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DACT1 Rabbit pAb

Catalog # AP99638

Product Information

Primary Accession	Q9NYF0
Other Accession	Q9NYF0
Reactivity	Human
Predicted	Rat, Mouse, Rabbit, Dog, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	90174
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human DACT1
Epitope Specificity	751-836/836
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the dapper family.
SUBUNIT	Can form homodimers and heterodimers with DACT2 or DACT3. Interacts with CSNK1D, PKA catalytic subunit, PKC-type kinase, CSNK2A1, CSNK2B, DVL1, DVL3, VANGL1, VANGL2, CTNND1 and HDAC1 (By similarity). Interacts with DVL2. Interacts with YWHAB; the interaction is enhanced by PKA phosphorylating DACT1 at Ser-237 and Ser-827. Interacts with CTNNB1 and HDAC1. Interacts with GSK3B; the interaction is indicative for an association of DACT1 with the beta-catenin destruction complex. Interacts with GSK3A.
DISEASE	Defects in DACT1 may be a cause of susceptibility to neural tube defects (NTD) [MIM:182940]. NTD are congenital malformations of the central nervous system and adjacent structures related to defective neural tube closure during the first trimester of pregnancy. Failure of neural tube closure can occur at any level of the embryonic axis. Common NTD forms include anencephaly, myelomeningocele and spina bifida, which result from the failure of fusion in the cranial and spinal region of the neural tube. NTDs have a multifactorial etiology encompassing both genetic and environmental components.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	The protein encoded by this gene belongs to the dapper family, characterized by the presence of PDZ-binding motif at the C-terminus. It interacts with, and positively regulates dishevelled-mediated signaling pathways during development. Depletion of this mRNA from xenopus embryos resulted in loss of notochord and head structures, and mice lacking this gene died shortly after birth from severe posterior malformations. Alternatively spliced transcript variants have been found for this gene. [provided by RefSeq, Jan 2012]

Additional Information

Gene ID	51339
Other Names	DAPPER; DAPPER1; DPR1; FRODO; HDPR1; TBS2; THYEX3; 4921528D17Rik; Frd1; Frodo1; MDpr1; MTNG3; RGD1564008; DACT1_HUMAN; DACT1; Dapper antagonist of catenin 1; Hepatocellular carcinoma novel gene 3 protein; HNG3; DACT1_MOUSE; Frodo homolog; Thymus-expressed novel gene 3 protein; dishevelled binding antagonist of beta catenin 1; dapper homolog 1, antagonist of beta-catenin (xenopus); dapper, antagonist of beta-catenin, homolog 1 (Xenopus laevis)
Dilution	ICC/IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	DACT1
Synonyms	DPR1, HNG3
Function	Involved in regulation of intracellular signaling pathways during development. Specifically thought to play a role in canonical and/or non-canonical Wnt signaling pathways through interaction with DSH (Dishevelled) family proteins. The activation/inhibition of Wnt signaling may depend on the phosphorylation status. Proposed to regulate the degradation of CTNNB1/beta-catenin, thereby modulating the transcriptional activation of target genes of the Wnt signaling pathway. Its function in stabilizing CTNNB1 may involve inhibition of GSK3B activity. Promotes the membrane localization of CTNNB1. The cytoplasmic form can induce DVL2 degradation via a lysosome-dependent mechanism; the function is inhibited by PKA-induced binding to 14-3-3 proteins, such as YWHAB. Seems to be involved in morphogenesis at the primitive streak by regulating VANGL2 and DVL2; the function seems to be independent of canonical Wnt signaling and rather involves the non- canonical Wnt/planar cell polarity (PCP) pathway (By similarity). The nuclear form may prevent the formation of LEF1:CTNNB1 complex and recruit HDAC1 to LEF1 at target gene promoters to repress transcription thus antagonizing Wnt signaling. May be involved in positive regulation of fat cell differentiation. During neuronal differentiation may be involved in excitatory synapse organization, and dendrite formation and establishment of spines.
Cellular Location	Cytoplasm. Nucleus. Synapse. Note=Shuttles between the nucleus and the cytoplasm. Seems to be nuclear in the absence of Wnt signaling and to translocate to the cytoplasm in its presence

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