SANTA CRUZ BIOTECHNOLOGY, INC.

Wnt-10a siRNA (h): sc-76927

BACKGROUND

The Wnt family of protooncogenes consists of at least 13 known members which encode secreted signaling proteins that are involved in oncogenesis and several other developmental processes, such as regulation of cell fate and embryogenesis. Wnt-10a (wingless-type MMTV integration site family, member 10A) is a 417 amino acid protein that is secreted into the extracellular matrix and belongs to the Wnt family. Strongly expressed in promyelocytic leukemia and Burkitt's lymphoma, Wnt-10a functions as a ligand for frizzled proteins and is thought to be involved in development of the central nervous system, probably acting as a signaling molecule. Overexpression of Wnt-10a is associated with the pathogenesis of various carcinomas, strongly suggesting a role for Wnt-10a in tumor development and metastasis. Defects in the gene encoding Wnt-10a are the cause of odonto-onycho-dermal dysplasia (OODD), a rare autosomal recessive disorder that is characterized by dry hair, onychodysplasia and hyperkeratosis of the skin.

REFERENCES

1. Tanaka, K., et al. 2000. The evolutionarily conserved porcupine gene family is involved in the processing of the Wnt family. Eur. J. Biochem. 267: 4300-4311.
2. Kirikoshi, H., et al. 2001. Wnt-10a and Wnt-6, clustered in human chromosome 2q35 region with head-to-tail manner, are strongly coexpressed in SW480 cells. Biochem. Biophys. Res. Commun. 283: 798-805.
3. Katoh, Y., et al. 2005. Identification and characterization of rat Wnt-6 and Wnt-10a genes in silico. Int. J. Mol. Med. 15: 527-531.

CHROMOSOMAL LOCATION

Genetic locus: WNT10A (human) mapping to 2q35.

PRODUCT

Wnt-10a 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-10a shRNA Plasmid (h): sc-76927-SH and Wnt-10a shRNA (h) Lentiviral Particles: sc-76927-V as alternate gene silencing products.

For independent verification of Wnt-10a (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-76927A, sc-76927B and sc-76927C.

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-10a siRNA (h) is recommended for the inhibition of Wnt-10a 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.

GENE EXPRESSION MONITORING

Wnt-10a (A-4): sc-376028 is recommended as a control antibody for monitoring of Wnt-10a 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Wnt-10a gene expression knockdown using RT-PCR Primer: Wnt-10a (h)-PR: sc-76927-PR (20 µl, 561 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Luo, T., et al. 2015. *Ehrlichia chaffeensis* exploits canonical and noncanonical host Wnt signaling pathways to stimulate phagocytosis and promote intracellular survival. Infect. Immun. 84: 686-700.
2. Oda, K., et al. 2016. Profibrotic role of Wnt-10a via TGF-β signaling in idiopathic pulmonary fibrosis. Respir. Res. 17: 39.

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.