Product datasheet

Anti-beta Catenin antibody ab2365

Overview

Product name: Anti-beta Catenin antibody
Description: Rabbit polyclonal to beta Catenin
Host species: Rabbit
Tested applications: Suitable for: WB, IHC-P, IHC-Fr, ICC, ICC/IF, IP
Species reactivity: Reacts with: Mouse, Rat, Chicken, Human, Xenopus laevis
Immunogen: Synthetic peptide corresponding to beta Catenin.

Properties

Form: Liquid
Storage buffer: pH: 7.60
Preservative: 0.1% Sodium azide
Constituents: 0.0268% PBS, 1% BSA
Purity: Protein A purified
Clonality: Polyclonal
Isotype: IgG

Applications

Our Abpromise guarantee covers the use of ab2365 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB</td>
<td>★★★★★</td>
<td>Use at an assay dependent concentration. Predicted molecular weight: 85 kDa.</td>
</tr>
</tbody>
</table>
### Function

Key downstream 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 pleomorphic 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.

### Application

<table>
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<tr>
<th>Method</th>
<th>Abreviews</th>
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</thead>
<tbody>
<tr>
<td>IHC-P</td>
<td>![ ](1/250. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. Incubate with primary antibody for 10 minutes at room temperature.)</td>
<td></td>
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<tr>
<td>IHC-Fr</td>
<td>![ ](Use at an assay dependent concentration.)</td>
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<td>ICC</td>
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<td>ICC/IF</td>
<td>![ ](Use at an assay dependent concentration.)</td>
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<tr>
<td>IP</td>
<td>![ ](Use a concentration of 5 µg/ml.)</td>
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**Target**

**Function**: Key downstream 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.

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**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**


**Images**

**Immunocytochemistry/ Immunofluorescence - Anti-beta Catenin antibody (ab2365)**

This image is courtesy of an Abreview submitted by Dr Jianyuan Chai

**Gastric epithelial cells (RGM1)**  **Embryonic fibroblasts (Rat2)**

ab2365 at 1/100 staining rat gastric epithelial cells by ICC/IF. The cells were formaldehyde fixed and blocked with 5% serum prior to incubation with the antibody for 2 hours. A FITC conjugated goat anti-rabbit IgG was used as the secondary. Nuclei were counterstained with propidium iodide.

The image shows the staining of gastric epithelial cells (left hand panel) and the staining of embryonic fibroblasts (negative control, right hand panel).

**Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody (ab2365)**

Formalin-fixed, paraffin-embedded human breast carcinoma tissue stained for beta Catenin using ab2365 at 1/250 dilution in immunohistochemical analysis.
**Immunohistochemistry (Frozen sections) - Anti-beta Catenin antibody (ab2365)**

This image is courtesy of an anonymous Abreview.

**Western blot - Anti-beta Catenin antibody (ab2365)**

Anti-beta Catenin antibody (ab2365) at 1/25 dilution + A431 cell lysate

**Predicted band size:** 85 kDa  
**Observed band size:** 92 kDa

**ab2365** at 1/200 staining mouse skin tissue sections by IHC-Fr. The tissue was paraformaldehyde fixed and blocked with serum prior to incubation with the antibody for 16 hours. An Alexa-Fluor® 594 conjugated chicken anti-rabbit polyclonal was used as the secondary.
Beta Catenin was immunoprecipitated using 0.5mg A431 whole cell extract, 5µg of Rabbit polyclonal to beta Catenin and 50µl of protein G magnetic beads (+). No antibody was added to the control (-).

The antibody was incubated under agitation with Protein G beads for 10min, A431 whole cell extract lysate diluted in RIPA buffer was added to each sample and incubated for a further 10min under agitation.

Proteins were eluted by addition of 40µl SDS loading buffer and incubated for 10min at 70°C; 10µl of each sample was separated on a SDS PAGE gel, transferred to a nitrocellulose membrane, blocked with 5% BSA and probed with ab2365.


Band: 85kDa; beta Catenin.

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