

## Product datasheet

# Anti-beta Catenin antibody [E247] ab32572

**KO** **VALIDATED** Recombinant **RabMAB**

★★★★★ 55 Abreviews 66 References 15 Images

### Overview

<b>Product name</b>	Anti-beta Catenin antibody [E247]
<b>Description</b>	Rabbit monoclonal [E247] to beta Catenin
<b>Tested applications</b>	<b>Suitable for:</b> IHC-Fr, IHC-P, WB, ICC/IF, IP <b>Unsuitable for:</b> Flow Cyt
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Sheep, Hamster, Cow, Human, Macaque monkey, African green monkey
<b>Immunogen</b>	Synthetic peptide (the amino acid sequence is considered to be commercially sensitive) corresponding to Human beta Catenin aa 1-100 (N terminal).
<b>Positive control</b>	WB: A431 cells and lysate. IF: A431 cells, CTNNB1-HAP1 cells (wildtype and knockout) IHC-P: Human colon adenocarcinoma.
<b>General notes</b>	A trial size is available to purchase for this antibody. Alternative versions available: <a href="#">Anti-beta Catenin antibody (BSA &amp; Azide free) [E247] (ab196204)</a> Produced using Abcam's RabMAB <sup>®</sup> technology. RabMAB <sup>®</sup> technology is covered by the following U.S. Patents, No. 5, 675, 063 and/or 7, 429, 487. This product is a recombinant rabbit monoclonal antibody.

### Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Avoid freeze / thaw cycle.
<b>Storage buffer</b>	PBS 49%, Sodium azide 0.01%, Glycerol 50%, BSA 0.05%
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	E247
<b>Isotype</b>	IgG

### Applications

Our [Abpromise guarantee](#) covers the use of **ab32572** 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-Fr	★★★★★	1/200.
IHC-P	★★★★★	1/500.
WB	★★★★★	1/5000 - 1/10000. Detects a band of approximately 92 kDa (predicted molecular weight: 86 kDa).
ICC/IF	★★★★★	1/250.
IP		1/100.

**Application notes** Is unsuitable for Flow Cyt.

## 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.

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 pilomatixoma (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

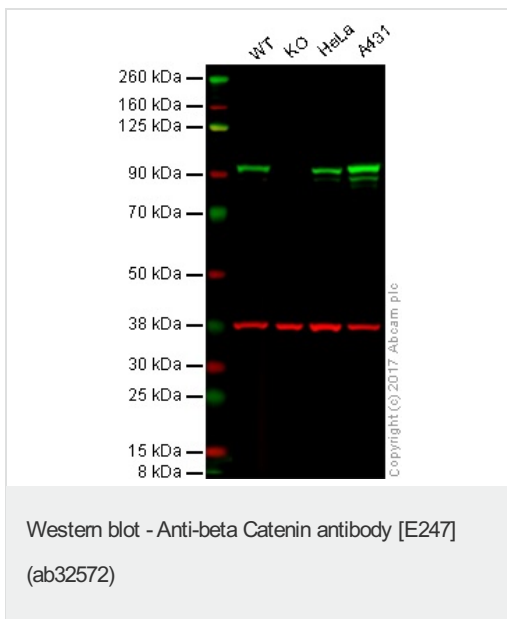
and enhances TBP binding.

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.

## Anti-beta Catenin antibody [E247] images



**Predicted band size :** 86 kDa

**Lane 1:** Wild type HAP1 whole cell lysate (20 µg)

**Lane 2:** Beta Catenin knockout HAP1 whole cell lysate (20 µg)

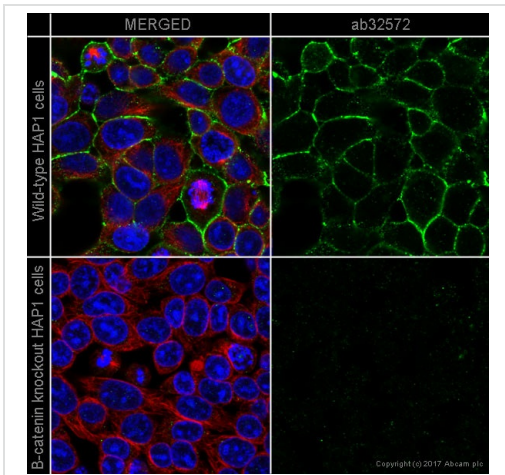
**Lane 3:** HeLa whole cell lysate (20 µg)

**Lane 4:** A431 whole cell lysate (20 µg)

**Lanes 1 - 4:** Merged signal (red and green).

Green - ab32572 observed at 85 kDa. Red - loading control, ab8245, observed at 37 kDa.

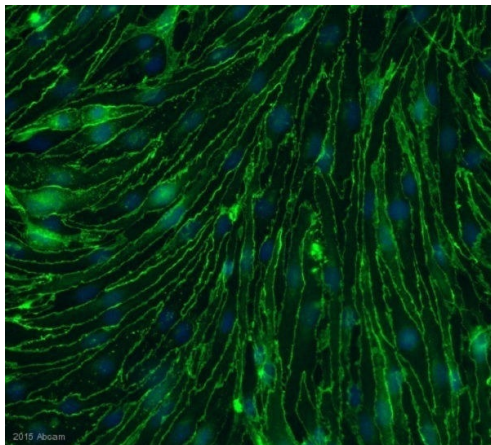
ab32572 was shown to specifically react with beta Catenin when beta Catenin knockout samples were used. Wild-type and beta Catenin knockout samples were subjected to SDS-PAGE. ab32572 and ab8245 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at a 1/5000 dilution and 1/10000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.



Immunocytochemistry/ Immunofluorescence - Anti-beta Catenin antibody [E247] (ab32572)

ab32572 staining  $\beta$ -catenin in wild-type HAP1 cells (top panel) and CTNNB1 knockout HAP1 cells (bottom panel). The cells were fixed with 100% methanol (5min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab32572 at 1/250 dilution and ab195889 at 1/250 dilution (shown in pseudocolour red) overnight at +4°C, followed by a further incubation at room temperature for 1h with a goat secondary antibody to Rabbit IgG (Alexa Fluor® 488) (ab150081) at 2  $\mu$ g/ml (shown in green). Nuclear DNA was labelled in blue with DAPI.

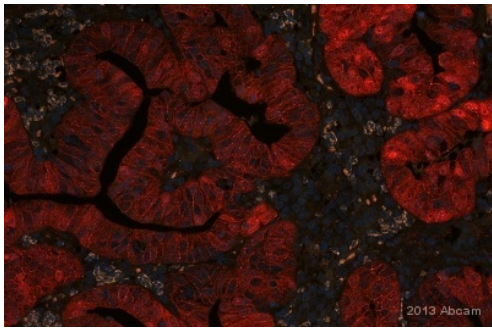
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunocytochemistry/ Immunofluorescence - Anti-beta Catenin antibody [E247] (ab32572)

This image is courtesy of an anonymous Abreview.

ab32572 staining beta-catenin in the bEnd.5 murine cell line by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with paraformaldehyde, permeabilized with 0.1% Triton in PBS and blocked with 10% serum for 30 minutes at 22°C. Samples were incubated with primary antibody (1/300) for 16 hours at 4°C. An Alexa Fluor® 488-conjugated goat anti-rabbit IgG polyclonal (1/500) was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody [E247] (ab32572)

This image is courtesy of an anonymous Abreview

ab32572 staining beta Catenin in Dog colon tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 10% serum for 30 minutes at 25°C; antigen retrieval was by heat mediation in 10mM citrate buffer, pH6. Samples were incubated with primary antibody (1/250 in PBS with 1x casein) for 90 minutes at 25°C. A Biotin-conjugated Goat anti-rabbit IgG polyclonal (1/200) was used as the secondary antibody.



Western blot - Anti-beta Catenin antibody [E247] (ab32572)

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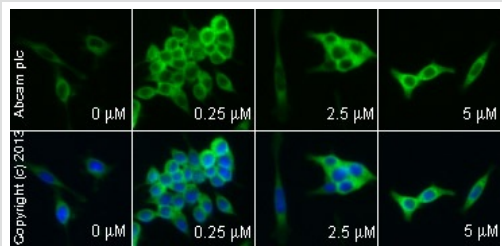
Performed under reducing conditions.

**Predicted band size** : 86 kDa

**Observed band size** : 90 kDa

*This image is courtesy of an anonymous Abreview*

Western blot image of ab32572 staining whole cell lysate of U2OS cells. The gel was blocked with 5% milk for 1 hour at 21°C. The primary antibody was diluted 1/5000 and incubated for 12 hours at 4°C. A HRP conjugated swine anti-rabbit antibody was used as the secondary.

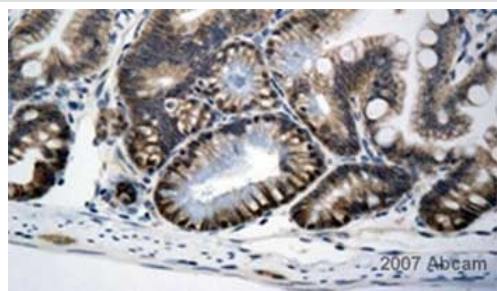


Immunocytochemistry/ Immunofluorescence - Anti-beta Catenin antibody [E247] (ab32572)

ab32572 staining  $\beta$ catenin in SW480 cells treated with BIO (ab120891), by ICC/IF.

Increase of  $\beta$ catenin expression correlates with increased concentration of BIO, as described in literature.

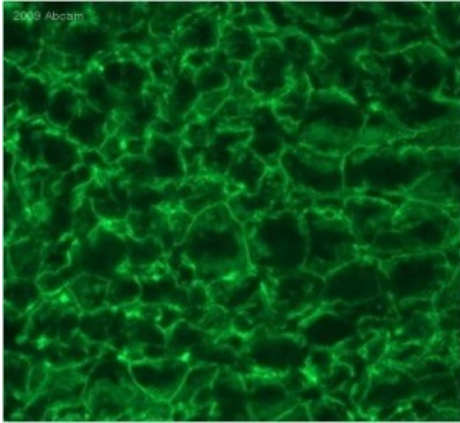
The cells were incubated at 37°C for 48h in media containing different concentrations of ab120891 (BIO) in DMSO, fixed with 4% formaldehyde for 10 minutes at room temperature and blocked with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% tween for 2h at room temperature. Staining of the treated cells with ab32572 (1/200) dilution was performed overnight at 4°C in PBS containing 1% BSA and 0.1% tween. A DyLight 488 anti-rabbit polyclonal antibody (ab96899) at 1/250 dilution was used as the secondary antibody. Nuclei were counterstained with DAPI and are shown in blue.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody [E247] (ab32572)

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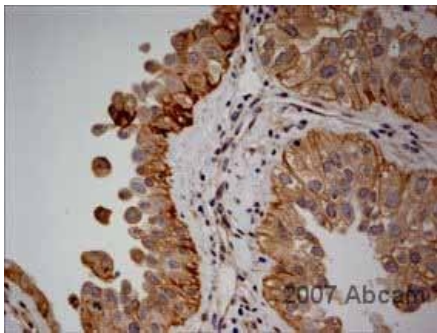
ab32572 at 1/200 staining mouse small intestine tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step was performed before incubation with the primary antibody. An HRP conjugated goat anti-rabbit antibody was used as the secondary.



Immunohistochemistry (Frozen sections) - Anti-beta Catenin antibody [E247] (ab32572)

This image is a courtesy of Anonymous Abreview

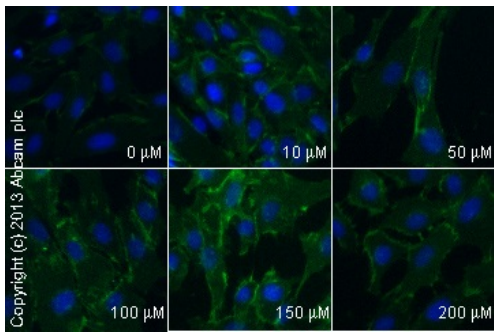
ab32572 staining beta Catenin in mouse liver tissue section by Immunohistochemistry (Frozen sections). Tissue samples were fixed with formaldehyde and blocked with 5% serum at 4°C for 30 minutes. The sample was incubated with primary antibody (1/200) in dilution buffer containing PBS and 3% Goat Serum at 4°C for 9 hours. An Alexa Fluor®488-conjugated Goat polyclonal to rabbit IgG was used as secondary antibody at 1/200 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody [E247] (ab32572)

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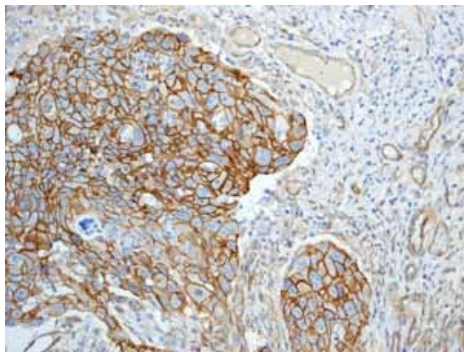
ab32572 staining human renal carcinoma tissue sections by IHC-P. Sections were formaldehyde fixed and subjected to heat mediated antigen retrieval in citrate buffer (pH 6) prior to blocking with 1% milk for 45 minutes at 22°C. The primary antibody was diluted 1/200 and incubated with the sample for 1 hour at 22°C. A HRP conjugated goat anti-rabbit antibody, diluted 1/400, was used as the secondary.



Immunocytochemistry/ Immunofluorescence - Anti-beta Catenin antibody [E247] (ab32572)

ab32572 staining  $\beta$  catenin in SKNSH cells treated with olanzapine (ab120736), by ICC/IF. Increase in expression of  $\beta$  catenin correlates with increased concentration of olanzapine, as described in literature.

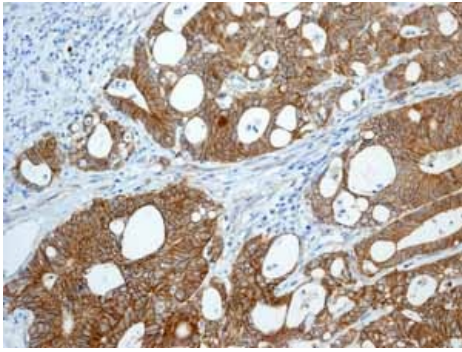
The cells were incubated at 37°C for 24h in media containing different concentrations of ab120736 (olanzapine) in DMSO, fixed with 4% formaldehyde for 10 minutes at room temperature and blocked with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% tween for 2h at room temperature. Staining of the treated cells with ab32572 (1/200 dilution) was performed overnight at 4°C in PBS containing 1% BSA and 0.1% tween. A DyLight 488 goat anti-rabbit polyclonal antibody (ab96899) at 1/250 dilution was used as the secondary antibody. Nuclei were counterstained with DAPI and are shown in blue.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody [E247] (ab32572)

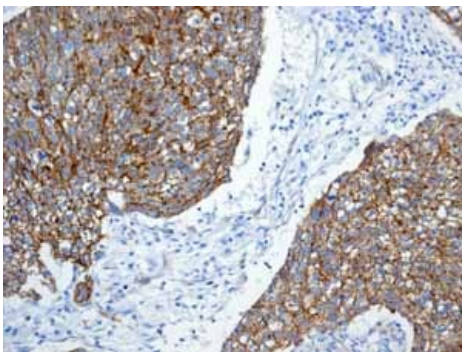
ab32572 showing positive staining in Cervical carcinoma tissue.





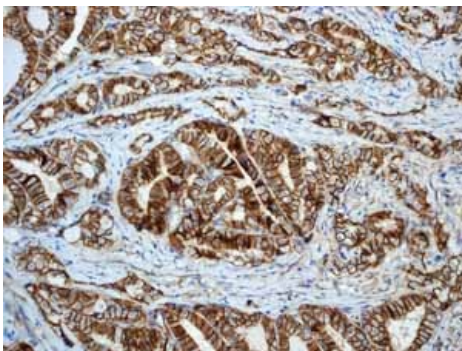
ab32572 showing positive staining in Breast carcinoma tissue.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody [E247] (ab32572)



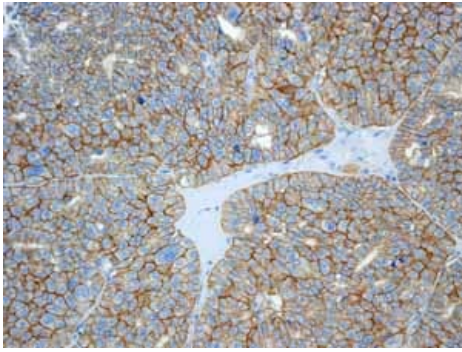
ab32572 showing positive staining in Lung adenocarcinoma tissue.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody [E247] (ab32572)



ab32572 showing positive staining in Papillary carcinoma of thyroid gland tissue.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody [E247] (ab32572)



ab32572 showing positive staining in Kidney carcinoma tissue.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody [E247] (ab32572)

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