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CTNB1 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11231b

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	P35222
Other Accession	P26233, Q9WU82, Q02248, Q0VCX4, P18824, NP_001895
Reactivity	Human
Predicted	Drosophila, Bovine, Mouse, Rat, Xenopus, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB19489
Calculated MW	85497
Antigen Region	646-673

Additional Information

Gene ID	1499
Other Names	Catenin beta-1, Beta-catenin, CTNNB1, CTNNB
Target/Specificity	This CTNB1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 646-673 amino acids from the C-terminal region of human CTNB1.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	CTNB1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CTNNB1 (HGNC:2514)
Synonyms	CTNNB

Function

Key downstream component of the canonical Wnt signaling pathway (PubMed:17524503, PubMed:18077326, PubMed:18086858, PubMed:18957423, PubMed:21262353, PubMed:22155184, PubMed:22647378, PubMed:22699938). In the absence of Wnt, forms a complex with AXIN1, AXIN2, APC, CSNK1A1 and GSK3B that promotes phosphorylation on N- terminal Ser and Thr residues and ubiquitination of CTNNB1 via BTRC and its subsequent degradation by the proteasome (PubMed:17524503, PubMed:18077326, PubMed:18086858, PubMed:18957423, PubMed:21262353, PubMed:22155184, PubMed:22647378, PubMed:22699938). In the presence of Wnt ligand, CTNNB1 is not ubiquitinated and accumulates in the nucleus, where it acts as a coactivator for transcription factors of the TCF/LEF family, leading to activate Wnt responsive genes (PubMed:17524503, PubMed:18077326, PubMed:18086858, PubMed:18957423, PubMed:21262353, PubMed:22155184, PubMed:22647378, PubMed:22699938). Also acts as a coactivator for other transcription factors, such as NR5A2 (PubMed:22187462). Promotes epithelial to mesenchymal transition/mesenchymal to epithelial transition (EMT/MET) via driving transcription of CTNNB1/TCF-target genes (PubMed:29910125). Involved in the regulation of cell adhesion, as component of an E-cadherin:catenin adhesion complex (By similarity). Acts as a negative regulator of centrosome cohesion (PubMed:18086858). Involved in the CDK2/PTPN6/CTNNB1/CEACAM1 pathway of insulin internalization (PubMed:21262353). Blocks anoikis of malignant kidney and intestinal epithelial cells and promotes their anchorage-independent growth by down-regulating DAPK2 (PubMed:18957423). Disrupts PML function and PML-NB formation by inhibiting RANBP2-mediated sumoylation of PML (PubMed:22155184). Promotes neurogenesis by maintaining sympathetic neuroblasts within the cell cycle (By similarity). Involved in chondrocyte differentiation via interaction with SOX9: SOX9-binding competes with the binding sites of TCF/LEF within CTNNB1, thereby inhibiting the Wnt signaling (By similarity). Acts as a positive regulator of odontoblast differentiation during mesenchymal tooth germ formation, via promoting the transcription of differentiation factors such as LEF1, BMP2 and BMP4 (By similarity). Activity is repressed in a MSX1-mediated manner at the bell stage of mesenchymal tooth germ formation which prevents premature differentiation of odontoblasts (By similarity).

Cellular Location

Cytoplasm. Nucleus. Cytoplasm, cytoskeleton {ECO:0000250|UniProtKB:B6V8E6}. Cell junction, adherens junction. Cell junction {ECO:0000250|UniProtKB:B6V8E6}. Cell membrane. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Cytoplasm, cytoskeleton, spindle pole. Synapse {ECO:0000250|UniProtKB:Q02248} Cytoplasm, cytoskeleton, cilium basal body {ECO:0000250|UniProtKB:Q02248}. Note=Colocalized with RAPGEF2 and TJP1 at cell-cell contacts (By similarity). Cytoplasmic when it is un-stable (highly phosphorylated) or bound to CDH1. Translocates to the nucleus when it is stabilized (low level of phosphorylation). Interaction with GLIS2 and MUC1 promotes nuclear translocation. Interaction with EMD inhibits nuclear localization. The majority of CTNNB1 is localized to the cell membrane. In interphase, colocalizes with CROCC between CEP250 puncta at the proximal end of centrioles, and this localization is dependent on CROCC and CEP250. In mitosis, when NEK2 activity increases, it localizes to centrosomes at spindle poles independent of CROCC. Colocalizes with CDK5 in the cell-cell contacts and plasma membrane of undifferentiated and differentiated neuroblastoma cells Interaction with FAM53B promotes translocation to the nucleus (PubMed:25183871). Translocates to the nucleus in the presence of SNAIL1 (By similarity). Ca(2+)-mediated localization to the cell membrane in dental epithelial cells is inhibited via WNT3A (By similarity). Localizes to cell-cell contacts as keratinocyte differentiation progresses (By similarity)

{ECO:0000250|UniProtKB:B6V8E6, ECO:0000250|UniProtKB:Q02248, ECO:0000269|PubMed:25183871}

Tissue Location

Expressed in several hair follicle cell types: basal and peripheral matrix cells, and cells of the outer and inner root sheaths. Expressed in colon. Present in cortical neurons (at protein level). Expressed in breast cancer tissues (at protein level) (PubMed:29367600).

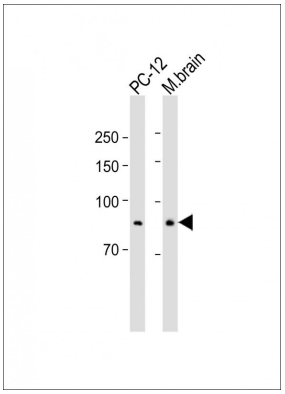
Background

The protein encoded by this gene is part of a complex of proteins that constitute adherens junctions (AJs). AJs are necessary for the creation and maintenance of epithelial cell layers by regulating cell growth and adhesion between cells. The encoded protein also anchors the actin cytoskeleton and may be responsible for transmitting the contact inhibition signal that causes cells to stop dividing once the epithelial sheet is complete. Finally, this protein binds to the product of the APC gene, which is mutated in adenomatous polyposis of the colon. Mutations in this gene are a cause of colorectal cancer (CRC), pilomatrixoma (PTR), medulloblastoma (MDB), and ovarian cancer. Three transcript variants encoding the same protein have been found for this gene.

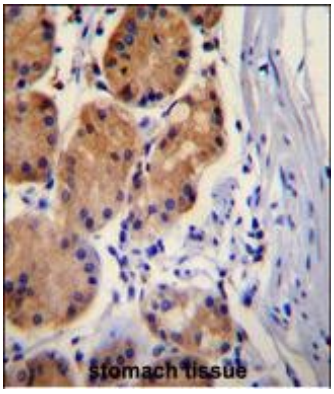
References

Huang, W., et al. Mol. Cell. Biol. 30(19):4575-4594(2010)
Chairoungdua, A., et al. J. Cell Biol. 190(6):1079-1091(2010)
Mirza, M.K., et al. J. Exp. Med. 207(8):1675-1685(2010)
Guo, Q., et al. Acta Biochim. Biophys. Sin. (Shanghai) 42(7):450-456(2010)
Teng, Y., et al. Zhonghua Yi Xue Za Zhi 90(14):988-992(2010)

Images

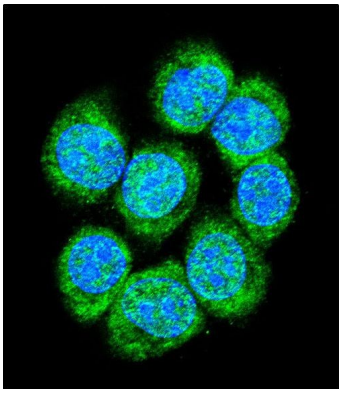


All lanes: Anti-CTNB1 Antibody (C-term) at 1:1000 dilution Lane 1: PC-12 whole cell lysate Lane 2: Mouse brain lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 85 KDa Blocking/Dilution buffer: 5% NFDM/TBST.



CTNB1 Antibody (C-term) (Cat. #AP11231b)immunohistochemistry analysis in formalin fixed and paraffin embedded human stomach tissue followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of CTNB1 Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.

Confocal immunofluorescent analysis of CTNB1 Antibody



(C-term)(Cat#AP11231b) with 293 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green). DAPI was used to stain the cell nuclear (blue).

Citations

- HNF4α is a therapeutic target that links AMPK to WNT signalling in early-stage gastric cancer.
- Effects of secreted frizzled-related protein 1 on proliferation, migration, invasion, and apoptosis of colorectal cancer cells.

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