abcam

ab201740

Alexa Fluor® 594 Anti-beta III Tubulin antibody [EP1569Y] - Neuronal Marker

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 594
Excitation/Emission	Ex: 590nm, Em: 617nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP1569Y
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Rat
Dilution info	1/100
Notes	-

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Predicted

Species	Zebrafish
Dilution info	-
Notes	-

Flow Cyt (Intra)

Expected

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

Predicted

Species	Zebrafish
Dilution info	-
Notes	-

IHC-P

Expected

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

Predicted

Species	Zebrafish
Dilution info	-
Notes	-

Target data

See full target information TUBB3

Function Tubulin is the major constituent of microtubules, protein filaments consisting of alpha- and beta-tubulin heterodimers (PubMed:34996871, PubMed:38305685, PubMed:38609661). Microtubules grow by the addition of GTP-tubulin dimers to the microtubule end, where a stabilizing cap forms (PubMed:34996871, PubMed:38305685, PubMed:38609661). Below the cap, alpha-beta tubulin heterodimers are in GDP-bound state, owing to GTPase activity of alpha-tubulin (PubMed:34996871, PubMed:38609661). TUBB3 plays a critical role in proper axon guidance and maintenance (PubMed:20074521). Binding of NTN1/Netrin-1 to its receptor UNC5C might cause dissociation of UNC5C from polymerized TUBB3 in microtubules and thereby lead to increased microtubule dynamics and axon repulsion (PubMed:28483977). Plays a role in dorsal root ganglion axon projection towards the spinal cord (PubMed:28483977).

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, Store in the dark

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.

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Supplementary info

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

Activity summary	Beta III tubulin often referred to as βIII tubulin or beta-tubulin 3 is a microtubule element involved in the cellular cytoskeleton structure. This protein with a molecular mass of approximately 55 kDa plays an important role in the development and maintenance of neuron structures. It is most prominently expressed in neurons within the central and peripheral nervous systems. In these cells beta III tubulin contributes to microtubule polymerization facilitating the formation of the intricate network necessary for cell shape intracellular transport and division.
Biological function summary	Beta III tubulin acts in stabilizing microtubules which are essential for proper neuronal function. It exists as part of the tubulin dimer complex partnering with alpha-tubulin to form the building blocks of microtubules. This particular isotype is often used as a marker for neuronal differentiation due to its specific expression pattern in neural tissues. Its regulation and expression levels are important for neurogenesis and maintaining neuronal plasticity.
Pathways	Beta III tubulin plays a role in neuron-specific intracellular transport and signaling pathways like the Rho GTPase and MAPK signaling pathways. These pathways are involved in cell cycle regulation and apoptotic processes. Relationships with other proteins such as kinesins and dyneins are important in these pathways influencing intracellular transport and signaling through binding and moving along the microtubule tracks created by beta-tubulin isotypes including beta III tubulin.

Associated diseases and disorders	Abnormal beta III tubulin expression has been associated with cancer particularly in tumors originating from neuronal lineage such as glioblastomas. Overexpression or mutations can contribute to chemoresistance complicating treatment for certain types of cancer. Beta III tubulin is also linked to neurodevelopmental disorders as it affects proper neural network formation and stability. Its relationship with tumor protein p53 is noted in cancer pathways as p53 can influence beta III tubulin expression impacting cellular proliferation and apoptosis in oncogenic processes.

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

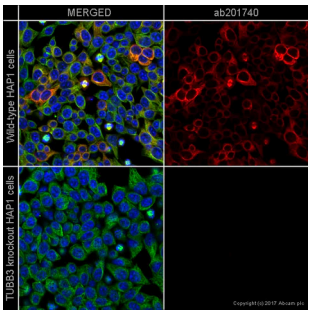
We do not recommend this combination. It is not covered by our product promise.

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.

2 product images

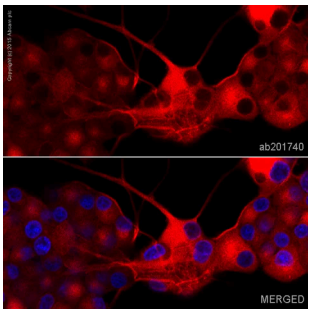


Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 594 Anti-beta III Tubulin antibody [EP1569Y] - Neuronal Marker (ab201740)

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

ab201740 staining beta III Tubulin in wild-type HAP1 cells (top panel) and TUBB3 knockout HAP1 cells (bottom panel). The cells were fixed with 100% methanol (5min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in

0.1% PBS-Tween for 1h. The cells were then incubated with ab201740 at 1/500 dilution (shown in red) and ab195887 at 1/250 dilution (shown in green) overnight at +4°C. Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 594 Anti-beta III Tubulin antibody [EP1569Y] - Neuronal Marker (ab201740)

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

ab201740 staining beta III Tubulin in PC12 cells treated with NGF. The cells were fixed with 4% formaldehyde (10 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab201740 at 1/100 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

This product also gave a positive signal under the same testing conditions in PC12 cells fixed with 100% methanol (5 min).

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