abcam

ab249136

Anti-PEN2 antibody [EPR9200] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR9200
Purification technique	Affinity purification Protein A
Concentration	1.03 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Expected

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

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information PSENEN

Function

Essential subunit of the gamma-secretase complex, an endoprotease complex that catalyzes the intramembrane cleavage of integral membrane proteins such as Notch receptors and APP (amyloid-beta precursor protein) (PubMed:12522139, PubMed:12679784, PubMed:12740439, PubMed:12763021, PubMed:24941111, PubMed:30598546, PubMed:30630874). The gamma-secretase complex plays a role in Notch and Wnt signaling cascades and regulation of downstream processes via its role in processing key regulatory proteins, and by regulating cytosolic CTNNB1 levels (Probable). PSENEN modulates both endoproteolysis of presenilin and gamma-secretase activity (PubMed:12522139, PubMed:12679784, PubMed:12740439, PubMed:12763021, PubMed:24941111).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab249136 is the carrier-free version of ab154830.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	PEN2 also known as Presenilin Enhancer 2 is a component of the gamma-secretase complex. It has a molecular mass of approximately 12 kDa. PEN2 is expressed in a variety of tissues including neuronal cells and across several cell lines like the HEK 293. This protein plays an essential mechanical role in stabilizing and activating the gamma-secretase complex which is necessary for its protease activity.
Biological function summary	PEN2 is an important element of the gamma-secretase complex composed of presenilin nicastrin APH-1 and PEN2. Its role involves the facilitation of proper maturation and assembly of the complex contributing to the proteolytic processing of several type I transmembrane proteins including the amyloid precursor protein (APP) and Notch. PEN2 plays a part in these cellular processes by

	ensuring that the gamma-secretase complex functions correctly impacting cellular signaling and communication.
Pathways	Gamma-secretase activity where PEN2 is involved is central to the Notch signaling pathway and the amyloidogenic pathway. The Notch signaling pathway is fundamental in cell differentiation proliferation and apoptosis and relies significantly on the function of the gamma-secretase complex. The amyloidogenic pathway involves the processing of APP to produce amyloid-beta peptides which PEN2's role in the gamma-secretase complex influences. Related proteins in these pathways include presenilin which is an active component in Notch and APP cleavage.
Associated diseases and disorders	Mutations or dysregulation of PEN2 can have links to Alzheimer's disease and certain cancers. Alzheimer's disease is associated with the production of amyloid-beta peptides which accumulate into plaques a process influenced by PEN2 through gamma-secretase activity with APP. Dysregulated Notch signaling where PEN2 is involved is linked to various cancers due to its role in controlling cell fate decisions. PEN2's interactions with proteins like presenilin and APP highlight its potential impact on these conditions.

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

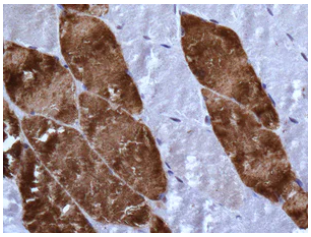
We do not recommend this combination. It is not covered by our product promise.

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.

3 product images

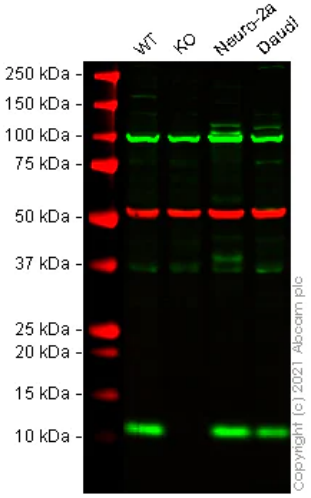


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PEN2 antibody [EPR9200] - BSA and Azide free (ab249136)

PEN2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PEN2 antibody

This data was developed using ab154830, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human skeletal muscle tissue labeling PEN2 with ab154830 at 1/100 dilution.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Western blot - Anti-PEN2 antibody [EPR9200] - BSA and Azide free (ab249136)

PEN2 Western blot staining using rabbit Anti-PEN2 antibody

False colour image of Western blot: Anti-PEN2 antibody [EPR9200] staining at 1/1000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] (ab7291) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab154830 was shown to bind specifically to PEN2. A band was observed at 12 kDa in wild-type HEK-293 cell lysates with no signal observed at this size in PSENEN knockout cell line ab273720 (knockout cell lysate ab273772). To generate this image, wild-type and PSENEN knockout HEK-293 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-PEN2 antibody [EPR9200] (ab154830) at 1/1000 dilution

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

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

Lane 2:
Western blot - Human PSENEN (PEN2) knockout HEK-293 cell line (ab273720)

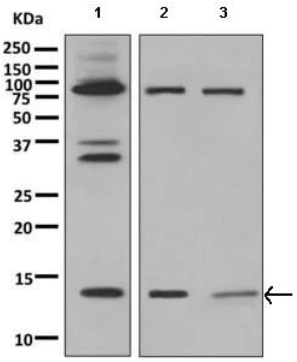
Lane 3:
Neuro-2a cell lysate at 20 µg

Lane 4:
Daudi cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 12 kDa

Observed band size: 12 kDa



Western blot - Anti-PEN2 antibody [EPR9200] - BSA and Azide free (ab249136)

This data was developed using ab154830, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-PEN2 antibody [EPR9200] (ab154830) at 1/1000 dilution

Lane 1:
Neuro-2a cell lysate at 10 µg

Lane 2:
Fetal lung tissue lysate at 10 µg

Lane 3:
Human placenta lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP at 1/2000 dilution

Predicted band size: 12 kDa

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