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### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# Stereocilin siRNA (m): sc-153892

## BACKGROUND

Stereocilin (STRC) is a 1,775 amino acid cell surface protein that belongs to the Stereocilin family. The STRC gene maps to human chromosome 15q15.3 and encodes a protein that is associated with the hair bundle of the sensory hair cells in the inner ear. The hair bundle is composed of stiff microvilli called stereocilia and is involved with mechanoreception of sound waves. Defects in Stereocilin are the cause of deafness autosomal recessive type 16 (DFNB16), which is a form of sensorineural hearing loss. Sensorineural deafness results from damage to the neural receptors of the inner ear, the nerve pathways to the brain or the area of the brain that receives sound information. Defects in Stereocilin can also cause deafness-infertility syndrome (DIS), which is characterized by deafness and infertility, and is caused by large contiguous gene deletions at 15q15.3 that remove both STRC and CatSper2 genes.

## REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 603720. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Verpy, E., Masmoudi, S., Zwaenepoel, I., Leibovici, M., Hutchin, T.P., Del Castillo, I., Nouaille, S., Blanchard, S., Laine, S., Popot, J.L., Moreno, F., Mueller, R.F. and Petit, C. 2001. Mutations in a new gene encoding a protein of the hair bundle cause non-syndromic deafness at the DFNB16 locus. *Nat. Genet.* 29: 345-349.
3. Zhang, Y., Malekpour, M., Al-Madani, N., Kahrizi, K., Zanganeh, M., Lohr, N.J., Mohseni, M., Mojahedi, F., Daneshi, A., Najmabadi, H. and Smith, R.J. 2007. Sensorineural deafness and male infertility: a contiguous gene deletion syndrome. *J. Med. Genet.* 44: 233-240.
4. Verpy, E., Weil, D., Leibovici, M., Goodyear, R.J., Hamard, G., Houdon, C., Lefèvre, G.M., Hardelin, J.P., Richardson, G.P., Avan, P. and Petit, C. 2008. Stereocilin-deficient mice reveal the origin of cochlear waveform distortions. *Nature* 456: 255-258.

## CHROMOSOMAL LOCATION

Genetic locus: Strc (mouse) mapping to 2 E5.

## PRODUCT

Stereocilin 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Stereocilin shRNA Plasmid (m): sc-153892-SH and Stereocilin shRNA (m) Lentiviral Particles: sc-153892-V as alternate gene silencing products.

For independent verification of Stereocilin (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-153892A, sc-153892B and sc-153892C.

## 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

Stereocilin siRNA (m) is recommended for the inhibition of Stereocilin 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  $\mu$ 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 Stereocilin gene expression knockdown using RT-PCR Primer: Stereocilin (m)-PR: sc-153892-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.