SANTA CRUZ BIOTECHNOLOGY, INC.

otogelin siRNA (h): sc-96567

BACKGROUND

Otogelin (OTOG), also known as OTGN, is a 2,925 amino acid secreted protein that belongs to the otogelin family and exists as two alternatively spliced isoforms. Otogelin contains four VWFD domains, one CTCK (C-terminal cystine knot-like) domain, one EGF-like domain and one TIL (trypsin inhibitory-like) domain. As a glycoprotein specific to acellular membranes of the inner ear, otogelin may be involved in the organization and/or stabilization of the fibrillar network that composes the tectorial membrane in the cochlea. In addition, otogelin may be required for the anchoring of the otoconial membranes and cupulae to the underlying neuroepithelia in the vestibule of the ear. The gene that encodes otogelin consists of nearly 100,000 bases and maps to human chromosome 11p15.1.

REFERENCES

1. Cohen-Salmon, M., El-Amraoui, A., Leibovici, M. and Petit, C. 1997. Otogelin: a glycoprotein specific to the acellular membranes of the inner ear. Proc. Natl. Acad. Sci. USA 94: 14450-14455.
2. Cohen-Salmon, M., Mattei, M.G. and Petit, C. 1999. Mapping of the otogelin gene (OTGN) to mouse chromosome 7 and human chromosome 11p14.3: a candidate for human autosomal recessive nonsyndromic deafness DFNB18. Mamm. Genome 10: 520-522.
3. Fabiani, J.E., Avigliano, A., Dupont, J.C. and Fabiana, J.E. 2000. Hereditary angioedema. Long-term follow-up of 88 patients. Experience of the Argentine Allergy and Immunology Institute. Allergol. Immunopathol. 28: 267-271.
4. Simmler, M.C., Cohen-Salmon, M., El-Amraoui, A., Guillaud, L., Benichou, J.C., Petit, C. and Panthier, J.J. 2000. Targeted disruption of otog results in deafness and severe imbalance. Nat. Genet. 24: 139-143.
5. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604487. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Jira, P.E., Waterham, H.R., Wanders, R.J., Smeitink, J.A., Sengers, R.C. and Wevers, R.A. 2003. Smith-Lemli-Opitz syndrome and the DHCR7 gene. Ann. Hum. Genet. 67: 269-280.
7. Schuchman, E.H. 2007. The pathogenesis and treatment of acid sphingomyelinase-deficient Niemann-Pick disease. J. Inherit. Metab. Dis. 30: 654-663.
8. Bhuiyan, Z.A., Momenah, T.S., Amin, A.S., Al-Khadra, A.S., Alders, M., Wilde, A.A. and Mannens, M.M. 2008. An intronic mutation leading to incomplete skipping of exon-2 in KCNQ1 rescues hearing in Jervell and Lange-Nielsen syndrome. Prog. Biophys. Mol. Biol. 98: 319-327.
9. Coldren, C.D., Lai, Z., Shragg, P., Rossi, E., Glidewell, S.C., Zuffardi, O., Mattina, T., Ivy, D.D., Curfs, L.M., Mattson, S.N., Riley, E.P., Treier, M. and Grossfeld, P.D. 2009. Chromosomal microarray mapping suggests a role for BSX and Neurogranin in neurocognitive and behavioral defects in the 11q terminal deletion disorder (Jacobsen syndrome). Neurogenetics 10: 89-95.

CHROMOSOMAL LOCATION

Genetic locus: OTOG (human) mapping to 11p15.1.

PRODUCT

otogelin siRNA (h) is a pool of 2 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 otogelin shRNA Plasmid (h): sc-96567-SH and otogelin shRNA (h) Lentiviral Particles: sc-96567-V as alternate gene silencing products.

For independent verification of otogelin (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-96567A and sc-96567B.

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

otogelin siRNA (h) is recommended for the inhibition of otogelin 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 otogelin gene expression knockdown using RT-PCR Primer: otogelin (h)-PR: sc-96567-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.