SANTA CRUZ BIOTECHNOLOGY, INC.

GRHL2 siRNA (m): sc-145761

BACKGROUND

The grainyhead subfamily, whose members include GRHL1, GRHL2 and GRHL3, consist of orthologs of the *Drosophila* grainyhead (GRH) protein. In *Drosophila,* GRH is involved in early dorsal/ventral patterning and tissue development. The grainyhead subfamily members are, therefore, believed to act as transcription factors during development. GRHL1, GRHL2 and GRHL3 are localized to the nucleus and exist as homodimers or as heterodimers with each other. GRHL2, also known as BOM or TFCP2L3, is a 325 amino acid protein that is highly expressed in kidney, brain, placenta and prostate, with lower expression in thymus, lung and salivary gland. Like other members of the grainyhead family, GRHL2, which exists as two alternatively spliced isoforms, is thought to function as a transcription factor. Increased GRHL2 expression is thought to play a role in the pathogenesis of hepatocellular carcinoma, suggesting that GRHL2 may be involved in carcinogenesis. Defects in the gene encoding GRHL2 are the cause of non-syndromic sensorineural deafness autosomal dominant type 28 (DFNA28), a form of sensorineural hearing loss.

REFERENCES

1. Peters, L.M., et al. 2002. Mutation of a transcription factor, TFCP2L3, causes progressive autosomal dominant hearing loss, DFNA28. Hum. Mol. Genet. 11: 2877-2885.
2. Wilanowski, T., et al. 2002. A highly conserved novel family of mammalian developmental transcription factors related to *Drosophila* grainyhead. Mech. Dev. 114: 37-50.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608576. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Ting, S.B., et al. 2003. The identification and characterization of human sister-of-mammalian grainyhead (SOM) expands the grainyhead-like family of developmental transcription factors. Biochem. J. 370: 953-962.
5. Auden, A., et al. 2006. Spatial and temporal expression of the grainyhead-like transcription factor family during murine development. Gene Expr. Patterns 6: 964-970.

CHROMOSOMAL LOCATION

Genetic locus: Grhl2 (mouse) mapping to 15 B3.1.

PRODUCT

GRHL2 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 GRHL2 shRNA Plasmid (m): sc-145761-SH and GRHL2 shRNA (m) Lentiviral Particles: sc-145761-V as alternate gene silencing products.

For independent verification of GRHL2 (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-145761A, sc-145761B and sc-145761C.

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

GRHL2 siRNA (m) is recommended for the inhibition of GRHL2 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 GRHL2 gene expression knockdown using RT-PCR Primer: GRHL2 (m)-PR: sc-145761-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.