SANTA CRUZ BIOTECHNOLOGY, INC.

# GRHL1 siRNA (m): sc-145760

## 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. GRHL1 (grainyhead-like 1 *(Drosophila)),* also known as MGR, LBP32, NH32 or TFCP2L2, is a 618 amino acid nuclear protein that is highly expressed in kidney, brain, tonsil, liver, placenta and pancreas. Like other members of the grainyhead family, GRHL1, which exists as three alternatively spliced isoforms, is thought to function as a transcription factor. GRHL1 is known to bind and transactivate the EN-1 promoter and may play a role in epidermal differentiation.

## REFERENCES


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2. 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.
3. Wilanowski, T., et al. 2002. A highly conserved novel family of mammalian developmental transcription factors related to *Drosophila* grainyhead. Mech. Dev. 114: 37-50.
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. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609786. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Henderson, Y.C., et al. 2008. LBP-1b, LBP-9, and LBP-32/MGR detected in syncytiotrophoblasts from first-trimester human placental tissue and their transcriptional regulation. DNA Cell Biol. 27: 71-79.


## CHROMOSOMAL LOCATION

Genetic locus: Grhl1 (mouse) mapping to 12 A1.3.

## PRODUCT

GRHL1 siRNA (m) 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 GRHL1 shRNA Plasmid (m): sc-145760-SH and GRHL1 shRNA (m) Lentiviral Particles: sc-145760-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

GRHL1 siRNA (m) is recommended for the inhibition of GRHL1 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.

## GENE EXPRESSION MONITORING

GRHL1 (D-2): sc-515541 is recommended as a control antibody for monitoring of GRHL1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GRHL1 gene expression knockdown using RT-PCR Primer: GRHL1 (m)-PR: sc-145760-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.