SANTA CRUZ BIOTECHNOLOGY, INC.

NKD2 siRNA (h): sc-91818

BACKGROUND

The canonical Wnt signaling pathway is a complex network of proteins involved in binding the Wnt ligand to the frizzled family of receptors, leading to activation of the Dvl proteins and, ultimately, a change in β-catenin concentration in the nucleus. NKD2 (naked cuticle homolog 2), also known as Naked2, is a 451 amino acid cell membrane protein belonging to the NKD family. Through interactions with Dvl-1, Dvl-2, Dvl-3 and PP2A-B72/B130, NKD2 functions as an autonomous antagonist of the classical Wnt signaling pathway and activates a second Wnt signaling pathway that controls planar cell polarity. NKD2 is required for processing of TGFα and for escorting TGFα to the basolateral membrane of polarized epithelial cells. NKD2 is a homolog of *Drosophila* naked cuticle, which negatively regulates canonical Wnt signaling by binding dishevelled.

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 analyses 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. Li, C., et al. 2004. Myristoylated Naked2 escorts transforming growth factor α to the basolateral plasma membrane of polarized epithelial cells. Proc. Natl. Acad. Sci. USA 101: 5571-5576.
5. Hu, T., et al. 2006. Structural studies of human Naked2: a biologically active intrinsically unstructured protein. Biochem. Biophys. Res. Commun. 350: 911-915.
6. Li, C., et al. 2007. Naked2 acts as a cargo recognition and targeting protein to ensure proper delivery and fusion of TGFα containing exocytic vesicles at the lower lateral membrane of polarized MDCK cells. Mol. Biol. Cell 18: 3081-3093.

CHROMOSOMAL LOCATION

Genetic locus: NKD2 (human) mapping to 5p15.33.

PRODUCT

NKD2 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 NKD2 shRNA Plasmid (h): sc-91818-SH and NKD2 shRNA (h) Lentiviral Particles: sc-91818-V as alternate gene silencing products.

For independent verification of NKD2 (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-91818A, sc-91818B and sc-91818C.

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

NKD2 siRNA (h) is recommended for the inhibition of NKD2 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 NKD2 gene expression knockdown using RT-PCR Primer: NKD2 (h)-PR: sc-91818-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.