SANTA CRUZ BIOTECHNOLOGY, INC.

Dvl-3 (4D3): sc-8027

BACKGROUND

Mammalian homologs of the *Drosophila* dishevelled (Dsh) gene have been identified, including Dvl-1, Dvl-2 and Dvl-3. The mammalian dishevelled proteins contain three homologous domains, two of which are unrelated to any other known protein. The third region is homologous to the discs-large homology domain of *Drosophila* discs-large-1, a tumor suppressor protein. Like their *Drosophila* counterpart, the dishevelled proteins are thought to be involved in embryogenesis. Overexpression of Dvl-1 has been shown to inhibit the phosphorylation of Tau by GSK-3β. This finding may prove to be important in Alzheimer's studies, which have shown that Tau is hyper-phosphorylated. In *Drosophila*, Dsh is a component of the frizzled signaling pathway. Both mammalian dishevelled and frizzled proteins are components of the Wnt signaling pathway.

CHROMOSOMAL LOCATION

Genetic locus: DVL3 (human) mapping to 3q27.1; Dvl3 (mouse) mapping to 16 A3.

SOURCE

Dvl-3 (4D3) is a mouse monoclonal antibody raised against amino acids 607-704 of Dvl-3 of mouse 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.

Dvl-3 (4D3) is available conjugated to agarose (sc-8027 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8027 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8027 PE), fluorescein (sc-8027 FITC), Alexa Fluor® 488 (sc-8027 AF488), Alexa Fluor® 546 (sc-8027 AF546), Alexa Fluor® 594 (sc-8027 AF594) or Alexa Fluor® 647 (sc-8027 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8027 AF680) or Alexa Fluor® 790 (sc-8027 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Dvl-3 (4D3) is recommended for detection of Dvl-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Dvl-3 siRNA (h): sc-40491, Dvl-3 siRNA (m): sc-40492, Dvl-3 shRNA Plasmid (h): sc-40491-SH, Dvl-3 shRNA Plasmid (m): sc-40492-SH, Dvl-3 shRNA (h) Lentiviral Particles: sc-40491-V and Dvl-3 shRNA (m) Lentiviral Particles: sc-40492-V.

Molecular Weight of Dvl-3: 90 kDa.

Positive Controls: Dvl-3 (h): 293T Lysate: sc-114825, K-562 whole cell lysate: sc-2203 or RPE-J cell lysate: sc-24771.

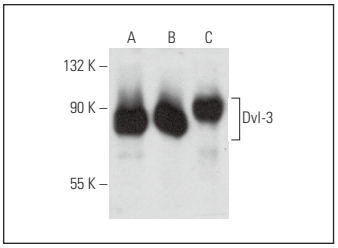
STORAGE

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

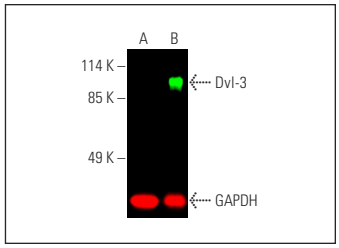
RESEARCH USE

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

DATA



Dvl-3 (4D3): sc-8027. Western blot analysis of Dvl-3 expression in MDA-MB-231 (**A**), K-562 (**B**) and RPE-J (**C**) whole cell lysates.



Simultaneous direct near-infrared western blot analysis of Dvl-3 expression, detected with Dvl-3 (4D3) Alexa Fluor® 680: sc-8027 AF680 and GAPDH expression, detected with GAPDH (G-9) Alexa Fluor® 790: sc-365062 AF790 in non-transfected: sc-117752 (**A**) and human Dvl-3 transfected: sc-114825 (**B**) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Qiang, Y.W., et al. 2003. Wnt signaling in B cell neoplasia. Oncogene 22: 1536-1545.
2. Zou, Y.F., et al. 2017. AMPK activators suppress breast cancer cell growth by inhibiting Dvl-3-facilitated Wnt/β-catenin signaling pathway activity. Mol. Med. Rep. 15: 899-907.
3. Lo, R.C., et al. 2018. Cripto-1 contributes to stemness in hepatocellular carcinoma by stabilizing Dishevelled-3 and activating Wnt/β-catenin pathway. Cell Death Differ. 25: 1426-1441.
4. Shami Shah, A., et al. 2019. PLEKHA4/kramer attenuates dishevelled ubiquitination to modulate Wnt and planar cell polarity signaling. Cell Rep. 27: 2157-2170.e8.
5. Bernatik, O., et al. 2020. Activity of Smurf2 ubiquitin ligase is regulated by the Wnt pathway protein dishevelled. Cells 9: 1147.
6. Banerjee, D., et al. 2021. A non-canonical, interferon-independent signaling activity of cGAMP triggers DNA damage response signaling. Nat. Commun. 12: 6207.
7. Agajanian, M.J., et al. 2022. Protein proximity networks and functional evaluation of the Casein Kinase 1 γ family reveal unique roles for CK1γ3 in WNT signaling. J. Biol. Chem. 298: 101986.
8. Chen, Y., et al. 2023. Proanthocyanidins inhibited colorectal cancer stem cell characteristics through Wnt/β-catenin signaling. Environ. Toxicol. 38: 2894-2903.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.