abcam

ab305262

# Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free

Recombinant | RabMAb | KO Validated

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.2 - 7.4 Constituents: PBS |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Carrier free** | Yes |
| **Clone number** | EPR26155-110-1 |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.997 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## WB

### Tested

| | |
|---|---|
| **Species** | Human, Mouse, Rat |
| **Dilution info** | - |

| | |
|---|---|
| **Notes** | - |

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Human, Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human, Mouse |
| **Dilution info** | - |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human, Mouse |
| **Dilution info** | - |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## IP

### Tested

| | |
|---|---|
| **Species** | Human, Mouse |
| **Dilution info** | - |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## Dot

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

# Target data

See full target information CTNNB1

| | |
|---|---|
| **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).

## Storage

| | |
|---|---|
| **Shipped at conditions** | Blue Ice |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | +4°C |

## Notes

**Conjugation ready**
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

**Compatibility**
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

**Patented technology**
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

**What are the advantages of a recombinant monoclonal antibody?**
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

| | |
|---|---|
| **Activity summary** | Beta Catenin also known by names such as CTNNB1 or beta-chip is an important protein involved in cell signaling and adhesion. This protein has a molecular weight of around 88 kDa. Beta Catenin is expressed in many cell types and tissues indicating its widespread role in various biological processes. It functions mechanically by mediating the linkage between cadherins and the actin cytoskeleton facilitating cell-cell adhesion. Beta Catenin is also a central part of transcription regulation processes in the nucleus. |
| **Biological function summary** | This protein plays roles in both cell adhesion and the regulation of gene expression. Beta Catenin is a critical component of the Wnt signaling pathway where it can form complexes with other proteins to influence gene transcription. In the absence of Wnt signaling beta Catenin levels are low due to its degradation. However when the pathway is active it accumulates in the cytoplasm and eventually translocates to the nucleus where it interacts with TCF/LEF transcription factors to regulate the expression of target genes. |
| **Pathways** | Beta Catenin plays a central role in the Wnt signaling pathway and influences cell fate decisions and cellular proliferation. It acts in concert with proteins such as Dishevelled (DVL) and Axin to coordinate these important biological processes. In the absence of Wnt signaling proteins such as APC and GSK-3β are responsible for beta Catenin degradation keeping its cellular levels in check. Beta Catenin's interaction with transcription factors in the nucleus makes it pivotal in the regulation of cell and tissue homeostasis. |
| **Associated diseases and disorders** | Beta Catenin has associations with colorectal cancer and hepatocellular carcinoma. Its dysregulation can lead to unchecked cell proliferation and tumorigenesis. Often mutations in the beta Catenin gene (CTNNB1) or components of the Wnt pathway like APC are implicated in the development of these cancers. Its interplay with E-cadherin is important for maintaining tissue architecture and disruptions can lead to invasive cancer phenotypes. Understanding beta Catenin's role provides insights into therapeutic strategies for these cancers. |

## Product promise

**Tested**

We have tested this species and application combination and it works. It is covered by our product promise.

**Expected**

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

**Predicted**

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

**Not recommended**

We do not recommend this combination. It is not covered by our product promise.

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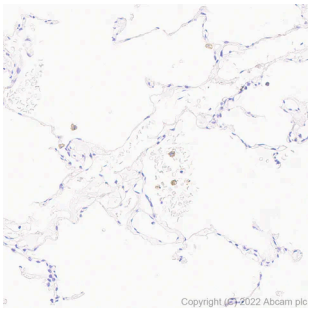
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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## 15 product images

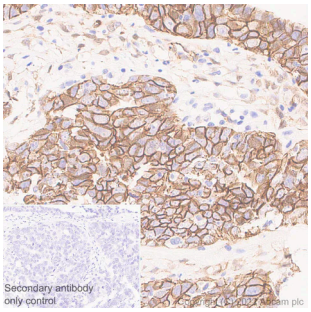



### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free (ab305262)

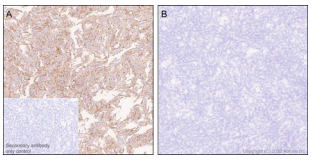
Beta Catenin non-phospho(active) S45 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human lung using rabbit Anti-beta Catenin non-phospho(active) S45 antibody



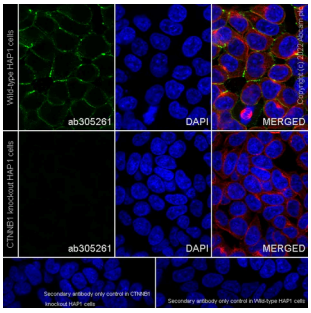

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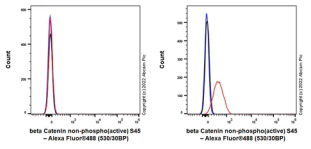



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free (ab305262)



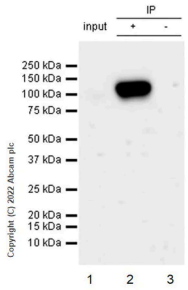

## Immunocytochemistry/ Immunofluorescence - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free (ab305262)

This data was developed using ab305261, the same antibody clone in a different buffer formulation. Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized CTNNB1 (beta Catenin) knockout HAP1 cells labelling beta Catenin non-phospho (active) S45 with ab305261 at 1/50 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green). Confocal image showing membranous staining in parental HAP1 cell line, and no staining in CTNNB1 (beta Catenin) knockout HAP1 cell line. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8) ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution.




## Flow Cytometry (Intracellular) - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free (ab305262)

This data was developed using ab305261, the same antibody clone in a different buffer formulation. Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Wild-type HAP1 (human chronic myelogenous leukemia near-haploid cell, Right) / CTNNB1 (beta Catenin) knockout HAP1(Left) cells labelling beta Catenin non-phospho(active) S45 with ab305261 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.




## Immunoprecipitation - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free (ab305262)

This data was developed using ab305261, the same antibody clone in a different buffer formulation. beta Catenin non-phospho(active) S45 was immunoprecipitated from 0.35 mg HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate 10 µg with ab305261 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab305261 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate 10 µg Lane 2: ab305261 IP in HeLa whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab305261 in HeLa whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 50 seconds
All lanes:
Immunoprecipitation - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] (ab305261) at 1/30 dilution

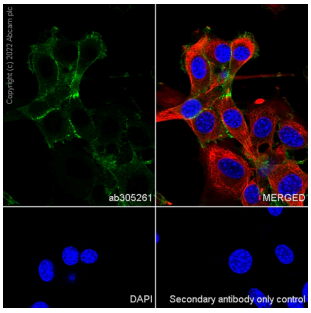
All lanes:
HeLa (human cervix adenocarcinoma epithelial cell)

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

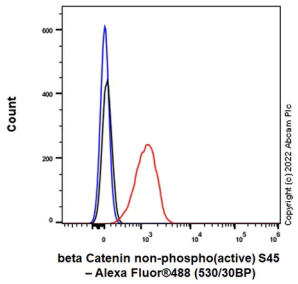
Observed band size: 95 kDa

Exposure time: 50s



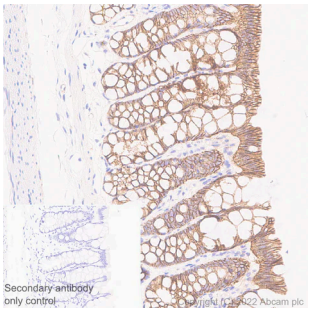

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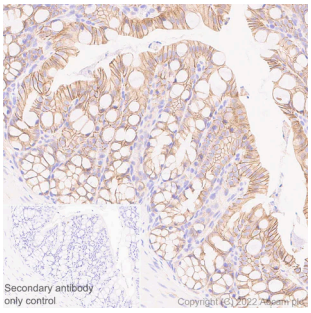



## Flow Cytometry (Intracellular) - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free (ab305262)

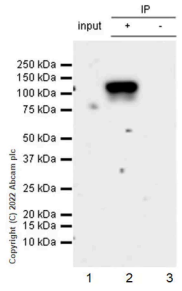
This data was developed using ab305261, the same antibody clone in a different buffer formulation. Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labelling beta Catenin non-phospho(active) S45 with ab305261 at 1/50 dilution (1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.




## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free (ab305262)




## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free (ab305262)




## Immunoprecipitation - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free (ab305262)

This data was developed using ab305261, the same antibody clone in a different buffer formulation. beta Catenin non-phospho(active) S45 was immunoprecipitated from 0.35 mg NIH/3T3 (mouse embryonic fibroblast) whole cell lysate 10 µg with ab305261 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab305261 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: NIH/3T3 (mouse embryonic fibroblast) whole cell lysate 10 µg Lane 2: ab305261 IP in NIH/3T3 whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab305261 in NIH/3T3 whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 50 seconds
All lanes:
Immunoprecipitation - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] (ab305261) at 1/30 dilution

All lanes:
HeLa (human cervix adenocarcinoma epithelial cell)

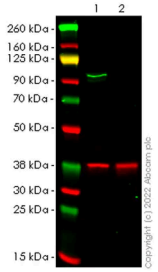
Secondary

All lanes:

Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Observed band size: 95 kDa

Exposure time: 50s




## Western blot - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free (ab305262)

This data was developed using ab305261, the same antibody clone in a different buffer formulation. Blocking and diluting buffer and concentration:Intercept® (TBS) Blocking Buffer diluted with an equal volume of 0.1% TBS The samples were run on a Bis-Tris gel. Performed under reducing conditions. False colour image of Western blot: Anti-beta Catenin non-phospho(active) S45 antibody (ab305261) staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody 6C5 (ab8245) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab305261 was shown to bind specifically to beta Catenin non-phospho(active) S45. A band was observed at 95 kDa in wild-type HAP1 cell lysates with no signal observed at this size in CTNNB1 (beta Catenin) knockout cell line. To generate this image, wild-type and CTNNB1 (beta Catenin) knockout HAP1 cell lysates were analyzed. First, samples were run on an SDS-PAGE gel then transferred onto an immobilon-FL PVDF membrane. Membranes were blocked in in Intercept® (TBS) Blocking Buffer diluted with an equal volume of 0.1% TBS before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) at 1/20000 dilution.
All lanes:
Western blot - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] (ab305261) at 1/1000 dilution

Lane 1:
Wild-type HAP1(human chronic myelogenous leukemia near-haploid cell line) whole cell lysate at 20 µg

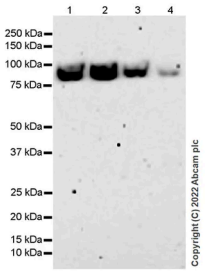
Lane 2:
CTNNB1 (beta Catenin) knockout HAP1 whole cell lysate at 20 µg

Secondary

Lanes 1 - 2:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Lanes 1 - 2:
Western blot - Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) at 1/10000 dilution

Observed band size: 95 kDa




## Western blot - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free (ab305262)

This data was developed using ab305261, the same antibody clone in a different buffer formulation. Blocking and diluting buffer and concentration: 5% NFDM/TBST Lysates were freshly made and used for Western Blotting immediately to minimize protein degradation. Exposure time: 180 seconds
All lanes:
Western blot - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] (ab305261) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
293T (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 3:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

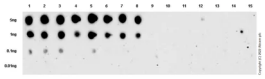
Lane 4:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Observed band size: 95 kDa

Exposure time: 180s



## Dot Blot - Anti-beta Catenin non-phospho(active) S45 antibody [EPR26155-110-1] - BSA and Azide free (ab305262)

Lane 1: beta Catenin non-phospho peptide Lane 2: beta Catenin phospho (S33) peptide Lane 3: beta Catenin phospho (S33/S37) peptide Lane 4: beta Catenin phospho (S33/S37/T41) peptide Lane 5: beta Catenin phospho (S37) peptide Lane 6: beta Catenin phospho (S37/T41) peptide Lane 7: beta Catenin phospho (T41) peptide Lane 8: beta Catenin phospho (S33/T41) peptide Lane 9: beta Catenin phospho (S33/S37/T41/S45) peptide Lane 10: beta Catenin phospho (S37/T41/S45) peptide Lane 11: beta Catenin phospho (T41/S45) peptide Lane 12: beta Catenin phospho (S45) peptide Lane 13: beta Catenin phospho (S33/T41/S45) peptide Lane 14: beta Catenin phospho (S33/S45) peptide Lane 15: beta Catenin phospho (S37/S45) peptide This data was developed using ab305261, the same antibody clone in a different buffer formulation. Dot blot analysis of beta Catenin non-phospho (active) S45 using ab305261 at 1/1000 dilution (0.454 µg/ml) followed by a Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100,000 dilution. Exposure time: 180 seconds Blocking and diluting buffer and concentration: 5% NFDM/TBST

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.