

GLI-1 siRNA (r): sc-270268

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-1 (GLI family zinc finger 1), also known as glioma-associated oncogene or oncogene GLI, is a 1,106 amino acid protein that localizes to both the cytoplasm and nucleus, and belongs to the GLI C₂H₂-type zinc-finger protein family. GLI-1 acts as a transcriptional activator and is thought to play a role in craniofacial development. GLI-1 exists as two alternatively spliced isoforms and is encoded by a gene that maps to human chromosome 12q13.3.

REFERENCES

1. Kinzler, K.W., et al. 1988. The GLI gene is a member of the Krüppel family of zinc finger proteins. *Nature* 332: 371-374.
2. Pavletich, N.P. and Pabo, C.O. 1993. Crystal structure of a five-finger GLI-DNA complex: new perspectives on zinc fingers. *Science* 261: 1701-1707.
3. Wang, X.Q., et al. 2000. Letters to the editor: identification of polymorphic variants of the GLI-1 oncogene. *J. Invest. Dermatol.* 115: 328-329.
4. Murone, M., et al. 2000. GLI regulation by the opposing activities of fused and suppressor of fused. *Nat. Cell Biol.* 2: 310-312.
5. Koyabu, Y., et al. 2001. Physical and functional interactions between Zic and GLI proteins. *J. Biol. Chem.* 276: 6889-6892.
6. Filion, G.J., et al. 2006. A family of human zinc finger proteins that bind methylated DNA and repress transcription. *Mol. Cell. Biol.* 26: 169-181.

CHROMOSOMAL LOCATION

Genetic locus: Gli1 (rat) mapping to 7q22.

PRODUCT

GLI-1 siRNA (r) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GLI-1 shRNA Plasmid (r): sc-270268-SH and GLI-1 shRNA (r) Lentiviral Particles: sc-270268-V as alternate gene silencing products.

For independent verification of GLI-1 (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270268A, sc-270268B and sc-270268C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

GLI-1 siRNA (r) is recommended for the inhibition of GLI-1 expression in rat 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 μ M in 66 μ 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.

GENE EXPRESSION MONITORING

GLI-1 (C-1): sc-515751 is recommended as a control antibody for monitoring of GLI-1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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-1 gene expression knockdown using RT-PCR Primer: GLI-1 (r)-PR: sc-270268-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Bensalma, S., et al. 2019. PKA at a cross-road of signaling pathways involved in the regulation of glioblastoma migration and invasion by the neuropeptides VIP and PACAP. *Cancers* 11: 123.

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.