SANTA CRUZ BIOTECHNOLOGY, INC.

Wnt-14 siRNA (h): sc-41122

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Wnt genes encode a family of secreted extracellular signaling glycoproteins, which function in a variety of important developmental processes such as regulation of cell growth and differentiation. Wnt proteins also play roles in carcinogenesis. Wnt-14 rather than Wnt-15 is preferentially expressed in various types of human cancer and is upregulated by IFN-g, but not by TNFα, in cells derived from gastric cancer. Wnt-15 is expressed in fetal and adult kidney and is most homologous to Wnt-14. Wnt-16, another member in the Wnt family, has two mRNA isoforms, Wnt-16a and Wnt-16b. These isoforms differ in the composition of their 5'UTR and first exon, which results in differential expression. Wnt-16a is expressed only on the pancreas, whereas Wnt-16b is highly expressed in adult kidney, placenta, brain, heart and spleen, but not in bone marrow. However, Wnt-16 transcripts are present in bone marrow and cell lines derived from pre-B acute lymphoblastoid leukemias patients carrying the E2A-Pbx1 hybrid gene. Thus, WNT-16 is a downstream target of E2A-Pbx1, and the Wnt-16-mediated autocrine growth mechanism may contribute to the development of t(1;19) pre-B acute lymphoblastoid leukemias.

REFERENCES

1. Bergstein, I., et al. 1997. Isolation of two novel WNT genes, Wnt-14 and Wnt-15, one of which (Wnt-15) is closely linked to Wnt-3 on human chromosome 17q21. Genomics 46: 450-458.
2. McWhirter, J.R., et al. 1999. Oncogenic homeodomain transcription factor E2A-Pbx1 activates a novel WNT gene in pre-B acute lymphoblastoid leukemia. Proc. Natl. Acad. Sci. USA 96: 11464-11469.
3. Fear, M.W., et al. 2000. Wnt-16a, a novel Wnt-16 isoform, which shows differential expression in adult human tissues. Biochem. Biophys. Res. Commun. 278: 814-820.
4. Kirikoshi, H., et al. 2001. Molecular cloning and characterization of Wnt-14b, a novel member of the WNT gene family. Int. J. Oncol. 19: 947-952.
5. Kirikoshi, H., et al. 2001. Expression of Wnt-14 and Wnt-14b mRNAs in human cancer, up-regulation of Wnt-14 by IFNγ and up-regulation of Wnt-14b by β-estradiol. Int. J. Oncol. 19: 1221-1225.

CHROMOSOMAL LOCATION

Genetic locus: WNT9A (human) mapping to 1q42.13.

PRODUCT

Wnt-14 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 Wnt-14 shRNA Plasmid (h): sc-41122-SH and Wnt-14 shRNA (h) Lentiviral Particles: sc-41122-V as alternate gene silencing products.

For independent verification of Wnt-14 (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-41122A, sc-41122B and sc-41122C.

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

Wnt-14 siRNA (h) is recommended for the inhibition of Wnt-14 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 Wnt-14 gene expression knockdown using RT-PCR Primer: Wnt-14 (h)-PR: sc-41122-PR (20 µl, 498 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.