

# Dkk-3 (N-17): sc-14956

## 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 down-regulates glycogen synthase kinase (GSK) through serine phosphorylation, causing the accumulation of  $\beta$ -catenin and subsequent regulation of developmentally significant Wnt target genes. The Dickkopf family of secreted inhibitors of Wnt signaling ensures proper morphological development by antagonizing different stages of the Wnt cascade. Dkk-3 (Dickkopf-3) is a 350 amino acid secreted glycoprotein that is composed of an N-terminal signal peptide and two conserved cysteine-rich domains, which are separated by a 12 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 and Dev.* 11: 3286-3305.
3. Sakanaka, C., et al. 1998. Bridging of  $\beta$ -catenin and glycogen synthase kinase-3 $\beta$  by axin and inhibition of  $\beta$ -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: DKK3 (human) mapping to 11p15.3; Dkk3 (mouse) mapping to 7 F1.

## SOURCE

Dkk-3 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Dkk-3 of human origin.

## 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-14956 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Dkk-3 (N-17) is recommended for detection of Dkk-3 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).

Dkk-3 (N-17) is also recommended for detection of Dkk-3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Dkk-3 siRNA (h): sc-41102, Dkk-3 siRNA (m): sc-41103, Dkk-3 shRNA Plasmid (h): sc-41102-SH, Dkk-3 shRNA Plasmid (m): sc-41103-SH, Dkk-3 shRNA (h) Lentiviral Particles: sc-41102-V and Dkk-3 shRNA (m) Lentiviral Particles: sc-41103-V.

Molecular Weight of Dkk-3: 38 kDa.

Positive Controls: rat heart extract: sc-2393.

## 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.

## RESEARCH USE

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

## PROTOCOLS

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



Try **Dkk-3 (4G7A9): sc-517200**, our highly recommended monoclonal alternative to Dkk-3 (N-17).