SANTA CRUZ BIOTECHNOLOGY, INC.

Dkk-1 (B-7): sc-374574

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 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 β-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-α, C/EBP-β, GATA-1, GATA-2 and GATA-3.

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. 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.

CHROMOSOMAL LOCATION

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

SOURCE

Dkk-1 (B-7) is a mouse monoclonal antibody raised against amino acids 1-120 of Dkk-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Dkk-1 (B-7) is available conjugated to agarose (sc-374574 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374574 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374574 PE), fluorescein (sc-374574 FITC), Alexa Fluor® 488 (sc-374574 AF488), Alexa Fluor® 546 (sc-374574 AF546), Alexa Fluor® 594 (sc-374574 AF594) or Alexa Fluor® 647 (sc-374574 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374574 AF680) or Alexa Fluor® 790 (sc-374574 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

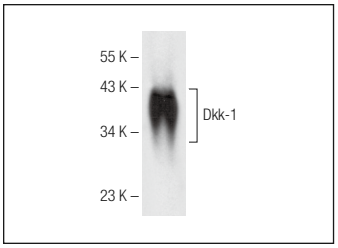
Dkk-1 (B-7) is recommended for detection of Dkk-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

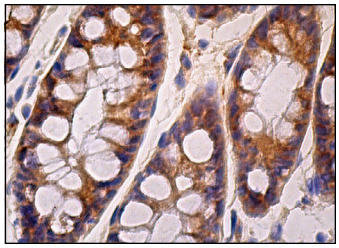
Molecular Weight of Dkk-1: 35 kDa.

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

DATA



Dkk-1 (B-7): sc-374574. Western blot analysis of human recombinant Dkk-1.



Dkk-1 (B-7): sc-374574. Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Gong, Y., et al. 2014. Inhibition of phosphodiesterase 5 reduces bone mass by suppression of canonical Wnt signaling. Cell Death Dis. 5: e1544.
2. Hu, P., et al. 2015. NBAT1 suppresses breast cancer metastasis by regulating Dkk-1 via PRC2. Oncotarget 6: 32410-32425.
3. Zhou, J., et al. 2016. Dkk-1 inhibits proliferation and migration in human retinal pigment epithelial cells via the Wnt/β-catenin signaling pathway. Exp. Ther. Med. 12: 859-863.
4. Yu, T., et al. 2019. Inhibition of Tet1- and Tet2-mediated DNA demethylation promotes immunomodulation of periodontal ligament stem cells. Cell Death Dis. 10: 780.
5. Jo, S., et al. 2020. Dkk-1 induced by 1,25D3 is required for the mineralization of osteoblasts. Cells 9: 236.
6. Kato, S., et al. 2020. Gain-of-function genetic alterations of G9a drive oncogenesis. Cancer Discov. 10: 980-997.
7. Luo, A., et al. 2020. Cancer stem cell property and gene signature in bone-metastatic breast cancer cells. Int. J. Biol. Sci. 16: 2580-2594.

RESEARCH USE

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