abcam

ab179512

Anti-beta II Tubulin antibody [EPR16773]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR16773
Purification technique	Affinity purification Protein A
Concentration	2.204 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/140
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/450
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/250
Notes	-

Species	Rat
Dilution info	1/250
Notes	-

Species	Human
Dilution info	1/250
Notes	-

Target data

See full target information TUBB2A

Function Tubulin is the major constituent of microtubules, a cylinder consisting of laterally associated linear protofilaments composed of alpha- and beta-tubulin heterodimers. Microtubules grow by the addition of GTP-tubulin dimers to the

microtubule end, where a stabilizing cap forms. Below the cap, tubulin dimers are in GDP-bound state, owing to GTPase activity of alpha-tubulin.

Storage

Shipped at conditions	Conditional Ambient
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

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 II tubulin also known as beta 2 tubulin is a significant component of microtubules which are essential for maintaining cell structure and integrity. This protein with an approximate molecular mass of 50 kDa is encoded by the TUBB2B gene. It is expressed in various tissues with high expression levels in neuronal tissues contributing to the formation of the cytoskeleton by polymerizing with alpha tubulin to form heterodimers. Alternative names for this protein include 7b9 and C#7b9 though beta II is a common reference in scientific literature.

Biological function summary	Beta II tubulin plays an important role in cellular processes like cell division and intracellular transport. As part of the microtubule complex it provides critical support in mitotic spindle formation facilitating chromosomal segregation during mitosis. It also assists in maintaining neuronal cell stability which is vital for proper neurological functions. The dynamic nature of microtubules aided by beta II tubulin ensures the correct distribution of organelles and other intracellular structures highlighting its importance in cellular mechanics.
Pathways	Beta II tubulin interacts with several critical cellular pathways including the mitotic spindle checkpoint pathway and axonal guidance. It closely associates with other tubulins such as alpha and gamma tubulin ensuring the regulation and stabilization of microtubule dynamics. These pathways are integral to cell cycle regulation and neural development highlighting beta II tubulin's involvement in important cellular and developmental processes.
Associated diseases and disorders	Mutations or dysregulation in beta II tubulin can relate to neurological disorders such as malformation of cortical development and certain types of brain atrophy. These are often linked to the protein's key role in neuronal function and axonal transport. Additionally altered expression of beta II tubulin has a connection to microtubule-related proteins such as tau which are implicated in neurodegenerative disorders like Alzheimer's disease. This highlights the importance of beta II tubulin in maintaining neuronal health and provides potential targets for therapeutic interventions.

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

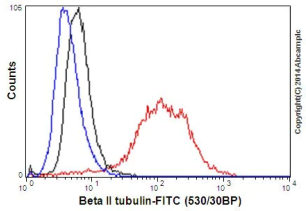
We do not recommend this combination. It is not covered by our product promise.

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.

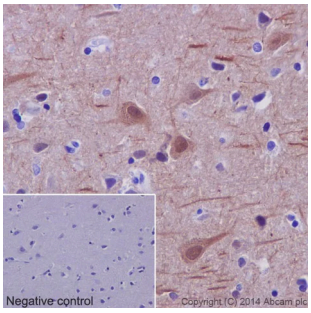
11 product images



Flow Cytometry (Intracellular) - Anti-beta II Tubulin antibody [EPR16773] (ab179512)

Beta II Tubulin Flow Cytometry (Intracellular) staining using rabbit Anti-beta II Tubulin antibody

Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed SH-SY5Y cells labeling beta II Tubulin with ab179512 at 1/450 dilution (red) compared with a rabbit monoclonal IgG isotype control (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (FITC) at 1/150 dilution was used as the secondary antibody.

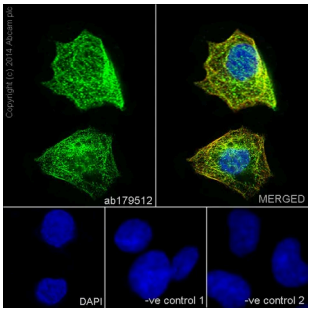


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta II Tubulin antibody [EPR16773] (ab179512)

Beta II Tubulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-beta II Tubulin antibody

Immunohistochemical analysis of paraffin-embedded Human cerebral cortex tissue labeling beta II Tubulin with ab179512 at 1/250 dilution, followed by Anti-Rabbit HRP (ab97051) at 1/500 dilution. High level of cytoplasmic and nuclear expression on neuron cells of Human cerebral cortex is observed. Counter stained with Hematoxylin.
Negative control: PBS instead of primary antibody; secondary antibody is Anti-Rabbit HRP (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-beta II Tubulin antibody [EPR16773] (ab179512)

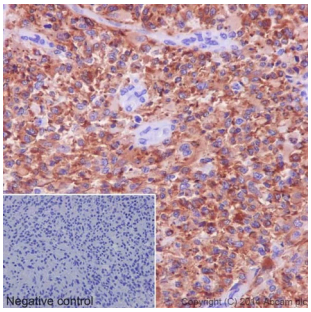
Beta II Tubulin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-beta II Tubulin antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized SH-SY5Y (Human neuroblastoma from bone marrow cells) cells labeling beta II Tubulin with ab179512 at 1/100 dilution, followed by anti-rabbit Alexa Fluor® 488 (ab150077) secondary antibody at 1/400 dilution (green). Confocal image shows both cytoplasm and nuclear staining on the SH-SY5Y cell line. The nuclear counter stain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution and anti-mouse AlexaFluor® 594 (ab150120) at 1/500 dilution (red).

The negative controls are as follows:-

-ve control 1: - ab179512 at 1/100 dilution followed by anti-mouse AlexaFluor® 594 (ab150120) at 1/500 dilution.

-ve control 2: - ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution followed by anti-rabbit Alexa Fluor® 488 (ab150077) at 1/400 dilution.

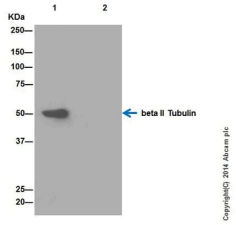


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta II Tubulin antibody [EPR16773] (ab179512)

Beta II Tubulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-beta II Tubulin antibody

Immunohistochemical analysis of paraffin-embedded Human glioma labeling beta II Tubulin with ab179512 at 1/250 dilution, followed by Anti-Rabbit HRP (ab97051) at 1/500 dilution. Cytoplasmic staining on Human glioma cells is observed. Counter stained with Hematoxylin.
Negative control: PBS instead of primary antibody; secondary antibody is Anti-Rabbit HRP (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunoprecipitation - Anti-beta II Tubulin antibody [EPR16773] (ab179512)

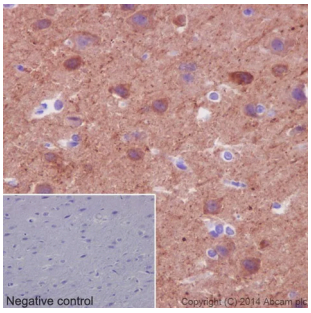
Beta II Tubulin was immunoprecipitated from 1mg of Human fetal brain extract with ab179512 at 1/140 dilution. Western blot was performed from the immunoprecipitate using ab179512 at 1/1000 dilution. Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG, was used as secondary antibody at 1/1500 dilution.
Lane 1: Human fetal brain extract. Lane 2: PBS instead of extract.

Blocking/Dilution buffer: 5% NFDM/TBST.

All lanes:
Immunoprecipitation - Anti-beta II Tubulin antibody [EPR16773] (ab179512)

Predicted band size: 50 kDa

Observed band size: 50 kDa



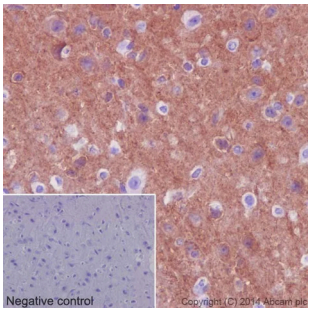
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta II Tubulin antibody [EPR16773] (ab179512)

Beta II Tubulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-beta II Tubulin antibody

Immunohistochemical analysis of paraffin-embedded Rat cerebral cortex tissue labeling beta II Tubulin with ab179512 at 1/250 dilution, followed by Anti-Rabbit HRP (ab97051) at 1/500 dilution. High level of expression on neuron cells of Rat cerebral cortex is observed. Counter stained with Hematoxylin.

Negative control: PBS instead of primary antibody; secondary antibody is Anti-Rabbit HRP (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

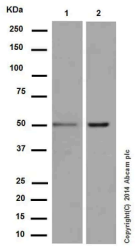


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta II Tubulin antibody [EPR16773] (ab179512)

Beta II Tubulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-beta II Tubulin antibody

Immunohistochemical analysis of paraffin-embedded Mouse cerebral cortex tissue labeling beta II Tubulin with ab179512 at 1/250 dilution, followed by Anti-Rabbit HRP (ab97051) at 1/500 dilution. High level of expression on neuron cells of Mouse cerebral cortex is observed. Counter stained with Hematoxylin.
Negative control: PBS instead of primary antibody; secondary antibody is Anti-Rabbit HRP (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-beta II Tubulin antibody [EPR16773] (ab179512)

Blocking/Dilution buffer: 5% NFDM/TBST.
Beta II Tubulin is highly expressed in brain tissues and cell lines derived from the central nervous system.

All lanes:
Western blot - Anti-beta II Tubulin antibody [EPR16773] (ab179512) at 1/1000 dilution

Lane 1:
Human fetal heart lysate at 10 µg

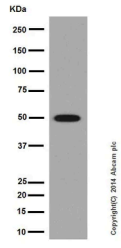
Lane 2:
Human fetal kidney lysate at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 50 kDa

Observed band size: 50 kDa



Western blot - Anti-beta II Tubulin antibody [EPR16773] (ab179512)

Beta II Tubulin Western blot staining of Human fetal brain lysate using rabbit Anti-beta II Tubulin antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
Beta II Tubulin is highly expressed in brain tissues and cell lines derived from the central nervous system.

All lanes:
Western blot - Anti-beta II Tubulin antibody [EPR16773] (ab179512) at 1/10000 dilution

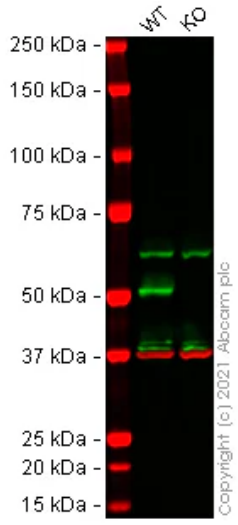
All lanes:
Human fetal brain lysate at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 50 kDa

Observed band size: 50 kDa



Western blot - Anti-beta II Tubulin antibody [EPR16773] (ab179512)

Beta II Tubulin Western blot staining using rabbit Anti-beta II Tubulin antibody

False colour image of Western blot: Anti-beta II Tubulin antibody [EPR16773] 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, ab179512 was shown to bind specifically to beta II Tubulin. A band was observed at 50 kDa in wild-type HEK-293T cell lysates with no signal observed at this size in Tubb2a knockout cell line ab266692 (knockout cell lysate ab258741). To generate this image, wild-type and Tubb2a knockout HEK-293T cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3% milk in TBS-0.1 % Tween® 20 (TBS-T) 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 II Tubulin antibody [EPR16773] (ab179512) at 1/1000 dilution

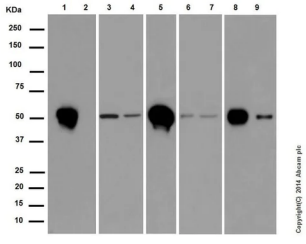
Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

Lane 2:
TUBB2A knockout HEK-293T cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 50 kDa

Observed band size: 50 kDa



Western blot - Anti-beta II Tubulin antibody [EPR16773] (ab179512)

Blocking/Dilution buffer: 5% NFDM/TBST.
Beta II Tubulin is highly expressed in brain tissues and cell lines derived from the central nervous system.

All lanes:
Western blot - Anti-beta II Tubulin antibody [EPR16773] (ab179512) at 1/1000 dilution

Lane 1:
Mouse brain lysate at 10 µg

Lane 2:
Mouse heart lysate at 10 µg

Lane 3:
Mouse kidney lysate at 10 µg

Lane 4:
Mouse spleen lysate at 10 µg

Lane 5:
Rat brain lysate at 10 µg

Lane 6:
Rat heart lysate at 10 µg

Lane 7:
Rat kidney lysate at 10 µg

Lane 8:
C6 (Rat glial tumor cells) whole cell lysate at 10 µg

Lane 9:
PC12 (Rat adrenal gland pheochromocytoma) whole cell lysate at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 50 kDa

Observed band size: 50 kDa

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