abcam

ab22656

Anti-beta Catenin antibody [12F7]

Anti-beta Catenin antibody [12F7] (ab22656) is a mouse monoclonal antibody detecting beta Catenin in **Western Blot, Flow Cytometry (Intra), IHC-P**. Suitable for **Human**.

- KO validated for confirmed specificity
- Over 70 publications
- Trusted since 2005

Lab Essentials | KO Validated

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	12F7
Purification technique	Affinity purification
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat, Pig
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	2 µg/mL
Notes	We recommend using 3% milk as the blocking agent for Western blot.

Predicted

Species	Mouse, Rat, Pig
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1-5 µg/mL
Notes	Perform heat-mediated antigen retrieval via the microwave method before commencing with IHC staining protocol.

Predicted

Species	Mouse, Rat, Pig

Dilution info	-
Notes	-

Target data

See full target information CTNNB1

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-beta Catenin antibody [12F7] (ab22656) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Flow Cytometry (Flow Cyt), Immunohistochemistry (IHC-P) in Human samples.

What is the molecular weight of beta Catenin?
Anti-beta Catenin [12F7] (ab22656) specifically detects a band for beta Catenin (UniProt: P35222) at a molecular weight of 85kDa.

Trusted by the scientific community
Anti-beta Catenin [12F7] (ab22656) was first used in a scientific publication in 2005 and has been cited over 70 times in peer-reviewed journals.

Reviewed by scientists
Anti-beta Catenin [12F7] (ab22656) has over 5 independent reviews from customers.

Specificity confirmed
The specificity of Anti-beta Catenin antibody [12F7] (ab22656) has been confirmed by Immunocytochemistry testing in CTNNB1 Knockout HAP1 cells.

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

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-3B 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.

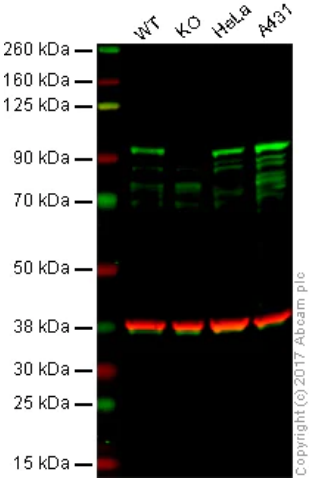
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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7 product images



Western blot - Anti-beta Catenin antibody [12F7] (ab22656)

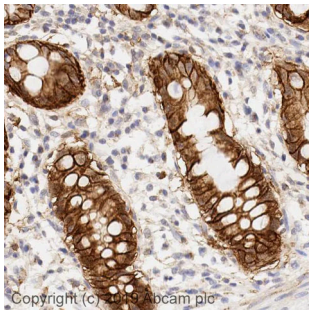
Beta Catenin Western blot staining using mouse Anti-beta Catenin antibody

Lane 1: Wild type HAP1 whole cell lysate (20 µg)
Lane 2: CTNNB1 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 - ab22656 observed at 95 kDa. Red - loading control, ab181602, observed at 37 kDa.

ab22656 was shown to specifically react with CTNNB1 (beta-catenin) in wild-type HAP1 cells along with additional cross reactive bands. No band was observed when CTNNB1 knockout samples were used. Wild-type and CTNNB1 knockout samples were subjected to SDS-PAGE. ab22656 and ab181602 (Rabbit anti GAPDH loading control) were incubated overnight at 4°C at 1 ug/ml and 1/10000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed ab216772 and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed ab216777 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-beta Catenin antibody [12F7] (ab22656)

Predicted band size: 85 kDa



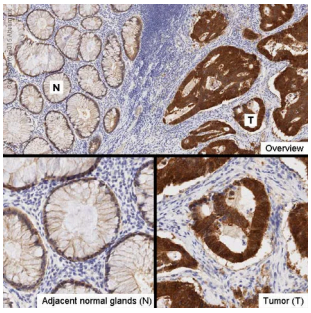
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody [12F7] (ab22656)

Beta Catenin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-beta Catenin antibody

IHC image of beta Catenin antibody staining in a section of formalin-fixed paraffin-embedded normal human colon* performed on a Leica BOND™ system using the standard protocol. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6,

epitope retrieval solution 1) for 20mins. The section was then incubated with ab22656, 1ug/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.

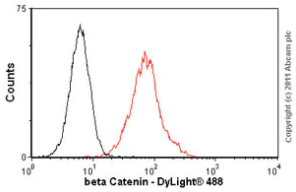
** Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre*



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody [12F7] (ab22656)

Beta Catenin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-beta Catenin antibody

IHC image of ab22656 staining beta Catenin in human colon adenocarcinoma formalin-fixed paraffin-embedded tissue sections*, performed on a Leica Bond. 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 ab22656, 1/500 dilution, 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. High magnification of the tumor region - T (lower right panel) and adjacent normal crypts - N (lower left panel) are shown.
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



Flow Cytometry (Intracellular) - Anti-beta Catenin antibody [12F7] (ab22656)

Beta Catenin Flow Cytometry (Intracellular) staining using mouse Anti-beta Catenin antibody

Overlay histogram showing HeLa cells stained with ab22656 (red line). The cells were fixed with methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab22656, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a decreased signal in HeLa cells fixed with 4% paraformaldehyde (10 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.



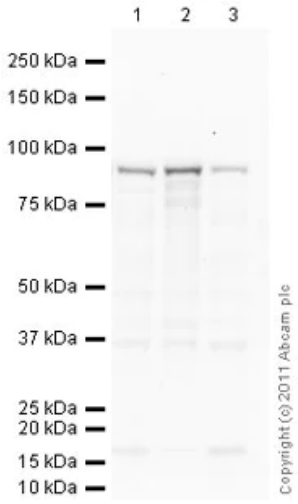
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Catenin antibody [12F7] (ab22656)

Beta Catenin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-beta Catenin antibody

ab22656 staining rat bowel tissue section by IHC-P. The section was formaldehyde fixed and subjected to heat mediated antigen retrieval in citrate buffer (pH6) prior to blocking with 10%

This image is courtesy of an anonymous customer review

serum for 10 hours at 24°C. The primary antibody was diluted 1/500 in milk and incubated with the section for 12 hours at 4°C. A biotinylated rabbit anti-mouse was used as the secondart antibody.



Western blot - Anti-beta Catenin antibody [12F7] (ab22656)

Beta Catenin Western blot staining using mouse Anti-beta Catenin antibody

We recommend using 3% milk as the blocking agent for Western blot.
All lanes:
Western blot - Anti-beta Catenin antibody [12F7] (ab22656) at 2 µg/mL

Lane 1:
HeLa (Human epithelial carcinoma cell line) Whole Cell Lysate at 20 µg

Lane 2:
DU 145 (Human prostate carcinoma cell line) Whole Cell Lysate at 20 µg

Lane 3:
A549 (Human lung adenocarcinoma epithelial cell line) Whole Cell Lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Mouse IgG H&L (HRP) preadsorbed (ab97040) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 85 kDa

Observed band size: 85 kDa

Exposure time: 12min

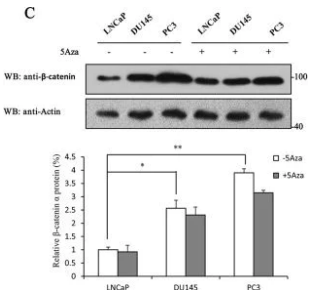


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Western blot - Anti-beta Catenin antibody [12F7] (ab22656)

Beta Catenin Western blot staining using mouse Anti-beta Catenin antibody

beta Catenin western blot using anti-beta Catenin antibody [12F7] ab22656. Publication image and figure legend from Zheng, L., Sun, D., et al., 2015, PLoS One, PubMed 25719802.

ab22656 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab22656 please see the product overview.

5Aza-induced changes in protein and mRNA levels of SFRP1 and β-catenin in PCa cell lines.A, LNCaP, DU145 and PC3 cells treated with or without 5Aza were collected and then subjected to Western blot analysis with anti-SFRP1 antibody. B, LNCaP, DU145 and PC3 cells treated with or without 5Aza were collected and then subjected to quantitative RT-PCR assay. The SFRP1 mRNA level of LNCaP cells was set to 1. C, LNCaP, DU145 and PC3 cells treated with or without 5Aza were collected and then subjected to Western blot analysis with anti-β-catenin antibody. D, LNCaP, DU145 and PC3 cells treated with or without 5Aza were collected and then subjected to quantitative RT-PCR assay. The β-catenin mRNA level of LNCaP cells was set to 1. All experiments were repeated at least three times. Data shown in the graphs are the means ±SDs of three experiments. *, $p<0.05$. ns, not significant. The full-length blot of Fig. 3A is presented in S2 Fig.

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