SANTA CRUZ BIOTECHNOLOGY, INC.

GLI-2 siRNA (h): sc-37913

BACKGROUND

Zinc-finger proteins contain DNA-binding domains and have a wide variety of functions, most of which encompass some form of transcriptional activation or repression. The majority of zinc-finger proteins contain a Krüppel-type DNA binding domain and a KRAB domain, which is thought to interact with KAP1, thereby recruiting histone modifying proteins. GLI-2 (GLI family zinc finger 2), also known as HPE9 or THP (tax helper protein), is a 1,586 amino acid nuclear protein that acts as a transcriptional activator and belongs to the GLI C_2H_2-type zinc-finger protein family. Localized to the nucleus, GLI-2 is thought to play a role in embryogenesis. The gene encoding GLI-2 maps to human chromosome 2q14.2, and when defective is the cause of holoprosencephaly type 9 (HPE9). GLI-2 exists as five alternatively spliced isoforms.

CHROMOSOMAL LOCATION

Genetic locus: GLI2 (human) mapping to 2q14.2.

PRODUCT

GLI-2 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 GLI-2 shRNA Plasmid (h): sc-37913-SH and GLI-2 shRNA (h) Lentiviral Particles: sc-37913-V as alternate gene silencing products.

For independent verification of GLI-2 (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-37913A and sc-37913B.

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

GLI-2 siRNA (h) is recommended for the inhibition of GLI-2 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.

GENE EXPRESSION MONITORING

GLI-2 (C-10): sc-271786 is recommended as a control antibody for monitoring of GLI-2 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 GLI-2 gene expression knockdown using RT-PCR Primer: GLI-2 (h)-PR: sc-37913-PR (20 µl, 452 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Nagao, H., et al. 2011. Role of GLI-2 in the growth of human osteosarcoma. J. Pathol. 224: 169-179.
2. Okabe, S., et al. 2012. Effects of the hedgehog inhibitor GDC-0449, alone or in combination with dasatinib, on Bcr-Abl-positive leukemia cells. Stem Cells Dev. 21: 2939-2948.
3. Nagao-Kitamoto, H., et al. 2015. GLI-2 is a novel therapeutic target for metastasis of osteosarcoma. Int. J. Cancer 136: 1276-1284.
4. Maiti, S., et al. 2017. mTORC2 regulates hedgehog pathway activity by promoting stability to GLI2 protein and its nuclear translocation. Cell Death Dis. 8: e2926.
5. Shao, J.B., et al. 2017. The mechanism of epithelial-mesenchymal transition induced by TGF-β1 in neuroblastoma cells. Int. J. Oncol. 50: 1623-1633.
6. Seidl, C., et al. 2019. MicroRNA-182-5p regulates hedgehog signaling pathway and chemosensitivity of cisplatin-resistant lung adenocarcinoma cells via targeting GLI2. Cancer Lett. 469: 266-276.
7. Xu, Y., et al. 2019. Crosstalk between Hh and Wnt signaling promotes osteosarcoma progression. Int. J. Clin. Exp. Pathol. 12: 768-773.
8. Tan, Y., et al. 2020. Silencing of brain-expressed X-linked 2 (BEX2) promotes colorectal cancer metastasis through the Hedgehog signaling pathway. Int. J. Biol. Sci. 16: 228-238.

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.