SANTA CRUZ BIOTECHNOLOGY, INC.

Sp5 siRNA (h): sc-94751

BACKGROUND

The Sp transcription factor family includes Sp1, Sp2, Sp3 (SPR-2), Sp4 (SPR-1) and Sp5. Sp transcription factors share similar structures but do not share similar functions. All five proteins contain a highly conserved DNA-binding domain composed of three zinc fingers at the C-terminus. Sp family members bind the consensus sequence GGGGCGGGGC and other closely related sequences which are known as GC boxes. Sp5 is a 398 amino acid transcription factor that localizes to the nucleus and contains three C_2H_2-type zinc fingers. Sp5 is suggested to have a role in the coordination of changes in transcription required to generate patterns in the developing embryo. Sp5 is considered a novel direct down-stream target in the Wnt signaling pathway, which regulates many processes during vertebrate development.

REFERENCES

1. Harrison, S.M., et al. 2000. Sp5, a new member of the Sp1 family, is dynamically expressed during development and genetically interacts with brachyury. Dev. Biol. 227: 358-372.
2. Treichel, D., et al. 2001. The novel transcription factor gene Sp5 exhibits a dynamic and highly restricted expression pattern during mouse embryogenesis. Mech. Dev. 101: 175-179.
3. Weidinger, G., et al. 2005. The Sp1-related transcription factors Sp5 and Sp5-like act downstream of Wnt/β-catenin signaling in mesoderm and neuroectoderm patterning. Curr. Biol. 15: 489-500.
4. Thorpe, C.J., et al. 2005. Wnt/β-catenin regulation of the Sp1-related transcription factor Sp5l promotes tail development in zebrafish. Development 132: 1763-1772.
5. Takahashi, M., et al. 2005. Identification of SP5 as a downstream gene of the β-catenin/Tcf pathway and its enhanced expression in human colon cancer. Int. J. Oncol. 27: 1483-1487.
6. Chen, Y., et al. 2006. Elevated expression and potential roles of human Sp5, a member of Sp transcription factor family, in human cancers. Biochem. Biophys. Res. Commun. 340: 758-766.

CHROMOSOMAL LOCATION

Genetic locus: SP5 (human) mapping to 2q31.1.

PRODUCT

Sp5 siRNA (h) is a pool of 2 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 Sp5 shRNA Plasmid (h): sc-94751-SH and Sp5 shRNA (h) Lentiviral Particles: sc-94751-V as alternate gene silencing products.

For independent verification of Sp5 (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-94751A and sc-94751B.

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

Sp5 siRNA (h) is recommended for the inhibition of Sp5 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Sp5 gene expression knockdown using RT-PCR Primer: Sp5 (h)-PR: sc-94751-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.