abcam

ab157217

Anti-EB3 antibody [EPR11421(B)]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 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	EPR11421(B)
Purification technique	Affinity purification Protein A
Concentration	0.151 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/250 - 1/500
Notes	-

Expected

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

Predicted

Species	Mouse
Dilution info	-
Notes	-

IP

Not recommended

Species	Rat, Human, Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/10000 - 1/50000
Notes	-

Species	Rat
Dilution info	1/10000 - 1/50000
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/250 - 1/500
Notes	-

Expected

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

Predicted

Species	Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Mouse

Dilution info	-
Notes	-

Target data

See full target information MAPRE3

Function	Plus-end tracking protein (+TIP) that binds to the plus-end of microtubules and regulates the dynamics of the microtubule cytoskeleton (PubMed:19255245, PubMed:28814570). Promotes microtubule growth (PubMed:19255245, PubMed:28814570). May be involved in spindle function by stabilizing microtubules and anchoring them at centrosomes (PubMed:19255245, PubMed:28814570). Also acts as a regulator of minus-end microtubule organization: interacts with the complex formed by AKAP9 and PDE4DIP, leading to recruit CAMSAP2 to the Golgi apparatus, thereby tethering non-centrosomal minus-end microtubules to the Golgi, an important step for polarized cell movement (PubMed:28814570). Promotes elongation of CAMSAP2-decorated microtubule stretches on the minus-end of microtubules (PubMed:28814570).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

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	EB3 also known as End-binding protein 3 is a microtubule-associated protein with a molecular weight of approximately 32 kDa. This protein belongs to the EB family of proteins which includes EB1 and EB2. EB3 facilitates microtubule dynamics by binding to the plus ends of microtubules and playing a role in their stabilization and elongation. Researchers have observed its expression in various tissues with a notable presence in neuronal tissues where it supports complex cellular activities.
Biological function summary	EB3 interacts with other end-binding proteins as part of the plus-end tracking complex often abbreviated as +TIPs. This complex modulates the behavior of microtubules essential for processes like mitosis and cell migration. EB3's interaction within this complex stabilizes microtubules at the growing edge important for neuronal development and synaptic function. Additionally EB3 helps in intracellular signaling through direct interaction with other microtubule-associated proteins thereby contributing to cellular structural integrity.
Pathways	EB3 plays an integral role in the Wnt signaling pathway and the microtubule polymerization regulation pathway. These pathways are important for normal cell division and signaling. In the Wnt signaling pathway EB3 interacts with proteins like APC essential for the pathway's downstream signaling events that influence cell polarity and differentiation. Moreover its involvement in the polymerization regulation pathway helps in facilitating effective cargo transport along microtubules.
Associated diseases and disorders	EB3 has been linked to neurodegenerative diseases such as Alzheimer's disease and certain types of cancer. Abnormalities in EB3 expression and function can lead to disruptions in microtubule stability contributing to the pathogenesis of these conditions. EB3's connection with tau protein further highlights its role in Alzheimer's where tau aggregation negatively affects microtubule function. In cancer alterations in EB3 expression influence tumor progression by impacting cell motility and invasiveness with implications for metastasis development.

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

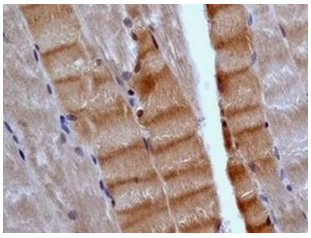
We do not recommend this combination. It is not covered by our product promise.

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.

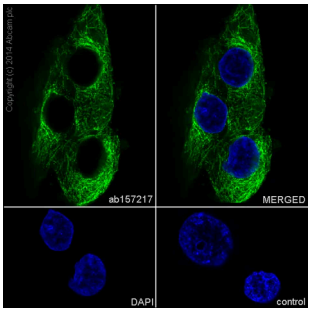
6 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-EB3 antibody [EPR11421(B)] (ab157217)

EB3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-EB3 antibody

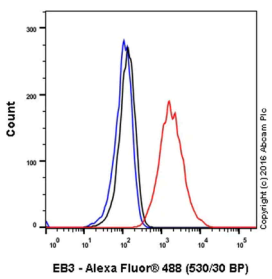
Immunohistochemical analysis of paraffin embedded human skeletal muscle tissue labeling EB3 with ab157217 at 1/250.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-EB3 antibody [EPR11421(B)] (ab157217)

EB3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-EB3 antibody

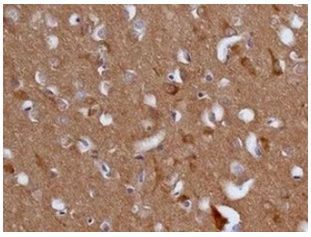
Immunocytochemistry/Immunofluorescence analysis of SH-SY5Y (Human neuroblastoma cell line from bone marrow) cells labeling EB3 with purified ab157217 at a dilution of 1/500. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. Nuclei counterstained with DAPI (blue).
Control: PBS only.



Flow Cytometry (Intracellular) - Anti-EB3 antibody [EPR11421(B)] (ab157217)

EB3 Flow Cytometry (Intracellular) staining using rabbit Anti-EB3 antibody

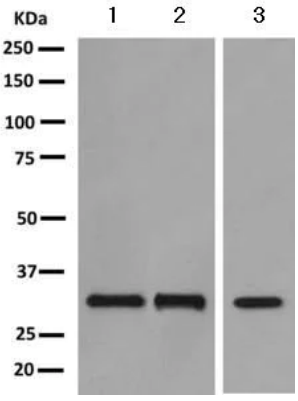
Intracellular Flow Cytometry analysis of U87-MG (human glioblastoma) cells labeling EB3 with unpurified ab157217 at 1/20 dilution (10µg/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-EB3 antibody [EPR11421(B)] (ab157217)

EB3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-EB3 antibody

Immunohistochemical analysis of paraffin embedded human brain tissue labeling EB3 with ab157217 at 1/250.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Western blot - Anti-EB3 antibody [EPR11421(B)] (ab157217)

All lanes:
Western blot - Anti-EB3 antibody [EPR11421(B)] (ab157217) at 1/10000 dilution

Lane 1:
Human cerebellum lysate at 10 µg

Lane 2:
Human fetal brain lysate at 10 µg

Lane 3:
Rat muscle lysate at 10 µg

Predicted band size: 31 kDa

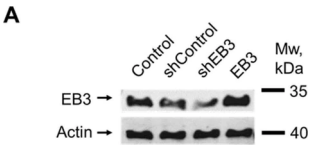


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-EB3 antibody [EPR11421(B)] (ab157217)

EB3 Western blot staining using rabbit Anti-EB3 antibody

EB3 western blot using anti-EB3 antibody [EPR11421(B)] ab157217. Publication image and figure legend from Pchitskaya, E., Rakovskaya, A., et al., 2022, Int J Mol Sci, PubMed 35216391.

ab157217 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 ab157217 please see the product overview.

EB3 affects PSD-95 and Synapsin protein clustering. (A) The efficiency of EB3 expression level regulation generated in HEK293T cells Lentiviral particles were analyzed by Western blot the primary hippocampal cultures infected with lentiviruses encoding EB3, control RNAi (shControl), or RNAi against EB3 (shEB3) at DIV 7-8 and lysed at DIV 15. Actin was used as a loading control. (B) Quantification of EB3 expression level (normalized to actin levels). The mean density of each band was normalized to an actin signal in the same sample and averaged. n = 4 batches of culture, *: $p < 0.05$. (C) Area and density of PSD-95 protein clusters for each group of cells shown on panel D. (D) Binarized confocal images of WT hippocampal dendrites and dendrites treated with beta-amyloid, infected with lentiviruses encoding EB3, control RNAi (shControl) or RNAi against EB3 (shEB3) at DIV 7 and fixed at DIV 14 and stained anti-MAP2 (red), anti-PSD95 (blue), and anti-Synapsin (green). Scale bar corresponds to 5µm. (E) Area and density of Synapsin protein clusters for each group of cells shown on panel D. *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$, ****: $p < 0.0001$, ns-no statistically significant difference. Tamhane's T3 test for PSD95 clusters area, Kruskal–Wallis test with post-hoc Dunn's test for other data. $n \geq 25$ neurons from 3 to 5 batches of cultures.

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