abcam

Product datasheet

Anti-beta Catenin (phospho Y654) antibody [1B11] ab24925

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Overview

Product name	Anti-beta Catenin (phospho Y654) antibody [1B11]
Description	Mouse monoclonal [1B11] to beta Catenin (phospho Y654)
Host species	Mouse
Specificity	ab24925 recognises beta catenin phosphorylated at tyrosine 654.
Tested applications	**Suitable for:** IHC-P, ICC/IF, IHC-Fr, WB, ELISA, ICC
Species reactivity	**Reacts with:** Mouse, Rat, Dog, Human
Immunogen	Synthetic phosphopeptide
Epitope	ab24925 reacts with an epitope located in the region of phosphorylated tyrosine 654.
Positive control	Vanadate treated SW480 cell lysate.

Properties

Form	Liquid
Storage instructions	Store at -20°C. Stable for 12 months at -20°C
Storage buffer	Preservative: 0.1% Sodium azide Constituent: 5.36% PBS
Purity	IgG fraction
Purification notes	ab24925 is purified from cell culture by thiophilic adsorption and size exclusion chromatography.
Clonality	Monoclonal
Clone number	1B11
Isotype	IgG1

Applications

The Abpromise guarantee Our Abpromise guarantee covers the use of ab24925 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P	★★★★☆ (1)	Use at an assay dependent concentration.
ICC/IF		Use at an assay dependent concentration. PubMed: 21970630
IHC-Fr	★★★★☆ (1)	Use at an assay dependent concentration.
WB	★★★☆☆ (3)	Use a concentration of 1 µg/ml. Predicted molecular weight: 86 kDa.
ELISA		Use a concentration of 0.05 µg/ml.
ICC	★★★★☆ (1)	1/50.

Target

Function

Key dowstream component of the canonical Wnt signaling pathway. 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. 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.
Involved in the regulation of cell adhesion. The majority of beta-catenin is localized to the cell membrane and is part of E-cadherin/catenin adhesion complexes which are proposed to couple cadherins to the actin cytoskeleton.

Tissue specificity

Expressed in several hair follicle cell types: basal and peripheral matrix cells, and cells of the outer and inner root sheaths. Expressed in colon.

Involvement in disease

Defects in CTNNB1 are associated with colorectal cancer (CRC) [MIM:114500].
Note=Activating mutations in CTNNB1 have oncogenic activity resulting in tumor development. Somatic mutations are found in various tumor types, including colon cancers, ovarian and prostate carcinomas, hepatoblastoma (HB), hepatocellular carcinoma (HCC). HBs are malignant embryonal tumors mainly affecting young children in the first three years of life.
Defects in CTNNB1 are a cause of pilomatrixoma (PTR) [MIM:132600]; a common benign skin tumor.
Defects in CTNNB1 are a cause of medulloblastoma (MDB) [MIM:155255]. MDB is a malignant, invasive embryonal tumor of the cerebellum with a preferential manifestation in children.
Defects in CTNNB1 are a cause of susceptibility to ovarian cancer (OC) [MIM:167000]. Ovarian cancer common malignancy originating from ovarian tissue. Although many histologic types of ovarian neoplasms have been described, epithelial ovarian carcinoma is the most common form. Ovarian cancers are often asymptomatic and the recognized signs and symptoms, even of late-stage disease, are vague. Consequently, most patients are diagnosed with advanced disease.
Note=A chromosomal aberration involving CTNNB1 is found in salivary gland pleiomorphic adenomas, the most common benign epithelial tumors of the salivary gland. Translocation t(3;8)(p21;q12) with PLAG1.

Sequence similarities

Belongs to the beta-catenin family.
Contains 12 ARM repeats.

Post-translational modifications

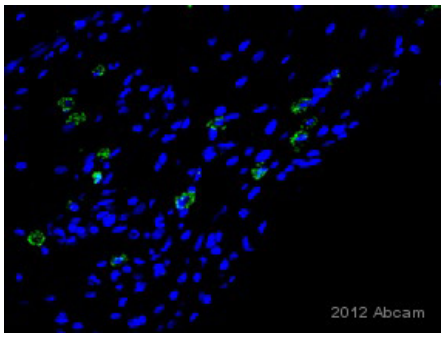
Phosphorylation by GSK3B requires prior phosphorylation of Ser-45 by another kinase. Phosphorylation proceeds then from Thr-41 to Ser-37 and Ser-33.

EGF stimulates tyrosine phosphorylation. Phosphorylation on Tyr-654 decreases CDH1 binding and enhances TBP binding.
Ubiquitinated by the SCF(BTRC) E3 ligase complex when phosphorylated by GSK3B, leading to its degradation. Ubiquitinated by a E3 ubiquitin ligase complex containing UBE2D1, SIAH1, CACYBP/SIP, SKP1, APC and TBL1X, leading to its subsequent proteasomal degradation.

Cellular localization

Cytoplasm. Nucleus. Cytoplasm > cytoskeleton. Cell junction > adherens junction. Cell junction. Cell membrane. Cytoplasmic when it is unstabilized (high level of phosphorylation) 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.

Images

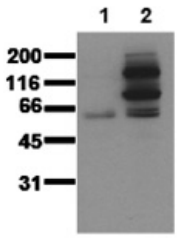


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin (phospho Y654) antibody [1B11] (ab24925)

This image is courtesy of an anonymous Abreview

Immunohistochemical analysis of rat bladder tissue sections, staining beta Catenin (phospho Y654) with ab24925.

Tissue was fixed with 10% Neutral Buffered Formalin and blocked with 5000 µg/ml BSA for 30 minutes at 22°C. Samples were incubated with primary antibody (1/100 in diluent) for 1 hour at 22°C. An AlexaFluor®488-conjugated goat anti-mouse polyclonal IgG (1/400) was used as the secondary antibody.



Western blot - Anti-beta Catenin (phospho Y654) antibody [1B11] (ab24925)

All lanes : Anti-beta Catenin (phospho Y654) antibody [1B11] (ab24925) at 0.5 µg/ml

Lane 1 : Whole cell extracts of control OVCAR 5 tumor cells
Lane 2 : Whole cell extracts pervanadate treated OVCAR 5 tumor cells

Lysates/proteins at 20000 cells per lane.

Secondary
All lanes : A HRP-conjugated antibody

Developed using the ECL technique.

Predicted band size: 86 kDa

Exposure time: 30 seconds

Whole cell extracts of control (1) or pervanadate treated (2) OVCAR 5 tumor cells were applied to SDS-PAGE (ca 20,000 cells per lane) and transferred to a PVDF membrane. The immunoblot was probed with ab24925 (0.5ug/ml) for 1 hour at room temp. and developed by ECL (exp. time: 30 seconds). The blot was probed for 1 hour at RT.

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