abcam

Product datasheet

Anti-Presenilin 1/PS-1 antibody [EP2000Y] ab76083

KO VALIDATED Recombinant RabMAb

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Overview

Product name	Anti-Presenilin 1/PS-1 antibody [EP2000Y]
Description	Rabbit monoclonal [EP2000Y] to Presenilin 1/PS-1
Host species	Rabbit
Specificity	The mouse and rat recommendation is based on the WB results. We do not guarantee IHC-P for mouse and rat.
Tested applications	**Suitable for:** WB, IHC-P **Unsuitable for:** Flow Cyt or ICC/IF
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Synthetic peptide within Human Presenilin 1/PS-1 aa 300-400. The exact sequence is proprietary. Database link: **P49768**
Positive control	WB: HeLa, Mouse brain, Rat brain cell, Human fetal brain lysate. IHC-P: Human liver.
General notes	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 production For more information **see here**. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Storage buffer	pH: 7.20 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol, 0.05% BSA
Purity	Protein A purified

Clonality	Monoclonal
Clone number	EP2000Y
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab76083 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★★★ (3)	1/1000 - 1/5000. Predicted molecular weight: 53 kDa.
IHC-P		1/100. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. See **IHC antigen retrieval protocols**. The mouse and rat recommendation is based on the WB results. We do not guarantee IHC-P for mouse and rat.

Application notes Is unsuitable for Flow Cyt or ICC/IF.

Target

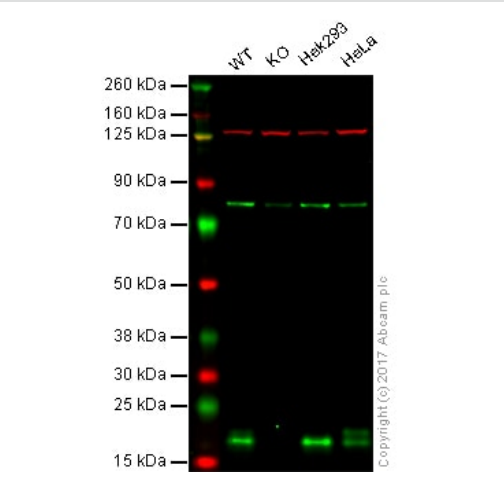
Function Probable catalytic subunit of the gamma-secretase complex, an endoprotease complex that catalyzes the intramembrane cleavage of integral membrane proteins such as Notch receptors and APP (beta-amyloid precursor protein). Requires the other members of the gamma-secretase complex to have a protease activity. May play a role in intracellular signaling and gene expression or in linking chromatin to the nuclear membrane. Stimulates cell-cell adhesion though its association with the E-cadherin/catenin complex. Under conditions of apoptosis or calcium influx, cleaves E-cadherin promoting the disassembly of the E-cadherin/catenin complex and increasing the pool of cytoplasmic beta-catenin, thus negatively regulating Wnt signaling. May also play a role in hematopoiesis.

Tissue specificity Expressed in a wide range of tissues including various regions of the brain, liver, spleen and lymph nodes.

Involvement in disease Defects in PSEN1 are a cause of Alzheimer disease type 3 (AD3) [MIM:607822]. AD3 is a familial early-onset form of Alzheimer disease. Alzheimer disease is a neurodegenerative disorder characterized by progressive dementia, loss of cognitive abilities, and deposition of fibrillar amyloid proteins as intraneuronal neurofibrillary tangles, extracellular amyloid plaques and vascular amyloid deposits. The major constituent of these plaques is the neurotoxic amyloid-beta-APP 40-42 peptide (s), derived proteolytically from the transmembrane precursor protein APP by sequential secretase processing. The cytotoxic C-terminal fragments (CTFs) and the caspase-cleaved products such as C31 derived from APP, are also implicated in neuronal death.
Defects in PSEN1 are a cause of frontotemporal dementia [MIM:600274].
Defects in PSEN1 are the cause of cardiomyopathy dilated type 1U (CMD1U) [MIM:613694]. It is a disorder characterized by ventricular dilation and impaired systolic function, resulting in congestive heart failure and arrhythmia. Patients are at risk of premature death.
Defects in PSEN1 are the cause of acne inversa familial type 3 (ACNIF3) [MIM:613737]. A chronic relapsing inflammatory disease of the hair follicles characterized by recurrent draining

	sinuses, painful skin abscesses, and disfiguring scars. Manifestations typically appear after puberty.
Sequence similarities	Belongs to the peptidase A22A family.
Domain	The PAL motif is required for normal active site conformation.
Post-translational modifications	Heterogeneous proteolytic processing generates N-terminal (NTF) and C-terminal (CTF) fragments of approximately 35 and 20 kDa, respectively. During apoptosis, the C-terminal fragment (CTF) is further cleaved by caspase-3 to produce the fragment, PS1-CTF12. After endoproteolysis, the C-terminal fragment (CTF) is phosphorylated on serine residues by PKA and/or PKC. Phosphorylation on Ser-346 inhibits endoproteolysis.
Cellular localization	Endoplasmic reticulum membrane. Golgi apparatus membrane. Cell surface. Bound to NOTCH1 also at the cell surface. Colocalizes with CDH1/2 at sites of cell-cell contact. Colocalizes with CTNNB1 in the endoplasmic reticulum and the proximity of the plasma membrane. Also present in azurophil granules of neutrophils.

Images



Western blot - Anti-Presenilin 1/PS-1 antibody [EP2000Y] (ab76083)

Lane 1: Wild-type HAP1 whole cell lysate (20 µg)

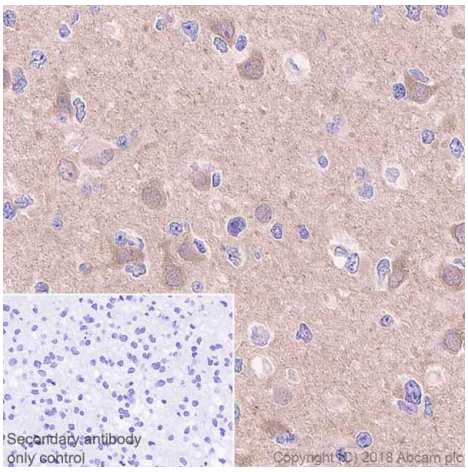
Lane 2: Presenilin 1 knockout HAP1 whole cell lysate (20 µg)

Lane 3: HEK293 whole cell lysate (20 µg)

Lane 4: HeLa whole cell lysate (20 µg)

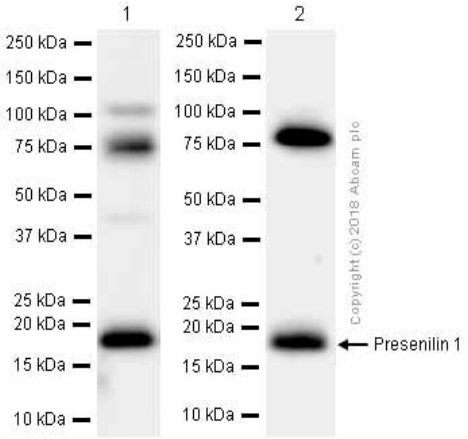
Lanes 1 - 4: Merged signal (red and green). Green - ab76083 observed at 18 kDa. Red - loading control, **ab18058**, observed at 130 kDa.

ab76083 was shown to recognize Presenilin 1 in wild-type HAP1 cells as signal was lost at the expected MW in Presenilin 1 knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and Presenilin 1 knockout samples were subjected to SDS-PAGE. Ab76083 and **ab18058** (Mouse anti-Vinculin loading control) were incubated overnight at 4°C at 1/5000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed **ab216773** and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed **ab216776** secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Presenilin 1/PS-1 antibody [EP2000Y] (ab76083)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human glioma tissue sections labeling Presenilin 1/PS-1 with Purified ab76083 at 1:100 dilution (1.31 µg/ml). Heat mediated antigen retrieval was performed using **ab93684** (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use)was used as the secondary antibody. Negative control:PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Western blot - Anti-Presenilin 1/PS-1 antibody [EP2000Y] (ab76083)

All lanes : Anti-Presenilin 1/PS-1 antibody [EP2000Y] (ab76083) at 1/1000 dilution

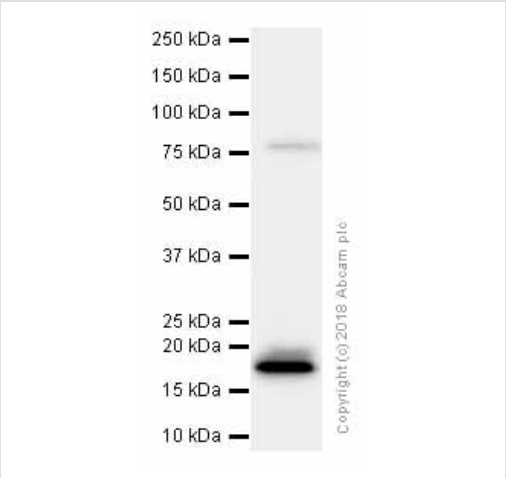
Lane 1 : Mouse brain lysates
Lane 2 : Rat brain lysates

Lysates/proteins at 15 µg per lane.

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

Predicted band size: 53 kDa
Observed band size: 18 kDa

The 18 KD band is the C-terminal fragment after proteolytic process reported by PMID 9173929. But we are not sure how to define the extra band around 75 KD.



Western blot - Anti-Presenilin 1/PS-1 antibody [EP2000Y] (ab76083)

Anti-Presenilin 1/PS-1 antibody [EP2000Y] (ab76083) at 1/1000 dilution (Purified) + Human fetal brain lysates at 15 µg

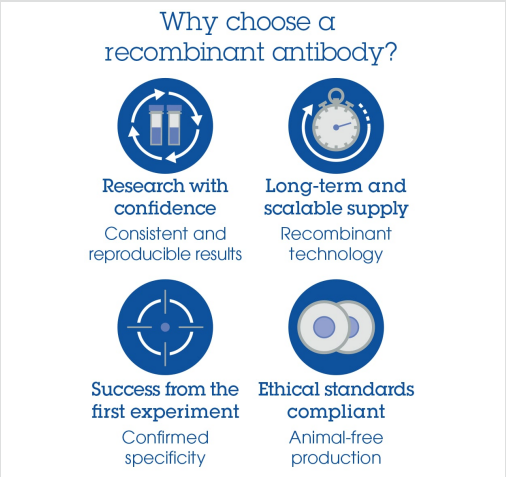
Secondary

Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 53 kDa

Observed band size: 18 kDa

The 18 KD band is the C-terminal fragment after proteolytic process reported by PMID 9173929.



Anti-Presenilin 1/PS-1 antibody [EP2000Y] (ab76083)

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