

# Dapper1 (D-4): sc-377030

## BACKGROUND

Dapper1, also known as DACT1 (dapper, antagonist of  $\beta$ -catenin, homolog 1), DPR1, HNG3 or FRODO, is an 836 amino acid protein that localizes to both the nucleus and the cytoplasm and contains a C-terminal PDZ-binding motif that is thought to mediate protein-protein interactions. Interacting with Dvl-2, Dapper1 functions to positively regulate Dvl-2-mediated developmental signaling pathways, specifically by preventing the degradation of  $\beta$ -catenin, thereby enhancing the transcriptional activation of select genes in the Wnt pathway. Dapper1 is downregulated in hepatocellular carcinoma, suggesting an additional role in tumor suppression. The gene encoding Dapper1 maps to human chromosome 14, which houses over 700 genes and comprises nearly 3.5% of the human genome. Chromosome 14 encodes the presenilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease (AD). The SERPINA1 gene is also located on chromosome 14 and, when defective, leads to the genetic disorder  $\alpha$ 1-antitrypsin deficiency, which is characterized by severe lung complications and liver dysfunction.

## REFERENCES

- Cheyette, B.N., et al. 2002. Dapper, a dishevelled-associated antagonist of  $\beta$ -catenin and JNK signaling, is required for notochord formation. *Dev. Cell* 2: 449-461.
- Katoh, M., et al. 2003. Identification and characterization of human Dapper1 and Dapper2 genes in silico. *Int. J. Oncol.* 22: 907-913.
- Yau, T.O., et al. 2005. HDPR1, a novel inhibitor of the WNT/ $\beta$ -catenin signaling, is frequently downregulated in hepatocellular carcinoma: involvement of methylation-mediated gene silencing. *Oncogene* 24: 1607-1614.
- Zhang, L., et al. 2006. Dapper1 antagonizes Wnt signaling by promoting dishevelled degradation. *J. Biol. Chem.* 281: 8607-8612.

## CHROMOSOMAL LOCATION

Genetic locus: DACT1 (human) mapping to 14q23.1.

## SOURCE

Dapper1 (D-4) is a mouse monoclonal antibody raised against amino acids 281-460 mapping within an internal region of Dapper1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Dapper1 (D-4) is available conjugated to agarose (sc-377030 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377030 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377030 PE), fluorescein (sc-377030 FITC), Alexa Fluor<sup>®</sup> 488 (sc-377030 AF488), Alexa Fluor<sup>®</sup> 546 (sc-377030 AF546), Alexa Fluor<sup>®</sup> 594 (sc-377030 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-377030 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-377030 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-377030 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

Dapper1 (D-4) is recommended for detection of Dapper1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 Dapper1 siRNA (h): sc-77095, Dapper1 shRNA Plasmid (h): sc-77095-SH and Dapper1 shRNA (h) Lentiviral Particles: sc-77095-V.

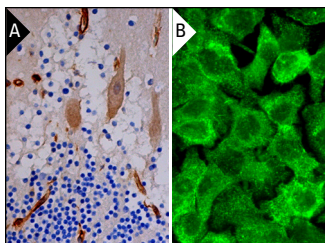
Molecular Weight of Dapper1: 90 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411 or SK-N-SH cell lysate: sc-2410.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Dapper1 (D-4): sc-377030. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic and membrane staining of Purkinje cells and endothelial cells (A). Immunofluorescence staining of formalin-fixed A-431 cells showing cytoplasmic and nuclear localization (B).

## 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.