

# Dkk-1 (Y-17): sc-14949

## 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  $\beta$ -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-1 (Dickkopf-1) acts upstream of  $\beta$ -catenin and dishevelled to inhibit Wnt signaling. Dkk-1 is a 266-amino acid (human), secreted protein that contains a 31-residue N-terminal signal peptide, 2 cysteine rich domains, and a putative carboxy-terminal N-glycosylation site. Human Dkk-1 transcripts are abundantly present in fetal kidney, adult placenta and adult prostate. Putative *cis* regulatory elements upstream of the Dkk-1 start site include p53, Sp1, MyoD, STAT, Oct-1/2, C/EBP- $\alpha$ , C/EBP- $\beta$  and GATA-1, GATA-2 and GATA-3.

## CHROMOSOMAL LOCATION

Genetic locus: DKK1 (human) mapping to 10q21.1; Dkk1 (mouse) mapping to 19 C1.

## SOURCE

Dkk-1 (Y-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Dkk-1 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-14949 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Dkk-1 (Y-17) is recommended for detection of precursor and mature Dkk-1 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-1 (Y-17) is also recommended for detection of precursor and mature Dkk-1 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for Dkk-1 siRNA (h): sc-37082, Dkk-1 siRNA (m): sc-37083, Dkk-1 shRNA Plasmid (h): sc-37082-SH, Dkk-1 shRNA Plasmid (m): sc-37083-SH, Dkk-1 shRNA (h) Lentiviral Particles: sc-37082-V and Dkk-1 shRNA (m) Lentiviral Particles: sc-37083-V.

Molecular Weight of Dkk-1: 35 kDa.

Positive Controls: JEG-3 whole cell lysate: sc-364255.

## SELECT PRODUCT CITATIONS

- Caricasole, A., et al. 2004. Induction of Dickkopf-1, a negative modulator of the Wnt pathway, is associated with neuronal degeneration in Alzheimer's brain. *J. Neurosci.* 24: 6021-6027.
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- Aguilera, O., et al. 2007. The Wnt antagonist Dickkopf-1 gene is induced by 1 $\alpha$ ,25-dihydroxyvitamin D3 associated to the differentiation of human colon cancer cells. *Carcinogenesis* 28: 1877-1884.
- Oyajobi, B.O., et al. 2007. Stimulation of new bone formation by the proteasome inhibitor, bortezomib: implications for myeloma bone disease. *Br. J. Haematol.* 139: 434-438.
- Busceti, C.L., et al. 2007. Induction of the Wnt inhibitor, Dickkopf-1, is associated with neurodegeneration related to temporal lobe epilepsy. *Epilepsia* 48: 694-705.
- Blouin, S., et al. 2008. Interactions between microenvironment and cancer cells in two animal models of bone metastasis. *Br. J. Cancer* 98: 809-815.
- Peng, S., et al. 2008. Dickkopf-1 secreted by decidual cells promotes trophoblast cell invasion during murine placentation. *Reproduction* 135: 367-375.
- Jia, L., et al. 2008. Effects of Wnt3a on proliferation and differentiation of human epidermal stem cells. *Biochem. Biophys. Res. Commun.* 368: 483-488.
- Ordóñez-Morán, P., et al. 2008. RhoA-ROCK and p38<sup>MAPK</sup>-MSK1 mediate vitamin D effects on gene expression, phenotype, and Wnt pathway in colon cancer cells. *J. Cell Biol.* 183: 697-710.
- Aguilera, Ó., et al. 2015. Nuclear DICKKOPF-1 as a biomarker of chemoresistance and poor clinical outcome in colorectal cancer. *Oncotarget* 6: 5903-5917.

## 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-1 (B-7): sc-374574**, our highly recommended monoclonal alternatives to Dkk-1 (Y-17). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **Dkk-1 (B-7): sc-374574**.