

ZNF143 siRNA (h): sc-97004

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. ZNF143 (zinc finger protein 143), also known as SBF, STAF or pHZ-1, is a 626 amino acid protein that contains seven C₂H₂-type zinc fingers and belongs to the GLI (glioma-associated oncogene) C₂H₂-type zinc finger family. Localized to the nucleus and expressed ubiquitously with highest expression in ovaries, ZNF143 functions as a transcriptional activator that, via its C₂H₂-type zinc domains, binds to the SPH motif found in the promoters of small nuclear RNAs (snRNA). Through its ability to bind the promoters of various snRNA genes, ZNF143 controls the subsequent expression of the corresponding protein products. ZNF143 expression is induced upon DNA damage, suggesting an important role for ZNF143 in DNA repair events.

REFERENCES

1. Myslinski, E., et al. 1998. ZNF76 and ZNF143 are two human homologs of the transcriptional activator STAF. *J. Biol. Chem.* 273: 21998-22006.
2. Rincon, J.C., et al. 1998. Molecular cloning of a cDNA encoding human SPH-binding factor, a conserved protein that binds to the enhancer-like region of the U6 small nuclear RNA gene promoter. *Nucleic Acids Res.* 26: 4846-4852.
3. Saur, D., et al. 2002. Complex regulation of human neuronal nitric-oxide synthase exon 1c gene transcription. Essential role of Sp and ZNF family members of transcription factors. *J. Biol. Chem.* 277: 25798-25814.
4. Ishiguchi, H., et al. 2004. ZNF143 activates gene expression in response to DNA damage and binds to cisplatin-modified DNA. *Int. J. Cancer* 111: 900-909.

CHROMOSOMAL LOCATION

Genetic locus: ZNF143 (human) mapping to 11p15.4.

PRODUCT

ZNF143 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZNF143 shRNA Plasmid (h): sc-97004-SH and ZNF143 shRNA (h) Lentiviral Particles: sc-97004-V as alternate gene silencing products.

For independent verification of ZNF143 (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-97004A, sc-97004B and sc-97004C.

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

ZNF143 siRNA (h) is recommended for the inhibition of ZNF143 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 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

ZNF143 (L-26): sc-100983 is recommended as a control antibody for monitoring of ZNF143 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 ZNF143 gene expression knockdown using RT-PCR Primer: ZNF143 (h)-PR: sc-97004-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. Paek, A.R., et al. 2014. A role of zinc-finger protein 143 for cancer cell migration and invasion through ZEB1 and E-cadherin in colon cancer cells. *Mol. Carcinog.* 53: E161-E168.
2. Kim, Y., et al. 2019. A mutation in ZNF143 as a novel candidate gene for endothelial corneal dystrophy. *J. Clin. Med.* 8: 1174.

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.