SANTA CRUZ BIOTECHNOLOGY, INC.

NKD1 siRNA (h): sc-93414

BACKGROUND

The canonical Wnt signaling pathway is a complex network of proteins involving the binding of the Wnt ligand to the frizzled family of receptors, leading to activation of the Dvl proteins and, ultimately, a change in the β-catenin concentration in the nucleus. NKD1 (Naked-1) is a 470 amino acid protein which functions as a negative regulator of the canonical Wnt signaling pathway. Through interactions with Dvl-1, Dvl-2, Dvl-3 and PP2A-Cα/β, NKD1 functions as a switch that restricts classical Wnt signaling and activates a second Wnt signaling pathway that controls planar cell polarity. Localized to the cell membrane and cytoplasm, NKD1 is expressed in heart, lung, pancreas, liver, colon, kidney, ovary, placenta, skeletal muscle, prostate, small intestine, leukocyte and spleen. Elevated expression of NKD1 and Conductin mRNA has been identified in some human colon tumors that were known to have activating mutations in the canonical Wnt signaling pathway.

REFERENCES

1. Rousset, R., et al. 2001. Naked cuticle targets dishevelled to antagonize Wnt signal transduction. Genes Dev. 15: 658-671.
2. Katoh, M. 2001. Molecular cloning, gene structure, and expression analysis of NKD1 and NKD2. Int. J. Oncol. 19: 963-969.
3. Yan, D., et al. 2001. Elevated expression of Axin2 and hNKD mRNA provides evidence that Wnt/β-catenin signaling is activated in human colon tumors. Proc. Natl. Acad. Sci. USA 98: 14973-14978.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607851. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Koch, A., et al. 2005. Elevated expression of Wnt antagonists is a common event in hepatoblastomas. Clin. Cancer Res. 11: 4295-4304.
6. Creyghton, M.P., et al. 2005. PR72, a novel regulator of Wnt signaling required for Naked cuticle function. Genes Dev. 19: 376-386.

CHROMOSOMAL LOCATION

Genetic locus: NKD1 (human) mapping to 16q12.1.

PRODUCT

NKD1 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 NKD1 shRNA Plasmid (h): sc-93414-SH and NKD1 shRNA (h) Lentiviral Particles: sc-93414-V as alternate gene silencing products.

For independent verification of NKD1 (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-93414A, sc-93414B and sc-93414C.

PROTOCOLS

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

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

NKD1 siRNA (h) is recommended for the inhibition of NKD1 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 NKD1 gene expression knockdown using RT-PCR Primer: NKD1 (h)-PR: sc-93414-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, S., et al. 2011. Down-regulation of NKD1 increases the invasive potential of non-small-cell lung cancer and correlates with a poor prognosis. BMC Cancer 11: 186.

RESEARCH USE

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