL: http://www.uniprot.org/uniprot/Q6P6B7

CHROMOSOMAL LOCATION

Genetic locus: ANKRD16 (human) mapping to 10p15.1.

PRODUCT

ANKRD16 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ANKRD16 shRNA Plasmid (h): sc-90379-SH and ANKRD16 shRNA (h) Lentiviral Particles: sc-90379-V as alternate gene silencing products.

PROTOCOLS

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

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

ANKRD16 siRNA (h) is recommended for the inhibition of ANKRD16 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 ANKRD16 gene expression knockdown using RT-PCR Primer: ANKRD16 (h)-PR: sc-90379-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.