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Sp6 siRNA (m): sc-153691

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. Sp6, also known as EPFN, EPIPROFIN or KLF14, is a 376 amino acid protein that localizes to the nucleus and contains three C₂H₂-type zinc-fingers. Expressed ubiquitously with higher expression in developing teeth, hair follicles and limb buds, Sp6 functions to bind GC-rich sequences and related GT and CACCC boxes, thereby promoting cellular proliferation. Human Sp6 shares 96% sequence homology with its mouse counterpart, suggesting a conserved role between species. The gene encoding Sp6 maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes.

REFERENCES

1. Scohy, S., et al. 2000. Identification of KLF13 and KLF14 (Sp6), novel members of the SP/XKLF transcription factor family. *Genomics* 70: 93-101.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608613. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Nakamura, T., et al. 2004. The Krüppel-like factor epiprofin is expressed by epithelium of developing teeth, hair follicles and limb buds, and promotes cell proliferation. *J. Biol. Chem.* 279: 626-634.
4. Hertveldt, V., et al. 2007. The Sp6 locus uses several promoters and generates sense and antisense transcripts. *Biochimie* 89: 1381-1387.
5. Hertveldt, V., et al. 2008. The development of several organs and appendages is impaired in mice lacking Sp6. *Dev. Dyn.* 237: 883-892.
6. Nakamura, T., et al. 2008. Transcription factor epiprofin is essential for tooth morphogenesis by regulating epithelial cell fate and tooth number. *J. Biol. Chem.* 283: 4825-4833.
7. Ruspita, I., et al. 2008. Sp6 downregulation of follistatin gene expression in ameloblasts. *J. Med. Invest.* 55: 87-98.

CHROMOSOMAL LOCATION

Genetic locus: Sp6 (mouse) mapping to 11 D.

PRODUCT

Sp6 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 Sp6 shRNA Plasmid (m): sc-153691-SH and Sp6 shRNA (m) Lentiviral Particles: sc-153691-V as alternate gene silencing products.

For independent verification of Sp6 (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-153691A, sc-153691B and sc-153691C.

RESEARCH USE

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

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

Sp6 siRNA (m) is recommended for the inhibition of Sp6 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Sp6 gene expression knockdown using RT-PCR Primer: Sp6 (m)-PR: sc-153691-PR (20 μl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.