



OS4 siRNA (h): sc-76008

BACKGROUND

OS4, also known as CTDSP2 (carboxy-terminal domain RNA polymerase II polypeptide A small phosphatase 2) or SCP2, is a 271 amino acid nuclear protein that is implicated in the development of sarcomas. Expressed ubiquitously with particularly high expression observed in the pancreas, OS4 functions in the regulation of androgen-dependent transcription by globally silencing neuronal genes. OS4 contains one FCP1 homology domain and, acting as a Smad2/3 linker phosphatase, can enhance Smad2/3 signaling. Through its ability to interact with Smad2/3, OS4 contributes to the final signaling events in the Smad pathway, and thus is thought to be a crucial component in the metastasis of certain cancers. Overexpression of OS4 may lead to the development of primary sarcomas, as well as brain tumors.

REFERENCES

1. Su, Y.A., et al. 1997. Characterization of a highly conserved gene (OS4) amplified with Cdk4 in human sarcomas. *Oncogene* 15: 1289-1294.
2. Zohn, I.E. and Brivanlou, A.H. 2002. Expression cloning of *Xenopus* Os4, an evolutionarily conserved gene, which induces mesoderm and dorsal axis. *Dev. Biol.* 239: 118-131.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608711. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Thompson, J., et al. 2006. Small carboxyl-terminal domain phosphatase 2 attenuates androgen-dependent transcription. *EMBO J.* 25: 2757-2767.
5. Knockaert, M., et al. 2006. Unique players in the BMP pathway: small C-terminal domain phosphatases dephosphorylate Smad1 to attenuate BMP signaling. *Proc. Natl. Acad. Sci. USA* 103: 11940-11945.
6. Wrighton, K.H., et al. 2006. Small C-terminal domain phosphatases dephosphorylate the regulatory linker regions of Smad2 and Smad3 to enhance transforming growth factor- β signaling. *J. Biol. Chem.* 281: 38365-38375.
7. Yeo, M. and Lin, P.S. 2007. Functional characterization of small CTD phosphatases. *Methods Mol. Biol.* 365: 335-346.

CHROMOSOMAL LOCATION

Genetic locus: CTDSP2 (human) mapping to 12q14.1.

PRODUCT

OS4 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 OS4 shRNA Plasmid (h): sc-76008-SH and OS4 shRNA (h) Lentiviral Particles: sc-76008-V as alternate gene silencing products.

For independent verification of OS4 (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-76008A, sc-76008B and sc-76008C.

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 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

OS4 siRNA (h) is recommended for the inhibition of OS4 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

OS4 (2230C1a): sc-81347 is recommended as a control antibody for monitoring of OS4 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor OS4 gene expression knockdown using RT-PCR Primer: OS4 (h)-PR: sc-76008-PR (20 μ l). 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.