SANTA CRUZ BIOTECHNOLOGY, INC.

Dkk-4 siRNA (h): sc-41104

BACKGROUND

The Wnt genes are a group of well conserved, cysteine-rich secreted glycoproteins that are required for numerous developmental processes including embryogenesis, asymmetric cell division and central nervous system (CNS) patterning. Wnt association with the seven membrane spanning receptor frizzled, activates dishevelled, which downregulates glycogen synthase kinase (GSK) (through serine phosphorylation), causing the accumulation of β-catenin and the regulation of developmentally significant Wnt target genes. The Dickkopf family of secreted inhibitors of Wnt signaling ensures proper morpho-logical development by antagonizing different stages of the Wnt cascade. Dkk-4 (Dickkopf-4) is a 224-amino acid secreted glycoprotein that is composed of an N-terminal signal peptide and two conserved cysteine-rich domains, which are separated by a 50-55-amino acid linker region.

REFERENCES

1. Krasnow, R.E., et al. 1995. Dishevelled is a component of the frizzled signaling pathway in *Drosophila.* Development 121: 4095-4102.
2. Cadigan, K.M., et al. 1997. Wnt signaling: a common theme in animal development. Genes Dev. 11: 3286-3305.
3. Sakanaka, C., et al. 1998. Bridging of β-catenin and glycogen synthase kinase-3β by axin and inhibition of β-catenin-mediated transcription. Proc. Natl. Acad. Sci. USA 95: 3020-3023.
4. Glinka, A., et al. 1998. Dickkopf-1 is a member of a new family of secreted proteins and functions in head induction. Nature 391: 357-362.
5. Fedi, P., et al. 1999. Isolation and biochemical characterization of the human Dkk-1 homologue, a novel inhibitor of mammalian Wnt signaling. J. Biol. Chem. 274: 19465-19472.
6. Krupnik, V.E., et al. 1999. Functional and structural diversity of the human Dickkopf gene family. Gene 238: 301-133.
7. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 605189. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: DKK4 (human) mapping to 8p11.21.

PRODUCT

Dkk-4 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 Dkk-4 shRNA Plasmid (h): sc-41104-SH and Dkk-4 shRNA (h) Lentiviral Particles: sc-41104-V as alternate gene silencing products.

For independent verification of Dkk-4 (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-41104A, sc-41104B and sc-41104C.

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

Dkk-4 siRNA (h) is recommended for the inhibition of Dkk-4 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 Dkk-4 gene expression knockdown using RT-PCR Primer: Dkk-4 (h)-PR: sc-41104-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. Yang, X., et al. 2017. DKK4-knockdown enhances chemosensitivity of A549/DTX cells to docetaxel. Acta Biochim. Biophys. Sin. 49: 899-906.

PROTOCOLS

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