abcam

# ab179509

# Anti-beta IV Tubulin antibody [EPR16776]

Recombinant | RabMAb | 20ul selling size

## 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** | EPR16776 |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.901 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## WB

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/1000 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Rat |

| | |
|---|---|
| **Dilution info** | 1/1000 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/1000 |
| **Notes** | - |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | 1/500 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/500 |
| **Notes** | - |

### Expected

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

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | 1/150 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/150 |
| **Notes** | - |

### Expected

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

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/1000 |
| **Notes** | IHC application is recommended for mouse only.<br>Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. |

### Expected

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

**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**

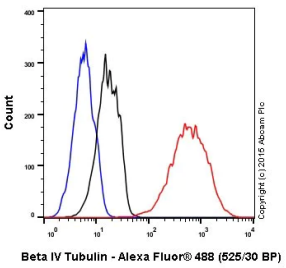
We do not recommend this combination. It is not covered by our product promise.

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.

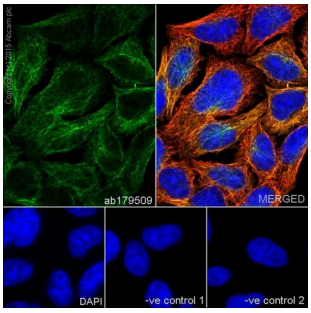
## 10 product images




## Flow Cytometry (Intracellular) - Anti-beta IV Tubulin antibody [EPR16776] (ab179509)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cell linefrom cervix adenocarcinoma) cell linelabeling beta IV Tubulinwith ab179509 at 1/150 dilution (red) compared with a Rabbit IgG,monoclonal [EPR16776]-Isotype Control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti Rabbit IgG (Alexa Fluor® 488) at 1/500 dilutionwas used as the secondary antibody.




## Immunocytochemistry/ Immunofluorescence - Anti-beta IV Tubulin antibody [EPR16776] (ab179509)

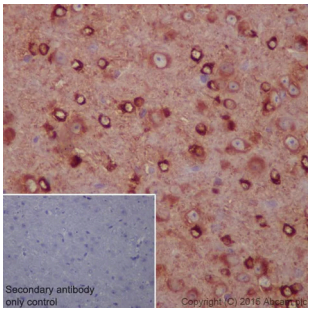
Beta IV Tubulin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-beta IV Tubulin antibody

Immunofluorescent analysis of 100% methanol fixed HeLa (Human epithelial cell line from cervix adenocarcinoma) cell line labeling beta IV Tubulin with ab179509 at 1/500 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Cytoplasm staining on HeLa cell line is observed.

The nuclear counterstain is DAPI (blue).

Tubulin is detected with Anti-alpha Tubulin antibody [EPR16776] - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (AlexaFluor®594) preadsorbed (ab150120) at 1/1000 dilution (red).

The negative controls are as follows:-
-ve control 1 - ab179509 at 1/500 followed by ab150120 at 1/1000.
-ve control 2. - ab7291 at 1/1000 followed by ab150077 at 1/1000.

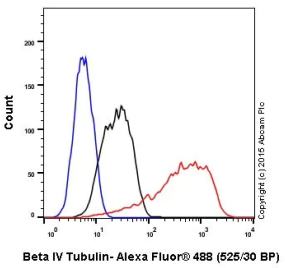



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta IV Tubulin antibody [EPR16776] (ab179509)

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

Immunohistochemical analysis of paraffin-embedded Mouse cerebrum tissue labeling beta IV Tubulin with ab179509 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Cytoplasm staining on Mouse cerebrum is observed. Counter stained with Hematoxylin.
Negative control: Used PBS instead of primary antibody,secondary antibody is ab97051 at 1/500 dilution.

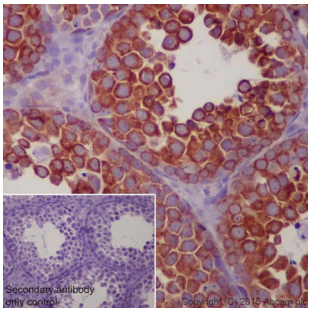
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.




## Flow Cytometry (Intracellular) - Anti-beta IV Tubulin antibody [EPR16776] (ab179509)

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

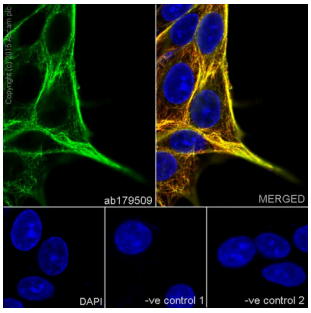
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed C6 (Rat glial tumor cell line) labeling beta IV Tubulin with ab179509 at 1/150 (red) compared with a Rabbit IgG,monoclonal [EPR16776]-Isotype control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti Rabbit IgG (Alexa Fluor® 488) at 1/500 dilutionwas used as the secondary antibody.




## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta IV Tubulin antibody [EPR16776] (ab179509)

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

Immunohistochemical analysis of paraffin-embedded Mouse testis tissue labeling beta IV Tubulin with ab179509 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Cytoplasm staining on Mouse testis is observed. Counter stained with Hematoxylin.
Negative control: Used PBS instead of primary antibody,secondary antibody is ab97051 at 1/500 dilution.
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



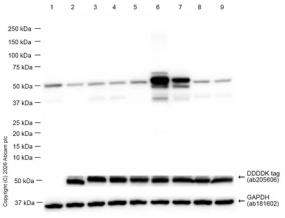

## Immunocytochemistry/ Immunofluorescence - Anti-beta IV Tubulin antibody [EPR16776] (ab179509)

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

Immunofluorescent analysis of 100% methanol fixed C6 (Rat glial tumor cell line ) labeling beta IV Tubulin with ab179509 at 1/500 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution(green).
Cytoplasm staining on C6 cell line is observed.

The nuclear counterstain is DAPI (blue).

Tubulin is detected with Anti-alpha Tubulin antibody [EPR16776] -Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG (AlexaFluor®594) preadsorbed (ab150120) at 1/1000 dilution (red).
The negative controls are as follows:-
-ve control 1 : ab179509 at 1/500 dilution followed by ab150120 at 1/1000 dilution.
-ve control 2.: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.




## Western blot - Anti-beta IV Tubulin antibody [EPR16776] (ab179509)

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

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/1000,000 dilution.

In Western blot, Anti-DDDDK tag (Binds to FLAG® tag sequence) antibody [EPR20018-251] (ab205606) 1/1000 dilution.
All lanes:
Western blot - Anti-beta IV Tubulin antibody [EPR16776] (ab179509) at 1/5000 dilution

Lane 1:
HEK293T (human embryonic kidney epithelial cell) cells transfected with an empty vector whole cell lysate at 20 µg

Lane 2:
HEK293T (human embryonic kidney epithelial cell) + OE- Tubulin beta- 1 whole cell lysate at 20 µg

Lane 3:
HEK293T (human embryonic kidney epithelial cell) + OE- Tubulin beta- 2A whole cell lysate at 20 µg

Lane 4:
HEK293T (human embryonic kidney epithelial cell) + OE- Tubulin beta- 2B whole cell lysate at 20 µg

Lane 5:
HEK293T (human embryonic kidney epithelial cell) + OE- Tubulin beta- 3 whole cell lysate at 20 µg

Lane 6:
HEK293T (human embryonic kidney epithelial cell) + OE- Tubulin beta- 4A whole cell lysate at 20 µg

Lane 7:
HEK293T (human embryonic kidney epithelial cell) + OE- Tubulin beta- 4B whole cell lysate at 20 µg

Lane 8:
HEK293T (human embryonic kidney epithelial cell) + OE- Tubulin beta- 5 whole cell lysate at 20 µg

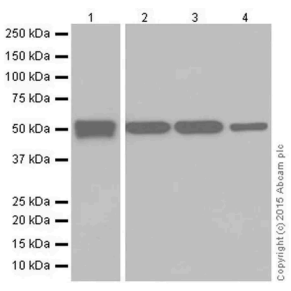
Lane 9:
HEK293T (human embryonic kidney epithelial cell) + OE- Tubulin beta- 6 whole cell lysate at 20 µg

Secondary

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

Observed band size: 50 kDa, 36 kDa

Exposure time: 1s




## Western blot - Anti-beta IV Tubulin antibody [EPR16776] (ab179509)

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

Blocking and diluting buffer was 5% NFDM /TBST.
Exposure time - Lane 1: 1 second; Lanes 2,3 and 4: 30 seconds

All lanes:
Western blot - Anti-beta IV Tubulin antibody [EPR16776] (ab179509) at 1/1000 dilution

Lane 1:
Human cerebellum lysate at 20 µg

Lane 2:

HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 3:
Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate at 20 µg

Lane 4:
Neuro-2a (Mouse neuroblastoma cell line) whole cell lysate at 20 µg

Secondary

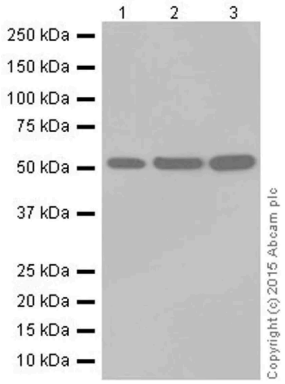
All lanes:
Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/10000 dilution

Developed using the ECL technique.

Predicted band size: 50 kDa

Observed band size: 50 kDa

Exposure time: 30s




## Western blot - Anti-beta IV Tubulin antibody [EPR16776] (ab179509)

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

Blocking and diluting buffer was 5% NFDM /TBST
All lanes:
Western blot - Anti-beta IV Tubulin antibody [EPR16776] (ab179509) at 1/1000 dilution

Lane 1:
Human fetal liver lysate at 10 µg

Lane 2:
Human fetal heart lysate at 10 µg

Lane 3:
Human fetal kidney lysate at 10 µg

Secondary

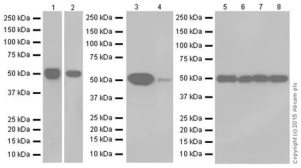
All lanes:
Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/10000 dilution

Developed using the ECL technique.

Predicted band size: 50 kDa

Observed band size: 50 kDa

Exposure time: 30s



## Western blot - Anti-beta IV Tubulin antibody [EPR16776] (ab179509)

Blocking and diluting buffer was 5% NFDM /TBST.
Exposure time - Lane 1: 1 second; Lane 2: 30 seconds; Lanes 3 and 4: 3 minutes; Lanes 5, 6, 7 and 8: 30 seconds
All lanes:

Western blot - Anti-beta IV Tubulin antibody [EPR16776] (ab179509) at 1/1000 dilution

Lane 1:
Mouse brain lysate at 10 µg

Lane 2:
Mouse spleen lysate at 10 µg

Lane 3:
Rat brain lysate at 10 µg

Lane 4:
Rat spleen lysate at 10 µg

Lane 5:
C6 (Rat glial tumor cell line) whole cell lysate at 10 µg

Lane 6:
Raw264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

Lane 7:
PC-12 (Rat adrenal gland pheochromocytoma cell line) whole cell lysate at 10 µg

Lane 8:
NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Predicted band size: 50 kDa

Observed band size: 50 kDa

Exposure time: 30s

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