abcam

ab179504

Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775]

Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504) is a rabbit monoclonal antibody detecting beta IV Tubulin in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb

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	EPR16775
Purification technique	Affinity purification Protein A
Concentration	0.192 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Mouse
Dilution info	1/5000
Notes	-

Species	Human
Dilution info	1/5000
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	1/20
Notes	-

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 TUBB4A

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

What is this antibody validated in?
Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of beta IV Tubulin?
Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504) specifically detects a band for beta IV Tubulin (UniProt: P04350) at a molecular weight of 50kDa.

Trusted by the scientific community
Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504) was first used in a scientific publication in 2014 and has been cited over 10 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [EPR16775] also available for your convenience: ab179504, Alexa Fluor® 488 - ab204003, Alexa Fluor® 647 - ab204034, Carrier free - ab250103, PE - ab307180, APC - ab307181, HRP - ab307182, Alkaline Phosphatase - ab308805, Alexa Fluor® 594 - ab310535, Alexa Fluor® 555 - ab312066, Alexa Fluor® 568 - ab312543, Alexa Fluor® 750 - ab321223

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 IV Tubulin also known as TUBB4 is an important component of the microtubule structure within cells. It has a molecular mass of approximately 50 kDa. This protein is a critical part of the cytoskeleton and is expressed in a variety of tissues including neuronal tissues. Beta IV Tubulin plays a role in forming dynamic structures that aid in maintaining cell shape facilitating intracellular transport and enabling cell division. Researchers often use beta tubulin staining techniques to observe microtubules in cells which is important for understanding cellular processes.
Biological function summary	Beta IV Tubulin contributes significantly to the stability and function of microtubule networks. It is a member of the tubulin family and often forms tubulin heterodimers which are building blocks of microtubules. These microtubules are essential for many cellular activities such as mitosis and transport of organelles. Beta IV Tubulin is integral to the microtubule-based cellular processes and its functions are critical for neuronal development and function because it is a part of the complex cytoskeletal framework.
Pathways	Beta IV Tubulin is deeply involved in cellular processes such as the MAP kinase pathway and cell cycle regulation. These pathways are pivotal in transmitting signals that regulate cellular processes including growth and differentiation. The protein interacts with other tubulin isotypes and motor proteins like dynein and kinesin contributing to intracellular transport and chromosomal segregation during cell division. These interactions highlight its importance in maintaining proper cellular responses and functions.
Associated diseases and disorders	Mutations or dysregulation of beta IV Tubulin are associated with neurological conditions like dystonia and Charcot-Marie-Tooth disease. These disorders underline the importance of beta IV Tubulin in neuronal health and development. The protein's interaction with other tubulins and motor proteins also relates it to neurodegenerative diseases where cytoskeletal integrity and function are often compromised. Understanding these interactions helps unravel the pathogenic mechanisms of these diseases and can guide therapeutic strategies.

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

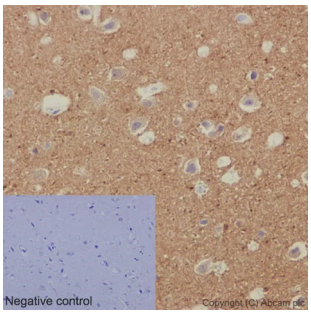
We do not recommend this combination. It is not covered by our product promise.

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.

9 product images

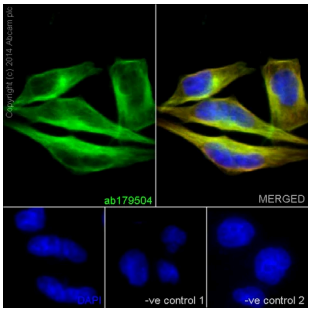


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504)

Beta I Tubulin + beta IV Tubulin + beta VI Tubulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody

Immunohistochemical analysis of paraffin-embedded Human cerebral cortex issue labeling beta I Tubulin + beta IV Tubulin + beta VI Tubulin with ab179504 at 1/250 dilution followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Counter stained with Hematoxylin. Cytoplasm staining is observed on neurons of cerebral cortex.
Negative control used PBS instead of ab179504 followed by prediluted HRP Polymer for Rabbit/Mouse IgG.

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



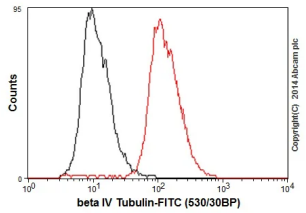
Immunocytochemistry/ Immunofluorescence - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504)

Beta I Tubulin + beta IV Tubulin + beta VI Tubulin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed 0.1% tritonX-100 permeabilized HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling beta I Tubulin + beta IV Tubulin + beta VI Tubulin with ab179504 at 1/100 dilution followed by Goat anti rabbit IgG (Alexa Fluor® 488) secondary antibody (ab150077) at 1/200 dilution (green). Cytoplasm staining is observed. Tubulin is detected with Mouse anti-Tubulin antibody (ab7291) at 1/500 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/400 dilution (red). The nuclear counter stain is DAPI (blue).

The negative controls:-

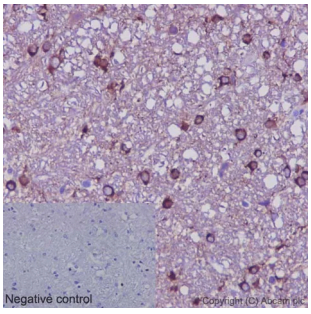
-ve control 1 - ab179504 at 1/100 dilution followed by Goat anti mouse IgG (Alexa Fluor®594) at 1/400 dilution.
-ve control 2 - Mouse anti-Tubulin antibody (ab7291) at 1/500 dilution followed by Goat anti rabbit IgG (Alexa Fluor®488) at 1/200 dilution.



Flow Cytometry (Intracellular) - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504)

Beta I Tubulin + beta IV Tubulin + beta VI Tubulin Flow Cytometry (Intracellular) staining using rabbit Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody

Intracellular Flow Cytometry analysis of 2% paraformaldehyde fixed Jurkat (Human T cell leukemia cells from peripheral blood) cells labeling beta I Tubulin + beta IV Tubulin + beta VI Tubulin with ab179504 at 1/20 dilution (red line). Secondary antibody used is a goat anti rabbit IgG (FITC) at 1/150 dilution. The isotype control is rabbit monoclonal IgG (black line).

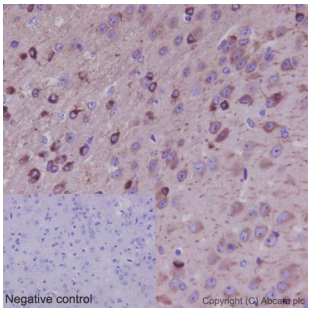


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504)

Beta I Tubulin + beta IV Tubulin + beta VI Tubulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody

Immunohistochemical analysis of paraffin-embedded Rat thalamus tissue labeling beta I Tubulin + beta IV Tubulin + beta VI Tubulin with ab179504 at 1/250 dilution followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Counter stained with Hematoxylin. Cytoplasm staining is observed on neurons of rat thalamus.
Negative control used PBS instead of ab179504 followed by prediluted HRP Polymer for Rabbit/Mouse IgG.

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

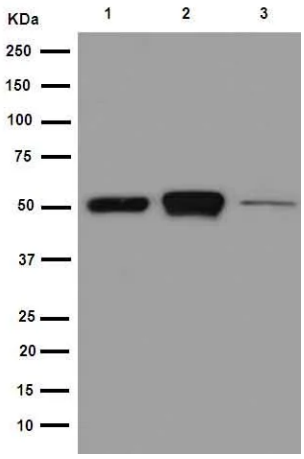


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504)

Beta I Tubulin + beta IV Tubulin + beta VI Tubulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody

Immunohistochemical analysis of paraffin embedded Mouse hippocampus tissue labeling beta I Tubulin + beta IV Tubulin + beta VI Tubulin with ab179504 at 1/250 dilution followed by prediluted HRP Polymer for Rabbit/Mouse IgG. Counter stained with Hematoxylin. Cytoplasm staining is observed on neurons of mouse hippocampus.
Negative control used PBS instead of ab179504 followed by prediluted HRP Polymer for Rabbit/Mouse IgG.

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504)

Beta I Tubulin + beta IV Tubulin + beta VI Tubulin Western blot staining using rabbit Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody

Blocking/dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504) at 1/5000 dilution

Lane 1:
Human fetal brain lysates at 20 µg

Lane 2:
Human cerebellum lysates at 20 µg

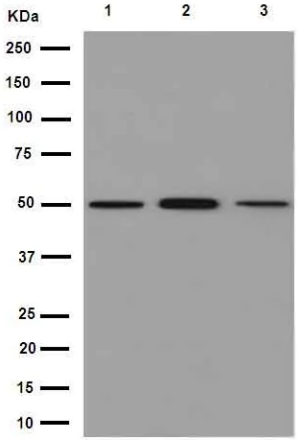
Lane 3:
Human fetal kidney lysates at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated antibody at 1/1000 dilution

Predicted band size: 50 kDa

Observed band size: 50 kDa



Western blot - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504)

Beta I Tubulin + beta IV Tubulin + beta VI Tubulin Western blot staining using rabbit Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody

Blocking/dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504) at 1/5000 dilution

Lane 1:
HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysates at 10 µg

Lane 2:
Jurkat (Human T cell leukemia cells from peripheral blood) whole cell lysates at 10 µg

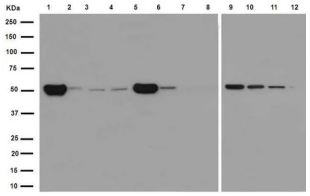
Lane 3:
Neuro-2a (Mouse neuroblastoma cells) whole cell lysates at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated antibody at 1/1000 dilution

Predicted band size: 50 kDa

Observed band size: 50 kDa



Western blot - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504)

Beta I Tubulin + beta IV Tubulin + beta VI Tubulin Western blot staining using rabbit Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody

Blocking/dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504) at 1/5000 dilution

Lane 1:
Mouse brain lysates at 10 µg

Lane 2:
Mouse heart lysates at 10 µg

Lane 3:
Mouse kidney lysates at 10 µg

Lane 4:
Mouse spleen lysates at 10 µg

Lane 5:
Rat brain lysates at 10 µg

Lane 6:
Rat heart lysates at 10 µg

Lane 7:
Rat kidney lysates at 10 µg

Lane 8:
Rat spleen lysates at 10 µg

Lane 9:
C6 (Rat glial tumor cells) whole cell lysates at 10 µg

Lane 10:
RAW 264.7 (Mouse macrophage cells transformed with Abelson murine leukemia virus) whole cell lysates at 10 µg

Lane 11:
PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysates at 10 µg

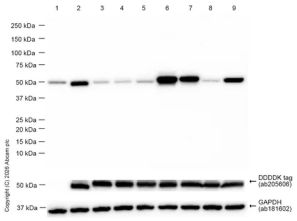
Lane 12:
NIH/3T3 (Mouse embyro fibroblast cells) whole cell lysates at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated antibody at 1/1000 dilution

Predicted band size: 50 kDa

Observed band size: 50 kDa



Western blot - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504)

Beta I Tubulin + beta IV Tubulin + beta VI Tubulin Western blot staining using rabbit Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST. ab181602 was used as a GAPDH loading control at 1/1000000 dilution.
All lanes:
Western blot - Anti-beta I Tubulin + beta IV Tubulin + beta VI Tubulin antibody [EPR16775] (ab179504) at 1/5000 dilution

Lane 1:
293T+OE-empty cell lysates at 20 µg

Lane 2:
293T+OE-Tubulin beta-1 cell lysates at 20 µg

Lane 3:
293T+OE-Tubulin beta-2A cell lysates at 20 µg

Lane 4:
293T+OE-Tubulin beta-2B cell lysates at 20 µg

Lane 5:
293T+OE-Tubulin beta-3 cell lysates at 20 µg

Lane 6:
293T+OE-Tubulin beta-4A cell lysates at 20 µg

Lane 7:
293T+OE-Tubulin beta-4B cell lysates at 20 µg

Lane 8:
293T+OE-Tubulin beta-5 cell lysates at 20 µg

Lane 9:
293T+OE-Tubulin beta-6 cell lysates at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 50 kDa

Exposure time: 10s

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