SANTA CRUZ BIOTECHNOLOGY, INC.

Cochlin siRNA (m): sc-60428

BACKGROUND

Cochlin is a secreted protein encoded by the coagulation factor C homology (COCH) gene, a cochlear gene. It constitutes 70% of the inner ear proteins and is classified into three glycosylated isoforms: p63s, p44s and p40. Cochlin contains an N-terminal LCCL domain and two von Willebrand factor A-like domains. Mutations in the COCH gene cause DFNA9, an autosomal dominant nonsyndromic auditory and vestibular dysfunction disorder, as a result of either an amino acid deletion in the LCCL domain or missense substitutions. Microfibrillar deposits accumulate in the inner ear of individuals with DFNA9 and these deposits may contain the Cochlin protein. Cochlin is a target antigen for autoimmune sensorineural hearing loss.

REFERENCES

1. Robertson, N.G., et al. 1998. Mutations in a novel cochlear gene cause DFNA9, a human nonsyndromic deafness with vestibular dysfunction. Nat. Genet. 20: 299-303.
2. Robertson, N.G., et al. 2003. Subcellular localization, secretion and post-translational processing of normal Cochlin, and of mutants causing the sensorineural deafness and vestibular disorder, DFNA9. J. Med. Genet. 40: 479-486.
3. Lair, V., et al. 2004. Thermodynamic study of the protonation of dimethyldodecylamine N-oxide micelles in aqueous solution at 298 K. Establishment of a theoretical relationship linking critical micelle concentrations and pH. Langmuir 20: 8490-8495.
4. Bhattacharya, S.K., et al. 2005. Cochlin deposits in the trabecular meshwork of the glaucomatous DBA/2J mouse. Exp. Eye Res. 80: 741-744.
5. Li, L., et al. 2005. Expression of full-length Cochlin p63s is inner ear specific. Auris Nasus Larynx 32: 219-223.
6. Makishima, T., et al. 2005. Targeted disruption of mouse Coch provides functional evidence that DFNA9 hearing loss is not a COCH haploinsufficiency disorder. Hum. Genet. 118: 29-34.
7. Robertson, N.G., et al. 2006. Cochlin immunostaining of inner ear pathologic deposits and proteomic analysis in DFNA9 deafness and vestibular dysfunction. Hum. Mol. Genet. 15: 1071-1085.

CHROMOSOMAL LOCATION

Genetic locus: Coch (mouse) mapping to 12 C1.

PRODUCT

Cochlin 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Cochlin shRNA Plasmid (m): sc-60428-SH and Cochlin shRNA (m) Lentiviral Particles: sc-60428-V as alternate gene silencing products.

For independent verification of Cochlin (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-60428A, sc-60428B and sc-60428C.

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

Cochlin siRNA (m) is recommended for the inhibition of Cochlin 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 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 Cochlin gene expression knockdown using RT-PCR Primer: Cochlin (m)-PR: sc-60428-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.