abcam

Product datasheet

# Anti-beta Catenin antibody ab16051

敲除验证

31 Abreviews 300 References 12 图像

## 概述

| | |
|---|---|
| **产品名称** | Anti-beta Catenin抗体 |
| **描述** | **兔多克隆抗体**to beta Catenin |
| **宿主** | Rabbit |
| **经测试应用** | **适用于:** IHC-P, ICC/IF, Sandwich ELISA, WB |
| **种属反应性** | **与反应:** Human<br>**预测可用于:** Mouse, Rat, Sheep, Goat, Chicken, Cat, Dog, Pig, Xenopus laevis, Zebrafish, Common marmoset, Squirrel, Dogfish, Catshark |
| **免疫原** | Synthetic peptide corresponding to Human beta Catenin aa 750 to the C-terminus (C terminal) conjugated to keyhole limpet haemocyanin.<br>(Peptide available as **ab16377**) |
| **常规说明** | The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.<br>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As |

## 性能

| | |
|---|---|
| **形式** | Liquid |
| **存放说明** | Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle. |
| **存储溶液** | pH: 7.40<br>Preservative: 0.02% Sodium azide<br>Constituent: PBS<br><br>Batches of this product that have a concentration < 1mg/ml may have BSA added as a stabilising agent. If you would like information about the formulation of a specific lot, please contact our scientific support team who will be happy to help. |

| | |
|---|---|
| **纯度** | Immunogen affinity purified |
| **克隆** | **多克隆** |
| **同种型** | IgG |

## 应用

**The Abpromise guarantee** **Abpromise™承诺保证使用**ab16051**于以下的**经测试应用

"应用说明"部分 下显示的仅为推荐的起始稀释度;实际最佳的稀释度/浓度应由使用者检定。

| 应用 | Ab评论 | 说明 |
|---|---|---|
| **IHC-P** | ★★★★★ (12) | Use a concentration of 0.5 - 1 µg/ml. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. |
| **ICC/IF** | ★★★★★ (6) | Use a concentration of 1 - 5 µg/ml. |
| **Sandwich ELISA** | | Use a concentration of 0.1 µg/ml. For sandwich ELISA, use this antibody as Detection at 0.1 µg/ml with **Mouse monoclonal [BDI080] to beta Catenin (ab19448)** as Capture. |
| **WB** | ★★★★☆ (8) | Use a concentration of 0.25 µg/ml. Detects a band of approximately 95 kDa (predicted molecular weight: 94 kDa). |

## 靶标

**功能**

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.

**组织特异性**

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

**疾病相关**

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.

**序列相似性**

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

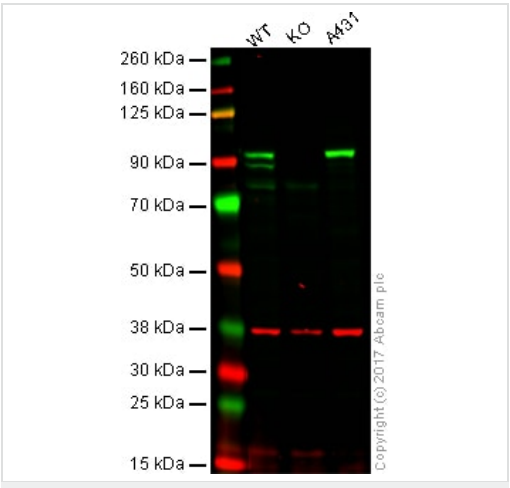
**翻译后修饰**

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.

**细胞定位**

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.

## 图片

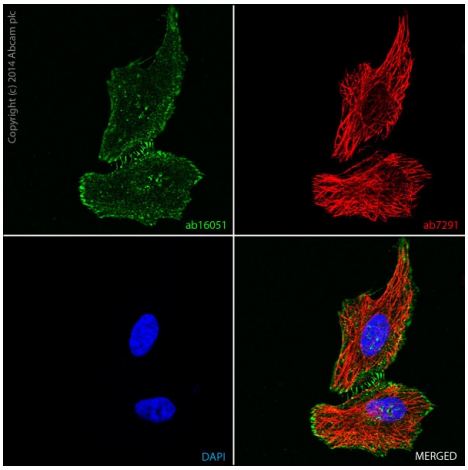



Western blot - Anti-beta Catenin antibody (ab16051)

**Lane 1:** Wild type HAP1 whole cell lysate (20 µg)
**Lane 2:** CTNNB1 (β-catenin) knockout HAP1 whole cell lysate (20 µg)
**Lane 3:** A431 whole cell lysate (20 µg)

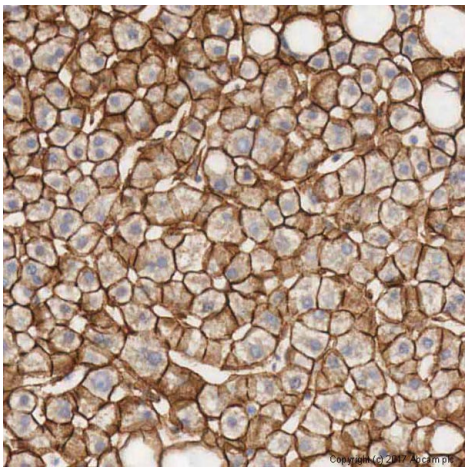
**Lanes 1 - 3:** Merged signal (red and green). Green - ab16051 observed at 95 kDa. Red - loading control, **ab9484**, observed at 37 kDa.

ab16051 was shown to specifically react with CTNNB1 (β-catenin) along with additional cross-reactive bands in wild-type HAP1 cells. No band was observed in knockout samples. Wild-type and CTNNB1 (β-catenin) knockout samples were subjected to SDS-PAGE. Ab16051 and **ab9484** (Mouse anti GAPDH loading control) were incubated overnight at 4°C at 0.25 ug/ml and 1/20000 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 (ab16051)

ab16051 staining CTNNB1 (β-catenin) in HeLa cells. The cells were fixed with 100% methanol (5min) and then blocked in 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated with ab16051 at 1µg/ml and **ab7291** (staining Tubulin) at 1µg/ml overnight at +4°C, followed by a further incubation at room temperature for 1h with an AlexaFluor®488 Goat anti-Rabbit secondary (**ab150077**) at 2 µg/ml (shown in green) and AlexaFluor®594 Goat anti-Mouse secondary (**ab150120**) at 2 µg/ml (shown in pseudo color red). Nuclear DNA was labelled in blue with DAPI.

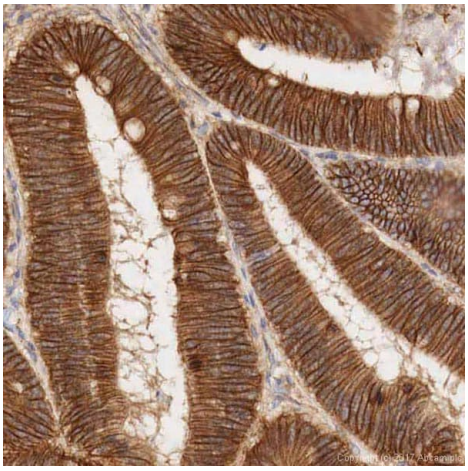


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody (ab16051)

IHC image of beta catenin staining in a formalin fixed, paraffin embedded normal human liver tissue section*, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab16051, 0.5 µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre

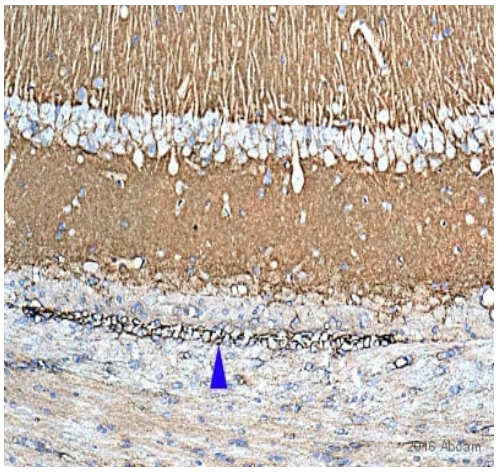


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody (ab16051)

IHC image of beta catenin staining in a formalin fixed, paraffin embedded human colon adenocarcinamo tissue section*, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab16051, 0.5 µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

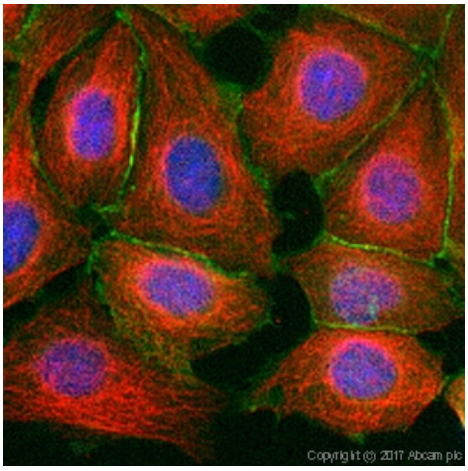
*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody (ab16051)

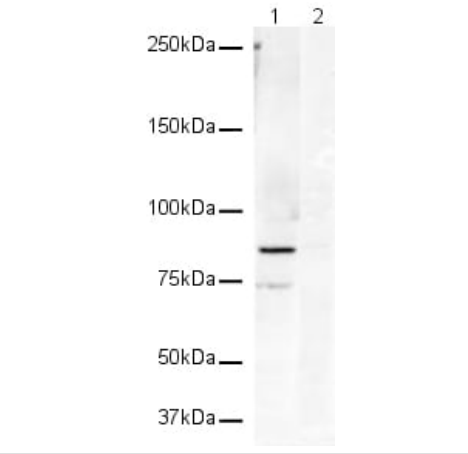
This image is courtesy of an Abreview by Carl Hobbs.

ab16051 staining beta Catenin in rat brain tissue sections by Immunohistochemistry (IHC-P - formaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 2% BSA for 10 minutes at 21°C; antigen retrieval was by heat mediation in a citrate buffer. Samples were incubated with primary antibody (1/1000 in TBS/BSA/azide) for 2 hours at 21°C. A Biotin-conjugated goat anti-rabbit IgG polyclonal (1/300) was used as the secondary antibody.




Immunocytochemistry/ Immunofluorescence - Anti-beta Catenin antibody (ab16051)

ab16051 stained in MCF7cells. Cells were fixed with 100% methanol (5 min) at room temperature and incubated with PBS containing 10% goat serum, 0.3 M glycine, 1% BSA and 0.1% tween for 1h at room temperature to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody ab16051 at 5 µg/ml and **ab7291** (Mouse monoclonal [DM1A] to alpha Tubulin - Loading Control) at 1/1000 dilution overnight at +4°C. The secondary antibodies were **ab150120** (pseudo-colored red) and **ab150081** (colored green) used at 1 ug/ml for 1hour at room temperature. DAPI was used to stain the cell nuclei (colored blue) at a concentration of 1.43 µM for 1hour at room temperature




Western blot - Anti-beta Catenin antibody (ab16051)

**All lanes :** Anti-beta Catenin antibody (ab16051) at 0.25 µg/ml

**Lane 1 :** HeLa whole cell lysate
**Lane 2 :** HeLa whole cell lysate with Human beta Catenin peptide (**ab16377**) at 1 µg/ml

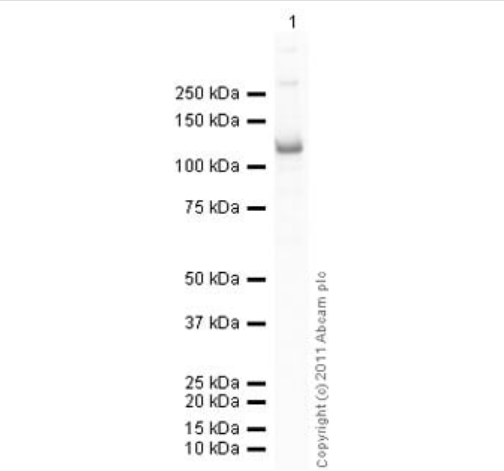
Lysates/proteins at 20 µg per lane.

**Secondary**
**All lanes :** Alexa Fluor Goat polyclonal to Rabbit IgG at 1/10000 dilution

Performed under reducing conditions.

**Predicted band size:** 94 kDa
**Observed band size:** 94 kDa
**Additional bands at:** 75 kDa. We are unsure as to the identity of these extra bands.

A second band of 75 kDa was also detected in Hela whole cell lysates and A431 lysates. This smaller band was of equal intensity to the 94 kDa band in the A431 lysates (data not shown).




Western blot - Anti-beta Catenin antibody (ab16051)

Anti-beta Catenin antibody (ab16051) at 0.25 µg/ml + Recombinant Human beta Catenin protein (Tagged) (**ab63175**) at 0.01 µg

**Secondary**

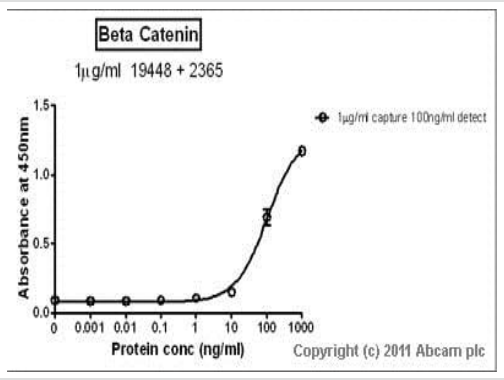
Goat Anti-Rabbit IgG H&L (HRP) preadsorbed (**ab97080**) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

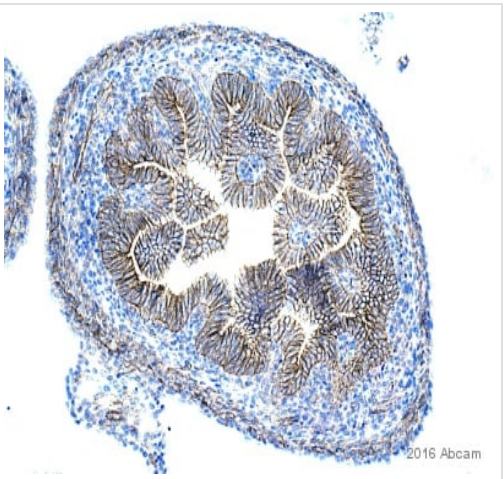
**Predicted band size:** 94 kDa

**Exposure time:** 10 seconds




Sandwich ELISA - Anti-beta Catenin antibody (ab16051)

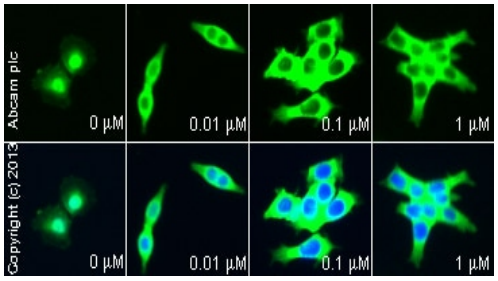
Standard Curve for Beta-Catenin (Analyte: **beta Catenin protein (Tagged) (ab63175)**); dilution range 1pg/ml to 1ug/ml using Capture Antibody **Mouse monoclonal [BDI080] to beta Catenin (ab19448)** at 1ug/ml and Detector Antibody **Rabbit polyclonal to beta Catenin (ab16051)** at 0.1ug/ml.




Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody (ab16051)

This image is courtesy of an Abreview by Carl Hobbs.

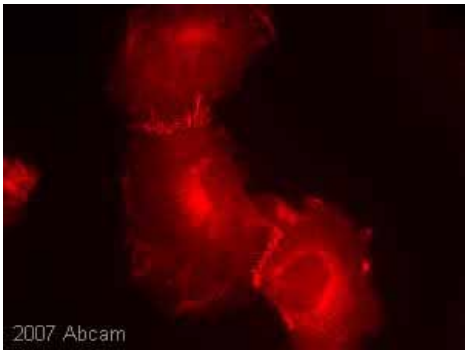
ab16051 staining beta Catenin in developing gut tissue sections from mouse by Immunohistochemistry (IHC-P - formaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 2% BSA for 2 minutes at 21°C; antigen retrieval was by heat mediation in a citrate buffer. Samples were incubated with primary antibody (1/2000 in TBS/BSA/azide) for 2 hours at 21°C. A Biotin-conjugated goat anti-rabbit IgG polyclonal (1/300) was used as the secondary antibody.




Immunocytochemistry/ Immunofluorescence - Anti-beta Catenin antibody (ab16051)

ab16051 staining β-catenin in SW480 cells treated with XAV939 (**ab120897**), by ICC/IF. Increase of ß-catenin cytoplasmic expression and decrease in nuclear expression correlates with increased concentration of XAV939, as described in literature.

The cells were incubated at 37°C for 6 hours in media containing different concentrations of **ab120897** (XAV939) 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 ab16051 (1 µg/ml) 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.




Immunocytochemistry/ Immunofluorescence - Anti-beta Catenin antibody (ab16051)

This image is courtesy of an Abreview submitted by Miss Helen Gillingham

ab16051 staining human fibrosarcoma cells by ICC/IF. Cells were PFA fixed and permeabilized in Triton X-100 prior to incubation with the primary antibody (at 10µg/ml) for 1 hour at 27°C. A Texas Red® conjugated donkey anti-rabbit antibody was used as the secondary.

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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