SANTA CRUZ BIOTECHNOLOGY, INC.

Gfi-1 siRNA (h): sc-35467

BACKGROUND

Growth factor independent 1 (Gfi-1) is a transcriptional repressor that specifically binds to the DNA consensus sequence TAAATCAC(A/T)GCA. The carboxy-terminus of Gfi-1 contains six C_2H_2-type zinc finger motifs, and zinc fingers 3, 4 and 5 are required for the binding of Gfi-1 to its DNA binding site. Gfi-1 also contains a 20 amino acid SNAG domain which mediates transcriptional repression. It represses Bax at the mRNA and protein levels, resulting in the inhibition of cell death. Gfi1 is expressed outside the lymphoid system in granulocytes and activated macrophages. Gfi-1B, a related protein, is a transcriptional repressor primarily expressed in bone marrow and spleen. Gfi-1B is a direct repressor of the p21 promoter and the Socs 1 and 3 promoters. The genes encoding human Gfi-1 and Gfi-1B map to chromosome 1p22.1 and 9q34.3, respectively.

REFERENCES

1. Gilks, C.B., et al. 1993. Progression of interleukin-2 (IL-2)-dependent rat T cell lymphoma lines to IL-2-independent growth following activation of a gene (Gfi-1) encoding a novel zinc finger protein. Mol. Cell. Biol. 13: 1759-1768.
2. Bell, D.W., et al. 1995. Chromosomal localization of a gene, Gfi-1, encoding a novel zinc finger protein reveals a new syntenic region between man and rodents. Cytogenet. Cell Genet. 70: 263-267.
3. Zweidler-McKay, P.A., et al. 1996. Gfi-1 encodes a nuclear zinc finger protein that binds DNA and functions as a transcriptional repressor. Mol. Cell. Biol. 16: 4024-4034.

CHROMOSOMAL LOCATION

Genetic locus: GFI1 (human) mapping to 1p22.1.

PRODUCT

Gfi-1 siRNA (h) 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 Gfi-1 shRNA Plasmid (h): sc-35467-SH and Gfi-1 shRNA (h) Lentiviral Particles: sc-35467-V as alternate gene silencing products.

For independent verification of Gfi-1 (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-35467A, sc-35467B and sc-35467C.

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

Gfi-1 siRNA (h) is recommended for the inhibition of Gfi-1 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

Gfi-1 (B-9): sc-376949 is recommended as a control antibody for monitoring of Gfi-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-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 Gfi-1 gene expression knockdown using RT-PCR Primer: Gfi-1 (h)-PR: sc-35467-PR (20 µl, 529 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Nakazawa, Y., et al. 2007. Cooperative interaction between Ets-1 and Gfi-1 transcription factors in the repression of Bax gene expression. Oncogene 26: 3541-3550.
2. Jung, J.H., et al. 2010. Triad 1 induces apoptosis by p53 activation. FEBS Lett. 584: 1565-1570.
3. Kenth, G., et al. 2011. Human growth hormone receptor gene expression is regulated by Gfi-1/1b and GAGA *cis*-elements. Mol. Cell. Endocrinol. 335: 135-147.
4. D'Souza, S., et al. 2011. Gfi-1 expressed in bone marrow stromal cells is a novel osteoblast suppressor in patients with multiple myeloma bone disease. Blood 118: 6871-6880.

RESEARCH USE

For research use only, not for use in diagnostic procedures.