SANTA CRUZ BIOTECHNOLOGY, INC.

GLIS1 siRNA (m): sc-62381

BACKGROUND

GLIS1 is a 789 amino acid protein encoded by the human gene GLIS1. Located in the nucleus, GLIS1 acts as both a repressor and activator of transcription. GLIS1 belongs to the GLI C_2H_2-type zinc-finger protein family and contains 5 C_2H_2-type zinc fingers. GLIS1 is expressed in a temporal and spatial manner during development, with expression being most prominent in several defined structures of mesodermal lineage, including craniofacial regions, branchial arches, somites, vibrissal and hair follicles, limb buds, and myotomes. GLIS1 is a a novel Krüppel-like protein that binds to the consensus sequence 5'-GACCACCCAC-3'. The Krüppel gene family characterized by a consensus C_2H_2 zinc finger domain and is believed to function as a transcription activator in the vertebrate Sonic hedgehog (Shh)-patched signal transduction pathway. Understanding GLI gene regulation may be of importance to understanding causes of human birth defects and cancer.

REFERENCES

1. Liu, C.Z., et al. 1998. Characterization of the promoter region and genomic organization of GLI, a member of the Sonic hedgehog-Patched signaling pathway. Gene 209: 1-11.
2. Zhang, F. and Jetten, A.M. 2001. Genomic structure of the gene encoding the human GLI-related, Krüppel-like zinc finger protein GLIS2. Gene 280: 49-57.
3. Zhang, F., et al. 2002. Characterization of GLIS, a novel gene encoding a Gli-related, Krüppel-like transcription factor with transactivation and repressor functions. Roles in kidney development and neurogenesis. J. Biol. Chem. 277: 10139-10149.
4. Kim, Y.S., et al. 2002. Identification of GLIS1, a novel Gli-related, Krüppel-like zinc finger protein containing transactivation and repressor functions. J. Biol. Chem. 277: 30901-30913.
5. Nakashima, M., et al. 2002. A novel gene, GliH1, with homology to the Gli zinc finger domain not required for mouse development. Mech. Dev. 119: 21-34.

CHROMOSOMAL LOCATION

Genetic locus: Glis1 (mouse) mapping to 4 C7.

PRODUCT

GLIS1 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 GLIS1 shRNA Plasmid (m): sc-62381-SH and GLIS1 shRNA (m) Lentiviral Particles: sc-62381-V as alternate gene silencing products.

For independent verification of GLIS1 (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-62381A, sc-62381B and sc-62381C.

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

GLIS1 siRNA (m) is recommended for the inhibition of GLIS1 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

GLIS1 (A-3): sc-373755 is recommended as a control antibody for monitoring of GLIS1 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 GLIS1 gene expression knockdown using RT-PCR Primer: GLIS1 (m)-PR: sc-62381-PR (20 µl, 466 bp). 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.