

# NKD1 (Q-16): sc-131999

## 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  $\beta$ -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-C $\alpha$ / $\beta$ , 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/ $\beta$ -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. Creighton, M.P., et al. 2005. PR72, a novel regulator of Wnt signaling required for Naked cuticle function. *Genes Dev.* 19: 376-386.
7. Li, Q., et al. 2005. A targeted mutation of NKD1 impairs mouse spermatogenesis. *J. Biol. Chem.* 280: 2831-2839.
8. Creighton, M.P., et al. 2006. PR130 is a modulator of the Wnt-signaling cascade that counters repression of the antagonist Naked cuticle. *Proc. Natl. Acad. Sci. USA* 103: 5397-5402.
9. Van Raay, T.J., et al. 2007. Zebrafish Naked 1 and Naked 2 antagonize both canonical and non-canonical Wnt signaling. *Dev. Biol.* 309: 151-168.

## CHROMOSOMAL LOCATION

Genetic locus: NKD1 (human) mapping to 16q12.1; Nkd1 (mouse) mapping to 8 C3.

## SOURCE

NKD1 (Q-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NKD1 of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-131999 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

NKD1 (Q-16) is recommended for detection of NKD1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with NKD2.

NKD1 (Q-16) is also recommended for detection of NKD1 in additional species, including equine and canine.

Suitable for use as control antibody for NKD1 siRNA (h): sc-93414, NKD1 siRNA (m): sc-149990, NKD1 shRNA Plasmid (h): sc-93414-SH, NKD1 shRNA Plasmid (m): sc-149990-SH, NKD1 shRNA (h) Lentiviral Particles: sc-93414-V and NKD1 shRNA (m) Lentiviral Particles: sc-149990-V.

Molecular Weight of NKD1: 54 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.